

Executive Summary - Informational

TO: State Investment Board
FROM: Dave Hunter
DATE: September 20, 2019
SUBJECT: **SIB Meeting Materials – September 27, 2019**

Our September board meeting will focus on Callan's comprehensive annual investment performance review of SIB client returns for the periods ended June 30, 2019. RIO will also highlight recent RVK Survey Results on U.S. Sovereign Wealth Funds (SWF) including North Dakota's Legacy Fund in addition to sharing recent insights gained while attending a recent SWF conference.

The September SIB meeting materials will address the following topics:

1. **Asset and Performance Overview** – RIO will briefly review the Asset and Performance Overview shared with the Board last month and highlight annual investment reviews conducted by RIO in September. **RIO notes that 97% of our SIB clients (based on Assets Under Management or "AUM") generated net investment returns which exceeded their approved policy benchmark by 0.50% for the 5-years ended June 30, 2019.** RIO will also provide an update on SIB client fees noting they declined from 0.65% in fiscal 2013 to 0.45% in recent years. Based on \$10 billion in average AUM, this 0.20% decline in investment fees translates into \$20 million of annual fee savings.
2. **Callan Annual Investment Review** – **The SIB has engaged Callan to provide quarterly investment performance reviews which includes a reconciliation of RIO's reported investment returns and asset valuations with those reported by Northern Trust, noting that Northern Trust serves as our primary custodian and record keeper of SIB client investments.** RIO ties out investment returns and asset valuations directly with our investment managers and Northern Trust after each month-end in addition to assisting Callan in reconciling reported returns and investments valuations directly with Northern Trust after every quarter-end. The State also obtains an outside independent audit of our financial statements and disclosures as of June 30th after every fiscal year end. Our Audit Committee and RIO's Internal Audit team is also responsible for reviewing RIO's internal accounting controls, policies, practices, reporting and documentation on behalf of the SIB throughout the year.
3. **RVK U.S. Sovereign Wealth Fund (SWF) Survey Results** – RIO participated in a recent RVK survey of U.S. SWF in order to gain additional insight and perspective on the governance structures, constraints, and spending models of U.S. based funds. RIO highlighted key observations in a 7-page "Summary" memo and included RVK's 46-page Survey Report in our meeting materials. **RIO notes that 6 of the 10 U.S. SWF survey**

respondents identified the Percent of Market Value (POMV) approach for determining the level of distributions or spending (with 5 respondents using 5% and one using 4% of “Trailing Market Value”). Last month, the SIB unanimously voted in favor to support a Legacy Fund Earnings Estimate Formula using the POMV approach noting it is used by North Dakota’s *Common Schools Trust Fund* in developing a sustainable spending policy.

4. **Legacy Fund Earnings Committee** – In response to a ND Legislative Council request to obtain the RVK US SWF Survey report for distribution to the Legacy Fund Earnings Committee, RIO stated its willingness to present the survey results at their next tentatively scheduled meeting in Fargo on November 12-13. RIO also stated its willingness to share recent discussions with several other US SWF representatives including informed leaders from Alaska, New Mexico, Wyoming and others.
5. **Press Releases** – RIO will provide a brief update on recent SIB and RIO press releases including the most recent one which was included in the Bismarck Tribune *Business Digest* this past weekend relating to our last SIB meeting.
6. **Annual Governance Manual Review** – The SIB and RIO are conducting their annual Governance Manual Review over four months (August to November) this year in order to facilitate a more meaningful review. A first reading of Sections A and B was completed last month (on Executive Limitations and Governance Process). A second reading of Sections A and B will be completed this month in addition to a first reading of Sections C and D (on Board Staff Relationship and Ends). **At the conclusion of our monthly board discussions, the SIB may make a motion to accept recommended changes, if any, to our Governance Manual.**
7. **Board Education** – RIO encourages all SIB members to attend approved investment education conferences in the upcoming year including Callan’s National Conference on January 27-29, 2020. Callan lists all upcoming conferences and workshops in their Quarterly Investment Performance Reports (see last four pages of each report).
8. **Agency Update** – RIO will highlight recent efforts to make RIO more efficient by redefining roles and responsibilities to address areas of increased emphasis (such as investment risk management and enhanced due diligence reporting and compliance monitoring). RIO’s is pleased to report that our new Investment Accountant is scheduled to start on October 1, 2019. RIO received two dozen applications for its newly redefined Investment and Compliance Officer position in September and will seek to interview the top candidates in October. RIO will also provide a brief TFFR system update.



ND STATE INVESTMENT BOARD MEETING

Friday, September 27, 2019, 8:30 a.m.

Fort Union Room, State Capitol
600 E Blvd., Bismarck, ND

I. APPROVAL OF AGENDA

II. APPROVAL OF MINUTES (AUGUST 23, 2019)

III. INVESTMENTS

- A. Asset and Investment Performance Overview – Mr. Hunter (15 minutes) *Informational*
- B. Callan Annual Review – Mr. Paul Erlendson, Mr. Alex Browning (1 hour) **Board Acceptance**
 - 1. Pension Investments – Annual Performance Review
 - 2. Insurance Investments – Annual Performance Review
 - 3. Legacy Fund – Annual Performance Review
- C. Legacy Fund - Mr. Hunter (enclosed) (30 minutes) *Informational*
 - 1. RVK U.S. Sovereign Wealth Fund Survey Results
 - 2. Legacy Fund Earnings Committee Assistance
 - 3. Press Releases

===== Break from 10:15 to 10:30 a.m. =====

IV. GOVERNANCE (enclosed) (1 hour)

- A. Annual Governance Manual Review (*Part 2 of 4*) – Mr. Hunter **Board Action**
- B. SIB Securities Litigation Committee Update – Mr. Hunter **Board Acceptance**
- C. Board Education: Conferences - Mr. Hunter *Informational*
- D. RIO Agency Update - Mr. Hunter *Informational*

V. OTHER

Next Meetings: SIB - October 25, 2019, 8:30 a.m., State Capitol, Fort Union Room
Securities Litigation Committee - November 7, 2019, 3:00 p.m. RIO Conference Room
Audit Committee - November 13, 2019, 3:00 p.m. RIO Conference Room

VI. ADJOURNMENT

**NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
AUGUST 23, 2019, BOARD MEETING**

MEMBERS PRESENT: Brent Sanford, Lt. Governor, Chair
Rob Lech, TFFR Board, Vice Chair
Troy Seibel, PERS Board, Parliamentarian
Jon Godfread, Insurance Commissioner
Toni Gumeringer, TFFR Board
Keith Kempenich, Legacy/Budget Stab. Adv. Board
Bryan Klipfel, Director of WSI
Adam Miller, PERS Board
Mel Olson, TFFR Board
Kelly Schmidt, State Treasurer
Jodi Smith, Commissioner of Trust Lands
Yvonne Smith, PERS Board

STAFF PRESENT: Eric Chin, Senior Investment Officer
Bonnie Heit, Admin Svs Suprv
David Hunter, Exec Dir/CIO
Sara Sauter, Suprv of Internal Audit
Darren Schulz, Deputy CIO

GUESTS: Jeff Diehl, Adams Street
Miguel Gonzalo, Adams Street
Eric Hardmeyer, Bank of North Dakota
Anders Odegaard, Attorney General Counsel
Michael Shackelford, Dept. of Trust Lands
Todd Steinwand, Bank of North Dakota

CALL TO ORDER:

Lt. Governor Sanford, Chair, called the State Investment Board (SIB) regular meeting to order at 8:30 a.m. on Friday, August 23, 2019, at the State Capitol, Peace Garden Room, Bismarck, ND.

AGENDA:

The Board considered the agenda for the August 23, 2019, meeting,

IT WAS MOVED BY MR. OLSON AND SECONDED BY COMMISSIONER SMITH AND CARRIED BY A VOICE VOTE TO ACCEPT THE AGENDA FOR THE AUGUST 23, 2019, MEETING.

AYES: COMMISSIONER SMITH, TREASURER SCHMIDT, MR. MILLER, COMMISSIONER GODFREAD, MR. OLSON, MR. KLIPFEL, MS. GUMERINGER, MR. SEIBEL, DR. LECH, MS. SMITH, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

MINUTES:

IT WAS MOVED BY DR. LECH AND SECONDED BY MS. SMITH AND CARRIED BY A VOICE VOTE TO APPROVE THE JULY 26, 2019 MINUTES AS DISTRIBUTED.

AYES: MS. GUMERINGER, COMMISSIONER SMITH, MS. SMITH, MR. KLIPFEL, TREASURER SCHMIDT, DR. LECH, COMMISSIONER GODFREAD, MR. OLSON, MR. SEIBEL, MR. MILLER, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

INVESTMENTS:

Asset and Performance Overview - Mr. Hunter highlighted investment performance of the SIB client assets under management for the period ending June 30, 2019.

The SIB client assets under management totaled approximately \$15.1 billion - Pension Trust \$5.95 billion, Insurance Trust approximately \$2.3 billion, and the Legacy Fund exceeding \$6.5 billion.

The Pension Trust posted a net return of 5.5% in the last year. The Pension Trust generated a net annualized return of 6.2%, exceeding the performance benchmark of 5.7% during the last 5-years.

The Insurance Trust posted a net annualized return of 5.0%, exceeding the performance benchmark of 4.0% during the last 5-years.

The Legacy Fund earned a net annualized return of 5.7%, exceeding the performance benchmark of 5.2% during the last 5-years. The Legacy Fund earned 8.1% per annum for the 3-years ended June 30, 2019, which surpassed the performance benchmark return of 7.5%, noting the Fund was not fully invested in its current asset allocation until 2015.

Every Pension Pool client posted positive excess returns of at least 0.38% per annum over the last 5-years (including 0.53% for Public Employees Retirement System (PERS) and Teachers' Fund for Retirement (TFFR)) while adhering to approved risk levels and generating positive risk adjusted excess return.

Every Non-Pension client generated positive excess return of at least 0.38% per annum and positive risk adjusted excess returns for the 5-years ended June 30, 2019.

Risk, as measured by standard deviation, was within approved levels for all SIB clients for the 5-years ended June 30, 2019.

Public Equity - Mr. Chin highlighted the work completed thus far on analyzing the public equity portfolios and developing a plan to optimize the portfolios. RIO investment personnel believe it is timely to review and optimize the equity portfolios across the three pools given the evolving equity landscapes and the importance of public equity strategies for meeting long-term return targets. Within the Pension Pool, Insurance Pool, and Legacy Fund approximately \$6.4 billion is allocated to equity strategies which approximates to 44.8% of total plan total assets as of May 31, 2019.

Legacy Fund Earnings Committee - Mr. Hunter reviewed the conversations he has had with the Legacy Fund Earnings Committee. Mr. Hunter has provided information to the Committee on the investments and earnings of the Legacy Fund. He has also reviewed historical annual earnings, investment volatility, the current "earnings" definition, and an alternative approach for estimating future earnings. Discussion has taken place on developing a sustainable spending policy using the Percent of Market Value (POMV) approach for estimating future "earnings" for potential distribution from the Fund. Mr. Hunter indicated the POMV approach has been used by many other similar funds including Alaska's Permanent Fund and the ND Common Schools Trust Fund. RIO investment personnel proposed a POMV approach based on the Legacy Fund's current asset allocation policy and an assumed long-term rate of return of approximately 6% less an assumed inflation rate of 2%. This annual sustainable spending policy rate of 4% was suggested by Callan in early 2019 and is conservative when compared to the Alaska Permanent Fund at 5.25% per annum or the ND Common Schools Trust Fund at 10% per biennium or 5% per annum, noting the average spending rate for endowments has ranged 4.2% to 5.2% in the prior decade.

Discussion followed on the POMV. After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY DR. LECH AND CARRIED BY A ROLL CALL VOTE THAT THE SIB TAKE A POSITION TO SUPPORT A LEGACY FUND EARNINGS ESTIMATE FORMULA SIMILAR TO THAT OF THE ND COMMON SCHOOLS TRUST FUND WHICH IS A PERCENT OF MARKET VALUE APPROACH.

AYES: MR. OLSON, MR. SEIBEL, COMMISSIONER SMITH, MS. GUMERINGER, COMMISSIONER GODFREAD, MS. SMITH, MR. MILLER, TREASURER SCHMIDT, MR. KLIPFEL, DR. LECH, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

For the record, it is not the SIB's fiduciary responsibility to determine the POMV percentage. However, the SIB deemed it to be reasonable and prudent to recommend a sustainable spending policy framework for the North Dakota Legacy Fund. The development of sustainable spending policy for the Legacy Fund should be a collaborative effort between RIO investment personnel, the SIB, the Legacy and Budget Stabilization Fund Advisory Board, the Legacy Fund Earnings Committee and North Dakota's Legislative, Executive and Judicial branches.

Investment Update - Mr. Hunter informed the SIB RIO received a \$513 million transfer into the Budget Stabilization Fund on August 13, 2019, and expect to receive an additional \$32 million in late August which would bring the Fund to approximately \$665 million.

The Office of Attorney General has requested the SIB accept them as a new client to oversee the investment of their AG Settlement Fund of approximately \$1 million.

IT WAS MOVED BY MR. OLSON AND SECONDED BY COMMISSIONER SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE OFFICE OF ATTORNEY GENERAL AS A SIB CLIENT TO MANAGE THEIR AG SETTLEMENT FUND CONTINGENT UPON THE INDUSTRIAL COMMISSION'S APPROVAL.

AYES: TREASURER SCHMIDT, MS. GUMERINGER, COMMISSIONER GODFREAD, MR. KLIPFEL, COMMISSIONER SMITH, MS. SMITH, DR. LECH, MR. MILLER, MR. SEIBEL, MR. OLSON, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

Private Equity - Mr. Schulz reviewed the private equity portfolio of the Pension Trust. RIO investment personnel have a long range plan to enhance the expected return of the private equity portfolio and are considering making a new "follow-on" commitment up to \$75 million to the Adams Street Partners Global Fund for 2019. The Pension Trust is currently underweighted in the private equity target allocation by \$172 million.

Adams Street Global Fund - Mr. Diehl and Mr. Gonzalo, Adams Street Partners, provided a firm and market update in addition to a review of the SIB's Adams Street portfolio and private equity investment strategy.

Pacing Schedule & Staff Recommendation - Mr. Schulz reviewed a revised pacing schedule for the private equity portfolio within the Pension Trust. RIO investment personnel engaged both Adams Street and BlackRock to each independently review the SIB's existing private equity pacing schedule. Each firm determined that annual private equity commitments of \$130 million in total were required over the next five years to address the asset class underweight.

IT WAS MOVED BY MS. SMITH AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION AND COMMIT UP TO \$75 MILLION IN THE ADAMS STREET GLOBAL FUND FOR 2019.

AYES: MS. SMITH, MR. MILLER, MR. OLSON, MS. GUMERINGER, DR. LECH, MR. SEIBEL, MR. KLIPFEL, COMMISSIONER GODFREAD, COMMISSIONER SMITH, TREASURER SCHMIDT, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

Match Loan CD Program - The SIB has committed the lesser of \$200 million or 5% of the Legacy Fund to the Bank of North Dakota Match Loan Certificates of Deposit (CD) Program. The purpose of the program is to encourage and attract financially strong companies to North Dakota. The program is targeted to manufacturing, processing, and value-added industries. The SIB provides capital to the program by purchasing CDs from the Bank of North Dakota. The CDs are guaranteed by the state and typically have 7 to 15 year maturities and pay interest pegged to US Treasury notes. As of June 30, 2019, less than \$40 million of CD's were outstanding.

RIO investment personnel recommended the SIB consider increasing their commitment up to \$100 million to \$300 million based on the above market based pricing spread to like term US Treasuries. The Bank of North Dakota is anticipating significant growth in the Program.

After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY COMMISSIONER GODFREAD AND CARRIED BY A ROLL CALL VOTE TO INCREASE THE SIB'S COMMITMENT TO THE BANK OF NORTH DAKOTA MATCH LOAN CD PROGRAM TO \$100 MILLION FOR A TOTAL COMMITMENT OF \$300 MILLION.

AYES: TREASURER SCHMIDT, MR. SEIBEL, MR. OLSON, COMMISSIONER SMITH, DR. LECH, MR. MILLER, COMMISSIONER GODFREAD, MS. GUMERINGER, MS. SMITH, MR. KLIPFEL, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

The SIB requested a press release on the above action be issued.

The Board recessed at 10:29 a.m. and reconvened at 10:44 a.m.

GOVERNANCE:

Governance Review - Mr. Hunter reviewed Section A, Executive Limitations, and Section B, Governance Process.

IT WAS MOVED BY DR. LECH AND SECONDED BY COMMISSIONER GODFREAD AND CARRIED BY A VOICE VOTE TO APPROVE 1673 FIRST READING OF THE GOVERNANCE MANUAL SECTIONS A & B.

AYES: MR. KLIPFEL, MR. OLSON, COMMISSIONER GODFREAD, TREASURER SCHMIDT, COMMISSIONER SMITH, MR. SEIBEL, DR. LECH, MR. MILLER, MS. SMITH, MS. GUMERINGER, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

Governance Expert and Board Proposed Ideas - Mr. Hunter reviewed ideas and suggestions that were shared during the SIB's review of best practices and current trends in public fund governance at their July 26, 2019, meeting. The Board concurred with the topics and requested Mr. Hunter begin the process of implementation.

Board Education - Mr. Hunter reviewed upcoming educational opportunities for the Board to consider for 2019-20 as well as opportunities the Board has engaged in for the period of July 1, 2017 - June 30, 2019.

Agency Update - Mr. Hunter provided an agency update as of June 30, 2019. RIO was fully staffed at the end of the biennium. Current openings include an Investment Accountant and Investment/Compliance Officer.

RIO personnel are working to develop a project charter for the TFFR Pension Administration System upgrade.

OTHER:

The next meeting of the SIB for regular business has been scheduled for September 27, 2019, at 8:30 a.m., at the State Capitol, Peace Garden Room.

The next meeting of the Securities Litigation Committee is scheduled for September 4, 2019, at 3:00 p.m. at the Retirement and Investment Office.

The next meeting of the SIB Audit Committee is scheduled for September 26, 2019, at 10:00 a.m. at the Retirement and Investment Office.

ADJOURNMENT:

With no further business to come before the SIB, Lt. Governor Sanford adjourned the meeting at 11:36 a.m.

Lt. Governor Sanford, Chair
State Investment Board

Bonnie Heit
Recorder

Asset and Performance Overview

Annual Investment Review as of June 30, 2019

September 20, 2019

Dave Hunter, Executive Director / CIO

Darren Schulz, Deputy Chief Investment Officer

Fay Kopp, Deputy Executive Director / Chief Retirement Officer

Connie Flanagan, Chief Financial Officer

Eric Chin, Senior Investment Analyst

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

State Investment Board – Client Assets Under Management

<u>Fund Name</u>	<u>Market Values as of 6/30/19 ⁽¹⁾</u>	<u>Market Values as of 6/30/18 ⁽²⁾</u>
Pension Trust Fund		
Public Employees Retirement System (PERS)	3,152,930,087	3,024,222,995
Teachers' Fund for Retirement (TFFR)	2,573,622,554	2,485,835,306
City of Bismarck Employees Pension	104,517,247	99,177,507
City of Grand Forks Employees Pension	68,419,301	63,633,206
City of Bismarck Police Pension	41,862,976	40,106,249
Grand Forks Park District	7,176,427	6,772,657
Subtotal Pension Trust Fund	5,948,528,592	5,719,747,919
Insurance Trust Fund		
Workforce Safety & Insurance (WSI)	2,065,400,398	1,923,117,660
Budget Stabilization Fund	118,707,130	113,603,777
City of Fargo FargoDome Permanent Fund	44,840,633	44,629,288
PERS Group Insurance Account	31,067,120	31,610,707
State Fire and Tornado Fund	22,761,457	23,066,784
ND Association of Counties (NDACo) Fund	6,333,052	5,910,661
Insurance Regulatory Trust Fund	6,218,781	5,637,791
Petroleum Tank Release Compensation Fund	5,994,235	6,167,272
State Risk Management Workers Comp Fund	5,187,879	5,356,549
State Risk Management Fund	4,909,623	4,956,217
State Bonding Fund	3,609,422	3,411,215
ND Board of Medicine	2,362,384	2,251,119
Bismarck Deferred Sick Leave Account	779,596	730,026
Lewis & Clark Interpretive Center Endowment Fund	751,763	703,284
Cultural Endowment Fund	475,311	448,825
Subtotal Insurance Trust Fund	2,319,398,784	2,171,601,175
Legacy Trust Fund		
Legacy Fund	6,580,759,920	5,577,319,109
PERS Retiree Insurance Credit Fund	135,962,521	126,605,207
Job Service of North Dakota Pension	97,285,279	95,690,469
ND Tobacco Prevention and Control Trust Fund	9,300,127	54,365,162
Total Assets Under SIB Management	15,091,235,223	13,745,329,041

⁽¹⁾ Market values are unaudited and subject to change.

⁽²⁾ 6/30/18 market values as stated in the Comprehensive Annual Financial Report.

- **SIB client investments totaled approximately \$15.1 billion as of June 30, 2019**, with the Pension Trust at \$5.95 billion, Insurance Trust approaching \$2.3 billion and Legacy Fund exceeding \$6.5 billion.
- **Equity markets continued to advance in the second quarter, aided by expectations of easing by the Fed, healthy consumer spending, and low unemployment.** Bonds posted gains as rates rallied across maturities and credit spreads fell. As a result, global public equities returned 3.8% in the 2nd quarter of 2019, while fixed income returned 3.2%.
- **The Pension Trust posted a net return of 5.5% in the last year.** During the last 5-years, the Pension Trust generated a net annualized return of 6.2%, exceeding the performance benchmark of 5.7%.
- **The Insurance Trust generated a net return of 6.4% in the last year.** During the last 5-years, the Insurance Trust posted a net annualized return of 5.0%, exceeding the performance benchmark of 4.0%.
- **Legacy Fund generated a net return of 5.0% last year.** During the last 5-years, Legacy Fund earned a net annualized return of 5.7%, exceeding the performance benchmark of 5.2% noting the Fund was not fully invested in its current asset allocation until 2015.

Investment Performance Evaluation – June 30, 2019

Investment Performance Criteria :

SIB clients should receive investment returns consistent with their investment policies and market variables (pursuant to Section D.3 of the SIB Governance Manual). **The “Ends” for investment performance is evaluated based on comparison of each client’s actual rate of return (net of fees), risk levels and risk adjusted returns, versus the client’s policy benchmark over 5 years.**

Pension Pool:

Every Pension Pool client posted positive Excess Returns of at least 0.38% per annum over the last 5-years (including 0.53% for PERS and TFFR), while adhering to approved risk levels and generating positive Risk Adjusted Excess Return.

TFFR and PERS earned 6.2% per annum for the 5-years ended June 30, 2019. Global equities were the primary return driver with TFFR and PERS portfolios earning 6.7% the last 5-years (versus 6.55% for the MSCI All Country World Index) with U.S. Equities up 10.3% while International Equities were up only 3.5% since June 30, 2014. Private equity was disappointing earning only 2.2% per annum the last 5-years (but up 8.6% in the last year). Fixed Income earned 4.2% annualized over the last 5-years outperforming the Bloomberg Aggregate U.S. Benchmark of 3.0%. Real Assets earned 7.3% per annum for the 5-years ended June 30, 2019, with Real Estate up 9.8% (versus 8.8% benchmark), Infrastructure up 5.0% (exceeding benchmarks), while Timber underperformed the last 5-years (-0.07% versus +4.7% for NCREIF Timber Index) albeit improving in the past year (up 4.1% versus NCREIF +3.2%).

Non-Pension Pool:

Every Non-Pension client generated positive Excess Return of at least 0.38% per annum and positive Risk Adjusted Excess Returns for the 5-years ended June 30, 2019, with two exceptions for PERS Retiree Health Insurance Credit Fund (-0.28% excess return) and PERS Group Insurance (-0.01% excess return).

The Legacy Fund earned 8.1% per annum for the 3-years ended June 30, 2019, which surpassed the performance benchmark return of 7.5% (noting that Legacy was not fully invested in its current asset allocation until 2015). Legacy’s U.S. Equity portfolio earned 12.8% per annum over the last 3-years, while International Equities earned 10% (with both U.S. and International Equities outperforming their respective benchmarks). Fixed Income returned 4.5% per annum the last 3-years, surpassing the Bloomberg Aggregate Index which was up 2.3%. Real Asset returns were mixed with Real Estate up 6.8% and Infrastructure up 7.6%, whereas Global Inflation Linked Debt Securities (including U.S. TIPs) were up only 2.3% the last 3-years.

Risk, as measured by standard deviation, was within approved levels for all SIB clients for the 5-years ended June 30, 2019.

Actual asset allocations are within Target ranges and guidelines as of June 30, 2019.

Pension Pool Return & Risk Summary – June 30, 2019

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
PERS \$3.15 billion					
Total Fund Return - Net	5.52%	9.21%	6.22%	6.6%	0.21%
Policy Benchmark Return	6.41%	8.68%	5.69%	6.2%	
Excess Return	-0.89%	0.53%	0.54%	106%	
TFFR \$2.57 billion					
Total Fund Return - Net	5.54%	9.15%	6.19%	6.6%	0.28%
Policy Benchmark Return	6.36%	8.61%	5.66%	6.3%	
Excess Return	-0.82%	0.54%	0.53%	105%	
Bismarck Employee \$105 million					
Total Fund Return - Net	5.94%	8.43%	5.91%	5.5%	0.48%
Policy Benchmark Return	6.34%	7.64%	5.28%	5.3%	
Excess Return	-0.39%	0.80%	0.64%	103%	

Key Points:
Every Pension Pool portfolio generated positive “Excess Return” for the 5 years ended June 30, 2019, while adhering to prescribed risk levels (e.g. within 115% of the Policy Benchmark the last 5-years).

5-Yr. Returns June 30, 2019	Asset Allocation	Benchmark Return	Allocation x Return
Asset Class	a	b	a x b
Equity	58%	6.6%	3.8%
Fixed Income	23%	3.0%	0.7%
Real Assets	19%	6.2%	1.1%
Policy Benchmark Return (5-years)			5.69%

PERS Current Policy Benchmark:
58% **Equity** (30% U.S., 21% Non-U.S., 7% Private); 23% **Fixed Income** (16% Investment Grade, 7% High Yield); 19% **Real Assets** (11% Real Estate; 6% Infrastructure; 2% Timber).

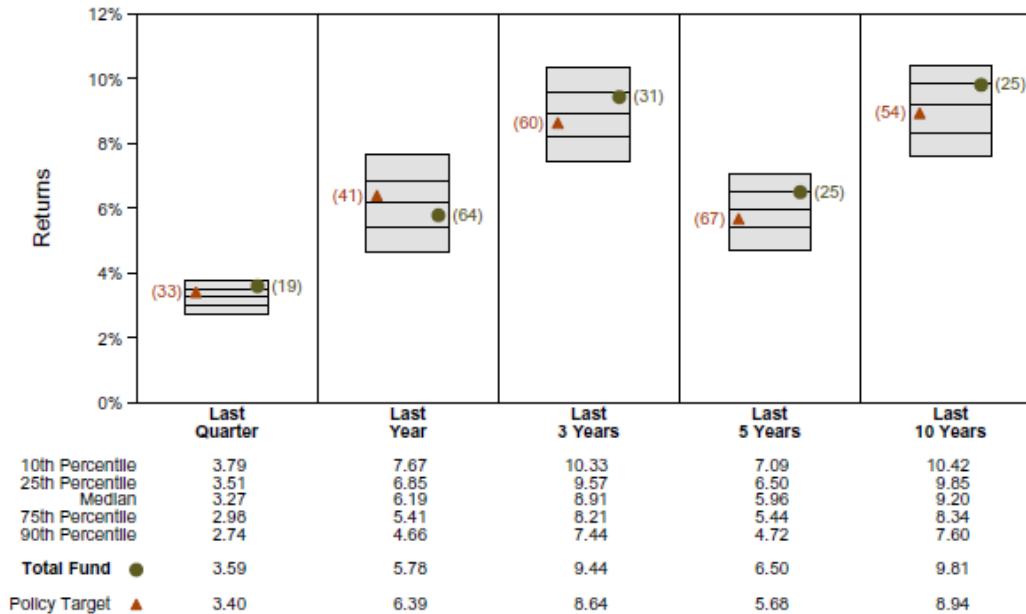
Pension Pool Return & Risk Summary – June 30, 2019

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
Bismarck Police \$42 million					
Total Fund Return - Net	5.76%	8.76%	5.97%	5.9%	0.45%
Policy Benchmark Return	6.14%	8.09%	5.40%	5.7%	
Excess Return	-0.38%	0.67%	0.58%	103%	
Job Service \$97 million					
Total Fund Return - Net	6.86%	5.20%	4.87%	3.6%	0.25%
Policy Benchmark Return	6.74%	6.24%	4.48%	3.4%	
Excess Return	0.11%	-1.05%	0.38%	103%	
G.F. Employee \$68 million					
Total Fund Return - Net	6.17%	9.46%	6.34%	6.7%	0.42%
Policy Benchmark Return	6.51%	8.96%	5.86%	6.7%	
Excess Return	-0.34%	0.50%	0.47%	101%	
G.F. Park District \$7 million					
Total Fund Return - Net	6.02%	9.34%	6.46%	6.5%	0.22%
Policy Benchmark Return	6.65%	8.81%	5.91%	6.2%	
Excess Return	-0.64%	0.53%	0.55%	106%	

Risk Adjusted Excess Returns for the 5-years ended June 30, 2019, were positive for all Pension Pool clients.

Job Service is 140% funded & significantly de-risked its portfolio (to 20% equity / 80% debt) in recent years.

Risk Adjusted Excess Return measures actual portfolio results versus a benchmark adjusted by its risk relative to a benchmark portfolio. This metric is positive if excess returns are due to “smart” investment decisions or negative if driven by excess risk.

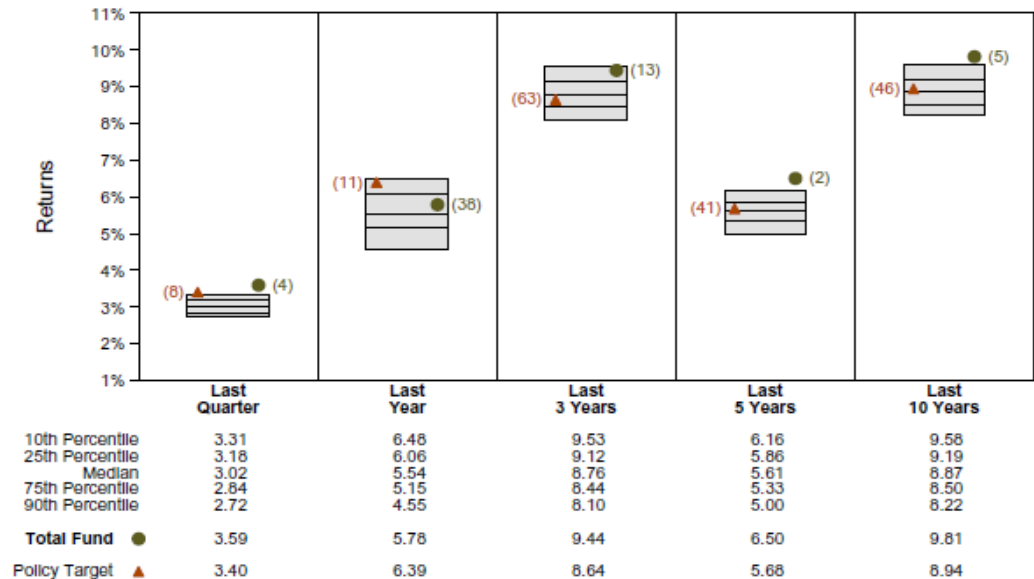


Callan – NDSIB Pension Trust Fund Ranking

The **Callan** charts show the ranking of the **Total Fund** (SIB Pension Trust) performance relative to that of the Callan Public Fund Sponsor Database for periods ended June 30, 2019.

The top chart is a standard unadjusted ranking. In the bottom chart each fund in the database is adjusted to have the same historical asset allocation as that of the **Total Fund**.

Asset Allocation Adjusted Ranking



Non-Pension Pool Return & Risk Summary – June 30, 2019

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
WSI \$2.065 billion					
Total Fund Return - Net	6.87%	6.83%	5.45%	4.0%	0.41%
Policy Benchmark Return	7.06%	5.33%	4.41%	3.4%	
Excess Return	-0.20%	1.49%	1.04%	OK	
Legacy Fund \$6.58 billion					
Total Fund Return - Net	4.98%	8.16%	5.72%	6.5%	0.23%
Policy Benchmark Return	6.12%	7.49%	5.14%	6.1%	
Excess Return	-1.14%	0.67%	0.59%	OK	
Budget Stabilization \$119 million					
Total Fund Return - Net	4.51%	1.86%	1.85%	1.1%	0.37%
Policy Benchmark Return	4.23%	1.60%	1.41%	1.0%	
Excess Return	0.28%	0.26%	0.44%	OK	
Fire & Tornado \$23 million					
Total Fund Return - Net	6.41%	7.00%	5.35%	5.1%	0.32%
Policy Benchmark Return	6.76%	5.86%	4.52%	4.5%	
Excess Return	-0.35%	1.14%	0.83%	OK	
State Bonding \$3.6 million					
Total Fund Return - Net	5.83%	3.08%	2.79%	1.9%	0.70%
Policy Benchmark Return	5.35%	1.92%	2.02%	1.8%	
Excess Return	0.48%	1.17%	0.77%	OK	
Insur.Reg.Trust Fund \$6.2 million					
Total Fund Return - Net	5.03%	5.65%	4.07%	4.1%	0.09%
Policy Benchmark Return	5.37%	5.04%	3.64%	3.7%	
Excess Return	-0.35%	0.61%	0.43%	OK	

Returns and Risk:
Thirteen out of Fifteen Non-Pension Pool clients generated positive Excess Return and Risk Adjusted Excess Return for the 5 years ended June 30, 2019. PERS RHIC underperformed by 0.28% and Group Insurance trailed by 0.01%. These returns were achieved while adhering to risk levels within 1% of policy.

Risk Adjusted Excess Return measures a portfolio's excess return adjusted by its risk relative to a benchmark portfolio. This metric is positive if returns are due to "smart" investment decisions or negative if driven by excess risk.

Non-Pension Pool Return & Risk Summary – June 30, 2019

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
Petrol Tank Release \$6 million					
Total Fund Return - Net	5.47%	2.93%	2.62%	1.7%	0.64%
Policy Benchmark Return	5.07%	1.86%	1.92%	1.7%	
Excess Return	0.40%	1.06%	0.70%	OK	
State Risk Mgmt. \$4.9 million					
Total Fund Return - Net	7.67%	7.01%	5.91%	4.7%	0.40%
Policy Benchmark Return	7.67%	5.79%	5.01%	4.2%	
Excess Return	0.00%	1.23%	0.90%	OK	
State Risk Mgmt W/C \$5.2 million					
Total Fund Return - Net	7.56%	7.65%	6.33%	5.3%	0.34%
Policy Benchmark Return	7.75%	6.62%	5.55%	4.9%	
Excess Return	-0.19%	1.03%	0.78%	OK	
NDACo \$6.3 million					
Total Fund Return - Net	7.12%	6.62%	5.06%	5.1%	0.28%
Policy Benchmark Return	7.32%	5.50%	4.26%	4.4%	
Excess Return	-0.19%	1.12%	0.80%	OK	
Bismarck Def.Sick Leave \$779,596					
Total Fund Return - Net	6.90%	6.79%	5.30%	4.8%	0.43%
Policy Benchmark Return	7.06%	5.33%	4.28%	4.1%	
Excess Return	-0.16%	1.46%	1.02%	OK	
FargoDome Perm.Fund \$45 million					
Total Fund Return - Net	5.13%	8.30%	5.85%	6.8%	0.28%
Policy Benchmark Return	6.07%	7.44%	5.15%	6.2%	
Excess Return	-0.94%	0.87%	0.70%	OK	

SIB Client Commentary:

Most Non-Pension Pool funds generated positive Risk Adjusted Excess Returns for the 5-years ended June 30, 2019, including the Legacy Fund, WSI, Budget Stabilization, Fire & Tornado, State Bonding, Insurance Regulatory Trust Fund, Petroleum Tank Release Compensation Fund, State Risk Management, State Risk Management Workers Compensation, NDACO, Bismarck Deferred Sick Leave, Fargo Dome and the Cultural Endowment Fund (excluding PERS Retiree Health Insurance Credit Fund and PERS Group Insurance Fund).

Non-Pension Pool Return & Risk Summary – June 30, 2019

	1 Yr Ended 6/30/2019	3 Yrs Ended 6/30/2019	5 Yrs Ended 6/30/2019	Risk 5 Yrs Ended 6/30/2019	Risk Adj Excess Return 5 Yrs Ended 6/30/2019
Cultural Endow.Fund \$475,311					
Total Fund Return - Net	6.02%	8.96%	6.83%	7.0%	0.14%
Policy Benchmark Return	6.91%	8.47%	6.32%	6.6%	
Excess Return	-0.88%	0.50%	0.50%	OK	
Board of Medicine \$2.3 million					
Total Fund Return - Net	4.98%	4.46%	N/A		
Policy Benchmark Return	5.22%	4.02%	N/A		
Excess Return	-0.24%	0.44%	N/A		
PERS RHIC Fund \$136 million					
Total Fund Return - Net	6.51%	8.46%	5.79%	7.5%	-0.67%
Policy Benchmark Return	6.89%	8.44%	6.06%	6.9%	
Excess Return	-0.37%	0.02%	-0.28%	OK	
PERS Group Insur \$31 million					
Total Fund Return - Net	4.20%	1.55%	1.23%	1.0%	-0.04%
Policy Benchmark Return	3.97%	1.54%	1.24%	1.0%	
Excess Return	0.24%	0.01%	-0.01%	OK	
Tobacco Prevention \$9.3 million					
Total Fund Return - Net	4.47%	2.58%	N/A		
Policy Benchmark Return	4.38%	2.57%	N/A		
Excess Return	0.09%	0.01%	N/A		
Lewis & Clark Interp.Ctr. \$751,763					
Total Fund Return - Net	6.99%	N/A	N/A		
Policy Benchmark Return	7.15%	N/A	N/A		
Excess Return	-0.16%	N/A	N/A		

Commentary:

The Board of Medicine became an SIB client 3 years ago noting they were previously investing in CD's.

PERS Retiree Health absolute returns have been reasonable the last 5-years (at 5.8%) but disappointing on a risk adjusted excess return basis of -0.67%. Given significant legislative actions impacting this fund, PERS is re-evaluating this portfolio in 2019-20.

PERS Group Insurance returns are reasonable and within 0.01% of the Policy Benchmark and within 0.04% for Risk Adjusted Excess Return basis (and improving in recent years).

The Tobacco Prevention and Control Trust Fund was transferred to OMB regulatory oversight on July 1, 2017.

The Lewis & Clark (Interpretive) Center became a client in 2017 and was previously invested in CD's.

Annual SIB Client Investment Performance Reviews

- ▶ During the past month, RIO has provided annual investment performance reviews with the following client boards, committees or representatives:
 - ▶ PERS Board (9/10) and Investment Sub-Committee (8/22)
 - ▶ TFFR Board (9/26)
 - ▶ WSI Executive Team (9/25)
 - ▶ City of Grand Forks Employees Pension Trustees (9/16)
 - ▶ City of Grand Forks Park District - George Hellyer/Jeff Lancaster (9/16)
 - ▶ Study Council – including Dr. Rob Lech (9/13)

ND State Investment Board
Investment Performance Summary
As of June 30, 2019

Investment Performance Summary As of June 30, 2019			Investment Performance (net of fees)									
Fund Name	Market Values as of 6/30/19	FYTD 2019	Fiscal Years ended June 30					Periods ended 6/30/19 (annualized)				
			2018	2017	2016	2015	2014	3 Years	5 Years	10 Years	20 Years	30 Years
Pension Pool												
Teachers' Fund for Retirement (TFFR)	\$ 2,573,622,554	5.54%	9.11%	12.93%	0.28%	3.52%	16.53%	9.15%	6.18%	9.57%	5.68%	7.68%
Public Employees Retirement System (PERS)	3,152,930,087	5.52%	9.19%	13.05%	0.28%	3.53%	16.38%	9.21%	6.22%	9.41%	6.00%	7.90%
City of Bismarck Employees Pension	104,517,247	5.94%	7.86%	11.56%	0.82%	3.69%	14.56%	8.43%	5.91%	8.99%	5.93%	*
City of Bismarck Police Pension	41,862,976	5.76%	8.36%	12.24%	0.32%	3.56%	15.27%	8.76%	5.97%	9.24%	5.86%	*
City of Grand Forks Employees Pension	68,419,301	6.17%	9.46%	12.84%	0.11%	3.53%	16.33%	9.46%	6.33%	9.71%	*	*
Park District of the City of Grand Forks Pension	7,176,427	6.02%	9.33%	12.74%	0.36%	4.22%	16.44%	9.33%	6.45%	*	*	*
Subtotal Pension Pool	5,948,528,592											
Insurance Pool												
Workforce Safety & Insurance (WSI)	2,065,400,398	6.87%	5.34%	8.29%	3.58%	3.26%	11.71%	6.83%	5.45%	7.82%	5.87%	7.39%
State Fire and Tornado Fund	22,761,457	6.41%	5.32%	9.30%	2.67%	3.16%	12.78%	7.00%	5.34%	8.34%	5.87%	6.82%
State Bonding Fund	3,609,422	5.83%	1.07%	2.40%	3.48%	1.25%	4.06%	3.08%	2.79%	3.98%	3.48%	5.24%
Petroleum Tank Release Compensation Fund	5,994,235	5.47%	1.13%	2.23%	3.17%	1.13%	3.68%	2.93%	2.61%	3.67%	3.25%	*
Insurance Regulatory Trust Fund	6,218,781	5.03%	4.53%	7.40%	1.46%	2.04%	9.88%	5.65%	4.07%	6.29%	5.01%	5.89%
State Risk Management Fund	4,909,623	7.67%	5.14%	8.27%	4.46%	4.08%	12.29%	7.02%	5.91%	8.94%	5.58%	*
State Risk Management Workers Comp Fund	5,187,879	7.56%	6.03%	9.41%	4.21%	4.57%	13.68%	7.66%	6.34%	9.62%	*	*
Cultural Endowment Fund	475,311	6.02%	8.27%	12.71%	2.18%	5.22%	16.94%	8.96%	6.82%	10.62%	*	*
Budget Stabilization Fund	118,707,130	4.51%	0.32%	0.80%	1.82%	1.86%	1.94%	1.86%	1.85%	2.61%	*	*
ND Association of Counties (NDACo) Fund	6,333,052	7.12%	4.48%	8.30%	2.76%	2.77%	11.61%	6.62%	5.06%	8.00%	5.21%	*
Bismarck Deferred Sick Leave Account	779,596	6.90%	4.66%	8.85%	3.26%	2.95%	12.32%	6.79%	5.30%	8.28%	*	*
City of Fargo FargoDome Permanent Fund	44,840,633	5.13%	7.64%	12.25%	1.19%	3.38%	16.34%	8.30%	5.85%	9.67%	*	*
State Board of Medicine Fund	2,362,384	4.98%	3.12%	5.29%	1.63%	2.70%	*	4.46%	3.54%	*	*	*
PERS Group Insurance Account	31,067,120	4.20%	0.41%	0.08%	1.49%	0.01%	0.06%	1.55%	1.23%	0.74%	*	*
Lewis & Clark Interpretive Center Endowment	751,763	6.99%	*	*	*	*	*	*	*	*	*	*
Subtotal Insurance Pool	2,319,398,785											
Legacy Fund	6,580,759,920	4.98%	7.57%	12.03%	1.06%	3.31%	6.64%	8.15%	5.72%	*	*	*
Job Service of North Dakota Pension	97,285,279	6.86%	3.15%	5.63%	5.45%	3.30%	13.54%	5.20%	4.87%	8.17%	5.53%	*
Tobacco Control and Prevention Fund	9,300,127	4.47%	1.63%	1.66%	*	*	*	2.58%	*	*	*	*
PERS Retiree Health Insurance Credit Fund	135,962,521	6.51%	7.15%	11.81%	0.72%	3.06%	16.53%	8.47%	5.79%	9.76%	5.22%	*
Total Assets Under SIB Management	\$ 15,091,235,224											

Note: Asset allocation largely drives investment performance. Each fund has a unique allocation that takes into consideration return objectives, risk tolerance, liquidity constraints, and unique circumstances. Such considerations must be taken into account when comparing investment returns. **All figures are preliminary and subject to revision.**

SIB Client Return on Investment Fees and Expenses

Investment Goals for SIB Client Fees and Expenses:

1. The SIB and RIO attempt to keep total fees and expenses at or below 50 bps (0.50%) per annum.
2. We also attempt to generate $\geq 0.50\%$ of excess return over our stated performance benchmarks (after deducting all investment fees and expenses) over a rolling 5-year period.
3. If we are successful in attaining both of the above goals, we are effectively earning a 2-for-1 return on our investment fee and expense dollars (which is consistent with our fundamental investment belief that the prudent use of active management is beneficial to our clients).

Key Point: Over the last 5-years, the vast majority of SIB clients earned at least 0.50% of excess return, while fees & expenses remained below 0.50% per annum since 2015 (see below).

<u>All State Investment Board Clients</u>	<u>Investment Fees and Expenses</u>	<u>Average "Assets Under Management"</u>	<u>% of AUM</u>
Fiscal Year Ended June 30, 2013	\$45 million	\$6.9 billion	0.65%
Fiscal Year Ended June 30, 2014	\$44 million	\$8.6 billion	0.51%
Fiscal Year Ended June 30, 2015	\$48 million	\$10.1 billion	0.48%
Fiscal Year Ended June 30, 2016	\$46 million	\$10.9 billion	0.42%
Fiscal Year Ended June 30, 2017	\$54.5 million	\$11.8 billion	0.46%
Fiscal Year Ended June 30, 2018	\$56 million	\$13.4 billion	0.42%
Fiscal Year Ended June 30, 2019	\$63.2 million	\$14.2 billion	0.44%

Key Take-Away: Based on \$10 billion of AUM, a 0.20% decline in fees between fiscal 2013 and 2019 translates into \$20 million of annual fee savings.

A basis point (or "bp") is equal to one one-hundredth of one percent (or 0.01%) such that 100 basis points ("bps") is equivalent to 1%.



September 2019

North Dakota State Investment Board

Performance Evaluation
as of June 30, 2019

Paul Erlendson
Senior Vice President

Alex Browning
Senior Vice President

Callan

Market Update

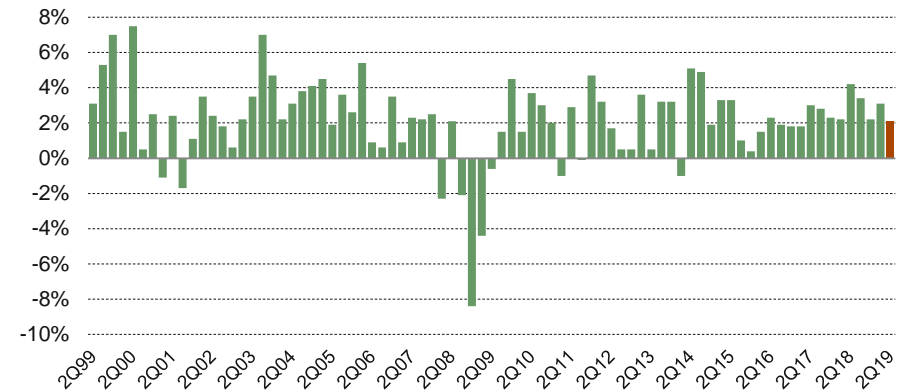
Second Quarter 2019

U.S. Economy

June 30, 2019

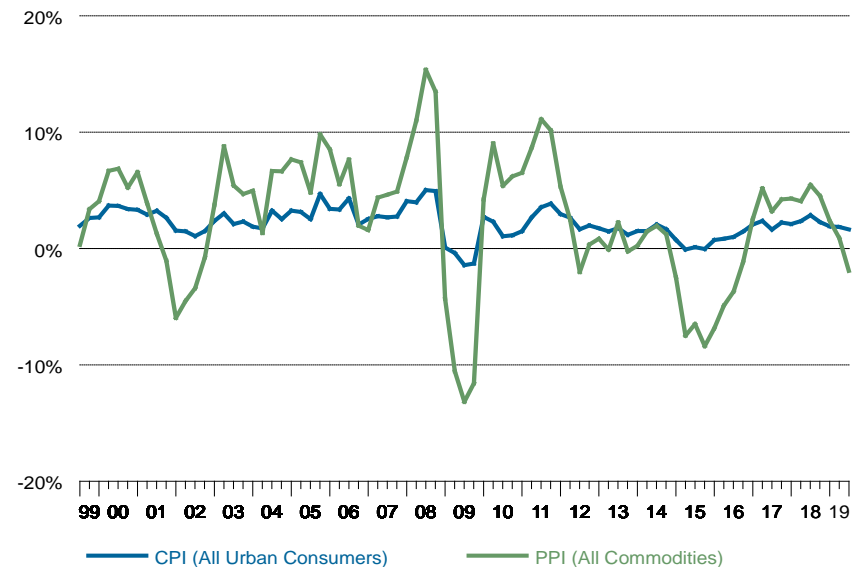
- The second estimate of second quarter GDP growth came in at 2.0% (annualized)
 - This figure reflects a decline from the first estimate of 2.1%, lower than the 3.1% growth in Q1 (3.1%).
 - Growth from consumer spending was much stronger than anticipated, at 4.3%.
- Labor market remains healthy, but volatile
 - On average, over 170,000 jobs were added on a monthly basis in the second quarter. However, job growth was highly inconsistent; reaching 224,000 in April and June, with a low of 74,000 in May.
 - US unemployment was 3.7% in June, July and August
- Moderate inflation
 - As of June, the CPI-U rose 1.6% over the last 12 months, while core CPI-U grew 2.0% over the same period.
 - Though month-end July, the CPI rose 1.8% over the trailing 12-month period
- The Fed provided more dovish guidance for 2019
 - As of June, the Federal Open Market Committee (FOMC) held the Fed Funds target range at 2.25% to 2.50%

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

Economic and Market Environment

For the Periods Ended August 31, 2019

Volatility returned to the global markets in the month of August, driven by a combination of factors including an inverted yield curve, trade wars, fears of a global recession, and other geopolitical issues.

In this environment, U.S. and Non-U.S. Equity markets posted negative returns, though 2019 YTD returns remain robust.

The outcome from the late-July FOMC meeting was a 25 bps cut in the Fed funds rate, described as “a mid-cycle adjustment to policy.”

U.S. Treasury yields rallied significantly across the curve in August. Escalating U.S. trade tensions with China coupled with more expected easing from the Fed led the initial move lower in yields.

Second quarter real GDP was +2.0% (y/y).

Unemployment hovers near its 5-year low, coming in at 3.7% for August.

Core inflation (excludes food and energy) rose by 2.4% year-over-year in August.

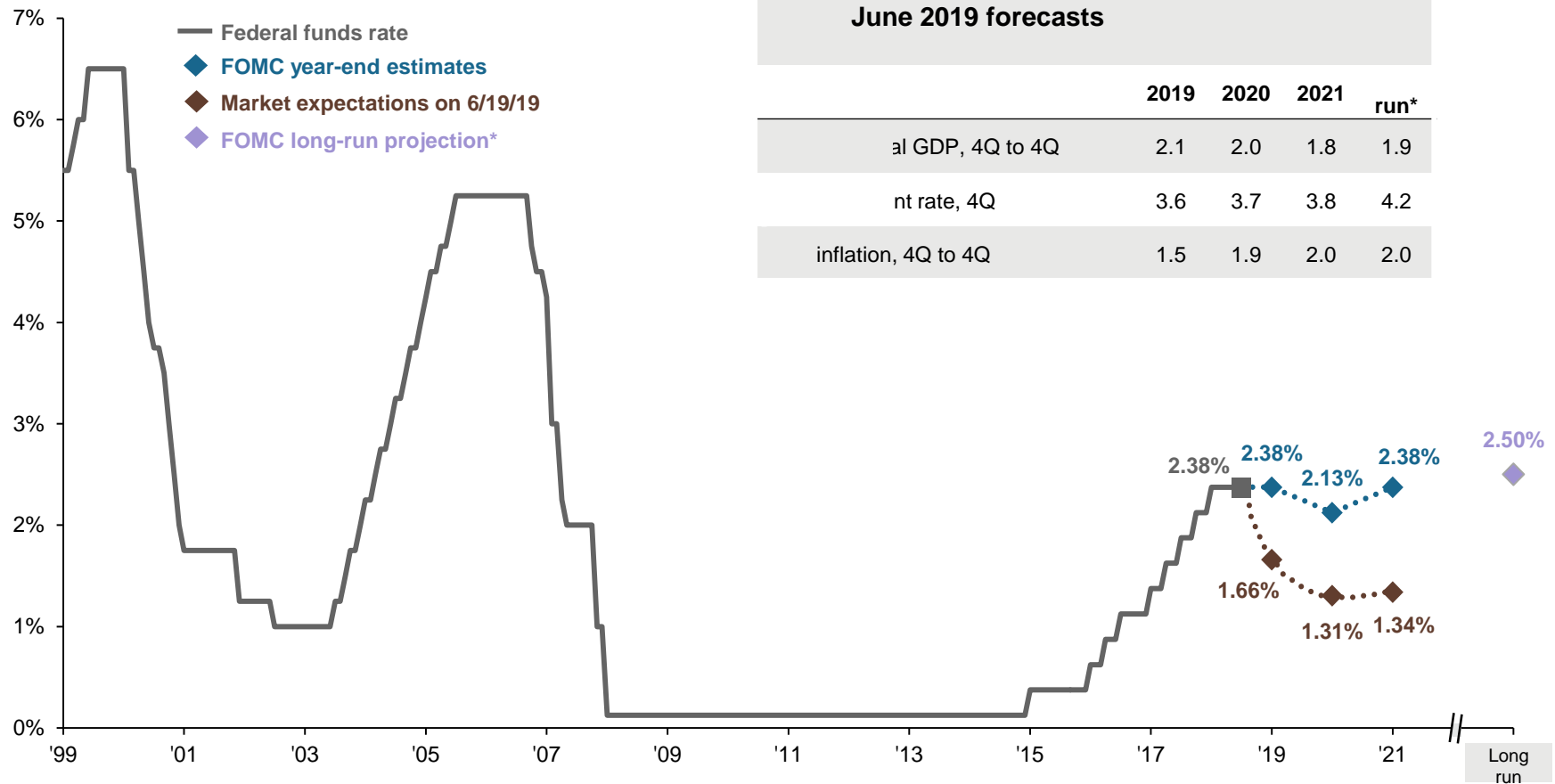
Returns for Periods ended August 31, 2019

	1 Month	YTD	1 Year	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	-2.04	18.02	1.31	9.60	14.67	9.98
S&P 500	-1.58	18.34	2.92	10.11	14.70	9.97
Russell 2000	-4.94	11.85	-12.89	6.41	13.45	9.26
Non-U.S. Equity						
MSCI World ex USA	-2.46	10.47	-2.90	1.64	6.75	5.01
MSCI Emerging Markets	-4.88	3.92	-4.35	0.38	5.81	--
MSCI ACWI ex USA Small Cap	-2.88	7.66	-9.01	2.28	8.48	5.32
Fixed Income						
Bloomberg Barclays Aggregate	2.59	9.10	10.17	3.35	3.90	5.50
3-Month T-Bill	0.21	1.63	2.36	0.95	0.49	2.52
Bloomberg Barclays Long Gov/Credit	7.87	23.29	22.32	6.68	7.62	7.73
Bloomberg Barclays Global Agg ex-US	1.59	5.89	5.71	0.29	2.10	4.49
Real Estate						
NCREIF Property	0.50	4.37	6.39	8.67	9.25	9.36
FTSE NAREIT Equity	3.40	23.34	12.12	8.29	15.46	10.25
Alternatives						
Bloomberg Commodity	-2.32	1.93	-5.89	-8.58	-3.74	1.69
Gold Spot Price	6.37	19.36	26.74	3.51	4.31	5.32
Inflation - CPI-U	-0.01	2.12	1.75	1.53	1.73	2.22

The Fed and Interest Rates

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



- At its July 31, 2019 meeting, the Federal Reserve Open Market Committee (FOMC) voted to lower the target by 25 basis points to a new range of 2 to 2-1/4 percent. In a press release, the FOMC said its decision was based on “implications of global developments for the economic outlook as well as muted inflation pressures.”

Source: JP Morgan Guide to the Markets as of June 30, 2019

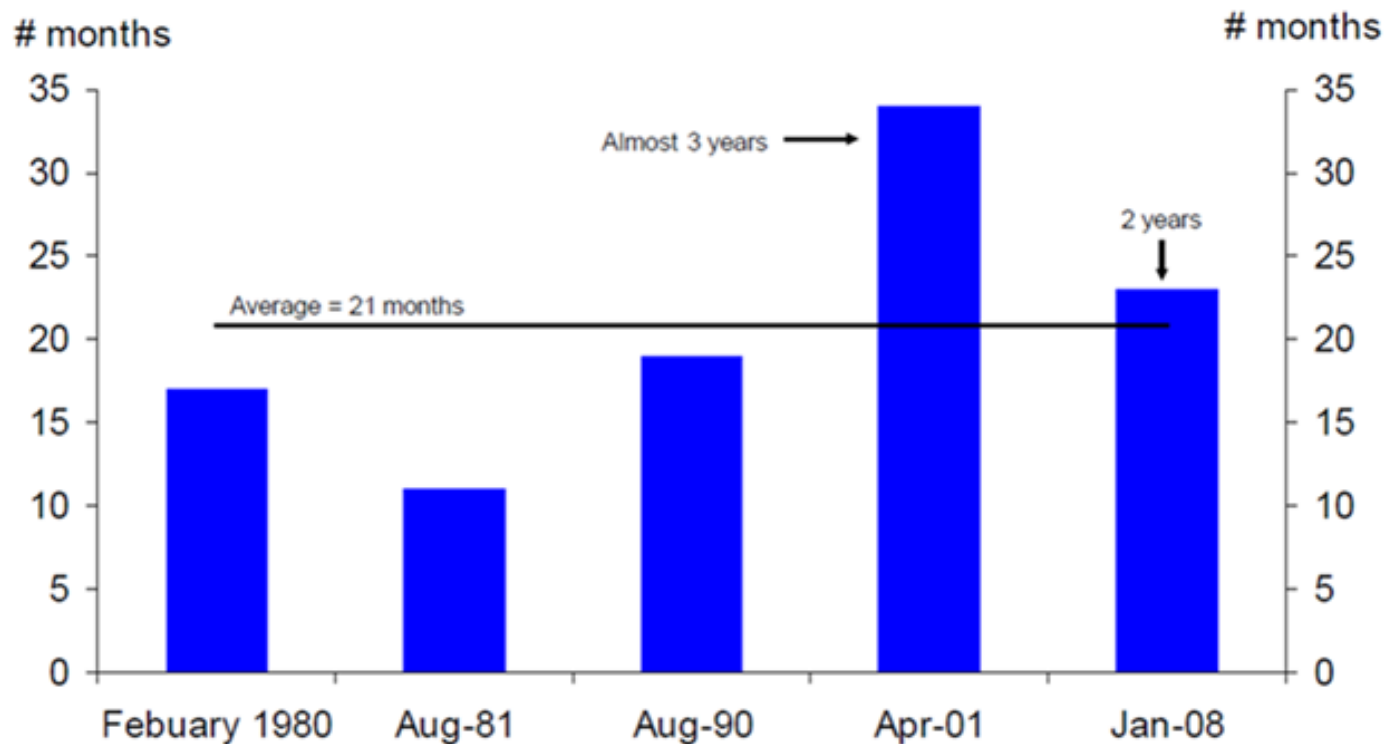
How Long Until the Next Recession?

Although the yield curve has inverted, a recession may not be imminent.

It takes one to three years from 2s-10s
yield curve inversion until recession begins



Time from 2s-10s yield curve inversion until recession starts



Source: FRB, Haver Analytics, DB Global Research

Deutsche Bank Research

Torsten Slok, torsten.slok@db.com +1 212 250-2155

September 2019

6

Asset Class Performance

Periodic Table of Investment Returns for Periods Ended June 30, 2019

Best



Worst

Last Quarter	Last 2 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
S&P:500 4.3%	S&P:500 18.5%	S&P:500 10.4%	S&P:500 14.2%	S&P:500 10.7%	S&P:500 14.7%	Russell:2000 Index 7.8%
MSCI:EAFE 3.7%	Russell:2000 Index 17.0%	Blmbg:Aggregate 7.9%	Russell:2000 Index 12.3%	NCREIF:NFI-ODCE Val Wt Nt 8.9%	Russell:2000 Index 13.4%	MSCI:EM Gross 7.6%
Blmbg:Aggregate 3.1%	MSCI:EAFE 14.0%	NCREIF:NFI-ODCE Val Wt Nt 5.9%	MSCI:EM Gross 11.1%	Russell:2000 Index 7.1%	NCREIF:NFI-ODCE Val Wt Nt 8.9%	NCREIF:NFI-ODCE Val Wt Nt 7.4%
Russell:2000 Index 2.1%	MSCI:EM Gross 10.8%	3 Month T-Bill 2.3%	MSCI:EAFE 9.1%	Blmbg:Aggregate 2.9%	MSCI:EAFE 6.9%	S&P:500 5.9%
NCREIF:NFI-ODCE Val Wt Nt 1.2%	Blmbg:Aggregate 6.1%	MSCI:EM Gross 1.6%	NCREIF:NFI-ODCE Val Wt Nt 6.8%	MSCI:EM Gross 2.9%	MSCI:EM Gross 6.2%	Blmbg:Aggregate 4.9%
MSCI:EM Gross 0.7%	Blmbg:Commodity Price Idx 3.8%	MSCI:EAFE 1.1%	Blmbg:Aggregate 2.3%	MSCI:EAFE 2.2%	Blmbg:Aggregate 3.9%	MSCI:EAFE 4.0%
3 Month T-Bill 0.6%	NCREIF:NFI-ODCE Val Wt Nt 2.4%	Russell:2000 Index (3.3%)	3 Month T-Bill 1.4%	3 Month T-Bill 0.9%	3 Month T-Bill 0.5%	3 Month T-Bill 1.9%
Blmbg:Commodity Price Idx (1.8%)	3 Month T-Bill 1.2%	Blmbg:Commodity Price Idx (8.9%)	Blmbg:Commodity Price Idx (3.6%)	Blmbg:Commodity Price Idx (10.0%)	Blmbg:Commodity Price Idx (4.2%)	Blmbg:Commodity Price Idx (0.2%)

U.S. Equity Market

June 30, 2019

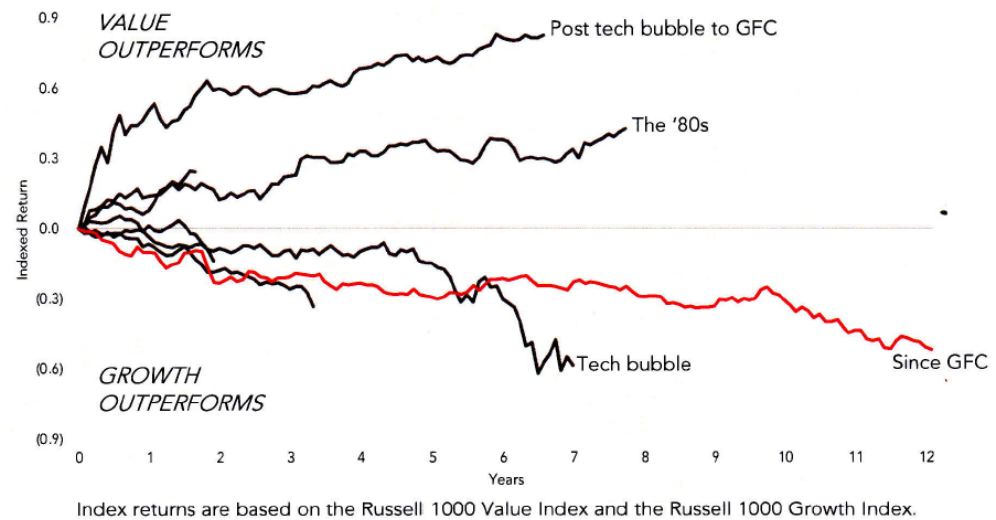
- The S&P 500 Index appreciated 4.3% in the second quarter
 - The index provided positive returns in April and June, but significantly negative returns in May.
 - Financials was the strongest performing sector at +7.7% (Russell 3000), while Energy was the weakest returning -3.9%.
 - Growth outperformed Value in the second quarter
 - *R1000 Growth climbed 4.6% in the second quarter, while R1000 Value grew 3.8%.*
- Large caps outperformed in the second quarter, followed by mid cap and finally, small caps
 - Last quarter, the R1000 was up 4.3% vs. the R2000 which was up 2.1%.

	Last Quarter	Last 2 Quarters	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Large Cap Equity						
Russell 1000 Index	4.25	18.84	10.02	14.15	10.45	14.77
Russell 1000 Growth	4.64	21.49	11.56	18.07	13.39	16.28
Russell 1000 Value	3.84	16.24	8.46	10.19	7.46	13.19
Mid Cap Equity						
Russell Midcap Index	4.13	21.35	7.83	12.16	8.63	15.16
Russell Midcap Growth	5.40	26.08	13.94	16.49	11.10	16.02
Russell Midcap Value	3.19	18.02	3.68	8.95	6.72	14.56
Small Cap Equity						
Russell 2000 Index	2.10	16.98	-3.31	12.30	7.06	13.45
Russell 2000 Growth	2.75	20.36	-0.49	14.69	8.63	14.41
Russell 2000 Value	1.38	13.47	-6.24	9.81	5.39	12.40

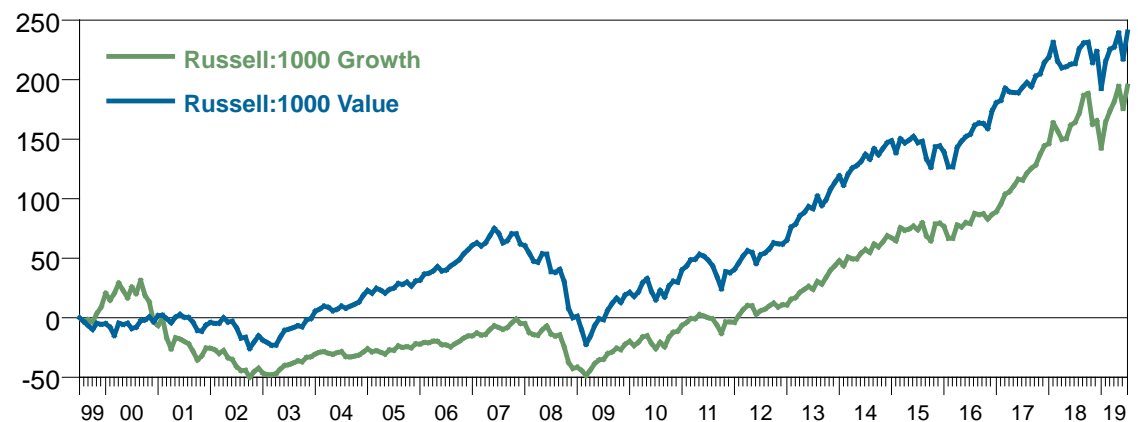
Growth Outpaced Value for Quarter, Continues to Widen Return Gap

- Growth outperformed value across all market caps, extending duration of growth outperformance since the GFC.
- While growth has outperformed value in recent time periods, value beats growth over the trailing 20-year period.
- Why the divergence? Speculation that low interest rates (and by proxy, discount rates) make growth stocks more attractive at higher valuations compared to similar value stocks, which typically are trading at discount.
- Investors are more inclined to invest in the perceived certainty of growth over the potential of value being unlocked (with the downside of holding a value-trap).

Value/Growth Cycle Duration 1978 – 2019



Cumulative Returns for Russell 1000 Style Indices: 20 Years

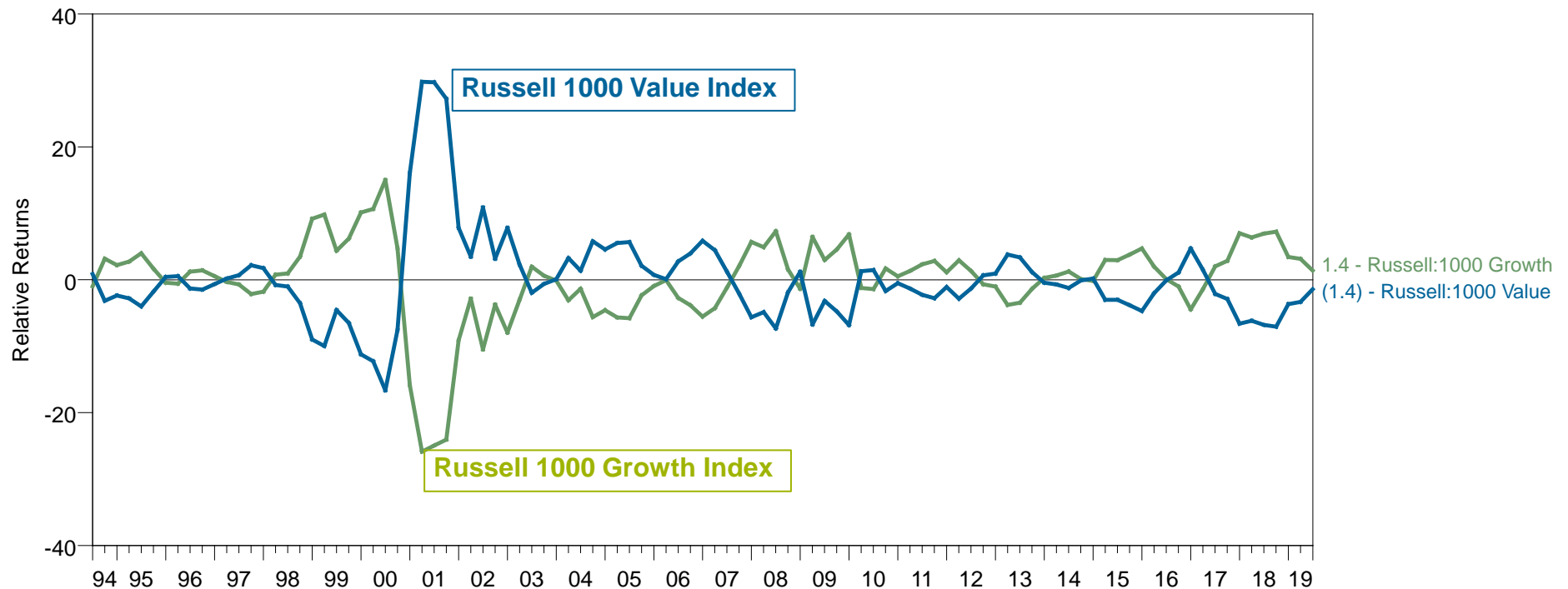


Source: Callan, AJO Partners

Growth and Value Through Time: I

Rolling one-year differences between Growth and Value

Relative Returns relative to Russell:1000 Index for 25 Years ended June 30, 2019

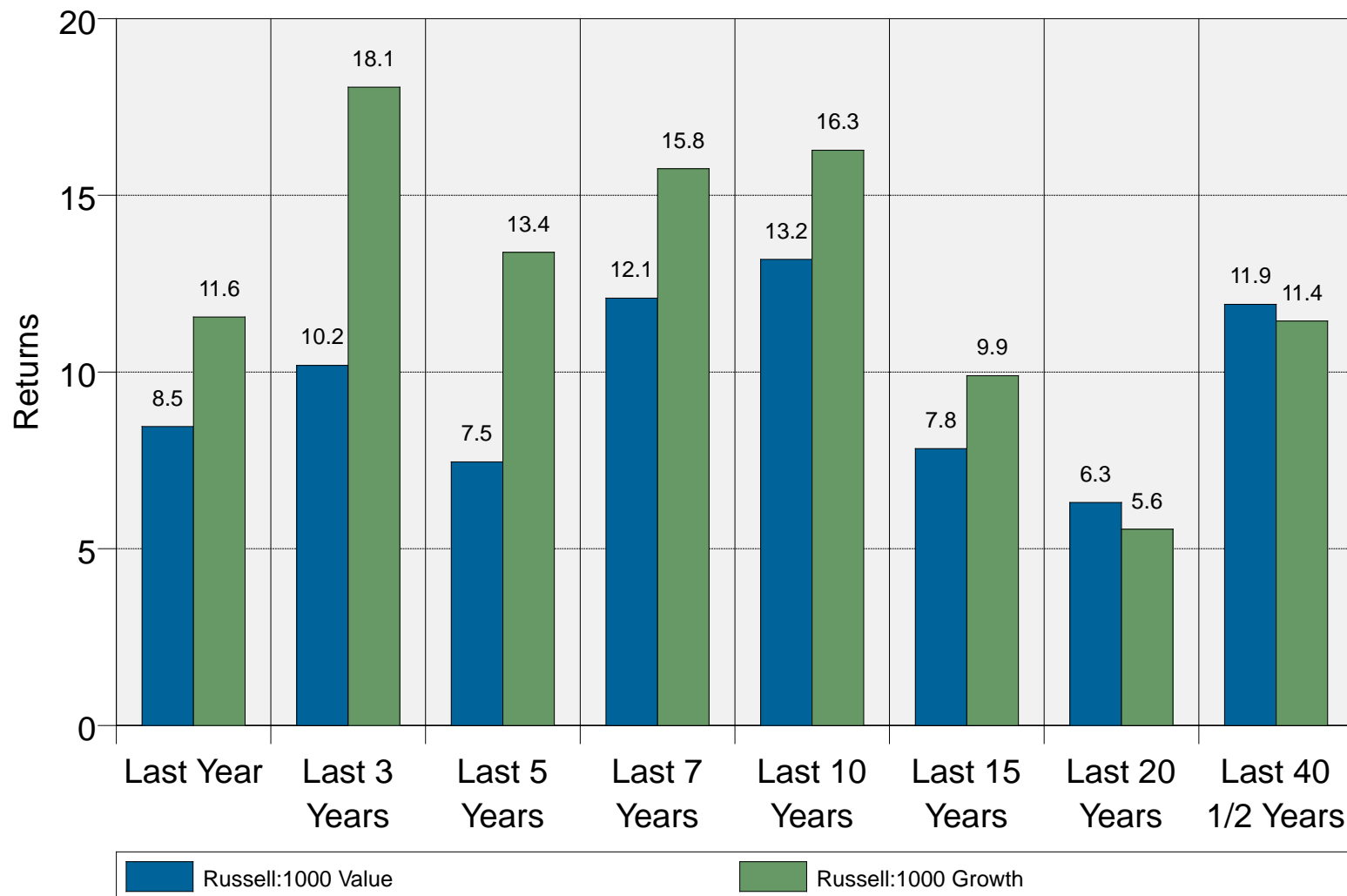


- Over the last 25 years, Growth stocks have tended to outperform value stocks
- Value returns exceeded growth returns from 2000 through 2007
- A risk-embracing environment has fueled growth stocks

Growth and Value Through Time: II

Growth outperformed Value for last 15 years, but Value won over longer periods

Returns for Various Periods Ending June 30, 2019



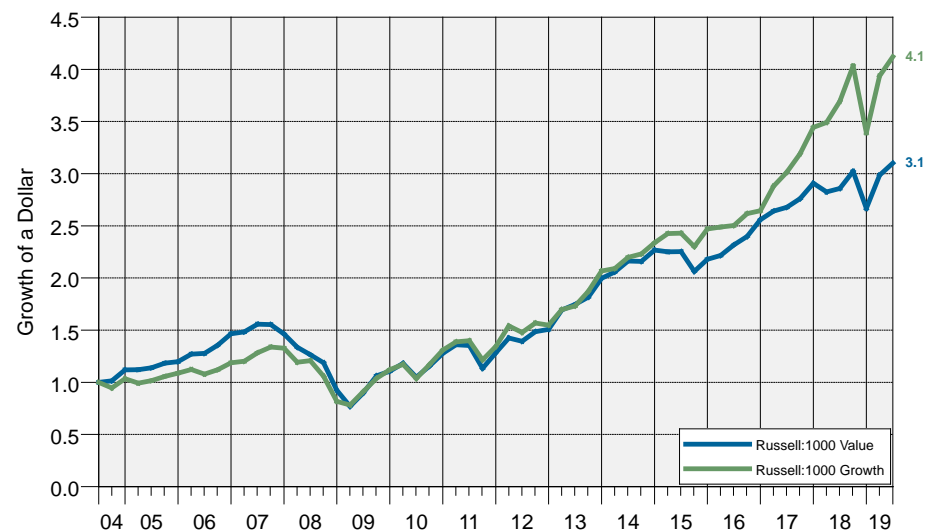
Growth vs. Value Over Time

Growth outperformed value for last 15 years, but value won over longer periods.

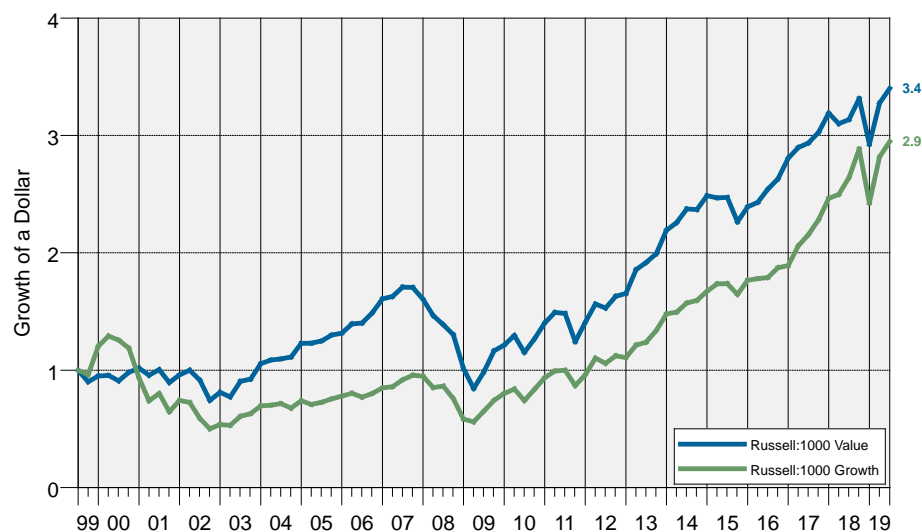
Growth of a Dollar for 10 Years Ended June 30, 2019



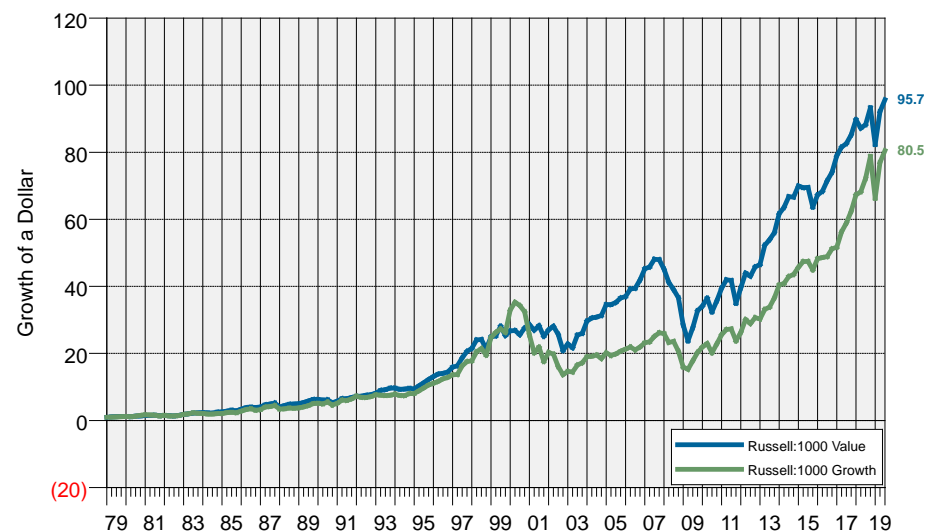
Growth of a Dollar for 15 Years Ended June 30, 2019



Growth of a Dollar for 20 Years Ended June 30, 2019



Growth of a Dollar for 40 1/2 Years Ended June 30, 2019

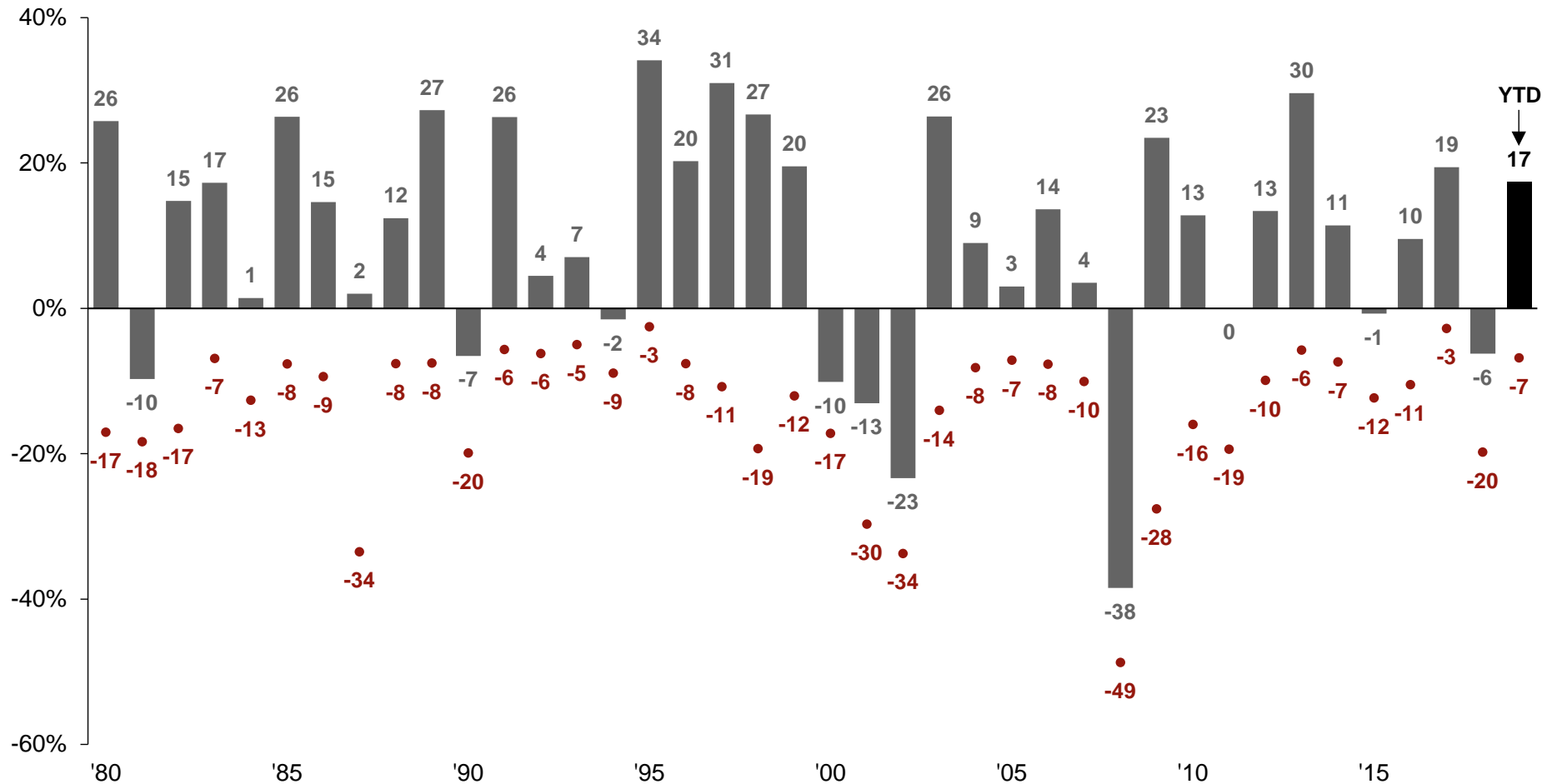


S&P 500 Intra Year Declines and Year-End Returns

Equities are inherently volatile

S&P 500 intra-year declines vs. calendar year returns

Despite average intra-year drops of 13.9%, annual returns positive in 29 of 39 years



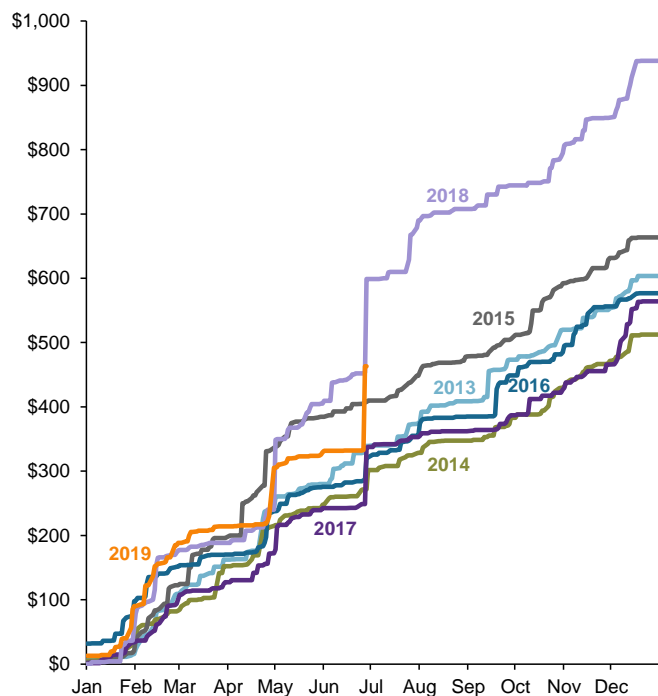
Source: JP Morgan Guide to the Markets as of June 30, 2019. FACTSET

S&P 500 Earnings

June 30, 2019

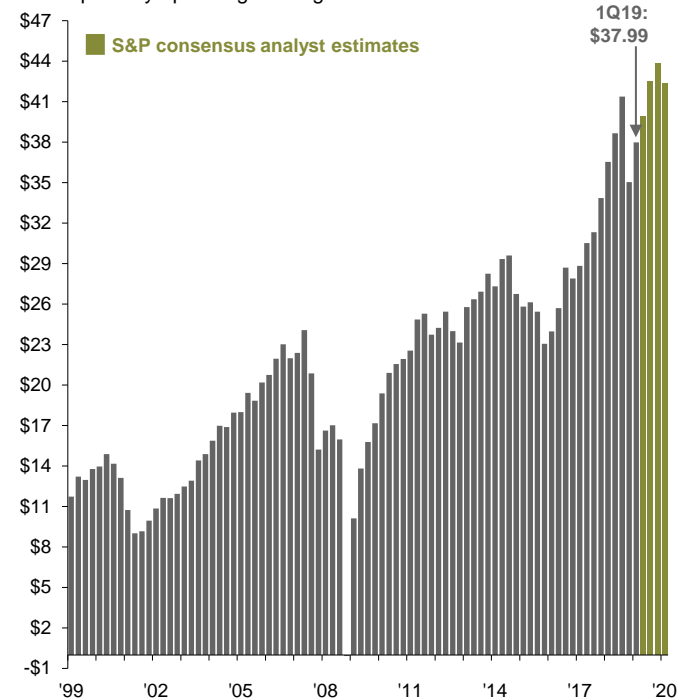
S&P 500 announced buybacks

Value of announced buybacks, \$bn



S&P 500 operating earnings per share

Index quarterly operating earnings



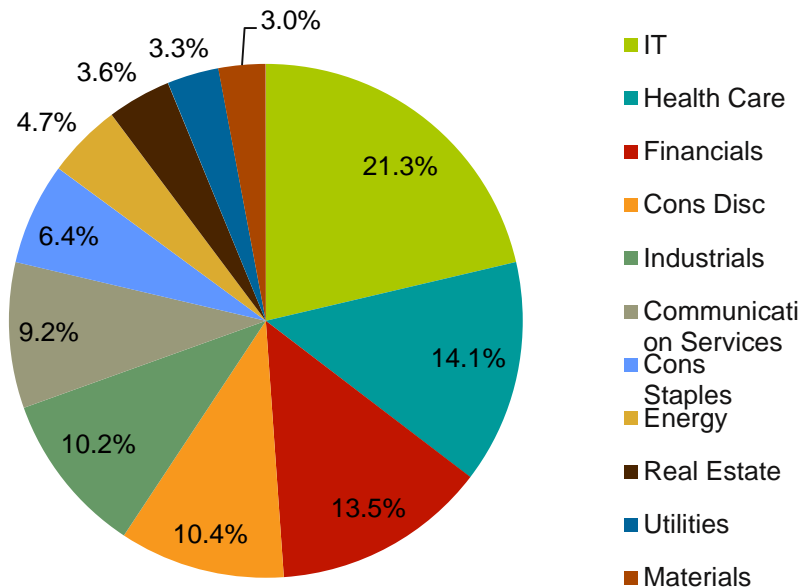
- For Q2 2019, with 99% of S&P 500 companies reporting results, the blended earnings decline for the S&P 500 is -0.4%. This marks the first time the index has reported two straight quarters of year-over-year earnings declines since Q1 and Q2 2016.
- 109 companies in the index have issued EPS guidance for Q3 2019. Of these 109 companies, 79 have issued negative EPS guidance and 30 have issued positive EPS guidance. The percentage of companies issuing negative EPS guidance is 72% (79 out of 109), which is above the 5-year average of 70%.

Source: JP Morgan Guide to the Markets as of June 30, 2019. FACTSET; Earnings Insight as of August 30, 2019.

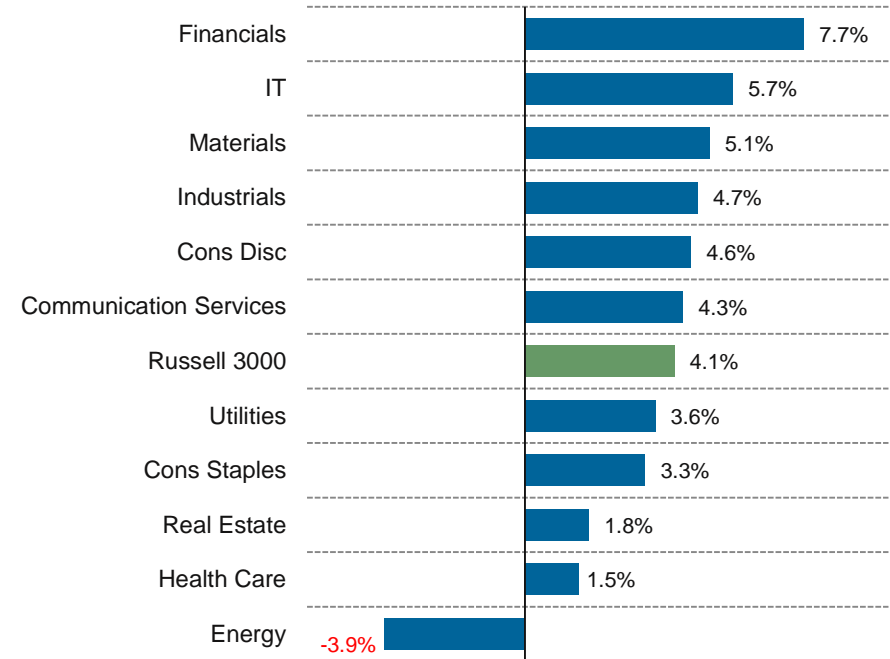
U.S. Equity Returns

June 30, 2019

Economic Sector Exposure (Russell 3000)



Quarterly Returns (Russell 3000)

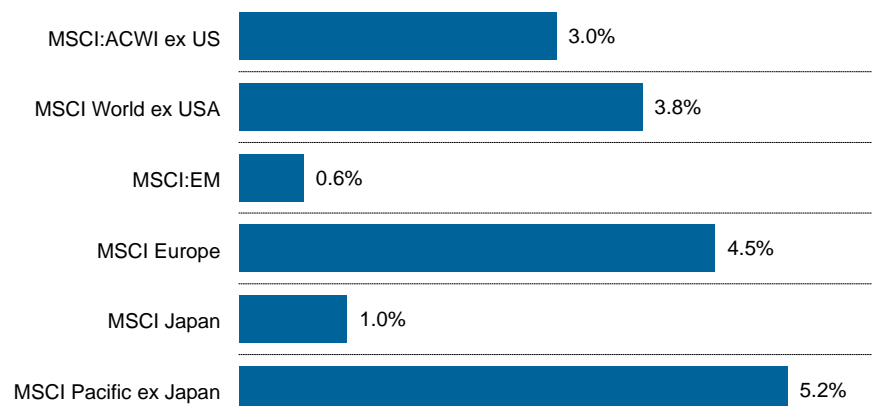


- The Russell 1000 Index rose 4.3% in the second quarter. Gains were driven by the Financial sector (+7.9%), followed by IT (+5.9%) and Materials (+5.6%).
- The Russell 2000 Index climbed 2.1% in the second quarter. Returns were driven by the Industrials sector (+8.5%), followed by Utilities (+5.3%) and Financials (+5.1%).

International Equity Returns

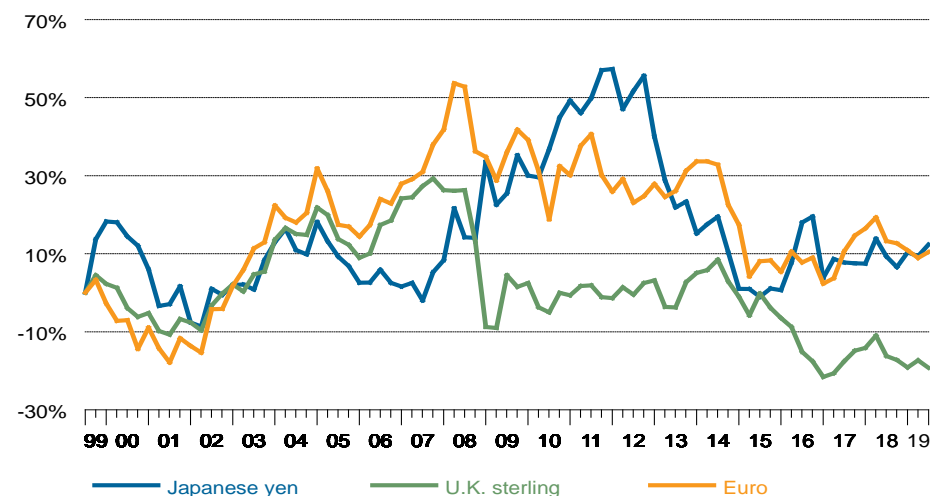
June 30, 2019

Regional Quarterly Performance (U.S. Dollar)



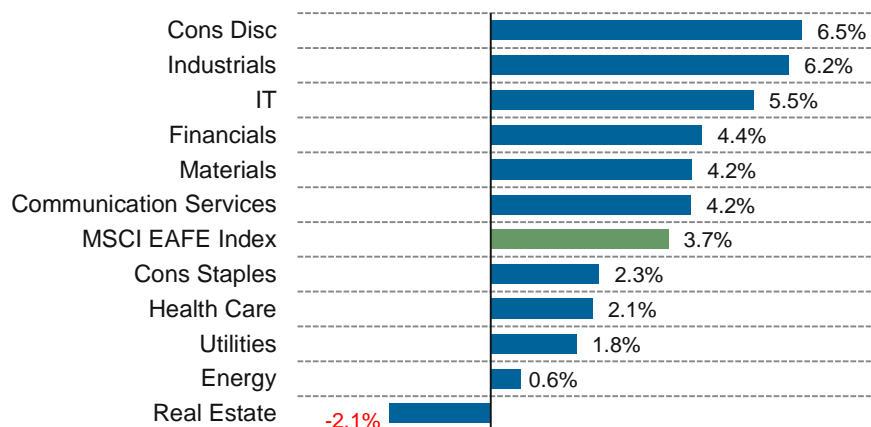
Source: MSCI

Major Currencies' Cumulative Returns (vs. U.S. Dollar)



Source: MSCI

MSCI EAFE Sector Returns

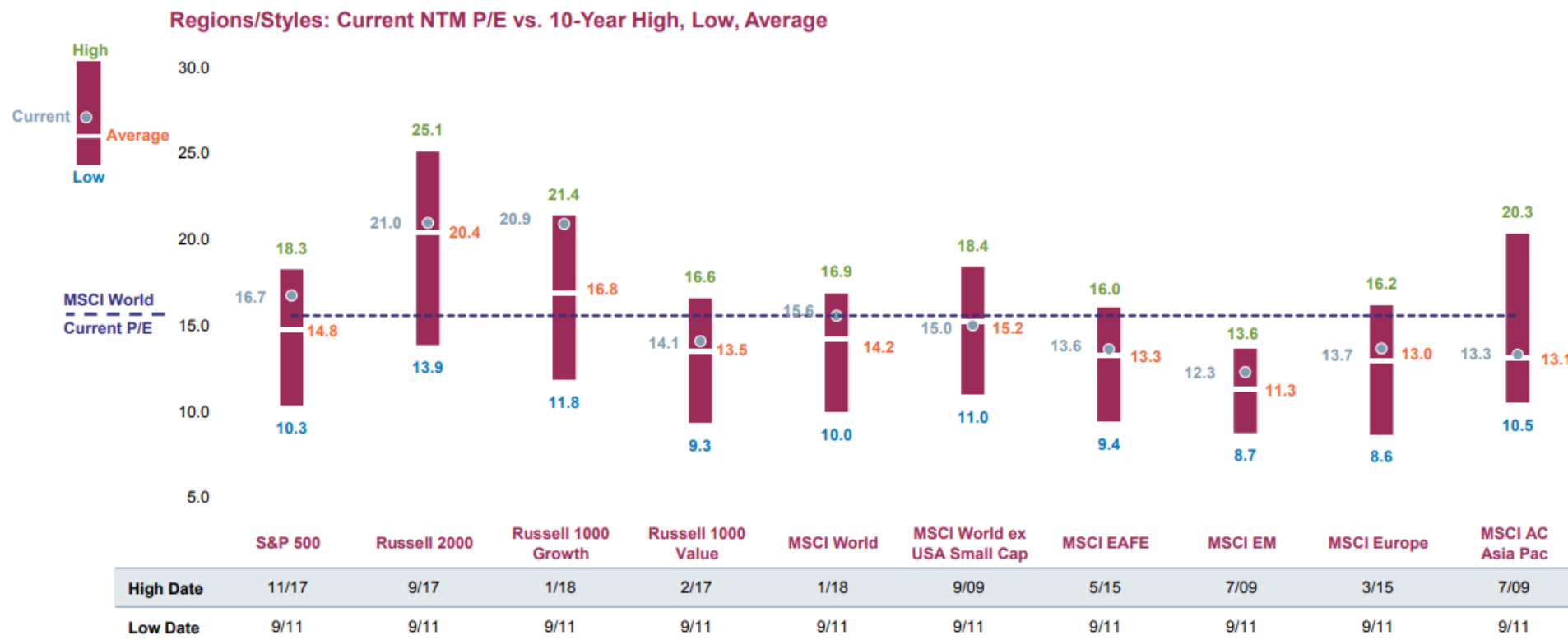


Source: MSCI

- International equity markets underperformed domestic equity in the second quarter (MSCI EAFE Index: +3.7%). Japan was again a laggard returning 1.0%.
- Consumer Discretionary and Industrials led performance from a sector perspective, while Real Estate provided negative returns.
- The euro (+1.4%) and the yen (+2.7%) rose against the dollar in the second quarter, while British pound fell 2.3%.

Global Equity Valuations

June 30, 2019



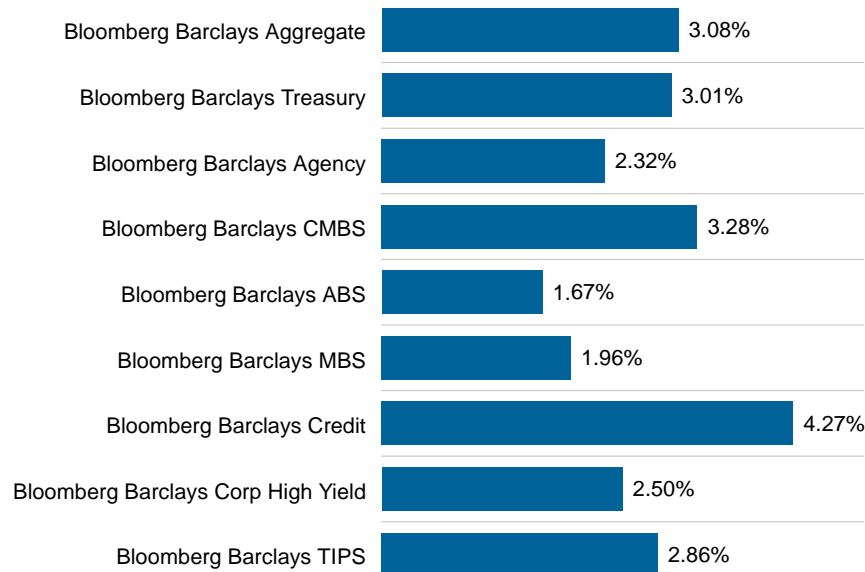
Source: Eaton Vance Monthly Market Monitor

FactSet as of 6/30/19. NTM P/E is market price per share divided by expected earnings per share over the next twelve months.

Fixed Income

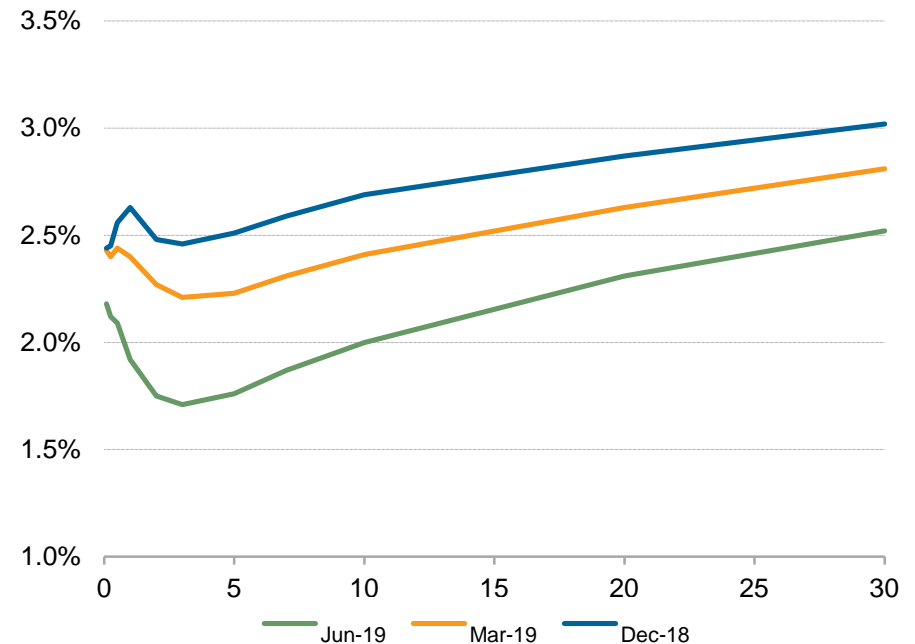
June 30, 2019

Total Returns



Source: Bloomberg

Treasury Yield Curve

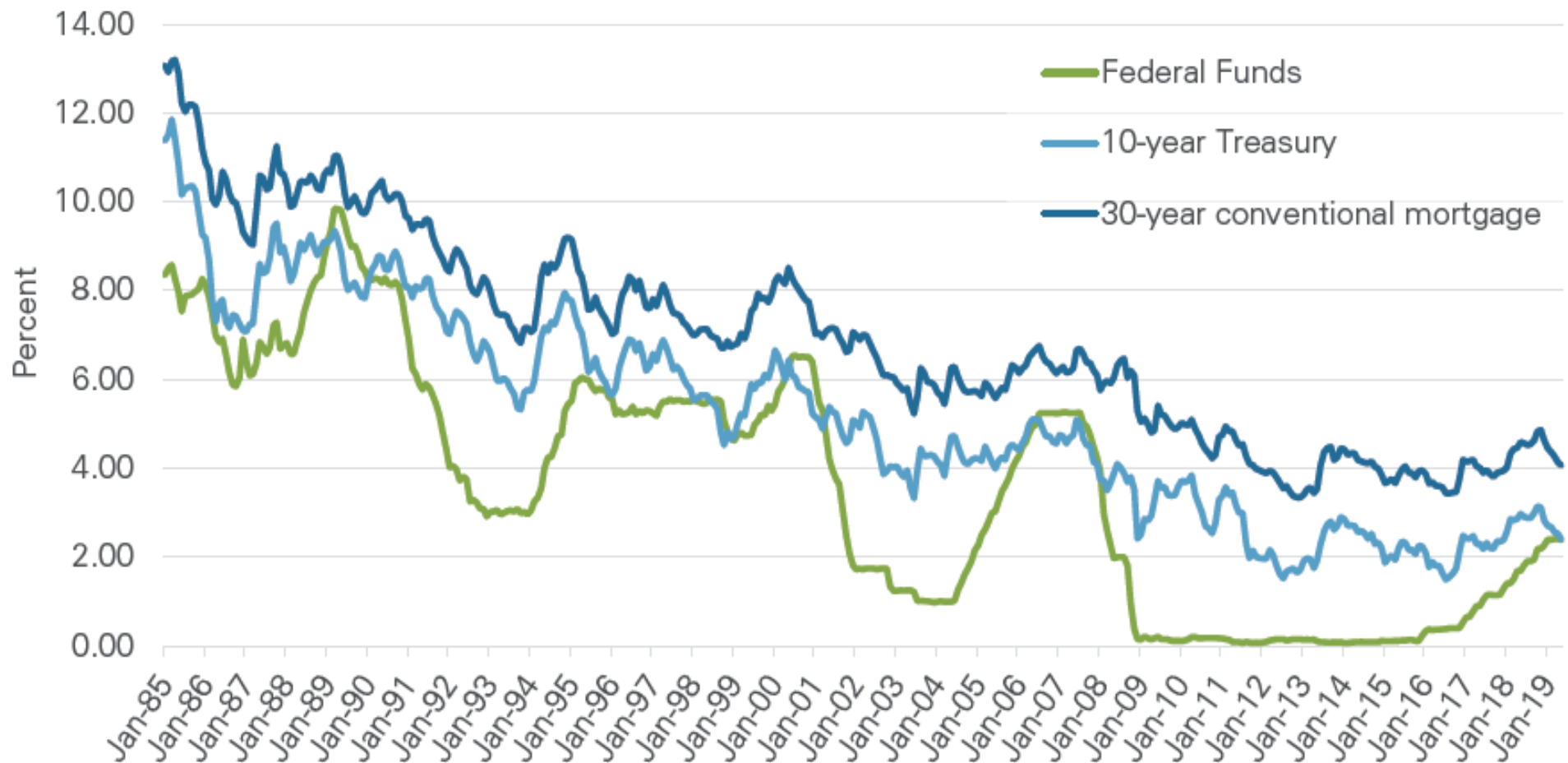


Source: U.S. Department of the Treasury

- As the Federal Reserve struck a more dovish tone, government bond yields fell across the maturity spectrum.
- The widely followed spread between the 2- and 10-year ended the month at 25 bps, up from 14 bps at the end of the first quarter.
- In this falling rate environment, the Bloomberg Aggregate Index gained 3.1%.
- Credit spreads tightened during the second quarter, and outperformed all other sectors returning 4.3% (Bloomberg Credit Index).

With some variation, decades of declining interest rates

US Interest Rates

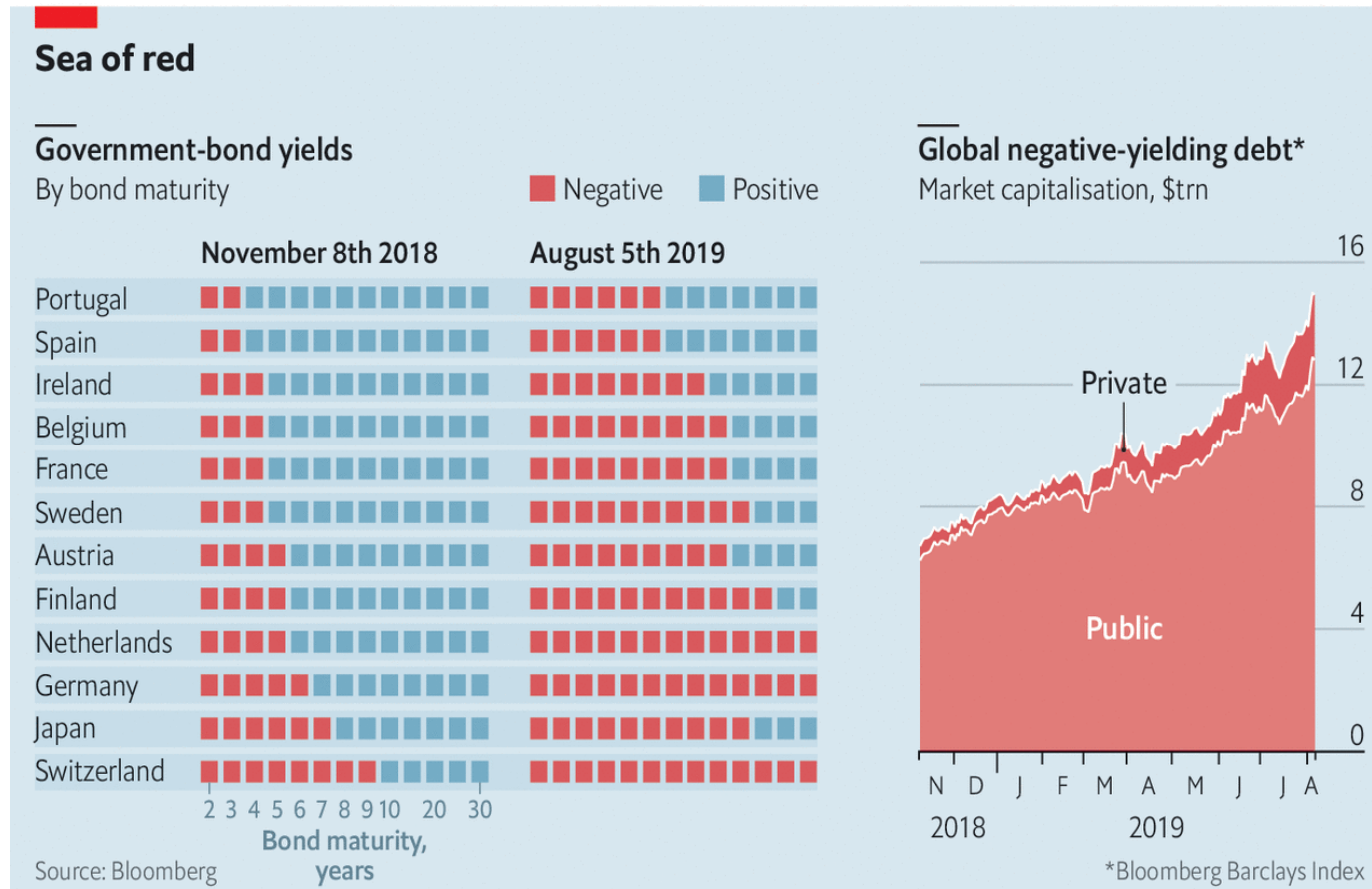


As of June 28, 2019 (last business day in June):

- Effective Fed Funds rate was 2.40%
- 10-Year Treasury Yield was 2.00%
- 30-Year Treasury Yield was 2.52%

Sources: Campbell Timber Group; Federal Reserve Bank; FreddieMac; US Treasury Department

\$15 Trillion in bonds with negative yields if held to maturity



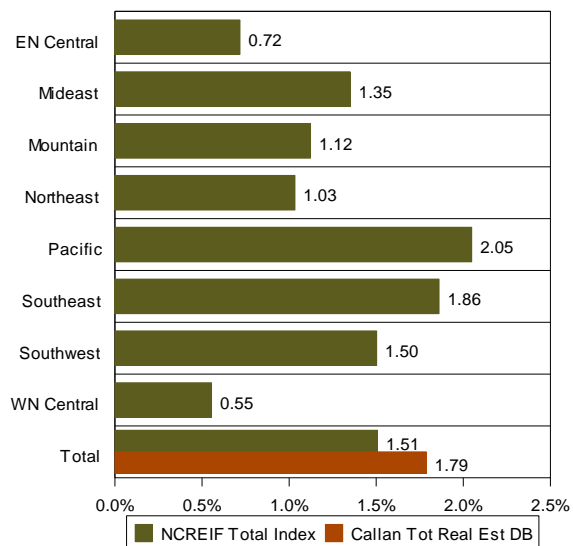
- Bloomberg and *The Economist* report that 25% of global sovereign and credit bonds trade at negative yields
 - Negative rates will theoretically encourage spending and investment as depositors are incentivized to spend cash rather than store it at the bank and incur a guaranteed loss.
- Trade disputes cause investors to favor the safety of government bonds, pushing yields lower.
- Expectations of low inflation are another source of downward pressure on bond yields globally

Source: *The Economist*, August 10, 2019, "Bond Yields: Under Water"

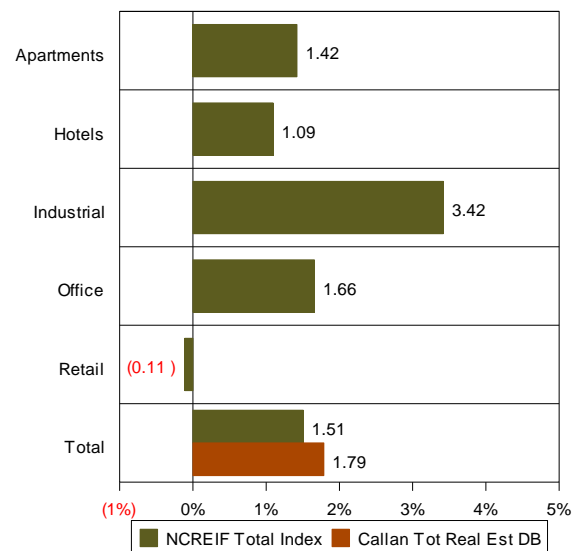
Real Estate Overview

June 30, 2019

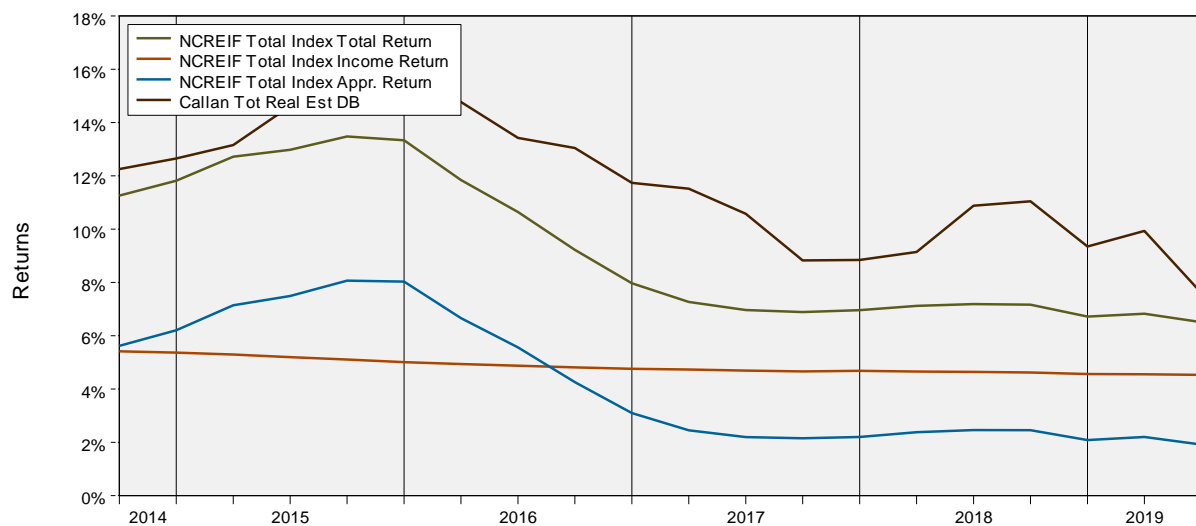
**NCREIF Total Index Returns by Geographic Area
Quarter Ended June 30, 2019**



**NCREIF Total Index Returns by Property Type
Quarter Ended June 30, 2019**



Rolling 1 Year Returns



Callan

NDSIB Total Performance Summary

NDSIB Consolidated Gross Performance Summary

As of June 30, 2019

	Last Quarter	Last Year	Last 5 Years
Consolidated Pension Trust	3.59%	5.78%	6.50%
<i>Consolidated Pension Trust Target</i>	3.39%	6.38%	5.67%
Relative Performance vs. Target	0.20%	-0.60%	0.83%
PERS Total Fund	3.58%	5.76%	6.52%
<i>NDSIB PERS Total Fund Target</i>	3.41%	6.41%	5.69%
Relative Performance vs. Target	0.17%	-0.65%	0.83%
TFFR Total Fund	3.61%	5.78%	6.48%
<i>NDSIB TFFR Total Fund Target</i>	3.38%	6.36%	5.66%
Relative Performance vs. Target	0.23%	-0.58%	0.82%
WSI Total Fund	3.31%	7.05%	5.67%
<i>NDSIB WSI Total Fund Target</i>	3.10%	7.06%	4.41%
Relative Performance vs. Target	0.21%	-0.01%	1.26%
Legacy - Total Fund	3.30%	5.18%	5.96%
<i>NDSIB Legacy - Total Fund Target</i>	3.38%	6.12%	5.18%
Relative Performance vs. Target	-0.08%	-0.94%	0.78%
Budget - Total Fund	1.67%	4.64%	2.01%
<i>NDSIB Budget - Total Fund Target</i>	1.47%	4.23%	1.41%
Relative Performance vs. Target	0.20%	0.41%	0.60%

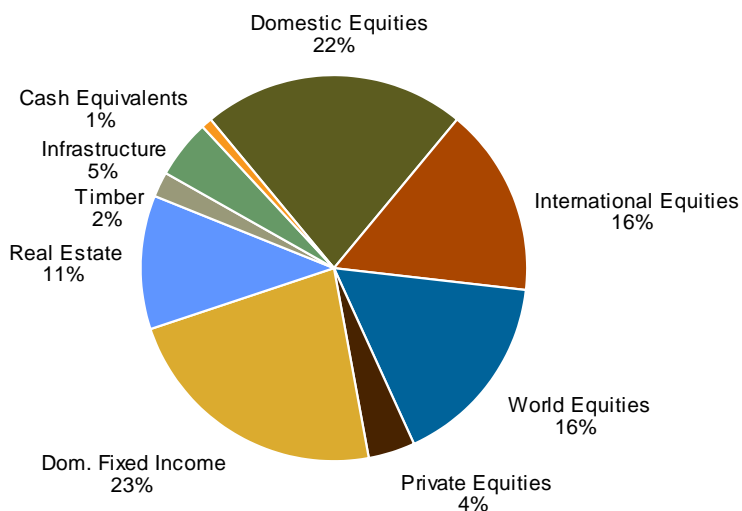
Consolidated Pension Trusts Quarterly Review

- Public Employees Retirement System
- Teachers' Fund for Retirement

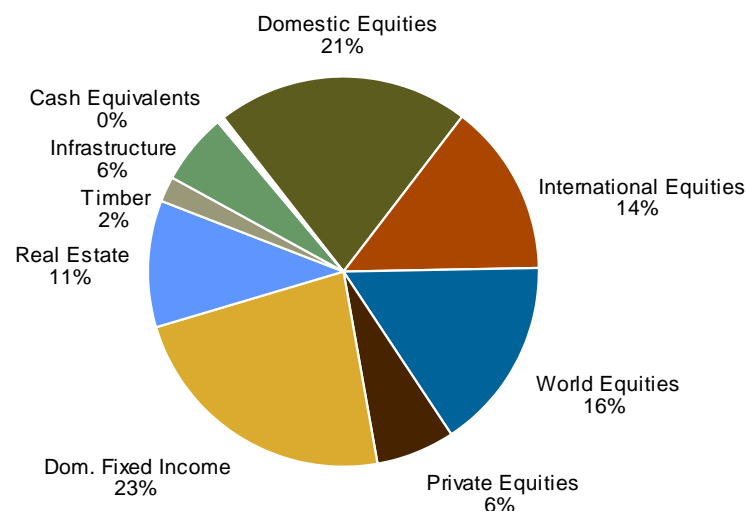
Consolidated Pension Trust Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

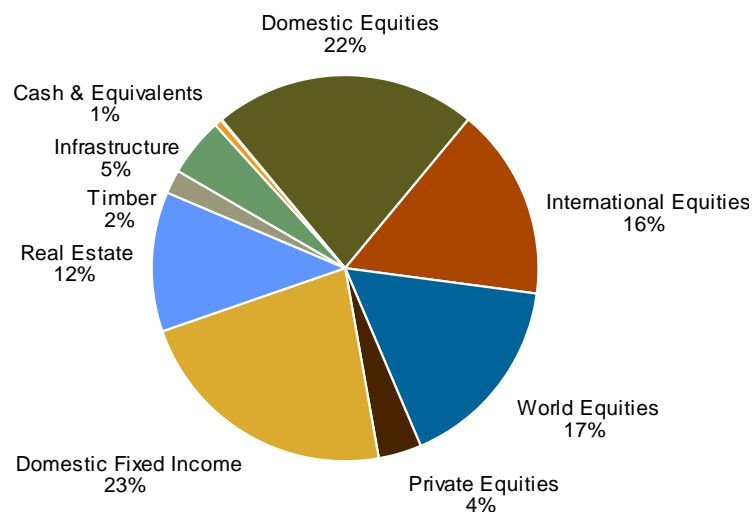


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,308,308	22.0%	20.9%	1.1%	62,603
International Equities	940,770	15.8%	14.3%	1.5%	87,802
World Equities	973,947	16.4%	16.0%	0.4%	22,183
Private Equities	229,364	3.9%	6.5%	(2.6%)	(155,991)
Dom. Fixed Income	1,354,842	22.8%	23.2%	(0.5%)	(28,191)
Real Estate	666,767	11.2%	10.5%	0.7%	39,510
Timber	125,771	2.1%	2.1%	(0.0%)	(0)
Infrastructure	294,013	4.9%	5.9%	(0.9%)	(56,241)
Cash Equivalents	54,746	0.9%	0.4%	0.5%	28,325
Total	5,948,529	100.0%	100.0%		

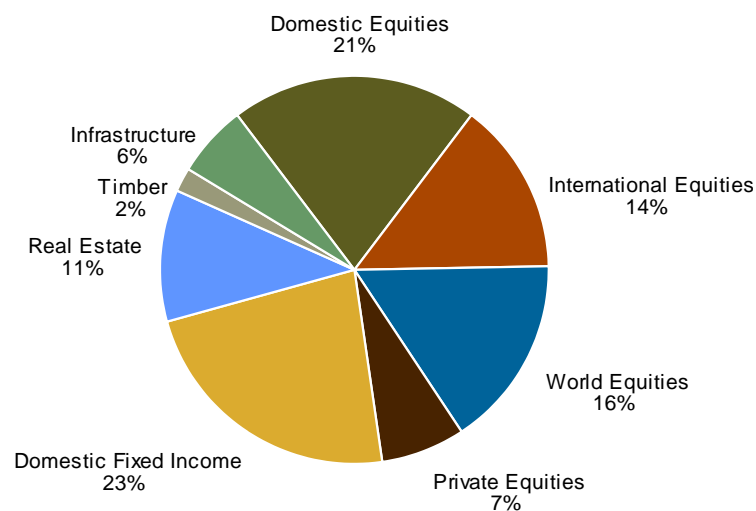
PERS Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

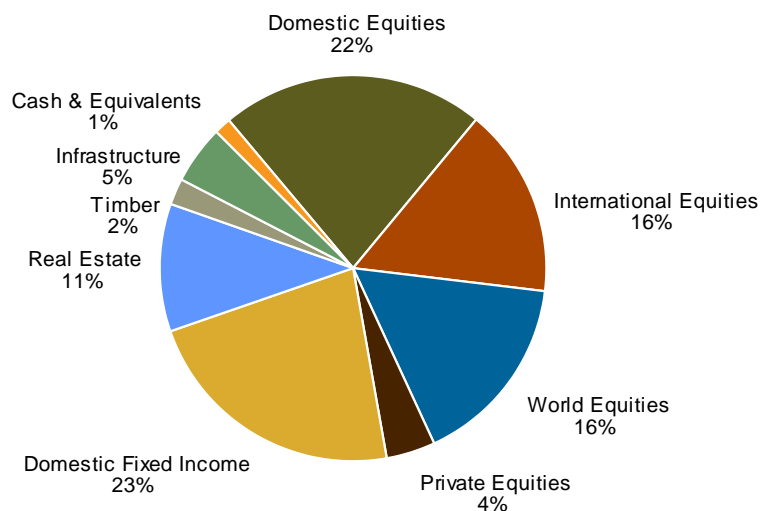


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	693,541	22.0%	20.6%	1.4%	44,037
International Equities	506,693	16.1%	14.4%	1.7%	52,671
World Equities	521,178	16.5%	16.0%	0.5%	16,709
Private Equities	115,069	3.6%	7.0%	(3.4%)	(105,636)
Domestic Fixed Income	710,758	22.5%	23.0%	(0.5%)	(14,416)
Real Estate	368,351	11.7%	11.0%	0.7%	21,529
Timber	63,601	2.0%	2.0%	0.0%	0
Infrastructure	155,105	4.9%	6.0%	(1.1%)	(33,528)
Cash & Equivalents	18,635	0.6%	0.0%	0.6%	18,635
Total	3,152,930	100.0%	100.0%		

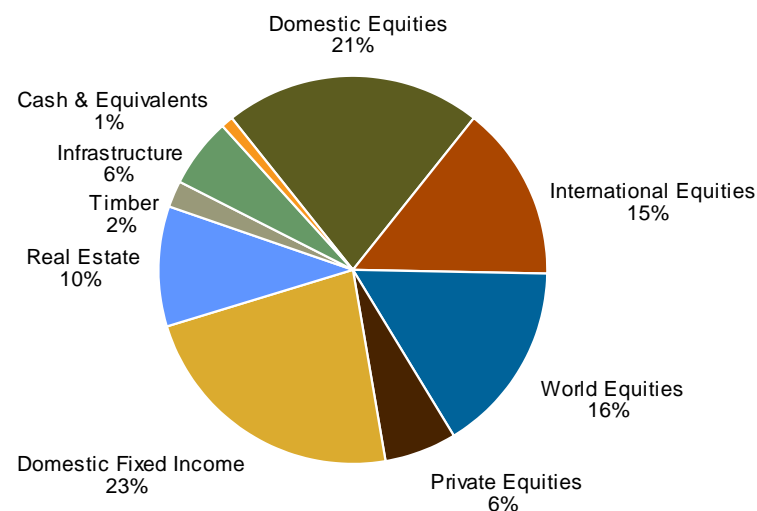
TFFR Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

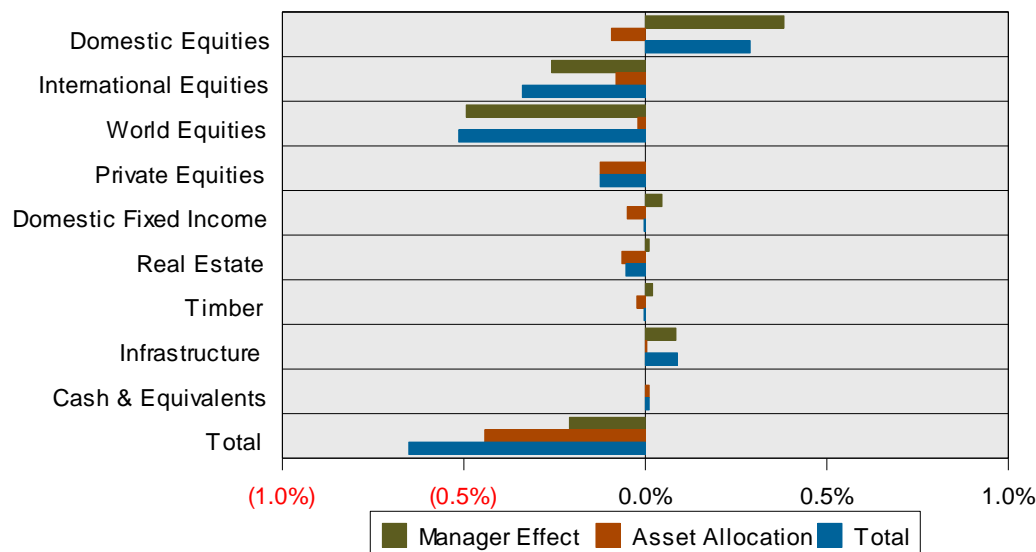


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	568,790	22.1%	21.4%	0.7%	18,035
International Equities	408,085	15.9%	14.6%	1.3%	32,336
World Equities	416,090	16.2%	16.0%	0.2%	4,310
Private Equities	105,620	4.1%	6.0%	(1.9%)	(48,797)
Domestic Fixed Income	580,286	22.5%	23.0%	(0.5%)	(11,647)
Real Estate	275,747	10.7%	10.0%	0.7%	18,385
Timber	56,772	2.2%	2.2%	0.0%	0
Infrastructure	127,195	4.9%	5.8%	(0.9%)	(21,923)
Cash & Equivalents	35,037	1.4%	1.0%	0.4%	9,301
Total	2,573,623	100.0%	100.0%		

PERS Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	5.76%
Net of fees	5.52%
Target	6.41%
Net added	-0.89%

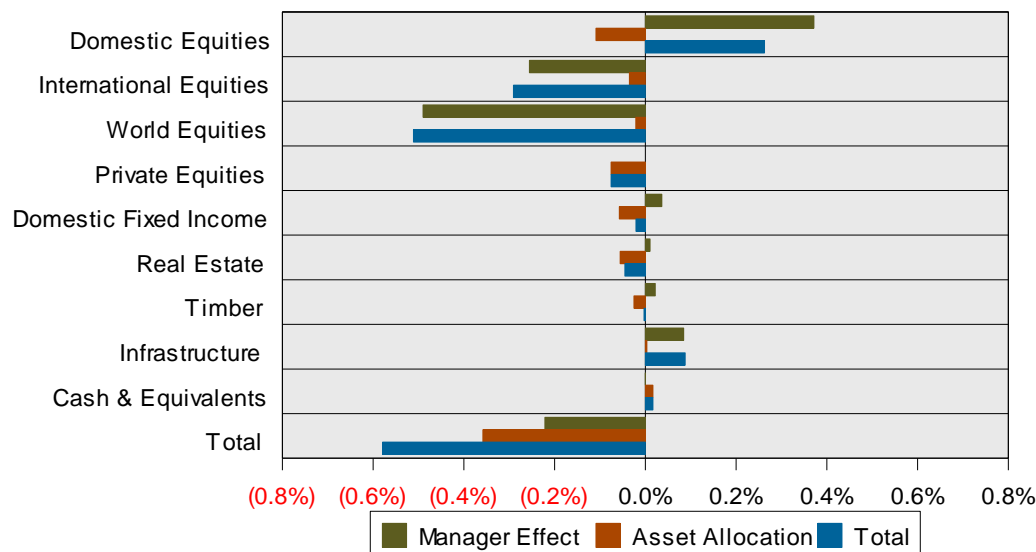
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.49%	6.82%	0.38%	(0.09%)	0.29%
International Equities	16%	14%	(0.35%)	1.31%	(0.26%)	(0.08%)	(0.34%)
World Equities	16%	16%	3.38%	6.33%	(0.49%)	(0.02%)	(0.51%)
Private Equities	3%	7%	8.62%	8.62%	0.00%	(0.12%)	(0.12%)
Domestic Fixed Income	23%	23%	7.94%	7.80%	0.05%	(0.05%)	0.00%
Real Estate	12%	11%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	0.00%
Infrastructure	5%	6%	5.58%	3.91%	0.08%	0.00%	0.09%
Cash & Equivalents	0%	0%	2.31%	2.31%	0.00%	0.01%	0.01%
Total			5.76%	6.41%	(0.21%)	(0.44%)	(0.65%)

TFFR Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	5.78%
Net of fees	5.54%
Target	6.36%
Net added	-0.82%

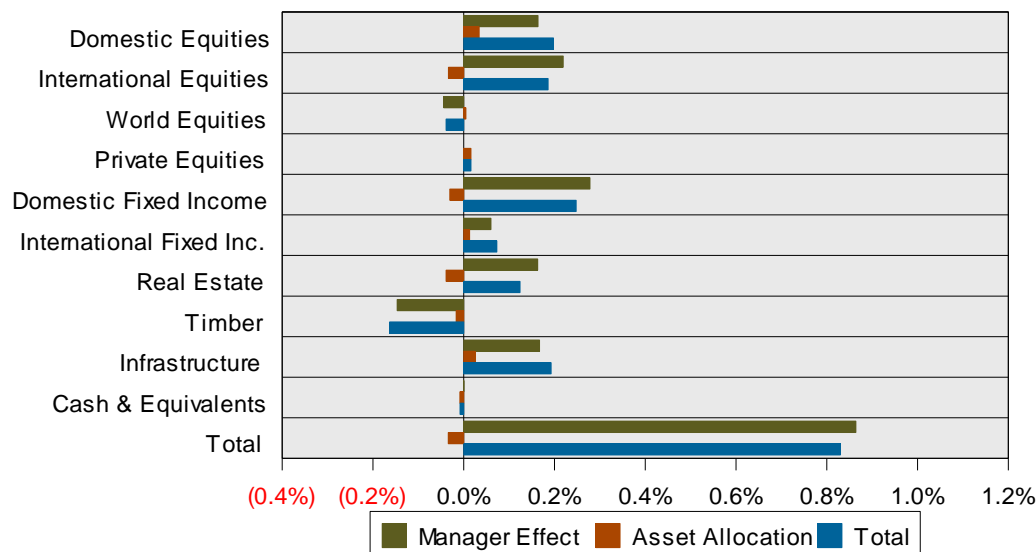
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.57%	6.94%	0.37%	(0.11%)	0.26%
International Equities	15%	15%	(0.40%)	1.31%	(0.26%)	(0.04%)	(0.29%)
World Equities	16%	16%	3.38%	6.33%	(0.49%)	(0.02%)	(0.51%)
Private Equities	4%	6%	8.62%	8.62%	0.00%	(0.08%)	(0.08%)
Domestic Fixed Income	23%	23%	7.91%	7.80%	0.04%	(0.06%)	(0.02%)
Real Estate	11%	10%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	(0.00%)
Infrastructure	5%	6%	5.58%	3.91%	0.08%	0.00%	0.09%
Cash & Equivalents	1%	1%	2.32%	2.31%	0.00%	0.02%	0.02%
Total			5.78%	6.36%	+(0.22%)	+(0.36%)	(0.58%)

PERS Performance and Attribution

As of June 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 06/30/2019

Return Type	Return (%)
Gross	6.52%
Net of fees	6.22%
Target	5.69%
Net added	0.53%

Five Year Annualized Relative Attribution Effects

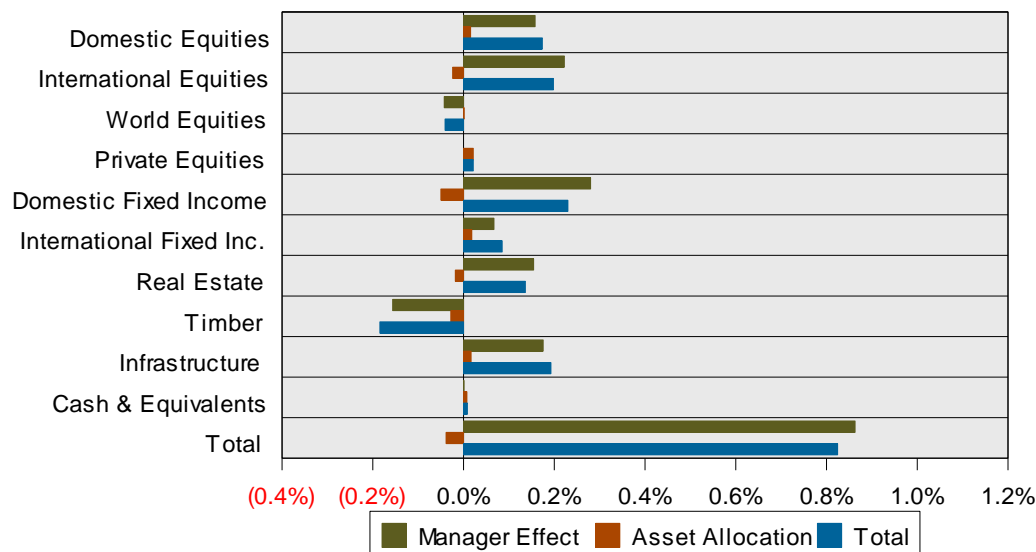
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.49%	9.74%	0.16%	0.03%	0.20%
International Equities	16%	14%	3.71%	2.34%	0.22%	(0.03%)	0.19%
World Equities	16%	16%	6.31%	6.60%	(0.04%)	0.01%	(0.04%)
Private Equities	3%	6%	2.22%	2.22%	0.00%	0.02%	0.02%
Domestic Fixed Income	19%	19%	4.91%	3.46%	0.28%	(0.03%)	0.25%
International Fixed Inc.	4%	4%	-	-	0.06%	0.01%	0.07%
Real Estate	11%	11%	10.39%	8.83%	0.16%	(0.04%)	0.12%
Timber	3%	4%	(0.07%)	4.67%	(0.15%)	(0.02%)	(0.16%)
Infrastructure	4%	5%	5.57%	1.74%	0.17%	0.03%	0.19%
Cash & Equivalents	1%	0%	0.97%	0.94%	0.00%	(0.01%)	(0.01%)

Total **6.52% = 5.69% + 0.86% + (0.03%)** **0.83%**

TFFR Performance and Attribution

As of June 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 06/30/2019

Return Type	Return (%)
Gross	6.48%
Net of fees	6.18%
Target	5.66%
Net added	0.52%

Five Year Annualized Relative Attribution Effects

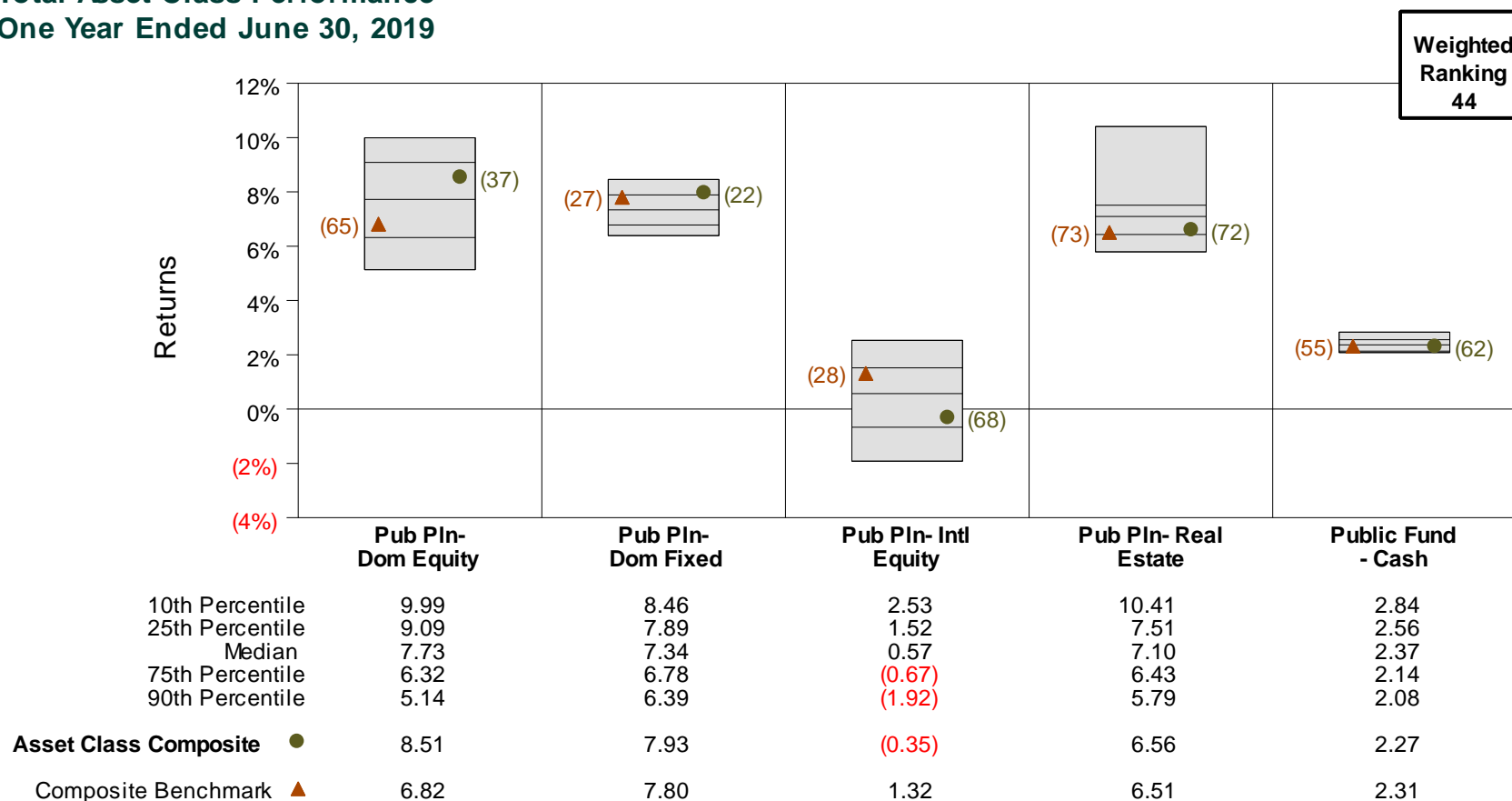
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.49%	9.75%	0.16%	0.02%	0.17%
International Equities	15%	15%	3.69%	2.32%	0.22%	(0.02%)	0.20%
World Equities	16%	16%	6.31%	6.60%	(0.04%)	0.00%	(0.04%)
Private Equities	4%	6%	2.22%	2.22%	0.00%	0.02%	0.02%
Domestic Fixed Income	19%	19%	4.82%	3.32%	0.28%	(0.05%)	0.23%
International Fixed Inc.	4%	4%	-	-	0.07%	0.02%	0.09%
Real Estate	10%	10%	10.39%	8.83%	0.15%	(0.02%)	0.14%
Timber	3%	4%	(0.07%)	4.67%	(0.16%)	(0.03%)	(0.18%)
Infrastructure	5%	5%	5.57%	1.74%	0.18%	0.02%	0.19%
Cash & Equivalents	1%	1%	0.97%	0.87%	0.00%	0.01%	0.01%

Total **6.48% = 5.66% + 0.86% + (0.04%)** **0.82%**

Asset Class Composite Results

Consolidated Pension Trust Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance
One Year Ended June 30, 2019

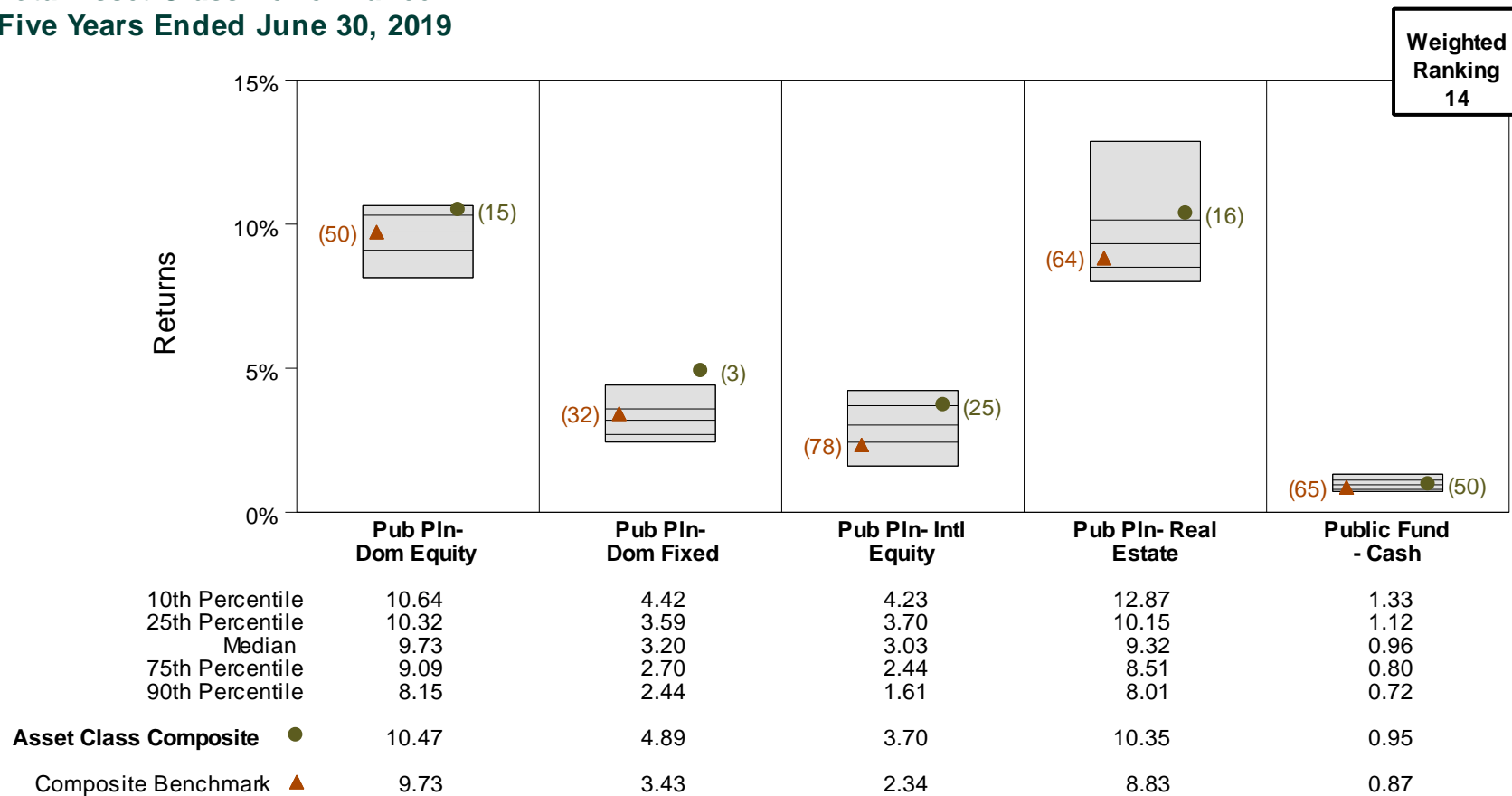


- Domestic equity has experienced the strongest outperformance relative to its benchmark over the trailing year, while international equity continues to lag.
- Domestic equity and fixed income ranked above median, while international equity and real estate were below.

Asset Class Composite Results

Consolidated Pension Trust Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance Five Years Ended June 30, 2019



- All asset classes outperformed their respective benchmarks over the trailing five years.
- All asset classes, with the exception of cash, ranked in the top quartile over the trailing five years.

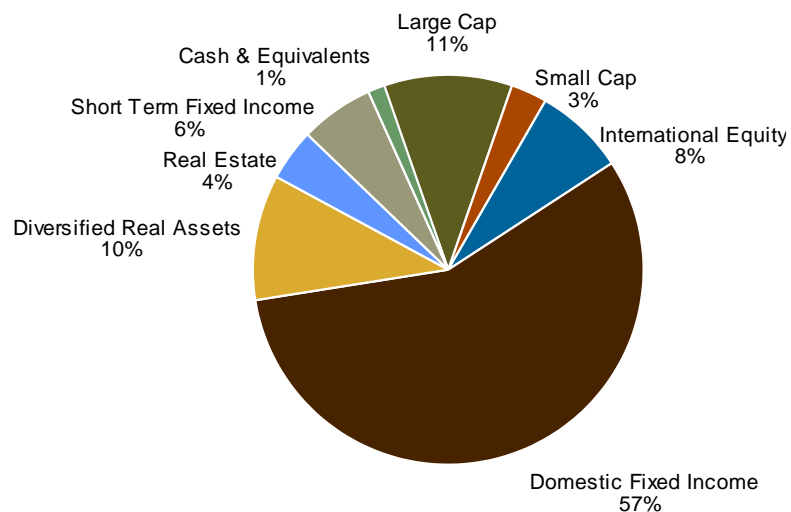
Consolidated Insurance Trust Quarterly Review

- Workforce Safety and Insurance Legacy Fund
- Budget Stabilization Fund

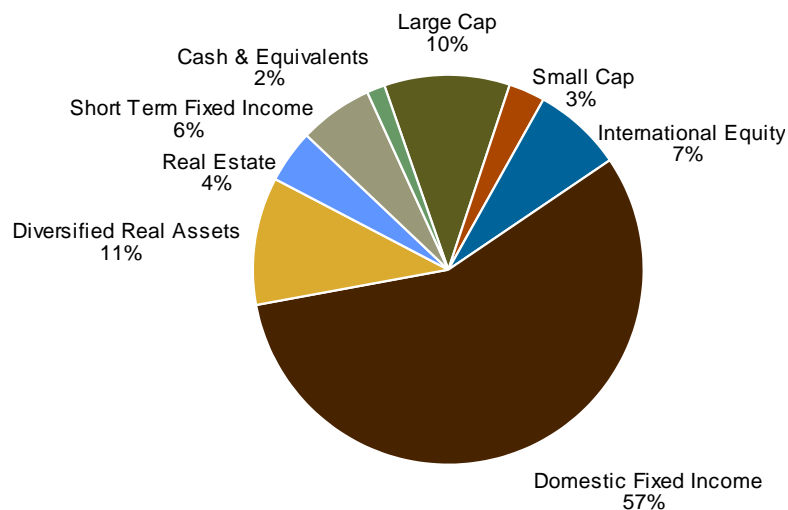
Consolidated Insurance Trust Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

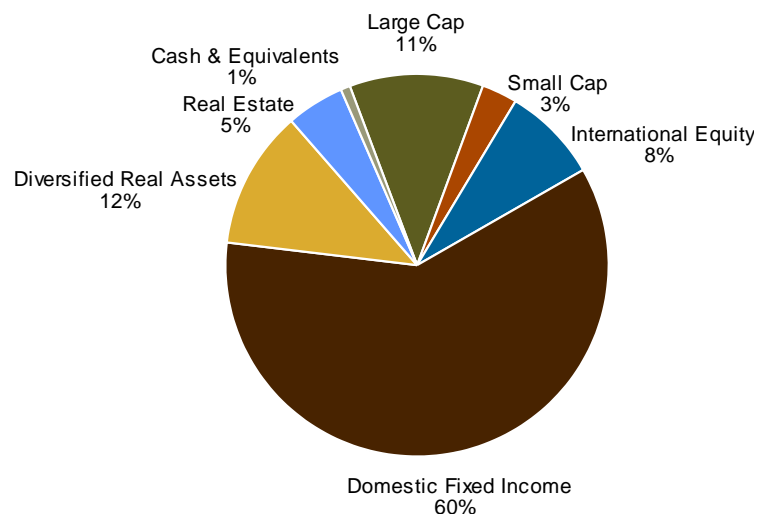


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	252,963	10.7%	10.4%	0.2%	5,779
Small Cap	70,403	3.0%	3.0%	(0.0%)	(39)
International Equity	178,776	7.5%	7.4%	0.1%	2,897
Domestic Fixed Income	1,346,993	56.7%	56.6%	0.2%	3,592
Diversified Real Assets	246,754	10.4%	10.6%	(0.2%)	(5,578)
Real Estate	101,176	4.3%	4.4%	(0.1%)	(2,165)
Short Term Fixed Income	145,741	6.1%	6.1%	(0.0%)	(13)
Cash & Equivalents	32,228	1.4%	1.5%	(0.2%)	(4,473)
Total	2,375,034	100.0%	100.0%		

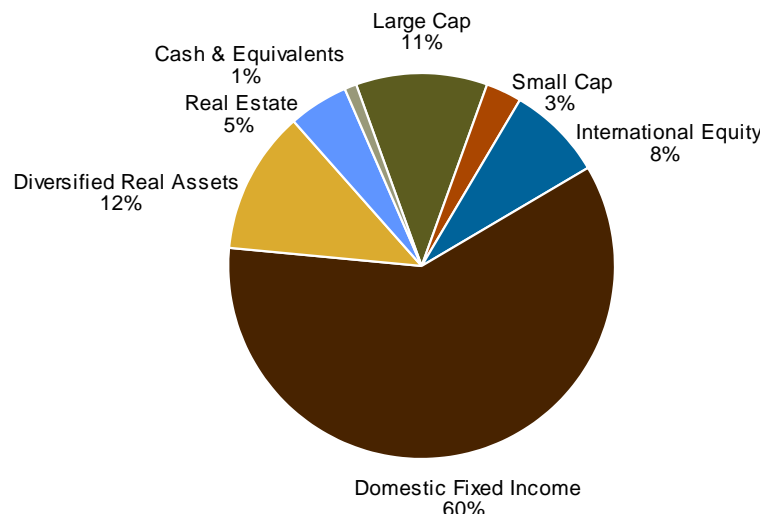
WSI Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

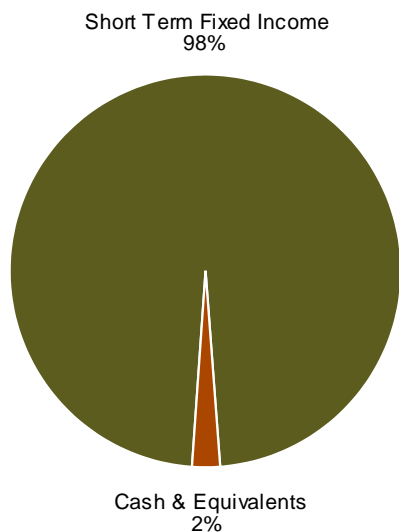


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	232,923	11.3%	11.0%	0.3%	5,729
Small Cap	61,960	3.0%	3.0%	(0.0%)	(2)
International Equity	168,036	8.1%	8.0%	0.1%	2,804
Domestic Fixed Income	1,242,884	60.2%	60.0%	0.2%	3,644
Diversified Real Assets	242,302	11.7%	12.0%	(0.3%)	(5,546)
Real Estate	101,105	4.9%	5.0%	(0.1%)	(2,165)
Cash & Equivalents	16,189	0.8%	1.0%	(0.2%)	(4,465)
Total	2,065,400	100.0%	100.0%		

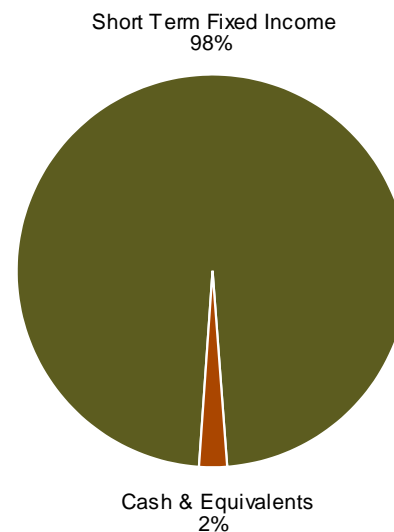
Budget Stabilization Fund Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

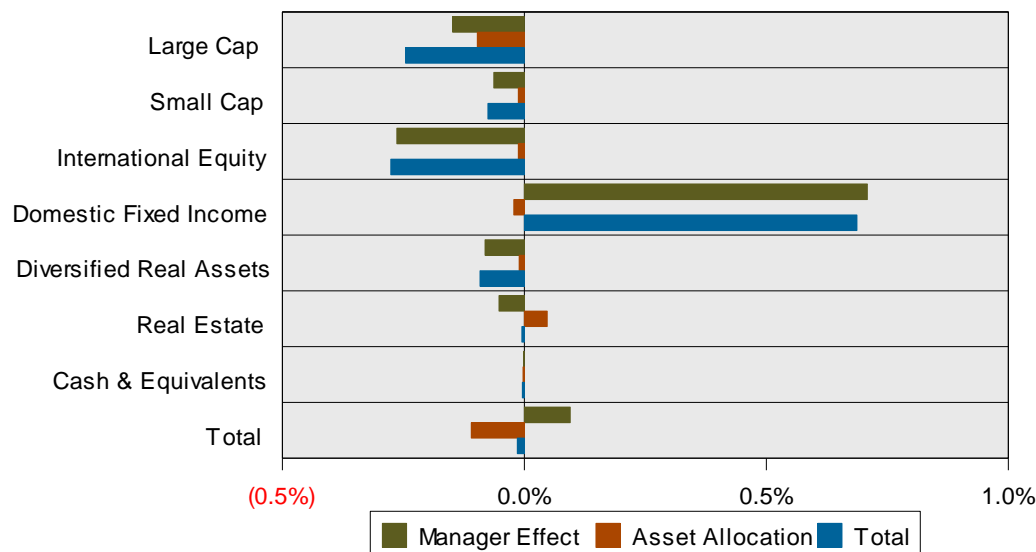


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Short Term Fixed Income	116,031	97.7%	97.8%	(0.0%)	(17)
Cash & Equivalents	2,676	2.3%	2.2%	0.0%	17
Total	118,707	100.0%	100.0%		

WSI Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	7.05%
Net of fees	6.87%
Target	7.06%
Net added	-0.19%

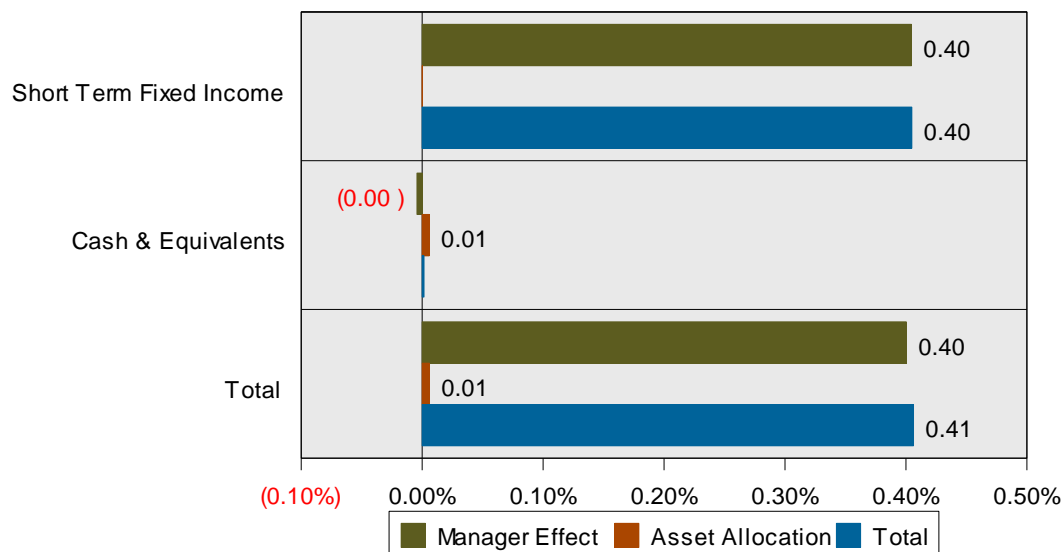
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	8.59%	10.02%	(0.15%)	(0.10%)	(0.25%)
Small Cap	3%	3%	(5.16%)	(3.31%)	(0.06%)	(0.01%)	(0.08%)
International Equity	8%	8%	(2.07%)	1.29%	(0.26%)	(0.01%)	(0.28%)
Domestic Fixed Income	58%	59%	9.12%	7.87%	0.71%	(0.02%)	0.69%
Diversified Real Assets	13%	13%	4.28%	4.72%	(0.08%)	(0.01%)	(0.09%)
Real Estate	6%	5%	5.74%	6.51%	(0.05%)	0.05%	(0.00%)
Cash & Equivalents	1%	1%	2.17%	2.31%	(0.00%)	(0.00%)	(0.00%)
Total			7.05%	7.06%	+ 0.09%	+ (0.11%)	(0.01%)

Budget Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	4.64%
Net of fees	4.51%
Target	4.23%
Net added	0.28%

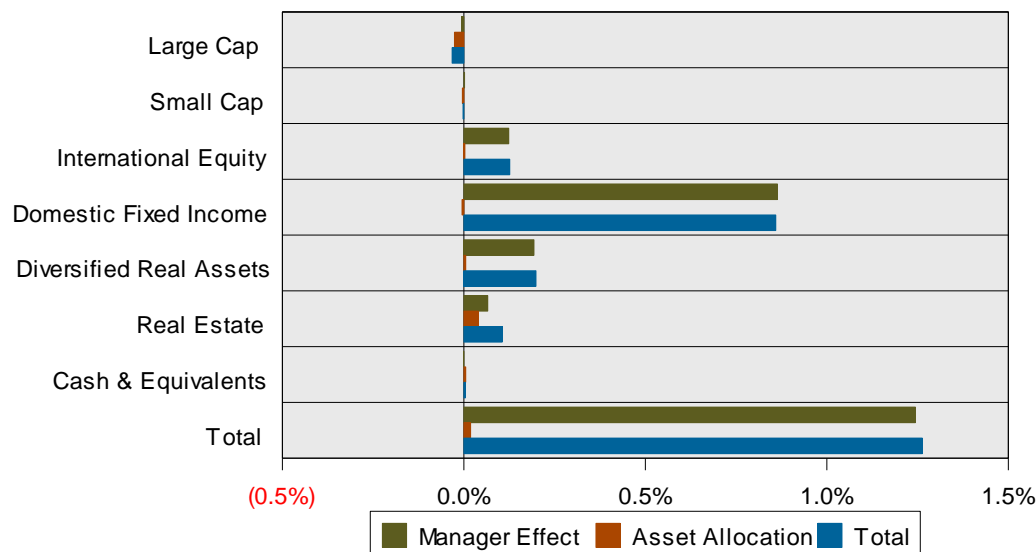
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	97%	97%	4.68%	4.27%	0.40%	0.00%	0.40%
Cash & Equivalents	3%	3%	2.17%	2.31%	(0.00%)	0.01%	0.00%
Total			4.64%	4.23%	+ 0.40%	+ 0.01%	0.41%

WSI Performance and Attribution

As of June 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 06/30/2019

Return Type	Return (%)
Gross	5.67%
Net of fees	5.45%
Target	4.41%
Net added	1.04%

Five Year Annualized Relative Attribution Effects

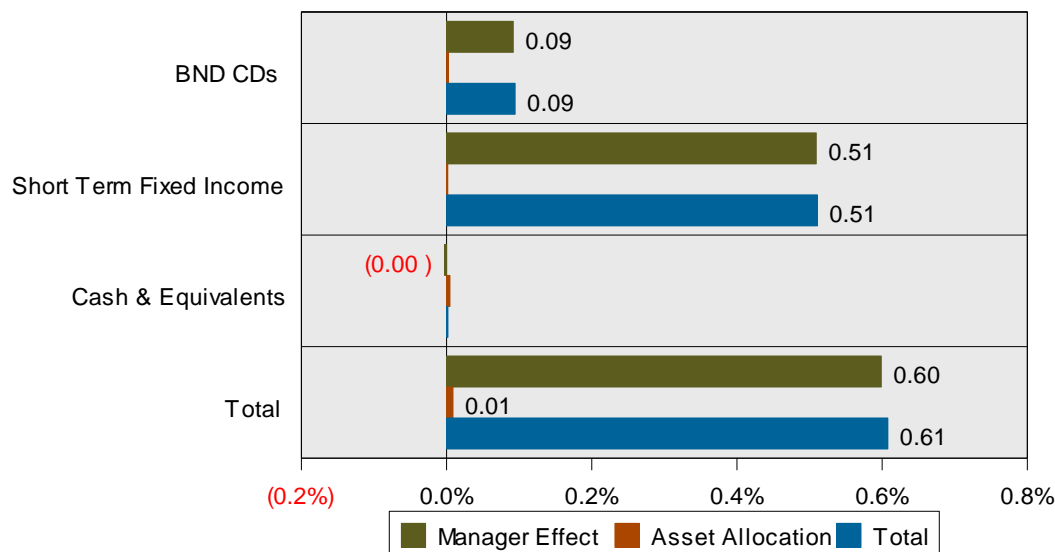
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	10.37%	10.45%	(0.01%)	(0.03%)	(0.03%)
Small Cap	4%	4%	7.02%	7.06%	0.00%	(0.00%)	(0.00%)
International Equity	9%	9%	3.37%	2.19%	0.12%	0.00%	0.13%
Domestic Fixed Income	54%	54%	4.57%	2.95%	0.86%	(0.00%)	0.86%
Diversified Real Assets	14%	15%	3.84%	2.50%	0.19%	0.01%	0.20%
Real Estate	7%	6%	9.79%	8.83%	0.07%	0.04%	0.11%
Cash & Equivalents	1%	1%	0.79%	0.87%	(0.00%)	0.01%	0.00%

Total **5.67% = 4.41% + 1.24% + 0.02%** **1.26%**

Budget Performance and Attribution

As of June 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 06/30/2019

Return Type	Return (%)
Gross	2.01%
Net of fees	1.85%
Target	1.41%
Net added	0.44%

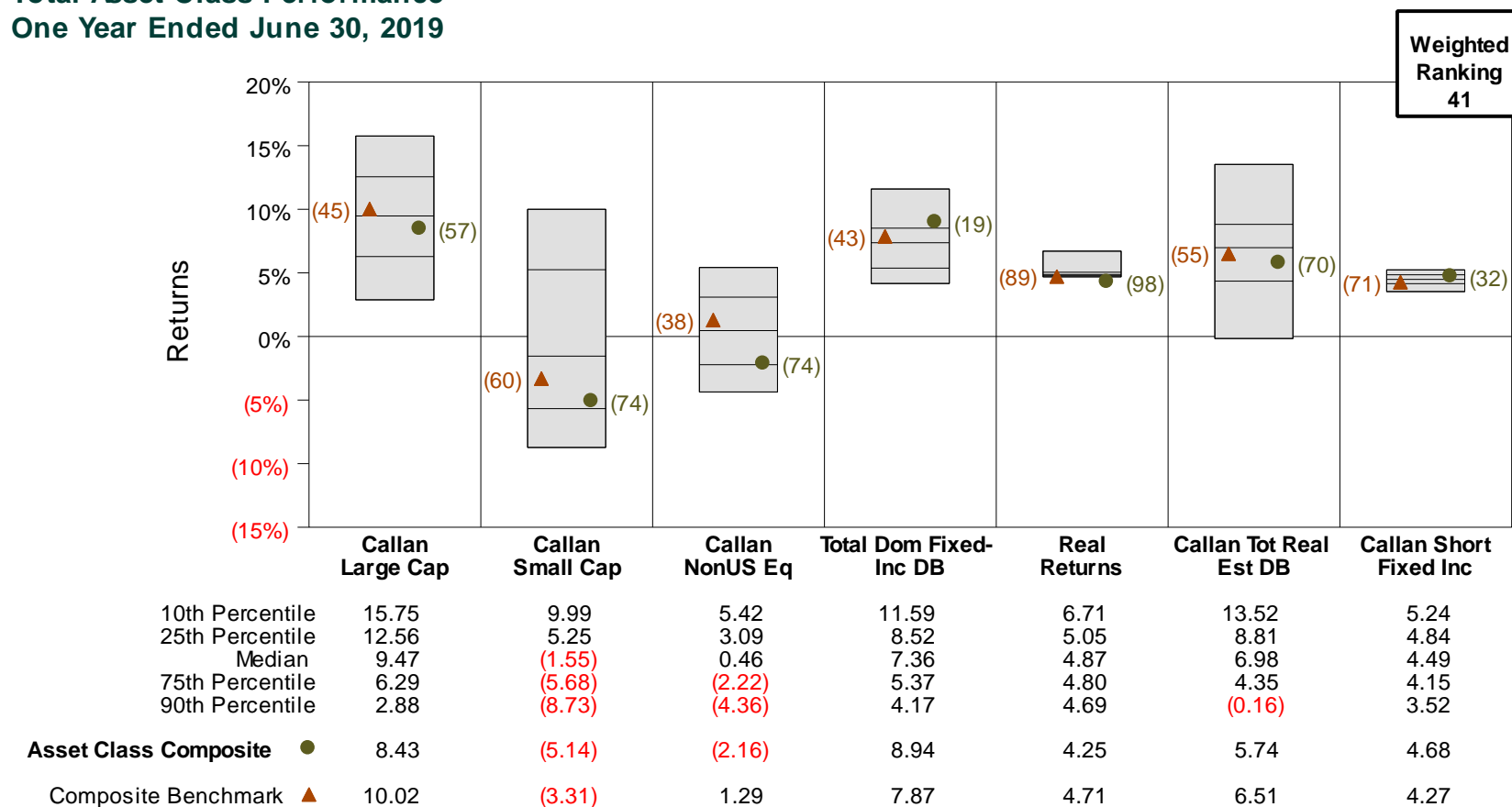
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
BND CDs	9%	9%	-	-	0.09%	0.00%	0.09%
Short Term Fixed Income	88%	88%	1.93%	1.33%	0.51%	0.00%	0.51%
Cash & Equivalents	3%	3%	0.78%	0.87%	(0.00%)	0.00%	0.00%
Total			2.01%	1.41%	+ 0.60%	+ 0.01%	0.61%

Asset Class Composite Results

Consolidated Insurance Trust Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
One Year Ended June 30, 2019

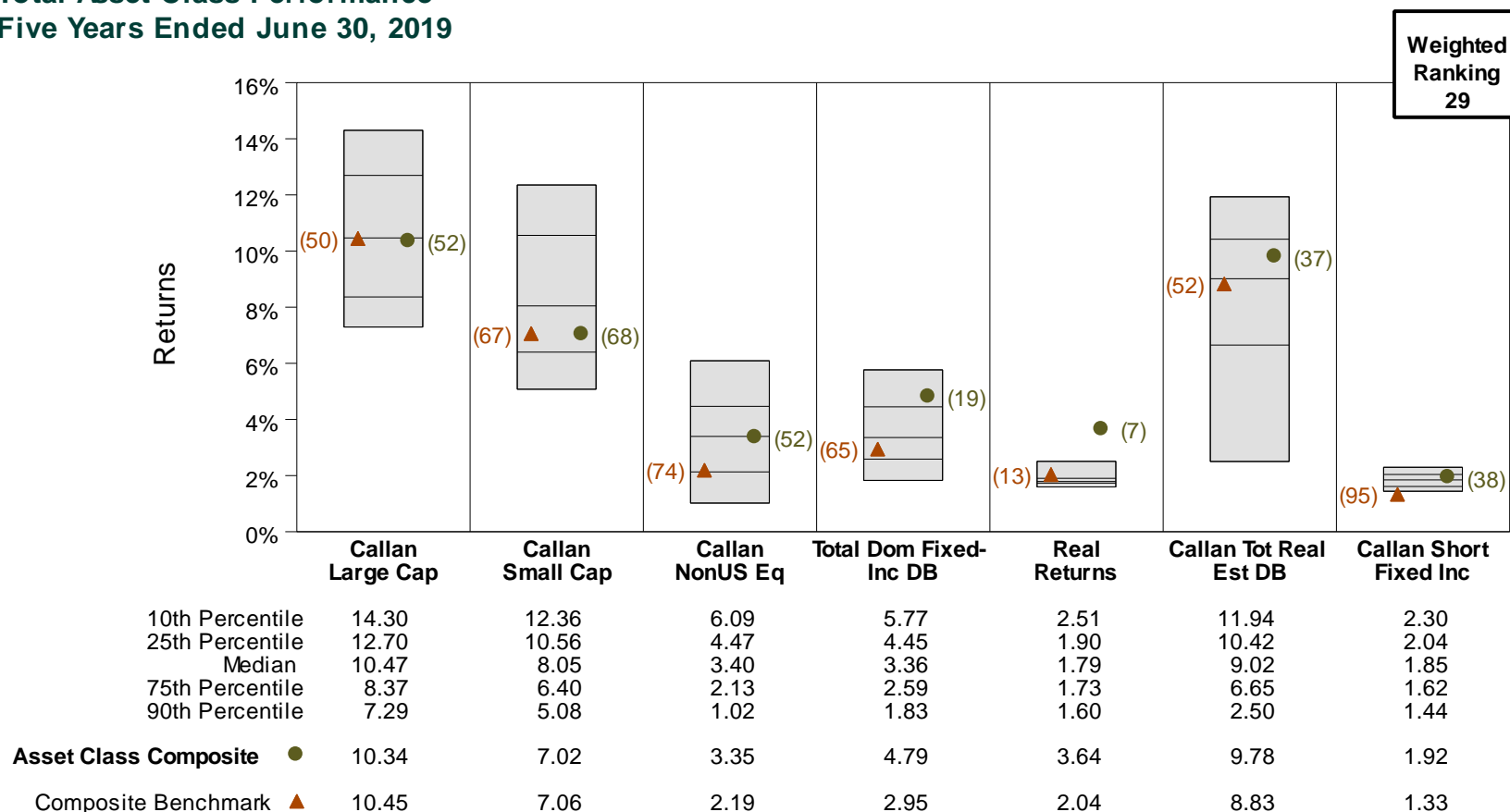


- Domestic and short-duration fixed income both ranked above median over the trailing year. These were also the only two asset classes to outpace their respective benchmarks over the period.

Asset Class Composite Results

Consolidated Insurance Trust Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
Five Years Ended June 30, 2019



- All asset classes, with the exception of large and small cap equities, outperformed their respective benchmarks over the past 5 years.
- Domestic fixed income, real assets, real estate, and short duration fixed income performed above the median over the trailing 5-year period.

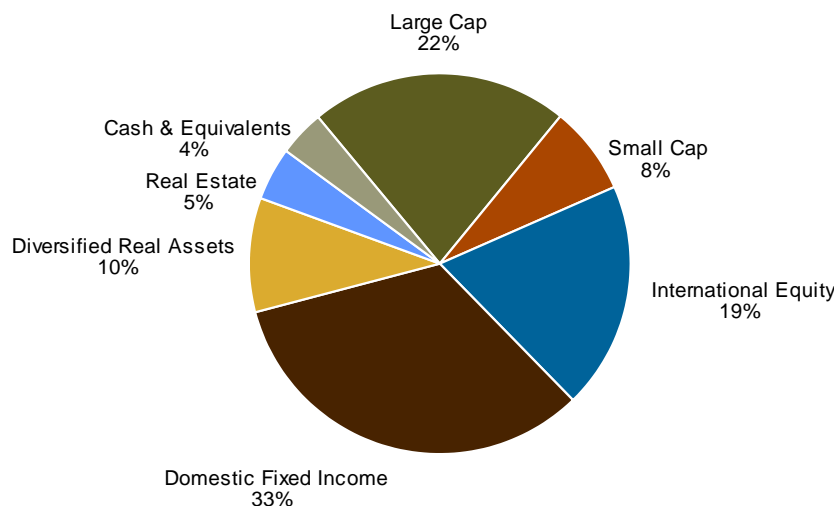
Callan

Legacy Fund Quarterly Review

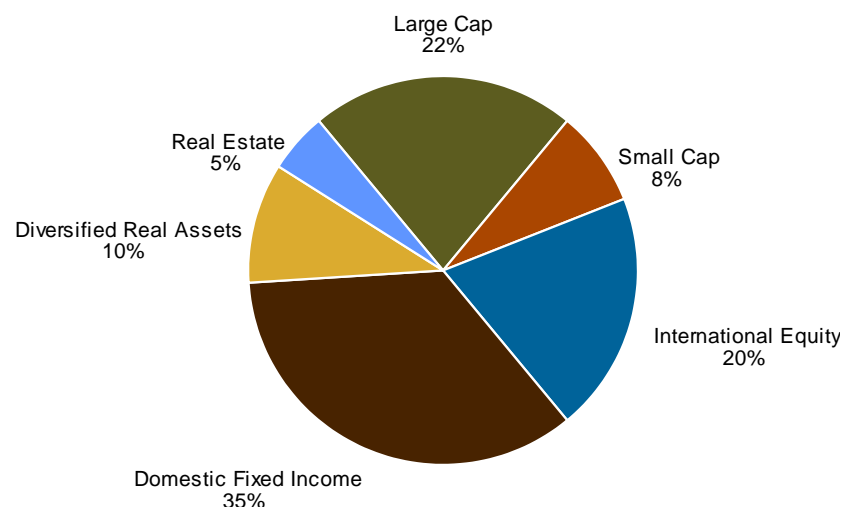
Legacy Fund Allocation

As of June 30, 2019

Actual Asset Allocation



Target Asset Allocation

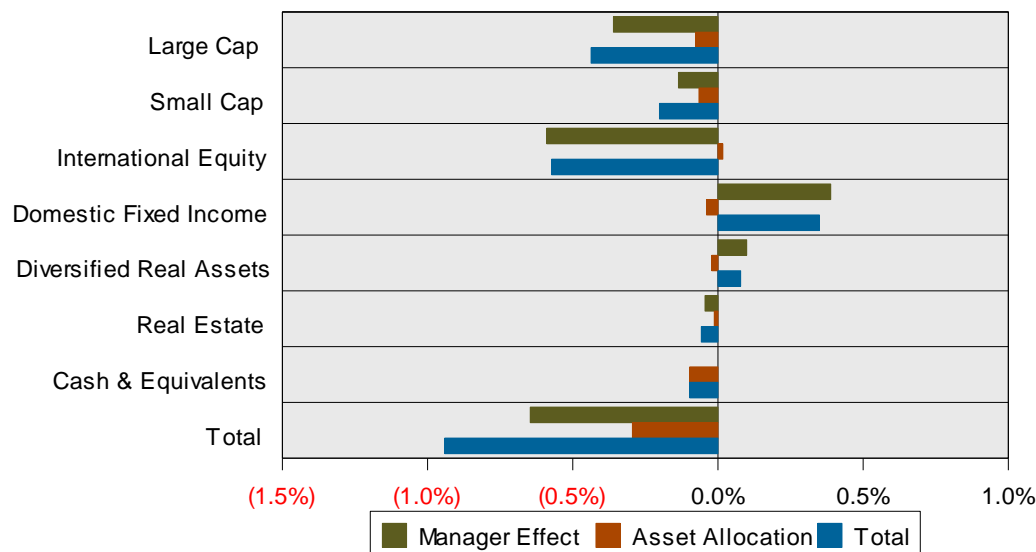


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	1,442,421	21.9%	22.0%	(0.1%)	(5,346)
Small Cap	495,696	7.5%	8.0%	(0.5%)	(30,765)
International Equity	1,272,823	19.3%	20.0%	(0.7%)	(43,329)
Domestic Fixed Income	2,181,598	33.2%	35.0%	(1.8%)	(121,668)
Diversified Real Assets	635,160	9.7%	10.0%	(0.3%)	(22,916)
Real Estate	297,218	4.5%	5.0%	(0.5%)	(31,820)
Cash & Equivalents	255,844	3.9%	0.0%	3.9%	255,844
Total	6,580,760	100.0%	100.0%		

Legacy Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 06/30/2019

Return Type	Return (%)
Gross	5.18%
Net of fees	4.98%
Target	6.12%
Net added	-1.14%

One Year Relative Attribution Effects

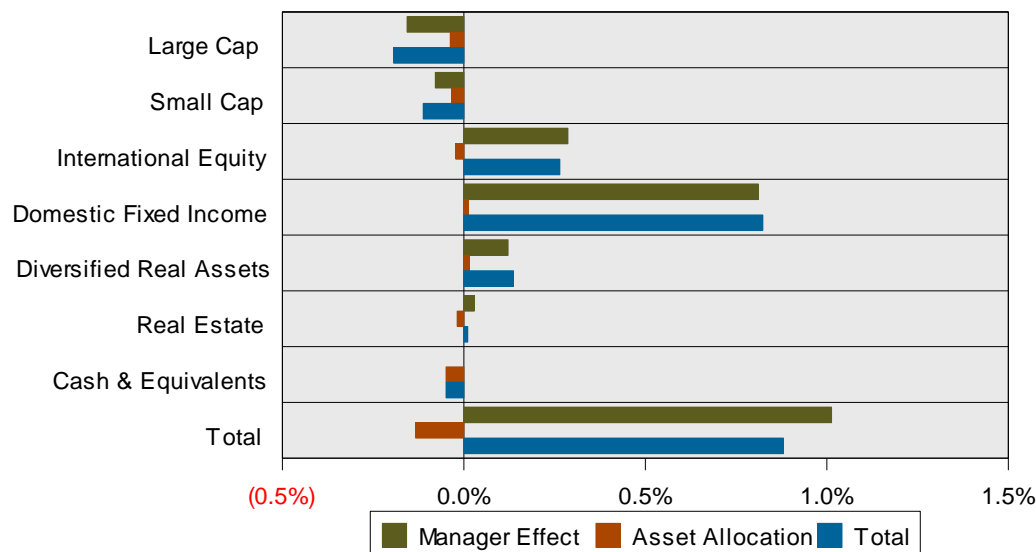
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	8.30%	10.02%	(0.36%)	(0.08%)	(0.44%)
Small Cap	8%	8%	(4.83%)	(3.31%)	(0.14%)	(0.07%)	(0.20%)
International Equity	19%	20%	(1.73%)	1.29%	(0.59%)	0.02%	(0.57%)
Domestic Fixed Income	35%	35%	9.11%	7.87%	0.39%	(0.04%)	0.35%
Diversified Real Assets	10%	10%	5.33%	4.28%	0.10%	(0.02%)	0.08%
Real Estate	5%	5%	5.57%	6.51%	(0.04%)	(0.01%)	(0.06%)
Cash & Equivalents	1%	0%	2.16%	2.16%	0.00%	(0.10%)	(0.10%)

Total **5.18% = 6.12% + (0.65%) + (0.29%)** **(0.94%)**

Legacy Performance and Attribution

As of June 30, 2019

Three Year Annualized Relative Attribution Effects



Returns for 3 Year Ended 06/30/2019

Return Type	Return (%)
Gross	8.38%
Net of fees	8.15%
Target	7.50%
Net added	0.65%

Three Year Annualized Relative Attribution Effects

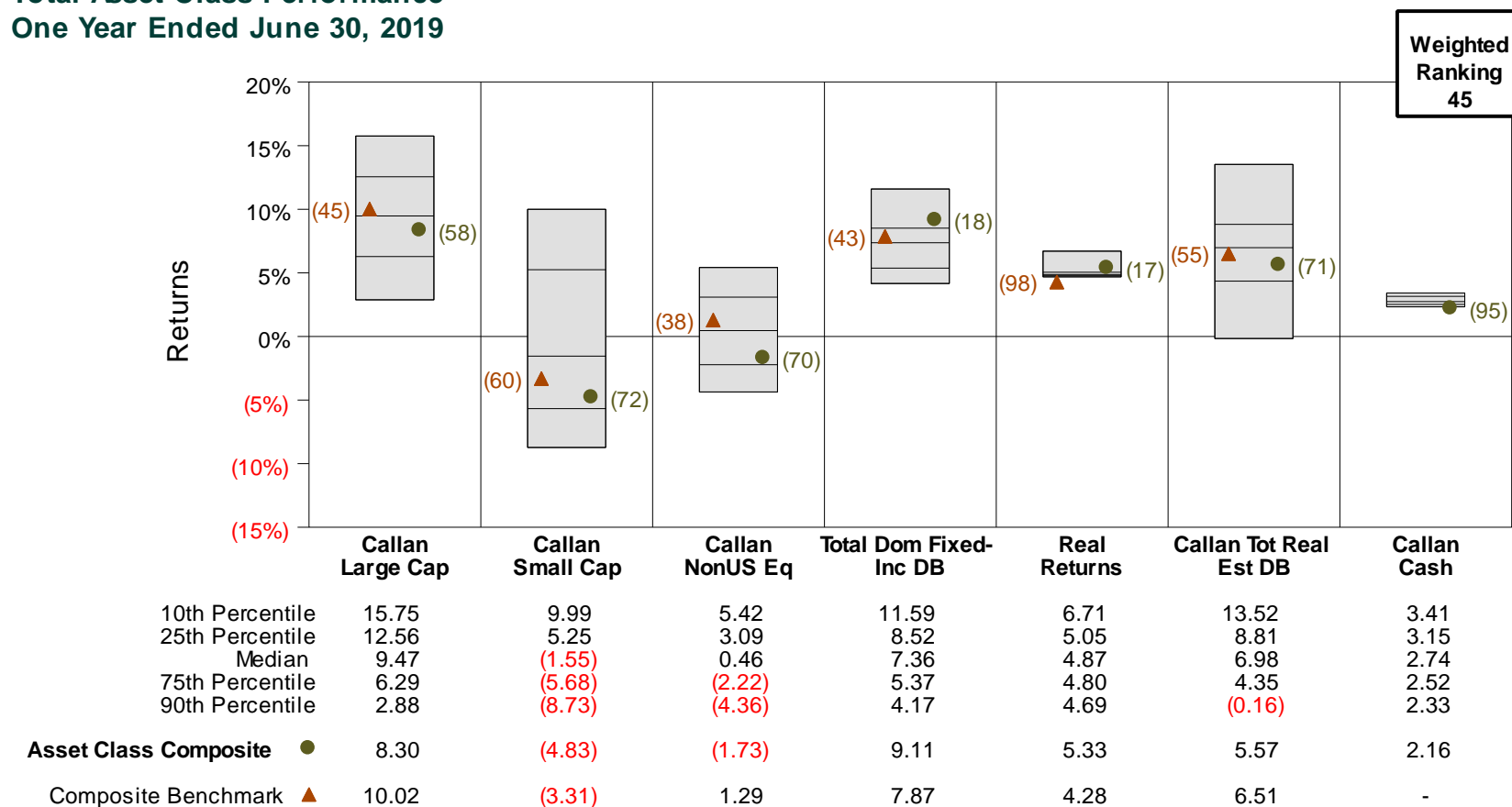
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	13.40%	14.15%	(0.16%)	(0.04%)	(0.19%)
Small Cap	8%	8%	11.29%	12.30%	(0.08%)	(0.03%)	(0.11%)
International Equity	20%	20%	10.37%	9.01%	0.29%	(0.02%)	0.26%
Domestic Fixed Income	35%	35%	4.62%	2.31%	0.81%	0.01%	0.82%
Diversified Real Assets	10%	10%	4.11%	2.86%	0.12%	0.02%	0.14%
Real Estate	5%	5%	7.39%	6.89%	0.03%	(0.02%)	0.01%
Cash & Equivalents	1%	0%	1.27%	1.27%	0.00%	(0.05%)	(0.05%)

Total **8.38% = 7.50% + 1.01% + (0.13%)** **0.88%**

Asset Class Composite Results

Legacy Fund Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
One Year Ended June 30, 2019

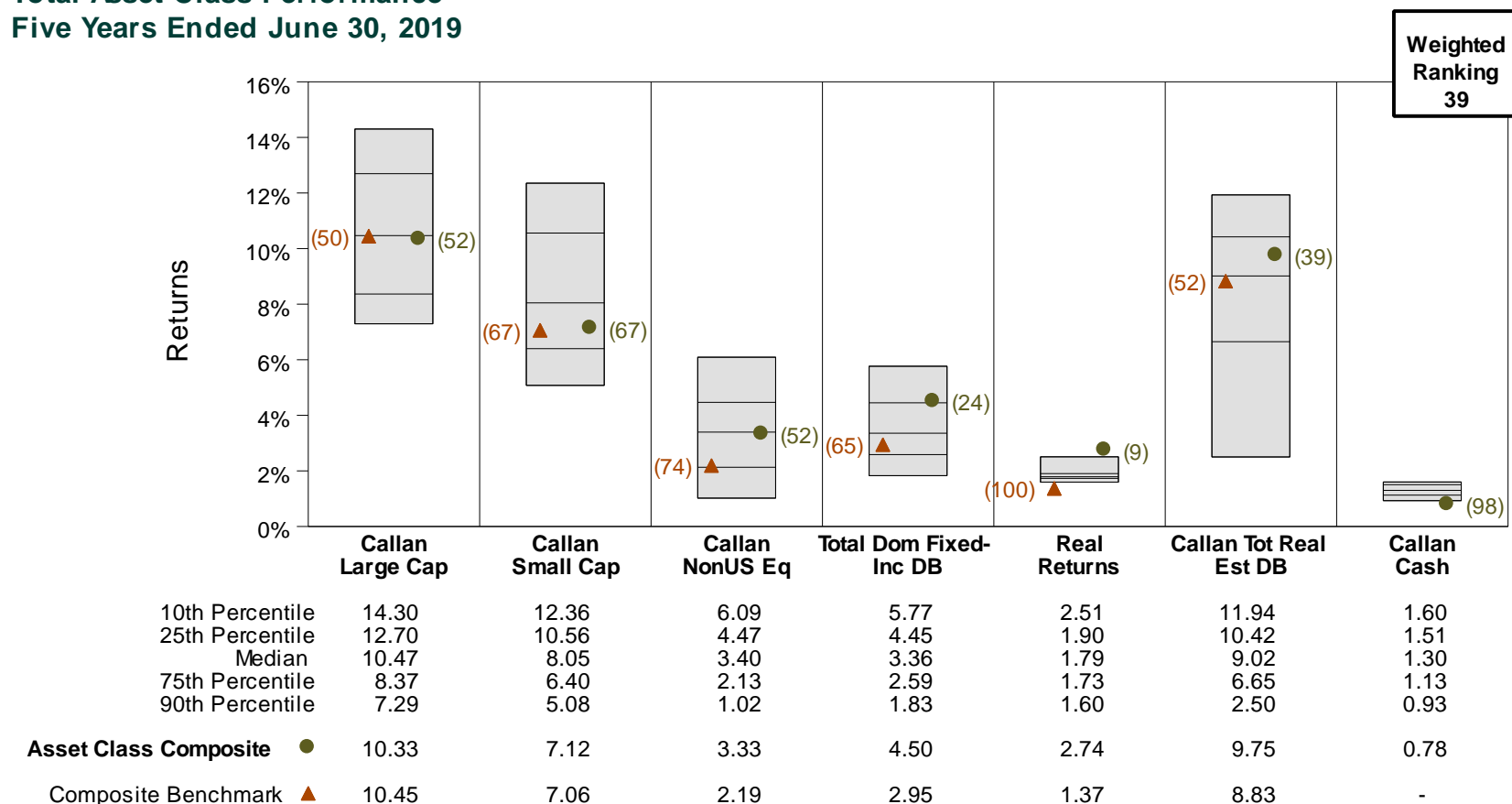


- Domestic fixed income and real returns performed in the top quartile over the trailing year. These were also the only asset classes to outperform their respective benchmarks during the period.

Asset Class Composite Results

Legacy Fund Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
Five Years Ended June 30, 2019



- Domestic fixed income, real assets, and real estate all performed above median over the trailing five years.
- All asset classes with the exception of large cap equities outperformed their respective benchmarks over the period.

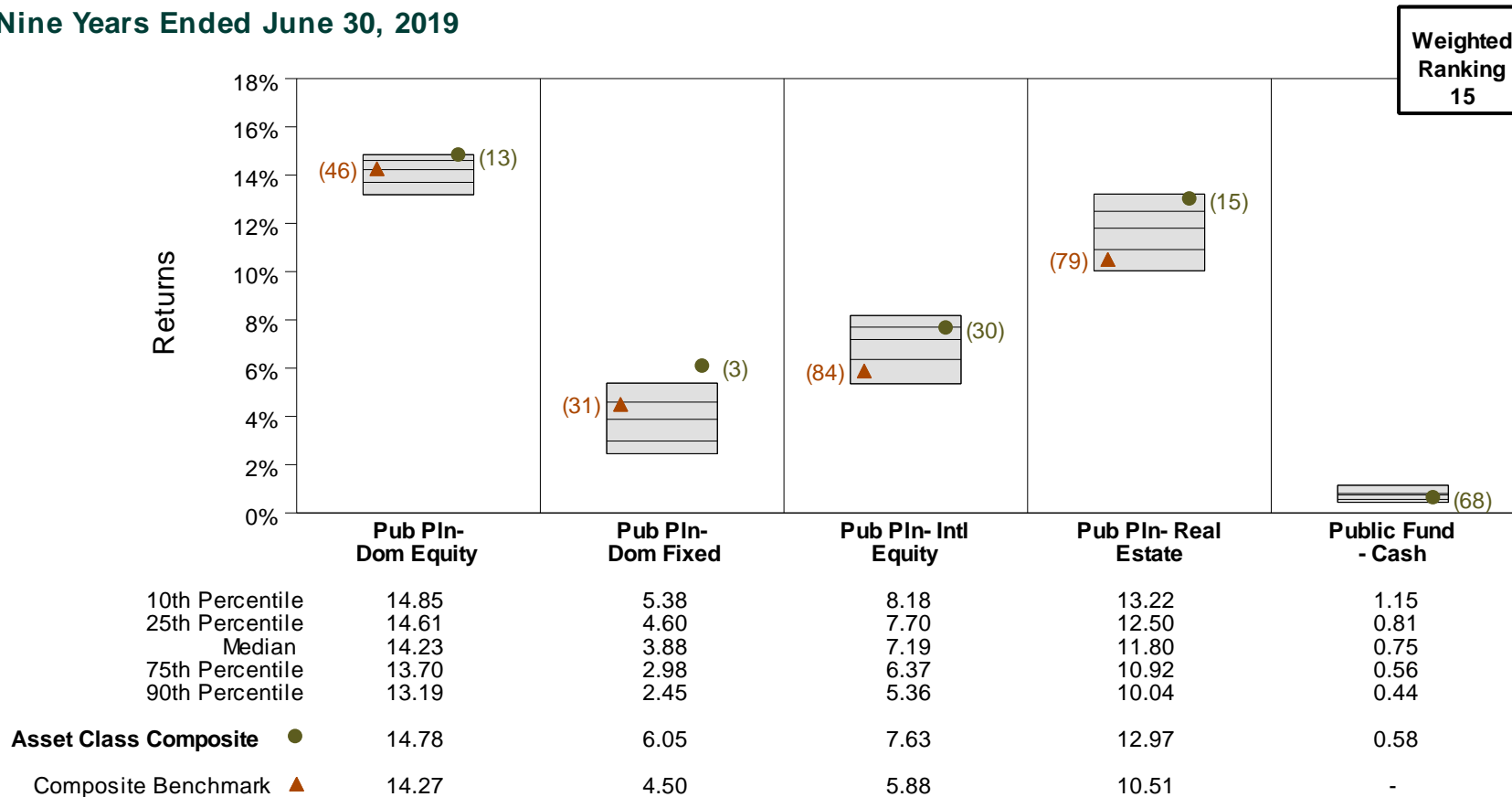
Appendix A

Consolidated Asset Class Rankings

Asset Class Composite Results

PERS' Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance
Nine Years Ended June 30, 2019

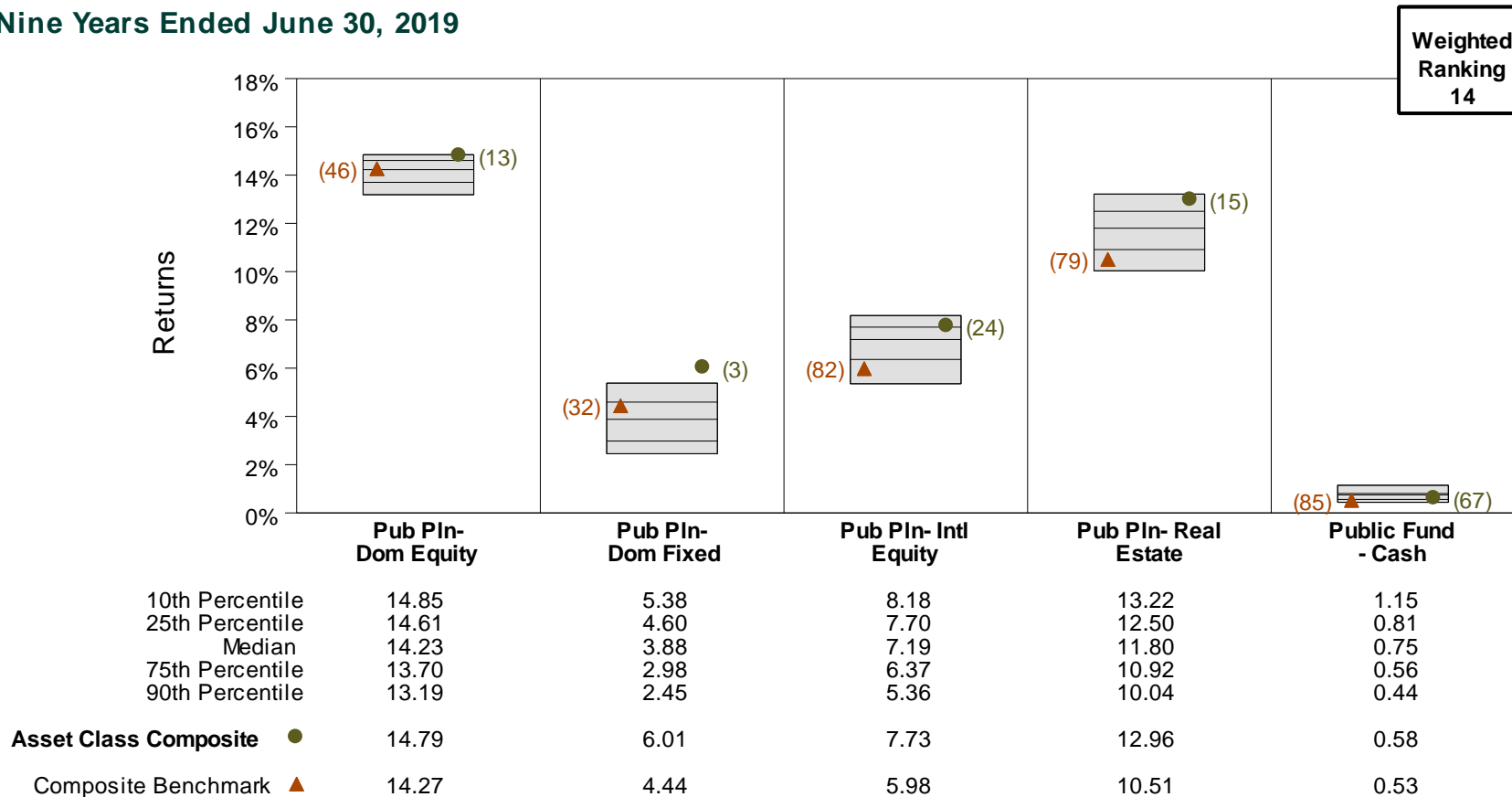


- All asset classes have outperformed their benchmarks and performed above the median of peer public funds over the last 9 years.
- Domestic equity, fixed income, and real estate have ranked in the top quartile over the period.

Asset Class Composite Results

TFFR's Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance
Nine Years Ended June 30, 2019

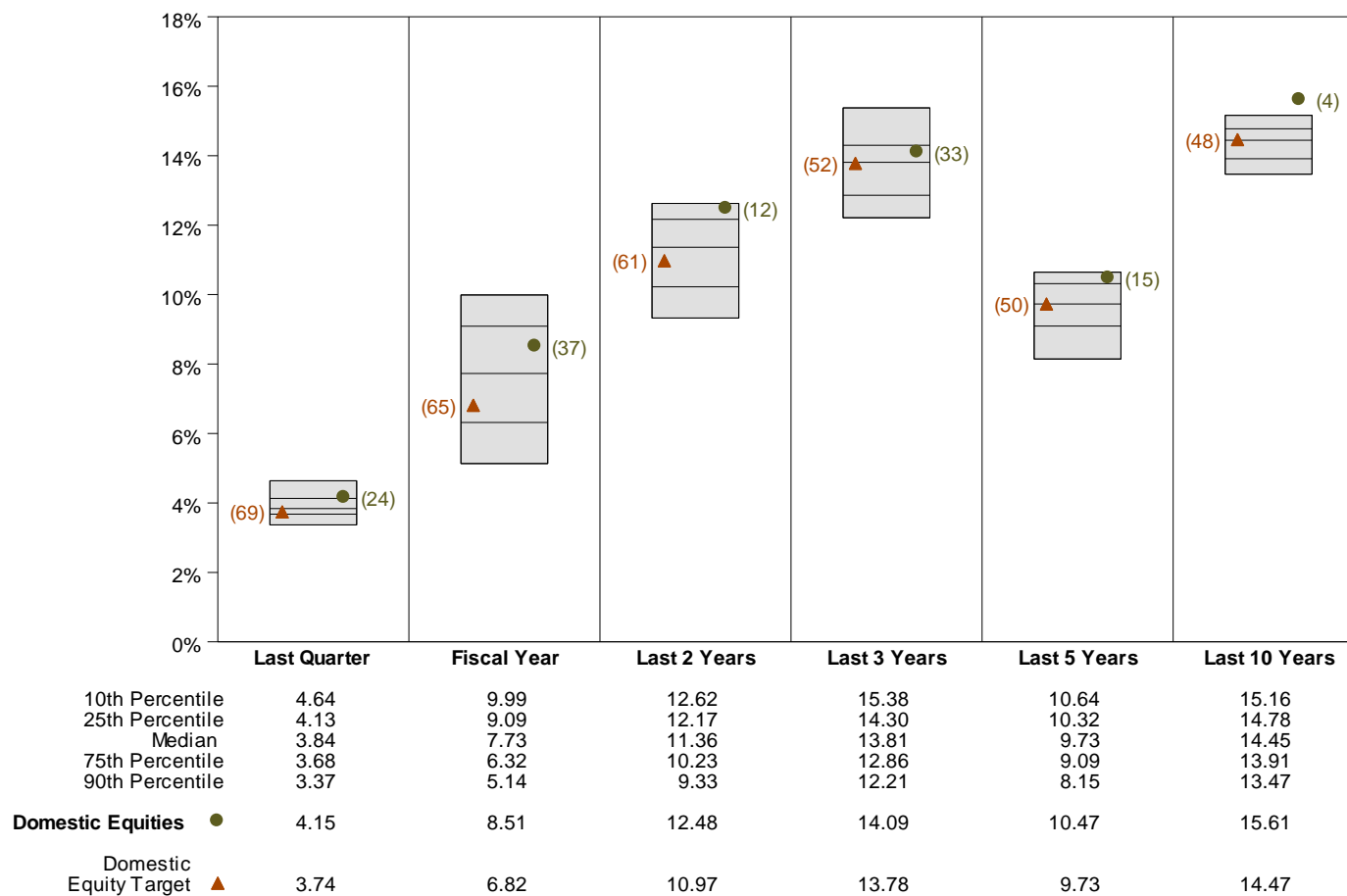


- All asset classes have outperformed their benchmarks over the last 9 years.
- With the exception of cash, all asset classes have ranked in the top quartile over the period.

Consolidated Pension Trust: Domestic Equity

As of June 30, 2019

Performance vs Public Fund - Domestic Equity (Gross)

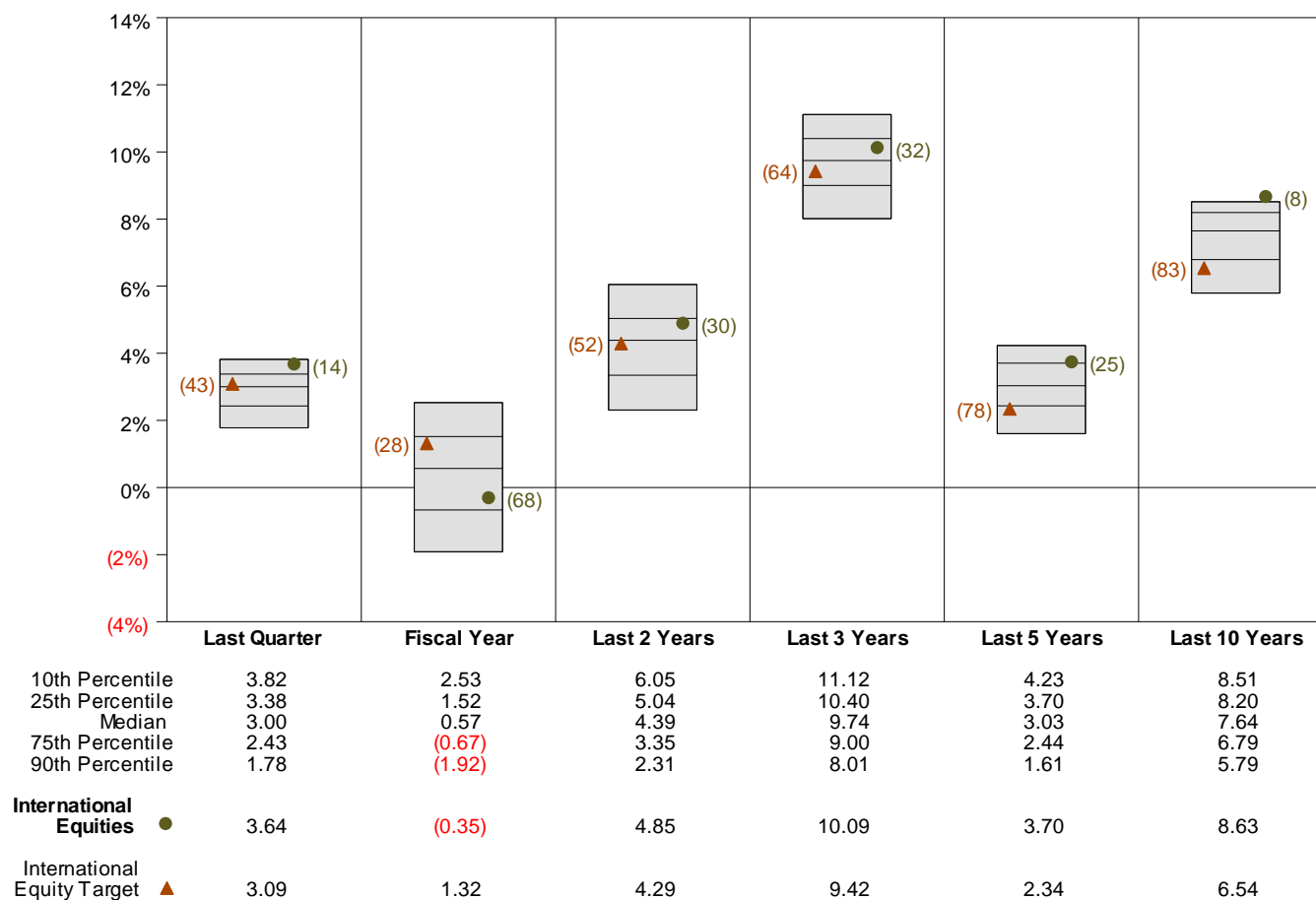


- The domestic equity composite outperformed its target and the median in all observed periods.
- Over the trailing 10-year period the composite ranks in the top decile.

Consolidated Pension Trust: International Equity

As of June 30, 2019

Performance vs Public Fund - International Equity (Gross)

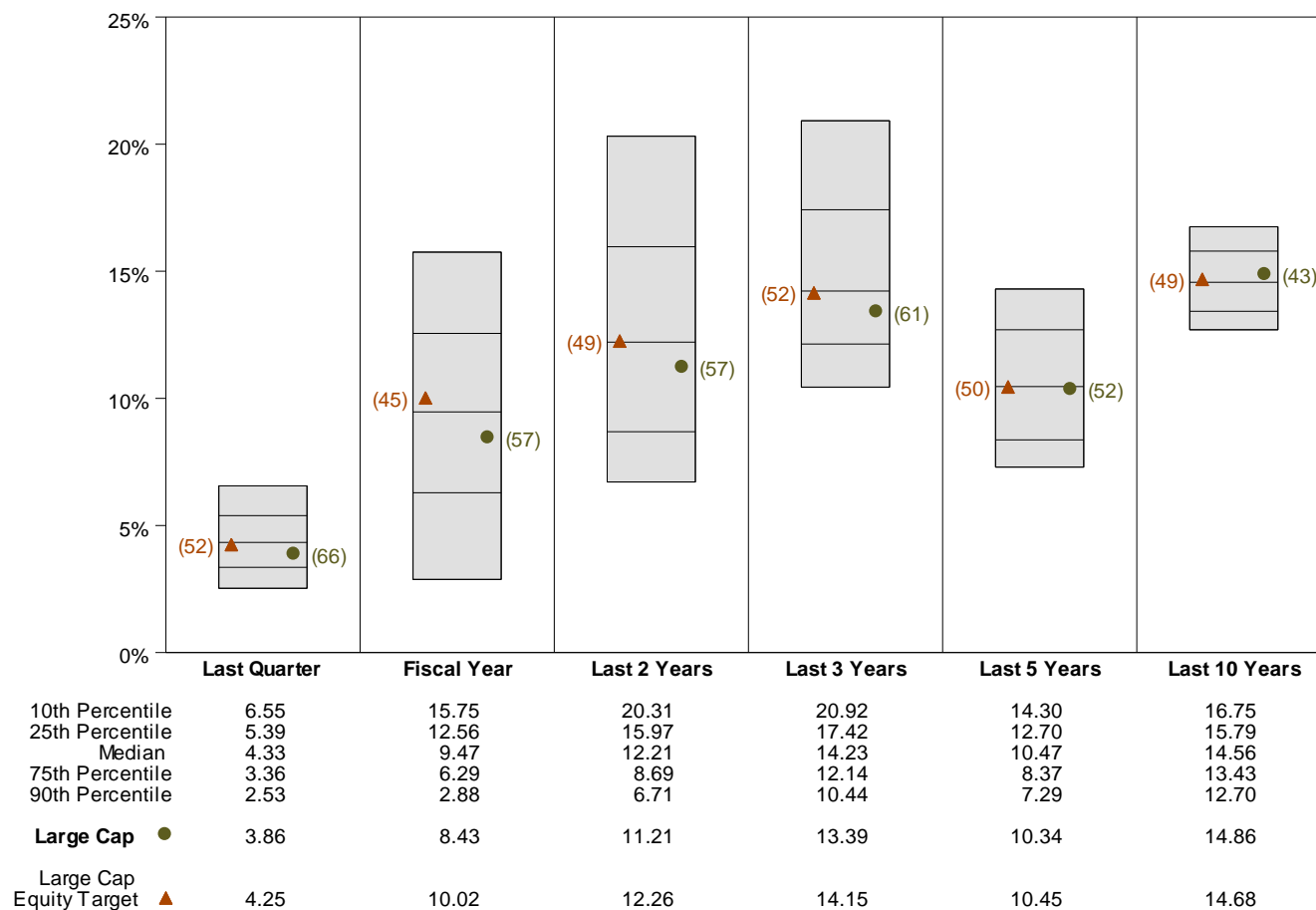


- Following a strong first quarter, the international equity portfolio continued to appreciate in Q2. However, a challenging conclusion to 2018 continues to mire the trailing 12-month figure.
- Compared to peers, the portfolio has performed relatively well, with the exception of the trailing one-year period.

Consolidated Insurance Trust: Large Cap Equity

As of June 30, 2019

Performance vs Callan Large Capitalization (Gross)

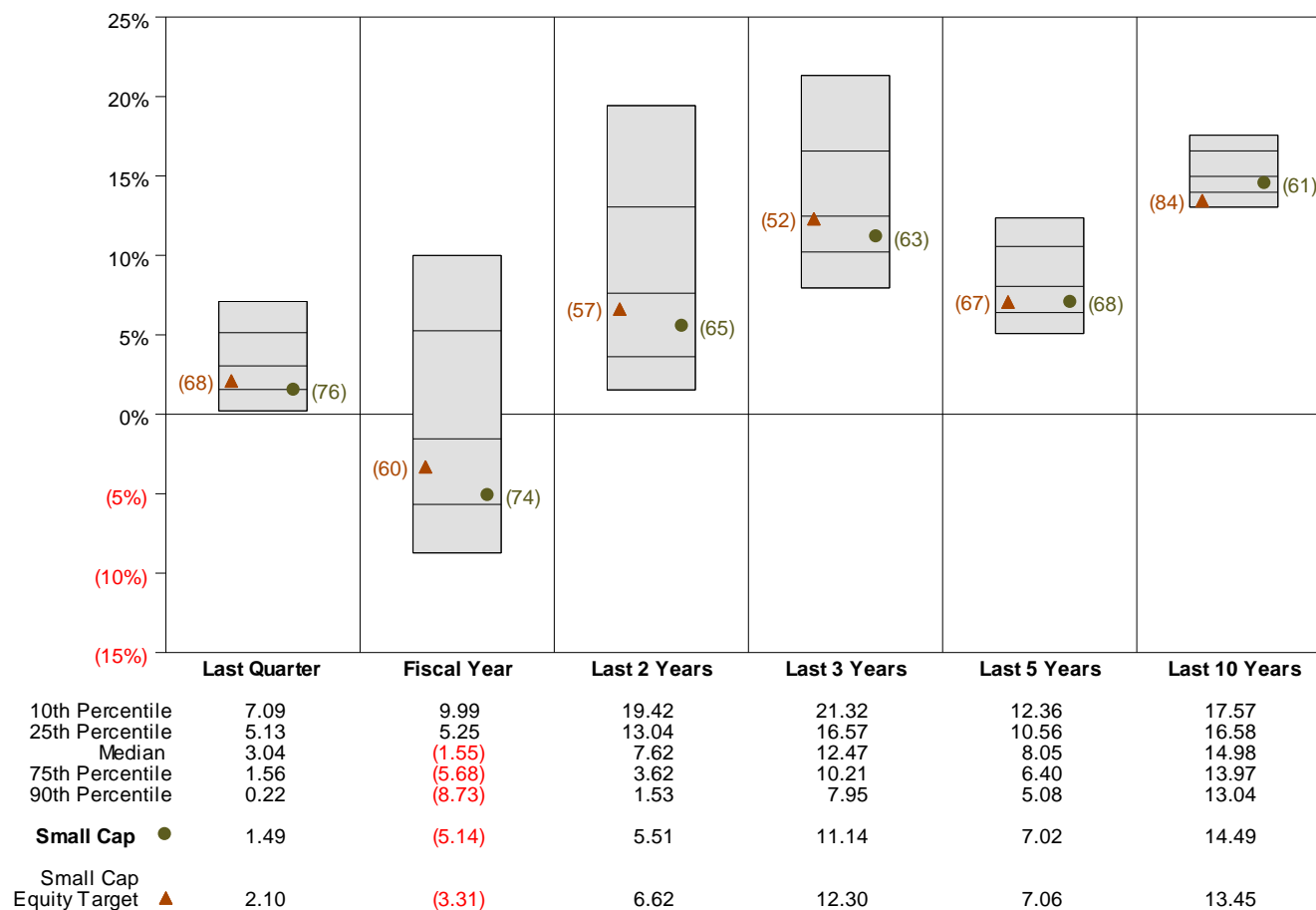


- The large cap equity portfolio underperformed the target over shorter-term periods, but edged out the target over the 10-year period.
- The portfolio only outperformed the median over the trailing 10 years.

Consolidated Insurance Trust: Small Cap Equity

As of June 30, 2019

Performance vs Callan Small Capitalization (Gross)

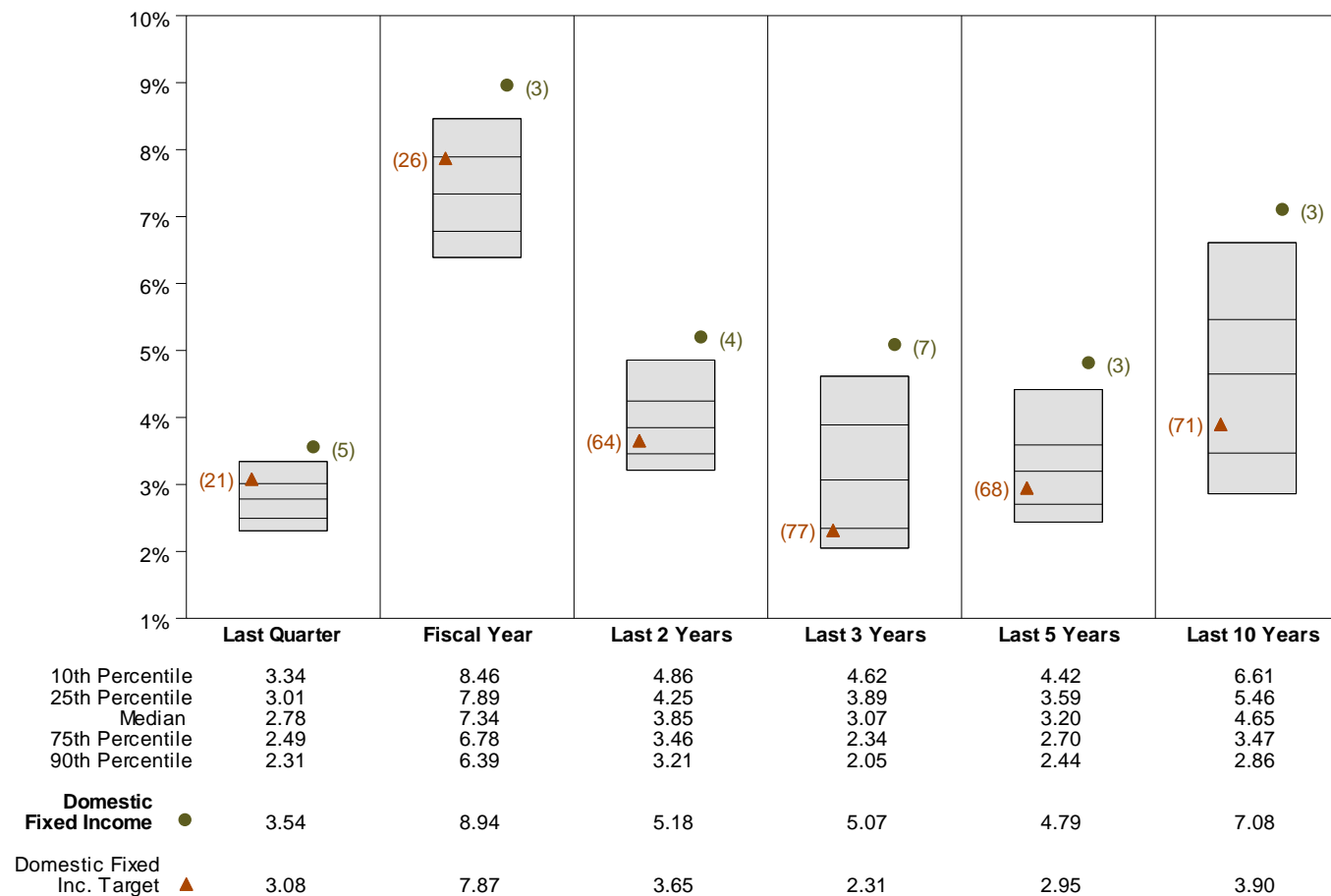


- Similar to the Large Cap Equity portfolio, the small cap composite underperformed the benchmarks in periods five years and shorter, but outperformed over the 10-year period.
- The asset class performed below the peer median during all measured periods.

Consolidated Insurance Trust: Domestic Fixed Income

As of June 30, 2019

Performance vs Public Fund - Domestic Fixed (Gross)



- The domestic fixed income asset class outperformed the target over all observed periods.
- The asset class ranked in the top decile for all observed periods.

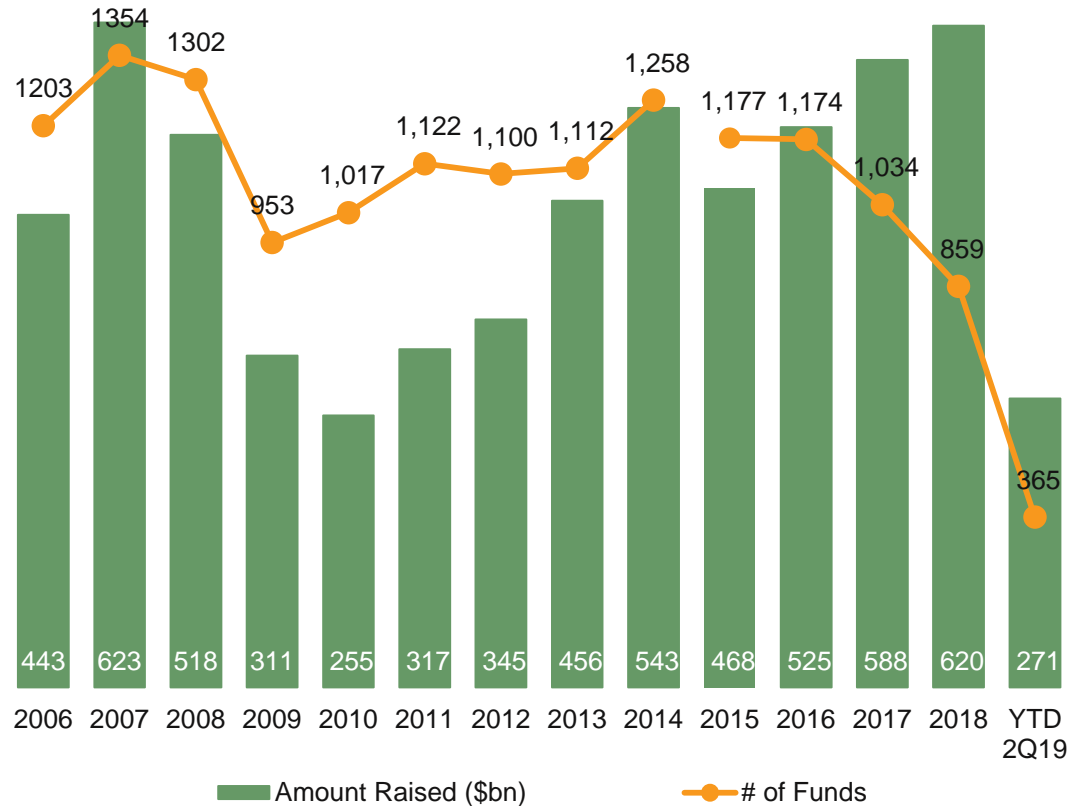
Appendix B

Private Equity Market Trends

Global Fundraising

- Capital raised in 2018 equaled amount raised in 2007—a sign that the market is peaking or has peaked.
- 2018 fundraising is a much more concentrated market with fewer, but much larger, funds.
- It is still too early to determine where 2019 fundraising will end up.
- Average fund size in 2018 was over \$700 million, a large jump from almost \$570 million in 2017.

Funds Holding Final Closes by Year



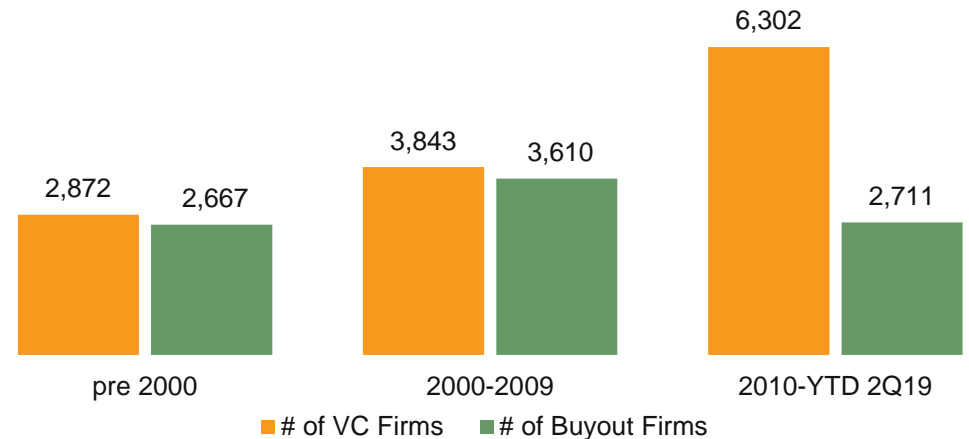
Source: Pitchbook, includes private equity and private debt

Growth of the Venture Capital Industry

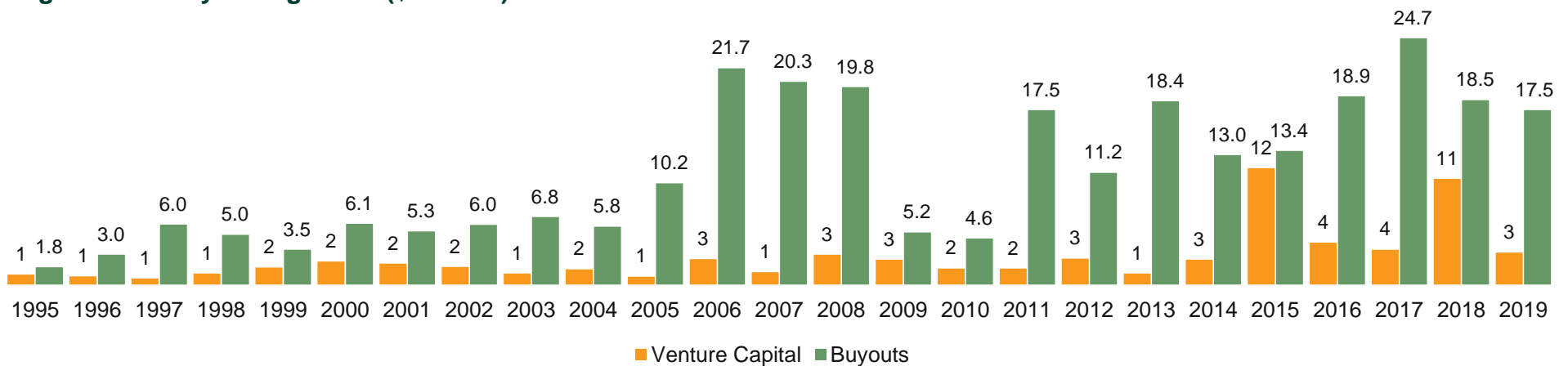
New Venture Firms Skyrocketing

- Managers looking to share in some of the industry's recent successes.
- Industry remains fragmented; may see consolidation in the near future.
- Size of VC funds has also increased, with some funds reaching double digits and nearing size of buyout funds.
- Industry becoming more capital intensive, especially as companies stay private longer
- VC firms becoming more institutional with larger teams and multiple products

Number of Venture Capital Firms Founded



Largest Funds by Vintage Year (\$billions)



Source: Pitchbook

Private Equity Dry Powder

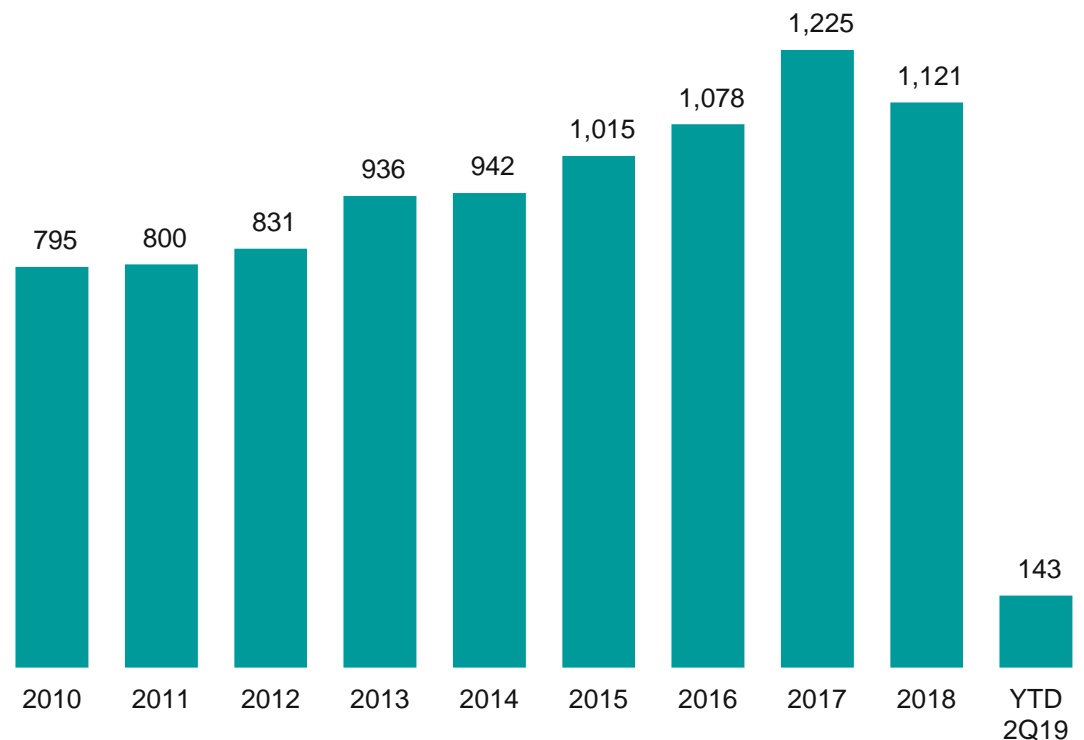
Dry powder peaked in 2017 at over \$1.2 trillion, while 2018 saw it drop, nearing 2016 levels.

- Difficult to determine if start of a downward trend; indicates normalization after 2017's highpoint.
- Too early to tell where 2019 will end up.

On a longer-term basis, dry powder still significantly higher than where it was 10 years ago.

- Private equity managers are raising larger and larger funds, leading to increased amounts of capital available to deploy.

Dry Powder (\$billions)
Cumulative as of Year End



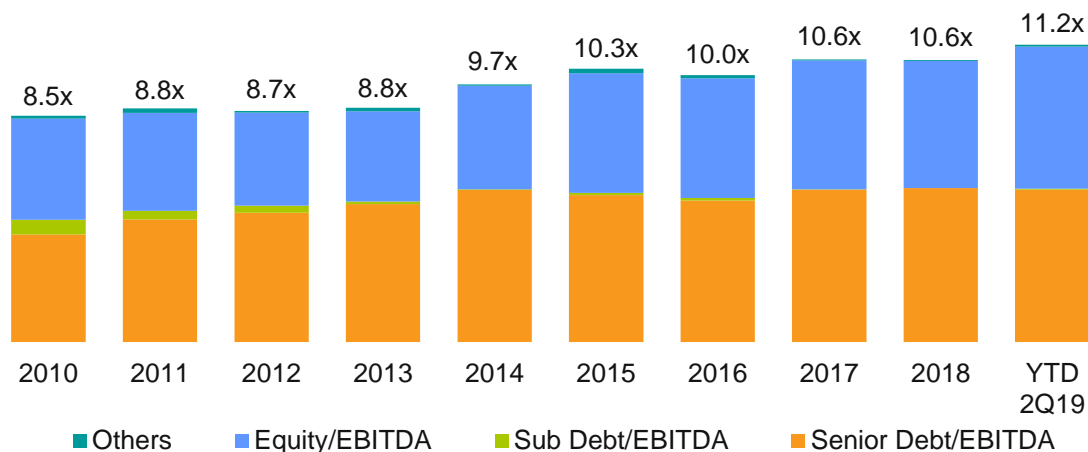
Source: Pitchbook; global, includes private equity and private debt

Private Equity Company Valuations and Leverage

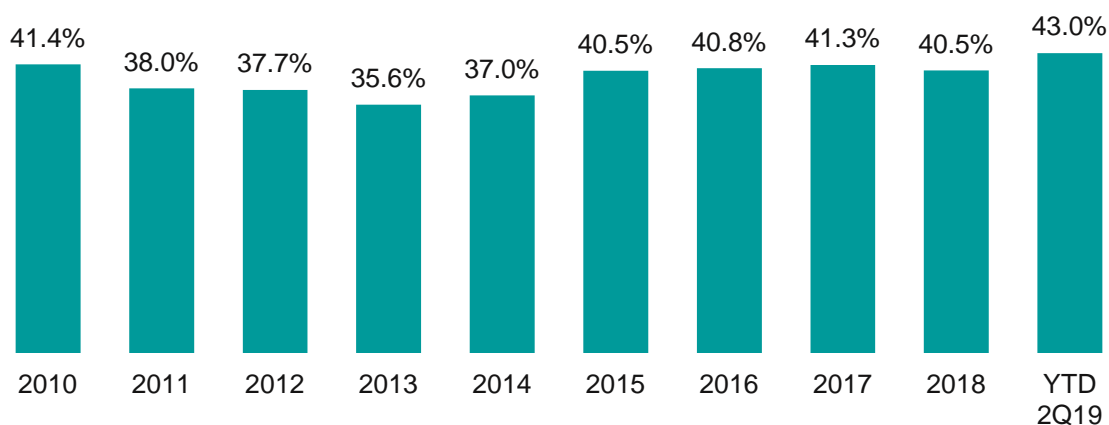
Record Purchase Prices

- 2019 purchase prices jumped to a record-setting 11.2x! It looks like double-digit purchase price multiples are here to stay, at least for now.
- This jump is primarily driven by middle-market buyout valuations, which are even higher at 12.6x for 2019 YTD and 13.7x for 2Q19.
- Such high multiples increase the execution risk of recent transactions, making it more difficult to achieve private equity-like returns.

U.S. Buyout Purchase Price Multiples



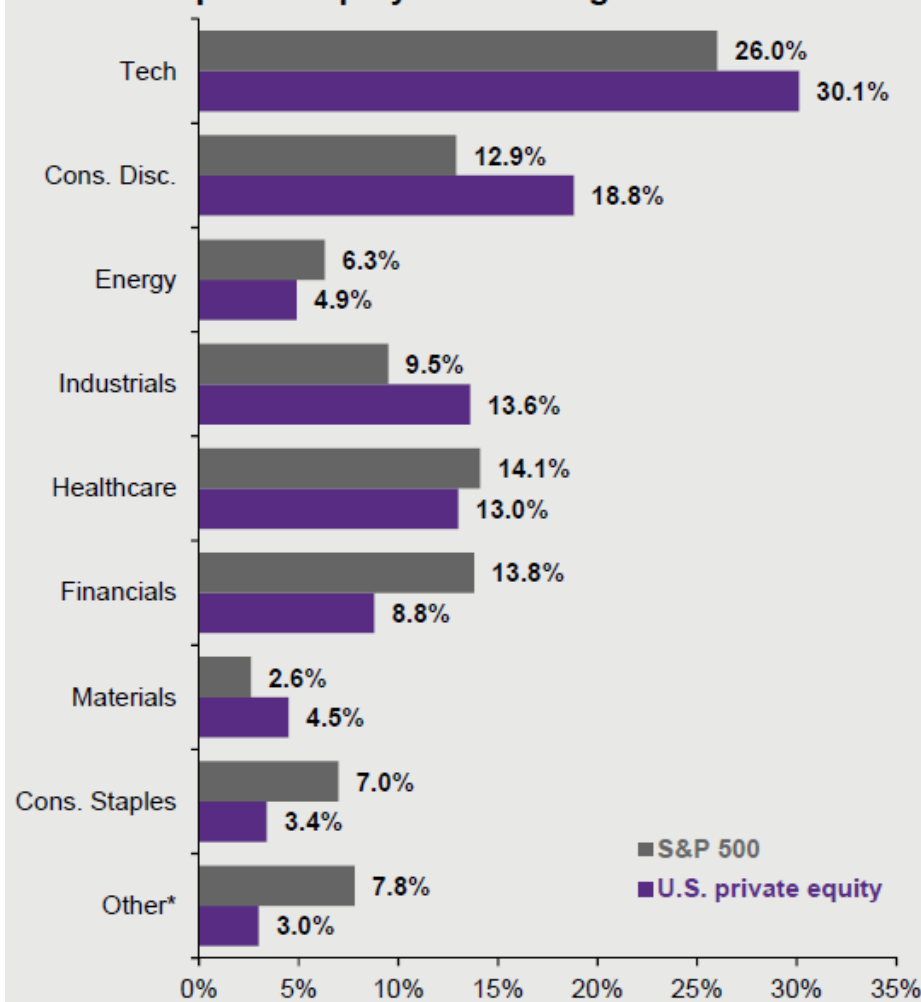
% Equity Contribution in U.S. Buyout Deals



Source: S&P LCD

Private Equity Sector Allocations

Private vs. public equity sector weights

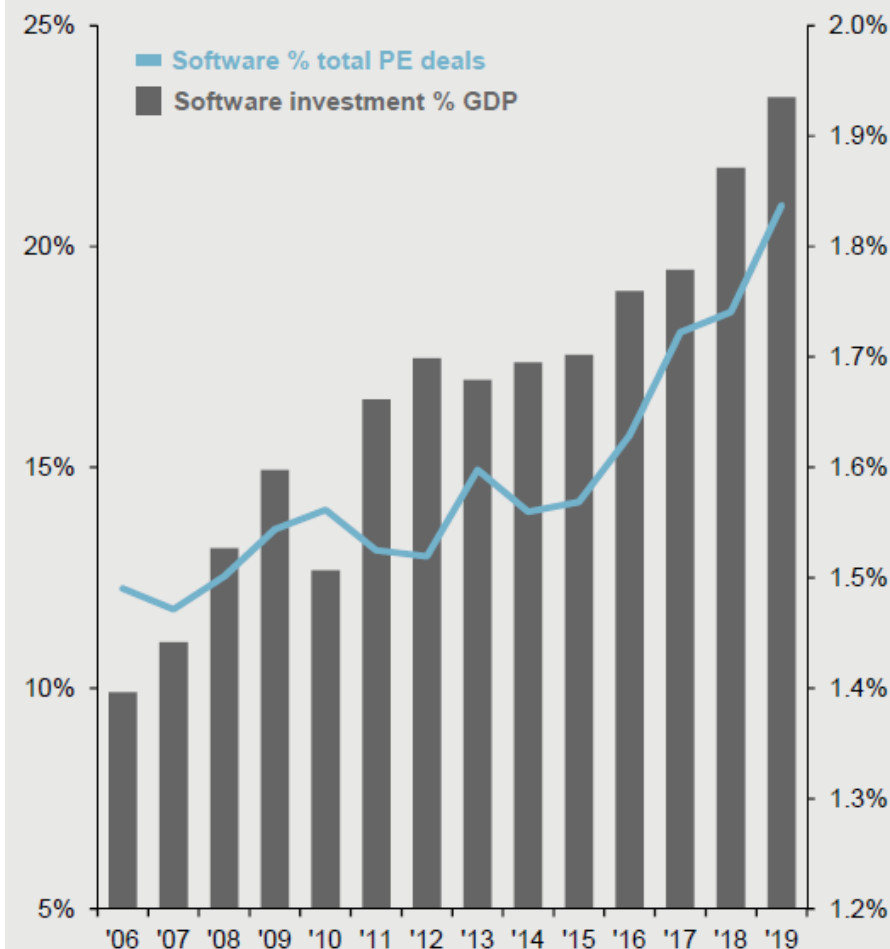


Sources: Cambridge Associates, World Federation of Exchanges, Standard & Poor's, J.P. Morgan Asset Management.

Data is based on availability as of August 31, 2019.

Software investment and private equity

% U.S. PE deals targeting software companies, software inv. % GDP

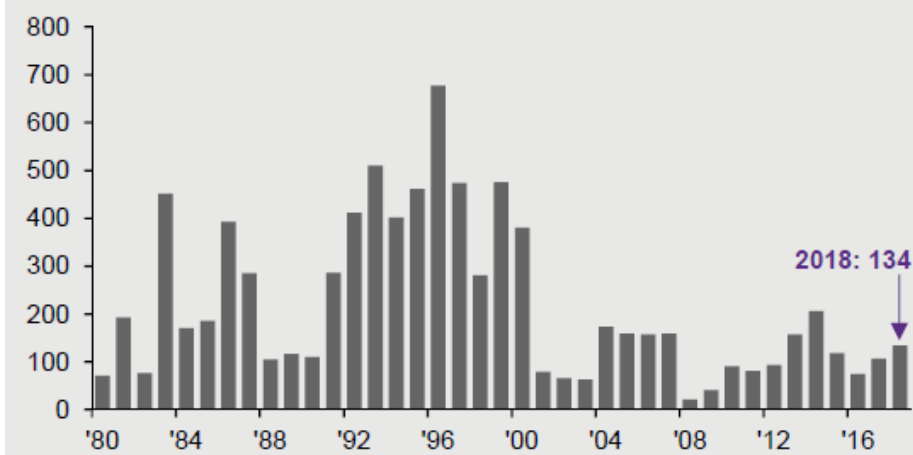


Sources: BEA, Pitchbook, FactSet, J.P. Morgan Asset Management.

Software investment is represented by nonresidential fixed investment in software.

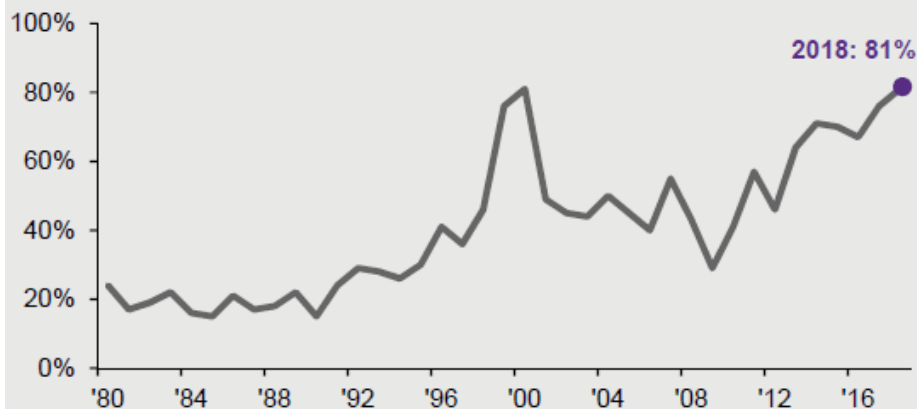
Private Equity Exit Trends

Number of IPOs



U.S. IPOs with negative earnings

Percent of all initial public offerings that year

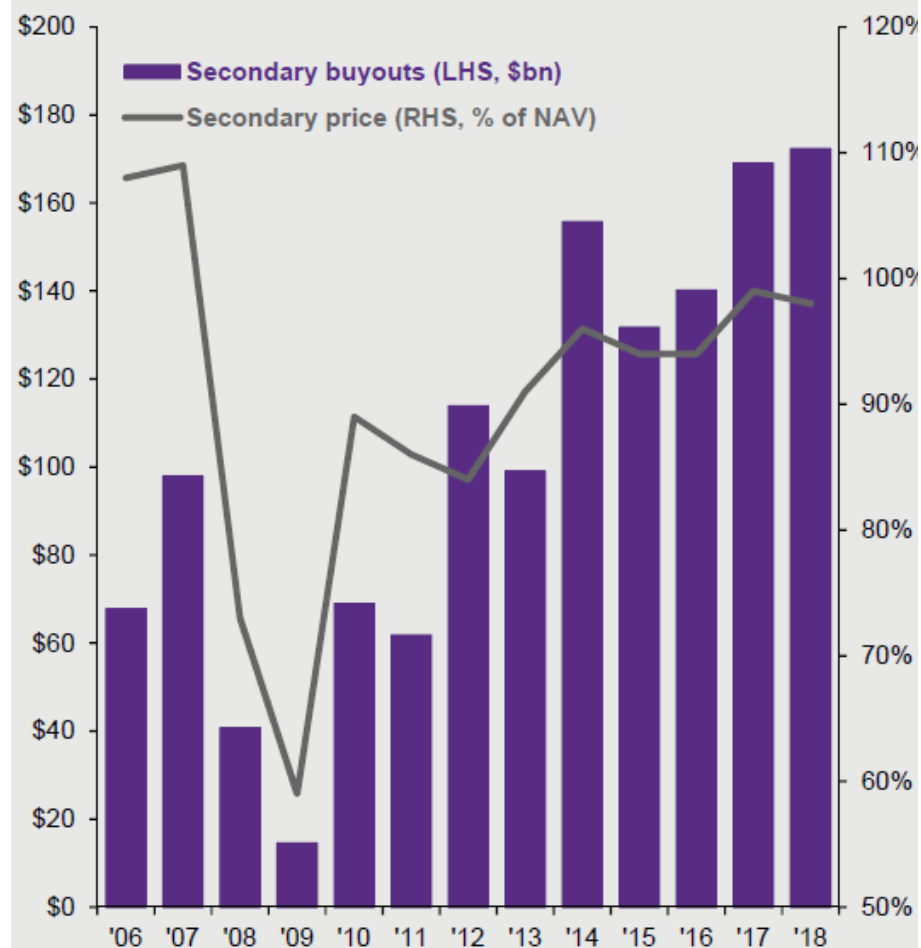


Sources: Pitchbook, Jay Ritter, University of Florida, J.P. Morgan Asset Management.

Data is based on availability as of August 31, 2019.

Secondary market transaction volume and pricing

Secondary buyouts by year, \$bn, percent of net asset value (NAV)

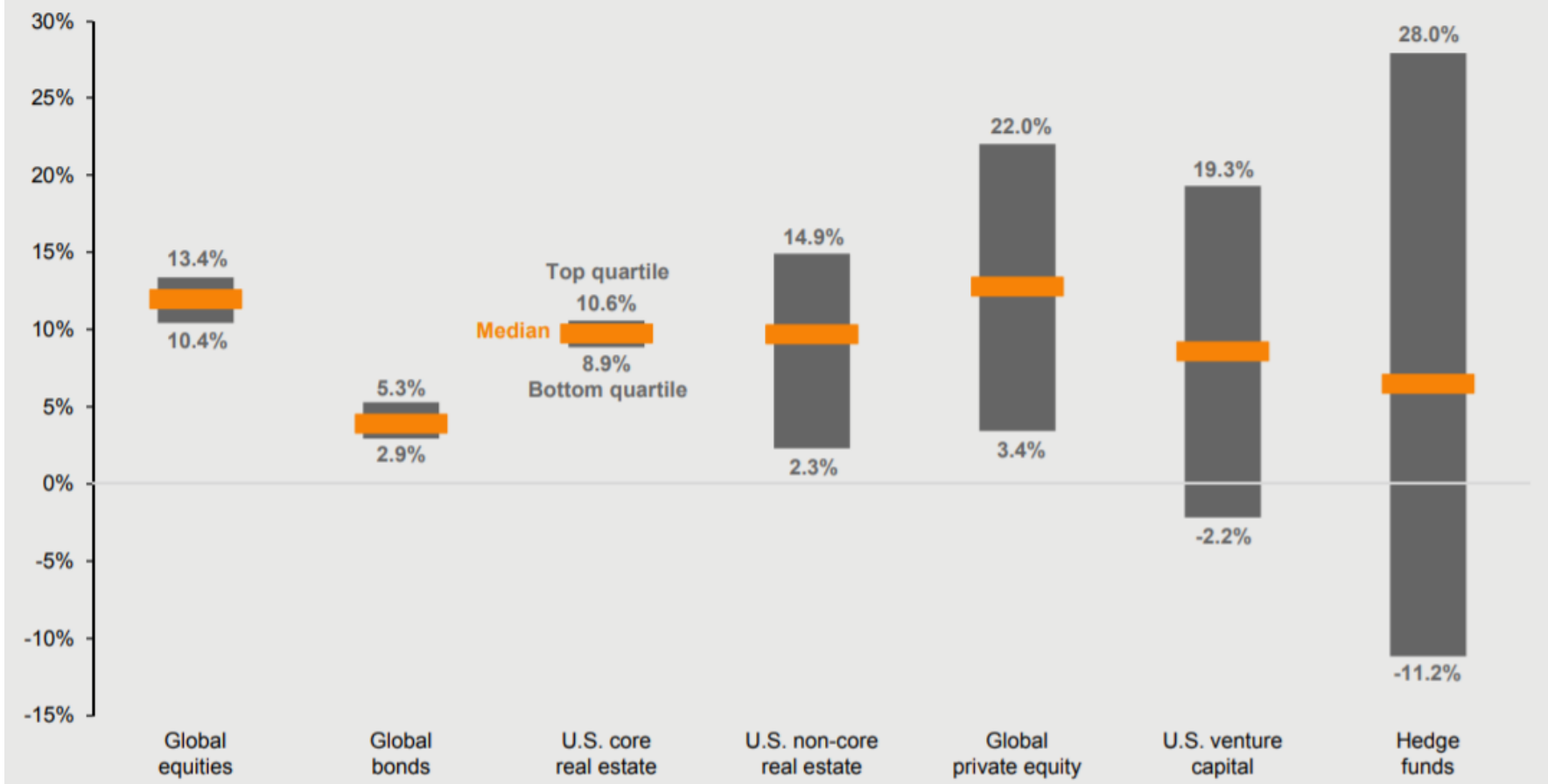


Sources: Preqin, Greenhill, London Business School, Pitchbook, J.P. Morgan Asset Management. *2018 data is for Q1 – Q3.

Alternative and Traditional Manager Dispersion

Private and public manager dispersion

Based on returns from 1Q 2009 – 1Q 2019



Sources: Lipper, NCREIF, Cambridge Associates, HFRI, J.P. Morgan Asset Management.

Global equities (large cap) and global bonds dispersion are based on the world large stock and world bond categories, respectively. Manager dispersion is based on: 1Q 2009 – 1Q 2019 annual returns for global equities, global bonds, U.S. core real estate and hedge funds. U.S. non-core real estate, U.S. private equity and U.S. venture capital are represented by the 10-year horizon internal rate of return (IRR) ending 1Q 2019.

Data is based on availability as of August 31, 2019.

June 30, 2019



North Dakota State Investment Board Pension Funds

**Investment Measurement Service
Quarterly Review**

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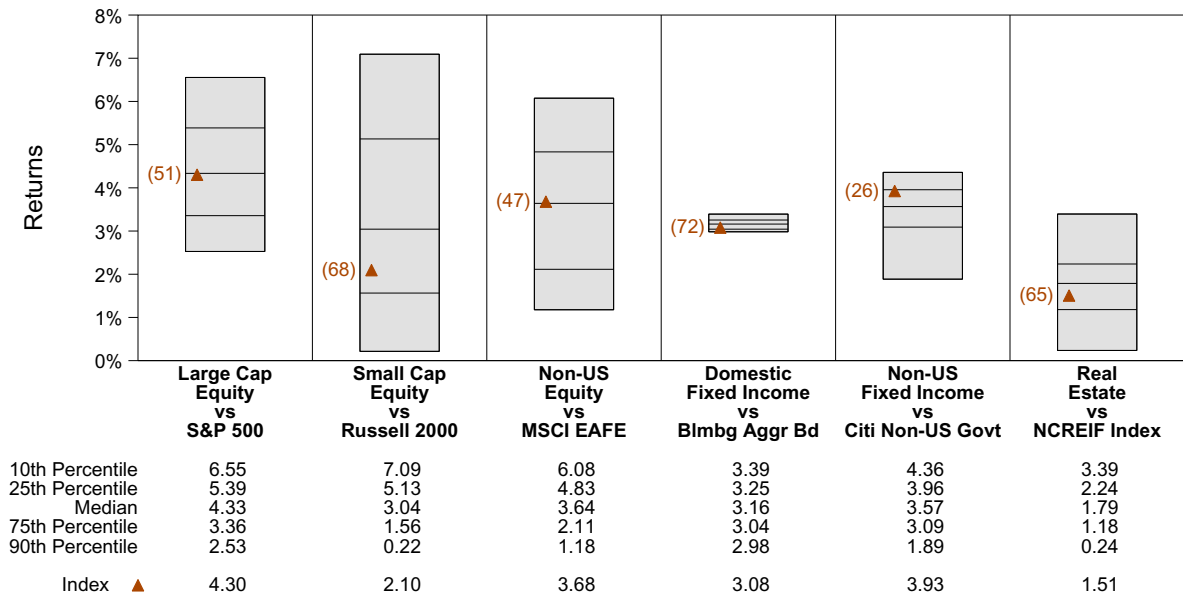
Market Overview

Active Management vs Index Returns

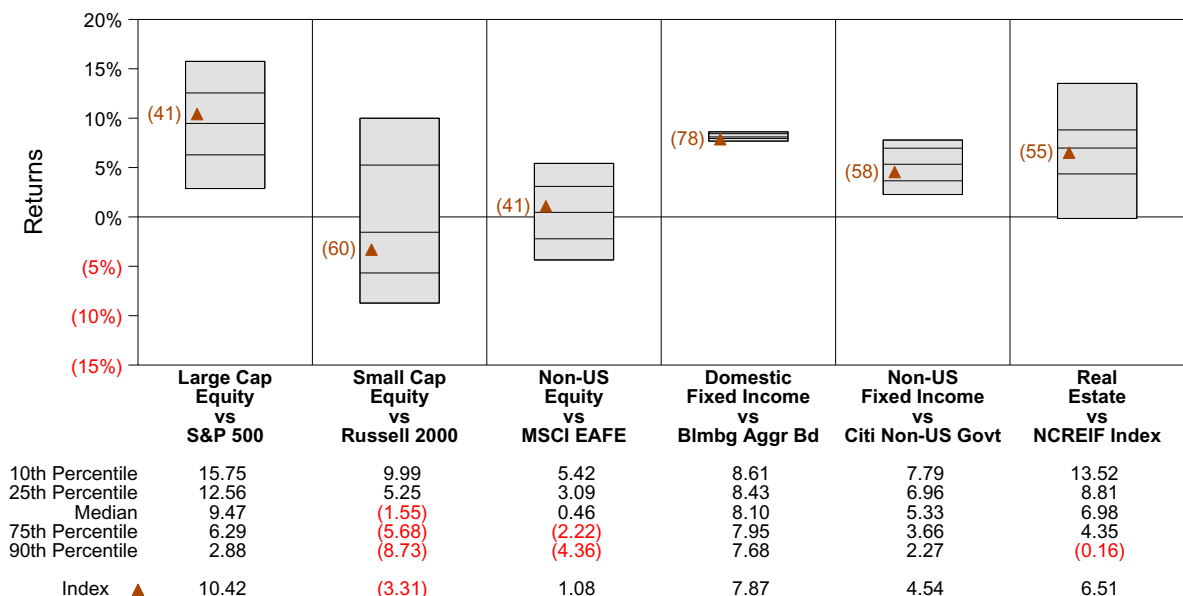
Market Overview

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

Range of Separate Account Manager Returns by Asset Class One Quarter Ended June 30, 2019



Range of Separate Account Manager Returns by Asset Class One Year Ended June 30, 2019



The Fed: 'A Mid-Cycle Adjustment to Policy'

ECONOMY

2 The economic news for the U.S. during the second quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, describing it as "a mid-cycle adjustment to policy."

Big Focus on Fed, Possible Correction

INSTITUTIONAL INVESTORS

4 Institutional investors, as measured by the Callan Total Fund Sponsor Database Group, gained 3.3% in the second quarter. That compares to the 4.0% increase generated by a benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.

U.S. Stocks Hit Highs; Global Gains Muted

EQUITY

6 U.S. equities neared record highs in the second quarter on expectations of easing from the Fed. Global equity markets were largely positive although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued.

Rally for Treasuries Lifts Sovereign Bonds

FIXED INCOME

8 The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Non-U.S. developed market sovereign bonds rose in tandem with the rally in Treasuries.

Real Estate Gains; Real Assets Fall

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index gained 1.5% during the second quarter. The NCREIF Open-End Diversified Core Equity Index rose 0.8%. U.S. REITs and global REITs both gained, but lagged broad equity indices. The Bloomberg Commodity Index fell 1.2%.

Value Is in the Eye of the Beholder

PRIVATE EQUITY

12 Fundraising, company purchase prices, and IPOs increased in the second quarter. But private M&A investment and exit measures were flat to markedly down. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

Continuing Rally Aids Most Strategies

HEDGE FUNDS/MACs

13 Risk-on sentiment supported virtually all hedge fund strategies. The continuing rally also lifted long-biased MACs, but risk premia languished again. Hedge funds are well positioned defensively for a downturn. But without a sustained pick-up in volatility, they are likely to lag.

Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION

15 The Callan DC Index™ rebounded in the first quarter, gaining 9.6%, and the Age 45 Target Date Fund did even better. After two quarters of negative flows, balances saw sizable growth. And TDFs retook their spot as the top destination for inflows.

Broad Market Quarterly Returns

U.S. Equity
Russell 3000

4.1%

Non-U.S. Equity
MSCI ACWI ex USA

3.0%

U.S. Fixed Income
Bloomberg Barclays Agg

3.1%

Non-U.S. Fixed Income
Bloomberg Barclays GBI ex US

3.4%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Fed Speaks: 'A Mid-Cycle Adjustment to Policy'

ECONOMY | Jay Kloepfer

The U.S. economy continued its now-record expansion in the second quarter with a 2.1% gain in GDP, slower than the robust 3.1% in the first quarter but well ahead of expectations. Consumer spending rose 4.3% in the quarter, supported by solid gains in the job market and disposable income growth of 5% in each of the first two quarters of 2019. Offsetting the gains in consumption were hits to GDP from exports, non-residential business investment, residential investment, and a drawdown in inventories. The economic news for the U.S. during the quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, lowering the Federal Funds rate target by 25 basis points.

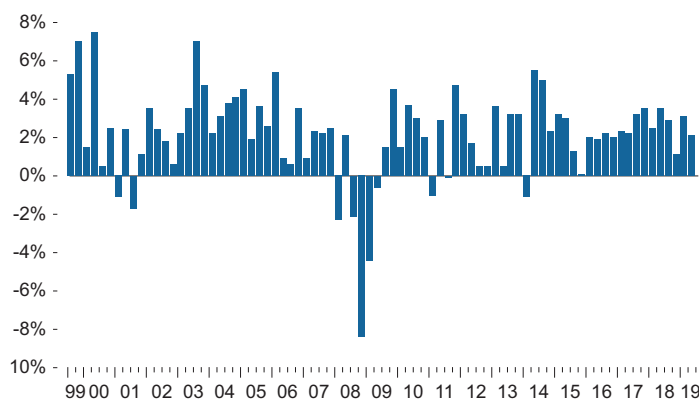
How did we get to a situation where the expansion continues but the Fed acts to cut rates? In classic Fed-speak, the announced reasoning is “a mid-cycle adjustment to policy.” To be fair, while the job market and overall GDP data are coming in solid for the U.S., the global economy is clearly showing signs of slowing, and the uncertainty stemming from trade tensions is top of mind. Chairman Jerome Powell noted three reasons for the rate cut: (1) to insure against downside risks from slowing global growth and trade tensions; (2) to mitigate the effects those factors are already having on the U.S. outlook, even if they haven't shown up in the data; and (3) to enable a faster return to the Federal Reserve's symmetric 2% inflation target.

It is important to note that the Fed made clear this July rate cut is not likely to be the first in a series. After initial confusion, the markets simply interpreted this Fed comment as fewer rate cuts this year than were previously priced into bond yields.

Key to the Fed's perceived latitude to lower rates is the persistent surprise of low inflation. After breaking through the Fed's 2% target in 2018, inflation has once again subsided. Headline CPI rose 1.6% in June (year-over-year), dragged down by a 3.4% decline in energy costs. In fact, core CPI (less food and energy) rose 2.1% over the past 12 months, pushed up by the

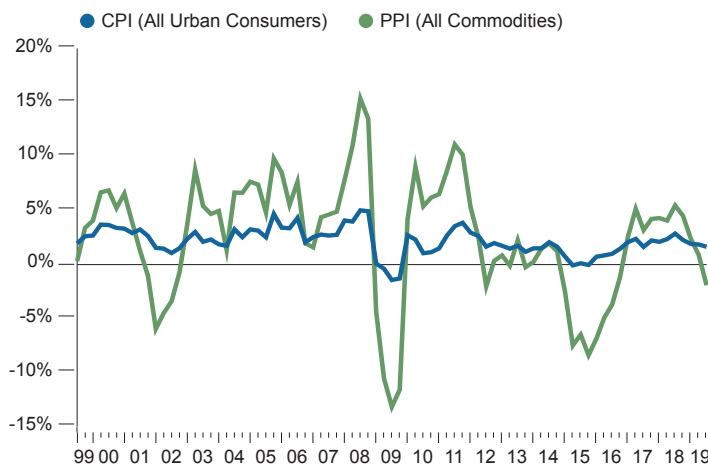
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

rising cost of shelter, apparel, and used vehicles. While annual wage gains have moved above 3% for the first time since the Global Financial Crisis (GFC), wage pressures have yet to show up in headline inflation. The impact of tariffs on consumer prices has not affected the broad CPI data, as the tariffs to date have been narrowly targeted.

Foreshadowing the expected slowdown in the U.S. economy is the Purchasing Managers' Index (PMI), a forward-looking measure of business expectations for manufacturing demand and

production. The mid-year 2019 reading of the PMI hit 50.6, very close to the line dividing expansion from contraction (50), and the lowest reading since 2009. Producers cite the twin worries of slowing global growth and trade tensions; the 5% drop in exports and the softening of business spending in the second quarter data certainly support these concerns. Other concerns about a material slowdown to GDP growth include the waning impact on domestic spending that has come from rising stock prices and fiscal stimulus since the GFC. Further concerns include the effects of potential new tariffs, and the slowdown in inventory accumulation. The U.S. economy is also approaching capacity constraints as the expansion reaches into record territory. Unemployment has hit a generational low of 3.6%; at some point firms' difficulties in finding new and replacement staff will weigh on overall workforce growth.

The nine interest rate hikes enacted by the Fed through 2018 raised the cost of borrowing for both businesses and consumers, and while the reversal of Fed policy since January halted the trajectory of rates, the impact of the increases since 2016 is still working its way through the economy. Higher mortgage rates slowed housing markets, pulling existing home sales down by more than 10% over the course of 2018. Rates for 30-year mortgages have fallen by more than 110 bps since November 2018, and home sales have bounced back since the start of the year, but the recovery has been uneven, concentrated in the South and the West. Investment in new homes, as measured by permits, began slipping in 2018 and is still down more than 10% (year over year) through June. New residential construction, restricted in many locations by supply and cost factors, has lagged the pace set in typical expansions since the GFC.

The Long-Term View

Index	2019 2nd Qtr	Periods ended Dec. 31, 2018			
		Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	4.1	-5.2	7.9	13.2	9.0
S&P 500	4.3	-4.4	8.5	13.1	9.1
Russell 2000	2.1	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	3.7	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	3.0	-14.2	0.7	6.6	--
MSCI Emerging Markets	0.6	-14.6	1.6	8.0	--
MSCI ACWI ex USA Small Cap	1.2	-18.2	2.0	10.0	--
Fixed Income					
Bloomberg Barclays Agg	3.1	0.0	2.5	3.5	5.1
90-Day T-Bill	0.6	1.9	0.6	0.4	2.5
Bloomberg Barclays Long G/C	6.6	-4.7	5.4	5.9	6.8
Bloomberg Barclays GI Agg ex US	3.4	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.5	6.7	9.3	7.5	9.3
FTSE Nareit Equity	1.2	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	2.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.9	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.2	-11.2	-8.8	-3.8	2.0
Gold Spot Price	8.9	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.8	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of March 31, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17
Employment Cost–Total Compensation Growth	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%	2.5%
Nonfarm Business–Productivity Growth	1.8%*	3.4%	1.3%	1.9%	2.9%	0.7%	-0.3%	2.3%
GDP Growth	2.1%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%	3.2%
Manufacturing Capacity Utilization	75.7%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%	74.9%
Consumer Sentiment Index (1966=100)	98.4	94.5	98.2	98.1	98.3	98.9	98.4	95.1

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

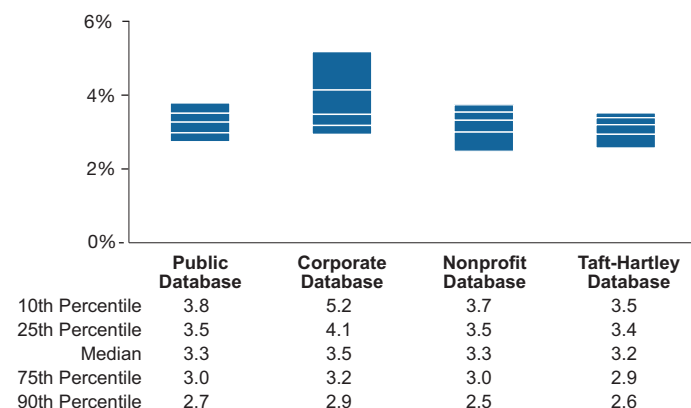
* Estimated figure provided by IHS Markit

Big Focus on Possible Correction, Future Action by Fed

INSTITUTIONAL INVESTORS

- Institutional investors, as measured by the **Callan Total Fund Sponsor Database Group**, gained 3.3% in the second quarter, with corporate plans faring best (+3.5%). Those results compare to the 4.0% gain of a quarterly rebalanced benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.
- Over the last 15 years, corporate plans (+6.9%) have fared the best, followed by nonprofits, public plans, and Taft-Hartley plans. Over that same period, the 60-40 index has seen a gain of 7.2%, annualized. Larger institutional investors have tended to do better than smaller ones over that time period, with the exception of Taft-Hartley plans; investors with more than \$1 billion in assets gained 7.0% over the 15-year period, followed by 6.7% for medium investors (\$100 million-\$1 billion), and 6.6% for small plans (under \$100 million).
- For institutional investors, strategic allocation decisions are focused on the anticipation of a market correction, volatility, and their desires to seek additional diversification opportunities. As a result, investors are re-evaluating the purpose and implementation of asset classes including real assets, hedge funds and liquid alternatives, fixed income, and equity.

Quarterly Returns, Callan Database Groups



Source: Callan

- Increasingly, investors are focused on the disparity of performance between growth and value. As value continues to underperform, investors are wondering if “value is dead.” They are also questioning whether there is any hope for active management. Will its promise to protect in a downturn be fulfilled?

Callan Database Median and Index Returns* for Periods ended June 30, 2019

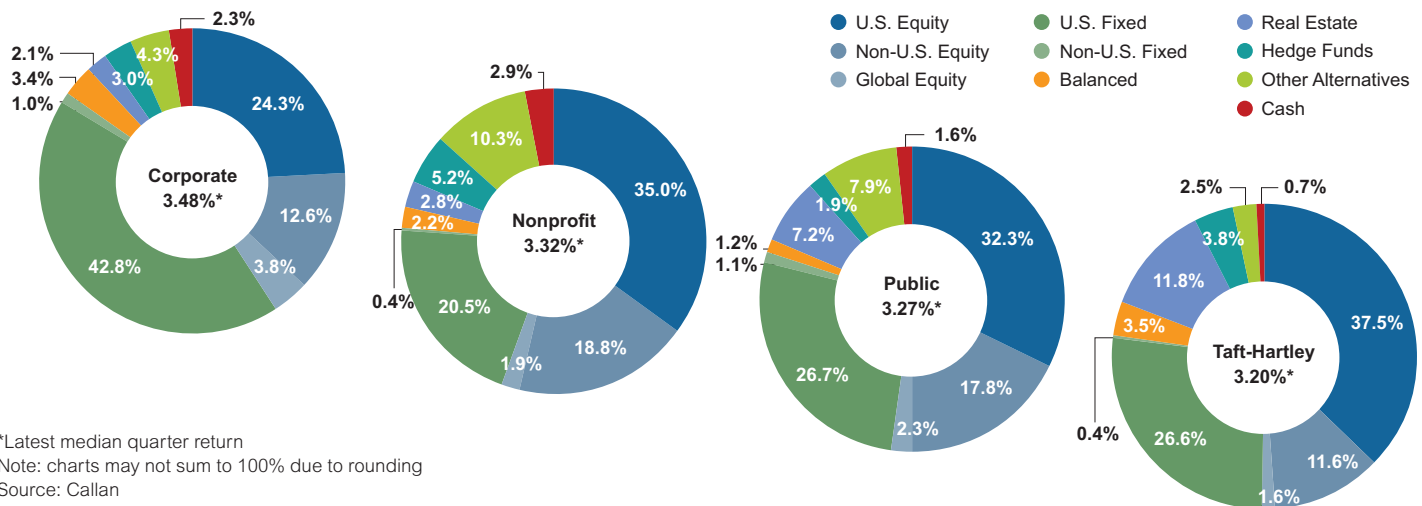
Database Group	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Public Database	3.27	6.19	8.91	5.96	9.20	6.74
Corporate Database	3.48	7.26	8.21	5.96	9.24	6.85
Nonprofit Database	3.32	5.78	9.11	5.62	9.06	6.76
Taft-Hartley Database	3.20	6.34	9.03	6.54	9.42	6.67
All Institutional Investors	3.32	6.31	8.85	5.97	9.24	6.75
Large (>\$1 billion)	3.24	6.35	9.03	6.17	9.39	7.04
Medium (\$100mm - \$1bn)	3.31	6.43	8.84	6.04	9.28	6.71
Small (<\$100 million)	3.34	6.20	8.76	5.73	9.03	6.59

*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, nonprofits, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- Plans continue to retain a strong tilt toward growth assets (at least 70% and as high as 90%). Many investors said they employ such a tilt to meet funding requirements. This has coincided with a refined definition of growth to include high yield, convertibles, low-volatility equity, hedge funds, MACs, and option-based strategies.
- Callan has consulted on a surge in asset-liability studies, with substantial changes to many policy portfolios. The focus is on de-risking (less equity) and risk mitigation (diversification and implementation), but dissatisfaction remains with hedge funds, risk premia, and absolute return products.
- In the current capital market environment, investors are focused on how long the expansion will continue. They are also examining how the reversal in Fed policy changes the landscape. Equity markets cheered, but doesn't accommodation imply leaner times ahead? And while LDI pays off when rates fall, lower rates can wreak havoc with liability-driven investing glidepaths.
- In discussions of asset class structures, investors are examining the role of fixed income in a total return portfolio: Is pursuit of return a goal?
- The relentless cost pressure is driving passive implementation in all asset classes, particularly equity.
- Public plans are focused on the return from private markets, but they face mounting pressure to control costs. One approach is the "bar-belled" pursuit of active in private markets and alternatives, and all passive in equity, more passive in fixed, and cheaper liquid alternatives with "passive" exposures to betas and factors.
- Liquidity needs are top of mind for public plans looking to increase private investments in pursuit of a growth engine aside from public equity.
- Corporate plans moving down de-risking glidepaths continue to reconsider their equity structures, moving to passive to control costs and attain broad beta exposure in the declining growth allocation.

Average Asset Allocation, Callan Database Groups



Equity

U.S. Equities

Markets continued to march upward, and U.S. equities neared record highs. Growth outpaced value, as the dovish stance of the Fed was a headwind for valuation-sensitive stocks. Small cap stocks lagged large caps, possibly from economic weakness.

Large Cap ► S&P 500: +4.3% | Russell 1000: +4.2%

- U.S. equity showed strong gains as market participants anticipated another round of monetary easing from the Fed.
- Financials (+8.0%) was the best-performing sector; Energy (-2.8%) was the only sector to experience negative returns over the quarter.
- Trade rhetoric weighed on U.S. stocks in May followed by a June rebound.
- Given the increase in risk appetite, cyclicals outperformed while defensive sectors such as Utilities underperformed.

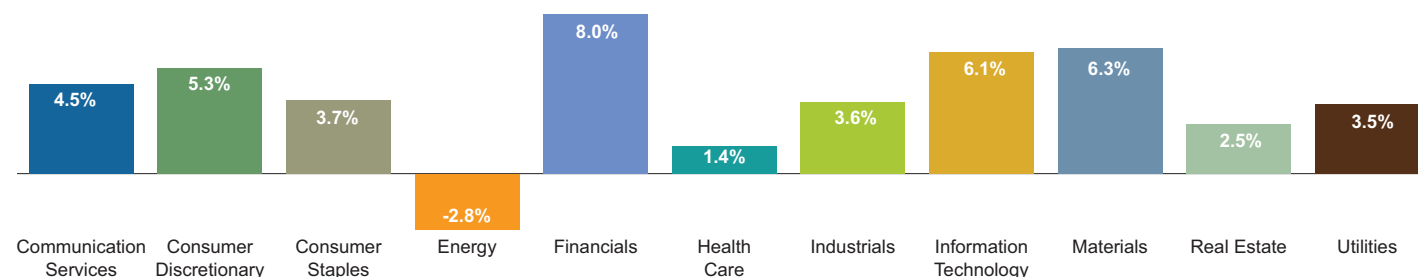
Small Cap ► Russell 2000: +2.1%

- Market conditions (e.g., more dovish Fed, strong U.S. dollar, trade tensions) should have benefited small cap companies, but did not.
- A slowing economy may explain weakness for small caps. Large caps tend to have stronger balance sheets and are more capable of weathering downturns.

Growth vs. Value ► Russell 1000 Growth: +4.6% | Russell 1000 Value: +3.8%

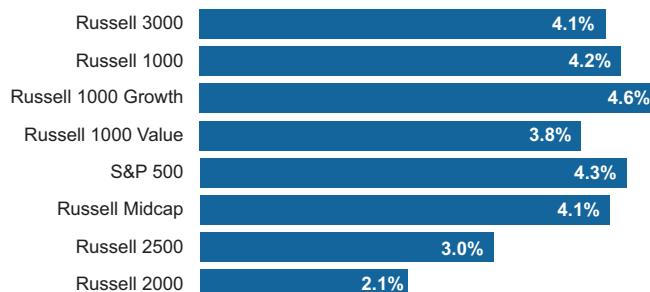
- Value factors (P/B, P/E trailing, yield) were mixed; growth factors (EPS growth, sales growth) were positive.

Quarterly Performance of Industry Sectors



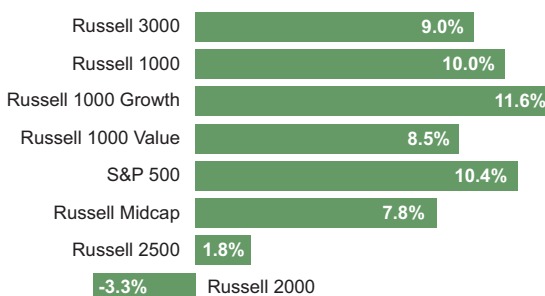
Source: Standard & Poor's

U.S. Equity: Quarterly Returns



Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Non-U.S./Global Equities

Global equity markets were largely positive in the second quarter although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued. Some non-U.S. markets benefited from a weakening U.S. dollar relative to local currencies. Global equities were boosted by dovish central bank commentary that led to lower interest rates around the globe.

Developed ► *MSCI EAFE: +3.7% | MSCI ACWI ex USA: +3.0% | MSCI Europe: +4.5% | MSCI Japan: +1.0%*

- Developed markets rallied as central banks around the world expressed more accommodative paths with interest rates and quantitative easing.
- U.K. equities finished the quarter slightly up (+0.9%) as Brexit uncertainty continues. Prime Minister Theresa May announced her resignation during the quarter.
- Relative to other non-U.S. developed markets, Europe had a strong quarter fueled by robust returns from Germany, France, and Switzerland (30% combined weight), which benefited from declining bond yields.
- EAFE sector performance was positive across the board with the exception of real estate. Cyclical drove the majority of returns as these are highly correlated with U.S. cyclical, which benefited from declining interest rates.
- Factor performance in non-U.S. developed markets favored growth over value, large caps over small caps, and cyclical over defensives.

Emerging Markets ► *MSCI Emerging Markets Index: +0.6%*

- Emerging market returns were lackluster although, regionally, returns were bar-belled as many Asian countries were held back by trade concerns while EM ex-Asia tended to perform well. Russia (+16.9%) performed strongly with the help of the ruble appreciating by 4.2% relative to the U.S. dollar. Brazil (+7.2%) was also a top contributor due to the initial success of keeping pension reforms on track. China (-4.0%) faltered on tariff concerns.
- Argentina (+31.7%) was the top country performer, aided by the announcement of its inclusion in the **MSCI Emerging Markets Index** at the end of May (eight stocks in total).

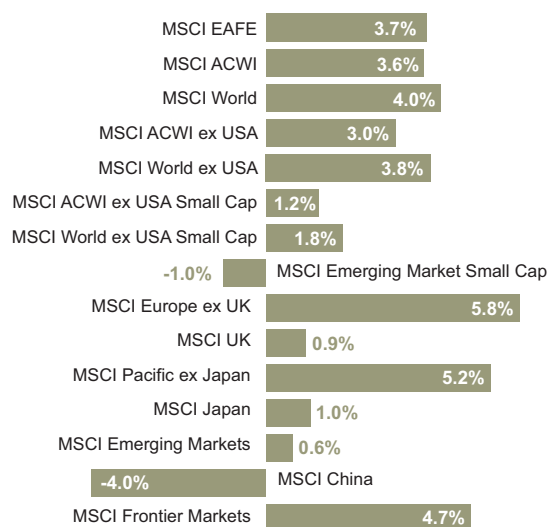
- The **MSCI EM Value Index** outperformed the **MSCI EM Growth Index** as many growth-oriented sector and country returns were impacted by trade disputes.

Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: +1.8% | MSCI EM Small Cap: +1.0%*

- Non-U.S. small caps lagged large caps as investors preferred lower earnings risk and higher earnings momentum. Emerging market small caps lagged large caps as investors searched for a combination of lower volatility and higher growth that was absent in smaller companies as tariff uncertainty persisted.

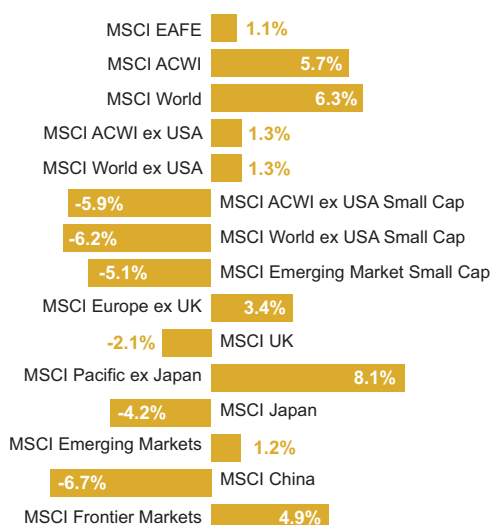
Non-U.S. Equity: Quarterly Returns

(U.S. Dollar)



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

(U.S. Dollar)



Source: MSCI

Fixed Income

U.S. Fixed Income

U.S. economic data continued to be mixed as a strong labor market and rising personal income offset waning business confidence and declining industrial production. The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Uncertainty surrounding trade policy and muted inflation data provided the Fed with additional cover for its rationale to potentially cut rates later this year.

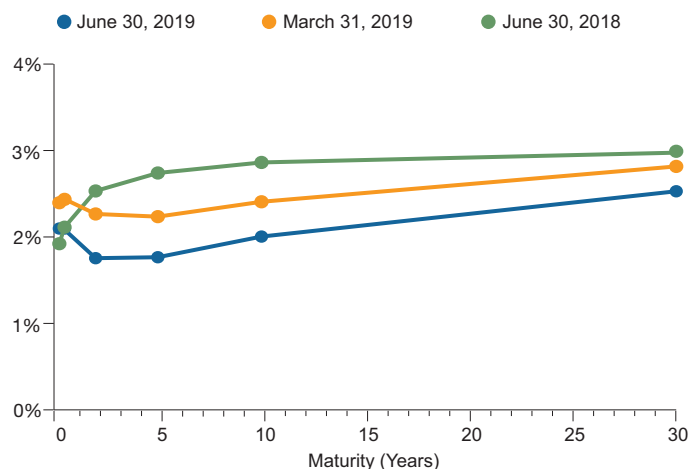
Core Fixed Income ► Bloomberg Barclays US Agg: +3.1%

- U.S. Treasuries gained 3.0% as the U.S. Treasury yield curve shifted lower across maturities, most dramatically at the 2-year key rate, as traders priced in expectations for the Fed to pre-emptively ease in order to boost domestic economic growth.
- The overall shape of the yield curve did not materially change during the quarter. The yield differential between the 10-year and 2-year key rates remained positive and widened 11 basis points during the quarter to close at 25 bps. However, the front-end of the curve remained inverted, with the 5-year offering roughly the same yield as the 2-year key rate.
- Nominal Treasuries outperformed TIPS as inflation expectations fell; the 10-year breakeven spread was only 1.69% as of quarter-end versus 1.88% at the end of the first quarter.

Investment-Grade Corporates ► Bloomberg Barclays Corporate (Inv. Grade): +4.5%

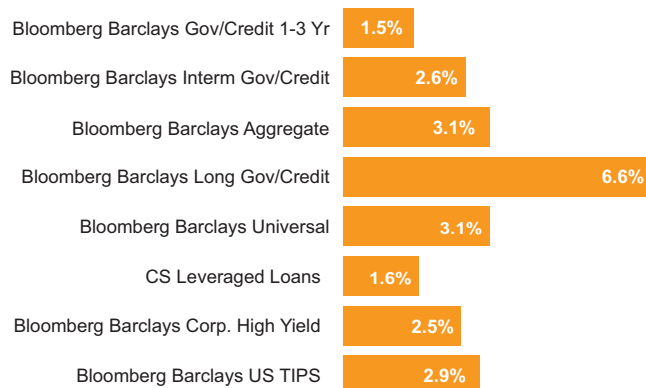
- Credit spreads rallied on the back of dovish Fed policy.
- Gross new corporate supply this quarter was \$290.5 billion, which was 14% lower than a year ago. Year-to-date supply was 18% lower than in the first half of 2018. New issuance favored the 6-12 year maturities relative to last year.
- AAA-rated corporates (+5.0%) were the best performers in absolute return terms. BBB-rated lagged AAA by 18 bps, but posted a positive excess return over the index (+1.4%).

U.S. Treasury Yield Curves



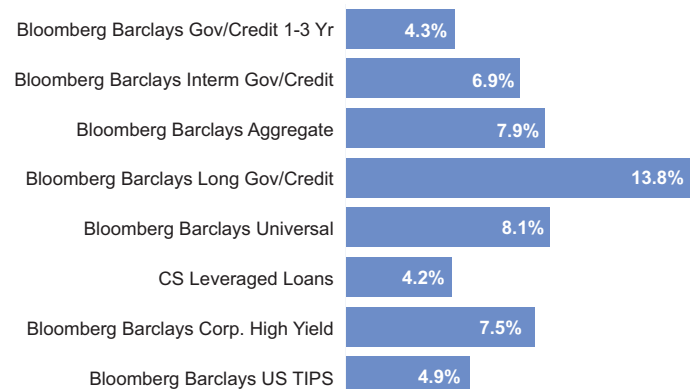
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

FIXED INCOME (Continued)

High Yield ► *Bloomberg Barclays Corporate HY: +2.5%*

- High yield corporates posted positive results for the quarter, but lagged investment grade corporates on both absolute and excess returns. High yield gained 9.9% for the first half of 2019.
- Interest rate-sensitive BB-rated issues posted the highest return (+3.1%) while CCC-rated issues rose 0.3%.

Leveraged Loans ► *CS Leveraged Loans: +1.6%*

- Bank loans participated in the risk-on rally, but lagged both longer duration IG and HY corporates as interest rates declined.
- Retail outflows remain unabated as the Fed's dovish tone dampened enthusiasm for floating rate assets. New CLO issuance running ahead of expectations has also put technical pressure on the sector as investors absorbed the new float.
- Bank loans have less sensitivity to interest rates, but may have a similar spread duration profile to that of high yield bonds.

Non-U.S. Fixed Income

Global Fixed Income ► *Bloomberg Barclays Global Aggregate: +3.3%*

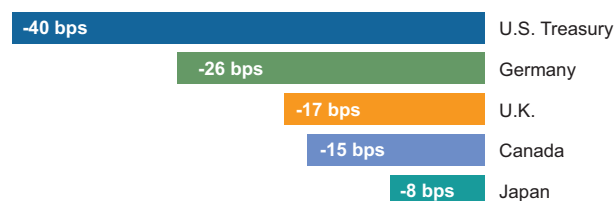
- Other developed market sovereign bonds rose in tandem with the rally in Treasuries and have pushed European sovereigns further into negative yields. The U.S. dollar depreciated modestly versus the euro and yen, but gained versus the U.K. pound.

Emerging Market Debt (\$US) ► *JPM EMBI Global Diversified: +4.1% | (Local currency) ► JPM GBI-EM Global Diversified: +5.6%*

- Most emerging market currencies appreciated against the U.S. dollar.
- Top performers included Russia (+10.4%) and Turkey (+10.1%), while Argentina was the worst performer (-5.0%), and one of the few countries to post a negative result this quarter.

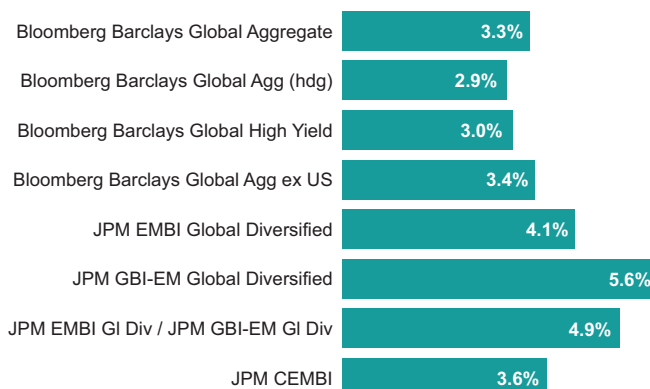
Change in 10-Year Global Government Bond Yields

1Q19 to 2Q19



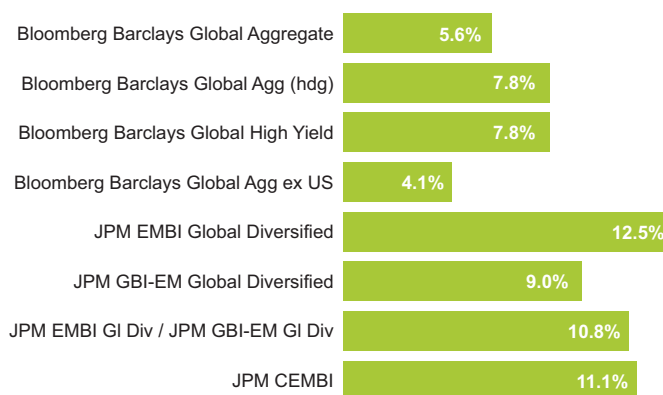
Source: Bloomberg Barclays

Non-U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

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



Sources: Bloomberg Barclays and JPMorgan Chase

Real Estate Gains; Real Assets Mostly Fall

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

Income Produces Bulk of Returns

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- The **NCREIF Property Index (NPI)**, a measure of U.S. institutional real estate assets, gained 1.5% during the second quarter. The income return was 1.1%, while appreciation contributed 0.4%.
- Industrial led property sector performance with a return of 3.4%. Retail finished last, falling 0.1%.
- Regionally, the West led with a 1.9% return, while the Midwest was the worst performer at 0.7%.
- The **NCREIF Open-End Diversified Core Equity Index** (value-weighted, net of fees), representing equity ownership positions in U.S. core real estate, generated a 0.8% total return during the second quarter, with income providing 0.8% and appreciation 0.0%.
- Defensive posturing is becoming more prevalent.

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metro areas.
- Within the NPI, the vacancy rate for U.S. offices was 9.8% in the second quarter, the lowest in over 12 years.
- Net operating income has been growing annually and is expected to be the primary return driver.

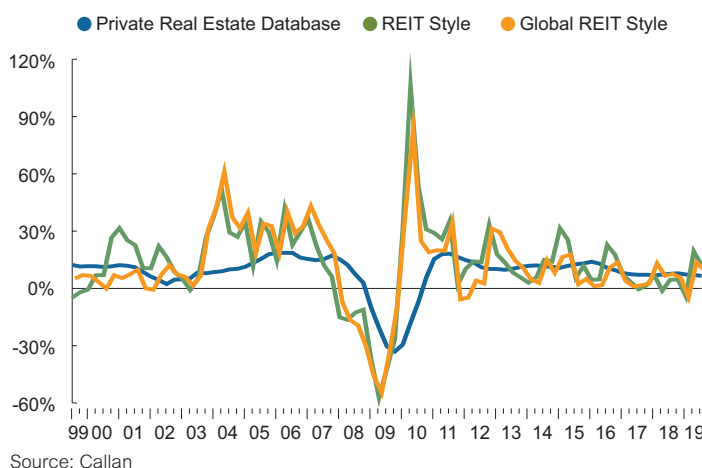
Pricing remains expensive in the U.S.

- Transaction volumes increased and remain robust.
- Cap rates fell slightly; market remains near full valuations

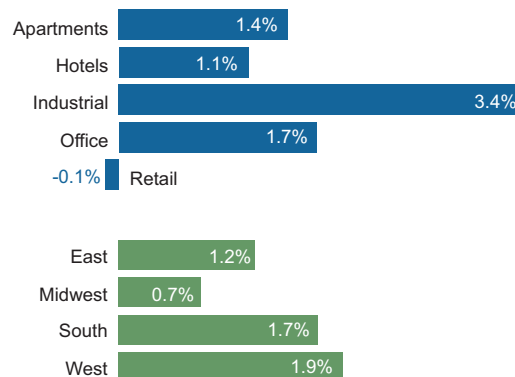
REITs underperformed global equities

- U.S. REITs advanced 1.2% in the second quarter, underperforming the S&P 500 Index, which rose 4.3%.
- Global REITs fell 0.1% in the second quarter compared to a 3.4% gain for global equities (MSCI ACWI IMI).
- Both U.S. and non-U.S. REITs are trading at NAV.
- Large cap REITs, especially those with lower debt levels, modestly underperformed.

Rolling One-Year Returns



Sector Quarterly Returns by Property Type and Region



Non-U.S. Real Estate

Asia

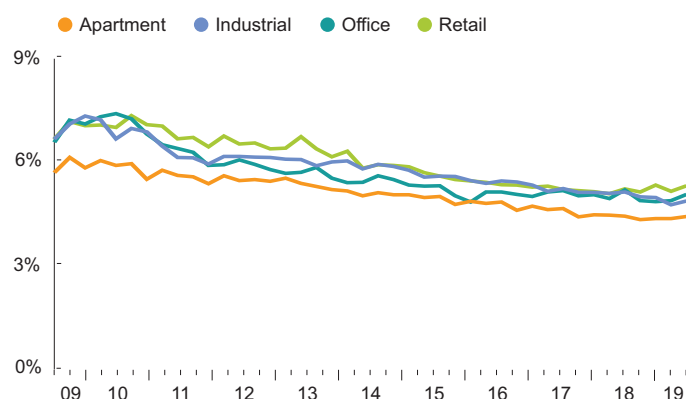
- The growth of the middle class in Asia is steady and the demand for institutional quality real estate is commensurate.
- The number of open-end core funds focused on the Asia Pacific market has increased over recent years and includes both sector-diversified and sector-specific (e.g., logistics) funds, supporting the development of the institutional real estate market in the region. In the first half of the year, India had the first successful IPO for a REIT, which substantiates the institutionalization of the asset class in that country.

REAL ESTATE/REAL ASSETS (Continued)

Europe

- Political uncertainty continues to weigh on overall growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Institutional interest and investment in multifamily properties keeps expanding, as housing prices continue to grow faster than incomes in major markets across Europe, and demand is supported by continued urbanization and migration to major cities in Europe.

NCREIF Capitalization Rates by Property Type

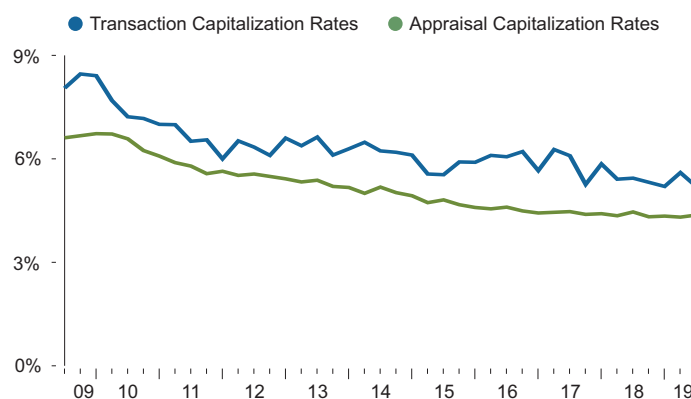


Source: NCREIF. Capitalization rates (net operating income / current market value (or sale price)) are appraisal-based.

Real Assets

- The **Bloomberg Commodity Index** fell 1.2% in the quarter.
- Both the Precious Metals and Agriculture commodity sectors were positive performers, driven by strong individual returns for gold as well as corn, wheat, and coffee.
- Meanwhile, the Livestock, Energy, and Industrial Metals commodity sectors all posted negative quarterly results.
- Oil pulled back but was roughly flat for the quarter, ending at \$58/barrel (West Texas intermediate).
- Natural gas within the **Bloomberg Energy Sub-Index** declined a precipitous 16.2%.
- MLPs (**Alerian MLP Index**: +0.1%) were flat.

NCREIF Transaction and Appraisal Capitalization Rates



Source: NCREIF
Note: Transaction capitalization rate is equal weighted.

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	1.55	3.12	6.53	7.15	9.51	9.07	6.79
NFI-ODCE (value wt net)	0.77	1.98	5.46	6.61	8.76	8.87	7.01
NCREIF Property	1.51	3.34	6.51	6.89	8.83	9.25	8.70
NCREIF Farmland	0.70	1.40	5.63	6.24	7.98	11.05	14.22
NCREIF Timberland	0.11	0.22	2.23	3.05	4.47	3.90	7.04
Public Real Estate							
Global Real Estate Style	1.20	16.17	9.66	6.17	6.54	12.22	8.56
FTSE EPRA Nareit Developed	-0.07	14.51	7.68	4.46	4.85	10.57	--
Global ex-U.S. Real Estate Style	0.35	13.95	7.84	8.97	5.45	9.97	8.10
FTSE EPRA Nareit Dev ex US	-0.58	12.89	6.09	6.79	3.47	8.26	--
U.S. REIT Style	2.06	19.28	12.11	5.17	8.60	16.15	9.90
EPRA Nareit Equity REITs	1.24	17.78	11.21	4.20	7.92	15.46	9.05

*Returns less than one year are not annualized.
Sources: Callan, FTSE Russell, NCREIF

Value Is in the Eye of the Beholder

PRIVATE EQUITY | Gary Robertson

Fundraising, company purchase prices, and IPOs increased in the second quarter. However, private M&A investment and exit measures were flat to markedly down. Average buyout company prices and leverage levels hit a record in 2019, tempering transaction activity. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

- **Fundraising** ► Based on preliminary data, final closes for private equity partnerships in the second quarter totaled \$143 billion of commitments in 203 partnerships. (Unless otherwise noted, all data in this commentary come from PitchBook.) The dollar volumes rose 8% and the number of funds rose 25% from the first quarter. For the first half, 2019 is running \$99 billion or 21% behind a year ago. We expect that the second half of 2019 will be larger than the first half, as some large fundraises are slated to start in the fourth quarter, and sought-after general partners are closing new funds quickly.
- **Buyouts** ► New buyout transactions continued declining in the quarter. Funds closed 1,424 investments with \$97 billion in disclosed deal value, representing a 12% decline in count and a 9% dip in dollar value from the first quarter. Average buyout prices leaped to 11.2x EBITDA in 2019 versus 10.6x in 2018, providing a headwind for investment volume.
- **VC Investments** ► New rounds of financing in venture capital companies totaled 4,656, with \$55 billion of announced value. The number of investments was down

Funds Closed January 1 to June 30, 2019

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	159	30,984	11%
Growth Equity	95	142,750	52%
Buyouts	37	26,682	10%
Mezzanine Debt	25	41,150	15%
Distressed	6	9,840	4%
Energy	6	12,266	4%
Secondary and Other	23	8,690	3%
Fund-of-funds	14	4,371	2%
Totals	365	276,733	100%

Source: PitchBook (Figures may not total due to rounding.)

- 15% but announced value rose 10%. Venture prices generally rose during the quarter, particularly for larger later-stage investments.
- **Exits** ► There were 336 private M&A exits of private equity-backed companies, with disclosed values totaling \$80 billion. The private sale count fell 28% but the announced dollar volume rose 4%. There were 35 private equity-backed IPOs in the second quarter raising an aggregate \$15 billion, up 250% and 650%, respectively, from the first quarter.
- Venture-backed M&A exits totaled 290 transactions with disclosed value of \$20 billion. The number of sales declined 14% from the first quarter, and announced value fell 62%. There were 54 VC-backed IPOs in the second quarter with a combined float of \$54 billion; the count jumped 116% and the issuance ballooned 340% as unicorns such as Uber, Slack, and Pinterest made their public debuts.

Private Equity Performance Database (%) (Pooled Horizon IRRs through March 31, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	5.71	19.54	13.70	14.32	14.38	11.37	15.71
Growth Equity	6.14	16.87	16.41	13.05	15.05	13.23	13.76
All Buyouts	4.52	10.65	15.56	12.25	15.63	13.78	12.23
Mezzanine	2.25	7.56	11.67	10.30	11.09	10.47	8.83
Distressed	2.28	4.65	9.89	6.31	16.26	9.70	10.24
All Private Equity	4.13	4.60	10.73	7.71	13.11	10.60	10.66
S&P 500	4.86	12.66	14.66	12.08	15.15	12.79	12.55

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and Standard & Poor's

*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of *Capital Market Review* and other Callan publications.

Continuing Rally Boosts Most Strategies

HEDGE FUNDS/MACs | Jim McKee

Top-Down Jumps Ahead; Bottom-Up Plods Forward

- Risk-on sentiment in equities and rates supported virtually all hedge fund strategies.
- *Global Macro* (+4.6%) and *Managed Futures* (+4.7%) led, supported by continuing trends/bets in the rates markets.
- Most relative value strategies slogged forward; *Equity Market Neutral* (-0.3%) slipped, indicating challenges with stock-specific risk factors.
- *Long/Short Equity* (+1.3%) lagged equities; *Event-Driven Multi-Strategy* (+2.9%) performed better with soft catalyst-driven stocks continuing to rebound from the fourth quarter sell-off.
- *Risk Arb* (+0.7%) and *Distressed* (+1.5%) edged ahead with their process-driven or hard-catalyst trades.
- Hedge fund portfolios with more exposure to macro or long-biased strategies beat absolute return, particularly those trading equity fundamentals without beta exposure.

- The median manager in the **Callan Hedge Fund-of-Funds Database Group**, net of fees, gained 1.9% in the second quarter. Within that broad grouping, the *Long/Short Equity FOF Style Group* (+2.2%) saw the biggest increase, followed by *Core Diversified* (+1.6%) and *Absolute Return* (+1.1%).

Hedge Fund-of-Funds Style Group Returns



Sources: Callan, Credit Suisse, and Federal Reserve

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	1.85	5.06	2.69	5.14	4.59	4.59
Callan Absolute Return FOF Style	1.13	4.42	2.84	5.00	4.00	4.00
Callan Core Diversified FOF Style	1.56	4.52	2.16	4.95	4.61	4.61
Callan Long/Short Equity FOF Style	2.17	6.76	3.46	5.52	5.47	5.47
Credit Suisse Hedge Fund	2.35	4.34	2.36	5.03	5.01	5.01
CS Convertible Arbitrage	1.25	3.99	2.18	5.68	3.81	3.81
CS Distressed	1.52	5.23	1.22	5.82	5.63	5.63
CS Emerging Markets	1.41	6.19	4.08	5.73	6.57	6.57
CS Equity Market Neutral	-0.25	1.39	0.31	1.73	-0.26	-0.26
CS Event-Driven Multi	2.86	4.82	-0.09	4.19	5.20	5.20
CS Fixed Income Arb	1.21	5.19	3.36	6.55	3.78	3.78
CS Global Macro	4.55	4.81	3.01	5.23	6.26	6.26
CS Long/Short Equity	1.25	5.46	3.39	5.66	5.80	5.80
CS Managed Futures	4.73	-1.65	2.50	1.57	3.23	3.23
CS Multi-Strategy	2.11	4.87	4.45	6.93	5.95	5.95
CS Risk Arbitrage	0.70	3.89	2.04	3.03	3.74	3.74
HFRI Asset Wtd Composite	2.12	5.15	3.00	5.15	--	--
90-Day T-Bill + 5%	1.84	6.38	5.87	5.49	6.38	6.38

*Gross of fees. Sources: Bloomberg Barclays, Callan, Credit Suisse, Hedge Fund Research, Societe Generale, and Standard & Poor's

Continuing Rally Lifts Long-Biased MACs; Risk Premia Languished Again

- **HFR Risk Parity Index** targeting 12% volatility gained 4.9%, propelled by rising stock and bond markets, amplified by portfolio leverage.
- Across these risk premia represented by HFR's Risk Premia indexes, *Rates Momentum* (+18.6%) benefited from global yields continuing their slide. Negative effects from other risk premia, especially in equities and commodities, dragged down overall performance.
- The **Callan Multi-Asset Class (MAC) Database Group** increased 2.3% in the quarter. Within that group, the *Risk Parity MAC Style Group* rose 4.6%, followed by *Long Biased* (+2.6%) and *Absolute Return* (+1.8%). *Risk Premia* fell 1.3%.

Volatility Settles Down Again with Risk-On Sentiment

- Markets are discounting continued growth with lower expected rates priced into valuations.
- If hard economic data does not confirm the market's buoyant sentiment, hedge funds are well positioned defensively for a downturn.
- Without a sustained pick-up in volatility, hedge funds are likely to lag.

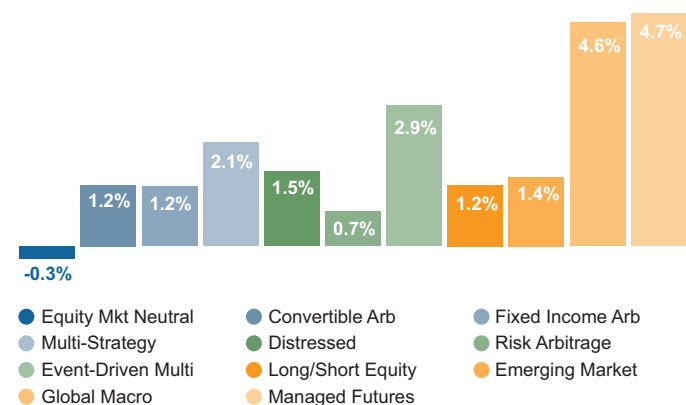
Flat Yield Curve Continues to Level Playing Field

- While both long and short rates settled to lower levels, today's positive short-term rates are still providing support to hedge funds on cash holdings and short interest rebates.
- If the Fed lowers rates aggressively from here due to weakening economic growth, fixed income and diversifying strategies of "hedged" funds will likely benefit at the expense of equities suffering from lowered earnings expectations.

Economic Divergence Creates More Opportunity

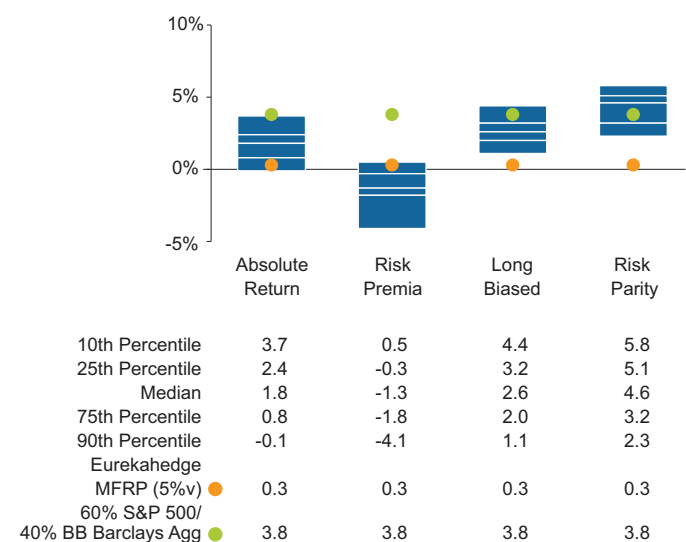
- Global macro tensions can lead to more fundamental and technical imbalances for hedge funds to trade.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



Sources: Bloomberg Barclays, Callan, Eurekahedge, Standard & Poor's

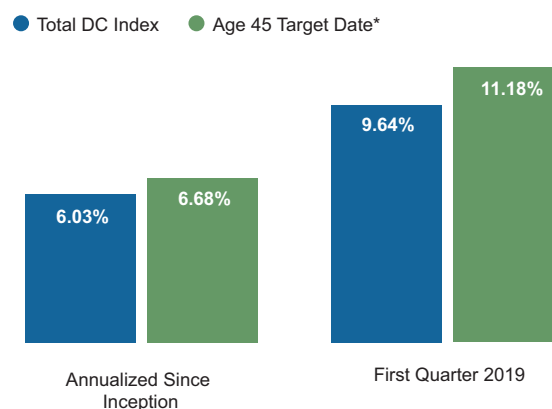
Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION | Patrick Wisdom

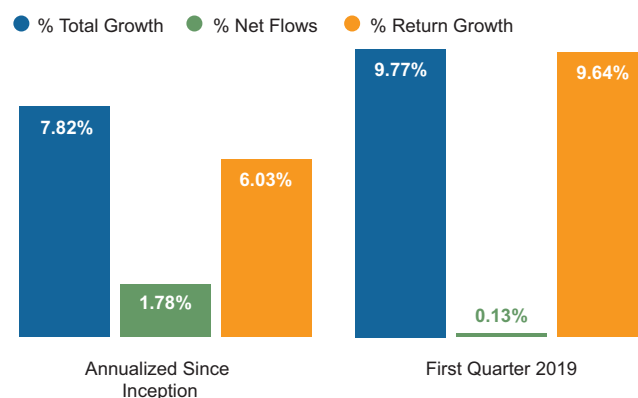
- After a rough finish to 2018, the Callan DC Index™ rebounded in the first quarter of 2019, gaining 9.6%. The Age 45 Target Date Fund posted even stronger results, gaining 11.2%, largely attributable to the Age 45 TDF's higher equity allocation (78% vs. 69%).
- After two quarters of negative flows, strong investment results and cash flows led to sizeable growth in balances in the first quarter, a reversal from two consecutive quarters of negative flows. The 9.8% total gain in market value for the quarter marked the highest since the first quarter of 2012 (9.9%).
- After an aberration in the fourth quarter, target date funds saw the largest inflows in the first quarter. Moreover, stable value experienced relatively large outflows after having the largest inflows the previous quarter. Despite strong equity gains in the first quarter, both U.S. and non-U.S. equity saw large outflows. At the same time, U.S. fixed and money market funds experienced relatively large inflows, perhaps indicating a shift toward safer securities within the core lineup.
- First quarter turnover (i.e., net transfer activity levels within DC plans) increased slightly to 0.48% from the previous quarter's 0.41%.
- After equities rebounded in the first quarter, the share of equity rose to 69.5% from 68.8% the previous quarter.
- Target date funds ended the quarter with 30% of assets, down from 33% the previous quarter. Among asset classes that increased, U.S. large cap (25%) and U.S./global balanced (7%) were up roughly 1 percentage point.
- Stable value's prevalence within DC plans rose for the sixth consecutive quarter and is now at 76%. Additionally, more plans are now offering emerging market equity (18%) as an option compared to the previous quarter.

The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over \$150 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.

Investment Performance



Growth Sources



Net Cash Flow Analysis (First Quarter 2019) (Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	73.22%
U.S. Fixed Income	21.27%
U.S./Global Balanced	-16.65%
U.S. Large Cap	-24.86%
Total Turnover**	0.48%

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

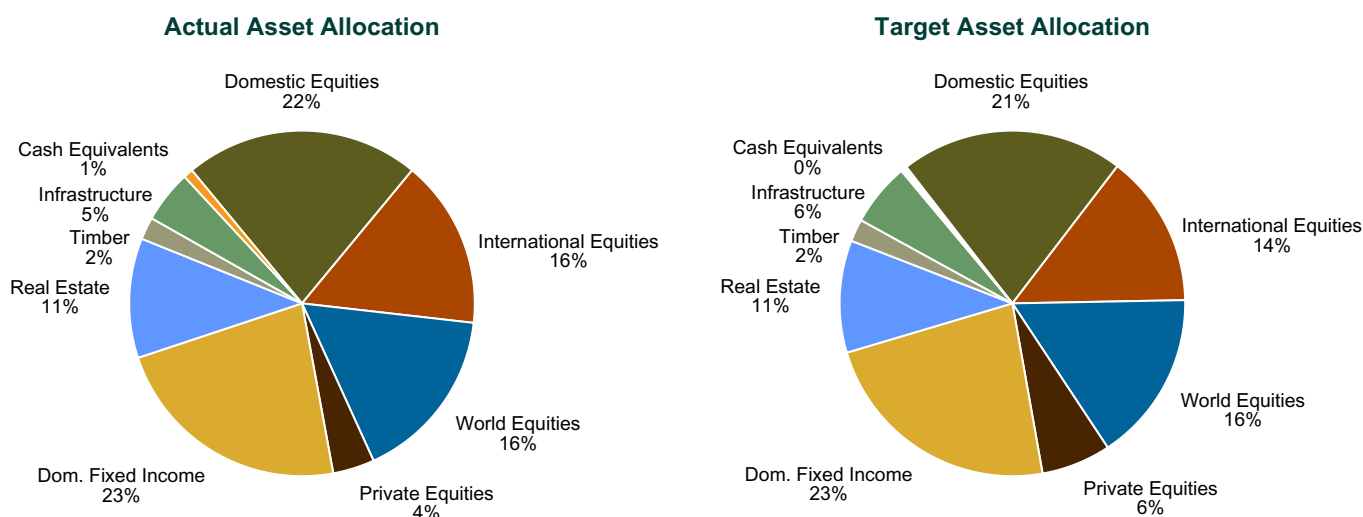
Note: DC Index inception date is January 2006.

* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

** Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

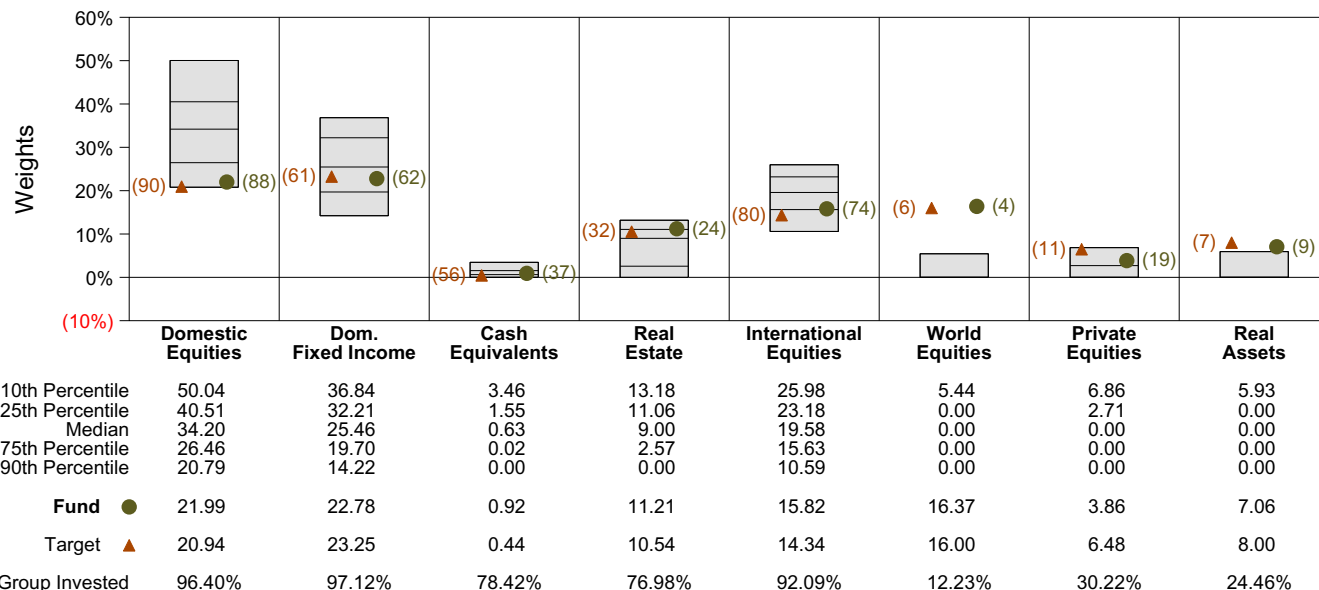
Actual vs Target Asset Allocation As of June 30, 2019

The top left chart shows the Fund's asset allocation as of June 30, 2019. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	1,308,308	22.0%	20.9%	1.1%	62,603
International Equities	940,770	15.8%	14.3%	1.5%	87,802
World Equities	973,947	16.4%	16.0%	0.4%	22,183
Private Equities	229,364	3.9%	6.5%	(2.6%)	(155,991)
Dom. Fixed Income	1,354,842	22.8%	23.2%	(0.5%)	(28,191)
Real Estate	666,767	11.2%	10.5%	0.7%	39,510
Timber	125,771	2.1%	2.1%	(0.0%)	(0)
Infrastructure	294,013	4.9%	5.9%	(0.9%)	(56,241)
Cash Equivalents	54,746	0.9%	0.4%	0.5%	28,325
Total	5,948,529	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database

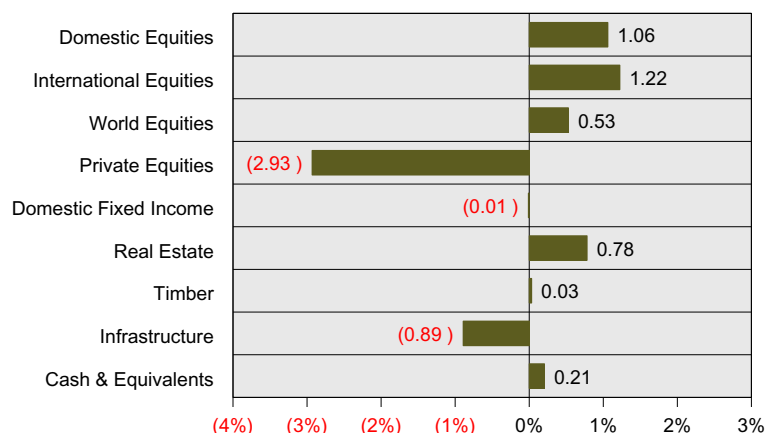


* Current Quarter Target = 16.2% Bimbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

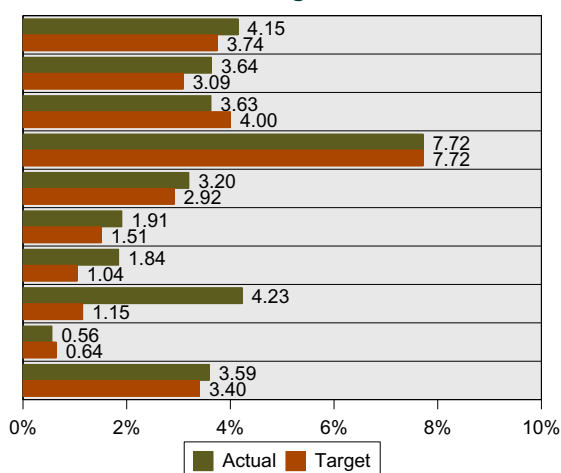
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

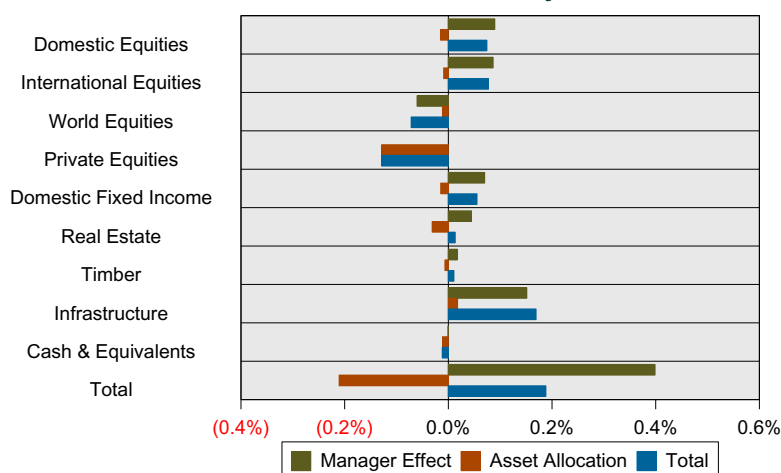
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

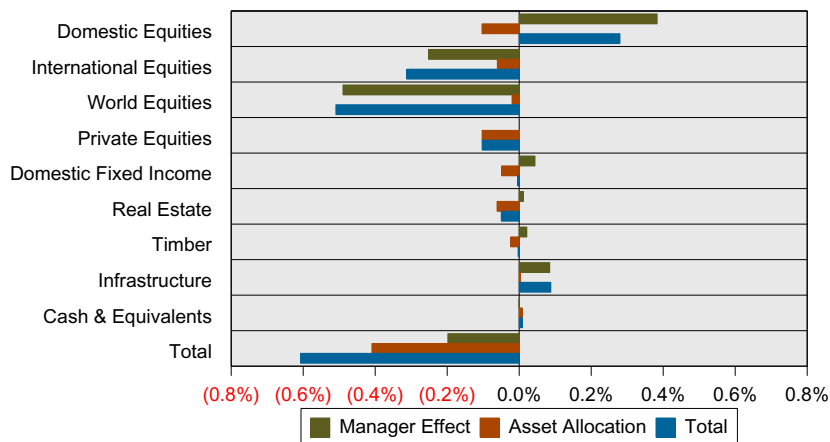
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	4.15%	3.74%	0.09%	(0.02%)	0.07%
International Equities	16%	14%	3.64%	3.09%	0.09%	(0.01%)	0.08%
World Equities	17%	16%	3.63%	4.00%	(0.06%)	(0.01%)	(0.07%)
Private Equities	4%	6%	7.72%	7.72%	0.00%	(0.13%)	(0.13%)
Domestic Fixed Income	23%	23%	3.20%	2.92%	0.07%	(0.01%)	0.06%
Real Estate	11%	11%	1.91%	1.51%	0.04%	(0.03%)	0.01%
Timber	2%	2%	1.84%	1.04%	0.02%	(0.01%)	0.01%
Infrastructure	5%	6%	4.23%	1.15%	0.15%	0.02%	0.17%
Cash & Equivalents	1%	0%	0.56%	0.64%	(0.00%)	(0.01%)	(0.01%)
Total			3.59%	3.40%	0.40%	(0.21%)	0.19%

* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

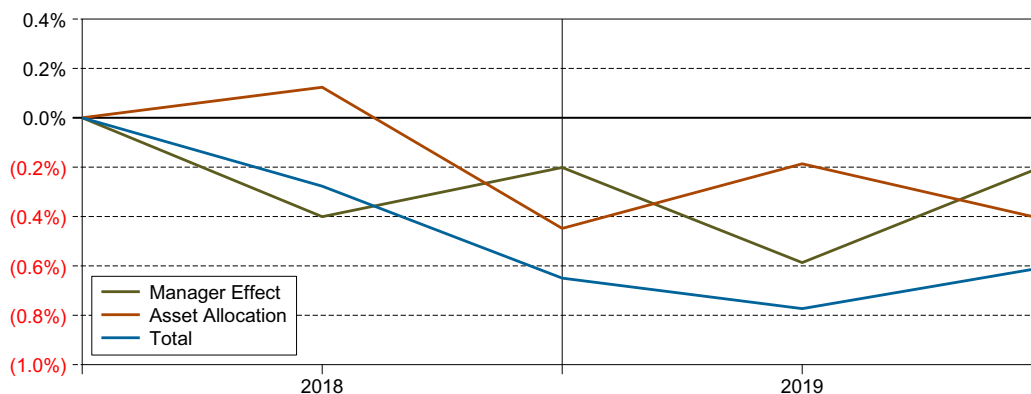
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

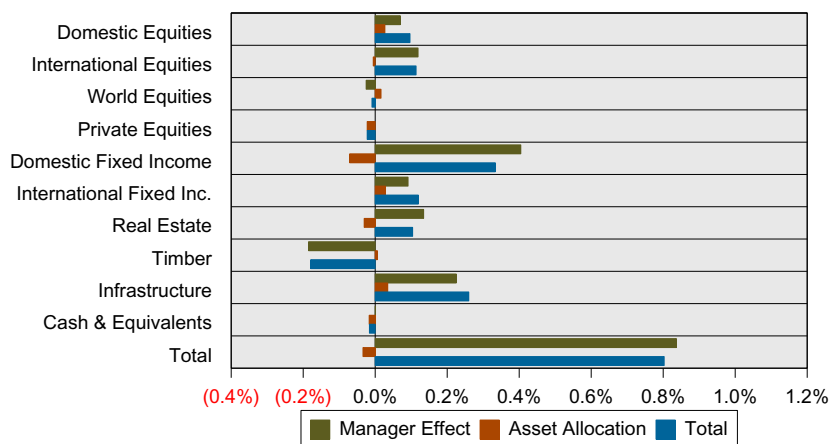
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.51%	6.82%	0.38%	(0.10%)	0.28%
International Equities	15%	14%	(0.35%)	1.31%	(0.25%)	(0.06%)	(0.31%)
World Equities	16%	16%	3.39%	6.33%	(0.49%)	(0.02%)	(0.51%)
Private Equities	3%	6%	8.60%	8.60%	0.00%	(0.10%)	(0.10%)
Domestic Fixed Income	23%	23%	7.93%	7.80%	0.04%	(0.05%)	(0.00%)
Real Estate	11%	11%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	(0.00%)
Infrastructure	5%	6%	5.59%	3.91%	0.08%	0.00%	0.09%
Cash & Equivalents	1%	0%	2.27%	2.31%	(0.00%)	0.01%	0.01%
Total			5.78%	6.39%	(0.20%)	(0.41%)	(0.61%)

* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

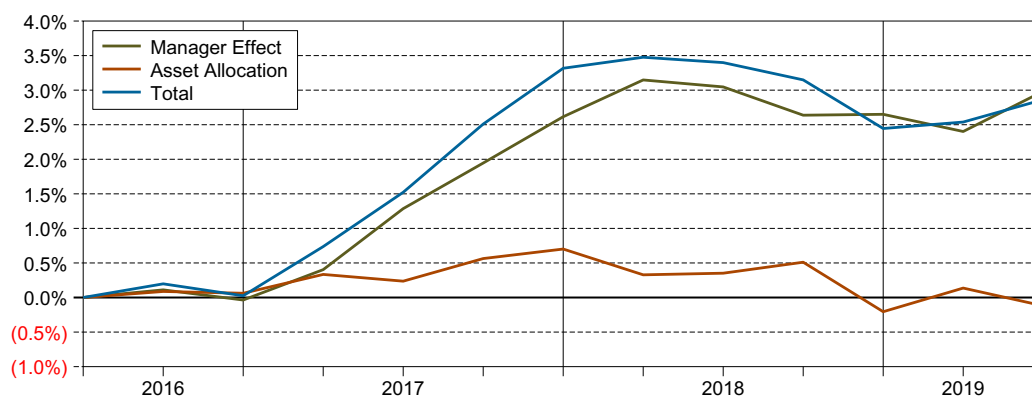
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

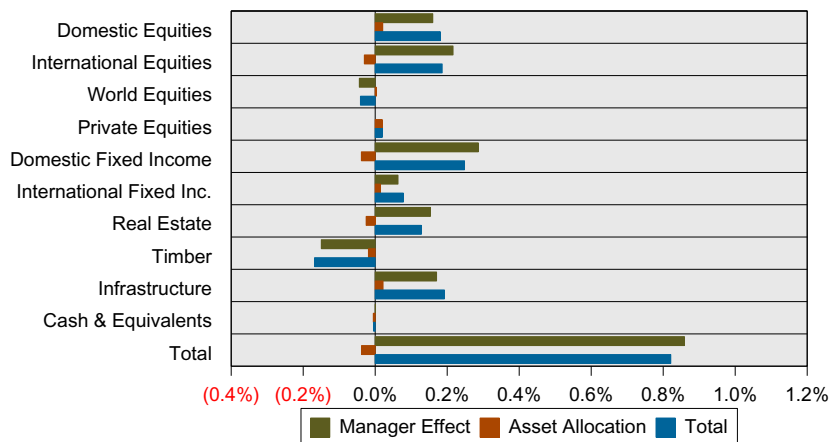
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	14.09%	13.78%	0.07%	0.03%	0.10%
International Equities	16%	14%	10.09%	9.42%	0.12%	(0.01%)	0.11%
World Equities	17%	16%	11.55%	11.77%	(0.03%)	0.02%	(0.01%)
Private Equities	3%	6%	8.30%	8.30%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	20%	20%	5.70%	3.67%	0.40%	(0.07%)	0.33%
International Fixed Inc.	3%	3%	-	-	0.09%	0.03%	0.12%
Real Estate	11%	10%	8.14%	6.89%	0.13%	(0.03%)	0.10%
Timber	3%	3%	(2.78%)	3.37%	(0.19%)	0.01%	(0.18%)
Infrastructure	5%	5%	7.72%	2.83%	0.23%	0.03%	0.26%
Cash & Equivalents	1%	0%	1.48%	1.38%	0.00%	(0.02%)	(0.02%)
Total			9.44%	8.64%	+ 0.84%	+ (0.03%)	0.80%

* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

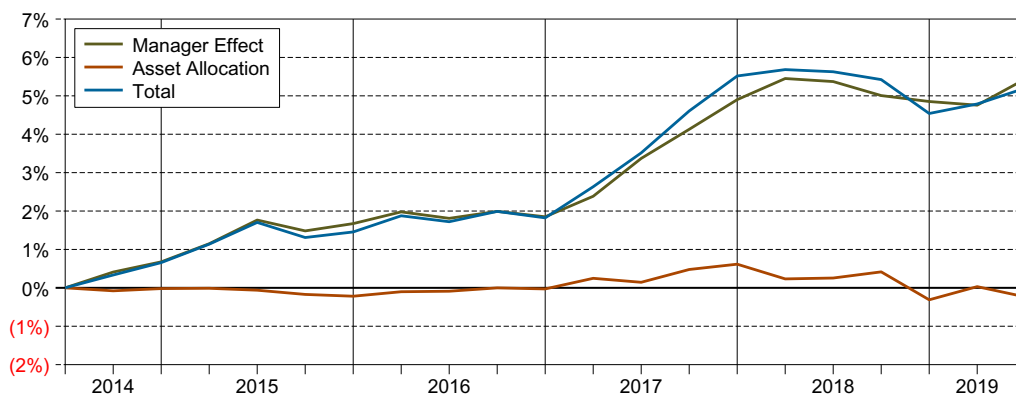
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

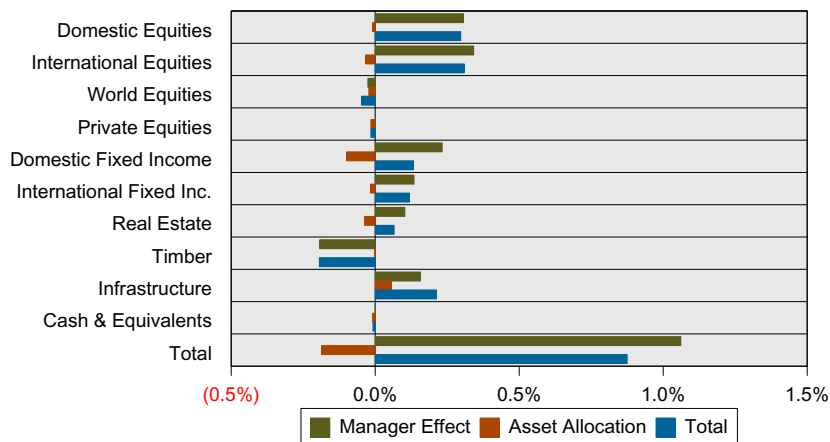
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.47%	9.73%	0.16%	0.02%	0.18%
International Equities	15%	14%	3.70%	2.34%	0.22%	(0.03%)	0.19%
World Equities	16%	16%	6.30%	6.60%	(0.04%)	0.00%	(0.04%)
Private Equities	4%	6%	2.21%	2.21%	0.00%	0.02%	0.02%
Domestic Fixed Income	20%	19%	4.89%	3.43%	0.29%	(0.04%)	0.25%
International Fixed Inc.	4%	4%	-	-	0.06%	0.01%	0.08%
Real Estate	10%	10%	10.35%	8.83%	0.15%	(0.03%)	0.13%
Timber	3%	4%	(0.07%)	4.67%	(0.15%)	(0.02%)	(0.17%)
Infrastructure	4%	5%	5.57%	1.74%	0.17%	0.02%	0.19%
Cash & Equivalents	1%	1%	0.95%	0.87%	0.00%	(0.01%)	(0.00%)
Total			6.50%	5.68%	+ 0.86%	+ (0.04%)	0.82%

* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

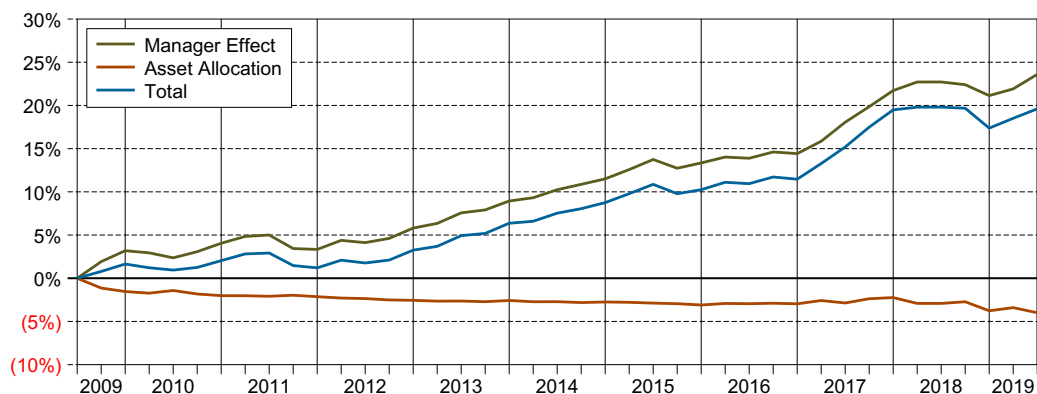
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Ten Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Ten Year Annualized Relative Attribution Effects

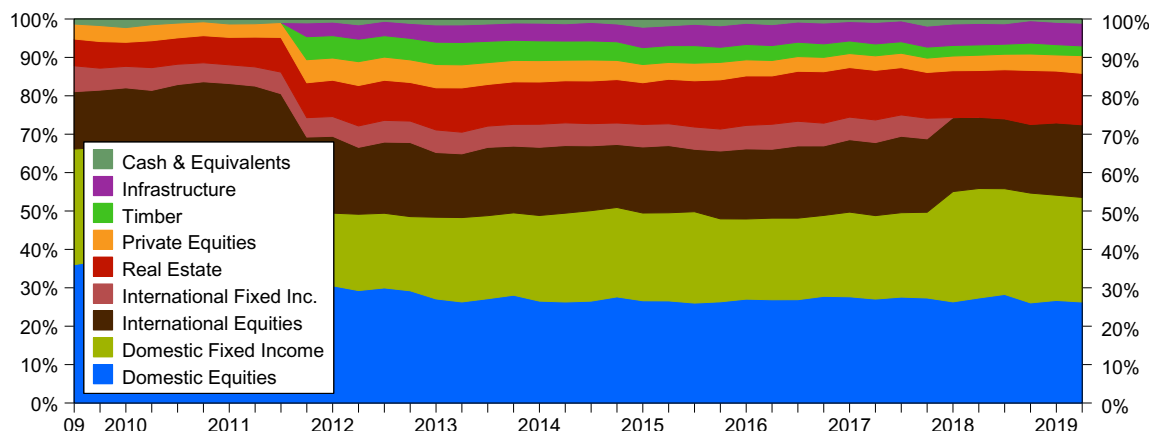
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	27%	26%	15.61%	14.47%	0.31%	(0.01%)	0.30%
International Equities	16%	16%	8.63%	6.54%	0.34%	(0.03%)	0.31%
World Equities	11%	11%	-	-	(0.03%)	(0.02%)	(0.05%)
Private Equities	4%	5%	5.96%	5.96%	0.00%	(0.01%)	(0.01%)
Domestic Fixed Income	21%	20%	6.63%	5.30%	0.23%	(0.10%)	0.13%
International Fixed Inc.	4%	4%	-	-	0.13%	(0.02%)	0.12%
Real Estate	9%	9%	10.13%	9.25%	0.10%	(0.04%)	0.07%
Timber	3%	3%	-	-	(0.19%)	0.00%	(0.19%)
Infrastructure	3%	4%	-	-	0.16%	0.06%	0.21%
Cash & Equivalents	1%	1%	0.55%	0.49%	0.00%	(0.01%)	(0.01%)
Total			9.81%	8.94%	+ 1.06%	(0.19%)	0.87%

* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

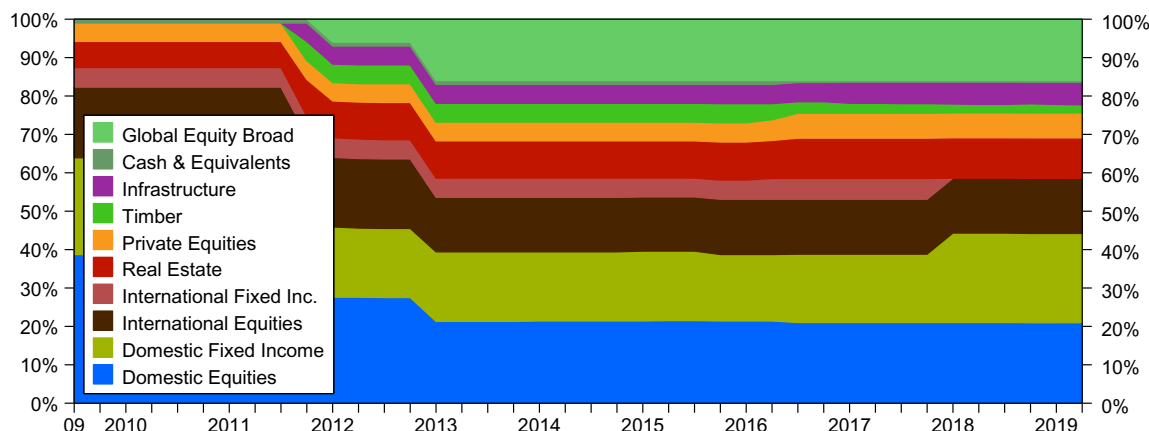
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

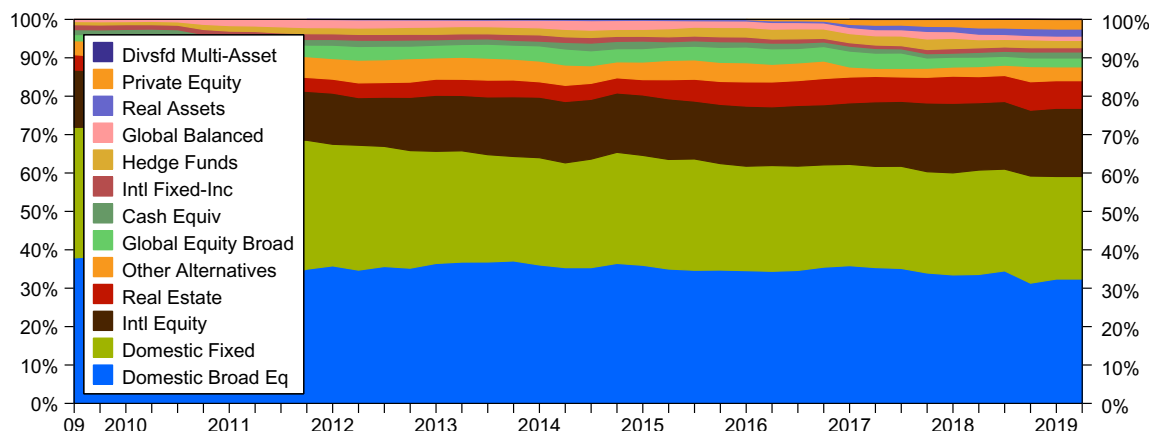
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

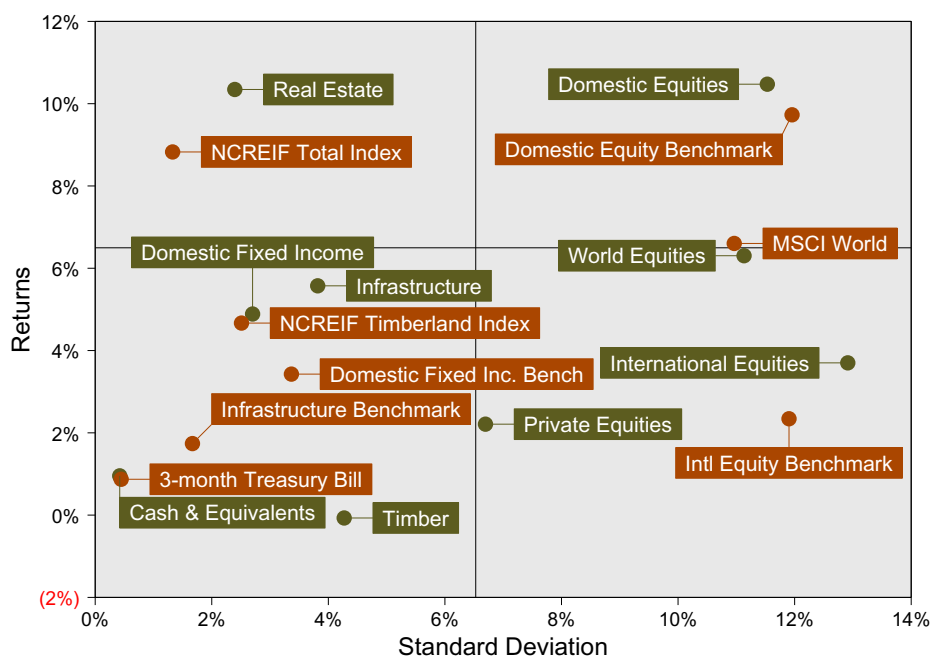


* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

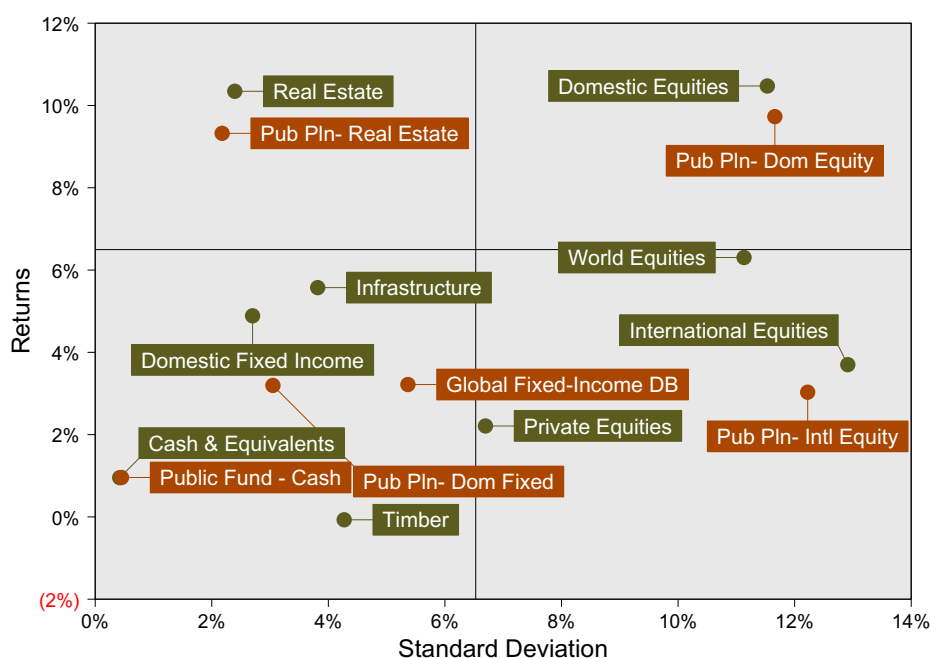
Asset Class Risk and Return

The charts below show the five year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

Five Year Annualized Risk vs Return Asset Classes vs Benchmark Indices



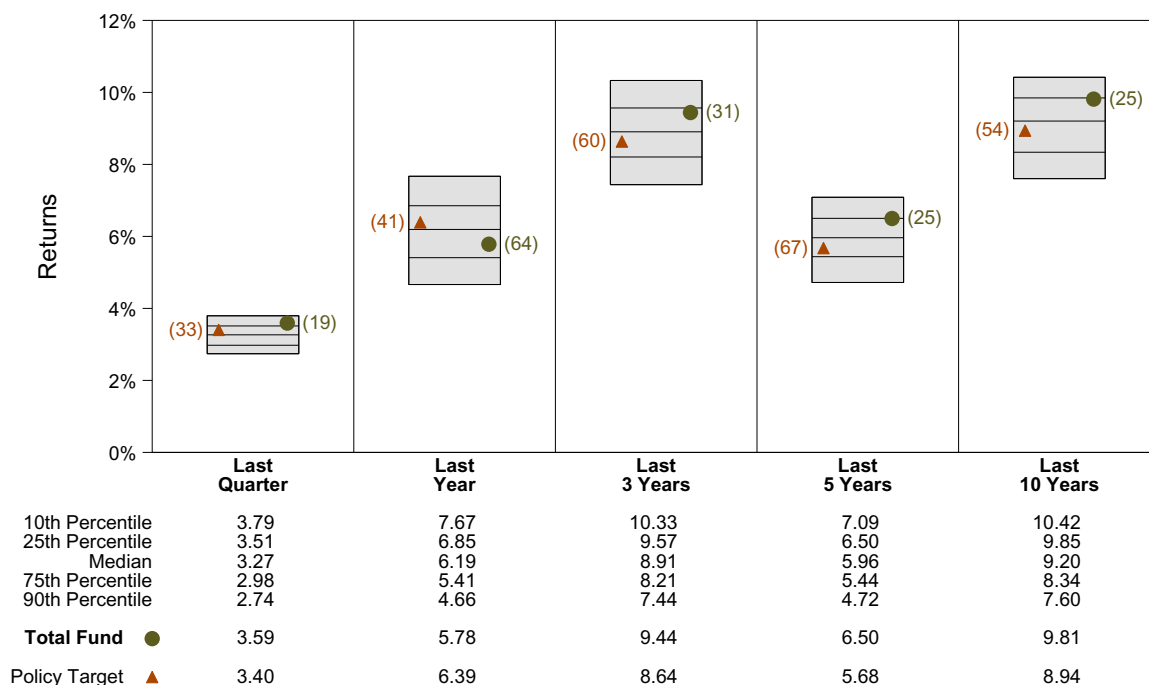
Five Year Annualized Risk vs Return Asset Classes vs Asset Class Median



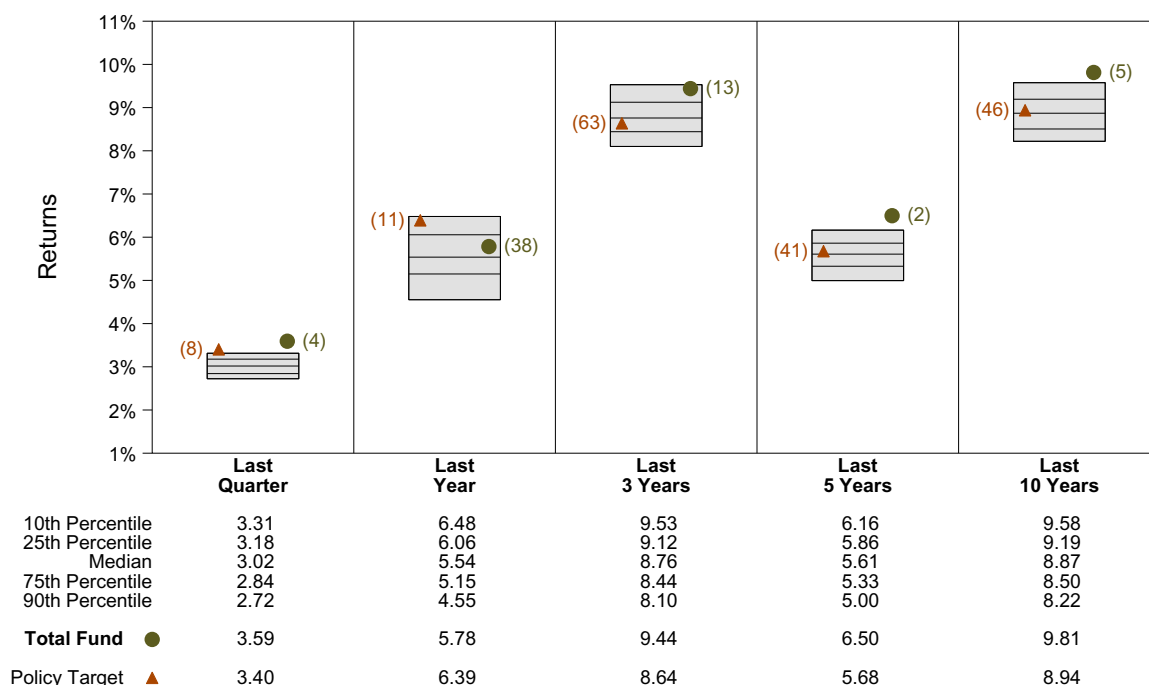
Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended June 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

Callan Public Fund Sponsor Database



Asset Allocation Adjusted Ranking

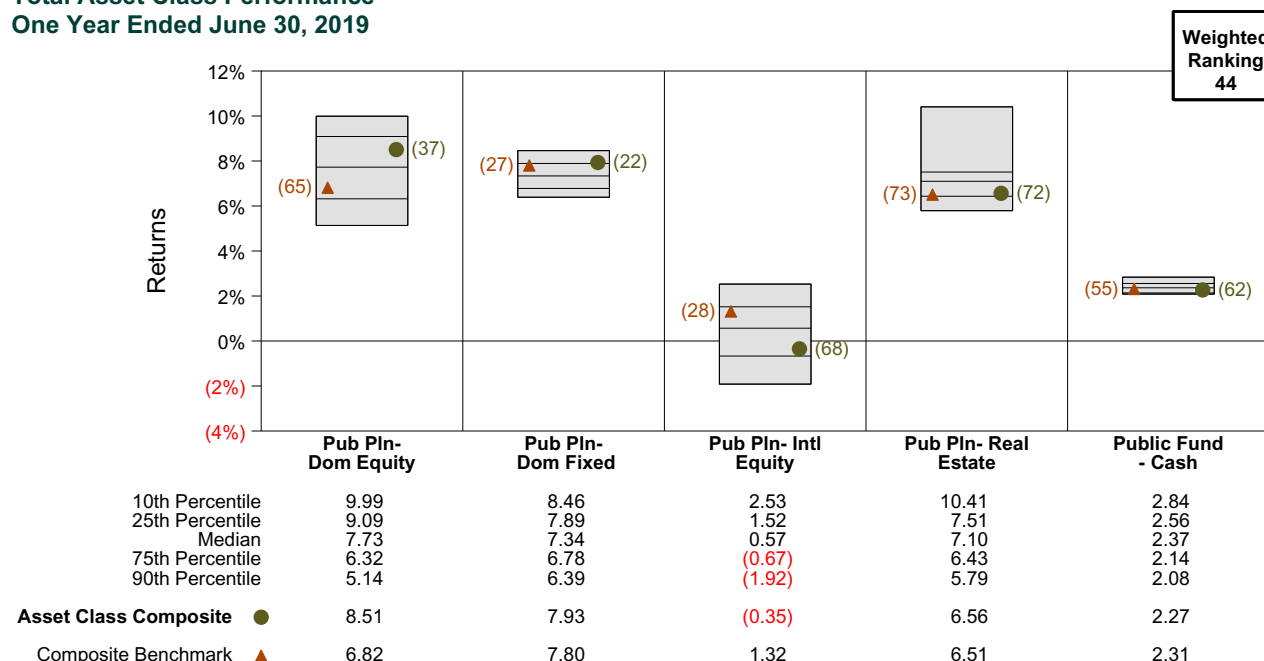


* Current Quarter Target = 16.2% Bimbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

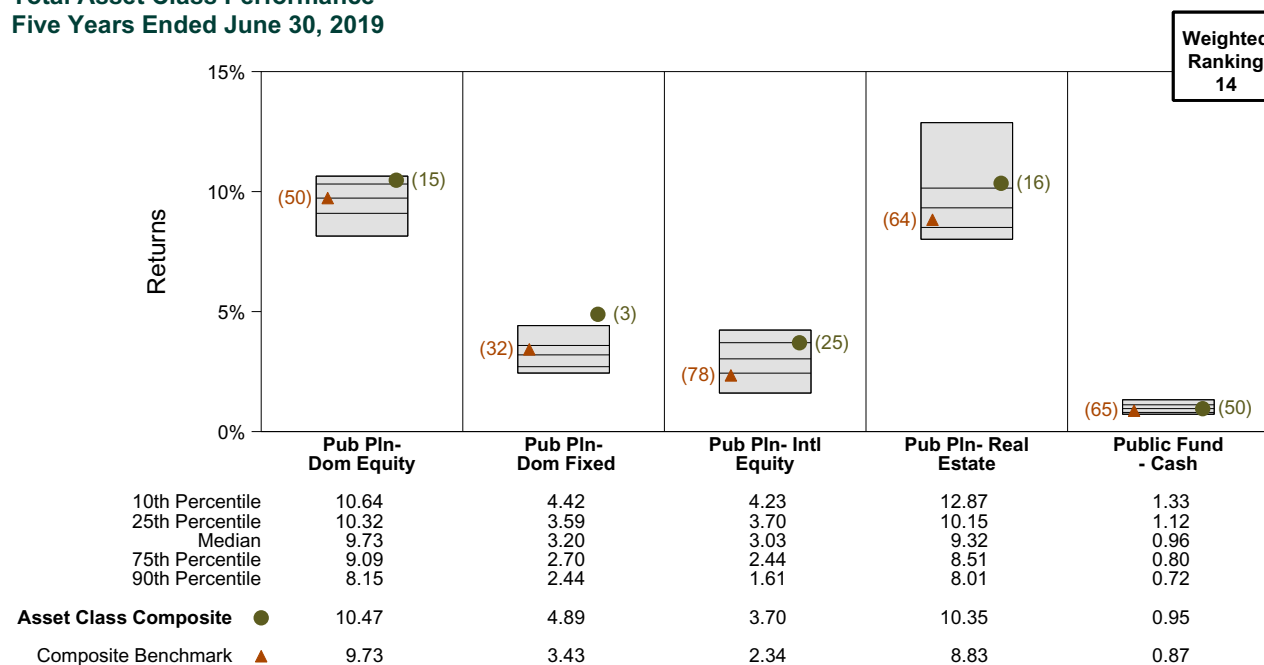
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Five Years Ended June 30, 2019



* Current Quarter Target = 16.2% Bimbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	\$3,452,390,148	58.04%	\$(29,870,293)	\$136,726,469	\$3,345,533,972	58.11%
Public Equities	\$3,223,025,826	54.18%	\$(41,224,199)	\$120,590,076	\$3,143,659,949	54.60%
World Equities	\$973,947,162	16.37%	\$(19,808,721)	\$34,401,758	\$959,354,125	16.66%
EPOCH Investment Partners	446,997,953	7.51%	(5,678,550)	23,232,173	429,444,330	7.46%
LSV Asset Management	526,949,210	8.86%	(14,130,171)	11,169,585	529,909,795	9.20%
Domestic Equities	\$1,308,308,370	21.99%	\$(26,519,302)	\$53,241,412	\$1,281,586,261	22.26%
Large Cap	\$998,472,991	16.79%	\$(16,252,943)	\$40,869,049	\$973,856,886	16.92%
L.A. Capital	391,840,602	6.59%	(16,197,448)	18,409,706	389,628,343	6.77%
LACM Enhanced Index	211,010,158	3.55%	9,944,504	8,662,611	192,403,043	3.34%
Northern Trust AM Enh S&P 500	199,292,648	3.35%	0	5,021,175	194,271,473	3.37%
Parametric Clifton Enh S&P 500	196,329,584	3.30%	(10,000,000)	8,775,557	197,554,027	3.43%
Small Cap	\$309,835,379	5.21%	\$(10,266,359)	\$12,372,363	\$307,729,375	5.35%
Atlanta Capital	156,435,409	2.63%	(5,266,359)	9,129,331	152,572,437	2.65%
Parametric Clifton Enh Small Cap	153,399,970	2.58%	(5,000,000)	3,243,032	155,156,938	2.69%
International Equities	\$940,770,294	15.82%	\$5,103,825	\$32,946,906	\$902,719,563	15.68%
Developed	\$722,743,719	12.15%	\$7,616,223	\$28,512,775	\$686,614,722	11.93%
DFA Int'l Small Cap	75,373,902	1.27%	0	115,778	75,258,123	1.31%
Northern Trust AM World Ex US	353,921,685	5.95%	9,950,918	13,288,390	330,682,378	5.74%
Wellington Management Co.	73,427,457	1.23%	(2,156,746)	1,775,635	73,808,569	1.28%
William Blair	220,020,675	3.70%	(177,949)	13,332,972	206,865,652	3.59%
Emerging Markets	\$218,026,575	3.67%	\$(2,512,398)	\$4,434,131	\$216,104,841	3.75%
Axiom	158,454,366	2.66%	(7,512,398)	3,909,157	162,057,607	2.81%
DFA	59,572,209	1.00%	5,000,000	524,974	54,047,234	0.94%

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Private Equities	\$229,364,322	3.86%	\$11,353,906	\$16,136,393	\$201,874,023	3.51%
Adams Street Direct Co-Invest Fd	722,281	0.01%	0	(85,846)	808,127	0.01%
Adams Street Direct Fund 2010	844,393	0.01%	0	36,990	807,403	0.01%
Adams Street 1998 Partnership	13,518	0.00%	0	88	13,430	0.00%
Adams Street 1999 Partnership	119,466	0.00%	0	(9,304)	128,770	0.00%
Adams Street 2000 Partnership	352,391	0.01%	0	23,867	328,524	0.01%
Adams Street 2001 Partnership	560,299	0.01%	0	23,118	537,181	0.01%
Adams Street 2002 Partnership	138,489	0.00%	0	6,943	131,546	0.00%
Adams Street 2003 Partnership	163,082	0.00%	0	9,237	153,845	0.00%
Adams Street 2010 Partnership	6,832,590	0.11%	(195,670)	505,919	6,522,341	0.11%
Adams Street 2008 Fund	6,917,900	0.12%	(782,233)	533,776	7,166,357	0.12%
Adams Street 1999 Non-US	72,047	0.00%	0	208	71,839	0.00%
Adams Street 2000 Non-US	357,711	0.01%	0	50,368	307,343	0.01%
Adams Street 2001 Non-US	93,991	0.00%	0	1,409	92,582	0.00%
Adams Street 2002 Non-US	89,988	0.00%	0	(1,458)	91,446	0.00%
Adams Street 2003 Non-US	177,521	0.00%	0	132	177,389	0.00%
Adams Street 2004 Non-US	221,837	0.00%	0	5,969	215,868	0.00%
Adams Street 2010 Non-US	2,938,933	0.05%	(302,211)	156,265	3,084,879	0.05%
Adams Street 2010 Non-US Emg	1,841,157	0.03%	(31,866)	108,607	1,764,416	0.03%
Adams Street 2015 Global Fd	22,621,557	0.38%	0	1,227,159	21,394,398	0.37%
Adams Street 2016 Global Fd	16,672,523	0.28%	1,710,000	763,933	14,198,590	0.25%
Adams Street 2017 Global Fd	25,468,402	0.43%	5,070,000	1,091,546	19,306,856	0.34%
Adams Street 2018 Global Fd	8,249,197	0.14%	0	443,087	7,806,110	0.14%
Adams Street BVCF IV Fund	3,383,026	0.06%	0	32,256	3,350,770	0.06%
BlackRock	61,845,265	1.04%	9,205,714	4,493,239	48,146,312	0.84%
Capital International V	820,513	0.01%	9,423	(88,114)	899,204	0.02%
Capital International VI	29,858,998	0.50%	(727,379)	740,919	29,845,458	0.52%
CorsAir III	13,727,992	0.23%	(84,948)	6,658,046	7,154,894	0.12%
EIG Energy Fund XIV	4,538,201	0.08%	0	(509,839)	5,048,040	0.09%
Hearthstone Advisors MS II	1	0.00%	0	(1,670)	1,671	0.00%
Hearthstone Advisors MS III	109,309	0.00%	(2,516,924)	161,482	2,464,751	0.04%
Lewis & Clark, LP	1,138,318	0.02%	0	(583,282)	1,721,600	0.03%
Lewis & Clark II	4,469,887	0.08%	0	(397,514)	4,867,401	0.08%
Matlin Patterson II	1,189,522	0.02%	0	(3,478)	1,193,000	0.02%
Matlin Patterson III	11,426,274	0.19%	0	1,528,994	9,897,280	0.17%
Quantum Energy Partners	1,387,743	0.02%	0	(786,659)	2,174,402	0.04%

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Fixed Income	\$1,354,841,531	22.78%	\$(2,532,940)	\$42,737,482	\$1,314,636,989	22.83%
Domestic Fixed Income	\$1,354,841,531	22.78%	\$(2,532,940)	\$42,737,482	\$1,314,636,989	22.83%
Investment Grade	\$943,855,829	15.87%	\$(15,390,649)	\$30,649,796	\$928,596,681	16.13%
Declaration Total Return	113,328,472	1.91%	(61,700)	2,613,865	110,776,307	1.92%
PIMCO DiSCO II	93,953,072	1.58%	0	1,521,297	92,431,775	1.61%
PIMCO Core Plus Constrained	317,630,279	5.34%	(12,192,791)	10,475,325	319,347,745	5.55%
Prudential Core	317,650,444	5.34%	(12,136,157)	10,157,590	319,629,011	5.55%
SSgA Long US Treas Index	101,293,562	1.70%	9,000,000	5,881,719	86,411,843	1.50%
Below Investment Grade	\$410,985,702	6.91%	\$12,857,708	\$12,087,686	\$386,040,308	6.71%
Ares ND Credit Strategies Fd	82,704,649	1.39%	0	3,358,120	79,346,529	1.38%
Cerberus ND Private Credit Fd	91,389,289	1.54%	15,000,000	1,546,884	74,842,405	1.30%
Goldman Sachs 2006 Offshore	92,396	0.00%	0	1,109	91,287	0.00%
Goldman Sachs Offshore V	403,546	0.01%	0	55,120	348,426	0.01%
Loomis Sayles	207,761,333	3.49%	(253,984)	4,828,136	203,187,181	3.53%
PIMCO Bravo II Fund	28,634,489	0.48%	(1,888,308)	2,298,317	28,224,480	0.49%
Global Real Assets	\$1,086,551,086	18.27%	\$3,986,847	\$26,720,688	\$1,055,843,550	18.34%
Real Estate	\$666,766,554	11.21%	\$6,043,228	\$12,424,430	\$648,298,896	11.26%
Invesco Core Real Estate	323,502,690	5.44%	(552,304)	6,848,842	317,206,152	5.51%
Invesco Fund II	176,874	0.00%	0	(2,444)	179,318	0.00%
Invesco Fund III	11,943,173	0.20%	0	(1,942,601)	13,885,774	0.24%
Invesco Asia RE Feeder	207,387	0.00%	0	(13,769)	221,156	0.00%
Invesco Asia RE Fund III	10,523,273	0.18%	5,702,699	723,685	4,096,890	0.07%
Invesco Value Added Fd IV	44,548,594	0.75%	(5,993,506)	2,583,315	47,958,785	0.83%
Invesco Value Added Fd V	17,260,715	0.29%	6,891,752	443,230	9,925,733	0.17%
JP Morgan	252,788,684	4.25%	0	2,218,211	250,570,472	4.35%
JP Morgan Alternative Fd	-	-	0	(25,951)	25,951	0.00%
JP Morgan China Property Fd	-	-	0	(1)	1	0.00%
JP Morgan Greater European Opp Fd	5,815,163	0.10%	(5,413)	1,591,912	4,228,664	0.07%
Other Real Assets	\$419,784,532	7.06%	\$(2,056,380)	\$14,296,258	\$407,544,654	7.08%
Infrastructure	\$294,013,235	4.94%	\$3,263,620	\$11,981,895	\$278,767,720	4.84%
ISQ Global Infrastructure II	17,853,225	0.30%	244,173	3,602,686	14,006,366	0.24%
The Rohatyn Group	18,199,852	0.31%	89,154	(205,072)	18,315,770	0.32%
JP Morgan IIF	188,360,123	3.17%	(4,265,613)	7,084,956	185,540,780	3.22%
Grosvenor Cust. Infrastructure	26,131,586	0.44%	0	452,475	25,679,111	0.45%
Grosvenor Cust. Infrastructure II	18,097,986	0.30%	0	1,077,758	17,020,228	0.30%
Macquarie Infrac. Partners IV	25,370,463	0.43%	7,195,905	(30,907)	18,205,465	0.32%
Timber	\$125,771,297	2.11%	\$(5,320,000)	\$2,314,363	\$128,776,934	2.24%
TIR Teredo	32,474,048	0.55%	0	1,165,501	31,308,547	0.54%
TIR Springbank	93,297,249	1.57%	(5,320,000)	1,148,862	97,468,387	1.69%
Cash	\$54,745,826	0.92%	\$13,202,197	\$230,117	\$41,313,512	0.72%
Northern Trust Cash Account	44,317,884	0.75%	13,202,197	168,590	30,947,097	0.54%
Bank of ND	10,427,942	0.18%	0	61,527	10,366,415	0.18%
Securities Lending Income	\$0	0.00%	\$(138,217)	\$138,217	-	-
Total Fund	\$5,948,528,591	100.0%	\$(15,352,406)	\$206,552,974	\$5,757,328,023	100.0%

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Equities					
Gross	4.09%	4.65%	11.97%	6.99%	-
Net	4.04%	4.44%	11.72%	6.71%	-
Weighted Benchmark	4.13%	5.72%	11.69%	6.38%	-
Public Equities					
Gross	3.84%	4.45%	-	-	-
Net	3.79%	4.22%	-	-	-
Weighted Benchmark	3.65%	5.14%	-	-	-
World Equities					
Gross	3.63%	3.39%	11.55%	6.30%	-
Net	3.54%	3.05%	11.15%	5.74%	-
MSCI World	4.00%	6.33%	11.77%	6.60%	10.72%
EPOCH Investment - Gross(1)	5.45%	7.56%	13.25%	8.21%	-
EPOCH Investment - Net	5.29%	6.90%	12.55%	7.52%	-
MSCI World	4.00%	6.33%	11.77%	6.60%	10.72%
LSV Asset Management - Gross(2)	2.18%	0.16%	10.13%	4.82%	-
LSV Asset Management - Net	2.15%	0.07%	9.96%	4.36%	-
MSCI ACWI Gross	3.80%	6.33%	12.22%	6.74%	10.73%
Domestic Equities					
Gross	4.15%	8.51%	14.09%	10.47%	15.61%
Net	4.11%	8.33%	13.87%	10.28%	15.35%
Weighted Benchmark	3.74%	6.82%	13.78%	9.73%	14.47%
Large Cap					
Gross	4.19%	10.23%	14.19%	11.28%	15.55%
Net	4.16%	10.11%	14.06%	11.14%	15.36%
Large Cap Benchmark(3)	4.25%	10.02%	14.15%	10.45%	14.68%
L.A. Capital - Gross	4.73%	11.79%	15.88%	13.04%	16.22%
L.A. Capital - Net	4.68%	11.56%	15.65%	12.80%	15.97%
Russell 1000 Growth Index	4.64%	11.56%	18.07%	13.39%	16.28%
LACM Enhanced Index - Gross	4.40%	10.87%	12.99%	10.62%	14.99%
LACM Enhanced Index - Net	4.38%	10.75%	12.87%	10.49%	14.83%
Russell 1000 Index	4.25%	10.02%	14.15%	10.45%	14.77%
Northern Tr AM Enh S&P500 - Gross	2.58%	6.28%	12.39%	8.95%	14.42%
Northern Tr AM Enh S&P500 - Net	2.58%	6.28%	12.39%	8.88%	14.22%
S&P 500 Index	4.30%	10.42%	14.19%	10.71%	14.70%
Parametric Clifton Enh S&P500 - Gross	4.57%	10.62%	13.91%	10.68%	-
Parametric Clifton Enh S&P500 - Net	4.57%	10.62%	13.82%	10.63%	-
S&P 500 Index	4.30%	10.42%	14.19%	10.71%	14.70%
Small Cap					
Gross	4.02%	3.38%	13.84%	7.76%	15.67%
Net	3.93%	3.02%	13.34%	7.40%	15.18%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.45%
Atlanta Capital - Gross	5.98%	10.30%	14.93%	-	-
Atlanta Capital - Net	5.81%	9.55%	14.13%	-	-
S&P 600 Small Cap Index	1.87%	(4.88%)	11.97%	8.41%	14.99%
Parametric Clifton Enh SmCap - Gross	2.10%	(3.36%)	12.27%	7.55%	-
Parametric Clifton Enh SmCap - Net	2.10%	(3.36%)	12.07%	7.27%	-
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.45%

(1) EPOCH Investment was removed from the Domestic Equities Composite to the World Equities Composite as of 1/1/2012.

(3) LSV Asset Management was removed from the Domestic Equities and Intl Equities Composites to the World Equities

Composite as of February 1, 2013.

(3) S&P 500 Index through 12/31/2011 and Russell 1000 Index thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
International Equities					
Gross	3.64%	(0.35%)	10.09%	3.70%	8.63%
Net	3.59%	(0.51%)	9.91%	3.52%	8.31%
Weighted Benchmark	3.09%	1.32%	9.42%	2.34%	6.54%
Developed					
Gross	4.13%	(0.63%)	10.04%	3.57%	8.69%
Net	4.07%	(0.85%)	9.80%	3.33%	8.37%
Benchmark(1)	3.79%	1.29%	9.01%	2.19%	6.56%
DFA Int'l Small Cap Value - Net	0.15%	(11.54%)	6.29%	1.05%	8.17%
World ex US SC Value	0.92%	(6.40%)	7.72%	1.89%	8.40%
Northern Tr AM World ex US - Gross	3.96%	1.55%	9.40%	2.40%	-
Northern Tr AM World ex US - Net	3.94%	1.51%	9.36%	2.37%	-
MSCI World ex US	3.79%	1.29%	9.01%	2.04%	6.75%
Wellington Management - Gross	2.47%	(12.61%)	7.10%	4.70%	11.51%
Wellington Management - Net	2.25%	(13.37%)	6.20%	3.83%	10.57%
BMI, EPAC, <\$2 B	0.02%	(9.91%)	6.36%	3.29%	8.09%
William Blair - Gross	6.45%	5.56%	13.68%	-	-
William Blair - Net	6.36%	5.19%	13.30%	-	-
MSCI ACWI ex US IMI	2.74%	0.26%	9.17%	2.25%	6.78%
Emerging Markets					
Gross	2.03%	0.37%	10.12%	3.78%	7.34%
Net	2.03%	0.37%	10.12%	3.77%	7.03%
Emerging Mkts - Net	0.61%	1.22%	10.66%	2.49%	5.81%
Axiom - Net	2.52%	0.91%	11.00%	-	-
Emerging Mkts - Net	0.61%	1.22%	10.66%	2.49%	5.81%
DFA - Net	0.77%	(1.31%)	7.55%	2.90%	8.07%
Emerging Mkts - Net	0.61%	1.22%	10.66%	2.49%	5.81%

(1) MSCI EAFE through 12/31/1996; 50% Hedged EAFE through 3/31/2011; MSCI EAFE again through 6/30/2016; MSCI World ex-US thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Private Equities*					
Net	7.72%	8.60%	8.30%	2.20%	5.91%
Adams Street Direct Co-Invest Fd	(10.62%)	(34.59%)	(18.03%)	(6.17%)	3.08%
Adams Street Direct Fund 2010	4.58%	16.01%	15.51%	11.62%	-
Adams Street 1998 Partnership	0.65%	8.09%	2.73%	2.32%	2.44%
Adams Street 1999 Partnership	(7.23%)	(5.75%)	(2.00%)	(2.85%)	3.64%
Adams Street 2000 Partnership	7.26%	15.03%	8.51%	2.30%	6.68%
Adams Street 2001 Partnership	4.30%	2.62%	5.40%	0.98%	7.20%
Adams Street 2002 Partnership	5.28%	(8.00%)	3.12%	(0.69%)	8.48%
Adams Street 2003 Partnership	6.00%	5.30%	10.42%	8.28%	10.84%
Adams Street 2010 Partnership	8.00%	18.13%	16.98%	15.01%	-
Adams Street 2008 Fund	8.01%	17.39%	16.68%	13.83%	10.96%
Adams Street 1999 Non-US	0.29%	0.92%	1.68%	0.70%	8.80%
Adams Street 2000 Non-US	16.39%	7.78%	10.53%	3.46%	5.79%
Adams Street 2001 Non-US	1.52%	14.62%	5.39%	11.05%	11.01%
Adams Street 2002 Non-US	(1.60%)	(2.53%)	(0.62%)	3.30%	6.86%
Adams Street 2003 Non-US	0.07%	(15.21%)	4.19%	5.52%	12.42%
Adams Street 2004 Non-US	2.76%	5.46%	8.30%	1.78%	7.93%
Adams Street 2010 Non-US	5.35%	20.14%	20.23%	13.20%	-
Adams Street 2010 Non-US Emg	6.27%	10.72%	14.05%	14.83%	-
Adams Street 2015 Global Fd	5.74%	17.55%	28.01%	-	-
Adams Street 2016 Global Fd	4.96%	10.66%	-	-	-
Adams Street 2017 Global Fd	4.78%	7.43%	-	-	-
Adams Street 2018 Global Fd	5.68%	-	-	-	-
Adams Street BVCF IV Fund	0.96%	(0.40%)	1.80%	8.07%	31.71%
BlackRock	8.36%	10.83%	-	-	-
Capital International V	(9.70%)	(37.07%)	(45.20%)	(36.13%)	(16.88%)
Capital International VI	2.47%	7.95%	7.82%	(0.17%)	-
Corsair III	94.28%	82.11%	8.50%	9.34%	3.89%
EIG Energy Fund XIV	(10.10%)	(23.43%)	0.63%	(24.08%)	(10.02%)
Lewis & Clark, LP	(33.88%)	(26.40%)	10.80%	(14.73%)	(5.29%)
Lewis & Clark II	(8.17%)	12.12%	7.83%	1.81%	(3.57%)
Matlin Patterson II	(0.29%)	(2.63%)	(9.89%)	(1.26%)	(23.12%)
Matlin Patterson III	15.45%	1.27%	5.50%	1.56%	15.60%
Quantum Energy Partners	(36.18%)	(51.42%)	(26.03%)	(24.05%)	(4.56%)

* Corsair III was taken out from the Private Equity Composite on July 1, 2009. It was then added back into the Private Equity Composite on October 1, 2011. At this time Corsair IV, Capital Intl and EIG were also added to this composite.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Fixed Income					
Gross	3.20%	7.93%	5.59%	4.46%	-
Net	3.15%	7.77%	5.38%	4.23%	-
Weighted Benchmark	2.92%	7.80%	3.69%	3.05%	-
Domestic Fixed Income					
Gross	3.20%	7.93%	5.70%	4.89%	6.63%
Net	3.15%	7.77%	5.52%	4.69%	6.41%
Weighted Benchmark	2.92%	7.80%	3.67%	3.43%	5.30%
Investment Grade					
Gross	3.26%	8.24%	4.54%	4.49%	5.19%
Net	3.22%	8.13%	4.43%	4.36%	5.01%
Bimbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Declaration Total Return - Net	2.36%	6.48%	4.92%	4.20%	-
Libor-3 Month	0.63%	2.61%	1.78%	1.21%	0.78%
PIMCO Core Plus Cons. - Gross(1)	3.29%	8.33%	6.52%	4.00%	-
PIMCO Core Plus Cons. - Net	3.22%	8.20%	6.25%	3.70%	-
Blended Benchmark(2)	3.08%	7.87%	3.49%	2.23%	-
PIMCO DiSCO II - Net	1.65%	5.90%	10.90%	8.24%	-
Bimbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Prudential Core - Gross	3.19%	8.36%	-	-	-
Prudential Core - Net	3.14%	8.17%	-	-	-
Bimbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
SSgA Long US Treas Idx - Gross	6.04%	12.30%	1.33%	5.70%	-
SSgA Long US Treas Idx - Net	6.04%	12.29%	1.30%	5.67%	-
Bimbg Long Treas	6.03%	12.30%	1.34%	5.71%	6.53%
Below Investment Grade					
Gross	3.06%	7.26%	8.63%	5.78%	10.70%
Net	3.00%	6.98%	8.29%	5.40%	10.38%
Bimbg HY Corp 2% Issue	2.50%	7.48%	7.52%	4.71%	9.22%
Ares ND Credit Strategies Fd - Net	4.23%	8.03%	-	-	-
Cerberus ND Private Credit Fd - Net	1.71%	8.89%	-	-	-
S&P/LSTA Leveraged Loan B	1.72%	4.22%	5.52%	3.90%	6.71%
Goldman Sachs 2006 Offshore - Net	1.21%	6.62%	24.47%	20.07%	23.64%
Goldman Sachs Offshore V - Net	15.82%	36.09%	11.26%	8.38%	13.40%
PIMCO Bravo II Fund - Net	8.39%	3.10%	7.41%	7.91%	-
Bimbg HY Corp 2% Issue	2.50%	7.48%	7.52%	4.71%	9.22%
Loomis Sayles - Gross	2.38%	7.17%	7.86%	4.87%	9.92%
Loomis Sayles - Net	2.25%	6.63%	7.32%	4.35%	9.52%
Bimbg HY Corp 2% Issue	2.50%	7.48%	7.52%	4.71%	9.22%

(1) The product changed from Commingled Fund to Separate Account in March 2014.

(2) Libor-3 month through Feb. 28, 2014; Fund's performance through March 31, 2014; Libor-3 month through June 30, 2018; Bimbg Aggregate thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Real Assets					
Gross	2.52%	6.04%	6.34%	7.35%	-
Net	2.30%	5.58%	5.90%	6.90%	-
Weighted Benchmark	1.34%	5.32%	5.21%	6.11%	-
Real Estate					
Gross	1.91%	6.56%	8.14%	10.35%	10.13%
Net	1.64%	6.02%	7.61%	9.80%	9.34%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.25%
Invesco Core Real Estate - Gross	2.16%	7.05%	7.95%	10.19%	9.92%
Invesco Core Real Estate - Net	1.99%	6.69%	7.58%	9.81%	9.48%
Invesco Fund II - Net	(1.36%)	(4.85%)	4.87%	5.49%	5.33%
Invesco Fund III - Net	(13.99%)	(17.71%)	(2.70%)	4.55%	-
Invesco Asia RE Feeder - Net	(6.23%)	(14.36%)	100.34%	83.29%	26.28%
Invesco Asia RE Fund III - Net	17.44%	16.08%	37.14%	-	-
Invesco Value Added Fd IV - Net	5.41%	12.51%	10.72%	-	-
Invesco Value Added Fd V - Net	0.92%	-	-	-	-
JP Morgan - Gross	0.89%	6.14%	7.65%	9.94%	10.45%
JP Morgan - Net	0.41%	5.19%	6.69%	8.89%	9.41%
JPM Greater European Opp Fd - Net	37.69%	9.79%	(16.29%)	(3.12%)	-
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.25%
Other Real Assets					
Gross	3.50%	5.17%	-	-	-
Net	3.35%	4.86%	-	-	-
Weighted Benchmark	1.12%	3.71%	-	-	-
Infrastructure					
Gross	4.23%	5.59%	7.72%	5.57%	-
Net	4.01%	5.12%	7.22%	5.02%	-
ISQ Global Infrastructure II - Net	25.71%	2.41%	-	-	-
The Rohatyn Group - Net	(1.11%)	(15.64%)	1.37%	(1.72%)	1.51%
JP Morgan IIF - Gross	3.83%	7.58%	8.40%	6.24%	6.91%
JP Morgan IIF - Net	3.49%	6.88%	7.69%	5.40%	5.82%
Grosvenor Cust. Infrastructure - Net	1.76%	3.58%	6.44%	6.62%	-
Grosvenor Cust. Infrastructure II - Net	6.33%	16.38%	9.08%	-	-
Benchmark(1)	1.15%	3.91%	2.83%	1.74%	1.95%
Macquarie Infras. Partners IV - Net	(0.92%)	-	-	-	-
Benchmark(2)	1.15%	-	-	-	-
Timber					
Net	1.84%	4.10%	(2.78%)	(0.07%)	-
TIR Teredo - Net	3.72%	7.55%	(1.35%)	3.92%	4.62%
TIR Springbank - Net	1.22%	2.99%	(3.22%)	(1.77%)	(3.57%)
NCREIF Timberland Index	1.04%	3.18%	3.37%	4.67%	4.00%
Cash & Cash Equivalents - Net	0.56%	2.27%	1.48%	0.95%	0.55%
Cash Account - Net	0.54%	2.23%	1.47%	0.95%	0.53%
Bank of ND - Net	0.59%	2.27%	-	-	-
3-month Treasury Bill	0.64%	2.31%	1.38%	0.87%	0.49%
Total Fund					
Gross	3.59%	5.78%	9.44%	6.50%	9.81%
Net	3.51%	5.54%	9.17%	6.20%	9.44%
Target*	3.40%	6.39%	8.64%	5.68%	8.94%

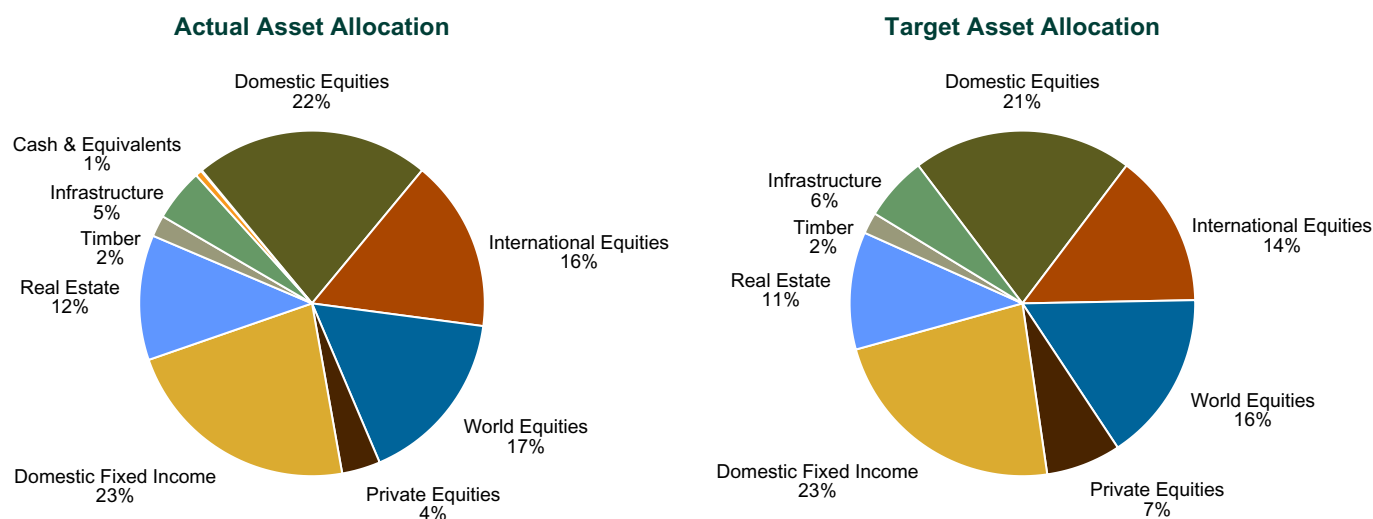
* Current Quarter Target = 16.2% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

(2) 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.

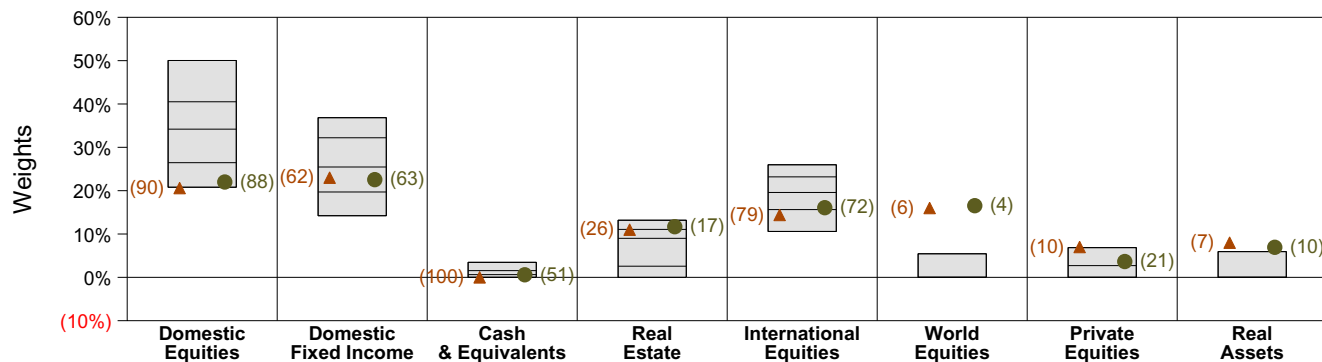
Actual vs Target Asset Allocation As of June 30, 2019

The top left chart shows the Fund's asset allocation as of June 30, 2019. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	693,541	22.0%	20.6%	1.4%	44,037
International Equities	506,693	16.1%	14.4%	1.7%	52,671
World Equities	521,178	16.5%	16.0%	0.5%	16,709
Private Equities	115,069	3.6%	7.0%	(3.4%)	(105,636)
Domestic Fixed Income	710,758	22.5%	23.0%	(0.5%)	(14,416)
Real Estate	368,351	11.7%	11.0%	0.7%	21,529
Timber	63,601	2.0%	2.0%	0.0%	0
Infrastructure	155,105	4.9%	6.0%	(1.1%)	(33,528)
Cash & Equivalents	18,635	0.6%	0.0%	0.6%	18,635
Total	3,152,930	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database



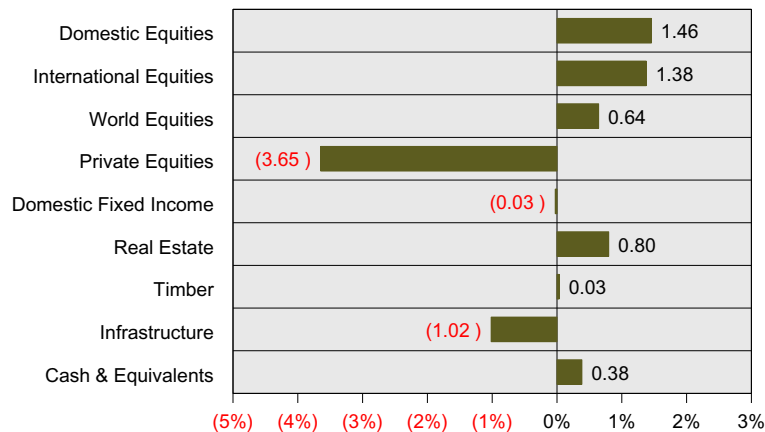
	Domestic Equities	Domestic Fixed Income	Cash & Equivalents	Real Estate	International Equities	World Equities	Private Equities	Real Assets
10th Percentile	50.04	36.84	3.46	13.18	25.98	5.44	6.86	5.93
25th Percentile	40.51	32.21	1.55	11.06	23.18	0.00	2.71	0.00
Median	34.20	25.46	0.63	9.00	19.58	0.00	0.00	0.00
75th Percentile	26.46	19.70	0.02	2.57	15.63	0.00	0.00	0.00
90th Percentile	20.79	14.22	0.00	0.00	10.59	0.00	0.00	0.00
Fund	22.00	22.54	0.59	11.68	16.07	16.53	3.65	6.94
Target	20.60	23.00	0.00	11.00	14.40	16.00	7.00	8.00
% Group Invested	96.40%	97.12%	78.42%	76.98%	92.09%	12.23%	30.22%	24.46%

* Current Quarter Target = 16.0% BImbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% BImbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

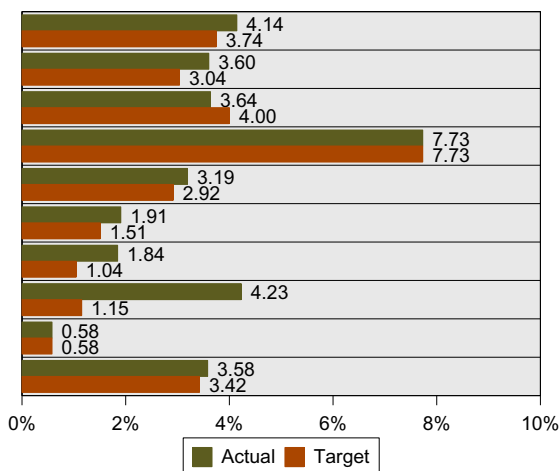
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

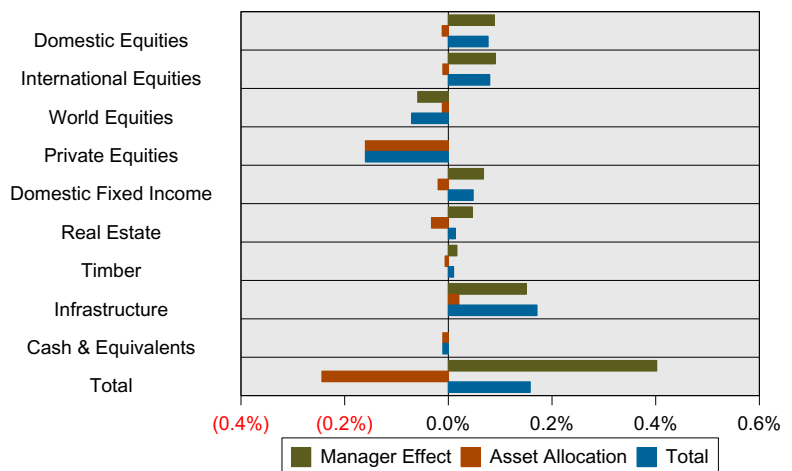
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

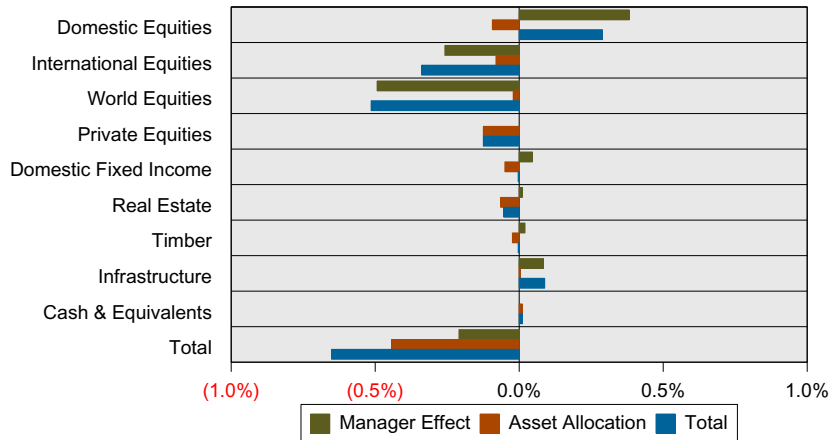
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	4.14%	3.74%	0.09%	(0.01%)	0.08%
International Equities	16%	14%	3.60%	3.04%	0.09%	(0.01%)	0.08%
World Equities	17%	16%	3.64%	4.00%	(0.06%)	(0.01%)	(0.07%)
Private Equities	3%	7%	7.73%	7.73%	0.00%	(0.16%)	(0.16%)
Domestic Fixed Income	23%	23%	3.19%	2.92%	0.07%	(0.02%)	0.05%
Real Estate	12%	11%	1.91%	1.51%	0.05%	(0.03%)	0.01%
Timber	2%	2%	1.84%	1.04%	0.02%	(0.01%)	0.01%
Infrastructure	5%	6%	4.23%	1.15%	0.15%	0.02%	0.17%
Cash & Equivalents	0%	0%	0.58%	0.58%	0.00%	(0.01%)	(0.01%)
Total			3.58%	3.42%	+ 0.40%	+ (0.24%)	0.16%

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

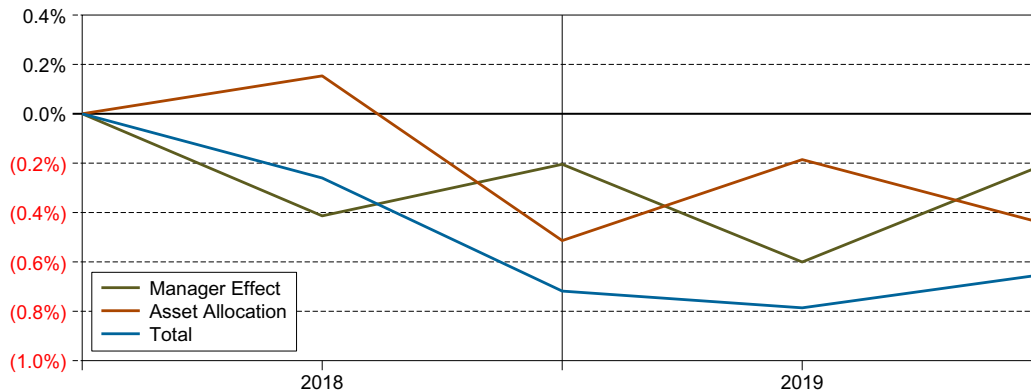
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

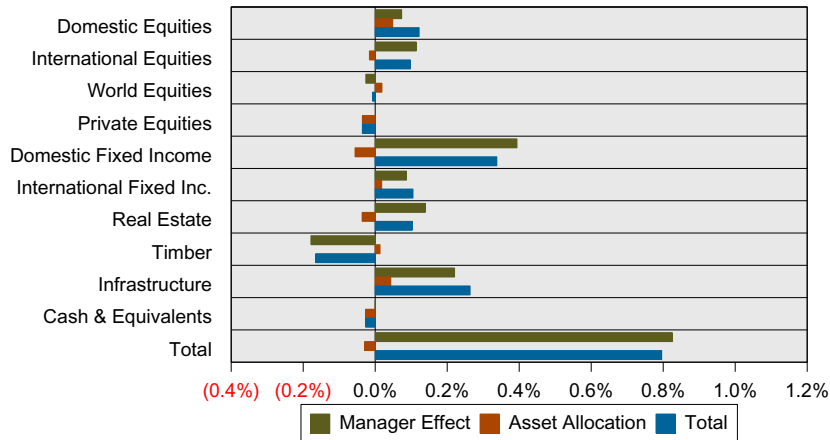
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.49%	6.82%	0.38%	(0.09%)	0.29%
International Equities	16%	14%	(0.35%)	1.31%	(0.26%)	(0.08%)	(0.34%)
World Equities	16%	16%	3.38%	6.33%	(0.49%)	(0.02%)	(0.51%)
Private Equities	3%	7%	8.62%	8.62%	0.00%	(0.12%)	(0.12%)
Domestic Fixed Income	23%	23%	7.94%	7.80%	0.05%	(0.05%)	0.00%
Real Estate	12%	11%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	0.00%
Infrastructure	5%	6%	5.58%	3.91%	0.08%	0.00%	0.08%
Cash & Equivalents	0%	0%	2.31%	2.31%	0.00%	0.01%	0.01%
Total			5.76%	6.41%	(0.21%)	(0.44%)	(0.65%)

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

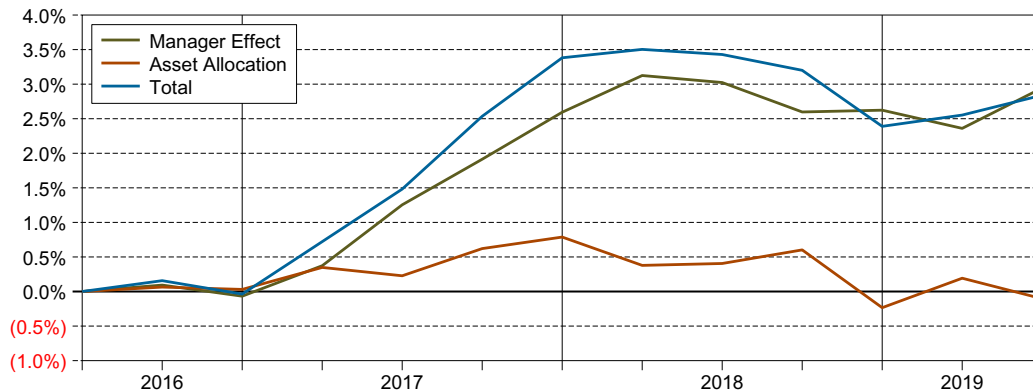
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

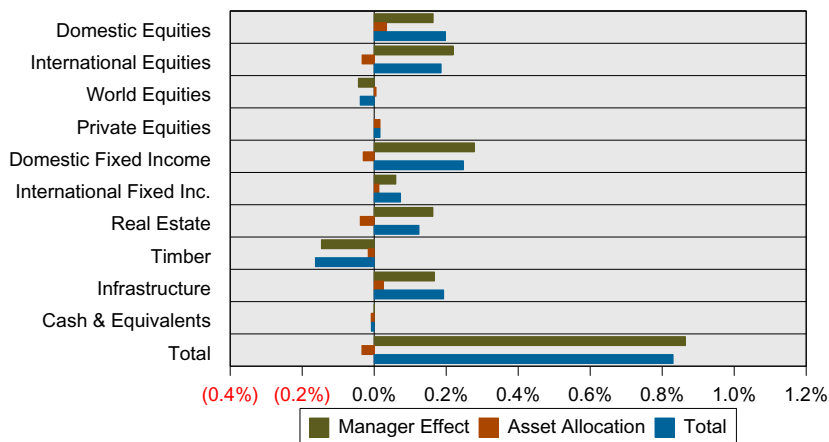
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	14.10%	13.77%	0.07%	0.05%	0.12%
International Equities	16%	14%	10.09%	9.45%	0.11%	(0.02%)	0.10%
World Equities	17%	16%	11.55%	11.77%	(0.03%)	0.02%	(0.01%)
Private Equities	3%	7%	8.31%	8.31%	0.00%	(0.04%)	(0.04%)
Domestic Fixed Income	20%	20%	5.77%	3.78%	0.39%	(0.06%)	0.34%
International Fixed Inc.	3%	3%	-	-	0.09%	0.02%	0.10%
Real Estate	11%	11%	8.14%	6.89%	0.14%	(0.04%)	0.10%
Timber	2%	3%	(2.78%)	3.37%	(0.18%)	0.01%	(0.17%)
Infrastructure	5%	6%	7.72%	2.83%	0.22%	0.04%	0.26%
Cash & Equivalents	1%	0%	1.50%	1.49%	0.00%	(0.03%)	(0.03%)
Total			9.48%	8.69%	+ 0.83%	+ (0.03%)	0.80%

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

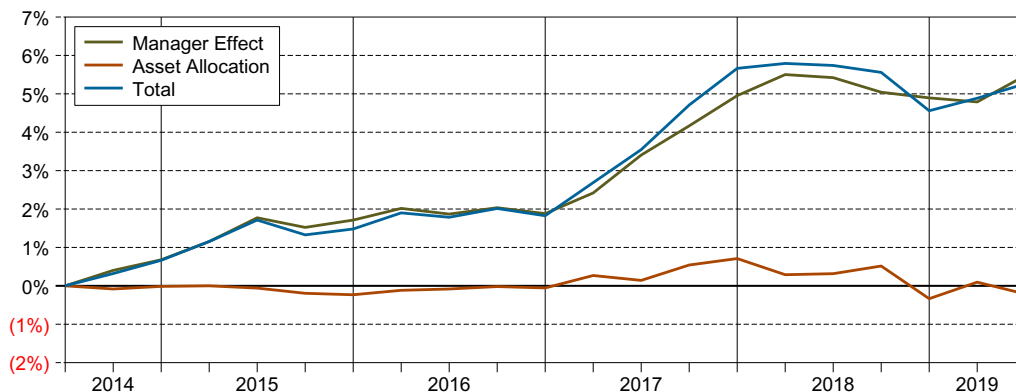
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

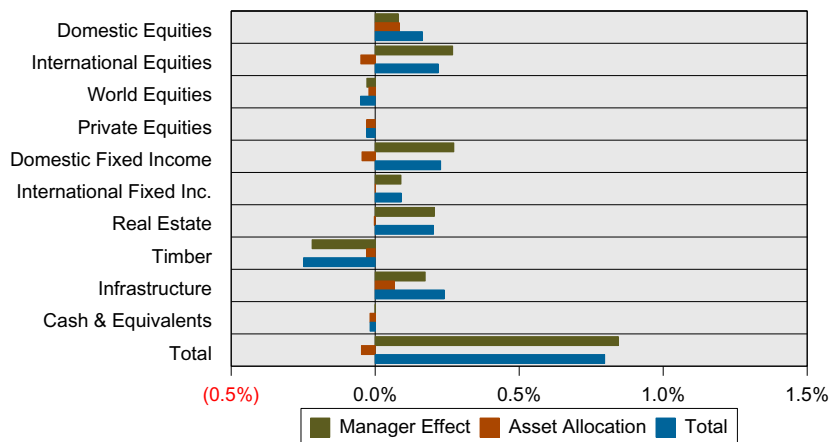
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.49%	9.74%	0.16%	0.03%	0.20%
International Equities	16%	14%	3.71%	2.34%	0.22%	(0.03%)	0.19%
World Equities	16%	16%	6.31%	6.60%	(0.04%)	0.01%	(0.04%)
Private Equities	3%	6%	2.22%	2.22%	0.00%	0.02%	0.02%
Domestic Fixed Income	19%	19%	4.91%	3.46%	0.28%	(0.03%)	0.25%
International Fixed Inc.	4%	4%	-	-	0.06%	0.01%	0.07%
Real Estate	11%	11%	10.39%	8.83%	0.16%	(0.04%)	0.12%
Timber	3%	4%	(0.07%)	4.67%	(0.15%)	(0.02%)	(0.16%)
Infrastructure	4%	5%	5.57%	1.74%	0.17%	0.03%	0.19%
Cash & Equivalents	1%	0%	0.97%	0.94%	0.00%	(0.01%)	(0.01%)
Total			6.52%	5.69%	+ 0.86%	+ (0.03%)	0.83%

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

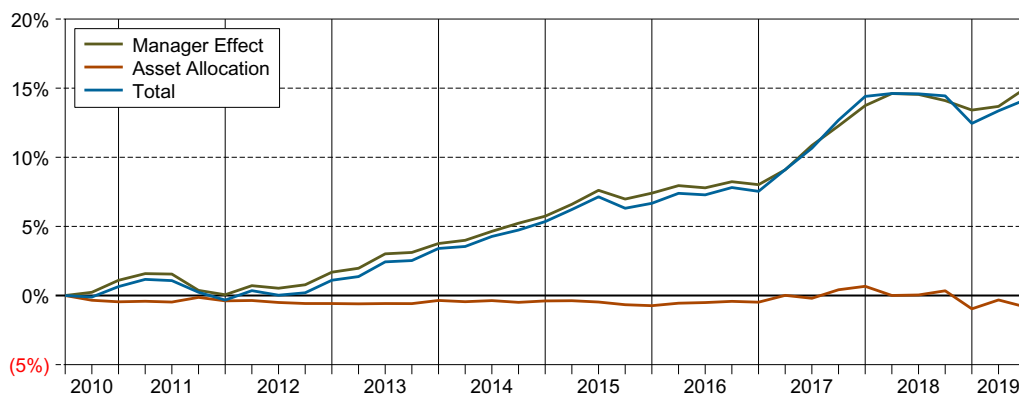
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Nine Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Nine Year Annualized Relative Attribution Effects

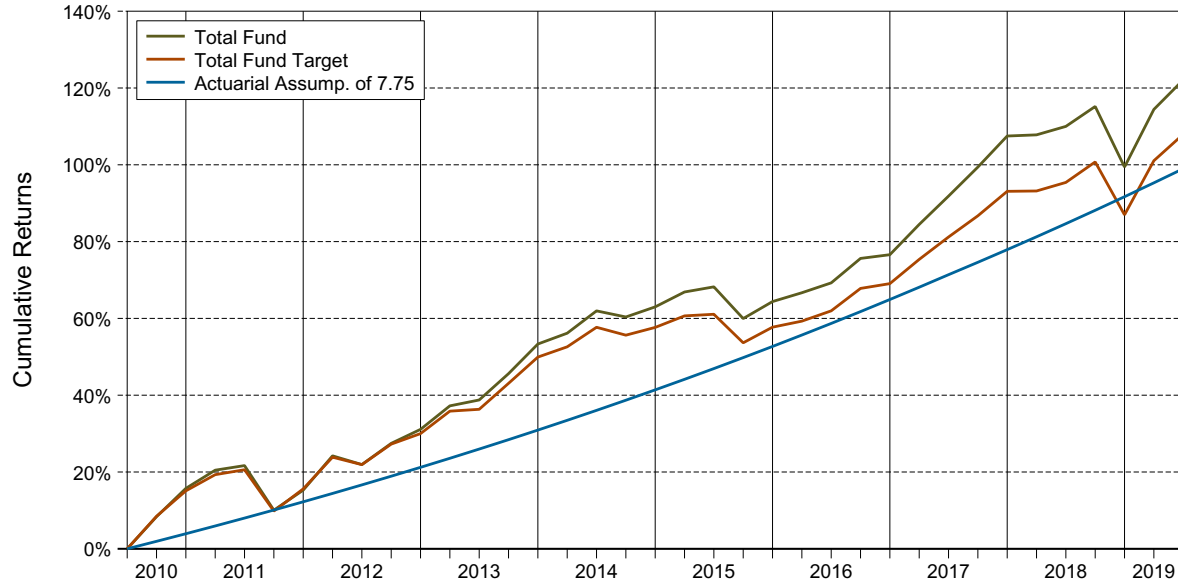
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	14.78%	14.27%	0.08%	0.08%	0.16%
International Equities	16%	15%	7.63%	5.88%	0.27%	(0.05%)	0.22%
World Equities	12%	12%	-	-	(0.03%)	(0.02%)	(0.05%)
Private Equities	4%	6%	4.57%	4.57%	0.00%	(0.03%)	(0.03%)
Domestic Fixed Income	20%	20%	6.05%	4.50%	0.27%	(0.05%)	0.23%
International Fixed Inc.	4%	4%	-	-	0.09%	0.00%	0.09%
Real Estate	10%	10%	12.97%	10.51%	0.21%	(0.00%)	0.20%
Timber	3%	3%	-	-	(0.22%)	(0.03%)	(0.25%)
Infrastructure	4%	4%	-	-	0.17%	0.07%	0.24%
Cash & Equivalents	1%	1%	0.58%	0.56%	0.00%	(0.02%)	(0.02%)
Total			9.27%	8.47%	+ 0.84%	+ (0.05%)	0.80%

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

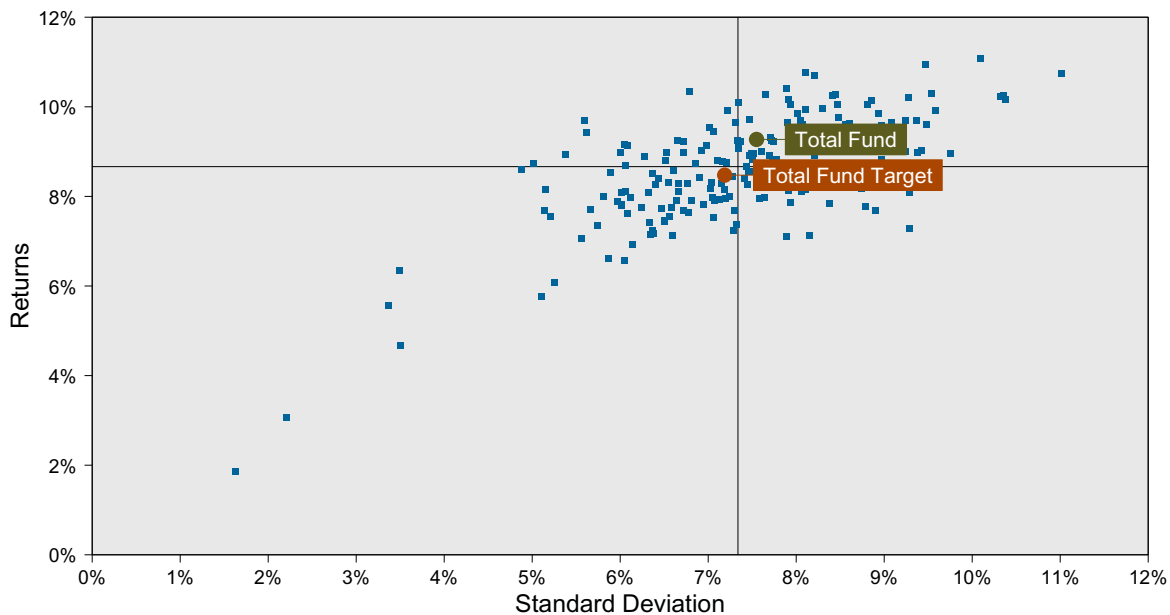
Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Sponsor Database.

Cumulative Returns Actual vs Target



Nine Year Annualized Risk vs Return



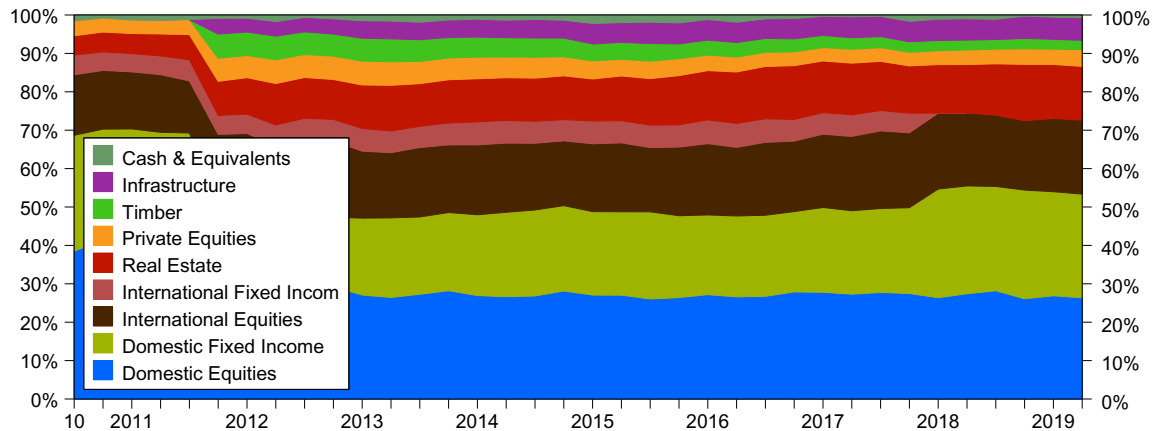
Squares represent membership of the Callan Public Fund Sponsor Database

* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

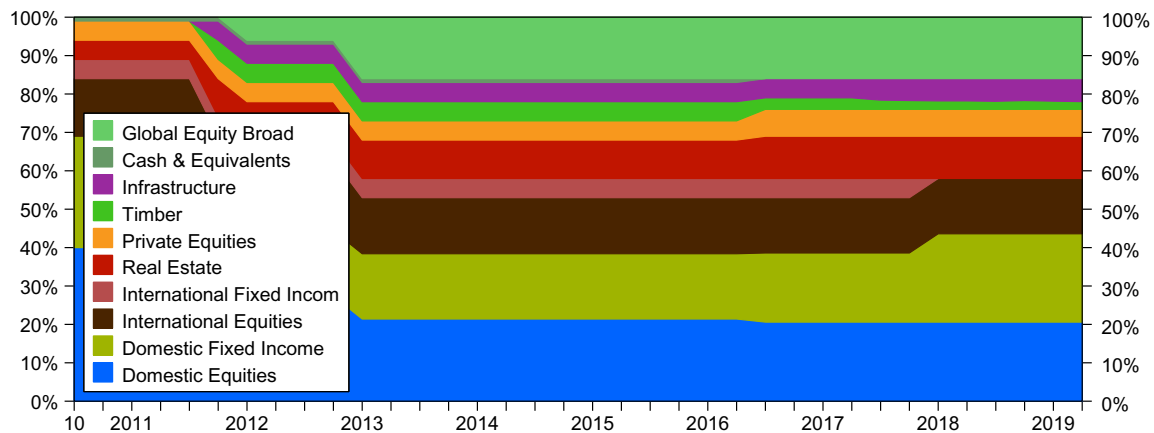
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

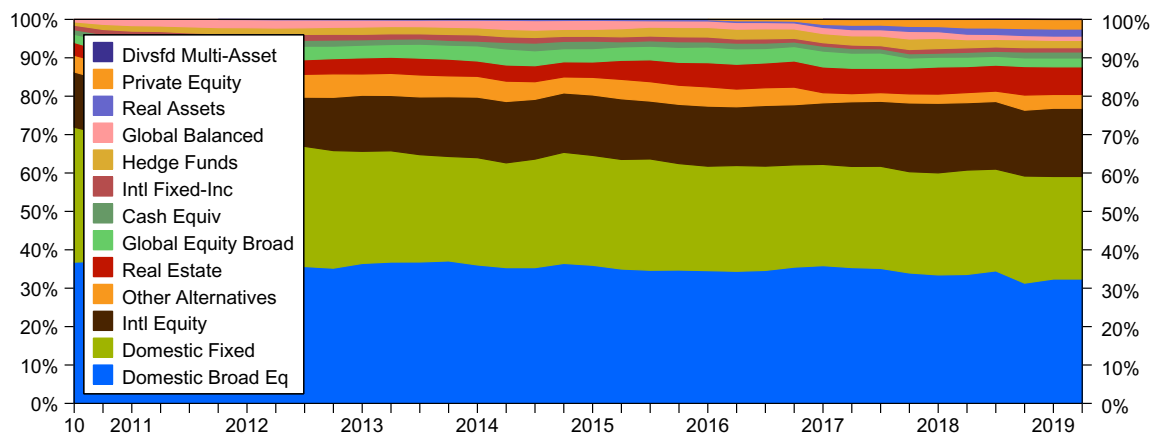
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

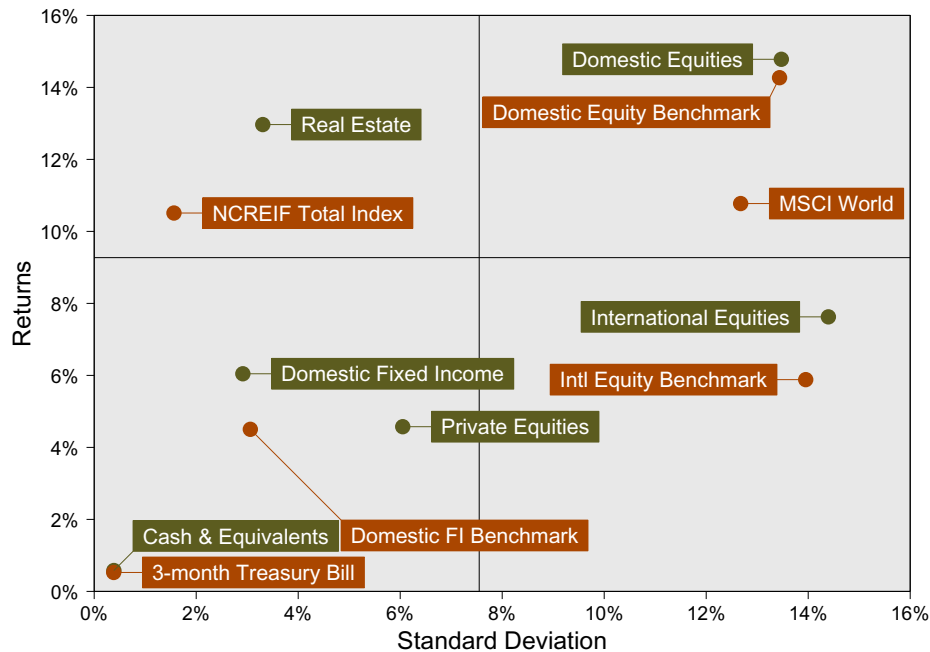


* Current Quarter Target = 16.0% Blmgb Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmgb HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

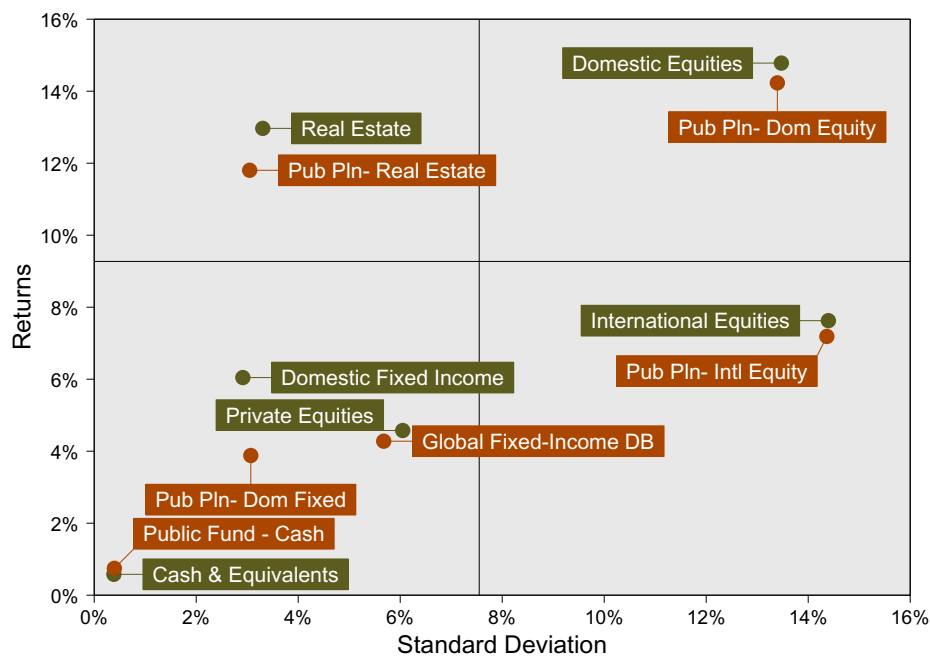
Asset Class Risk and Return

The charts below show the nine year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

**Nine Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices**



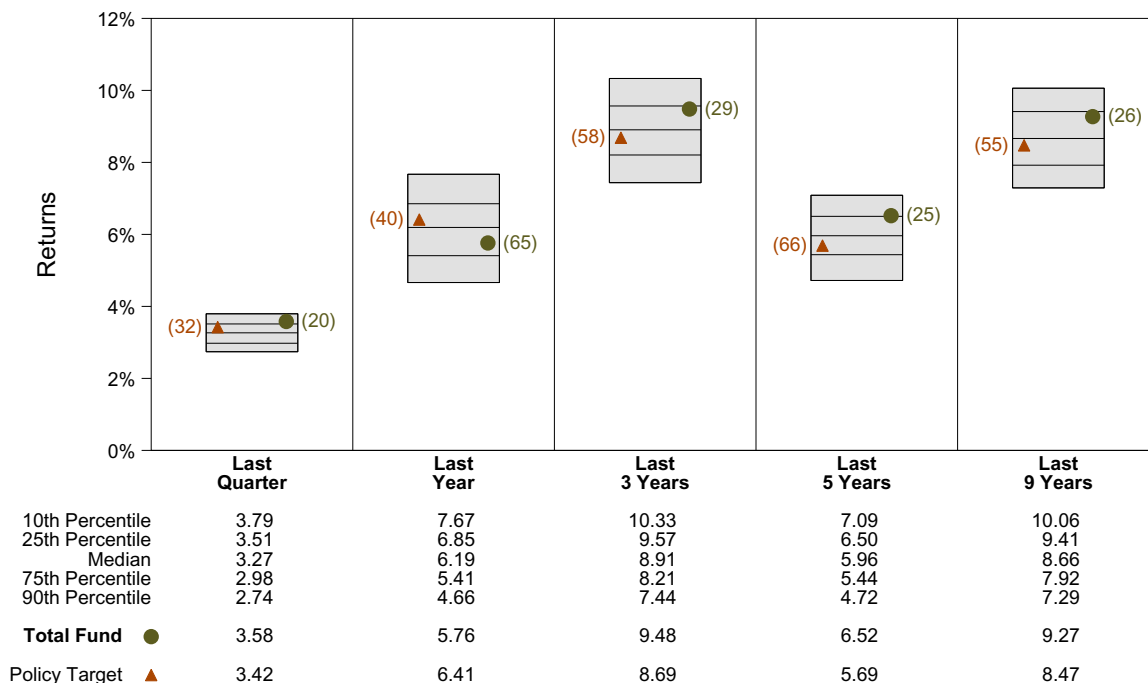
**Nine Year Annualized Risk vs Return
Asset Classes vs Asset Class Median**



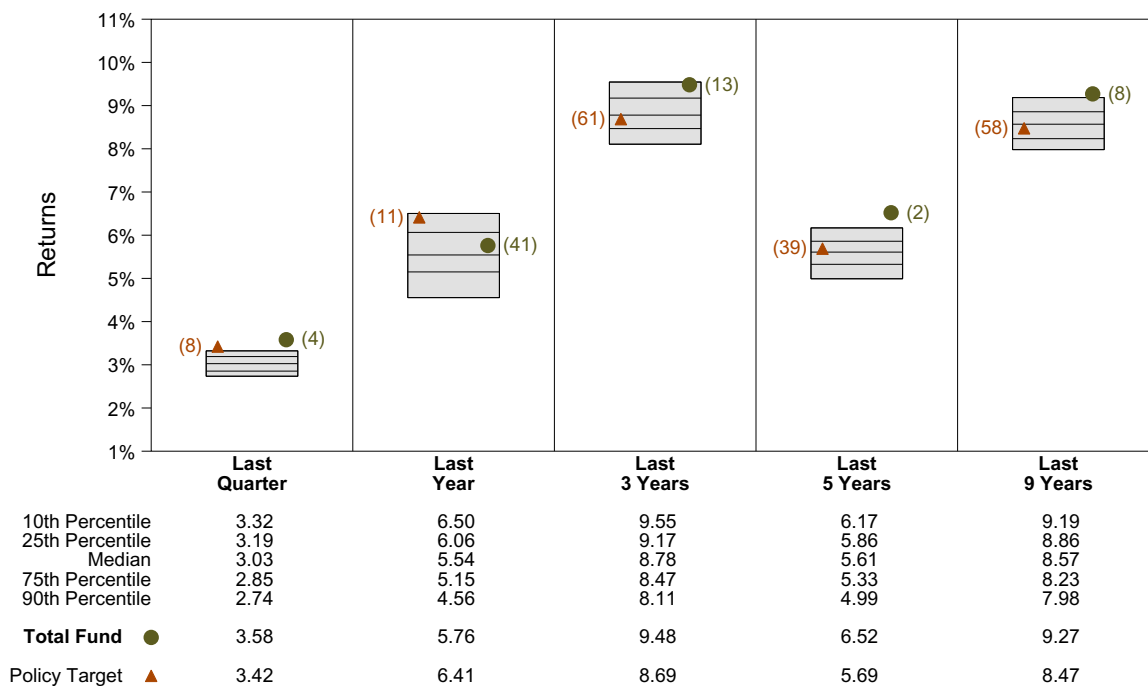
Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended June 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

Callan Public Fund Sponsor Database



Asset Allocation Adjusted Ranking

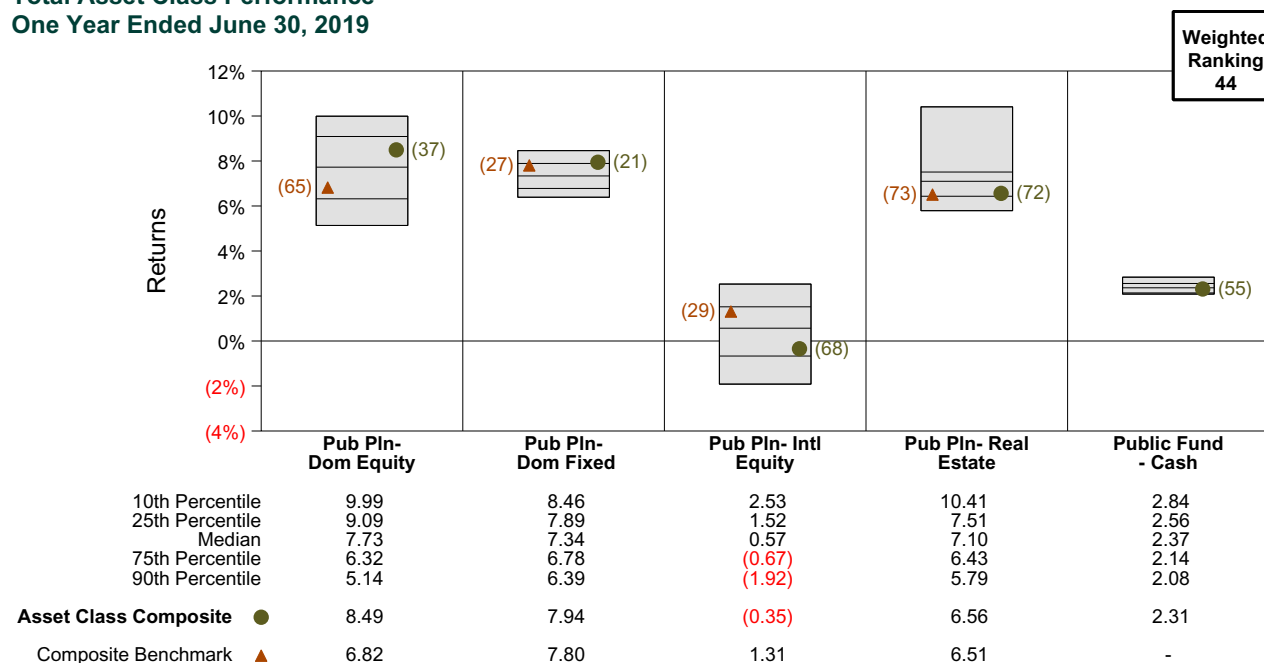


* Current Quarter Target = 16.0% Bimbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

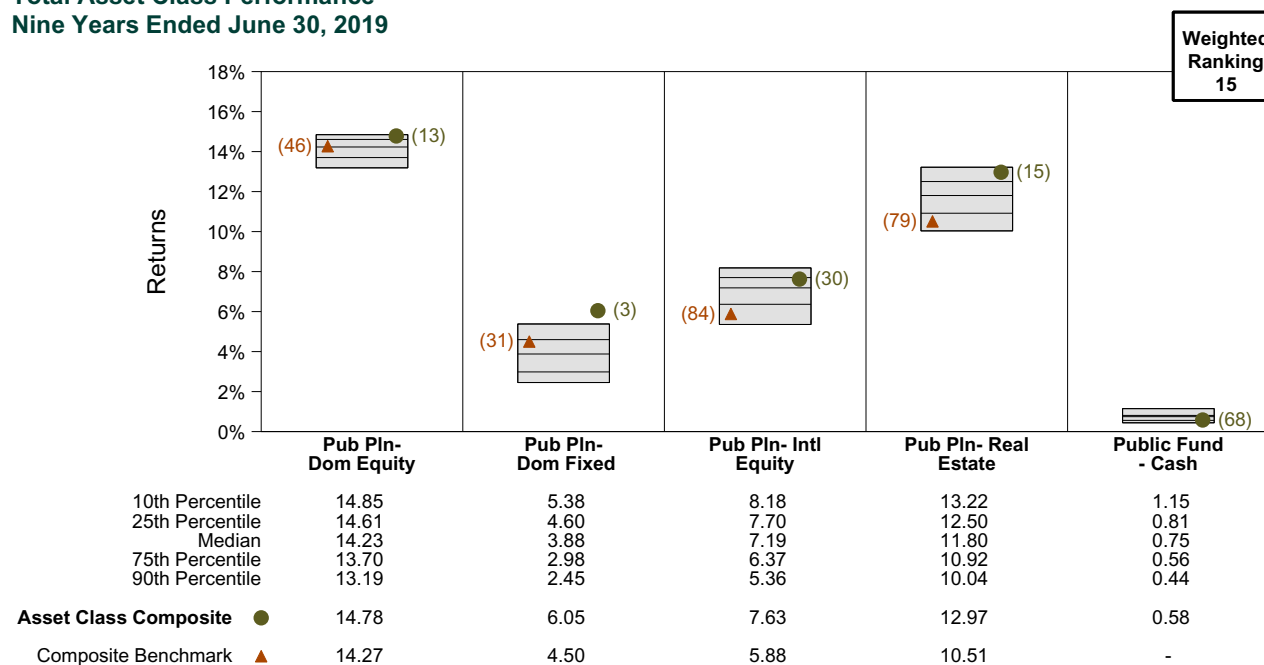
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Nine Years Ended June 30, 2019



* Current Quarter Target = 16.0% Bimbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Class Allocation

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	\$1,836,479,886	58.25%	\$(16,997,690)	\$72,264,882	\$1,781,212,694	58.30%
Public Equities	\$1,721,411,251	54.60%	\$(22,693,774)	\$64,169,496	\$1,679,935,530	54.99%
World Equities	\$521,177,858	16.53%	\$(7,905,892)	\$18,353,115	\$510,730,635	16.72%
Domestic Equities	\$693,540,590	22.00%	\$(18,529,357)	\$28,287,724	\$683,782,223	22.38%
Large Cap	526,533,725	16.70%	(10,508,679)	21,560,491	515,481,912	16.87%
Small Cap	167,006,865	5.30%	(8,020,678)	6,727,233	168,300,310	5.51%
International Equities	\$506,692,803	16.07%	\$3,741,475	\$17,528,656	\$485,422,672	15.89%
Developed	378,386,730	12.00%	4,418,688	14,912,945	359,055,097	11.75%
Emerging Markets	128,306,073	4.07%	(677,213)	2,615,711	126,367,575	4.14%
Private Equities	\$115,068,635	3.65%	\$5,696,084	\$8,095,386	\$101,277,165	3.31%
Global Fixed Income	\$710,758,174	22.54%	\$(1,191,096)	\$22,346,051	\$689,603,219	22.57%
Domestic Fixed Income	\$710,758,174	22.54%	\$(1,191,096)	\$22,346,051	\$689,603,219	22.57%
Investment Grade	493,108,442	15.64%	(8,661,169)	15,954,597	485,815,014	15.90%
Below Investment Grade	217,649,732	6.90%	7,470,073	6,391,454	203,788,205	6.67%
Global Real Assets	\$587,057,251	18.62%	\$2,440,003	\$14,354,455	\$570,262,793	18.67%
Real Estate	\$368,351,098	11.68%	\$3,408,574	\$6,863,132	\$358,079,391	11.72%
Other Real Assets	\$218,706,153	6.94%	\$(968,571)	\$7,491,323	\$212,183,402	6.95%
Infrastructure	155,104,798	4.92%	1,721,702	6,320,971	147,062,125	4.81%
Timber	63,601,355	2.02%	(2,690,274)	1,170,351	65,121,277	2.13%
Cash	\$18,634,776	0.59%	\$4,477,283	\$67,177	\$14,090,317	0.46%
Securities Lending Income	\$0	0.00%	\$(73,175)	\$73,175	-	-
Total Fund	\$3,152,930,087	100.0%	\$(11,344,676)	\$109,105,740	\$3,055,169,023	100.0%

PLEASE REFER TO PAGES 29-31 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Global Equities					
Gross	4.07%	4.62%	11.97%	6.99%	-
Net	4.02%	4.41%	11.72%	6.70%	-
Weighted Benchmark	4.19%	5.87%	11.81%	6.37%	-
Public Equities					
Gross	3.84%	4.42%	-	-	-
Net	3.78%	4.20%	-	-	-
Weighted Benchmark	3.63%	5.15%	-	-	-
World Equities					
Gross	3.64%	3.38%	11.55%	6.31%	-
Net	3.55%	3.04%	11.15%	5.74%	-
MSCI World	4.00%	6.33%	11.77%	6.60%	10.77%
Domestic Equities					
Gross	4.14%	8.49%	14.10%	10.49%	14.78%
Net	4.10%	8.32%	13.88%	10.29%	14.54%
Weighted Benchmark	3.74%	6.82%	13.77%	9.74%	14.27%
Large Cap					
Gross	4.19%	10.25%	14.20%	11.28%	15.16%
Net	4.16%	10.13%	14.07%	11.14%	14.95%
Benchmark(1)	4.25%	10.02%	14.15%	10.45%	14.71%
Small Cap Equity					
Gross	4.02%	3.35%	13.82%	7.75%	13.46%
Net	3.93%	3.00%	13.33%	7.39%	13.14%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	12.59%
International Equities					
Gross	3.60%	(0.35%)	10.09%	3.71%	7.63%
Net	3.56%	(0.51%)	9.92%	3.53%	7.35%
Weighted Benchmark	3.04%	1.31%	9.45%	2.34%	5.88%
Developed					
Gross	4.13%	(0.67%)	10.03%	3.57%	8.10%
Net	4.07%	(0.88%)	9.79%	3.33%	7.80%
Benchmark(2)	3.79%	1.29%	9.01%	2.19%	6.35%
Emerging Markets					
Gross	2.01%	0.42%	10.14%	3.75%	5.69%
Net	2.01%	0.42%	10.14%	3.75%	5.47%
Benchmark(3)	0.61%	1.22%	10.66%	2.49%	4.07%
Private Equities					
Net	7.73%	8.62%	8.31%	2.21%	4.51%

(1) S&P 500 Index through 12/31/2011 and the Russell 1000 Index thereafter.

(2) 50% Hedged EAFE through 3/31/2011, MSCI EAFE through 6/30/2016; MSCI World ex-US thereafter.

(3) MSCI Emerging Mkts Idx (Gross) through 6/30/2011 and MSCI Emerging Mkts Idx Net thereafter.

PLEASE REFER TO PAGES 32-36 FOR INVESTMENT MANAGER LEVEL RETURNS.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Global Fixed Income					
Gross	3.19%	7.94%	5.65%	4.46%	-
Net	3.14%	7.78%	5.45%	4.23%	-
Weighted Benchmark	2.92%	7.80%	3.73%	3.00%	-
Domestic Fixed Income					
Gross	3.19%	7.94%	5.77%	4.91%	6.05%
Net	3.14%	7.78%	5.59%	4.71%	5.82%
Weighted Benchmark	2.92%	7.80%	3.78%	3.46%	4.50%
Inv. Grade Fixed Income					
Gross	3.26%	8.24%	4.54%	4.49%	5.06%
Net	3.22%	8.13%	4.43%	4.36%	4.91%
Bimbg Aggregate Index	3.08%	7.87%	2.31%	2.95%	3.29%
Below Inv. Grade Fixed Income					
Gross	3.00%	7.20%	8.63%	5.77%	8.57%
Net	2.94%	6.93%	8.30%	5.39%	8.17%
Bimbg HY Corp 2% Issue	2.50%	7.48%	7.52%	4.71%	7.44%
Global Real Assets					
Gross	2.51%	6.06%	6.43%	7.45%	-
Net	2.28%	5.60%	5.99%	7.00%	-
Weighted Benchmark	1.34%	5.32%	5.24%	6.14%	-
Real Estate					
Gross	1.91%	6.56%	8.14%	10.39%	12.97%
Net	1.64%	6.02%	7.61%	9.84%	12.41%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	10.51%
Other Real Assets					
Gross	3.52%	5.19%	-	-	-
Net	3.37%	4.86%	-	-	-
Weighted Benchmark	1.12%	3.71%	-	-	-
Infrastructure					
Gross	4.23%	5.58%	7.72%	5.57%	-
Net	4.01%	5.12%	7.22%	5.02%	-
Benchmark(1)	1.15%	3.91%	2.83%	1.74%	-
Timber					
Net	1.84%	4.10%	(2.78%)	(0.07%)	-
NCREIF Timberland Index	1.04%	3.18%	3.37%	4.67%	4.88%
Cash & Equivalents - Net	0.58%	2.31%	1.50%	0.97%	0.58%
3-month Treasury Bill	0.64%	2.31%	1.38%	0.87%	0.53%
Total Fund					
Gross	3.58%	5.76%	9.48%	6.52%	9.27%
Net	3.50%	5.52%	9.21%	6.22%	8.95%
Target*	3.42%	6.41%	8.69%	5.69%	8.47%

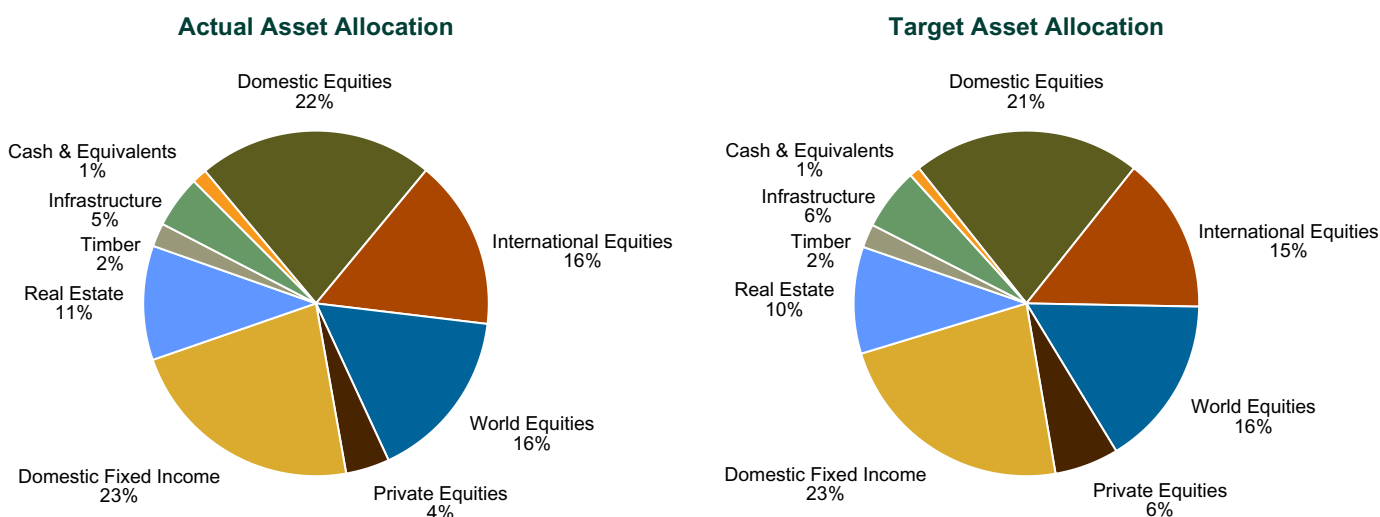
* Current Quarter Target = 16.0% Bimbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Bimbg HY 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months and 2.0% NCREIF Timberland Index.

(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

PLEASE REFER TO PAGES 32-36 FOR INVESTMENT MANAGER LEVEL RETURNS.

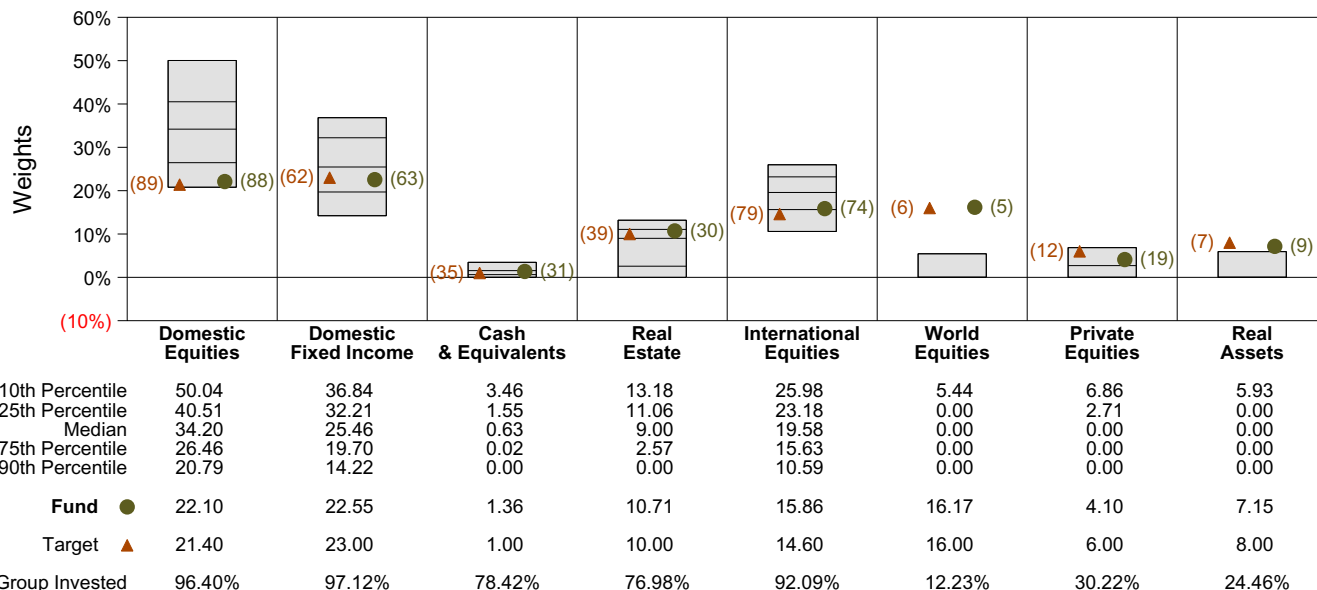
Actual vs Target Asset Allocation As of June 30, 2019

The top left chart shows the Fund's asset allocation as of June 30, 2019. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database.



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equities	568,790	22.1%	21.4%	0.7%	18,035
International Equities	408,085	15.9%	14.6%	1.3%	32,336
World Equities	416,090	16.2%	16.0%	0.2%	4,310
Private Equities	105,620	4.1%	6.0%	(1.9%)	(48,797)
Domestic Fixed Income	580,286	22.5%	23.0%	(0.5%)	(11,647)
Real Estate	275,747	10.7%	10.0%	0.7%	18,385
Timber	56,772	2.2%	2.2%	0.0%	0
Infrastructure	127,195	4.9%	5.8%	(0.9%)	(21,923)
Cash & Equivalents	35,037	1.4%	1.0%	0.4%	9,301
Total	2,573,623	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database

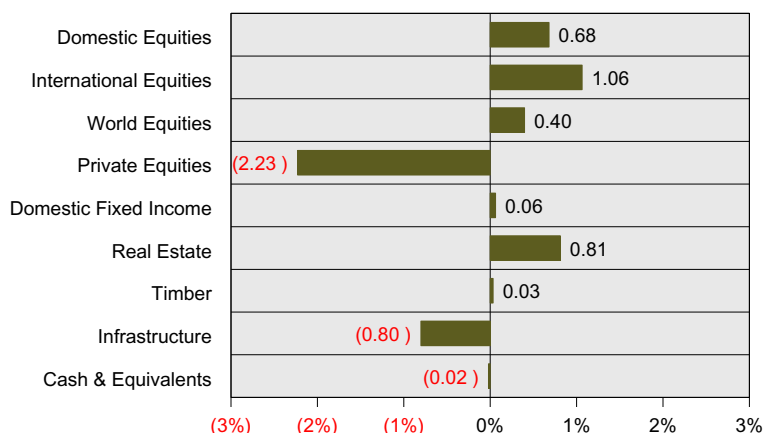


* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

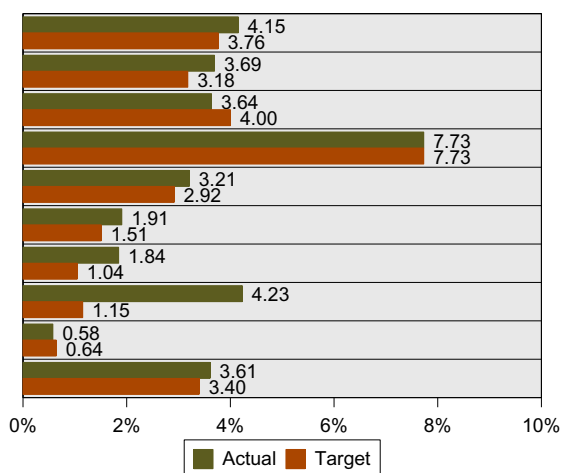
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

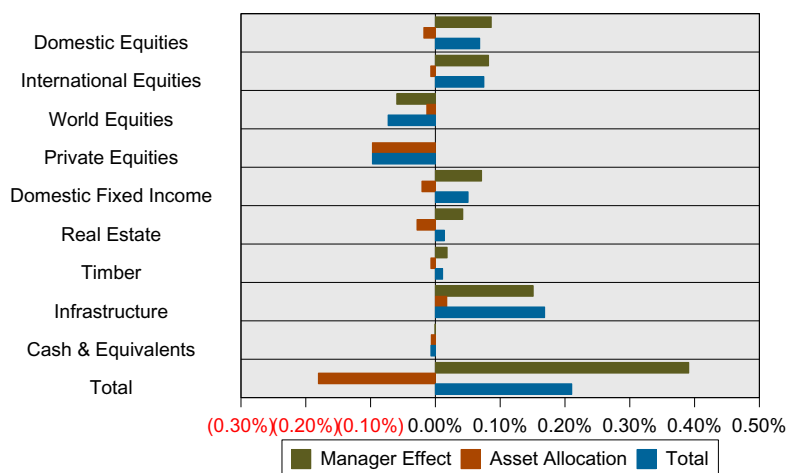
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

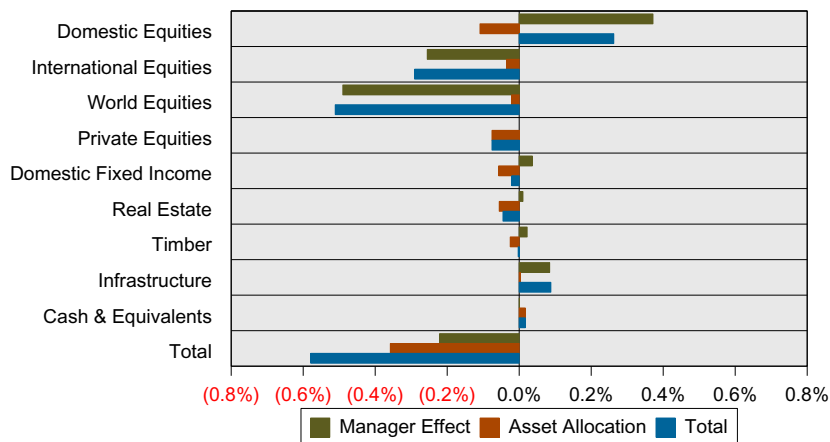
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	4.15%	3.76%	0.09%	(0.02)%	0.07%
International Equities	16%	15%	3.69%	3.18%	0.08%	(0.01)%	0.07%
World Equities	16%	16%	3.64%	4.00%	(0.06)%	(0.01)%	(0.07)%
Private Equities	4%	6%	7.73%	7.73%	0.00%	(0.10)%	(0.10)%
Domestic Fixed Income	23%	23%	3.21%	2.92%	0.07%	(0.02)%	0.05%
Real Estate	11%	10%	1.91%	1.51%	0.04%	(0.03)%	0.01%
Timber	2%	2%	1.84%	1.04%	0.02%	(0.01)%	0.01%
Infrastructure	5%	6%	4.23%	1.15%	0.15%	0.02%	0.17%
Cash & Equivalents	1%	1%	0.58%	0.64%	(0.00)%	(0.01)%	(0.01)%
Total			3.61%	3.40%	+ 0.39%	+ (0.18)%	0.21%

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

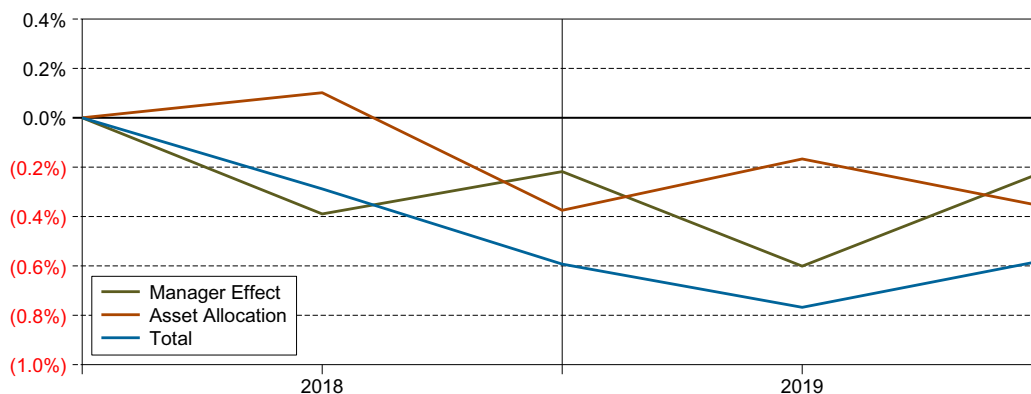
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

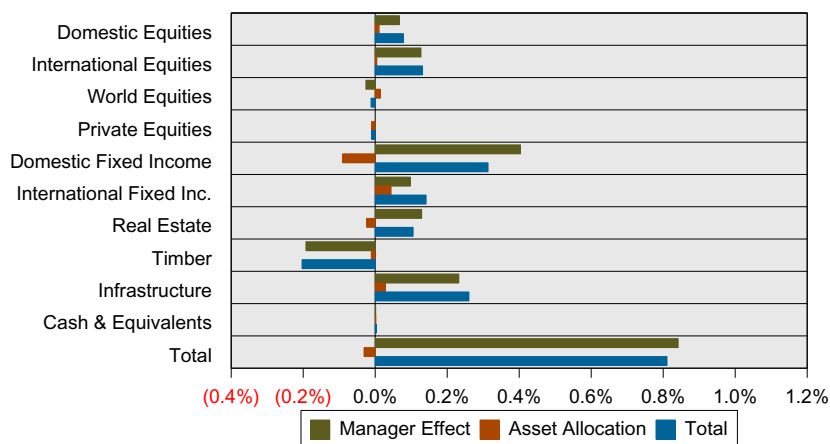
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	8.57%	6.94%	0.37%	(0.11%)	0.26%
International Equities	15%	15%	(0.40%)	1.31%	(0.26%)	0.04%	(0.29%)
World Equities	16%	16%	3.38%	6.33%	(0.49%)	0.02%	(0.51%)
Private Equities	4%	6%	8.62%	8.62%	0.00%	0.08%	0.08%
Domestic Fixed Income	23%	23%	7.91%	7.80%	0.04%	(0.06%)	0.02%
Real Estate	11%	10%	6.56%	6.51%	0.01%	(0.06%)	(0.05%)
Timber	2%	2%	4.10%	3.18%	0.02%	(0.02%)	0.00%
Infrastructure	5%	6%	5.58%	3.91%	0.08%	0.00%	0.09%
Cash & Equivalents	1%	1%	2.32%	2.31%	0.00%	0.02%	0.02%
Total			5.78%	6.36%	(0.22%)	(0.36%)	(0.58%)

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

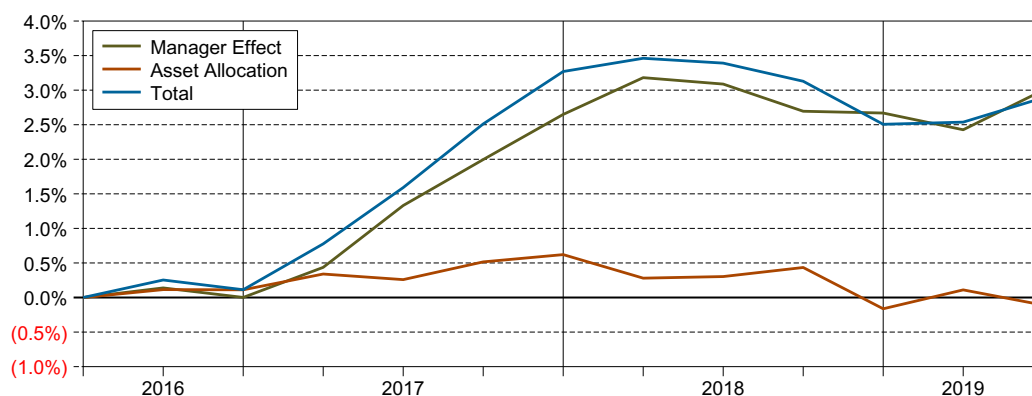
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

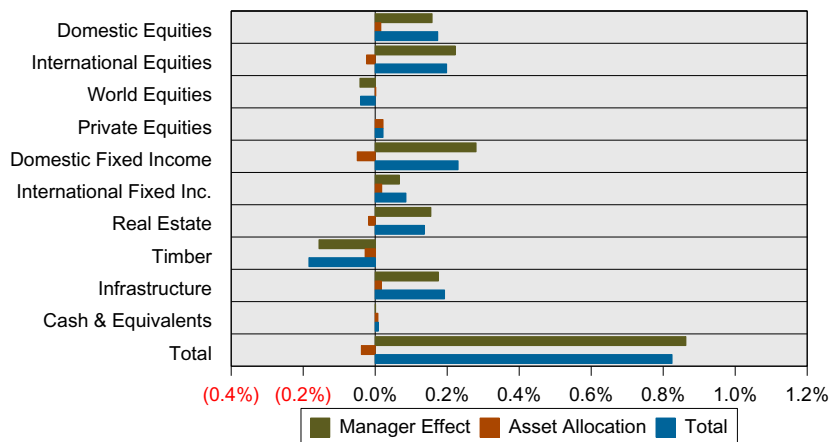
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	14.11%	13.80%	0.07%	0.01%	0.08%
International Equities	16%	15%	10.07%	9.37%	0.13%	0.00%	0.13%
World Equities	17%	16%	11.55%	11.77%	(0.03%)	0.01%	(0.01%)
Private Equities	3%	6%	8.31%	8.31%	0.00%	(0.01%)	(0.01%)
Domestic Fixed Income	20%	20%	5.63%	3.53%	0.40%	(0.09%)	0.31%
International Fixed Inc.	3%	3%	-	-	0.10%	0.04%	0.14%
Real Estate	10%	10%	8.14%	6.89%	0.13%	(0.02%)	0.11%
Timber	3%	3%	(2.78%)	3.37%	(0.19%)	(0.01%)	(0.20%)
Infrastructure	5%	5%	7.72%	2.83%	0.23%	0.03%	0.26%
Cash & Equivalents	1%	1%	1.51%	1.38%	0.00%	0.00%	0.00%
Total			9.42%	8.61%	+ 0.84%	+ (0.03%)	0.81%

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

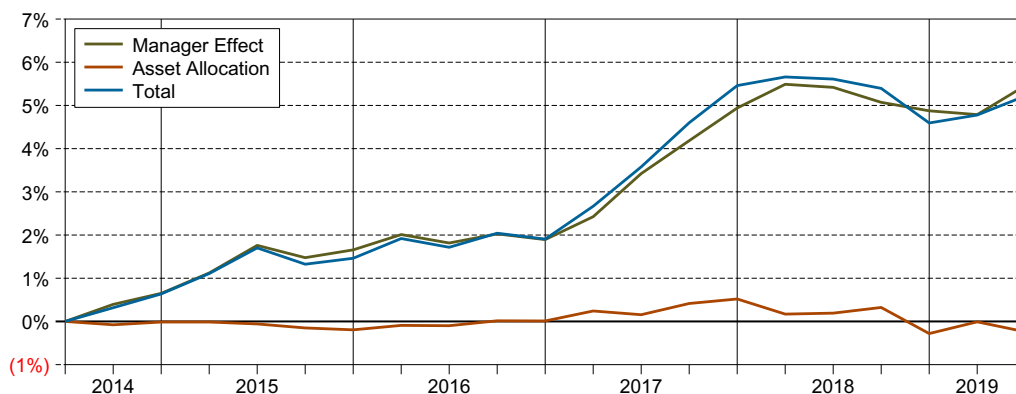
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

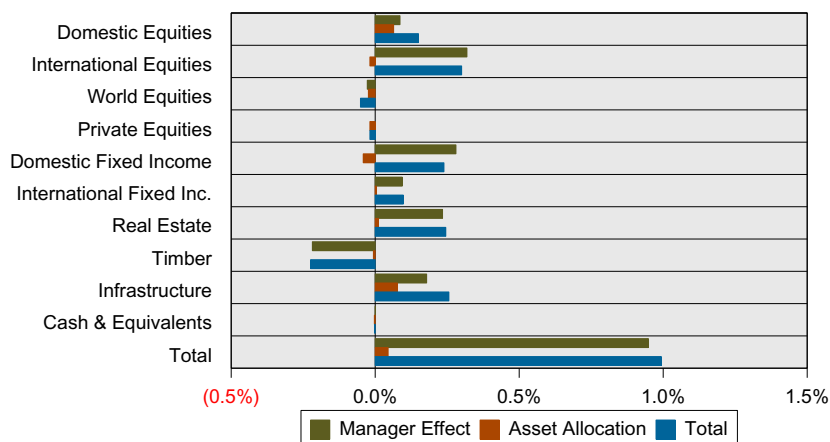
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.49%	9.75%	0.16%	0.02%	0.17%
International Equities	15%	15%	3.69%	2.32%	0.22%	(0.02%)	0.20%
World Equities	16%	16%	6.31%	6.60%	(0.04%)	0.00%	(0.04%)
Private Equities	4%	6%	2.22%	2.22%	0.00%	0.02%	0.02%
Domestic Fixed Income	19%	19%	4.82%	3.32%	0.28%	(0.05%)	0.23%
International Fixed Inc.	4%	4%	-	-	0.07%	0.02%	0.09%
Real Estate	10%	10%	10.39%	8.83%	0.15%	(0.02%)	0.14%
Timber	3%	4%	(0.07%)	4.67%	(0.16%)	(0.03%)	(0.18%)
Infrastructure	5%	5%	5.57%	1.74%	0.18%	0.02%	0.19%
Cash & Equivalents	1%	1%	0.97%	0.87%	0.00%	0.01%	0.01%
Total			6.48%	5.66%	+ 0.86%	+ (0.04%)	0.82%

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

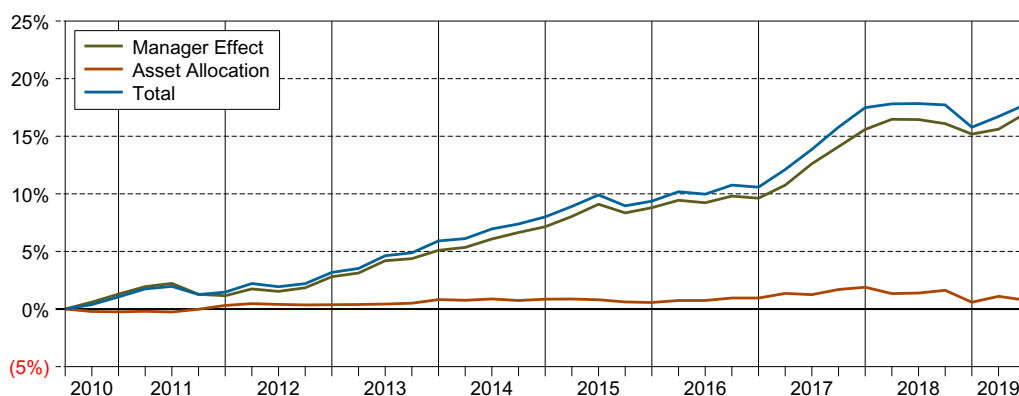
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Nine Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Nine Year Annualized Relative Attribution Effects

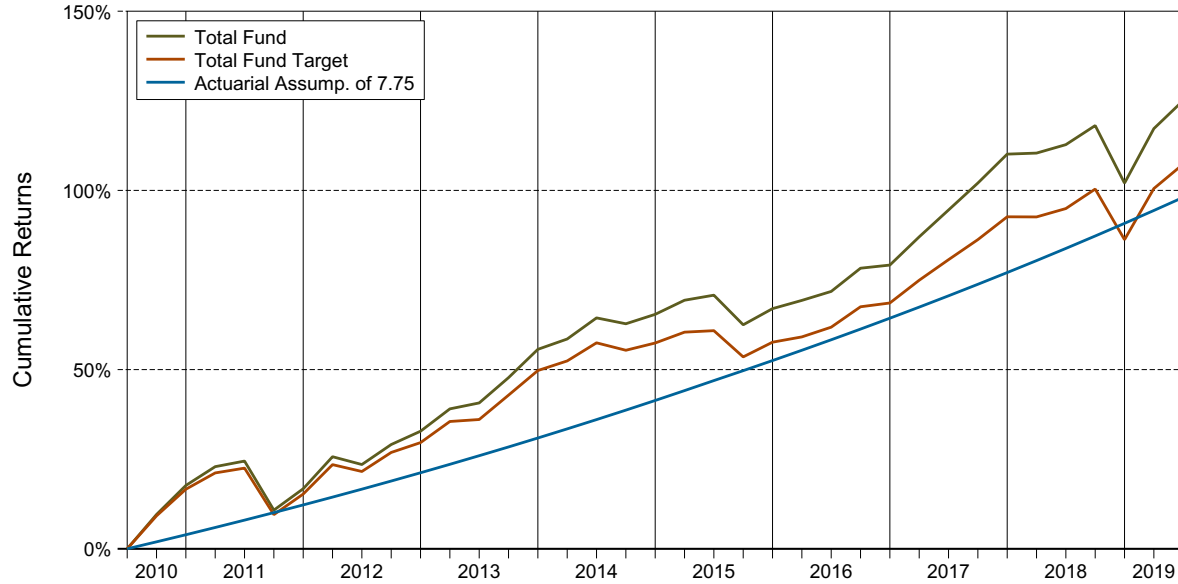
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	14.79%	14.27%	0.09%	0.06%	0.15%
International Equities	17%	16%	7.73%	5.98%	0.32%	(0.02%)	0.30%
World Equities	12%	12%	-	-	(0.03%)	(0.02%)	(0.05%)
Private Equities	4%	5%	4.59%	4.59%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	18%	18%	6.01%	4.44%	0.28%	(0.04%)	0.24%
International Fixed Inc.	4%	4%	-	-	0.09%	0.00%	0.10%
Real Estate	10%	10%	12.96%	10.51%	0.23%	0.01%	0.25%
Timber	3%	3%	-	-	(0.22%)	(0.01%)	(0.22%)
Infrastructure	4%	4%	-	-	0.18%	0.08%	0.26%
Cash & Equivalents	1%	1%	0.58%	0.53%	0.00%	(0.00%)	(0.00%)
Total			9.43%	8.44%	+ 0.95%	+ 0.04%	0.99%

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

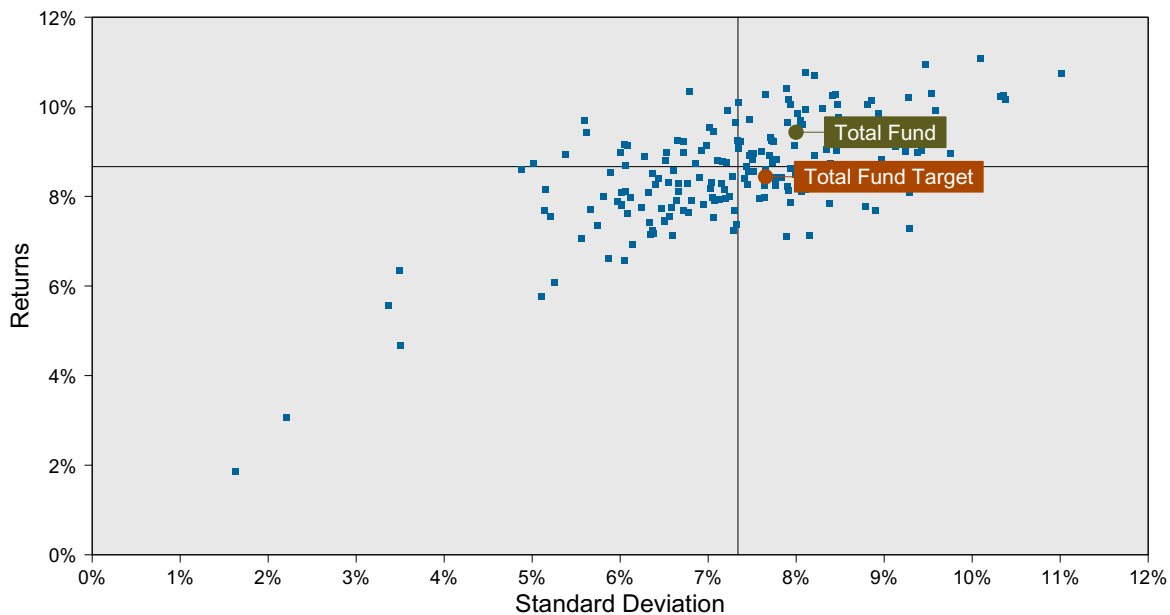
Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Sponsor Database.

Cumulative Returns Actual vs Target



Nine Year Annualized Risk vs Return



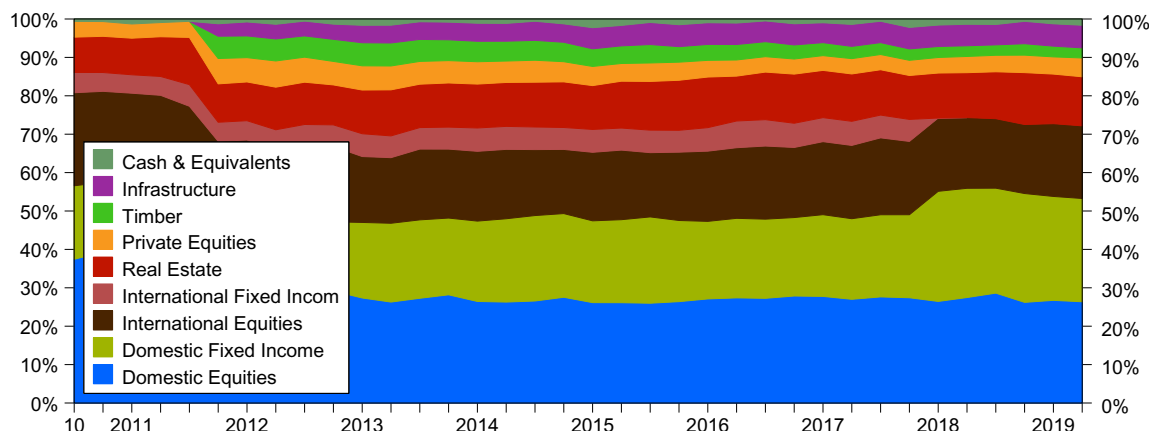
Squares represent membership of the Callan Public Fund Sponsor Database

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

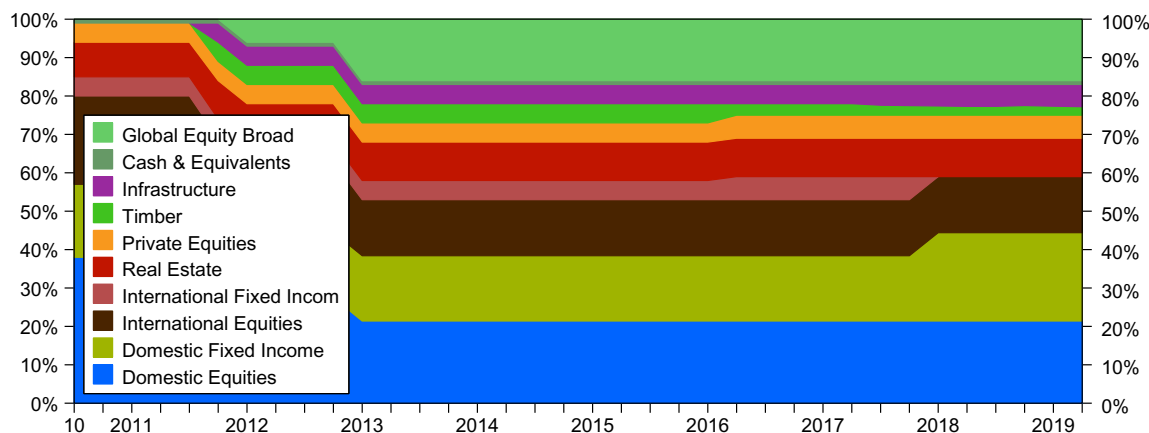
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Sponsor Database.

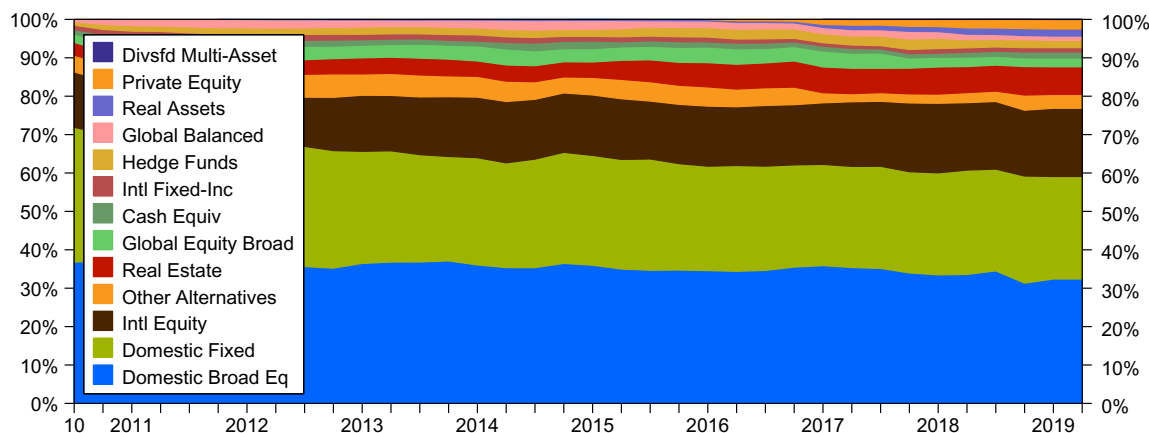
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

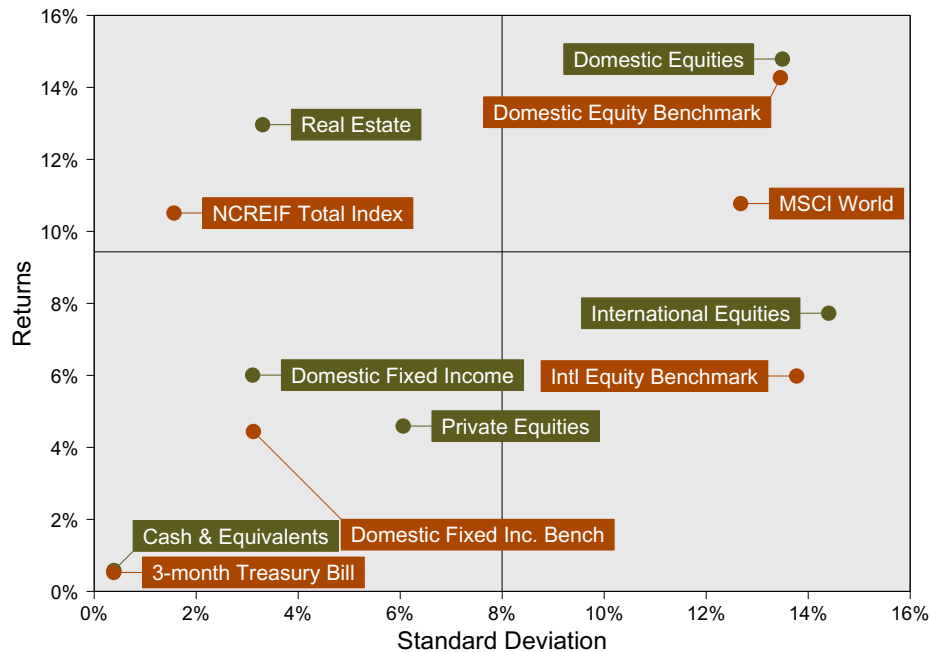


* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmgb Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmgb HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

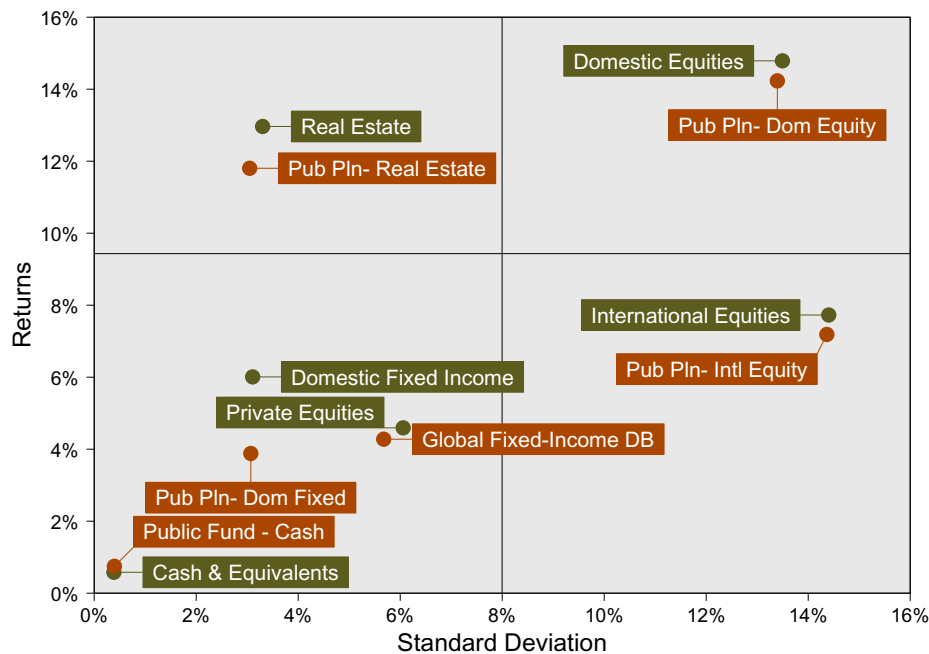
Asset Class Risk and Return

The charts below show the nine year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

**Nine Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices**



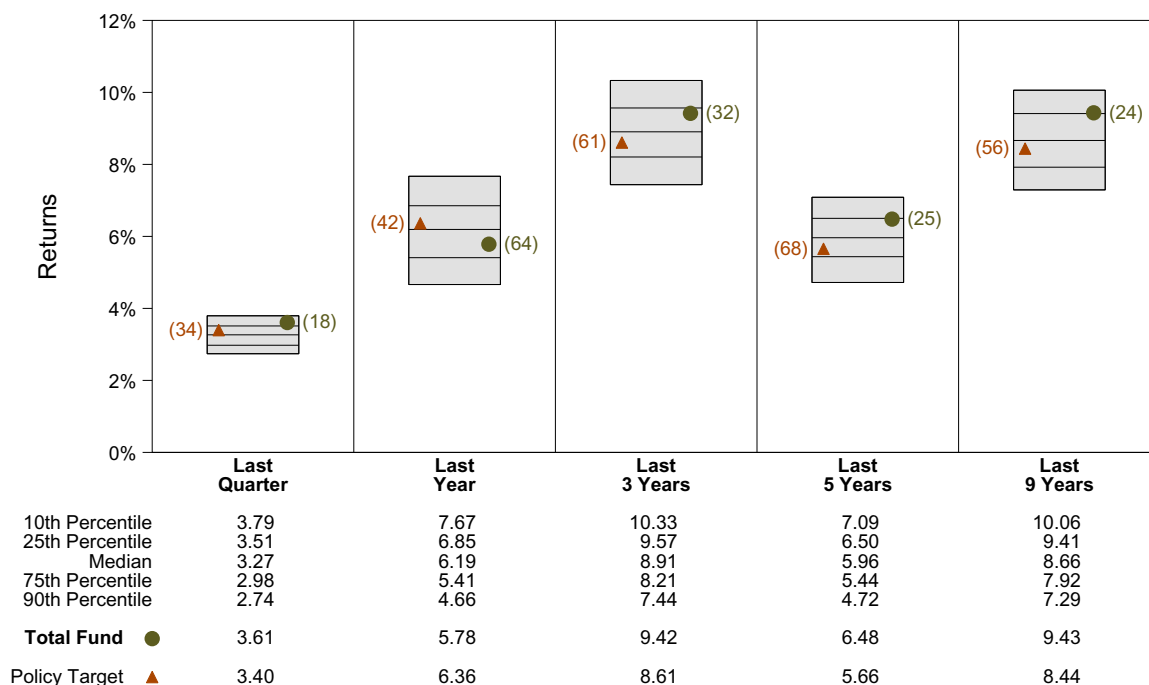
**Nine Year Annualized Risk vs Return
Asset Classes vs Asset Class Median**



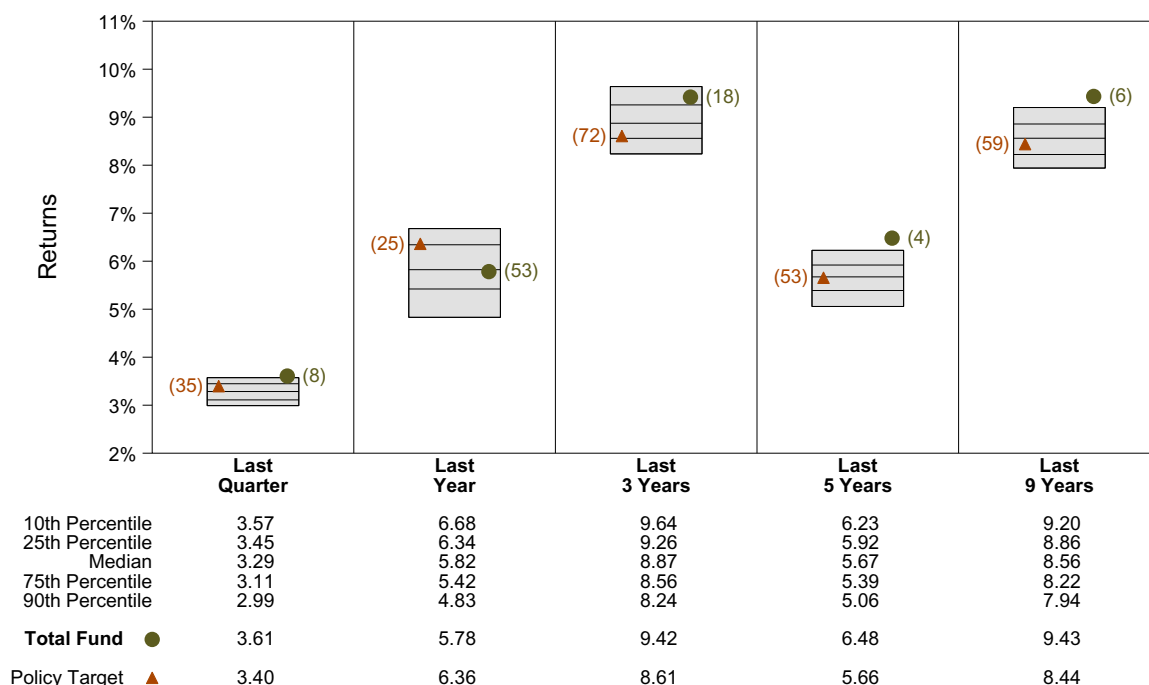
Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended June 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

Callan Public Fund Sponsor Database



Asset Allocation Adjusted Ranking

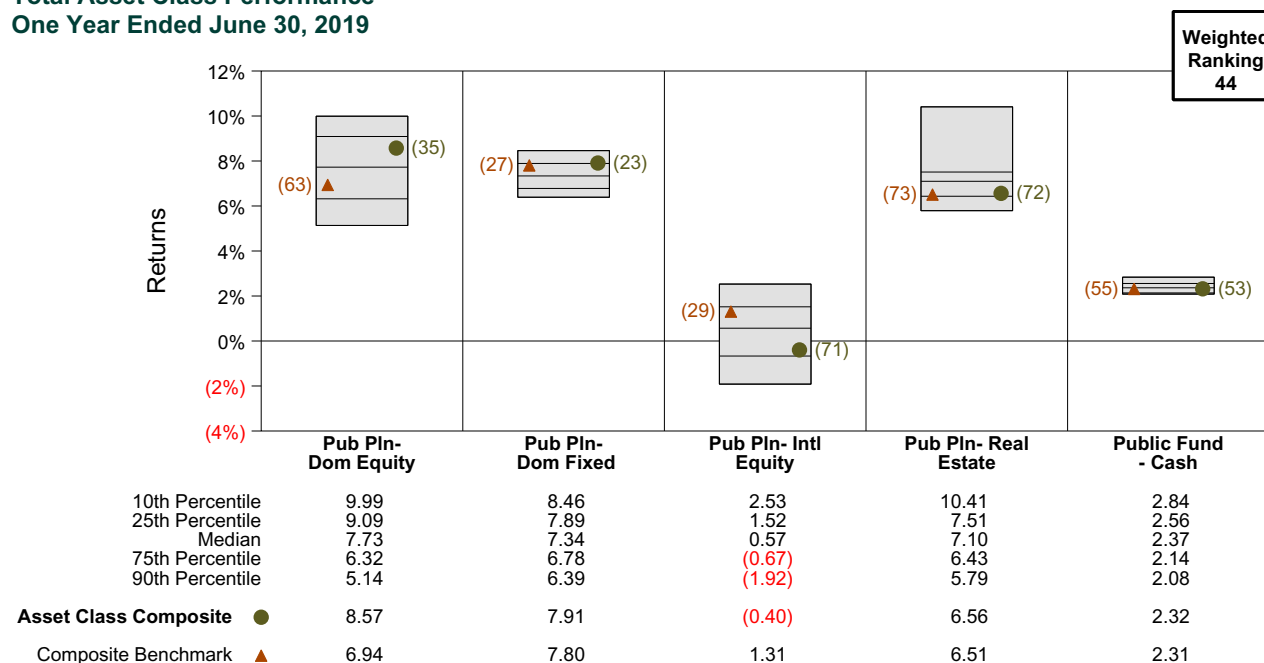


* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

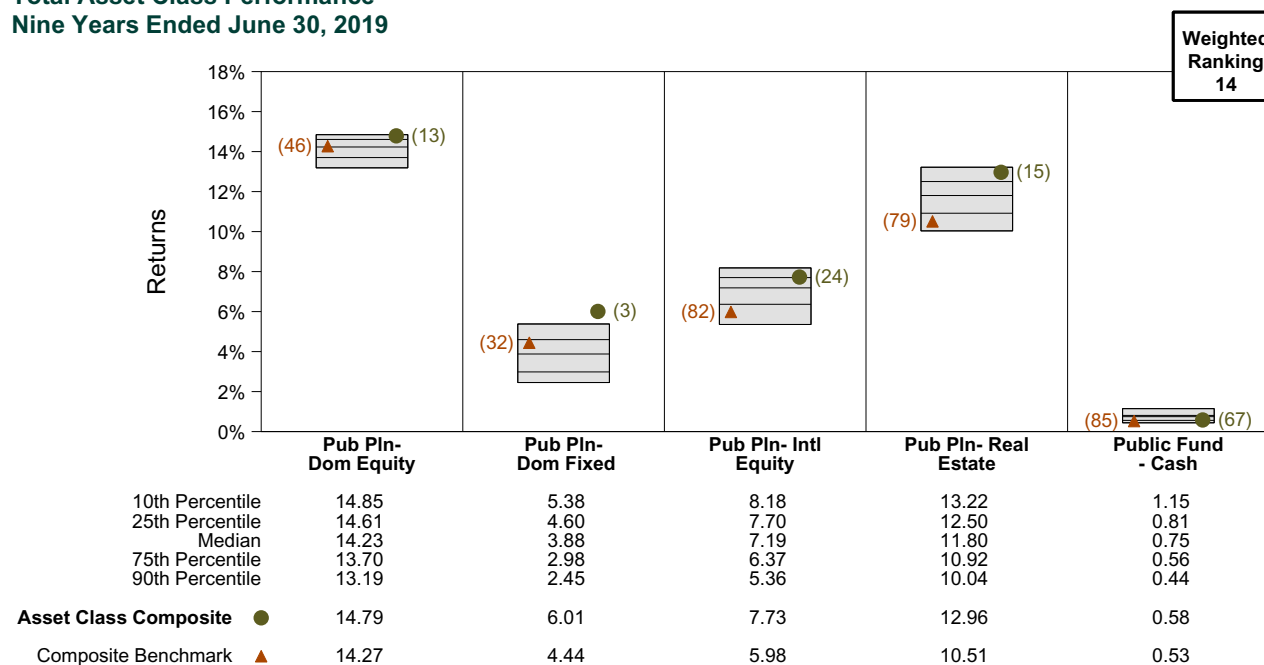
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Nine Years Ended June 30, 2019



* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Class Allocation

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	\$1,498,584,709	58.23%	\$(16,438,753)	\$59,726,871	\$1,455,296,591	58.45%
Public Equities	\$1,392,964,837	54.12%	\$(21,667,108)	\$52,296,231	\$1,362,335,714	54.71%
World Equities	\$416,089,737	16.17%	\$(12,848,908)	\$14,690,672	\$414,247,973	16.64%
Domestic Equities	\$568,790,240	22.10%	\$(9,095,156)	\$23,093,195	\$554,792,201	22.28%
Large Cap	441,366,550	17.15%	(6,136,634)	18,088,967	429,414,217	17.25%
Small Cap	127,423,689	4.95%	(2,958,522)	5,004,228	125,377,984	5.04%
International Equities	\$408,084,861	15.86%	\$276,956	\$14,512,364	\$393,295,541	15.79%
Developed	326,827,165	12.70%	2,756,685	12,895,768	311,174,712	12.50%
Emerging Markets	81,257,696	3.16%	(2,479,729)	1,616,597	82,120,829	3.30%
Private Equities	\$105,619,872	4.10%	\$5,228,355	\$7,430,640	\$92,960,877	3.73%
Global Fixed Income	\$580,286,226	22.55%	\$134,051	\$18,373,696	\$561,778,478	22.56%
Domestic Fixed Income	\$580,286,226	22.55%	\$134,051	\$18,373,696	\$561,778,478	22.56%
Investment Grade	402,088,431	15.62%	(5,557,518)	13,131,931	394,514,018	15.84%
Below Investment Grade	178,197,795	6.92%	5,691,570	5,241,765	167,264,460	6.72%
Global Real Assets	\$459,714,120	17.86%	\$1,564,225	\$11,365,470	\$446,784,425	17.94%
Real Estate	\$275,746,821	10.71%	\$2,553,745	\$5,137,218	\$268,055,858	10.77%
Other Real Assets	\$183,967,299	7.15%	\$(989,521)	\$6,228,252	\$178,728,567	7.18%
Infrastructure	127,194,908	4.94%	1,411,894	5,183,563	120,599,450	4.84%
Timber	56,772,391	2.21%	(2,401,415)	1,044,689	58,129,117	2.33%
Cash	\$35,037,499	1.36%	\$8,740,627	\$152,570	\$26,144,302	1.05%
Securities Lending Income	\$0	0.00%	\$(60,044)	\$60,044	-	-
Total Fund	\$2,573,622,554	100.0%	\$(6,059,895)	\$89,678,652	\$2,490,003,796	100.0%

PLEASE REFER TO PAGES 29-31 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Global Equities					
Gross	4.12%	4.71%	11.99%	6.98%	-
Net	4.07%	4.50%	11.74%	6.70%	-
Weighted Benchmark	4.13%	5.71%	11.69%	6.31%	-
Public Equities					
Gross	3.86%	4.49%	-	-	-
Net	3.80%	4.26%	-	-	-
Weighted Benchmark	3.64%	5.08%	-	-	-
World Equities					
Gross	3.64%	3.38%	11.55%	6.31%	-
Net	3.55%	3.04%	11.15%	5.75%	-
MSCI World	4.00%	6.33%	11.77%	6.60%	10.77%
Domestic Equities					
Gross	4.15%	8.57%	14.11%	10.49%	14.79%
Net	4.11%	8.40%	13.89%	10.30%	14.55%
Weighted Benchmark	3.76%	6.94%	13.80%	9.75%	14.27%
Large Cap					
Gross	4.19%	10.24%	14.20%	11.28%	15.15%
Net	4.16%	10.13%	14.07%	11.14%	14.94%
Benchmark(1)	4.25%	10.02%	14.15%	10.45%	14.71%
Small Cap					
Gross	4.03%	3.36%	13.82%	7.75%	13.48%
Net	3.94%	3.00%	13.33%	7.39%	13.16%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	12.59%
International Equities					
Gross	3.69%	(0.40%)	10.07%	3.69%	7.73%
Net	3.65%	(0.57%)	9.88%	3.50%	7.45%
Weighted Benchmark	3.18%	1.31%	9.37%	2.32%	5.98%
Developed					
Gross	4.13%	(0.66%)	10.03%	3.57%	8.14%
Net	4.08%	(0.87%)	9.79%	3.33%	7.84%
Benchmark(2)	3.79%	1.29%	9.01%	2.19%	6.35%
Emerging Markets					
Gross	2.01%	0.41%	10.14%	3.75%	5.67%
Net	2.01%	0.41%	10.14%	3.75%	5.44%
Benchmark(3)	0.61%	1.22%	10.66%	2.49%	4.07%
Private Equities					
Net	7.73%	8.62%	8.31%	2.21%	4.53%

(1) S&P 500 Index through 12/31/2011 and the Russell 1000 Index thereafter.

(2) 50% Hedged EAFE through 3/31/2011; MSCI EAFE through 6/30/16; MSCI World ex-US thereafter.

(3) MSCI Emerging Mkts Idx (Gross) through 6/30/2011 and MSCI Emerging Mkts Idx Net thereafter.

PLEASE REFER TO PAGES 32-36 FOR INVESTMENT MANAGER LEVEL RETURNS.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Global Fixed Income					
Gross	3.21%	7.91%	5.53%	4.36%	-
Net	3.16%	7.75%	5.32%	4.13%	-
Weighted Benchmark	2.92%	7.80%	3.54%	2.92%	-
Domestic Fixed Income					
Gross	3.21%	7.91%	5.63%	4.82%	6.01%
Net	3.16%	7.75%	5.45%	4.62%	5.86%
Weighted Benchmark	2.92%	7.80%	3.53%	3.32%	4.44%
Inv. Grade Fixed Income					
Gross	3.26%	8.23%	4.54%	4.48%	5.07%
Net	3.22%	8.12%	4.42%	4.36%	4.91%
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.29%
Below Inv. Grade Fixed Income					
Gross	3.10%	7.22%	8.64%	5.77%	8.57%
Net	3.03%	6.93%	8.30%	5.39%	8.16%
Blmbg HY Corp 2% Issue	2.50%	7.48%	7.52%	4.71%	7.44%
Global Real Assets					
Gross	2.53%	6.01%	6.23%	7.31%	-
Net	2.31%	5.56%	5.80%	6.86%	-
Weighted Benchmark	1.34%	5.26%	5.16%	6.10%	-
Real Estate					
Gross	1.91%	6.56%	8.14%	10.39%	12.96%
Net	1.64%	6.02%	7.61%	9.84%	12.41%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	10.51%
Other Real Assets					
Gross	3.48%	5.16%	-	-	-
Net	3.33%	4.85%	-	-	-
Weighted Benchmark	1.12%	3.69%	-	-	-
Infrastructure					
Gross	4.23%	5.58%	7.72%	5.57%	-
Net	4.01%	5.12%	7.22%	5.02%	-
Benchmark(1)	1.15%	3.91%	2.83%	1.74%	-
Timber					
Net	1.84%	4.10%	(2.78%)	(0.07%)	-
NCREIF Timberland Index	1.04%	3.18%	3.37%	4.67%	4.88%
Cash & Equivalents - Net	0.58%	2.32%	1.51%	0.97%	0.58%
3-month Treasury Bill	0.64%	2.31%	1.38%	0.87%	0.53%
Total Fund					
Gross	3.61%	5.78%	9.42%	6.48%	9.43%
Net	3.53%	5.54%	9.15%	6.18%	9.11%
Target*	3.40%	6.36%	8.61%	5.66%	8.44%

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg HY 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months, 2.8% MSCI EM, 2.2% NCREIF Timberland Index and 1.0% 3-month Treasury Bill.

(1) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

PLEASE REFER TO PAGES 32-36 FOR INVESTMENT MANAGER LEVEL RETURNS.

Domestic Equities Period Ended June 30, 2019

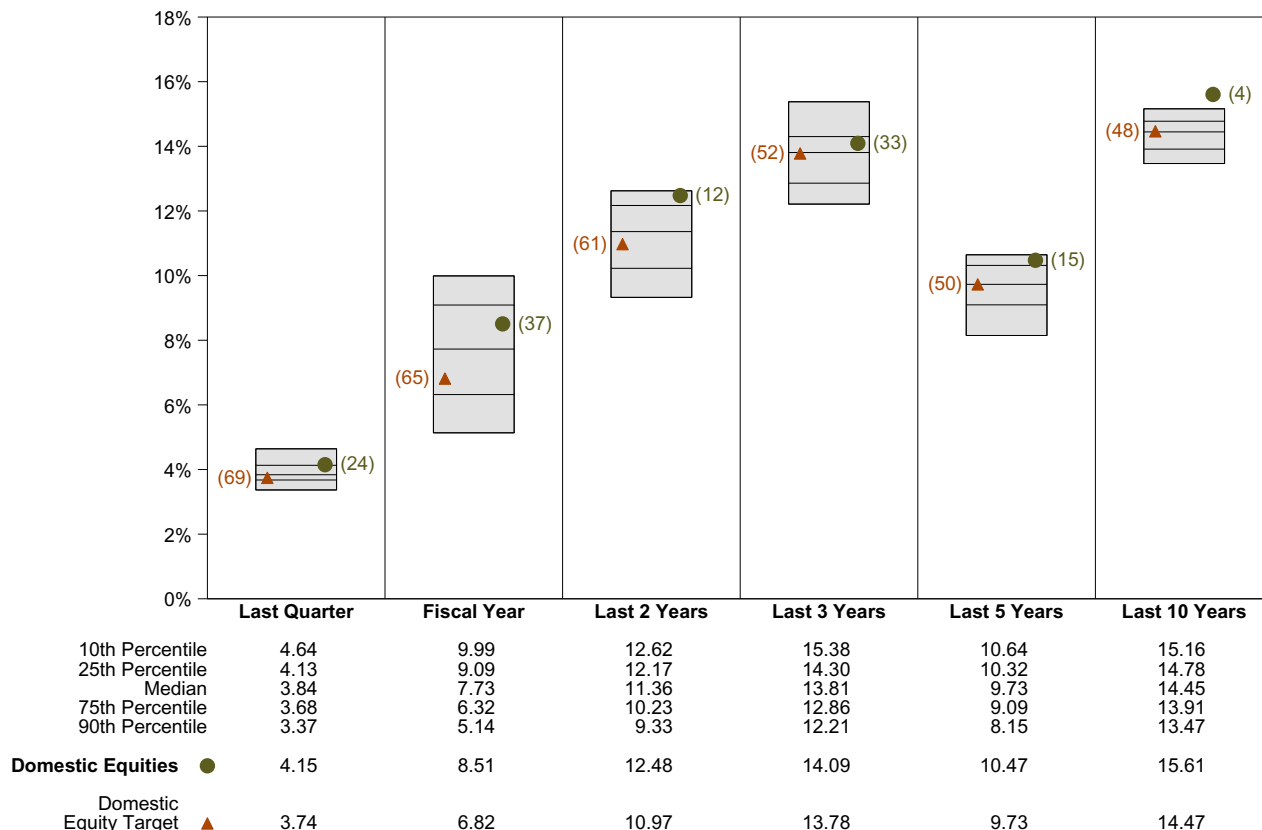
Quarterly Summary and Highlights

- Domestic Equities's portfolio posted a 4.15% return for the quarter placing it in the 24 percentile of the Public Fund - Domestic Equity group for the quarter and in the 37 percentile for the last year.
- Domestic Equities's portfolio outperformed the Domestic Equity Target by 0.41% for the quarter and outperformed the Domestic Equity Target for the year by 1.69%.

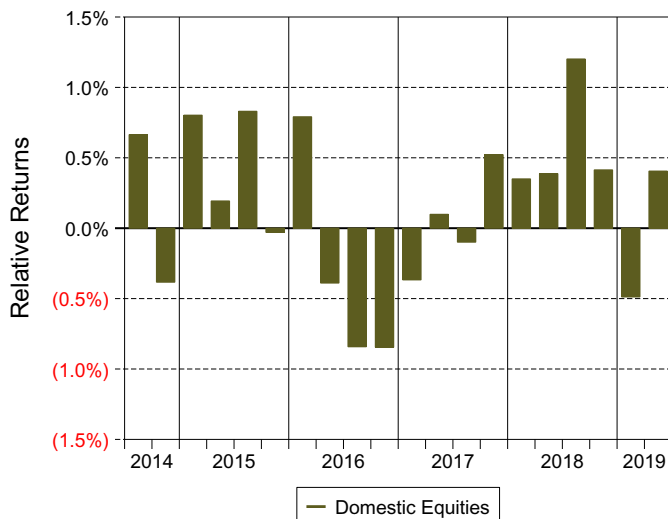
Quarterly Asset Growth

Beginning Market Value	\$1,281,586,261
Net New Investment	\$-26,519,302
Investment Gains/(Losses)	\$53,241,412
Ending Market Value	\$1,308,308,370

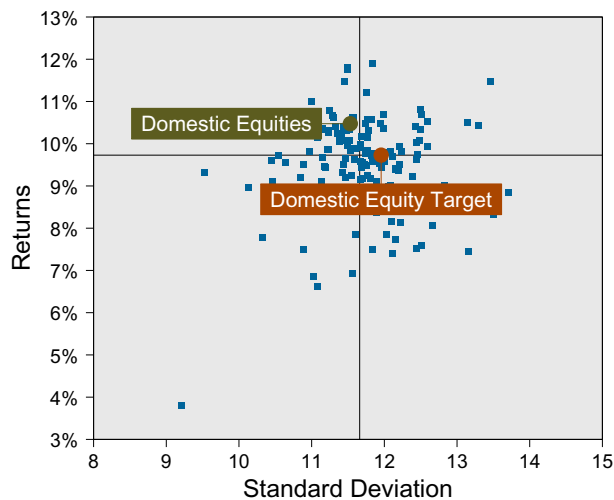
Performance vs Public Fund - Domestic Equity (Gross)



Relative Return vs Domestic Equity Target



Public Fund - Domestic Equity (Gross) Annualized Five Year Risk vs Return



L.A. Capital Period Ended June 30, 2019

Investment Philosophy

The LA Capital Structured portfolio is a large growth portfolio benchmarked to the Russell 1000 Growth Index. It is an active assignment meaning that it targets a 2% alpha and constrains its risk budget (tracking error) to 4% relative to the benchmark. LA Capital believes that investment results are driven by Investor Preferences and thus recognize that when preferences shift a different posture related to that factor is warranted.

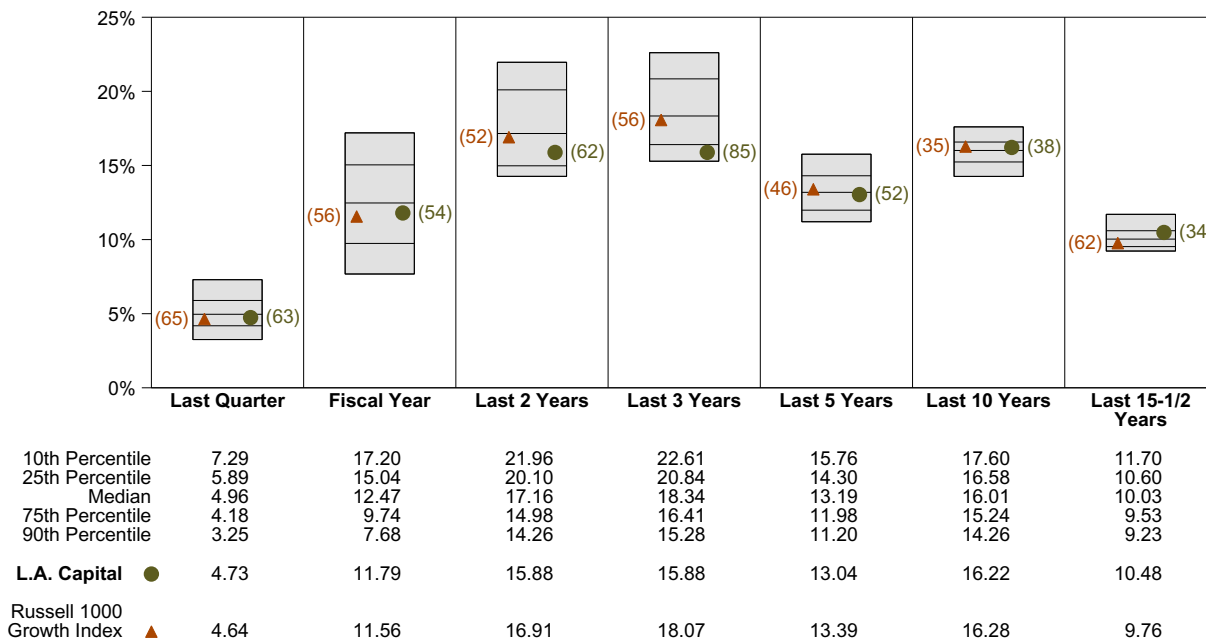
Quarterly Summary and Highlights

- L.A. Capital's portfolio posted a 4.73% return for the quarter placing it in the 63 percentile of the Callan Large Cap Growth group for the quarter and in the 54 percentile for the last year.
- L.A. Capital's portfolio outperformed the Russell 1000 Growth Index by 0.10% for the quarter and outperformed the Russell 1000 Growth Index for the year by 0.24%.

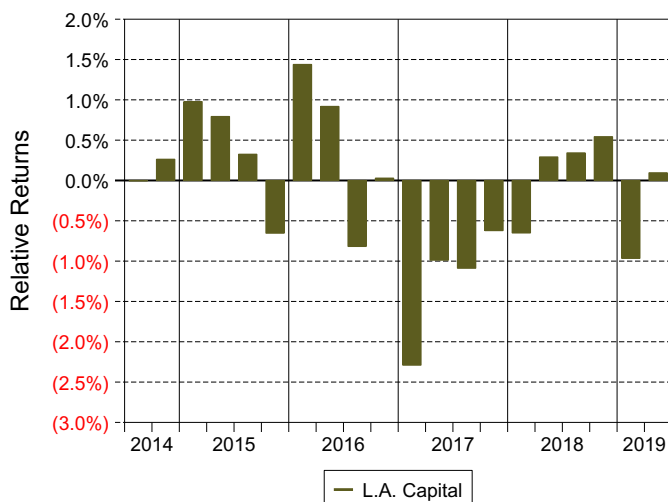
Quarterly Asset Growth

Beginning Market Value	\$389,628,343
Net New Investment	\$-16,197,448
Investment Gains/(Losses)	\$18,409,706
Ending Market Value	\$391,840,602

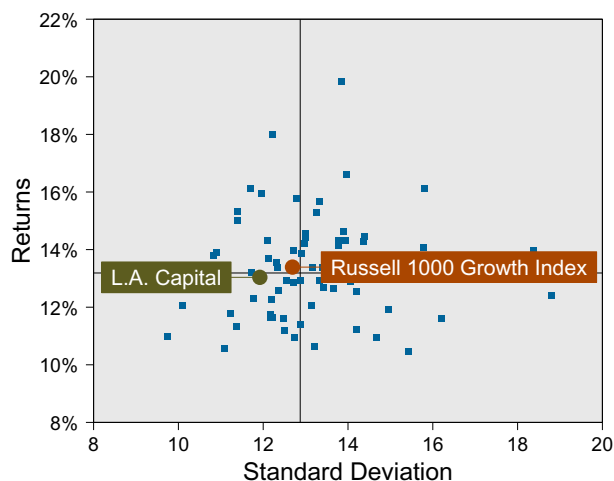
Performance vs Callan Large Cap Growth (Gross)



Relative Return vs Russell 1000 Growth Index



Callan Large Cap Growth (Gross) Annualized Five Year Risk vs Return



L.A. Capital Management Enhanced Index Period Ended June 30, 2019

Investment Philosophy

The LA Capital Enhanced portfolio is a large core portfolio benchmarked to the Russell 1000 Index. Characterized as an enhanced index assignment, its objective is to track the benchmark with lower variability. The pension portfolio began in August of 2000 and the insurance portfolio was initiated in April of 2004. Since October of 2006 a small portion of each of the two core accounts was allocated into the Large Cap Alpha Fund with intent to add incremental alpha to the assignment given that the information ratio was expected to be higher.

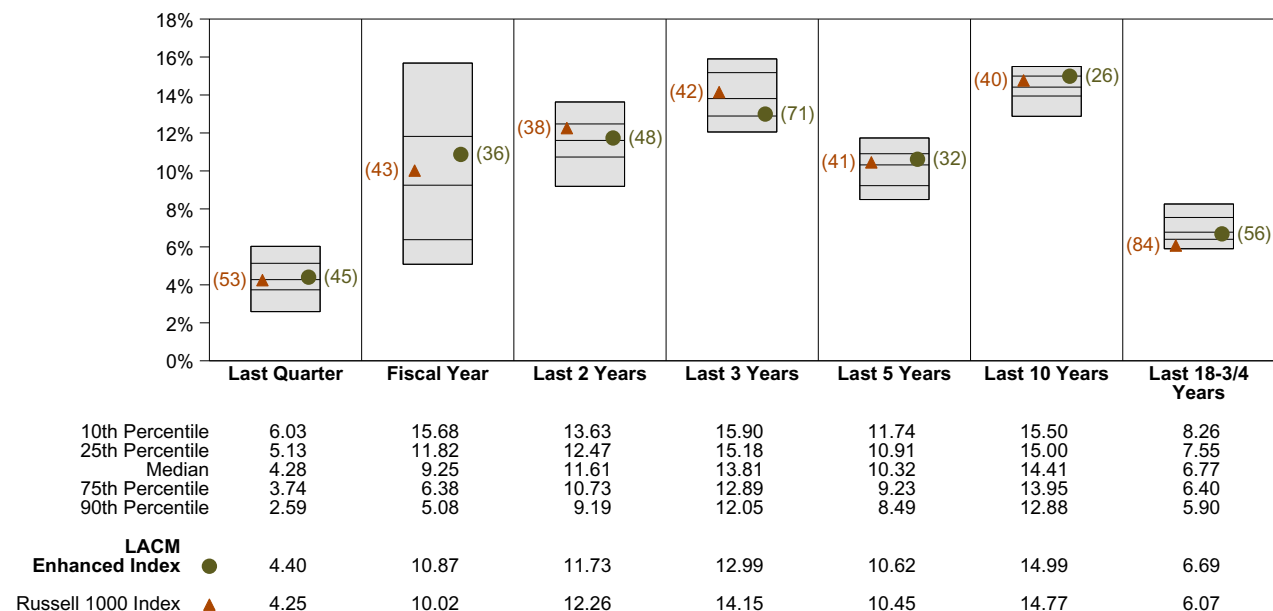
Quarterly Summary and Highlights

- LACM Enhanced Index's portfolio posted a 4.40% return for the quarter placing it in the 45 percentile of the Callan Large Cap Core group for the quarter and in the 36 percentile for the last year.
- LACM Enhanced Index's portfolio outperformed the Russell 1000 Index by 0.16% for the quarter and outperformed the Russell 1000 Index for the year by 0.85%.

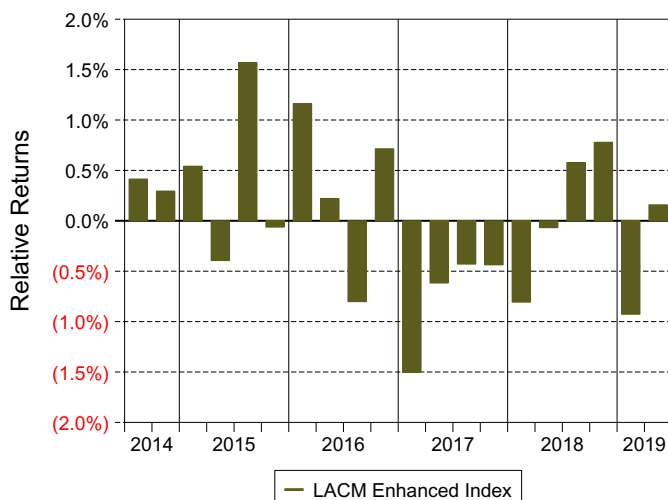
Quarterly Asset Growth

Beginning Market Value	\$192,403,043
Net New Investment	\$9,944,504
Investment Gains/(Losses)	\$8,662,611
Ending Market Value	\$211,010,158

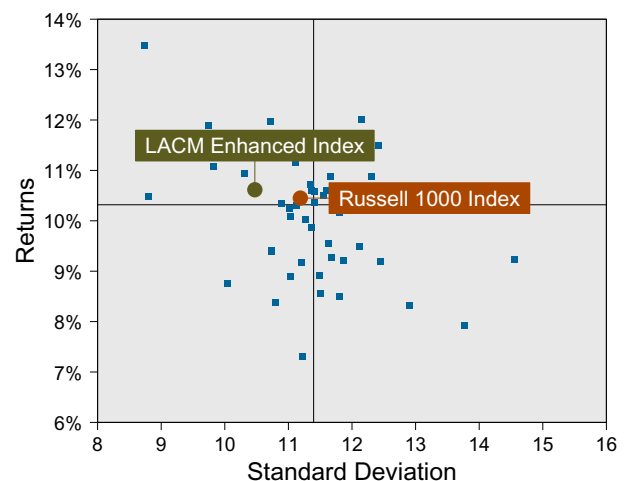
Performance vs Callan Large Cap Core (Gross)



Relative Return vs Russell 1000 Index



Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



Northern Trust AM Enh S&P500 Period Ended June 30, 2019

Investment Philosophy

Northern Trust AM Enhanced S&P 500 employs a quantitative investment approach, focusing on the stock selection process as the principal source of value added. The account invests primarily in a broadly diversified portfolio of equity securities that include securities convertible into equity securities (including common stock), warrants, rights and units or shares in trusts, exchange traded funds and investment companies. The Investment Manager intends to use futures and options to manage market risk associated with the account's investments.

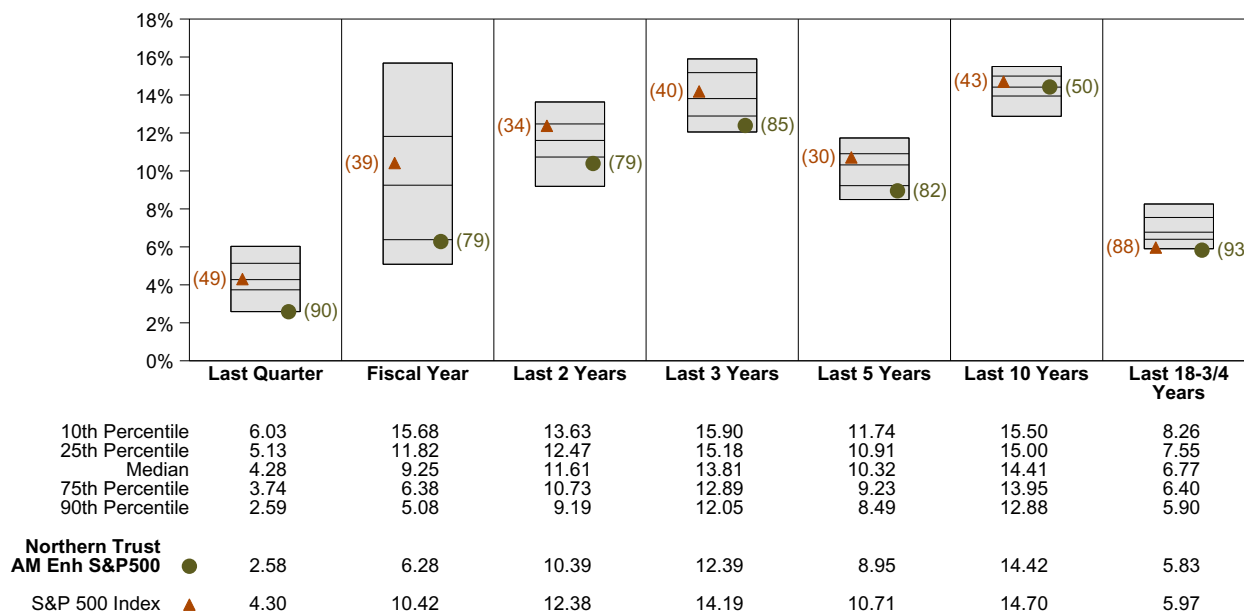
Quarterly Summary and Highlights

- Northern Trust AM Enh S&P500's portfolio posted a 2.58% return for the quarter placing it in the 90 percentile of the Callan Large Cap Core group for the quarter and in the 79 percentile for the last year.
- Northern Trust AM Enh S&P500's portfolio underperformed the S&P 500 Index by 1.72% for the quarter and underperformed the S&P 500 Index for the year by 4.14%.

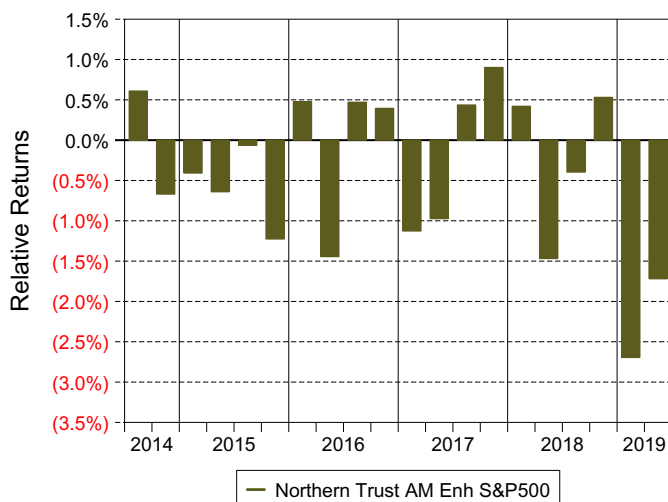
Quarterly Asset Growth

Beginning Market Value	\$194,271,473
Net New Investment	\$0
Investment Gains/(Losses)	\$5,021,175
Ending Market Value	\$199,292,648

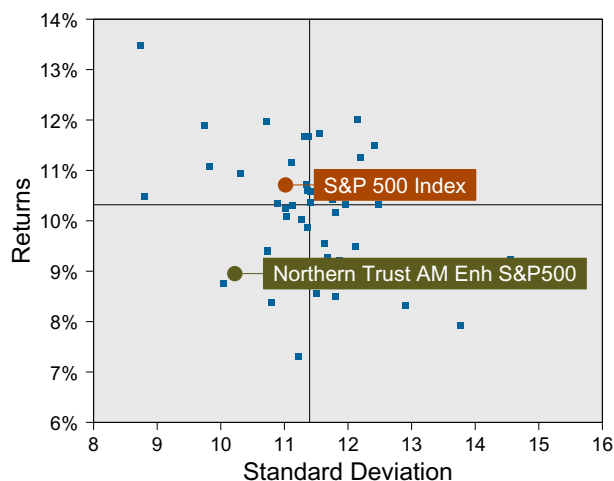
Performance vs Callan Large Cap Core (Gross)



Relative Return vs S&P 500 Index



Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



Parametric Clifton Enh S&P Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

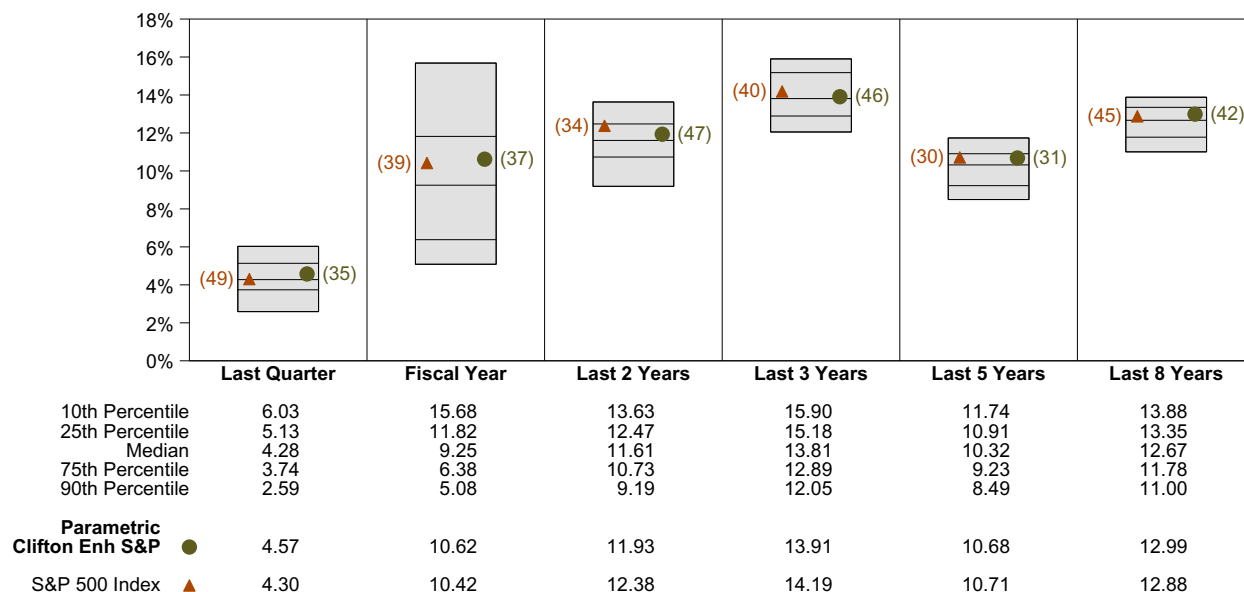
Quarterly Summary and Highlights

- Parametric Clifton Enh S&P's portfolio posted a 4.57% return for the quarter placing it in the 35 percentile of the Callan Large Cap Core group for the quarter and in the 37 percentile for the last year.
- Parametric Clifton Enh S&P's portfolio outperformed the S&P 500 Index by 0.27% for the quarter and outperformed the S&P 500 Index for the year by 0.20%.

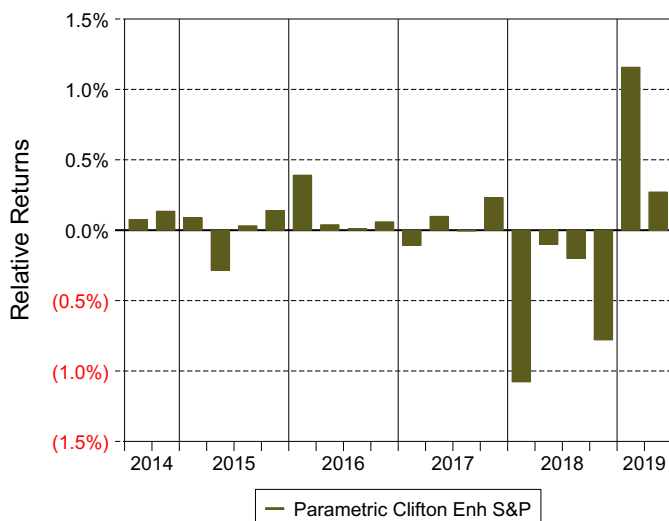
Quarterly Asset Growth

Beginning Market Value	\$197,554,027
Net New Investment	\$-10,000,000
Investment Gains/(Losses)	\$8,775,557
Ending Market Value	\$196,329,584

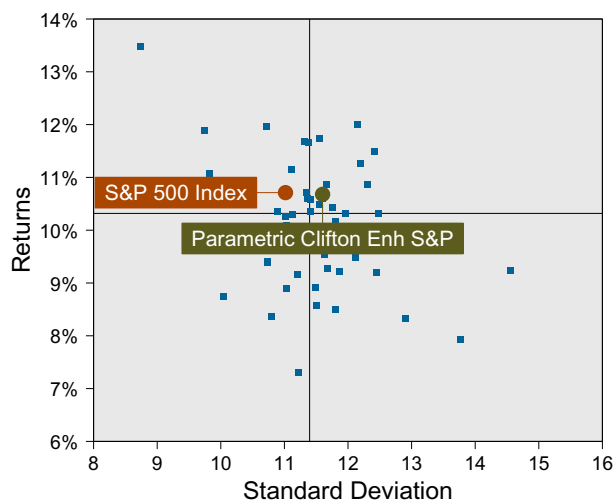
Performance vs Callan Large Cap Core (Gross)



Relative Return vs S&P 500 Index



Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



Atlanta Capital Period Ended June 30, 2019

Investment Philosophy

Atlanta believes that high quality companies produce consistently increasing earnings and dividends, thereby providing attractive returns with moderate risk over the long-term.

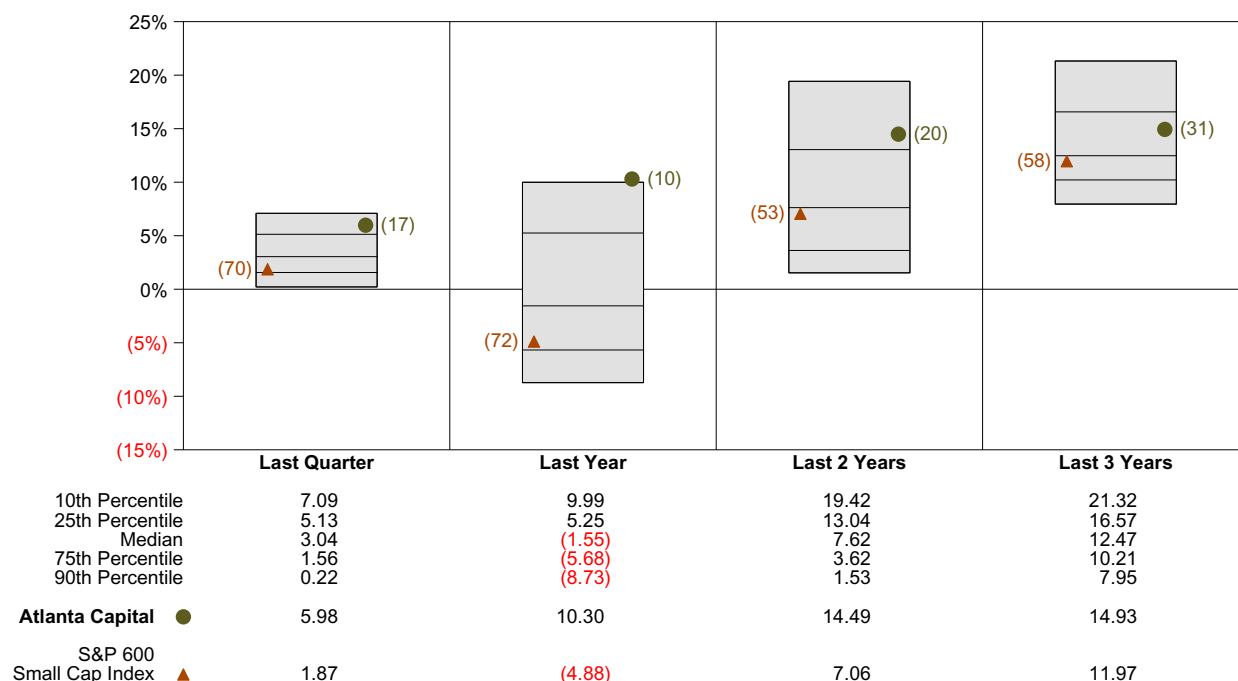
Quarterly Summary and Highlights

- Atlanta Capital's portfolio posted a 5.98% return for the quarter placing it in the 17 percentile of the Callan Small Capitalization group for the quarter and in the 10 percentile for the last year.
- Atlanta Capital's portfolio outperformed the S&P 600 Small Cap Index by 4.11% for the quarter and outperformed the S&P 600 Small Cap Index for the year by 15.18%.

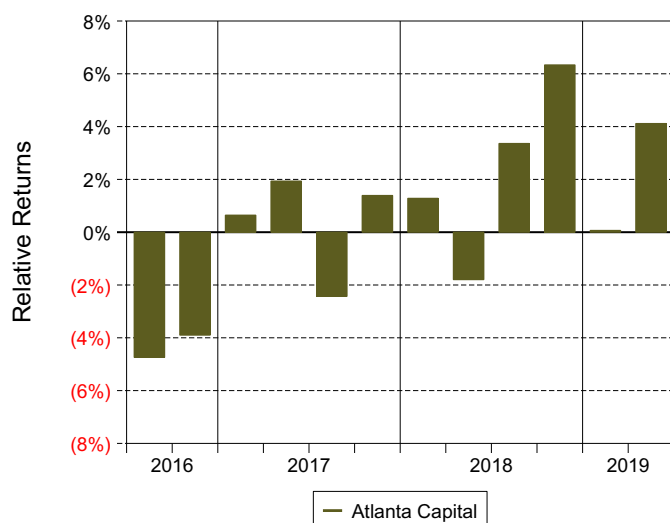
Quarterly Asset Growth

Beginning Market Value	\$152,572,437
Net New Investment	\$-5,266,359
Investment Gains/(Losses)	\$9,129,331
Ending Market Value	\$156,435,409

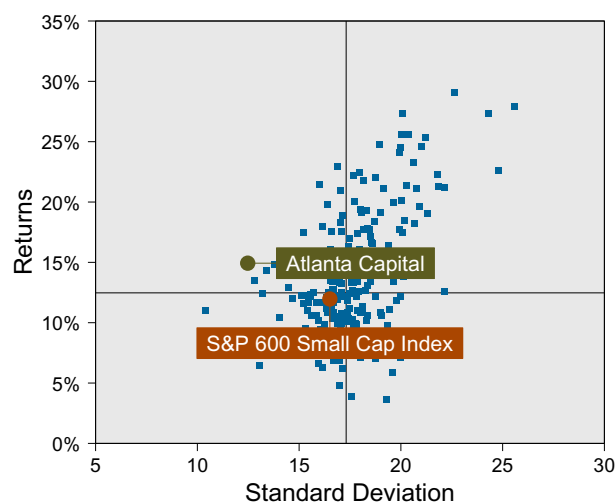
Performance vs Callan Small Capitalization (Gross)



Relative Return vs S&P 600 Small Cap Index



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



Parametric Clifton Enh SmCap Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

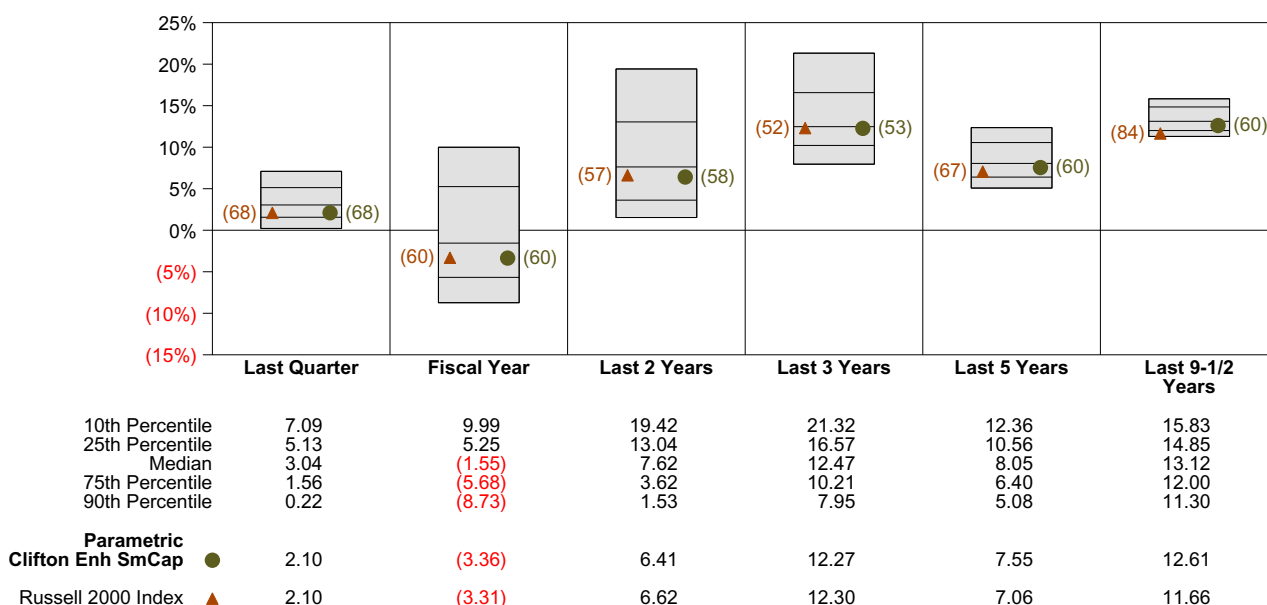
Quarterly Summary and Highlights

- Parametric Clifton Enh SmCap's portfolio posted a 2.10% return for the quarter placing it in the 68 percentile of the Callan Small Capitalization group for the quarter and in the 60 percentile for the last year.
- Parametric Clifton Enh SmCap's portfolio outperformed the Russell 2000 Index by 0.01% for the quarter and underperformed the Russell 2000 Index for the year by 0.05%.

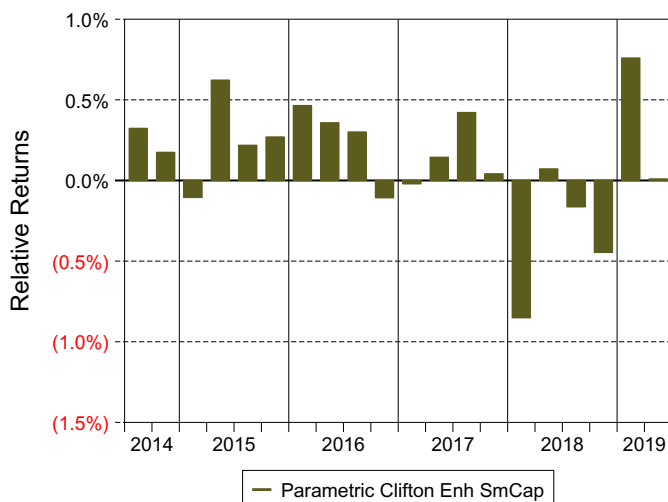
Quarterly Asset Growth

Beginning Market Value	\$155,156,938
Net New Investment	\$-5,000,000
Investment Gains/(Losses)	\$3,243,032
Ending Market Value	\$153,399,970

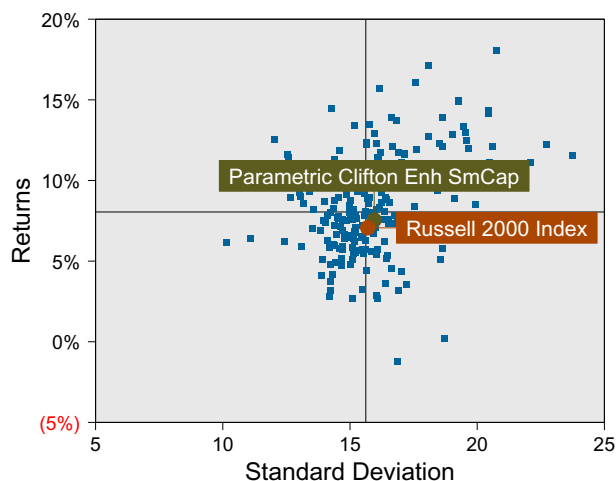
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Russell 2000 Index



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



International Equities Period Ended June 30, 2019

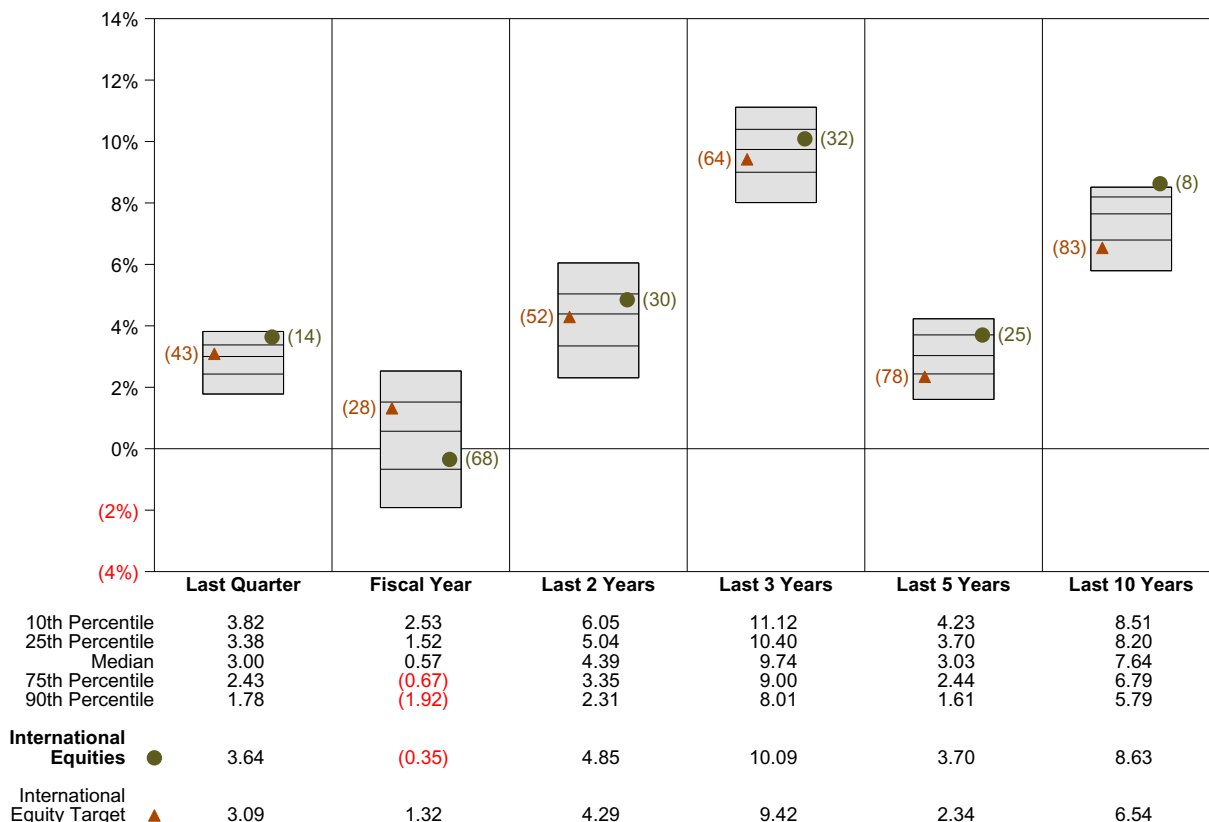
Quarterly Summary and Highlights

- International Equities's portfolio posted a 3.64% return for the quarter placing it in the 14 percentile of the Public Fund - International Equity group for the quarter and in the 68 percentile for the last year.
- International Equities's portfolio outperformed the International Equity Target by 0.55% for the quarter and underperformed the International Equity Target for the year by 1.66%.

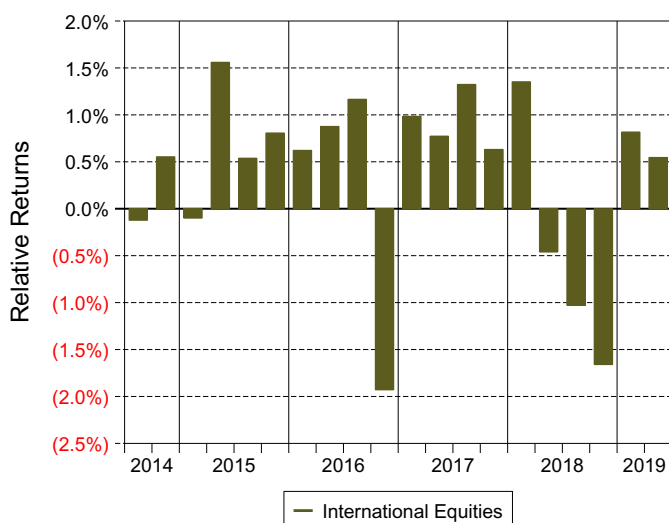
Quarterly Asset Growth

Beginning Market Value	\$902,719,563
Net New Investment	\$5,103,825
Investment Gains/(Losses)	\$32,946,906
Ending Market Value	\$940,770,294

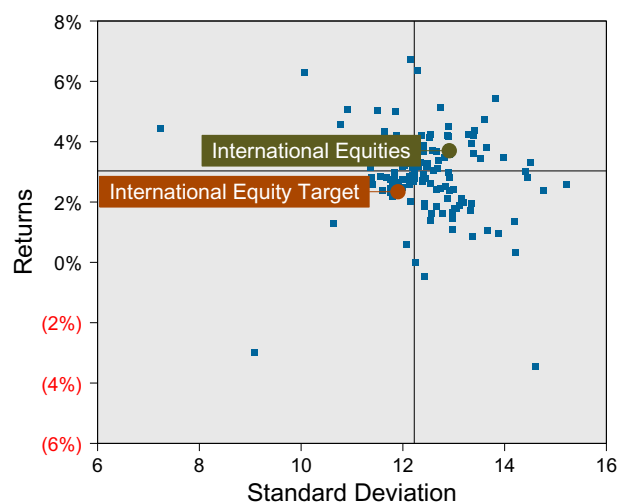
Performance vs Public Fund - International Equity (Gross)



Relative Return vs International Equity Target



Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return



DFA International Small Cap Value Fund

Period Ended June 30, 2019

Investment Philosophy

The International Small Cap Value Portfolio invests in the stocks of small, non-US developed markets companies that Dimensional believes to be value stocks at the time of purchase. Specifically, it looks at companies that fall within the smallest 8-10% of each country's market capitalization, and who's shares have a high book value in relation to their market value (BtM). It does not invest in emerging markets.

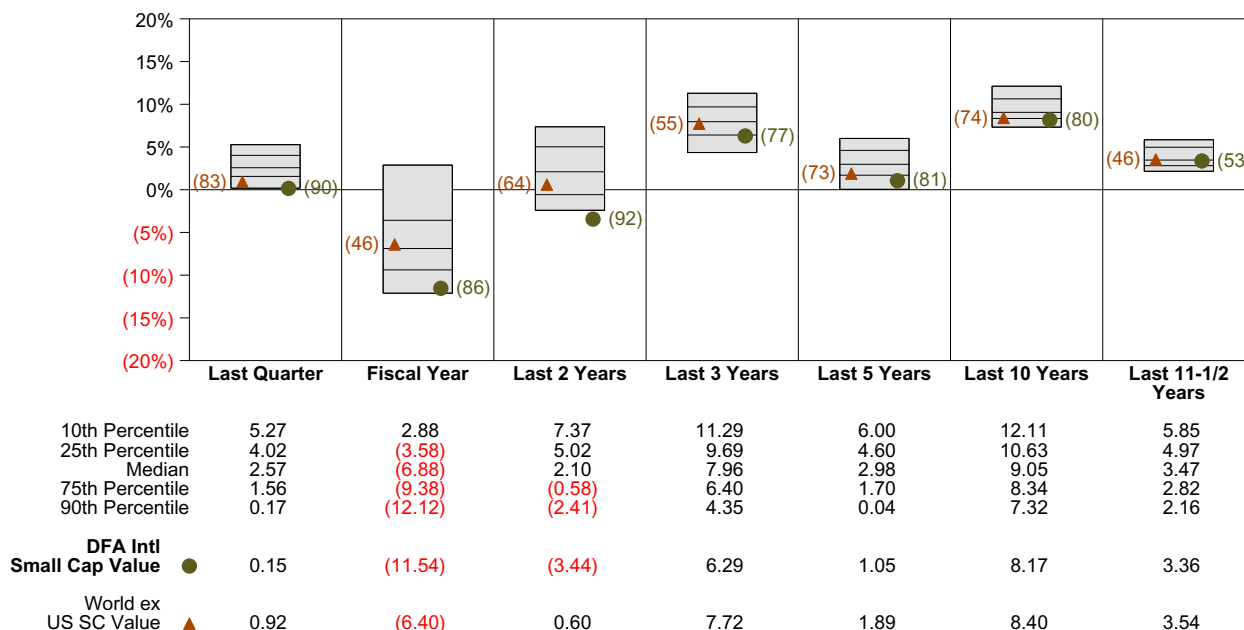
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a 0.15% return for the quarter placing it in the 90 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 86 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.77% for the quarter and underperformed the World ex US SC Value for the year by 5.14%.

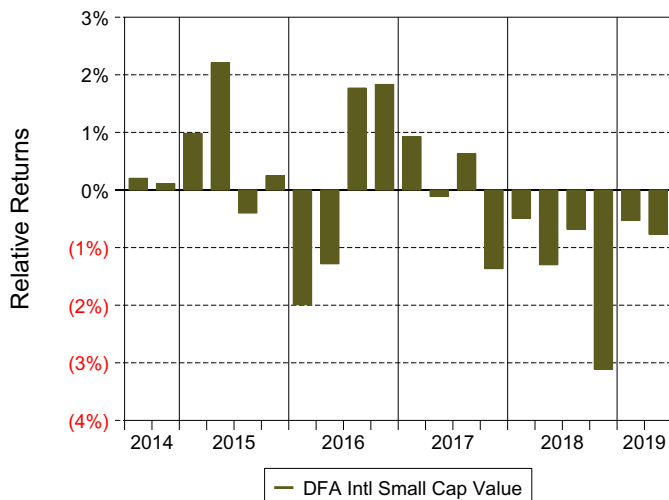
Quarterly Asset Growth

Beginning Market Value	\$75,258,123
Net New Investment	\$0
Investment Gains/(Losses)	\$115,778
Ending Market Value	\$75,373,902

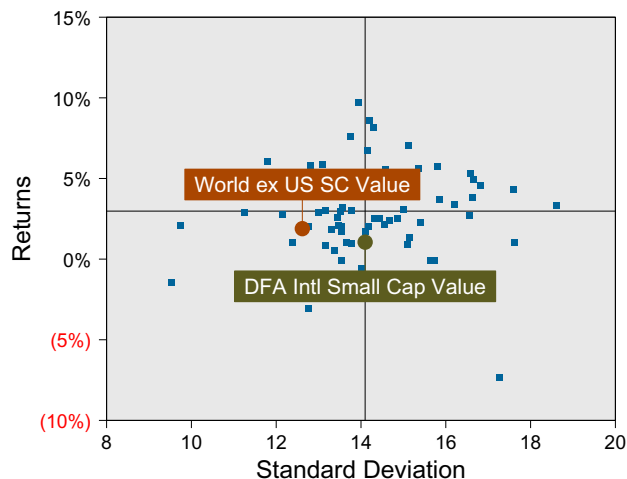
Performance vs Callan International Small Cap Mut Funds (Net)



Relative Return vs World ex US SC Value



Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



Northern Tr AM Wrld ex US Period Ended June 30, 2019

Investment Philosophy

The Fund's objective is to provide investment results that approximate the overall performance of the MSCI World ex-US Equity Index.

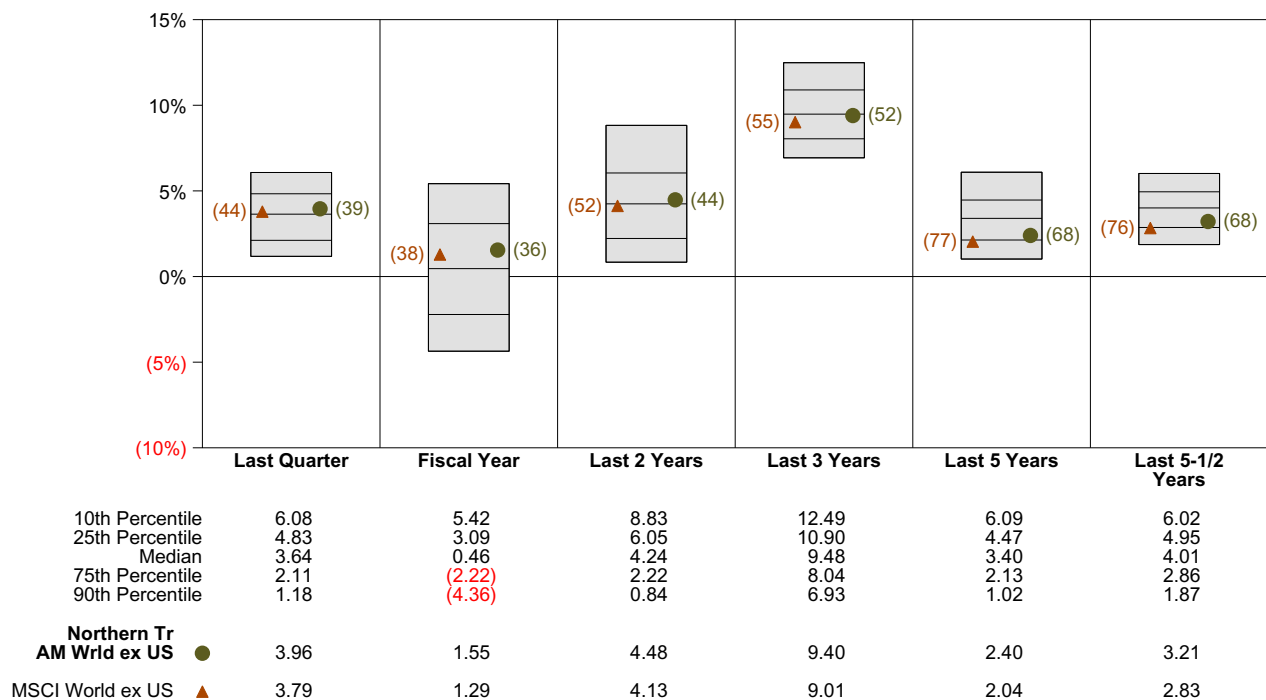
Quarterly Summary and Highlights

- Northern Tr AM Wrld ex US's portfolio posted a 3.96% return for the quarter placing it in the 39 percentile of the Callan Non-US Equity group for the quarter and in the 36 percentile for the last year.
- Northern Tr AM Wrld ex US's portfolio outperformed the MSCI World ex US by 0.16% for the quarter and outperformed the MSCI World ex US for the year by 0.26%.

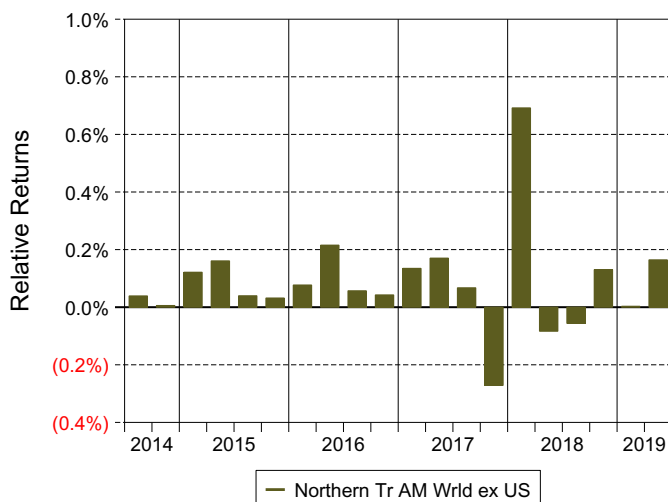
Quarterly Asset Growth

Beginning Market Value	\$330,682,378
Net New Investment	\$9,950,918
Investment Gains/(Losses)	\$13,288,390
Ending Market Value	\$353,921,685

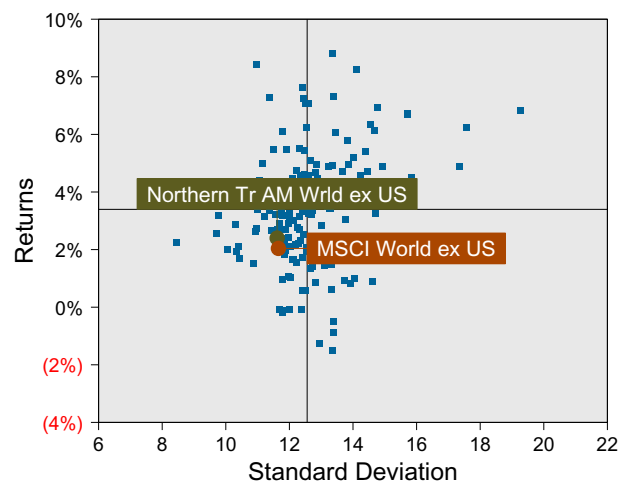
Performance vs Callan Non-US Equity (Gross)



Relative Return vs MSCI World ex US



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



Wellington Management Period Ended June 30, 2019

Investment Philosophy

The International Small Cap Opportunities investment approach is bottom-up focused, and leverages the global research resources at Wellington Management. In implementing purchase decisions, consideration is given to the size, liquidity, and volatility of these prospects. Sell decisions are based on changing fundamentals or valuations, or on finding better opportunities elsewhere. The assets are not hedged.

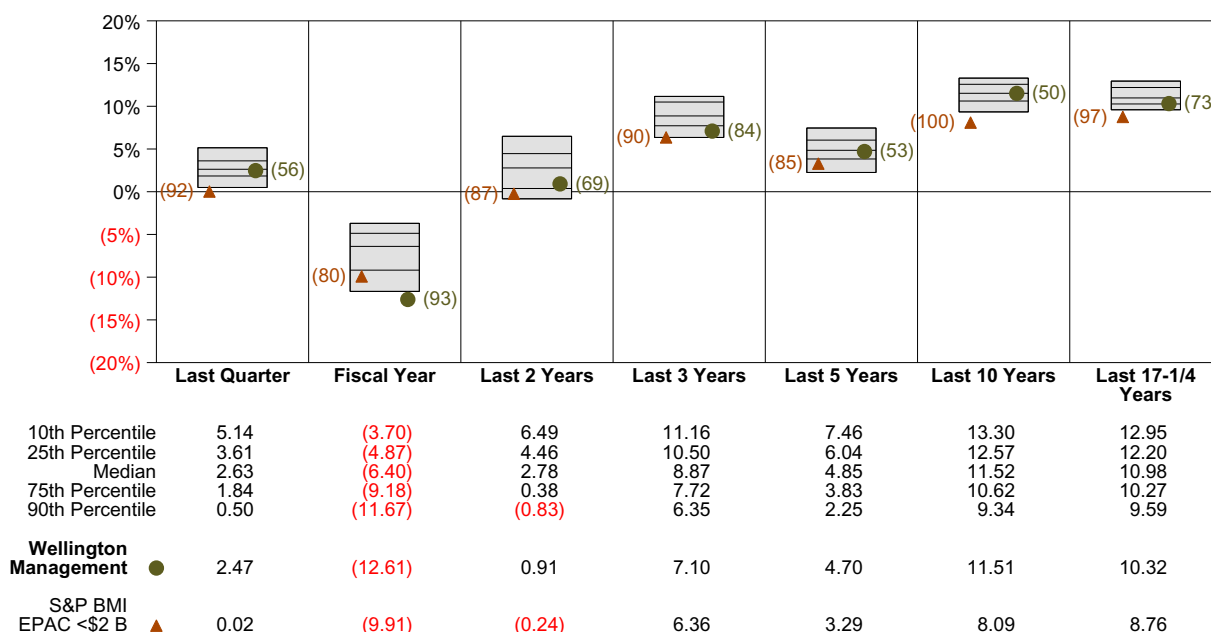
Quarterly Summary and Highlights

- Wellington Management's portfolio posted a 2.47% return for the quarter placing it in the 56 percentile of the Callan International Small Cap group for the quarter and in the 93 percentile for the last year.
- Wellington Management's portfolio outperformed the S&P BMI EPAC <\$2 B by 2.45% for the quarter and underperformed the S&P BMI EPAC <\$2 B for the year by 2.70%.

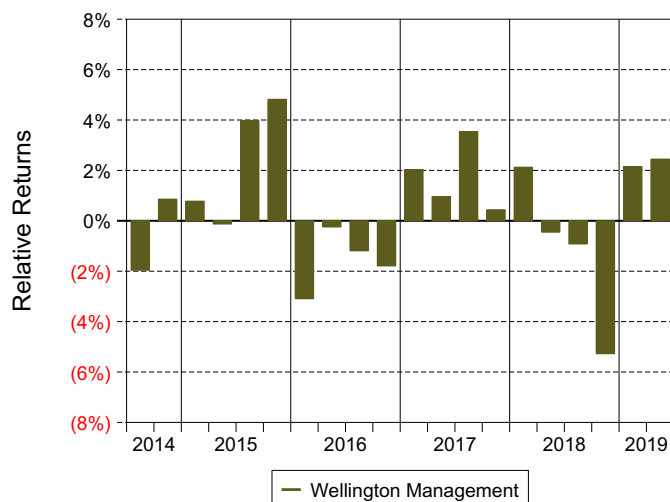
Quarterly Asset Growth

Beginning Market Value	\$73,808,569
Net New Investment	\$-2,156,746
Investment Gains/(Losses)	\$1,775,635
Ending Market Value	\$73,427,457

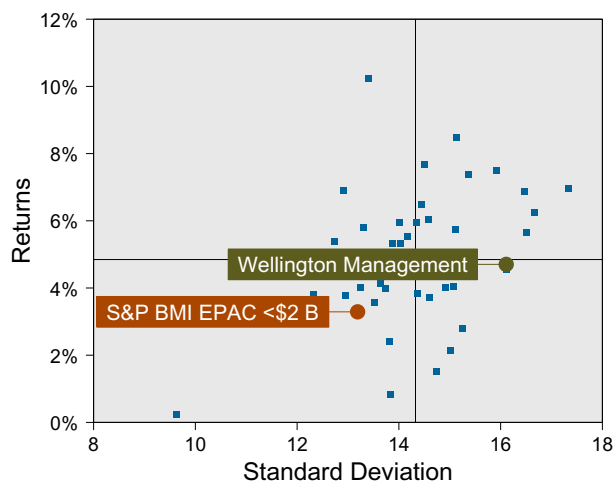
Performance vs Callan International Small Cap (Gross)



Relative Return vs S&P BMI EPAC <\$2 B



Callan International Small Cap (Gross) Annualized Five Year Risk vs Return



William Blair Period Ended June 30, 2019

Investment Philosophy

One of the basic investment tenets of William Blair & Company has been its focus on quality growth companies. They believe that investing in quality growth companies will generate above average results with generally less risk than the market. This opportunity exists because they believe the market underestimates the durability and rate of growth in companies that have the following characteristics: strong management with a unique vision, competitive advantages that prolong the duration and size of earnings growth, and conservative financing. Internationally, they believe that this philosophy can be combined with strategic flexibility in managing geographic exposure, capitalization, sector emphasis, and relative growth and valuation at the portfolio level in order to provide an appropriate degree of adaptability to cyclical conditions.

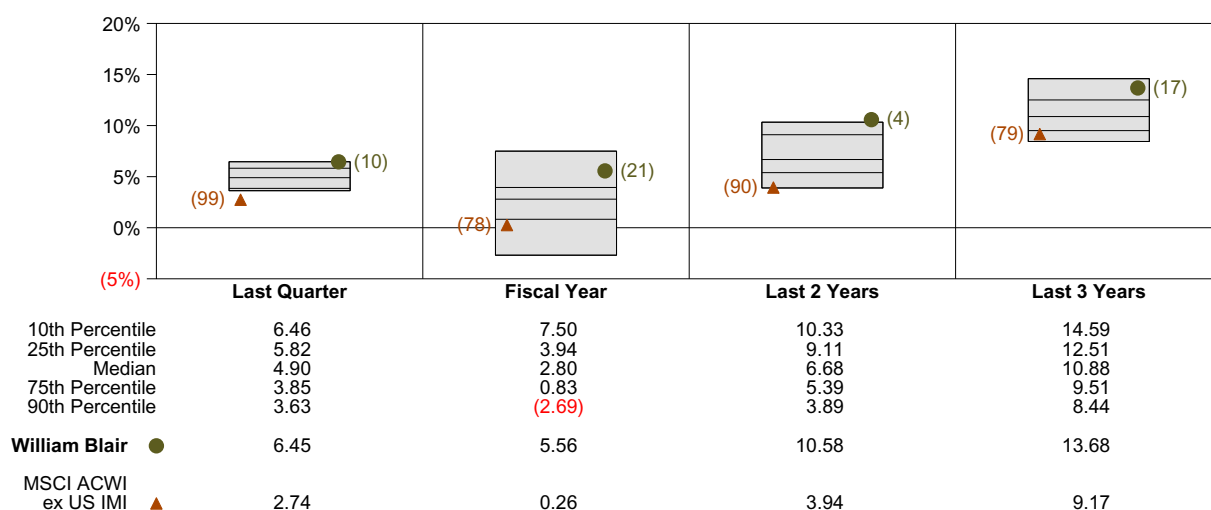
Quarterly Summary and Highlights

- William Blair's portfolio posted a 6.45% return for the quarter placing it in the 10 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 21 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 3.71% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 5.30%.

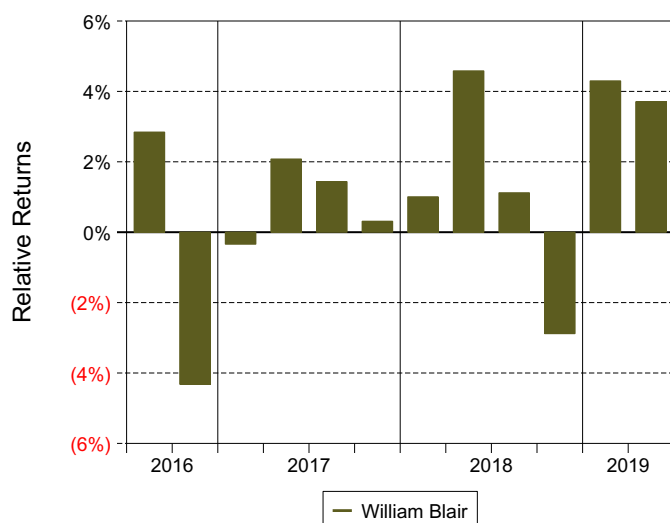
Quarterly Asset Growth

Beginning Market Value	\$206,865,652
Net New Investment	\$-177,949
Investment Gains/(Losses)	\$13,332,972
Ending Market Value	\$220,020,675

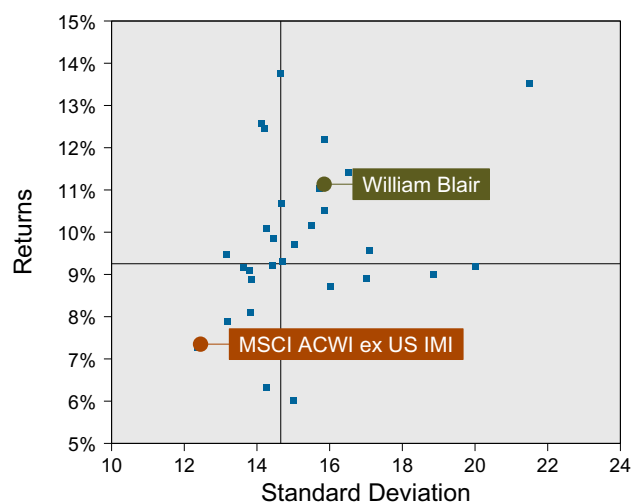
Performance vs Callan Non-US All Country Growth Equity (Gross)



Relative Return vs MSCI ACWI ex US IMI



Callan Non-US All Country Growth Equity (Gross) Annualized Two and Three-Quarter Year Risk vs Return



Axiom Emerging Markets Period Ended June 30, 2019

Investment Philosophy

The Emerging Markets Equity strategy seeks to invest in emerging market securities issued by companies whose key business drivers are both improving and exceeding expectations, as determined by Axiom's stock selection techniques focused on fundamental company analysis. The strategy considers companies either (i) located in countries that are not included in the MSCI Developed Markets Index series or (ii) that derive a majority of their revenues or assets from a country or countries not included in the MSCI Developed Markets Index series, in each case at the time of investment. Although the Manager generally expects the strategy's investment portfolio to be geographically diverse, there are no prescribed limits on geographic distribution of the strategy's investments and the strategy has the authority to invest in securities traded in securities markets or any country in the world.

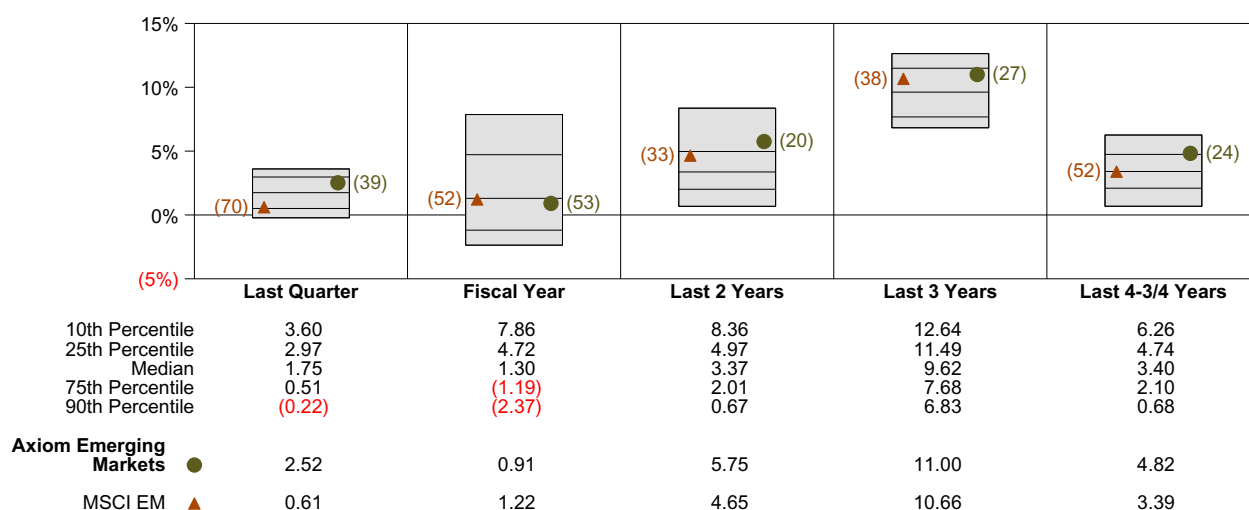
Quarterly Summary and Highlights

- Axiom Emerging Markets's portfolio posted a 2.52% return for the quarter placing it in the 39 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 53 percentile for the last year.
- Axiom Emerging Markets's portfolio outperformed the MSCI EM by 1.91% for the quarter and underperformed the MSCI EM for the year by 0.31%.

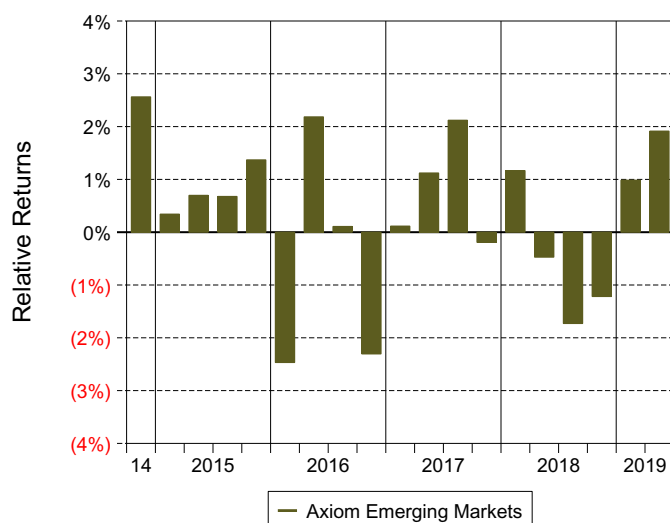
Quarterly Asset Growth

Beginning Market Value	\$162,057,607
Net New Investment	\$-7,512,398
Investment Gains/(Losses)	\$3,909,157
Ending Market Value	\$158,454,366

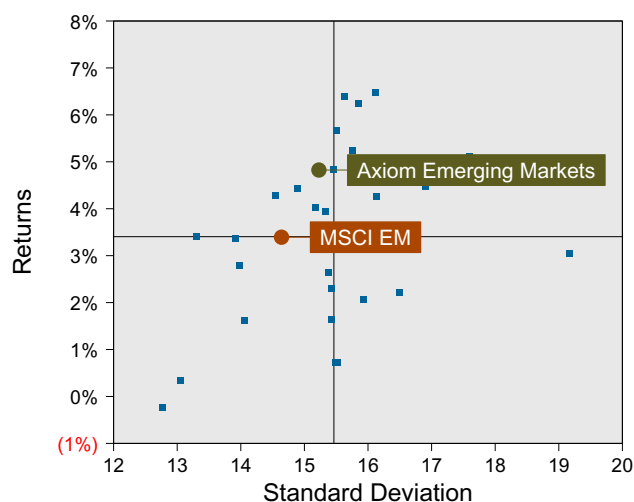
Performance vs Callan Emerging Markets Equity Mut Funds (Net)



Relative Return vs MSCI EM



Callan Emerging Markets Equity Mut Funds (Net) Annualized Four and Three-Quarter Year Risk vs Return



DFA Emerging Markets Period Ended June 30, 2019

Investment Philosophy

The Emerging Markets Small Cap Portfolio invests in small cap emerging markets companies. Presently, this means investment in companies whose market capitalization is less than \$2.3 billion at the time of purchase. Dimensional considers, among other things, information disseminated by the International Finance Corporation in determining and approving emerging market countries.

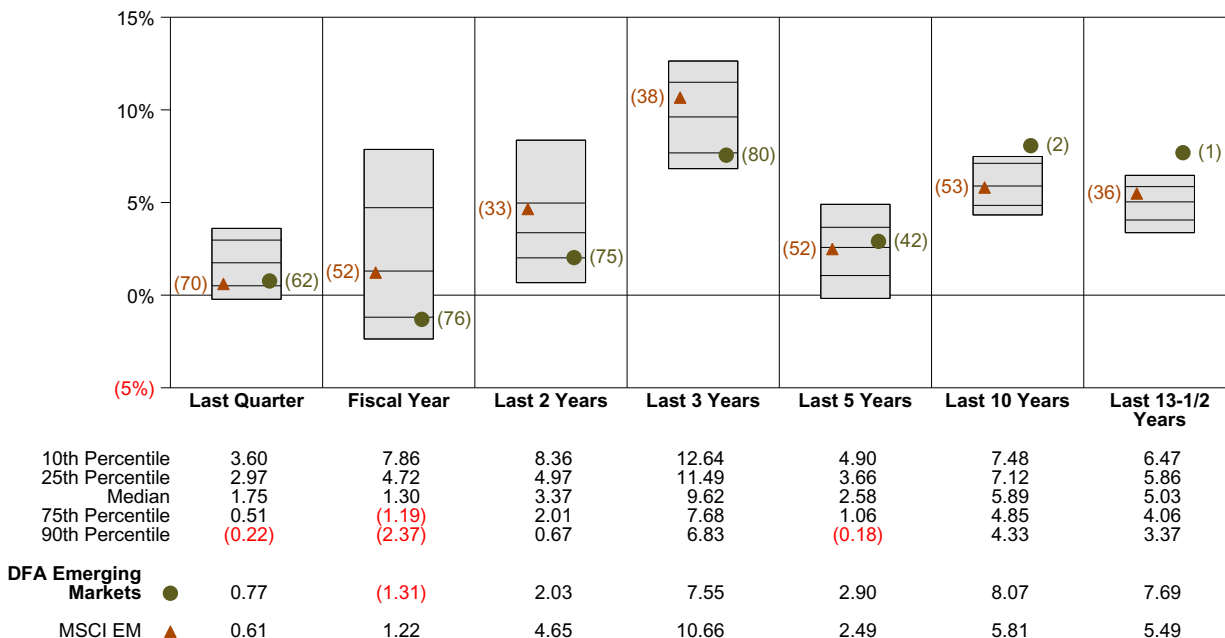
Quarterly Summary and Highlights

- DFA Emerging Markets's portfolio posted a 0.77% return for the quarter placing it in the 62 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 76 percentile for the last year.
- DFA Emerging Markets's portfolio outperformed the MSCI EM by 0.16% for the quarter and underperformed the MSCI EM for the year by 2.53%.

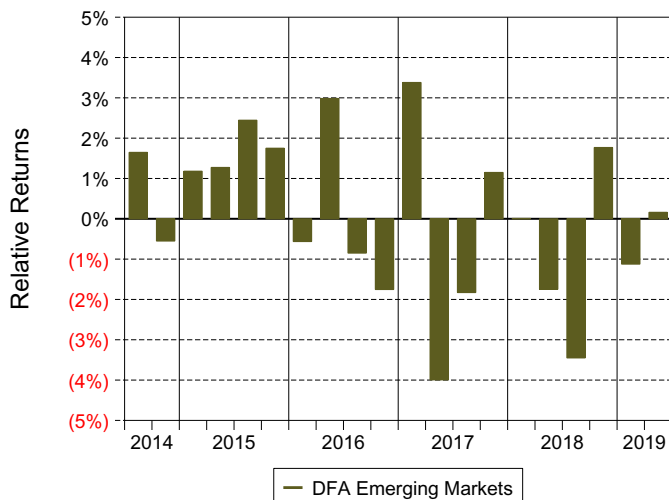
Quarterly Asset Growth

Beginning Market Value	\$54,047,234
Net New Investment	\$5,000,000
Investment Gains/(Losses)	\$524,974
Ending Market Value	\$59,572,209

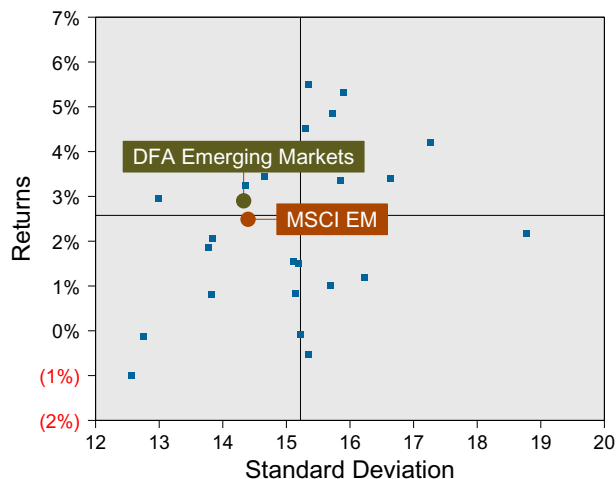
Performance vs Callan Emerging Markets Equity Mut Funds (Net)



Relative Return vs MSCI EM



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



EPOCH Investment Period Ended June 30, 2019

Investment Philosophy

Epoch seeks to produce superior risk adjusted returns by building portfolios of businesses with outstanding risk/reward profiles without running a high degree of capital risk. They analyze businesses in the same manner private investors would in looking to purchase the entire company. The strategy only invests in businesses that are understood and where they have confidence in the financial statements. They seek businesses that generate "free cash flow" and securities that have unrecognized potential yet possess a combination of above average yield, above average free cash flow growth, and/or below average valuation. Global Choice is a "best ideas" portfolio at Epoch with every stock held in other strategies managed by the firm.

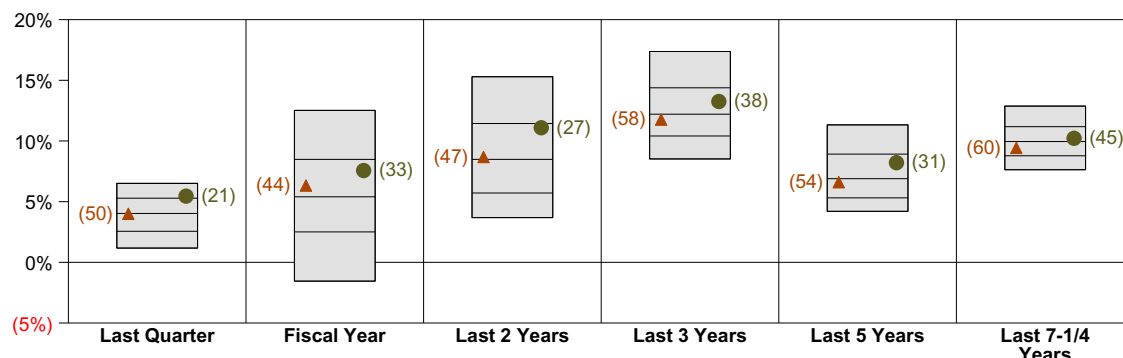
Quarterly Summary and Highlights

- EPOCH Investment's portfolio posted a 5.45% return for the quarter placing it in the 21 percentile of the Callan Global Equity group for the quarter and in the 33 percentile for the last year.
- EPOCH Investment's portfolio outperformed the MSCI World by 1.45% for the quarter and outperformed the MSCI World for the year by 1.23%.

Quarterly Asset Growth

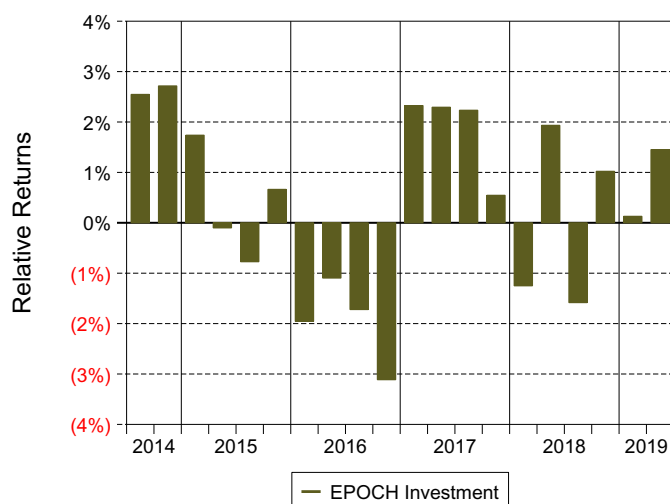
Beginning Market Value	\$429,444,330
Net New Investment	\$-5,678,550
Investment Gains/(Losses)	\$23,232,173
Ending Market Value	\$446,997,953

Performance vs Callan Global Equity (Gross)

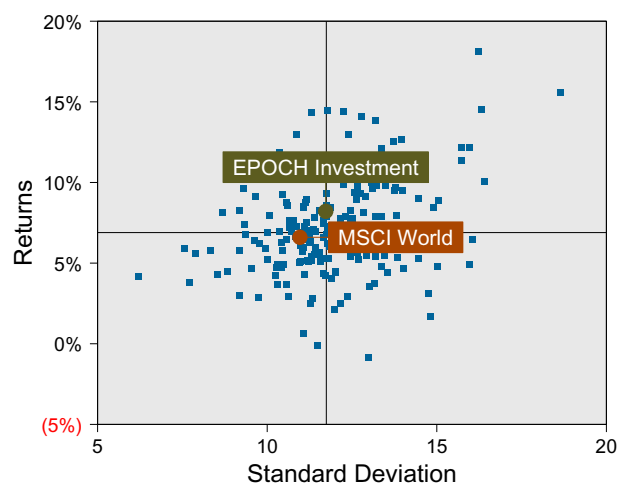


10th Percentile	6.51	12.52	15.29	17.37	11.33	12.87
25th Percentile	5.29	8.48	11.44	14.38	8.92	11.18
Median	4.03	5.40	8.48	12.21	6.89	9.96
75th Percentile	2.56	2.51	5.71	10.41	5.31	8.78
90th Percentile	1.17	(1.55)	3.68	8.52	4.20	7.63
EPOCH Investment	5.45	7.56	11.09	13.25	8.21	10.22
MSCI World	4.00	6.33	8.68	11.77	6.60	9.43

Relative Return vs MSCI World



Callan Global Equity (Gross) Annualized Five Year Risk vs Return



LSV Asset Management

Period Ended June 30, 2019

Investment Philosophy

The Global Value (ACWI) Equity strategy is managed using quantitative techniques to select individual securities in a risk-controlled, bottom-up approach. Value factors and security selection dominate sector/industry factors as explanators of performance.

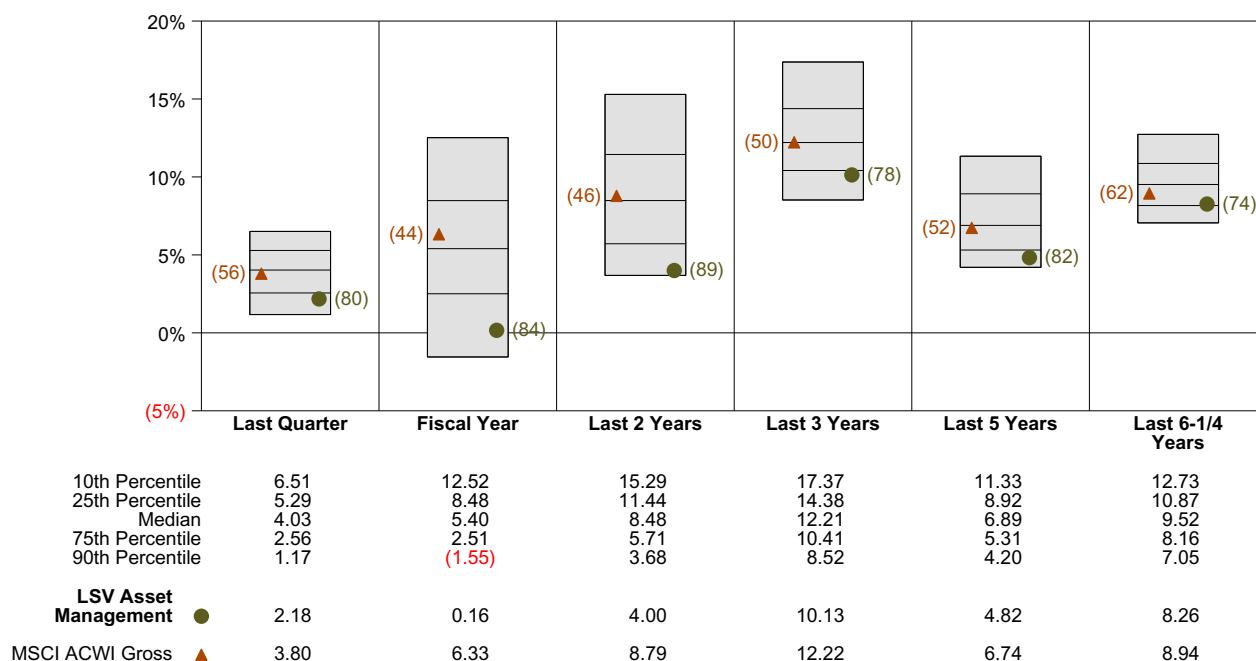
Quarterly Summary and Highlights

- LSV Asset Management's portfolio posted a 2.18% return for the quarter placing it in the 80 percentile of the Callan Global Equity group for the quarter and in the 84 percentile for the last year.
- LSV Asset Management's portfolio underperformed the MSCI ACWI Gross by 1.63% for the quarter and underperformed the MSCI ACWI Gross for the year by 6.16%.

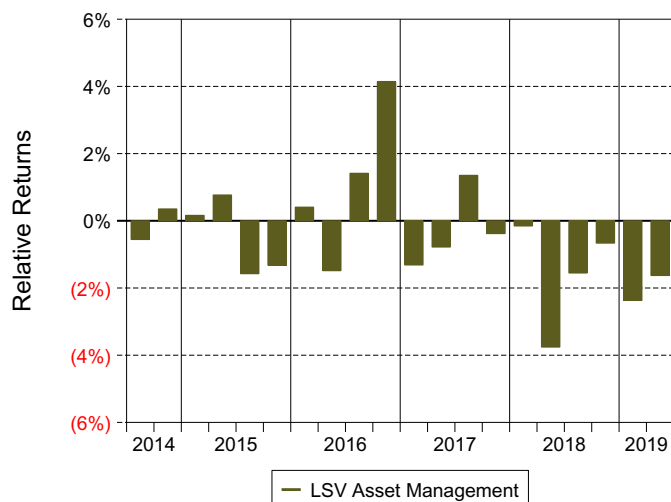
Quarterly Asset Growth

Beginning Market Value	\$529,909,795
Net New Investment	\$-14,130,171
Investment Gains/(Losses)	\$11,169,585
Ending Market Value	\$526,949,210

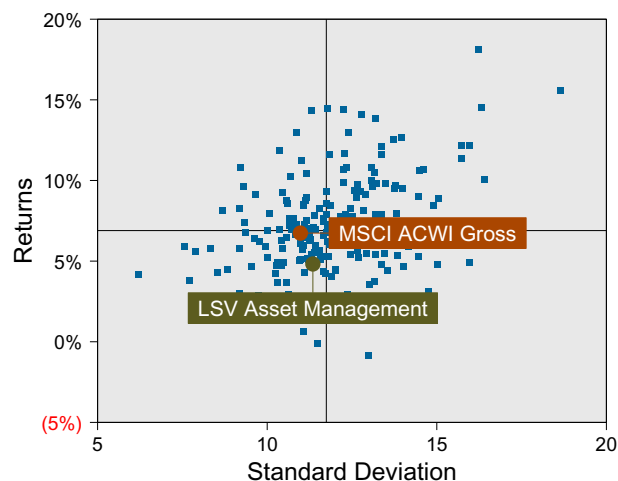
Performance vs Callan Global Equity (Gross)



Relative Return vs MSCI ACWI Gross



Callan Global Equity (Gross) Annualized Five Year Risk vs Return



Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 18-1/2 Years
Private Equity	7.72%	8.60%	8.30%	2.20%	2.85%
Adams Street Direct Co-Invest Fd	(10.62%)	(34.59%)	(18.03%)	(6.17%)	-
Adams Street Direct Fd 2010	4.58%	16.01%	15.51%	11.62%	-
Adams Street 1998 Partnership	0.65%	8.09%	2.73%	2.32%	1.94%
Adams Street 1999 Partnership	(7.23%)	(5.75%)	(2.00%)	(2.85%)	2.12%
Adams Street 2000 Partnership	7.26%	15.03%	8.51%	2.30%	4.06%
Adams Street 2001 Partnership	4.30%	2.62%	5.40%	0.98%	3.77%
Adams Street 2002 Partnership	5.28%	(8.00%)	3.12%	(0.69%)	-
Adams Street 2003 Partnership	6.00%	5.30%	10.42%	8.28%	-
Adams Street 2010 Partnership	8.00%	18.13%	16.98%	15.01%	-
Adams Street 2008 Fund	8.01%	17.39%	16.68%	13.83%	-
Adams Street 1999 Non-US	0.29%	0.92%	1.68%	0.70%	5.72%
Adams Street 2000 Non-US	16.39%	7.78%	10.53%	3.46%	3.79%
Adams Street 2001 Non-US	1.52%	14.62%	5.39%	11.05%	-
Adams Street 2002 Non-US	(1.60%)	(2.53%)	(0.62%)	3.30%	-
Adams Street 2003 Non-US	0.07%	(15.21%)	4.19%	5.52%	-
Adams Street 2004 Non-US	2.76%	5.46%	8.30%	1.78%	-
Adams Street 2010 Non-US	5.35%	20.14%	20.23%	13.20%	-
Adams Street 2010 NonUS Emg	6.27%	10.72%	14.05%	14.83%	-
Adams Street 2015 Global Fd	5.74%	17.55%	28.01%	-	-
Adams Street 2016 Global Fd	4.96%	10.66%	-	-	-
Adams Street 2017 Global Fd	4.78%	7.43%	-	-	-
Adams Street 2018 Global Fd	5.68%	-	-	-	-
Adams Street BVCF IV Fund	0.96%	(0.40%)	1.80%	8.07%	15.70%
BlackRock	8.36%	10.83%	-	-	-
Capital International V	(9.70%)	(37.07%)	(45.20%)	(36.13%)	-
Capital International VI	2.47%	7.95%	7.82%	(0.17%)	-
CorsAir III	94.28%	82.11%	8.50%	9.34%	-
EIG Energy Fund XIV	(10.10%)	(23.43%)	0.63%	(24.08%)	-
Lewis & Clark	(33.88%)	(26.40%)	10.80%	(14.73%)	-
Lewis & Clark II	(8.17%)	12.12%	7.83%	1.81%	-
Matlin Patterson II	(0.29%)	(2.63%)	(9.89%)	(1.26%)	-
Matlin Patterson III	15.45%	1.27%	5.50%	1.56%	-
Quantum Energy Partners	(36.18%)	(51.42%)	(26.03%)	(24.05%)	-
Russell 1000 Index	4.25%	10.02%	14.15%	10.45%	6.71%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	8.00%

Domestic Fixed Income Period Ended June 30, 2019

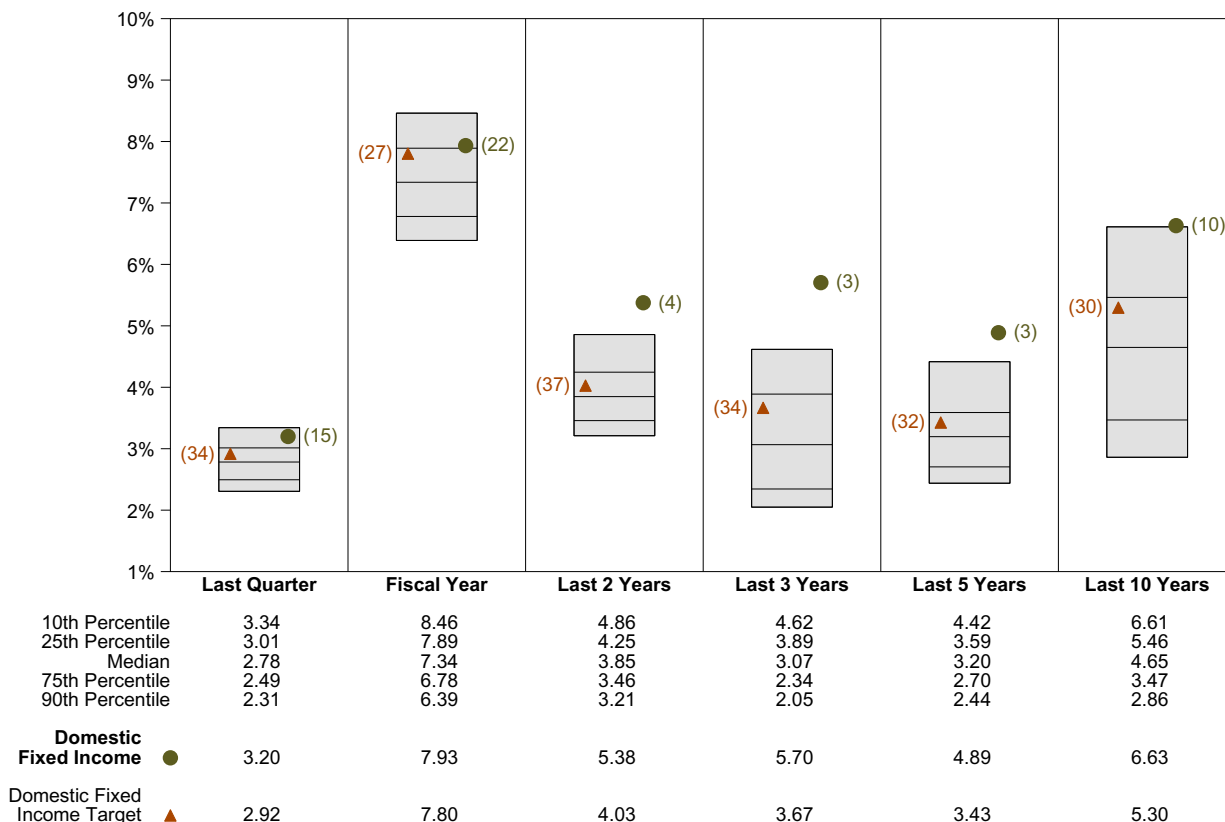
Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 3.20% return for the quarter placing it in the 15 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 22 percentile for the last year.
- Domestic Fixed Income's portfolio outperformed the Domestic Fixed Income Target by 0.28% for the quarter and outperformed the Domestic Fixed Income Target for the year by 0.13%.

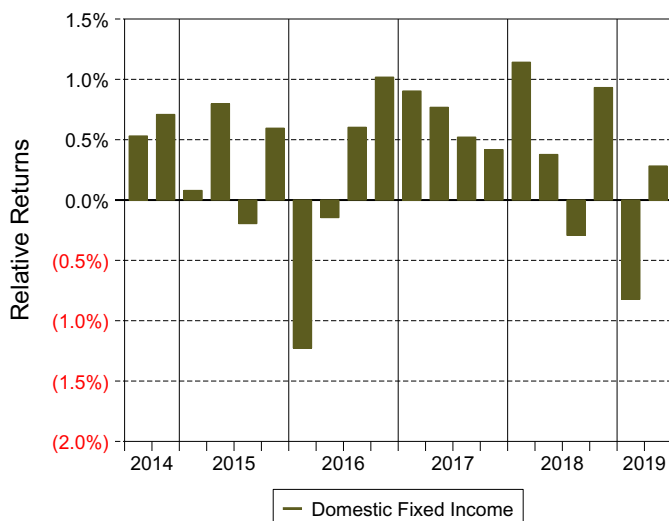
Quarterly Asset Growth

Beginning Market Value	\$1,314,636,989
Net New Investment	\$-2,532,940
Investment Gains/(Losses)	\$42,737,482
Ending Market Value	\$1,354,841,531

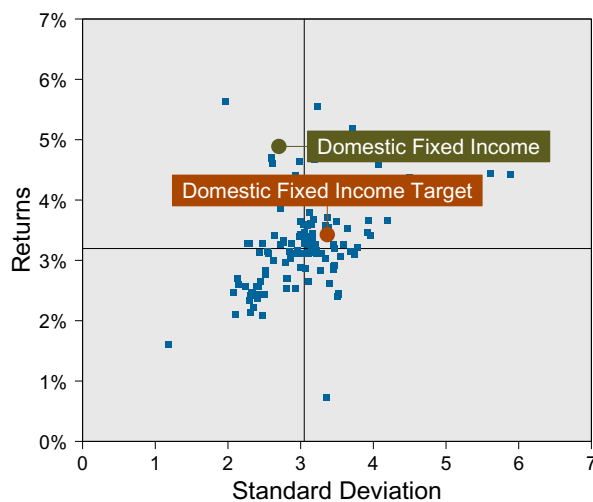
Performance vs Public Fund - Domestic Fixed (Gross)



Relative Returns vs Domestic Fixed Income Target



Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return



Declaration Total Return Period Ended June 30, 2019

Investment Philosophy

The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies (Non-Agency RMBS) and government agencies (Agency MBS) and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). Portfolio holdings may range from short tenure senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. Smaller portfolio allocations may include consumer asset-backed securities (ABS), or other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only (IO) MBS.

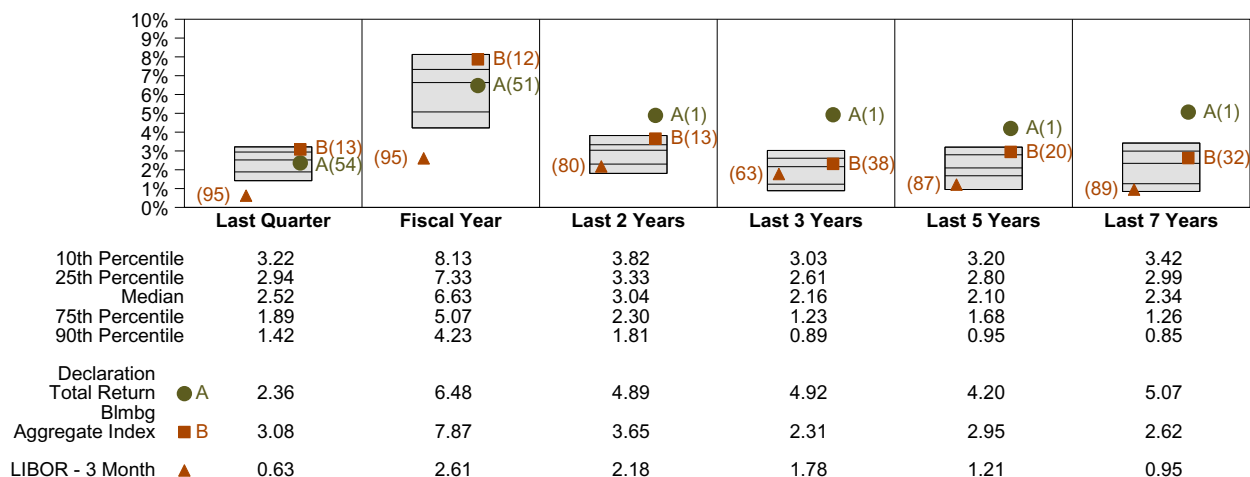
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 2.36% return for the quarter placing it in the 54 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 51 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.73% for the quarter and outperformed the LIBOR - 3 Month for the year by 3.87%.

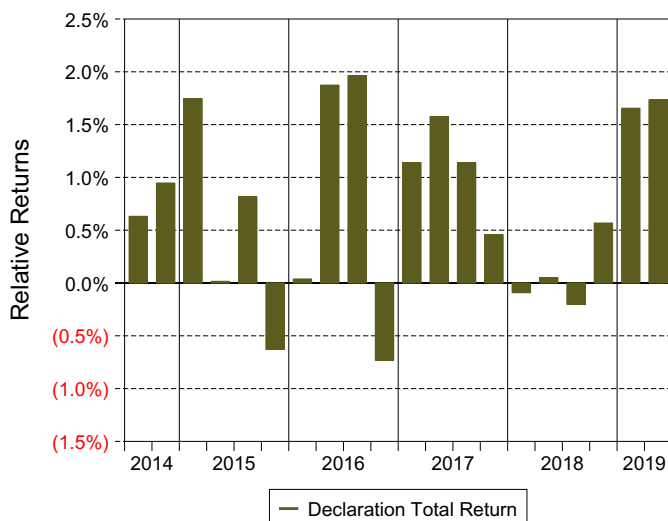
Quarterly Asset Growth

Beginning Market Value	\$110,776,307
Net New Investment	\$-61,700
Investment Gains/(Losses)	\$2,613,865
Ending Market Value	\$113,328,472

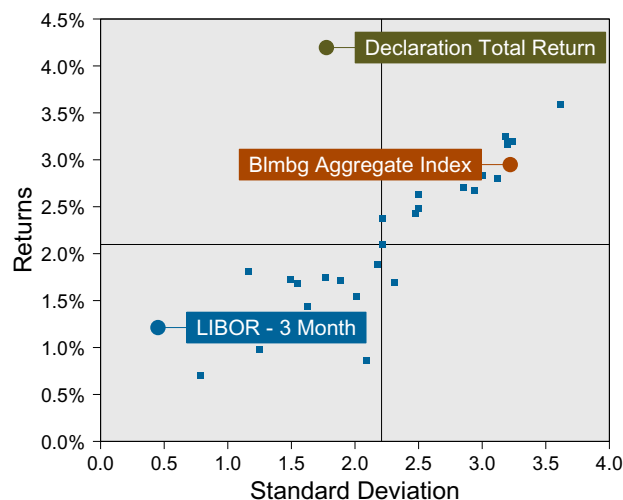
Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)



Relative Return vs LIBOR - 3 Month



Callan Intermediate Fixed Inc Mut Funds (Net) Annualized Five Year Risk vs Return



PIMCO DiSCO II

Period Ended June 30, 2019

Investment Philosophy

The PIMCO Distressed Senior Credit Opportunities Fund is an opportunistic private-equity style Fund which seeks to provide investors enhanced returns principally through long-biased investments in undervalued senior and super senior structured credit securities that are expected to produce attractive levels of current income and that may also appreciate in value over the long term. The fund will look to capitalize on forced sales by liquidity constrained investors.

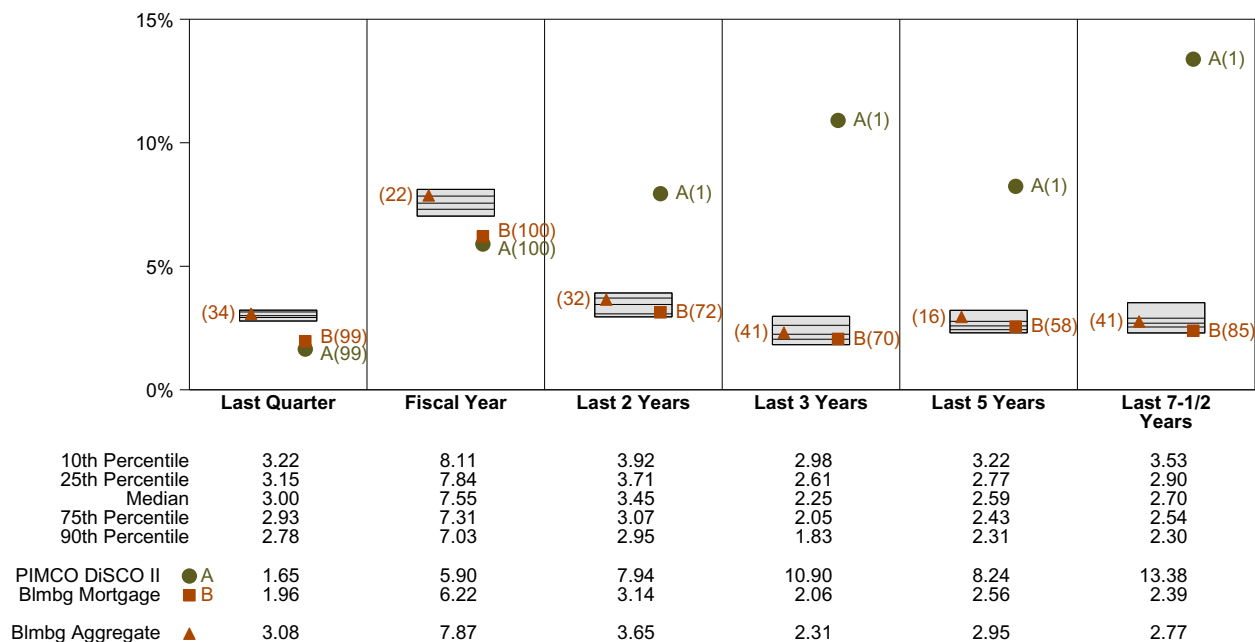
Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 1.65% return for the quarter placing it in the 99 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 100 percentile for the last year.
- PIMCO DiSCO II's portfolio underperformed the Blmbg Aggregate by 1.43% for the quarter and underperformed the Blmbg Aggregate for the year by 1.97%.

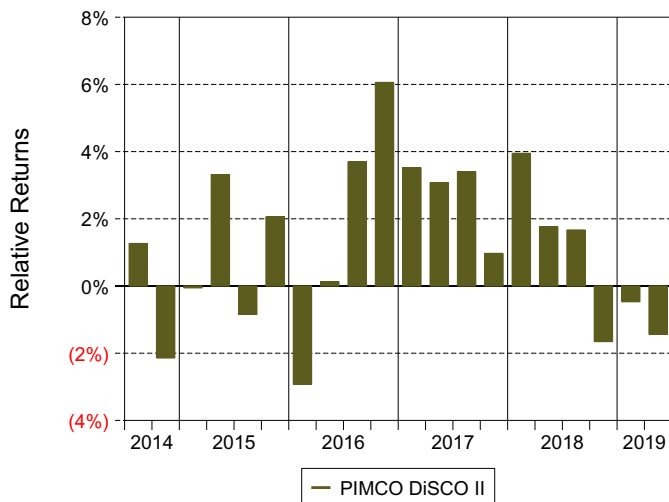
Quarterly Asset Growth

Beginning Market Value	\$92,431,775
Net New Investment	\$0
Investment Gains/(Losses)	\$1,521,297
Ending Market Value	\$93,953,072

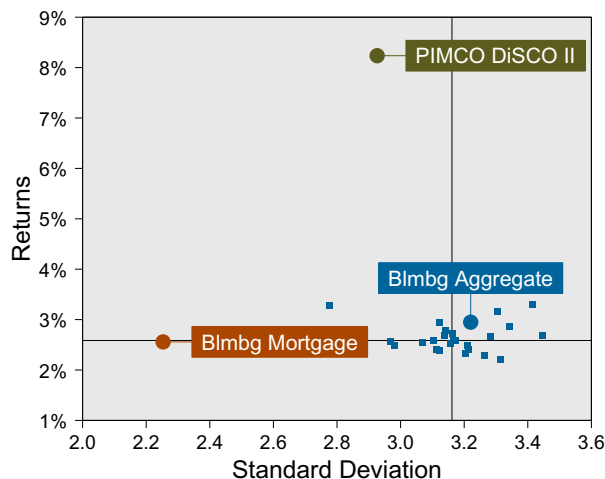
Performance vs Callan Core Bond Mutual Funds (Net)



Relative Return vs Blmbg Aggregate



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



PIMCO Core Plus Constrained Period Ended June 30, 2019

Investment Philosophy

The PIMCO Unconstrained Bond Strategy is an absolute return-oriented, investment grade quality fixed income strategy that leverages PIMCO's secular thinking, global themes, and integrated investment process without the constraints of a benchmark or significant sector/instrument limitations. The strategy focuses on long-term economic, social and political trends. Over shorter cyclical time frames, the unconstrained nature of the strategy allows PIMCO to take on more risk when tactical opportunities are identified, and it allows for reduction and diversification of risk at times when the outlook may be more challenging for traditional fixed income benchmarks. **The product changed from Commingled Fund to Separate Account in March 2014. *Libor-3 month through February 28, 2014; Fund's performance through March 31, 2014; Libor-3 month through June 30, 2018; Blmbg Aggregate thereafter.**

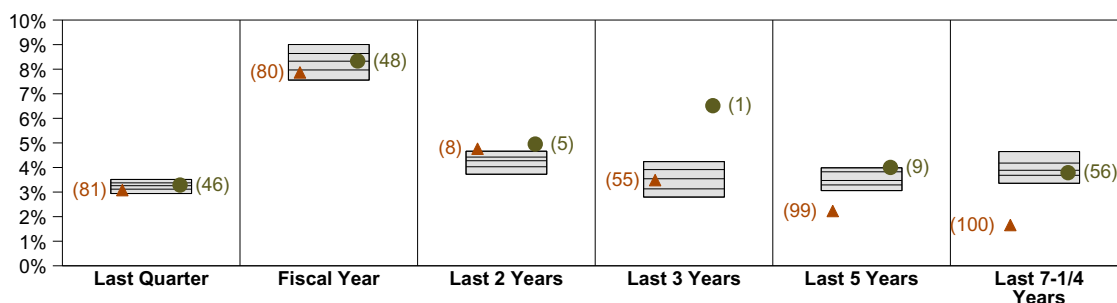
Quarterly Summary and Highlights

- PIMCO Core Plus Constrained's portfolio posted a 3.29% return for the quarter placing it in the 46 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 48 percentile for the last year.
- PIMCO Core Plus Constrained's portfolio outperformed the Blended Benchmark* by 0.21% for the quarter and outperformed the Blended Benchmark* for the year by 0.47%.

Quarterly Asset Growth

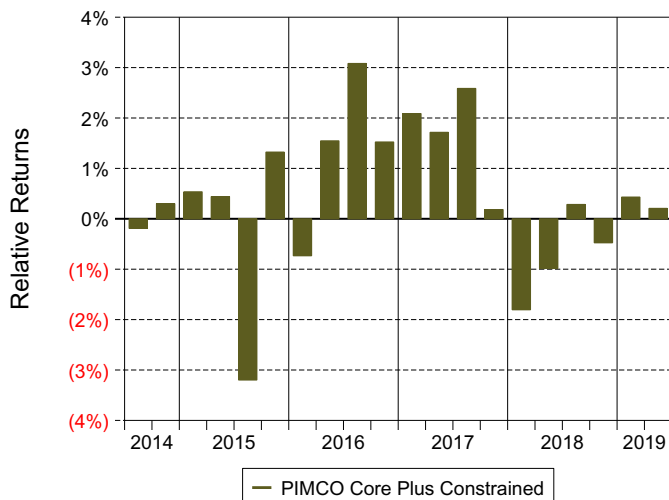
Beginning Market Value	\$319,347,745
Net New Investment	\$-12,192,791
Investment Gains/(Losses)	\$10,475,325
Ending Market Value	\$317,630,279

Performance vs Callan Core Plus Fixed Income (Gross)

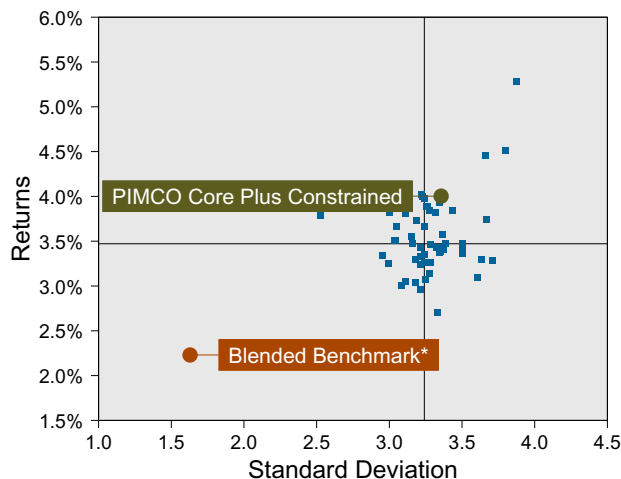


10th Percentile	3.51	9.00	4.66	4.24	3.99	4.65
25th Percentile	3.37	8.64	4.42	3.91	3.83	4.18
Median	3.26	8.33	4.27	3.54	3.47	3.89
75th Percentile	3.12	7.97	4.03	3.13	3.29	3.68
90th Percentile	2.94	7.56	3.73	2.80	3.06	3.36
PIMCO Core Plus Constrained	3.29	8.33	4.95	6.52	4.00	3.79
Blended Benchmark*	3.08	7.87	4.76	3.49	2.23	1.66

Relative Return vs Blended Benchmark*



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



Prudential Core Period Ended June 30, 2019

Investment Philosophy

The PGIM Fixed Income Core Fixed Income strategy seeks to provide +60 bps over the Bloomberg Barclays Aggregate Index over a market cycle. The strategy tends to generate its excess return from fairly equal increments of both sector allocation and subsector/security allocation. Duration and yield curve positioning is generally de-emphasized, but will be considered when market opportunities dictate. The primary way they add value is through intensive research-based sector, industry, and security selection. The strategy is predominately investment grade, but may also invest nominally in crossover/high yield bonds and emerging markets debt, when guidelines permit.

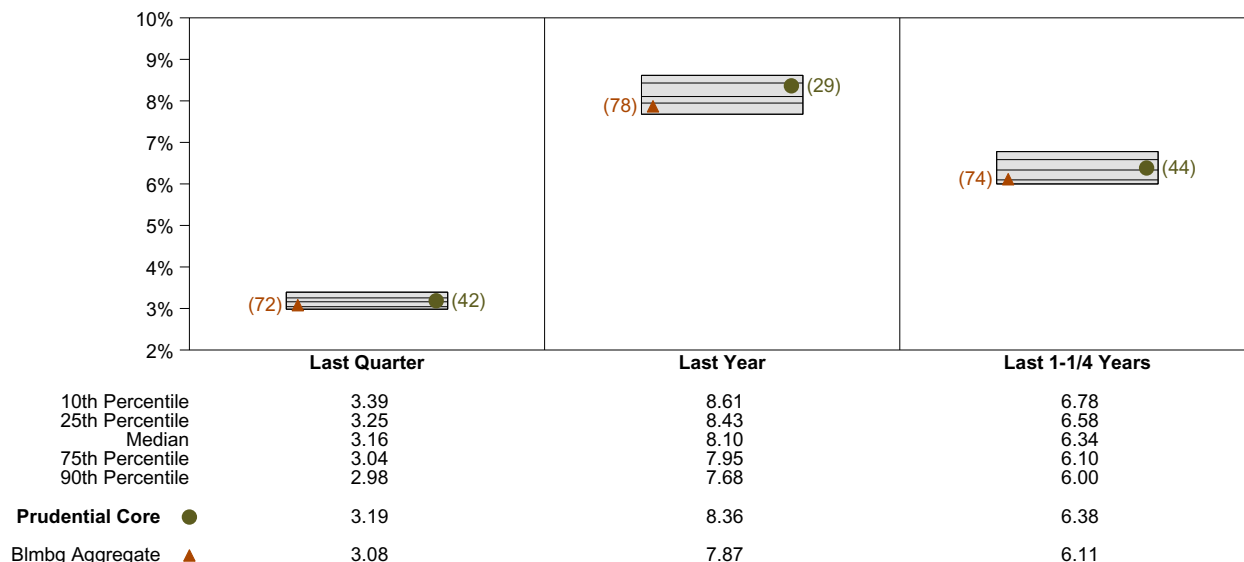
Quarterly Summary and Highlights

- Prudential Core's portfolio posted a 3.19% return for the quarter placing it in the 42 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 29 percentile for the last year.
- Prudential Core's portfolio outperformed the Blmbg Aggregate by 0.11% for the quarter and outperformed the Blmbg Aggregate for the year by 0.49%.

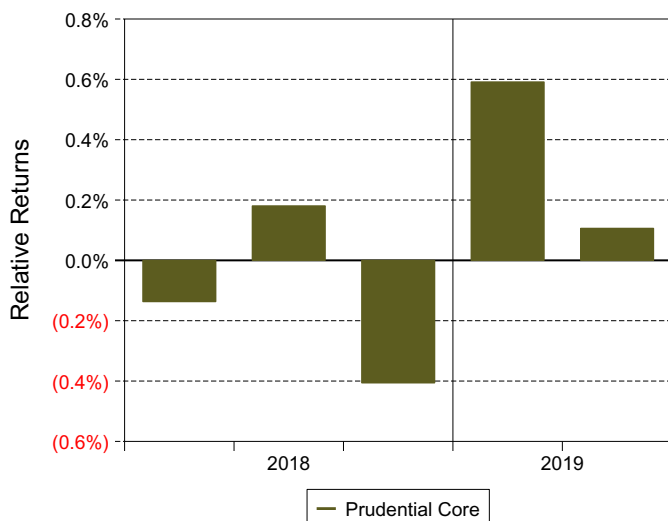
Quarterly Asset Growth

Beginning Market Value	\$319,629,011
Net New Investment	\$-12,136,157
Investment Gains/(Losses)	\$10,157,590
Ending Market Value	\$317,650,444

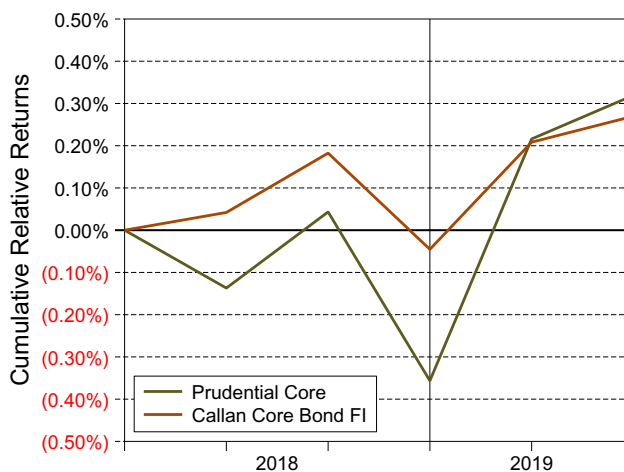
Performance vs Callan Core Bond Fixed Income (Gross)



Relative Return vs Blmbg Aggregate



Cumulative Returns vs Blmbg Aggregate



SSgA Long US Treas Index Period Ended June 30, 2019

Investment Philosophy

The Fund seeks an investment return that approximates as closely as practicable, before expenses, the performance of the Barclays Capital U.S. Long Treasury Bond Index over the long term.

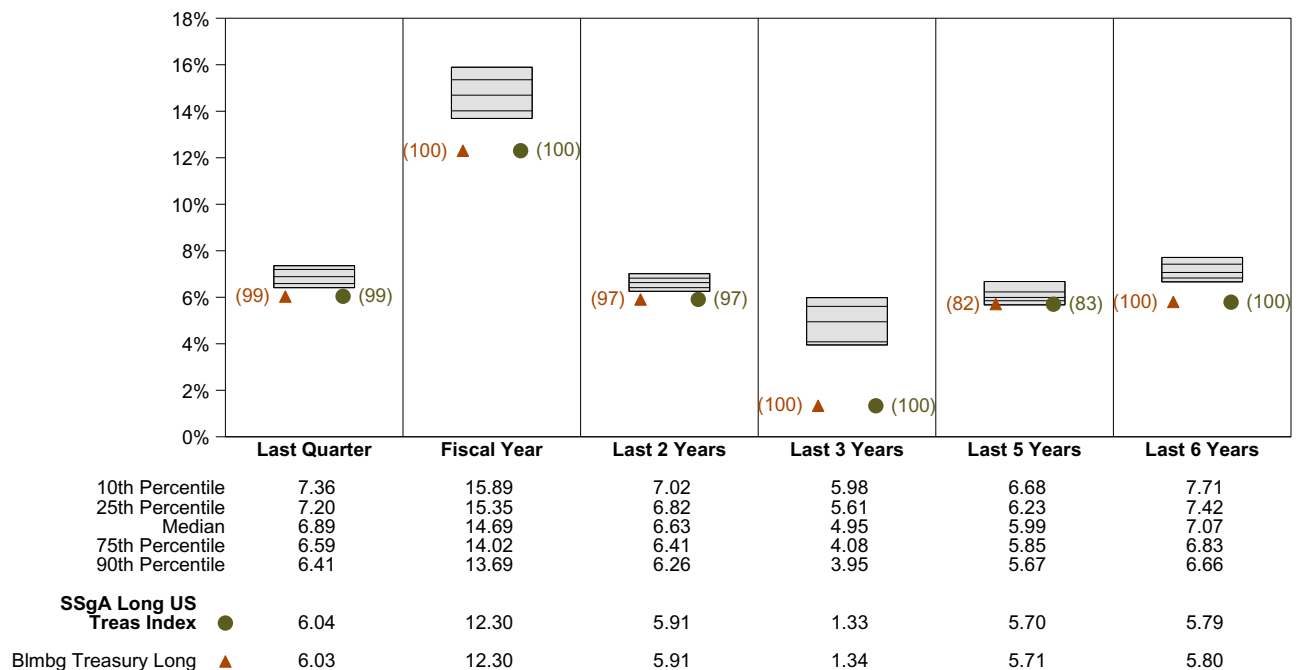
Quarterly Summary and Highlights

- SSgA Long US Treas Index's portfolio posted a 6.04% return for the quarter placing it in the 99 percentile of the Callan Extended Maturity Fixed Income group for the quarter and in the 100 percentile for the last year.
- SSgA Long US Treas Index's portfolio outperformed the Blmbg Treasury Long by 0.01% for the quarter and outperformed the Blmbg Treasury Long for the year by 0.00%.

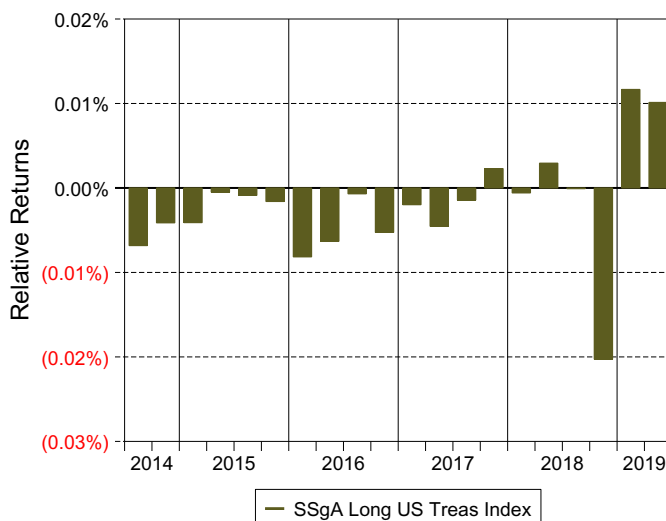
Quarterly Asset Growth

Beginning Market Value	\$86,411,843
Net New Investment	\$9,000,000
Investment Gains/(Losses)	\$5,881,719
Ending Market Value	\$101,293,562

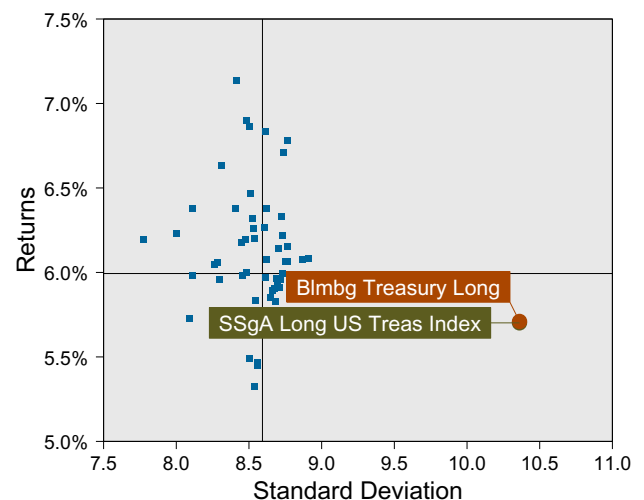
Performance vs Callan Extended Maturity Fixed Income (Gross)



Relative Return vs Blmbg Treasury Long



Callan Extended Maturity Fixed Income (Gross) Annualized Five Year Risk vs Return



Ares ND Credit Strategies Fd Period Ended June 30, 2019

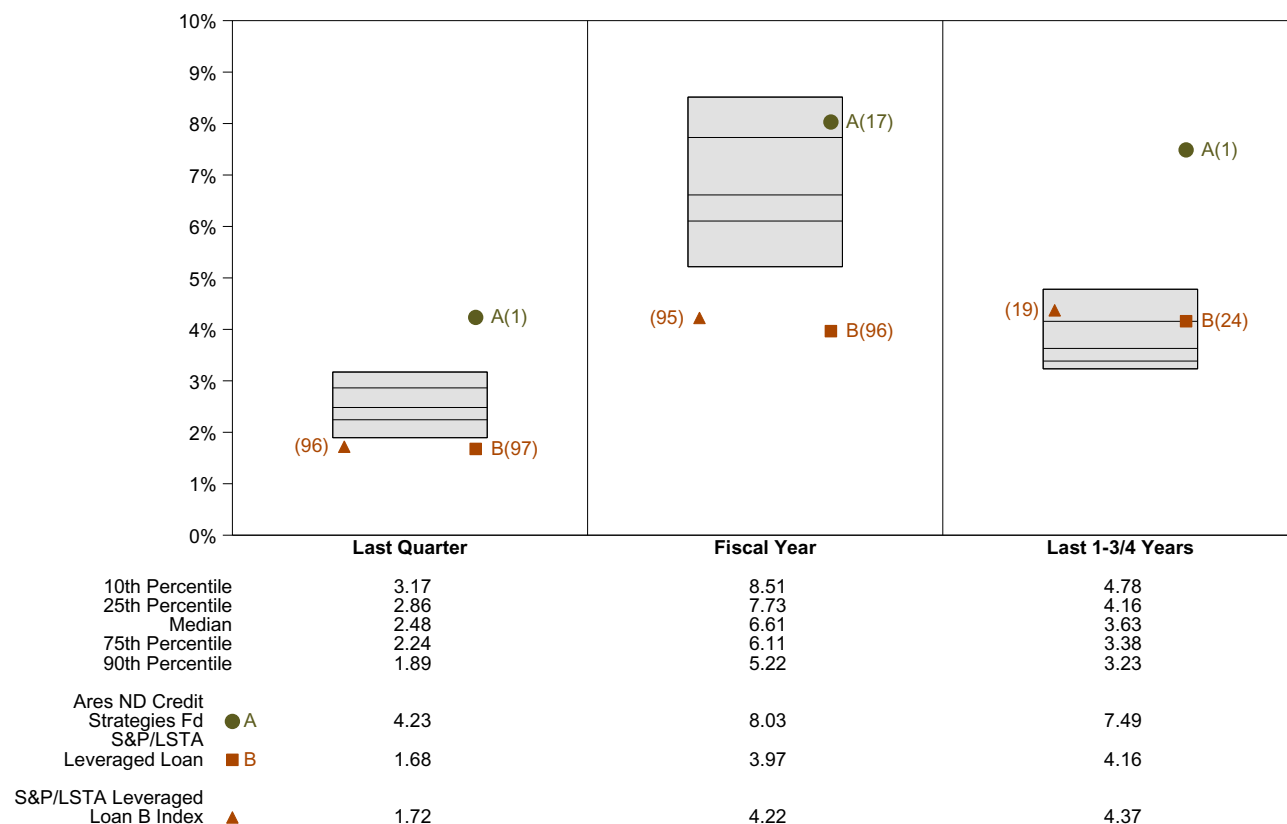
Quarterly Summary and Highlights

- Ares ND Credit Strategies Fd's portfolio posted a 4.23% return for the quarter placing it in the 1 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 17 percentile for the last year.
- Ares ND Credit Strategies Fd's portfolio outperformed the S&P/LSTA Leveraged Loan B Index by 2.51% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 3.81%.

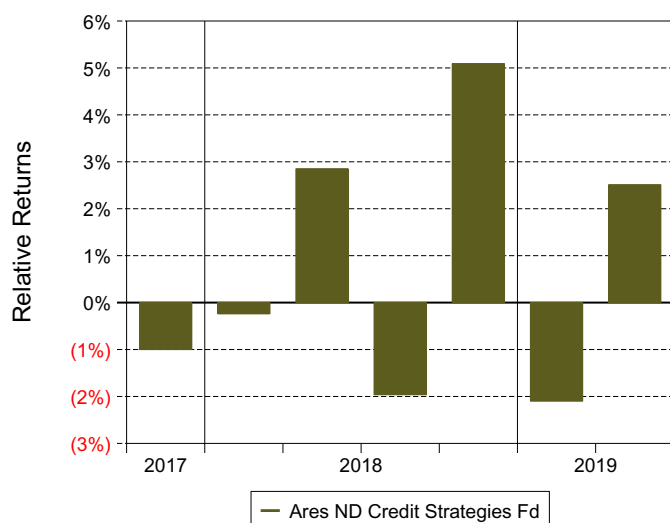
Quarterly Asset Growth

Beginning Market Value	\$79,346,529
Net New Investment	\$0
Investment Gains/(Losses)	\$3,358,120
Ending Market Value	\$82,704,649

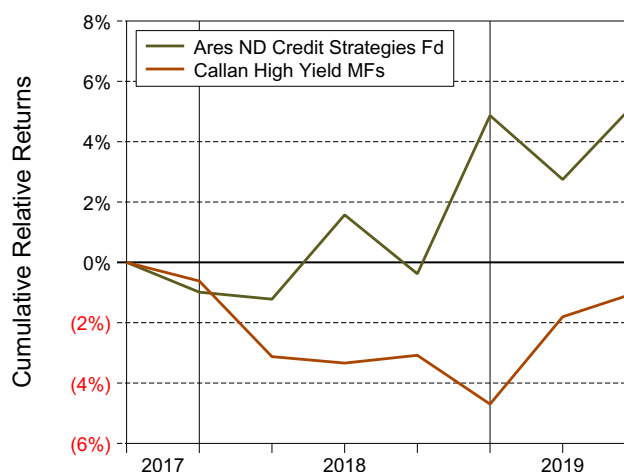
Performance vs Callan High Yield Mutual Funds (Net)



Relative Returns vs S&P/LSTA Leveraged Loan B Index



Cumulative Returns vs S&P/LSTA Leveraged Loan B Index



Cerberus ND Private Credit Fd Period Ended June 30, 2019

Investment Philosophy

The investment objective of the LLC is to achieve superior risk-adjusted rates of return primarily through origination of, and investment in, secured debt assets consistent with the Loan Opportunities Strategy of the Cerberus Business Finance lending platform ("CBF", "Cerberus Business Finance" or the "Cerberus Lending Platform"). The Cerberus Lending Platform is a direct origination and lending business focused on providing secured debt primarily to U.S. middle-market companies. The LLC expects to generate both current income and capital appreciation.

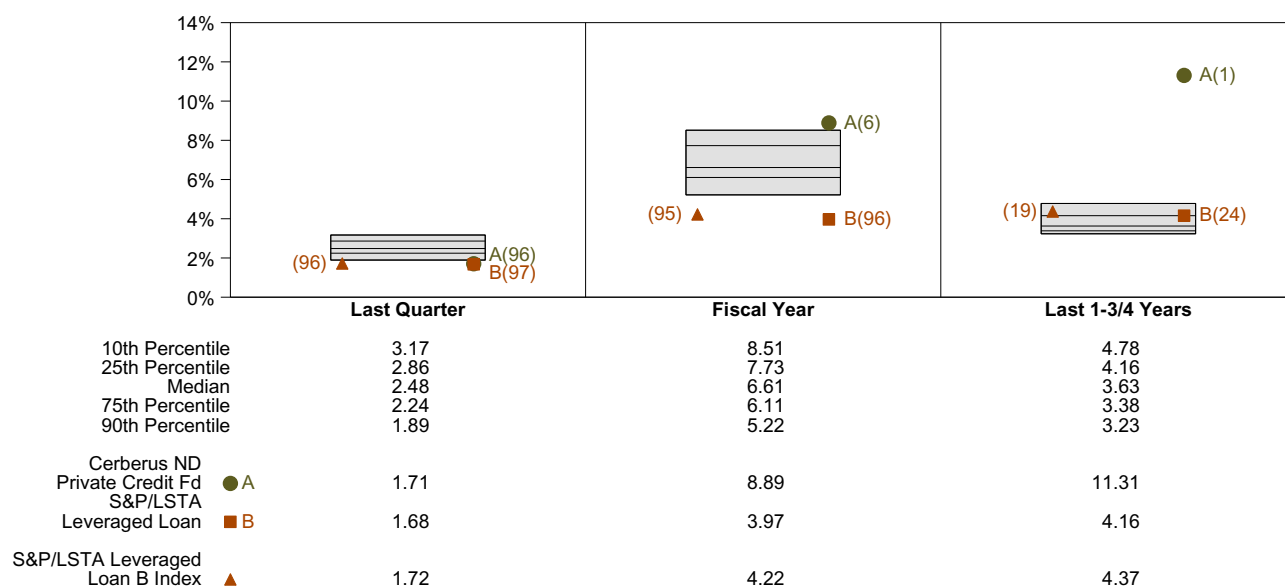
Quarterly Summary and Highlights

- Cerberus ND Private Credit Fd's portfolio posted a 1.71% return for the quarter placing it in the 96 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 6 percentile for the last year.
- Cerberus ND Private Credit Fd's portfolio underperformed the S&P/LSTA Leveraged Loan B Index by 0.02% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 4.66%.

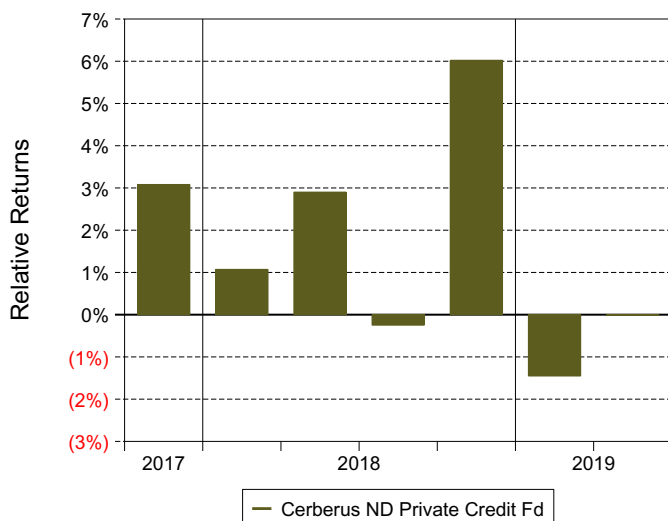
Quarterly Asset Growth

Beginning Market Value	\$74,842,405
Net New Investment	\$15,000,000
Investment Gains/(Losses)	\$1,546,884
Ending Market Value	\$91,389,289

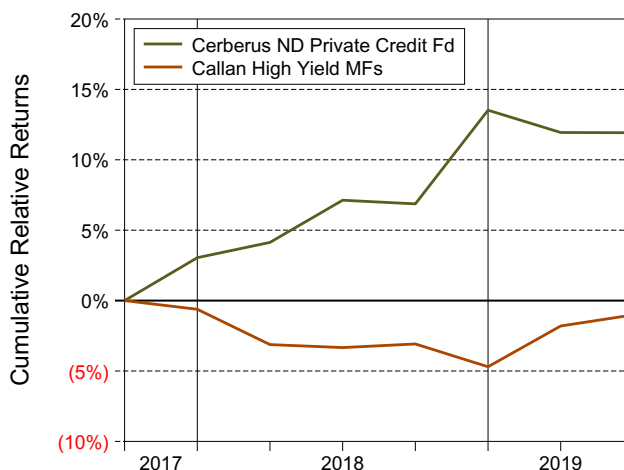
Performance vs Callan High Yield Mutual Funds (Net)



Relative Returns vs S&P/LSTA Leveraged Loan B Index



Cumulative Returns vs S&P/LSTA Leveraged Loan B Index



Goldman Sachs 2006 Offshore Period Ended June 30, 2019

Investment Philosophy

GS Mezzanine Partners seeks large-sized mezzanine investments comprised generally of fixed income securities and an associated equity component. They focus on providing "private high yield" capital for mid- to large-sized leveraged and management buyout transactions, recapitalizations, financings, re-financings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers.

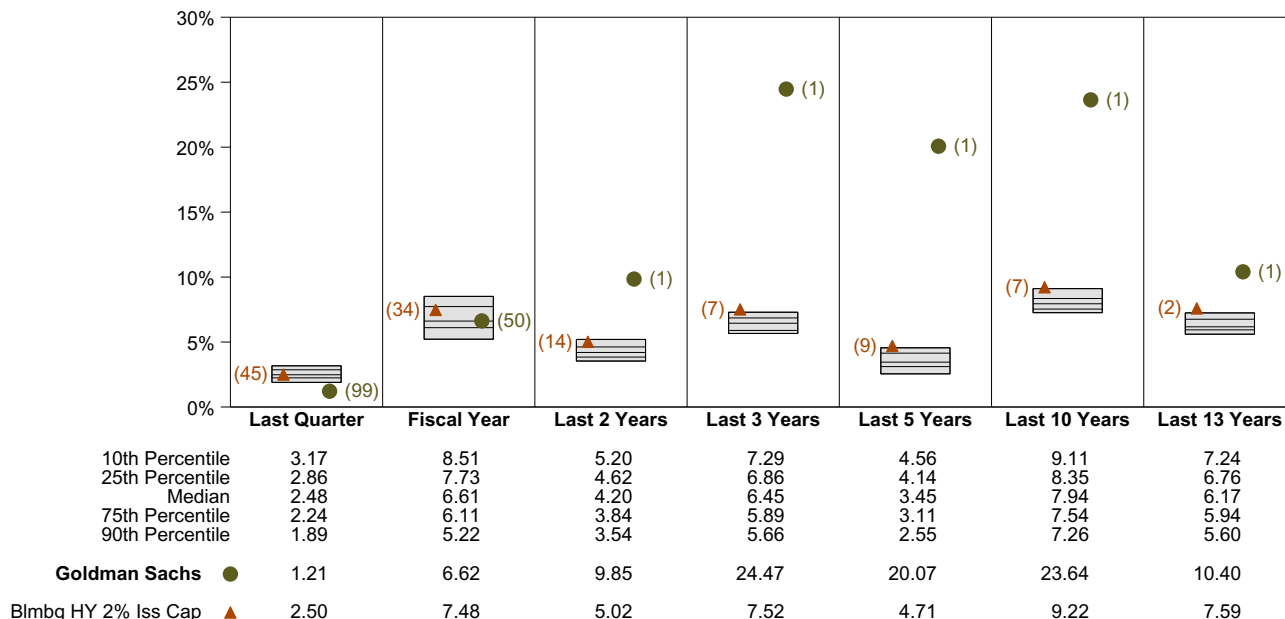
Quarterly Summary and Highlights

- Goldman Sachs's portfolio posted a 1.21% return for the quarter placing it in the 99 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 50 percentile for the last year.
- Goldman Sachs's portfolio underperformed the Blmbg HY 2% Iss Cap by 1.29% for the quarter and underperformed the Blmbg HY 2% Iss Cap for the year by 0.85%.

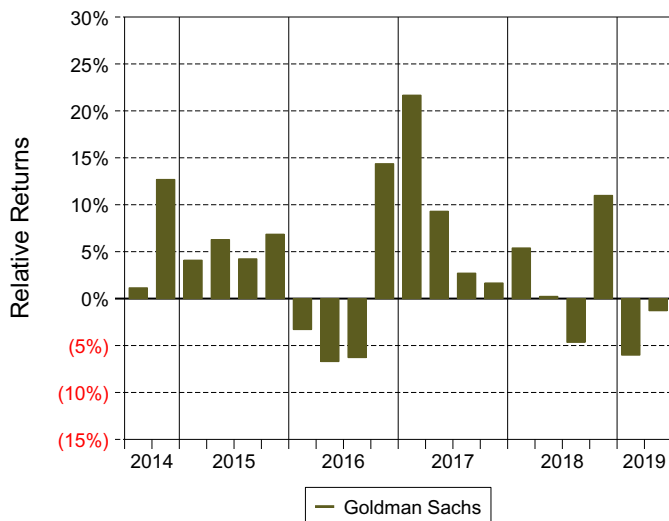
Quarterly Asset Growth

Beginning Market Value	\$91,287
Net New Investment	\$0
Investment Gains/(Losses)	\$1,109
Ending Market Value	\$92,396

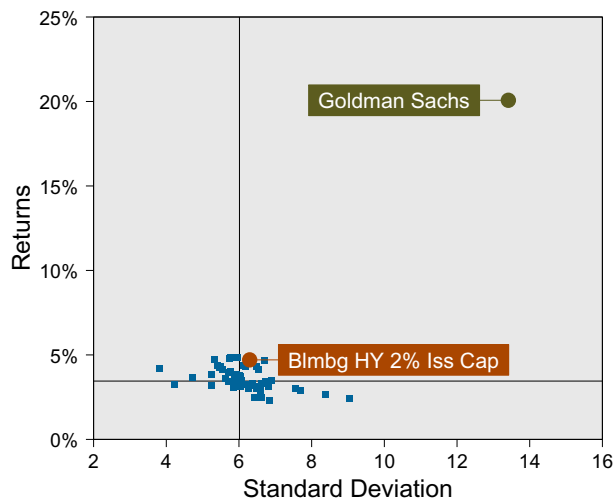
Performance vs Callan High Yield Mutual Funds (Net)



Relative Return vs Blmbg HY 2% Iss Cap



Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



Goldman Sachs Offshore Fund V Period Ended June 30, 2019

Investment Philosophy

GS Mezzanine Partners seeks large-sized mezzanine investments comprised generally of fixed income securities and an associated equity component. They focus on providing "private high yield" capital for mid- to large-sized leveraged and management buyout transactions, recapitalizations, financings, re-financings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers.

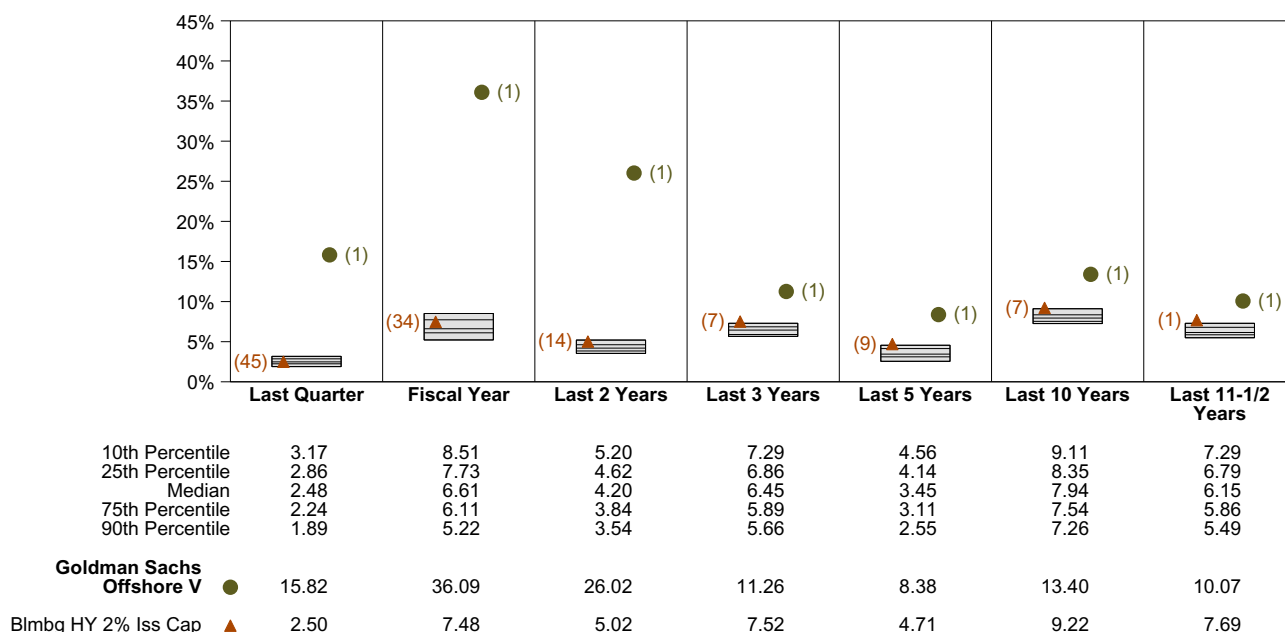
Quarterly Summary and Highlights

- Goldman Sachs Offshore V's portfolio posted a 15.82% return for the quarter placing it in the 1 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Goldman Sachs Offshore V's portfolio outperformed the Blmbg HY 2% Iss Cap by 13.32% for the quarter and outperformed the Blmbg HY 2% Iss Cap for the year by 28.61%.

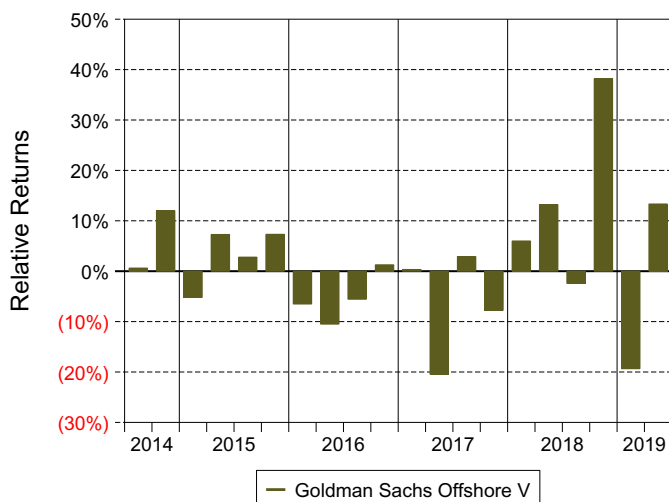
Quarterly Asset Growth

Beginning Market Value	\$348,426
Net New Investment	\$0
Investment Gains/(Losses)	\$55,120
Ending Market Value	\$403,546

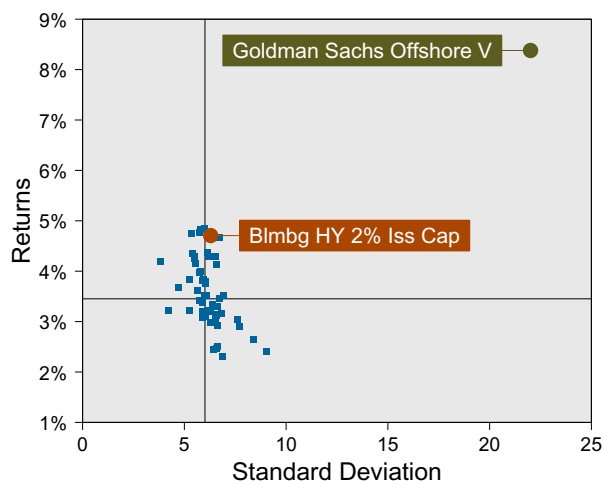
Performance vs Callan High Yield Mutual Funds (Net)



Relative Return vs Blmbg HY 2% Iss Cap



Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



Loomis Sayles Period Ended June 30, 2019

Investment Philosophy

The High Yield Full Discretion Strategy seeks to identify attractive sectors and specific investment opportunities primarily within the global fixed income market through a global economic and interest rate framework. Portfolio managers incorporate a long-term macroeconomic view along with a stringent bottom-up investment evaluation process that drives security selection and resulting sector allocations. Opportunistic investments in non-benchmark sectors including investment grade corporate, emerging market, and non-US dollar debt and convertible bonds help to manage overall portfolio risk and enhance total return potential.

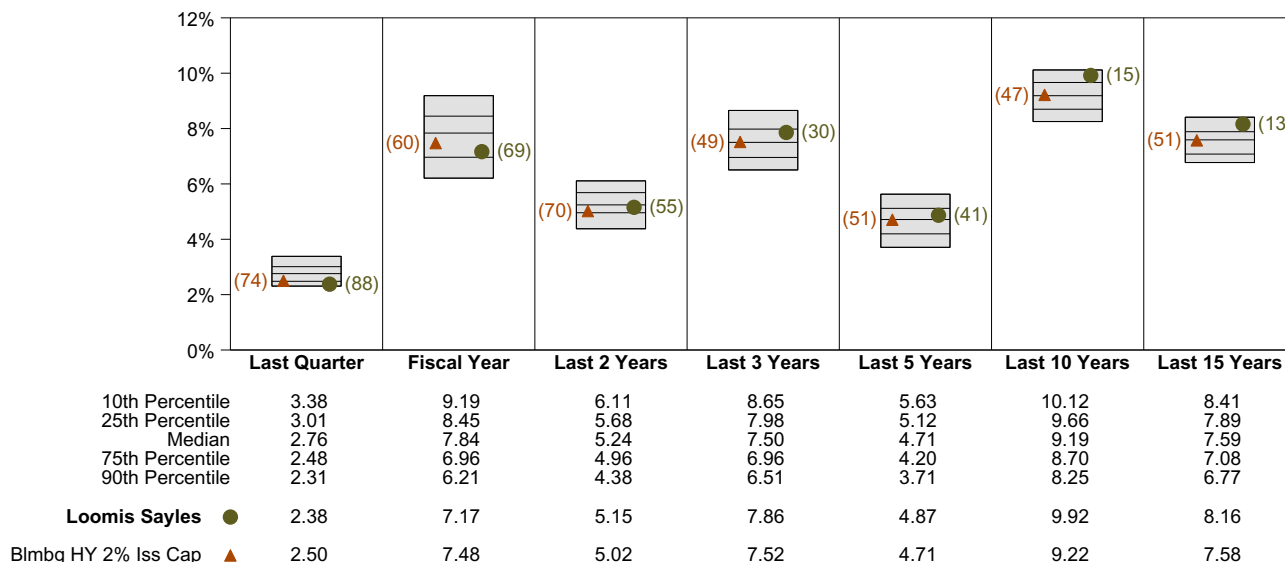
Quarterly Summary and Highlights

- Loomis Sayles's portfolio posted a 2.38% return for the quarter placing it in the 88 percentile of the Callan High Yield Fixed Income group for the quarter and in the 69 percentile for the last year.
- Loomis Sayles's portfolio underperformed the Blmbg HY 2% Iss Cap by 0.12% for the quarter and underperformed the Blmbg HY 2% Iss Cap for the year by 0.31%.

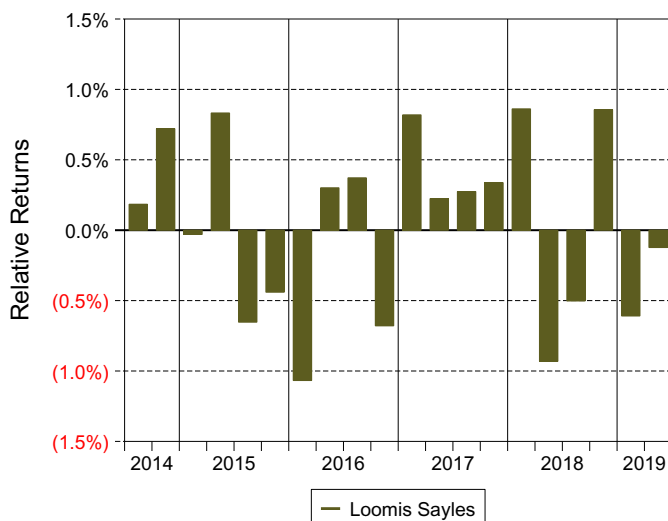
Quarterly Asset Growth

Beginning Market Value	\$203,187,181
Net New Investment	\$-253,984
Investment Gains/(Losses)	\$4,828,136
Ending Market Value	\$207,761,333

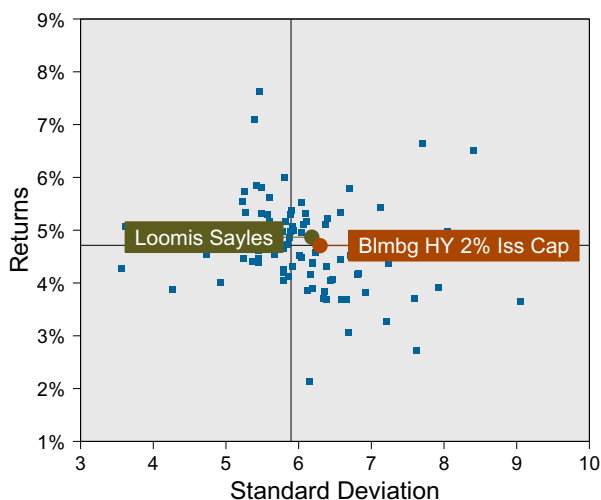
Performance vs Callan High Yield Fixed Income (Gross)



Relative Return vs Blmbg HY 2% Iss Cap



Callan High Yield Fixed Income (Gross) Annualized Five Year Risk vs Return



PIMCO Bravo II Fund Period Ended June 30, 2019

Investment Philosophy

The BRAVO II Fund is a private equity style fund targeting an annualized IRR of 15-20% and multiple of 1.8-2x, net of fees and carried interest with an initial 5-year term. The fund will seek to capitalize on non-economic asset sale decisions by global financial institutions. The fund will have the flexibility to acquire attractively discounted, less liquid loans, structured credit and other assets tied to residential or commercial real estate markets in the U.S. and Europe.

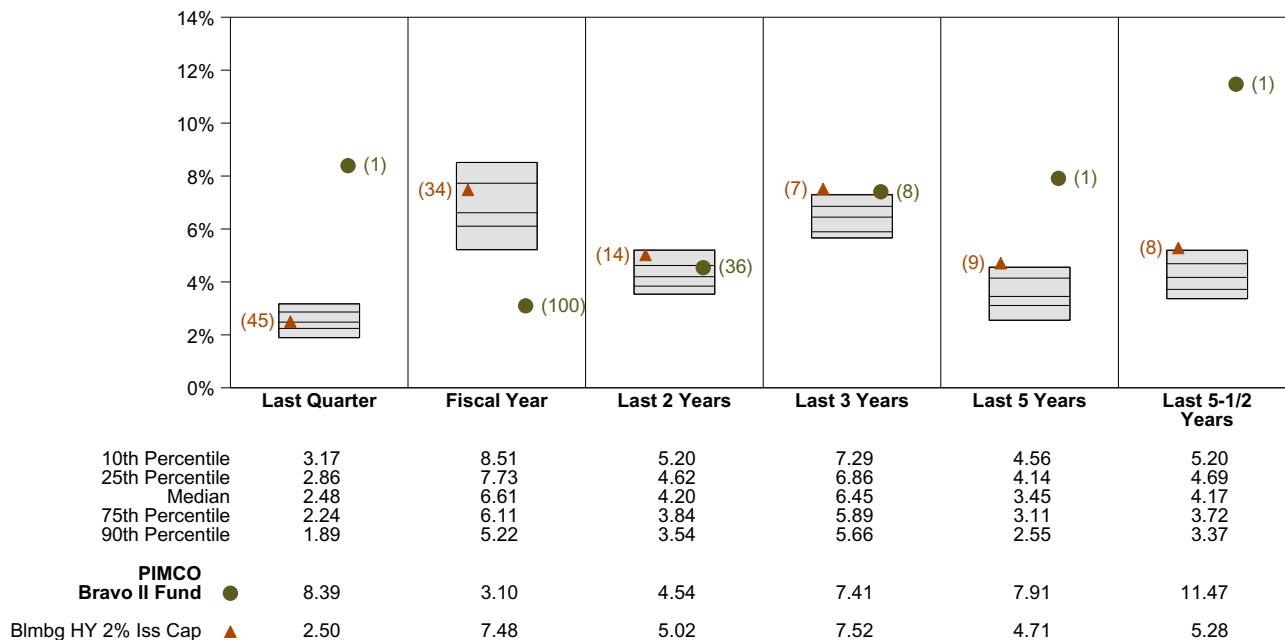
Quarterly Summary and Highlights

- PIMCO Bravo II Fund's portfolio posted a 8.39% return for the quarter placing it in the 1 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 100 percentile for the last year.
- PIMCO Bravo II Fund's portfolio outperformed the Blmbg HY 2% Iss Cap by 5.89% for the quarter and underperformed the Blmbg HY 2% Iss Cap for the year by 4.38%.

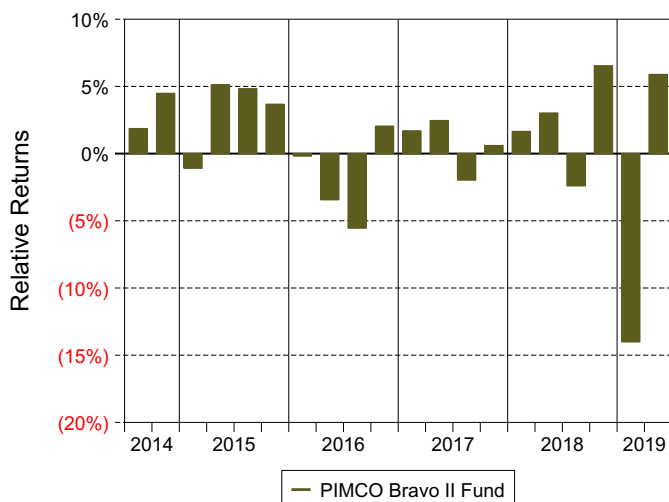
Quarterly Asset Growth

Beginning Market Value	\$28,224,480
Net New Investment	\$-1,888,308
Investment Gains/(Losses)	\$2,298,317
Ending Market Value	\$28,634,489

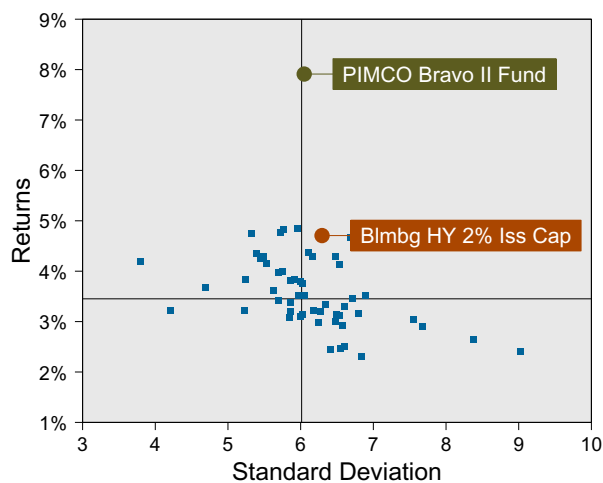
Performance vs Callan High Yield Mutual Funds (Net)



Relative Return vs Blmbg HY 2% Iss Cap



Callan High Yield Mutual Funds (Net) Annualized Five Year Risk vs Return



Real Estate Period Ended June 30, 2019

Quarterly Summary and Highlights

- Real Estate's portfolio posted a 1.91% return for the quarter placing it in the 15 percentile of the Public Fund - Real Estate group for the quarter and in the 72 percentile for the last year.
- Real Estate's portfolio outperformed the NCREIF Total Index by 0.40% for the quarter and outperformed the NCREIF Total Index for the year by 0.05%.

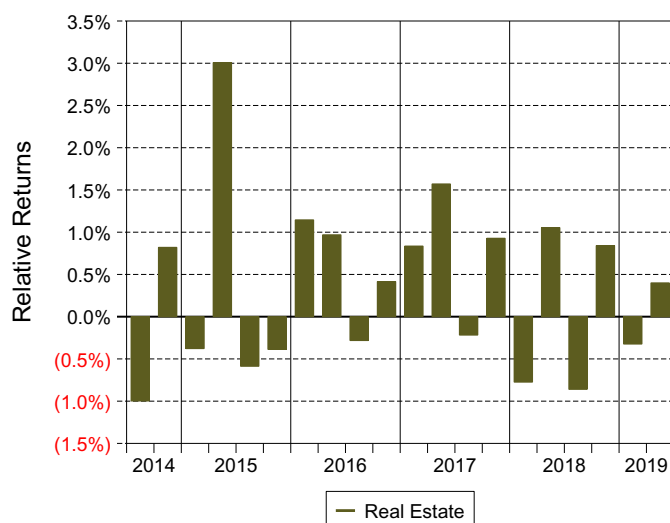
Quarterly Asset Growth

Beginning Market Value	\$648,298,896
Net New Investment	\$6,043,228
Investment Gains/(Losses)	\$12,424,430
Ending Market Value	\$666,766,554

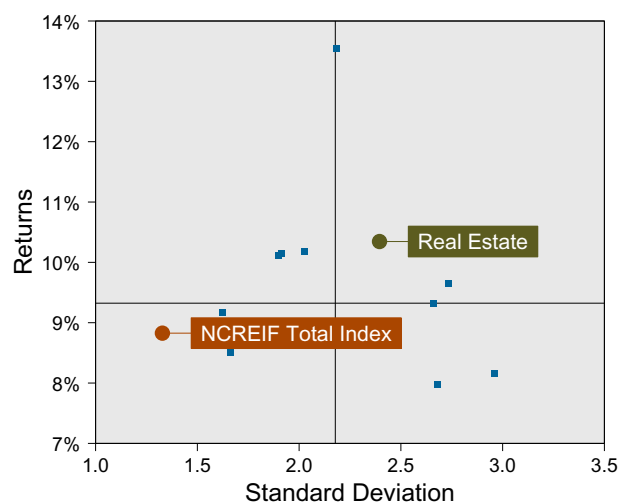
Performance vs Public Fund - Real Estate (Gross)



Relative Return vs NCREIF Total Index



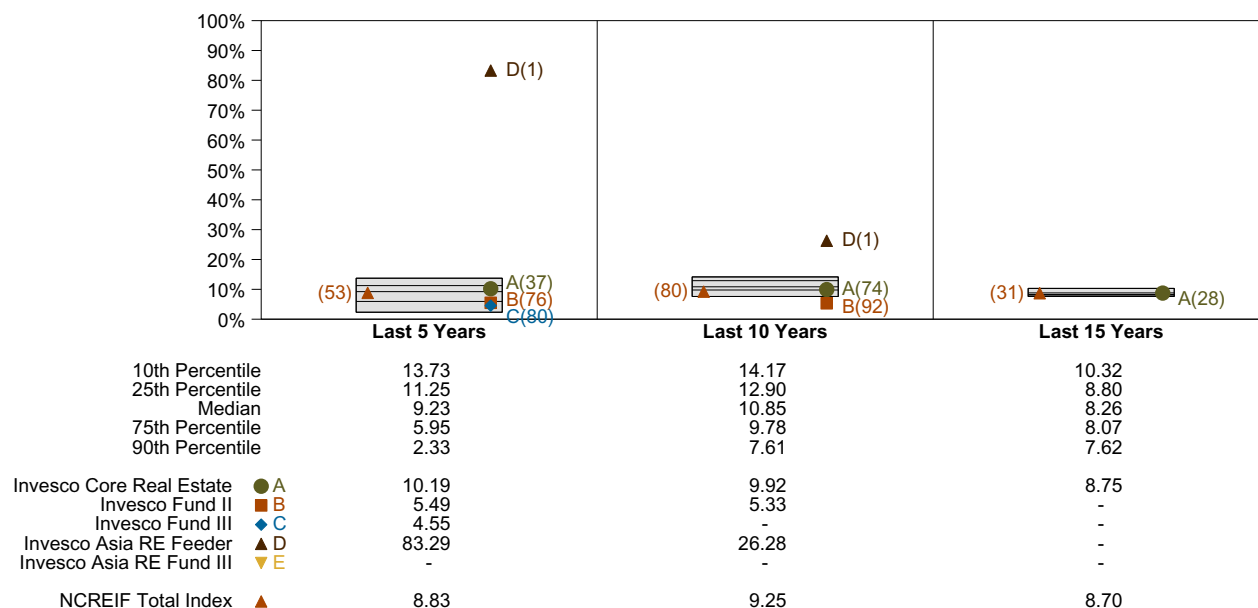
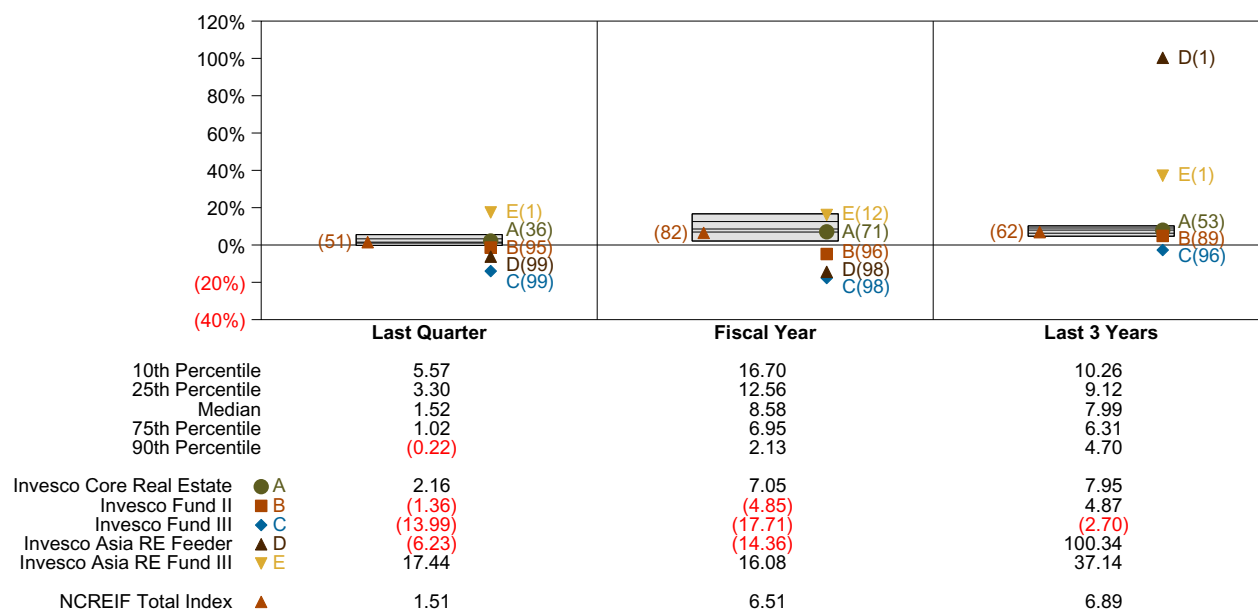
Public Fund - Real Estate (Gross) Annualized Five Year Risk vs Return



North Dakota State Investment Board Pension Funds Performance vs Callan Total Domestic Real Estate DB Periods Ended June 30, 2019

Return Ranking

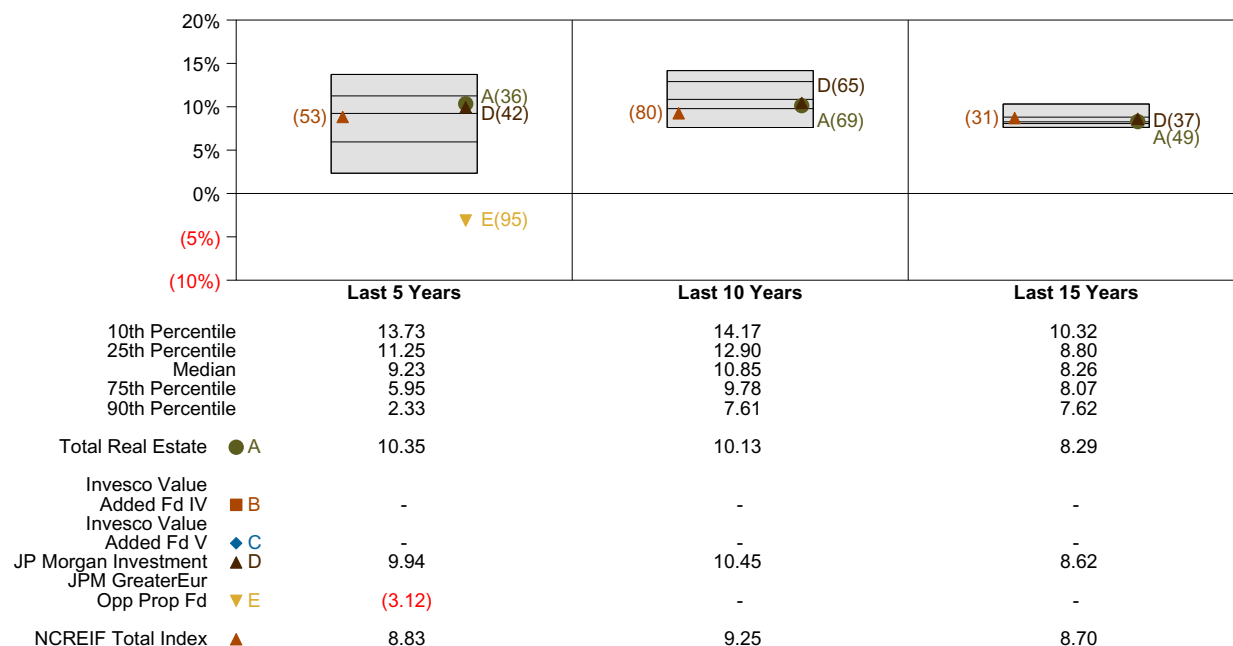
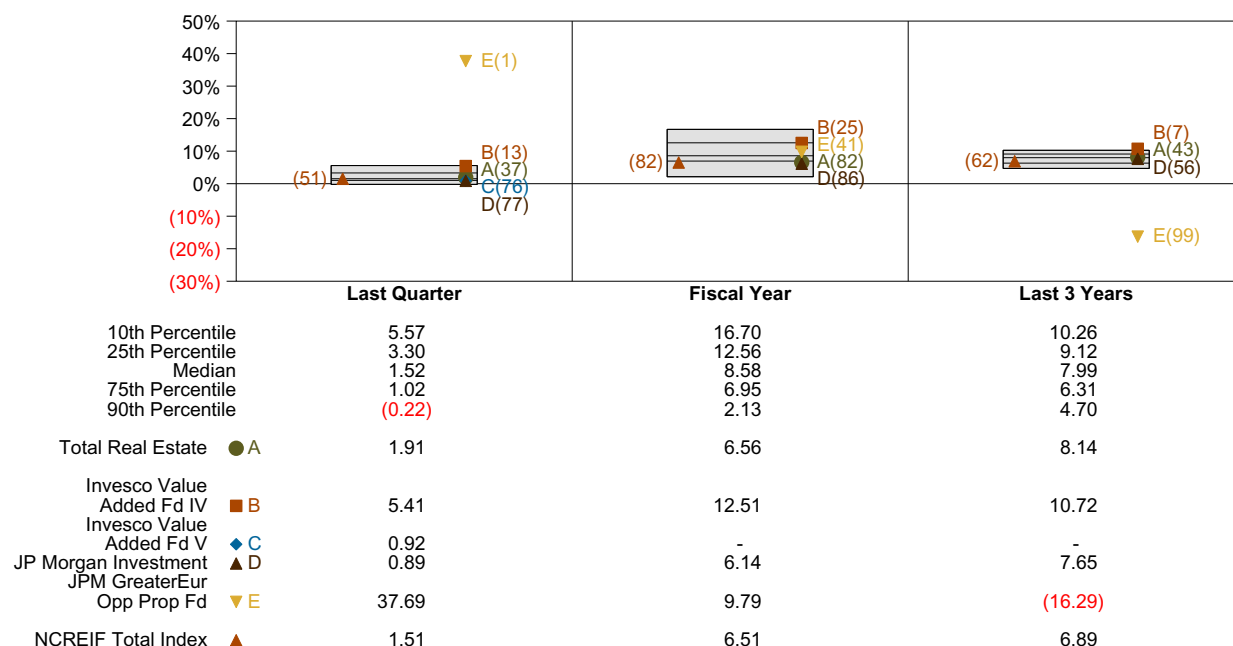
The chart below illustrates fund rankings over various periods versus the Callan Total Domestic Real Estate DB. The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Callan Total Domestic Real Estate DB. The numbers to the right of the bar represent the percentile rankings of the funds being analyzed. The table below the chart details the rates of return plotted in the graph above.



North Dakota State Investment Board Pension Funds Performance vs Callan Total Domestic Real Estate DB Periods Ended June 30, 2019

Return Ranking

The chart below illustrates fund rankings over various periods versus the Callan Total Domestic Real Estate DB. The bars represent the range of returns from the 10th percentile to the 90th percentile for each period for all funds in the Callan Total Domestic Real Estate DB. The numbers to the right of the bar represent the percentile rankings of the funds being analyzed. The table below the chart details the rates of return plotted in the graph above.



TIR Teredo Period Ended June 30, 2019

Investment Philosophy

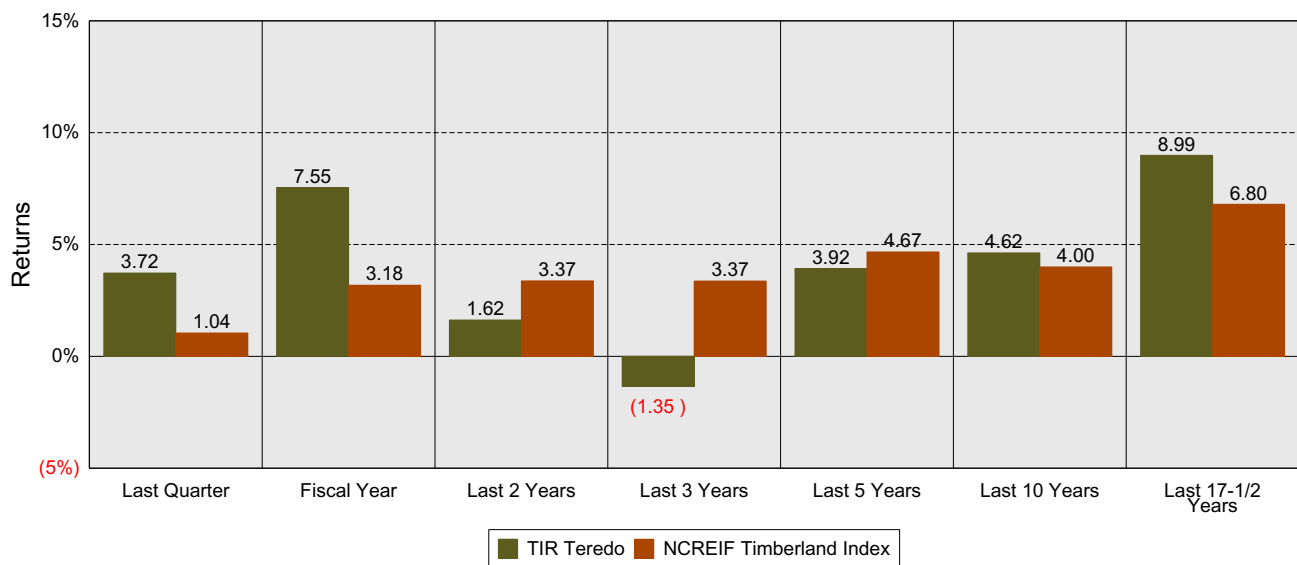
Teredo Timber LLC - The investment objective of Teredo is to provide competitive investment returns from increasing saw timber production through the 20 year term of the partnership. TIR's management strategy is to maximize saw timber volume by applying intensive forest management techniques which accelerate growth through the diameter class distribution. Periodic cash flows are produced from thinning and final harvests of the individual timber stands.

Quarterly Summary and Highlights

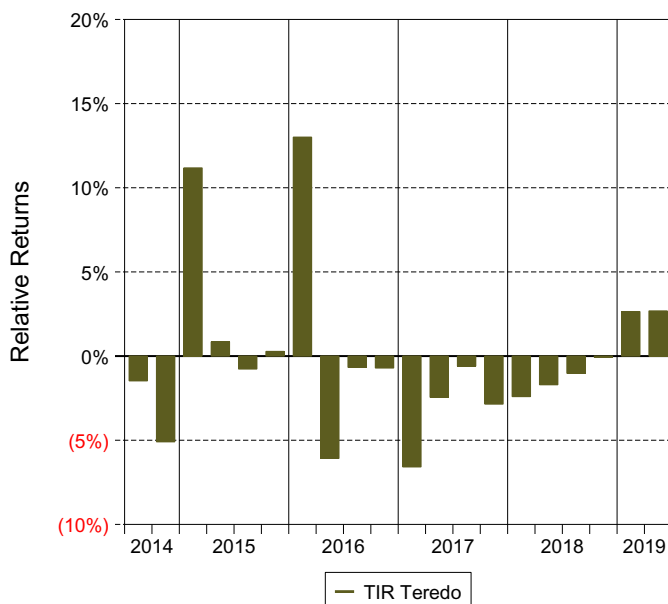
- TIR Teredo's portfolio outperformed the NCREIF Timberland Index by 2.68% for the quarter and outperformed the NCREIF Timberland Index for the year by 4.37%.

Quarterly Asset Growth

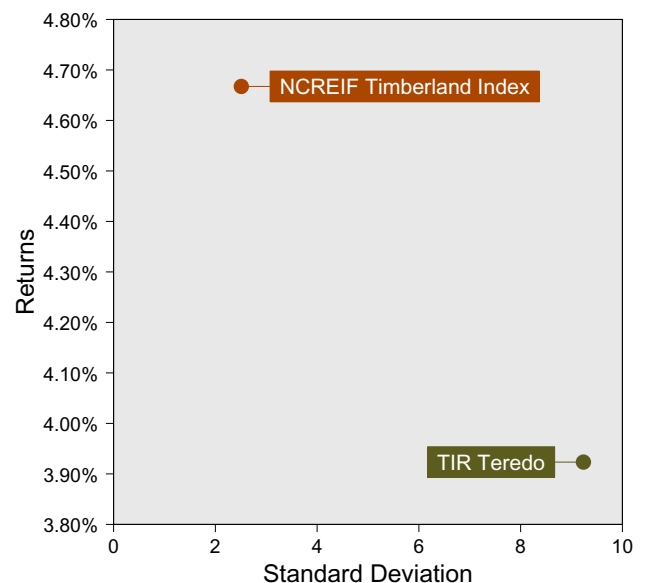
Beginning Market Value	\$31,308,547
Net New Investment	\$0
Investment Gains/(Losses)	\$1,165,501
Ending Market Value	\$32,474,048



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



TIR Springbank Period Ended June 30, 2019

Investment Philosophy

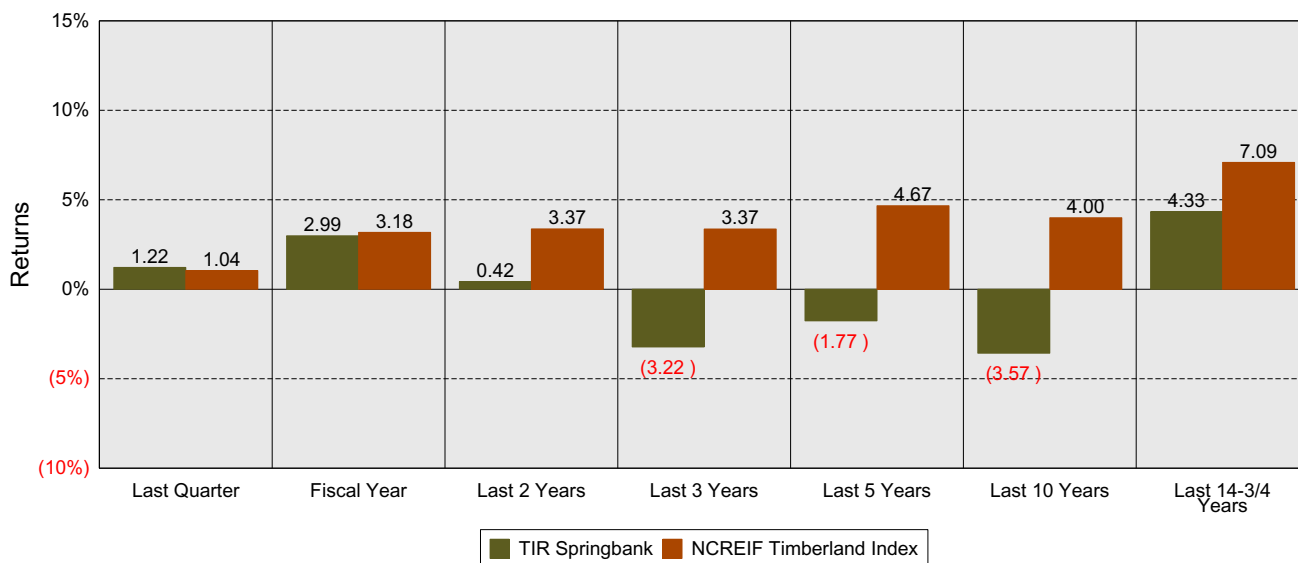
Springbank LLC - The investment objective of Springbank is to maximize long-term investment potential by means of the formation of a dedicated land management group, intensive timber management to increase timber production, the coordination of timber harvesting with land management activities and direct marketing and selective real estate partnerships.

Quarterly Summary and Highlights

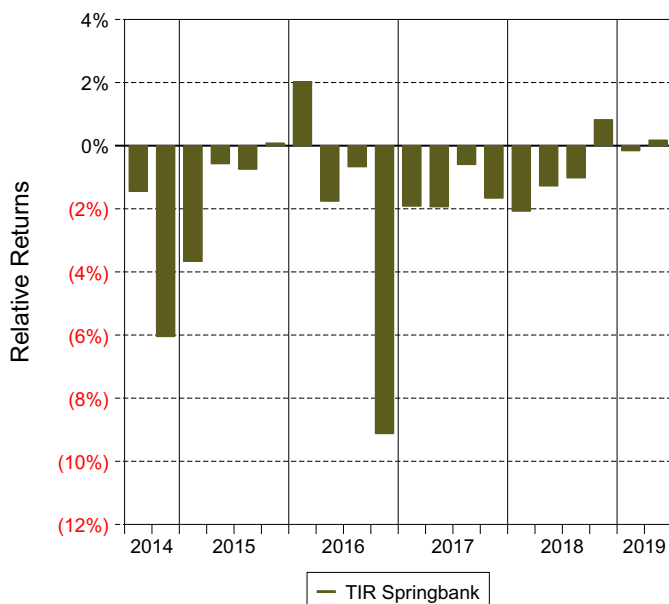
- TIR Springbank's portfolio outperformed the NCREIF Timberland Index by 0.18% for the quarter and underperformed the NCREIF Timberland Index for the year by 0.19%.

Quarterly Asset Growth

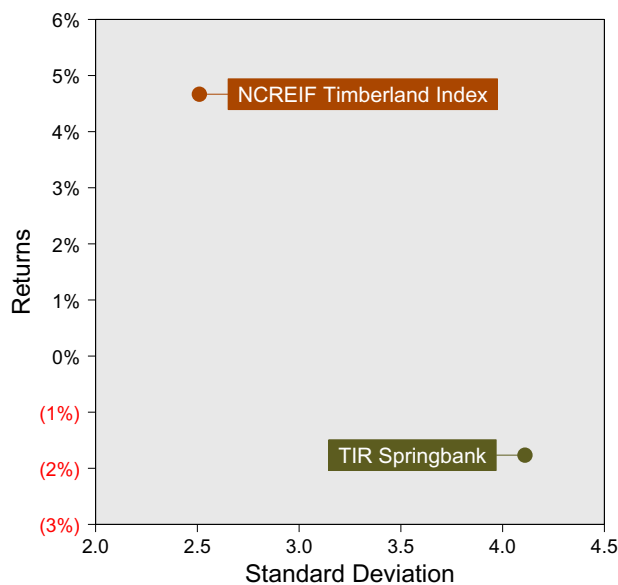
Beginning Market Value	\$97,468,387
Net New Investment	\$-5,320,000
Investment Gains/(Losses)	\$1,148,862
Ending Market Value	\$93,297,249



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



ISQ Global Infrastructure II Period Ended June 30, 2019

Investment Philosophy

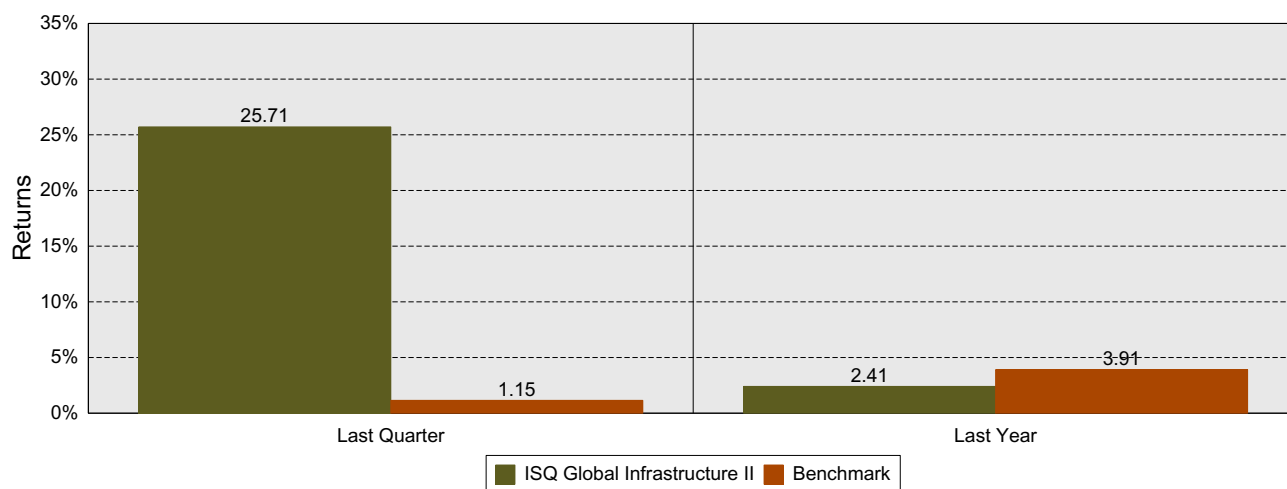
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia and Latin America. The Fund may also invest in debt Securities that have equity-like returns or an equity component, or are related to its equity investments, including without limitation convertible debt, bank loans and participations and other similar instruments. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

Quarterly Summary and Highlights

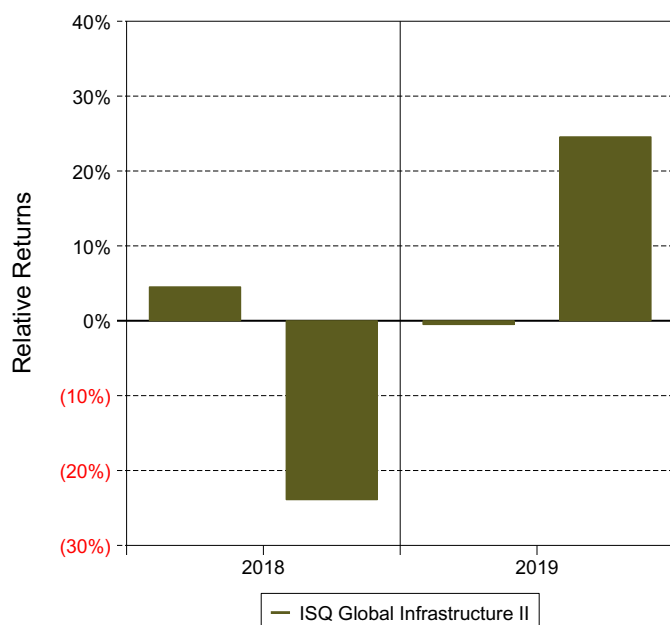
- ISQ Global Infrastructure II's portfolio outperformed the Benchmark by 24.56% for the quarter and underperformed the Benchmark for the year by 1.50%.

Quarterly Asset Growth

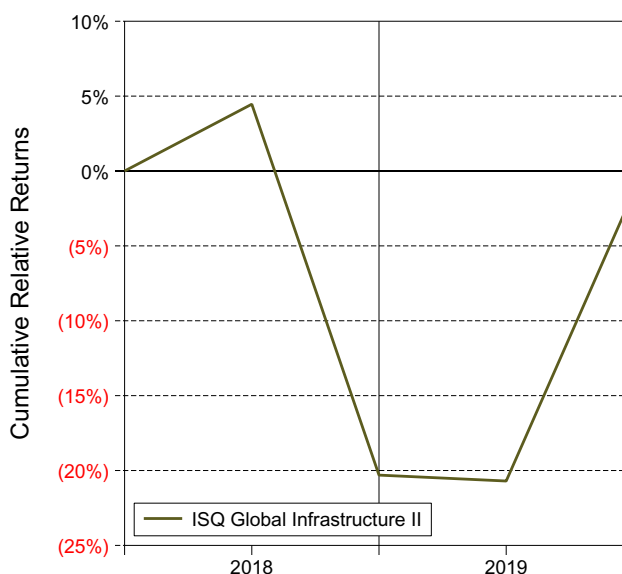
Beginning Market Value	\$14,006,366
Net New Investment	\$244,173
Investment Gains/(Losses)	\$3,602,686
Ending Market Value	\$17,853,225



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



The Rohatyn Group

Period Ended June 30, 2019

Investment Philosophy

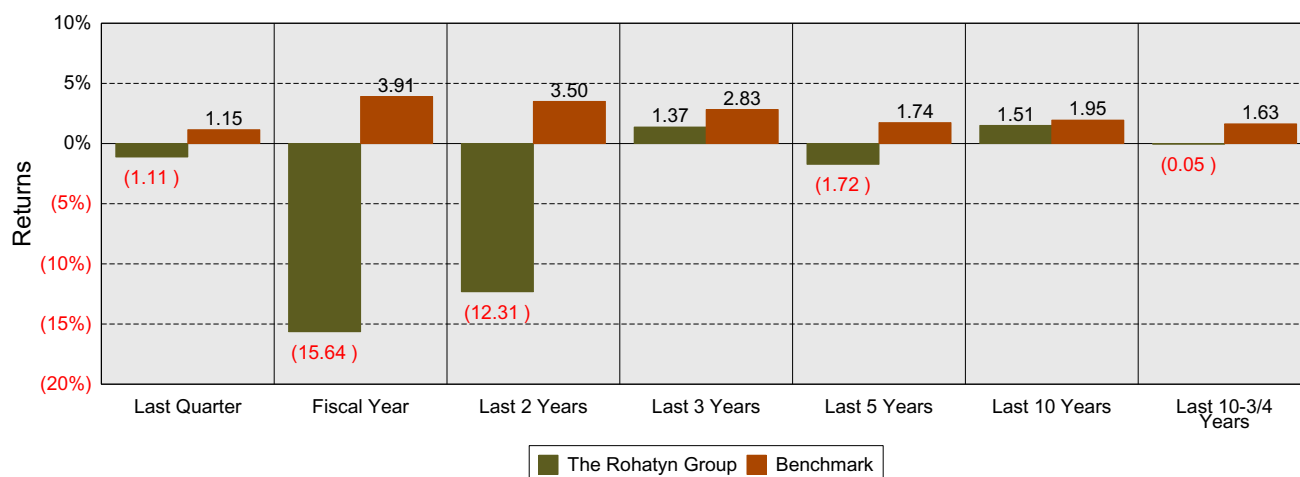
The Rohatyn Group's Asian Infrastructure & Related Resources Opportunity (AIRRO) Fund seeks to invest in infrastructure and related resources opportunities across the greater Asia Pacific region. The Fund seeks to invest in a broad range of assets, including: core infrastructure, power both from conventional and renewable sources, communications, water and waste-water, public works, urban development and other "social" infrastructure assets and related resources. The management of the AIRRO Fund was transferred from JP Morgan to The Rohatyn Group in May, 2018. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

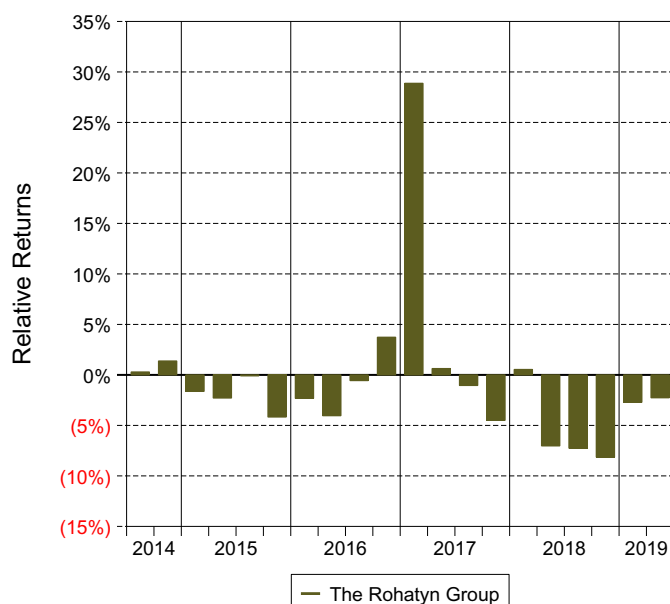
- The Rohatyn Group's portfolio underperformed the Benchmark by 2.27% for the quarter and underperformed the Benchmark for the year by 19.55%.

Quarterly Asset Growth

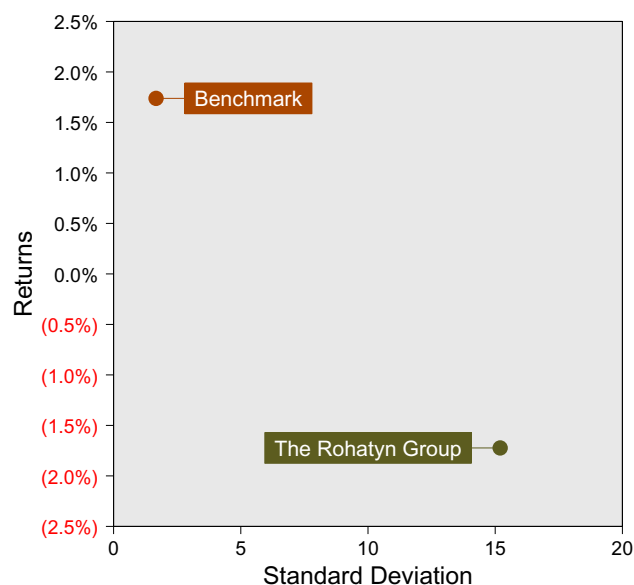
Beginning Market Value	\$18,315,770
Net New Investment	\$89,154
Investment Gains/(Losses)	\$-205,072
Ending Market Value	\$18,199,852



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



JPM Infrastructure Fund Period Ended June 30, 2019

Investment Philosophy

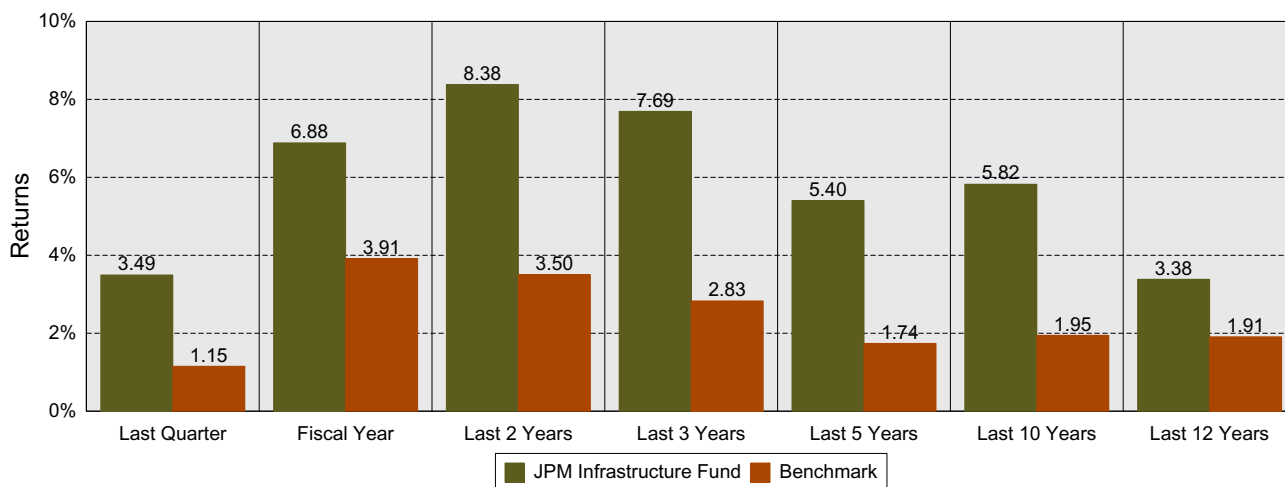
The only open-ended private commingled infrastructure fund in the U.S., the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas pipelines; electricity transmission and distribution facilities; contracted power generation assets; water distribution; waste-water collection and processing; railway lines and rapid rail links; and seaports and airports. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

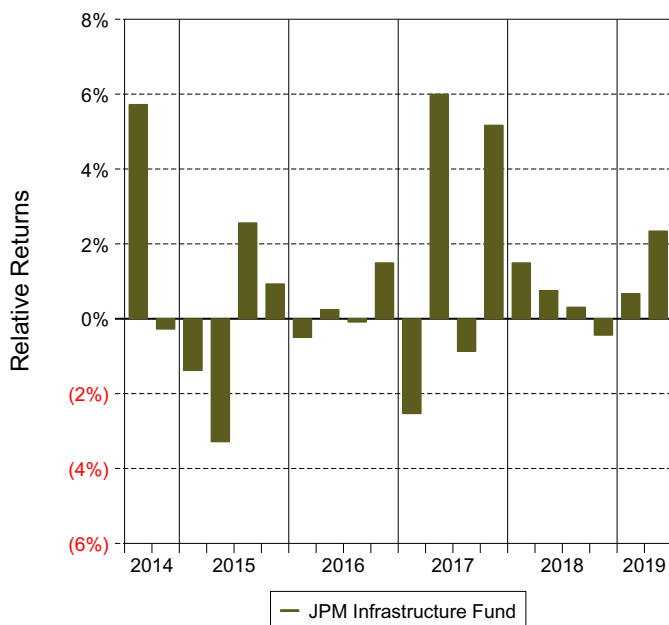
- JPM Infrastructure Fund's portfolio outperformed the Benchmark by 2.34% for the quarter and outperformed the Benchmark for the year by 2.97%.

Quarterly Asset Growth

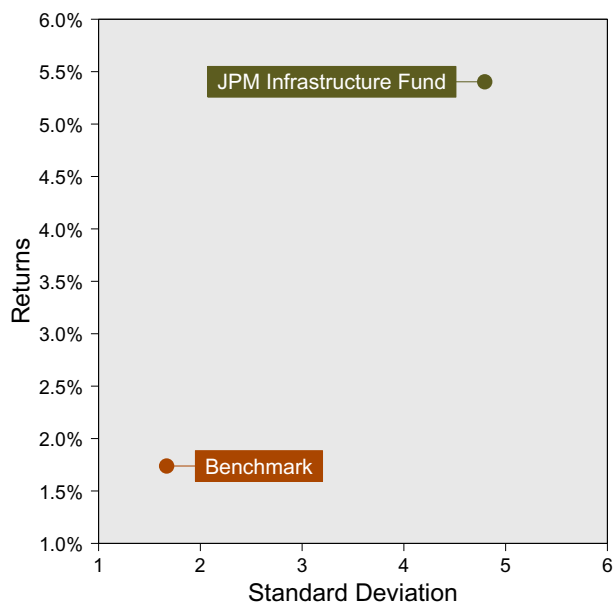
Beginning Market Value	\$185,540,780
Net New Investment	\$-3,648,991
Investment Gains/(Losses)	\$6,468,334
Ending Market Value	\$188,360,123



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Grosvenor Cust. Infrastructure Period Ended June 30, 2019

Investment Philosophy

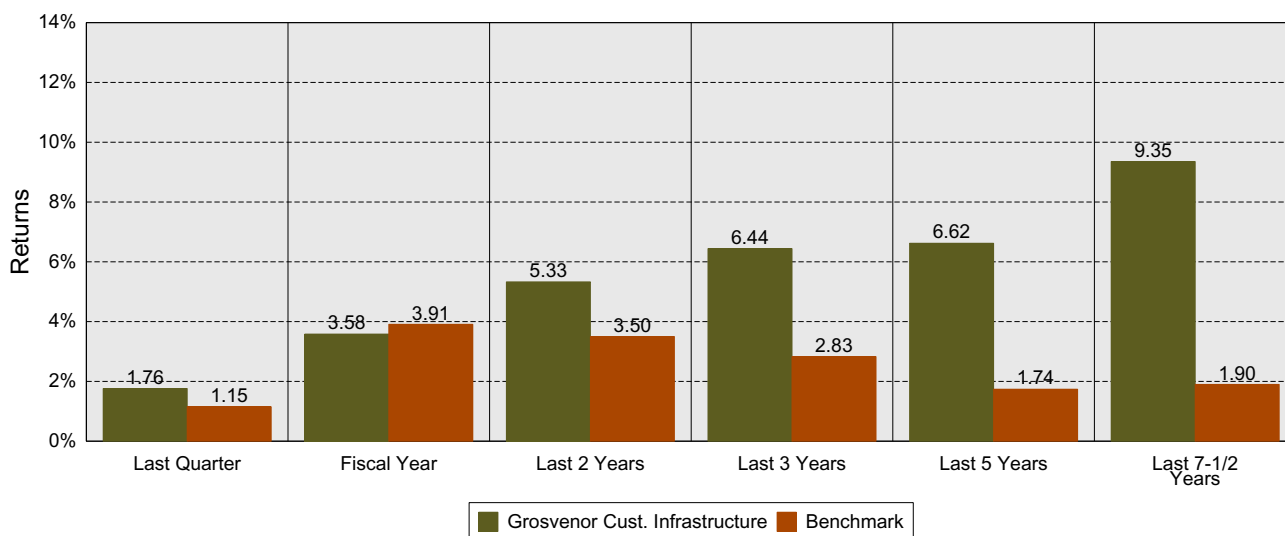
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

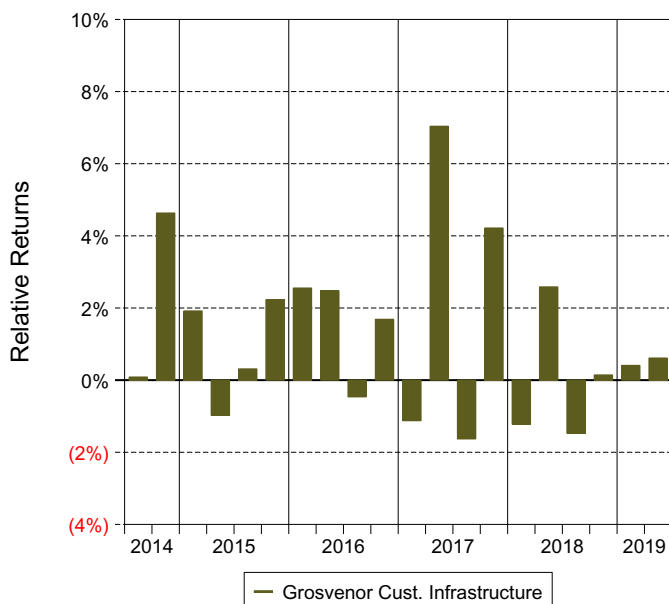
- Grosvenor Cust. Infrastructure's portfolio outperformed the Benchmark by 0.61% for the quarter and underperformed the Benchmark for the year by 0.33%.

Quarterly Asset Growth

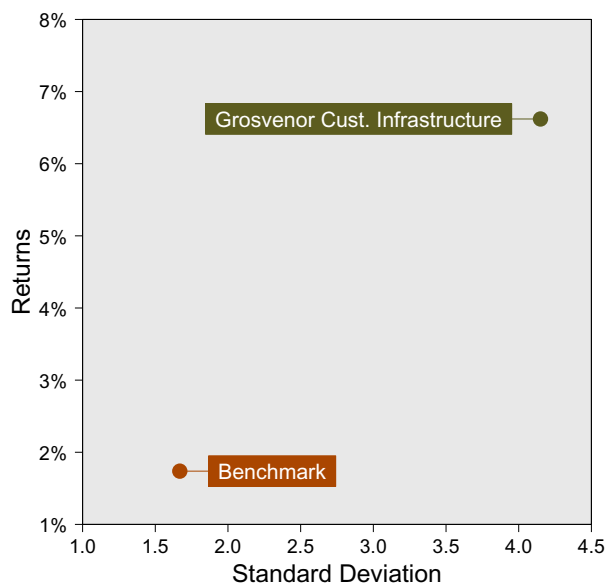
Beginning Market Value	\$25,679,111
Net New Investment	\$0
Investment Gains/(Losses)	\$452,475
Ending Market Value	\$26,131,586



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Grosvenor Cust. Infrastructure II Period Ended June 30, 2019

Investment Philosophy

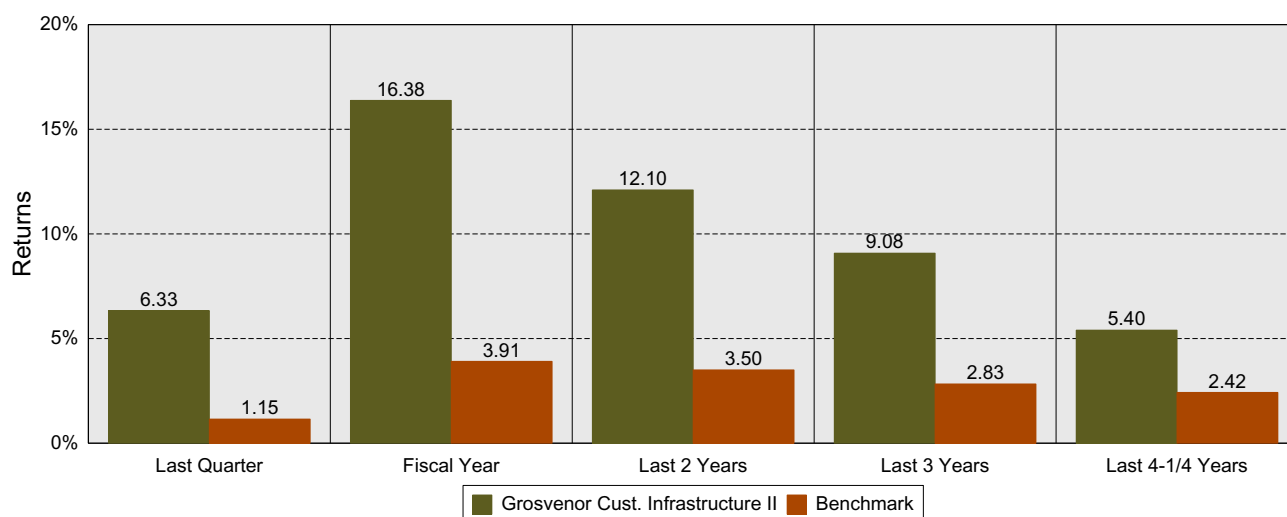
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

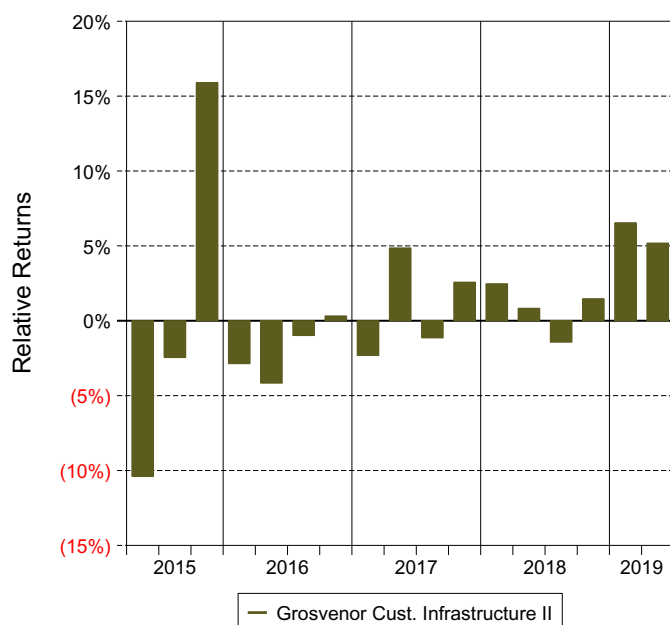
- Grosvenor Cust. Infrastructure II's portfolio outperformed the Benchmark by 5.18% for the quarter and outperformed the Benchmark for the year by 12.47%.

Quarterly Asset Growth

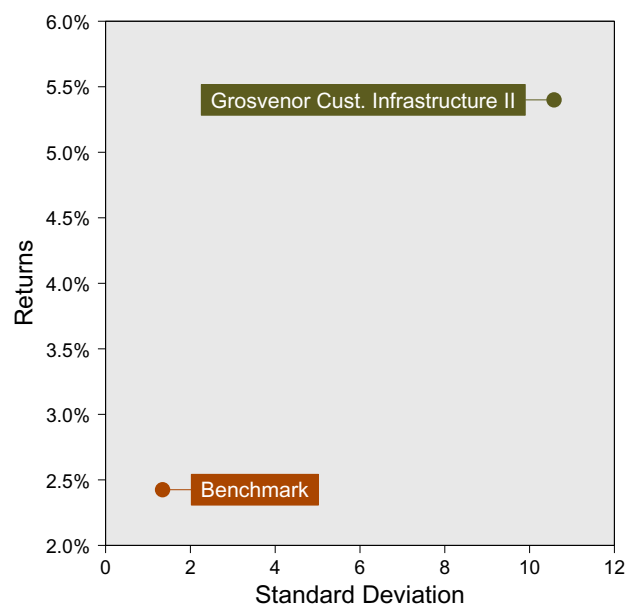
Beginning Market Value	\$17,020,228
Net New Investment	\$0
Investment Gains/(Losses)	\$1,077,758
Ending Market Value	\$18,097,986



Relative Return vs Benchmark



Annualized Four and One-Quarter Year Risk vs Return



Macquarie Infrac. Partners IV Period Ended June 30, 2019

Investment Philosophy

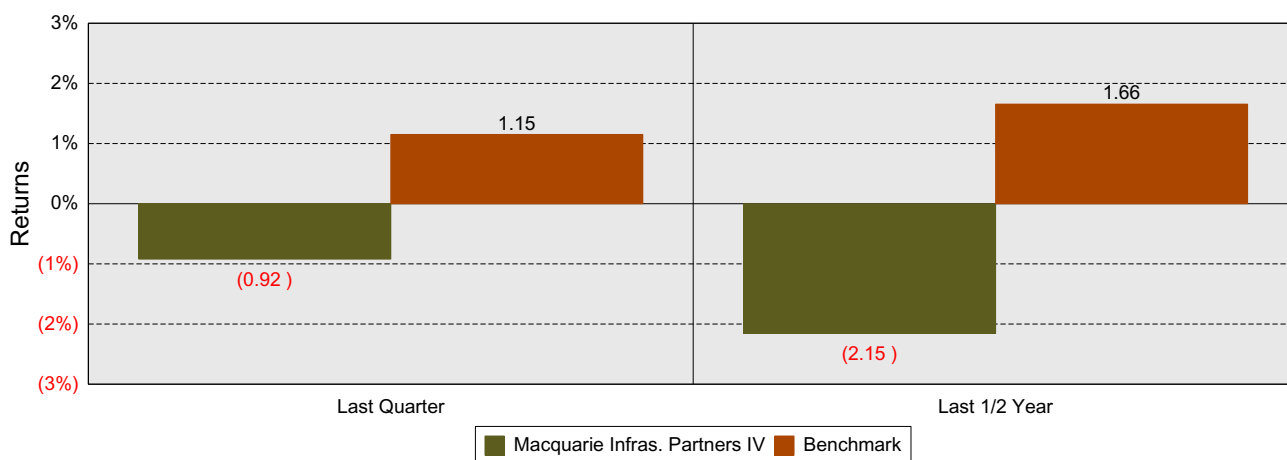
Macquarie's principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team's sector expertise and operating experience will provide a competitive advantage in sourcing and due diligence. Furthermore, the manager will also continue to focus on opportunities where its active management capabilities can add value for investors in terms of enhancing returns and the substantial mitigation and/or elimination of material operational risks. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

Quarterly Summary and Highlights

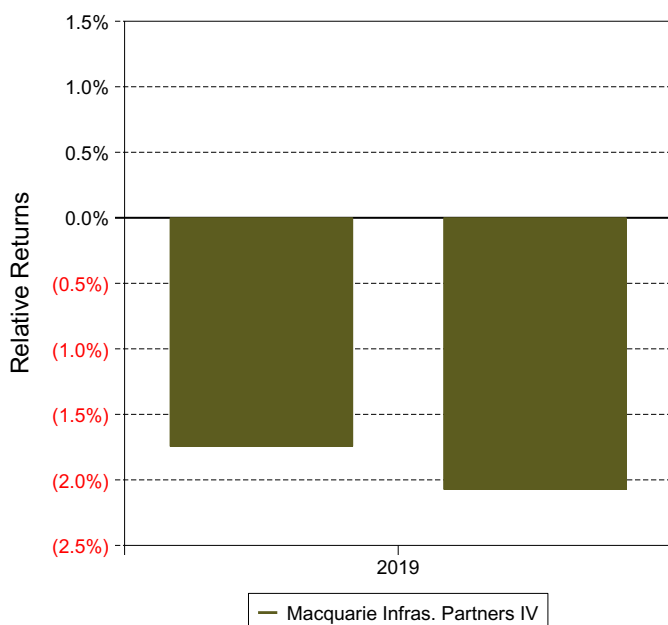
- Macquarie Infrac. Partners IV's portfolio underperformed the Benchmark by 2.07% for the quarter and underperformed the Benchmark for the one-half year by 3.81%.

Quarterly Asset Growth

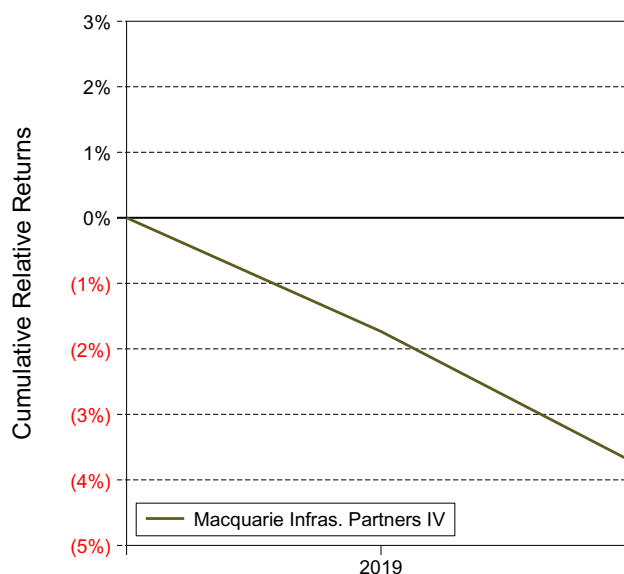
Beginning Market Value	\$18,205,465
Net New Investment	\$7,195,905
Investment Gains/(Losses)	\$-30,907
Ending Market Value	\$25,370,463



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



Research and Educational Programs

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

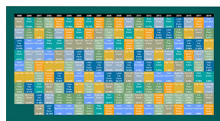
The OCIO Model: How Do We Measure Success? | This paper outlines the key issues for evaluating the success of outsourced chief investment officer (OCIO) services.

Perspectives on Investing: The Evolution of Strategic Allocations | In this video, Callan experts discuss the key challenges of evaluating non-U.S. equity investments.

Opportunities & Challenges: Investing in Private Equity Partnerships | In this video, Callan experts discuss investing directly in private equity partnerships.

Building a Pool of Transition Managers: Both an Art and a Science | Transition management is the restructuring of institutional portfolios from single or multiple investment managers/asset classes to a new allocation over a short-term horizon. This paper offers guidance on building a pool of transition managers.

Callan's Periodic Table Explained | The popular Callan Periodic Table of Investment Returns turned 20 this year. This animated feature discusses the benefits and some of the history of the table.



The Cobbler's Shoes: How Asset Managers Run Their Own 401(k) Plans | Can investment manager-sponsored DC plans provide insights on plan design and implementation? To help answer this question, Callan examined the 401(k) plans of investment



managers. The industry scored high on retirement savings metrics. But in contrast to the industry consensus, asset managers generally embraced complexity over simplicity in their investment designs.

How to Distinguish Between Growth Equity and Late-Stage VC



Both growth equity and late-stage venture capital are growth-oriented but differ significantly in the types of companies they invest in, the structure of their investments, the way in which they create value, and the trade-offs between risk and return.

Nurturing Strong Cultures at Professional Firms | In this paper, Callan Executive Chairman Ron Peyton offers advice for building effective and transparent corporate cultures.

Opening Doors of Opportunity | This paper reviews the types of co-investment opportunities offered by hedge funds and funds-of-funds (FOFs).

Quarterly Periodicals

Private Equity Trends | A newsletter on private equity activity, covering both the fundraising cycle and performance over time.

Market Pulse Flipbook | A market reference guide covering trends in the U.S. economy, developments for fund sponsors, and the latest data for U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution plans.

Active vs. Passive Charts | This series of charts compares active managers alongside relevant benchmarks over the long term.

Capital Market Review | A newsletter providing analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Events

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

Please mark your calendar and look forward to upcoming invitations.

October Regional Workshops

October 22, 2019 – Denver

October 24, 2019 – Chicago

2020 National Conference

January 27-29, 2020 – San Francisco

Please also keep your eye out for upcoming Webinars in 2019! We will be sending invitations for these and also will have registration links on our website at www.callan.com/events.

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

The Center for Investment Training Educational Sessions

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

Introduction to Investments

San Francisco, July 23-24, 2019

Atlanta, October 8-9, 2019

Chicago, October 22-23, 2019

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

“Callan College” on Alternative Investments

Chicago, October 29-30, 2019

The “Callan College” on Alternative Investments will cover: private equity, private credit, hedge funds, real estate, and real assets. Tuition for the “Callan College” on Alternative Investments session is \$2,500 per person. Tuition includes instruction, all materials, and breakfast and lunch on each day.

Learn more at www.callan.com/events/callan-college-intro

Education: By the Numbers

525

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

50+

Unique pieces of research the Institute generates each year

3,700

Total attendees of the “Callan College” since 1994

1980

Year the Callan Institute was founded



“Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry.”

Greg Allen, CEO and Chief Research Officer

List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

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

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g. attending and educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

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

Manager Name
Aberdeen Standard Investments
Acadian Asset Management LLC
AEGON USA Investment Management
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Pioneer Asset Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford International, LLC
Baird Advisors
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Asset Management
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
BrightSphere Investment Group
Brown Brothers Harriman & Company
Cambiar Investors, LLC
Capital Group
Carillon Tower Advisers
CastleArk Management, LLC
Causeway Capital Management
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Credit Suisse Asset Management
DePrince, Race & Zollo, Inc.
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Management Co.
DWS
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
Financial Engines
First Hawaiian Bank Wealth Management Division
First State Investments
Fisher Investments
Franklin Templeton
Fred Alger Management, Inc.
GAM (USA) Inc.
Glenmeade Investment Management, LP
GlobeFlex Capital, L.P.
Goldman Sachs
Green Square Capital LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.
Heitman LLC

Manager Name
Hotchkis & Wiley Capital Management, LLC
HSBC Global Asset Management
Income Research + Management, Inc.
Insight Investment Management Limited
Intech Investment Management, LLC
Intercontinental Real Estate Corporation
Invesco
Investec Asset Management
Ivy Investments
J.P. Morgan
Janus
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
Logan Circle Partners, L.P.
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
MacKay Shields LLC
Macquarie Investment Management (MIM)
Manulife Asset Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
MFS Investment Management
MidFirst Bank
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
Mountain Pacific Advisors, LLC
MUFG Union Bank, N.A.
Natixis Investment Managers
Neuberger Berman
Newton Investment Management
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management
Nuveen
OFI Global Asset Management
Osterweis Capital Management, LLC
P/E Investments

Manager Name
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, Inc.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Principal Global Investors
Putnam Investments, LLC
QMA LLC
RBC Global Asset Management
Regions Financial Corporation
Robeco Institutional Asset Management, US Inc.
Rockefeller Capital Management
Rothschild & Co. Asset Management US
Russell Investments
Schroder Investment Management North America Inc.
Smith Graham & Co. Investment Advisors, L.P.
Smith Group Asset Management
South Texas Money Management, Ltd.
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
The Boston Company Asset Management
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
Thornburg Investment Management, Inc.
Tri-Star Trust Bank
UBS Asset Management
VanEck
Versus Capital Group
Victory Capital Management Inc.
Virtus Investment Partners, Inc.
Vontobel Asset Management, Inc.
Voya
WCM Investment Management
WEDGE Capital Management
Wellington Management Company, LLP
Wells Fargo Asset Management
Western Asset Management Company LLC
Westfield Capital Management Company, LP
William Blair & Company LLC

Overview

LSV Asset Management (LSV) was formed in 1994 to offer domestic and international value equity investment management services utilizing its proprietary quantitative models developed by its three founders: Josef Lakonishok, Andrei Shleifer, and Robert Vishny. Lakonishok remains the active leader of LSV while Rob Vishny and Andrei Shleifer have retired from the firm and are active in their academic work. The founders established the foundation for the investment strategy with their academic roots as well as their work in behavioral finance.

LSV is majority employee-owned (~61%) by 30 partners. The remaining ~39% of equity is owned by SEI Funds, Inc., a wholly-owned subsidiary of SEI Investments Co. As a venture capital partner, SEI provided initial working capital to LSV. Research and investment professionals are incentivized through equity and performance bonuses, and the firm has nearly tripled in assets over the past 10 years (\$115 billion as of June 30, 2019) while maintaining a headcount of 42 people.

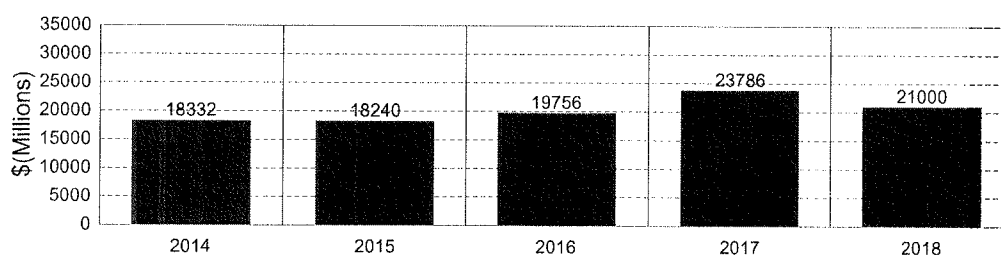
Cumulative Returns

	<u>2q19</u>	<u>1 Yr</u>	<u>2 Yr</u>	<u>3 Yr</u>	<u>4 Yr</u>	<u>5 Yr</u>	<u>7 Yr</u>	<u>10 Yr</u>
LSV International Large C	1.6% (49)	(2.2%) (31)	1.5% (17)	9.5% (3)	3.7% (6)	1.9% (11)	7.7% (7)	7.3% (7)
MSCI EAFE	3.7% (2)	1.1% (6)	3.9% (1)	9.1% (7)	3.9% (5)	2.2% (9)	7.3% (7)	6.9% (10)
MSCI EAFE Value	1.5% (49)	(2.1%) (30)	1.0% (26)	8.5% (11)	1.9% (30)	0.1% (43)	6.0% (26)	5.5% (42)
Callan Intl Lg Cap VI MF	1.5%	(3.7%)	0.1%	6.3%	1.3%	(0.2%)	5.2%	5.4%

Calendar Year Returns

	<u>YTD 19</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
LSV International Large C	10.4% (47)	(16.0%) (35)	26.5% (13)	6.8% (19)	(1.9%) (39)	(4.9%) (33)	24.2% (21)	17.8% (42)
MSCI EAFE	14.0% (5)	(13.8%) (11)	25.0% (23)	1.0% (64)	(0.8%) (31)	(4.9%) (33)	22.8% (28)	17.3% (48)
MSCI EAFE Value	9.6% (59)	(14.8%) (13)	21.4% (70)	5.0% (22)	(5.7%) (73)	(5.4%) (41)	23.0% (27)	17.7% (44)
Callan Intl Lg Cap VI MF	10.3%	(16.9%)	22.8%	1.8%	(3.1%)	(6.1%)	21.2%	17.2%

Product Asset Growth



Top 10 Holdings*

Name	Sector	% of Portfolio	Quarter Return
Roche Hldgs Ag Basel Div	Health	2.7%	2.3%
Royal Dutch Shell 'b' Sh	Energy	2.2%	5.3%
Sanofi Shs	Health	1.8%	1.9%
Nippon Tel & Tel Corp Or	Communication	1.6%	9.2%
Total Sa Act	Energy	1.6%	2.3%
Glaxosmithkline Plc Ord	Health	1.6%	(2.4)%
Enel	Utility	1.6%	9.2%
Bp Plc Shs	Energy	1.4%	(2.6)%
Kddi	Communication	1.3%	18.3%
Volvo B	Industrial	1.3%	9.4%

Top 10 Performers*

Name	Sector	% of Portfolio	Quarter Return
Landis Gyr Group Ag Comm	Technology	0.4%	31.2%
Autoneum Holding Ag	Discretionary	0.2%	29.0%
J M Ab Shs	Discretionary	0.4%	28.1%
C&c Group Plc Shs	Staples	0.2%	27.2%
Allied Mining & Proc.	Material	0.6%	26.5%
Hitachi High-Techs.	Technology	0.5%	25.8%
Worldline	Technology	0.2%	22.9%
Rheinmetall Ag Ord	Industrial	0.7%	20.2%
Asm Intl N V Ny Register	Technology	0.4%	19.9%
Nissin Electric	Industrial	0.3%	19.2%

Bottom 10 Performers*

Name	Sector	% of Portfolio	Quarter Return
Teva Pharmaceutical Indu	Health	0.1%	(39.3)%
Imperial Brands Plc Shs	Staples	0.5%	(30.2)%
Postnl N V Shs	Industrial	0.1%	(27.3)%
Marks & Spencer Group	Discretionary	0.2%	(20.4)%
Kingboard Chem. Holdigns	Technology	0.3%	(18.9)%
Skyworth Digital Hldgs L	Discretionary	0.2%	(18.6)%
Centrica	Utility	0.1%	(18.2)%
Yue Yuen Industrial	Discretionary	0.3%	(15.1)%
Lee & Man Paper Mfg Ltd	Material	0.3%	(15.8)%
Sainsbury (J)	Staples	0.4%	(15.5)%

Buy and Hold Attribution Effects by Sector vs MSCI EAFE
Quarter ended June 30, 2019

Sector	Manager Eff Weight	Index Eff Weight	Manager Return	Index Return	Sector Concentration	Stock Selection	Trading Effect	Asset Allocation
Consumer Staples	5.68%	11.84%	(1.51)%	2.25%	0.10%	(0.30)%	-	-
Consumer Discretionary	11.03%	11.03%	(1.83)%	6.45%	0.00%	(0.55)%	-	-
Industrials	16.79%	14.64%	2.99%	6.18%	0.05%	(0.50)%	-	-
Energy	8.11%	5.77%	0.45%	0.62%	(0.00)%	(0.01)%	-	-
Materials	11.44%	7.40%	(0.02)%	4.17%	0.01%	(0.45)%	-	-
Information Technology	3.78%	6.47%	5.29%	5.45%	(0.04)%	(0.01)%	-	-
Utilities	3.42%	3.67%	5.02%	1.78%	0.01%	0.10%	-	-
Financials	23.92%	19.05%	5.19%	4.38%	0.03%	0.18%	-	-
Communication Services	5.67%	5.45%	4.61%	4.15%	0.00%	0.02%	-	-
Health Care	8.84%	10.94%	(1.32)%	2.11%	0.04%	(0.26)%	-	-
Real Estate	1.30%	3.74%	4.36%	(2.09)%	0.14%	0.08%	-	-
Total	100.00%	100.00%	1.56%	3.68%	0.26%	(1.91)%	(0.46)%	(0.01)%

Manager Return	=	Index Return	+	Sector Concen	+	Stock Select	+	Trading	+	Asset Alloc
1.56%		3.68%		0.26%		(1.91)%		(0.46)%		(0.01)%

Buy and Hold Attribution Effects by Sector vs MSCI EAFE
Year to Date ended June 30, 2019

Sector	Manager Eff Weight	Index Eff Weight	Manager Return	Index Return	Sector Concentration	Stock Selection	Trading Effect	Asset Allocation
Consumer Staples	5.68%	11.62%	7.42%	14.96%	(0.04)%	(0.44)%	-	-
Consumer Discretionary	11.18%	11.11%	4.56%	14.28%	(0.00)%	(1.04)%	-	-
Industrials	16.20%	14.62%	13.19%	17.41%	0.06%	(0.67)%	-	-
Energy	8.05%	5.81%	11.87%	11.18%	(0.07)%	0.07%	-	-
Materials	11.63%	7.42%	10.39%	17.38%	0.14%	(0.80)%	-	-
Information Technology	3.80%	6.26%	26.33%	20.90%	(0.16)%	0.23%	-	-
Utilities	3.42%	3.70%	15.08%	11.12%	0.01%	0.13%	-	-
Financials	24.15%	19.19%	12.88%	11.38%	(0.14)%	0.37%	-	-
Communication Services	5.78%	5.54%	4.25%	9.36%	(0.01)%	(0.34)%	-	-
Health Care	8.97%	11.01%	7.77%	13.79%	0.01%	(0.54)%	-	-
Real Estate	1.15%	3.72%	23.52%	11.96%	0.04%	0.13%	-	-
Total	100.00%	100.00%	10.39%	14.03%	(0.17)%	(2.89)%	(0.51)%	(0.06)%

Manager Return	=	Index Return	+	Sector Concen	+	Stock Select	+	Trading	+	Asset Alloc
10.39%		14.03%		(0.17)%		(2.89)%		(0.51)%		(0.06)%

*Disclosure: Holdings are as of June 30, 2019 and may not have been held by the manager for the entire quarter.

● Organization	<p>LSV Asset Management (LSV) was formed in 1994 to offer domestic and international value equity investment management services utilizing its proprietary quantitative models developed by its three founders: Josef Lakonishok, Andrei Shleifer, and Robert Vishny. Lakonishok remains the active leader of LSV while Rob Vishny and Andrei Shleifer have retired from the firm and are active in their academic work. The founders established the foundation for LSV's investment strategy with their academic roots as well as their work in behavioral finance.</p> <p>LSV is majority employee-owned (~61%) by 30 partners. The remaining ~39% of equity is owned by SEI Funds, Inc., a wholly-owned subsidiary of SEI Investments Co. As a venture capital partner, SEI provided initial working capital to LSV. Research and investment professionals are incentivized through equity and performance bonuses, and the firm has nearly tripled in assets over the past 10 years (\$115 billion as of June 30, 2019) while maintaining a headcount of 42 people.</p> <p>LSV Asset Management assets under management as of June 30, 2019: \$115,885mm.</p>
● People	<p>Josef Lakonishok, founding partner, CEO, and CIO, heads the investment team of six portfolio managers and seven quantitative analysts and systems developers. The firm also partners with three academic advisors from various well-respected universities. This team has been extremely stable and has not experienced a departure in the past 10 years. This stability is aided by the fact that the majority of the individuals on the investment team are equity owners. In the event of team turnover, the quantitative investment process helps to lessen the impact of any one individual. Lakonishok is the last remaining founder employed at the firm and his eventual departure could be perceived as a negative by clients. In recent conversations, Lakonishok shared his desire to work for another 10 years and we believe the firm is adequately resourced today to manage his eventual departure without negatively impacting portfolios.</p>
● Philosophy and Process	<p>The strategy is managed using quantitative techniques to select individual securities in a risk-controlled and bottom-up approach. The quant model consists of ~60% value, ~20% contrarian, and ~20% momentum factors, resulting in a consistent deep value style exposure for the strategy. The portfolio also tends to be all-cap in nature as the model ranks all securities with market caps greater than \$500mm. Holdings are expected to range from 140-170 securities with an annual turnover rate between 20%-30%. The portfolio is optimized to the MSCI EAFE Index (not EAFE Value), but sector and country deviations are typically +/-5% of the index weight. As a result, the portfolio will generally have exposure to every sector and all large and moderate sized countries in the index, but smaller benchmark countries may have a zero weight. Individual security weights are limited to a max of 1.2% relative to the benchmark at time of purchase, and a position will be trimmed to reduce risk if its active weight exceeds 2.5%. Stock selection is expected to be the primary driver of returns.</p>
● Product Dynamics	<p>Assets in the strategy totaled roughly \$23.5bn as of June 30, 2019. The strategy is open to new separately managed account and commingled clients, but a mutual fund vehicle is not available. LSV closely manages capacity in all its products. This strategy has been closed to new clients in the past, but the firm maintains that capacity is still available today. Capacity analysis for all products at the firm is more art than science (i.e., not a specific dollar amount), based on the ability of the team to purchase the top ~15% of the highest rated stocks from their model output without exceeding ownership of over 5% of the company or an average daily trading volume of 10-12 days. Capacity concerns are also mitigated by the diversified nature of the portfolio that is coupled with a low turnover approach.</p> <p>Strategy assets under management as of June 30, 2019: \$23,507mm.</p>

● Short Term Performance	<p>Short term performance for the strategy has been challenging relative to the MSCI EAFE Index for several reasons. Value continues to be out of favor relative to growth, causing the deep value-oriented portfolio to underperform the core-oriented index. This performance pattern is not unexpected in this market environment given the process employed. However, the strategy has managed to outperform international large cap value peers over the trailing 1- and 3-year periods despite trailing the index. Benchmark relative performance has also been weak in recent years due to increased factor volatility (i.e., rapidly changing market leadership). This whipsawing, caused primarily by macro news and events, has impacted almost all quantitative strategies including LSV. Lastly, the strategy has also lagged the index due to its overweight to small and mid-cap companies. Over the trailing 1- and 3-year periods non-US large cap stocks have outperformed non-US small cap stocks by 7.43% and 0.05%, respectively, as shown by the returns of the MSCI EAFE Index versus the MSCI EAFE Small Cap Index. This has weighed on the portfolio as it has maintained an average weighted average market cap of roughly \$33bn over the last 12 quarters, compared to that of \$56bn for the MSCI EAFE Index and \$54bn for international large cap value peers. Callan believes this underperformance stemmed from exogenous factors, is transitory, and expects performance for the LSV International Large Cap Value strategy to recover with the normalization of the market.</p>
● Long Term Performance	<p>Long term performance of the strategy remains attractive as the portfolio has outperformed the MSCI EAFE Index over trailing 7- and 10-year periods; however, 5-year trailing performance slightly lags that of the index for the same reasons that have impacted shorter term results. Historically, LSV portfolios have added significant value relative to the index during down markets, when value is in favor, and/or when factor volatility is low. The average rolling 3-year return for the strategy over the trailing 40 quarters (10 years) has been 4.0%, compared to that of 3.3% for the index and 2.1% for international large cap value peers.</p>
● Overall Status	<p>Callan maintains a positive view of the LSV International Large Cap Value strategy given the majority employee ownership, stability of the team, and sound and repeatable quantitative investment process. Although unfavorable market conditions have challenged short term performance relative to the index, the strategy has added value on a long term basis. As the market normalizes, Callan expects the strategy to generate positive relative returns through stock selection by employing its bottom-up quantitative process with a deep value and all-cap orientation.</p>

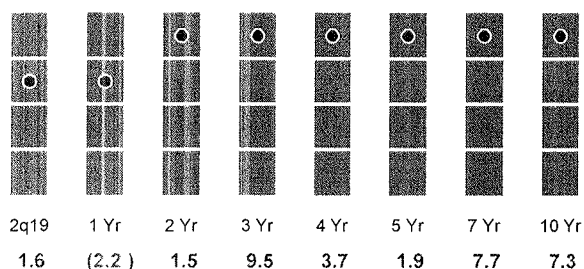
● Within expectations

● Cautionary

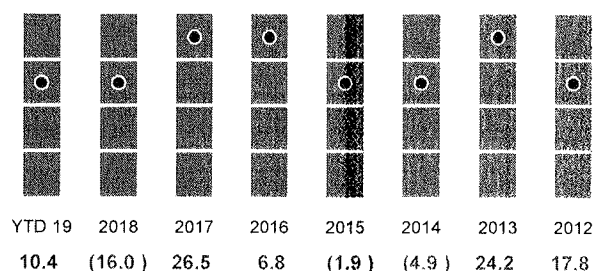
● Under Review

PRODUCT SNAPSHOT

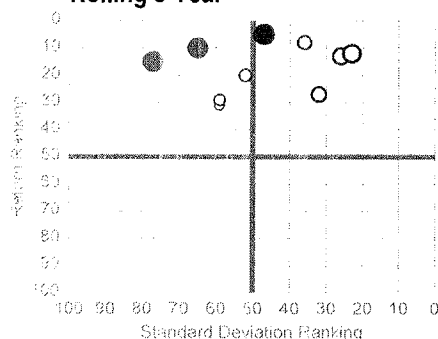
Cumulative Returns



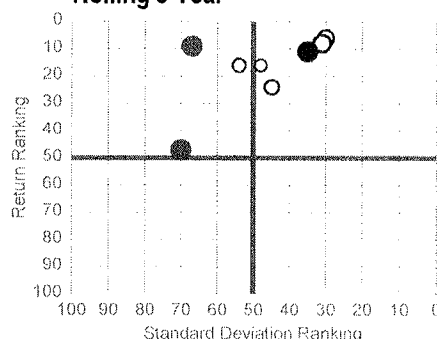
Calendar Year Returns



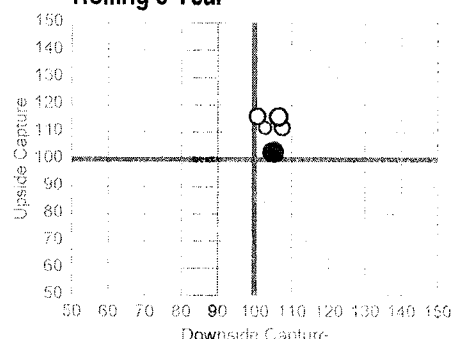
Relative Return vs. Risk vs. Group Rolling 3 Year



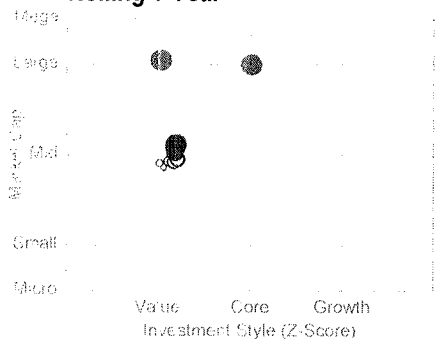
Relative Return vs. Risk vs. Group Rolling 5 Year



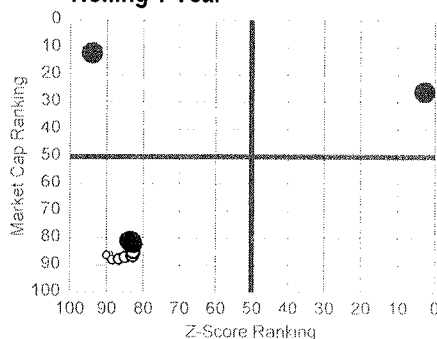
Upside/Downside Capture vs. Group Rolling 5 Year



Holdings Based Style Map* Rolling 1 Year



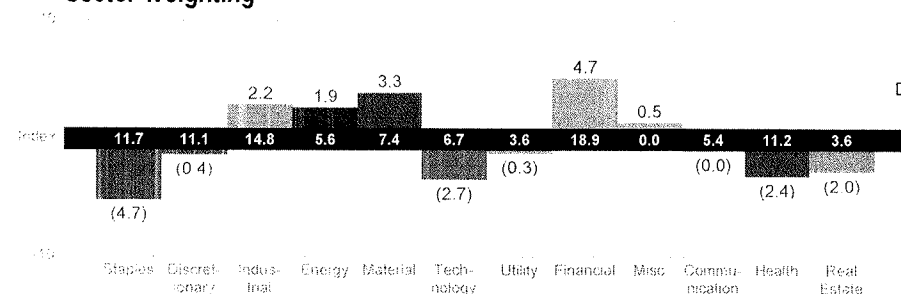
Style Map Ranking vs. Group* Rolling 1 Year



Statistics*

	LSV International Large C	MSCI EAFE	MSCI EAFE Value
Number of Holdings	220	922	486
Issue Diversification	54	109	54
Growth Z-Score	(0.1)	(0.0)	(0.3)
Value Z-Score	0.7	0.0	0.7
Combined Z-Score	(0.8)	(0.0)	(1.0)
Wtd. Median Market Cap.	16.0	36.5	41.3
Forward P/E	9.6	13.6	10.6
Price/Book Value	1.1	1.6	1.1
Forecasted Growth in Earnings	7.8	9.1	7.4
Return on Equity	13.8	15.5	11.0
Dividend Yield	4.3	3.3	4.7
Stability Score	(0.1)	0.2	0.1

Sector Weighting*



Regional Exposures*

	LSV International Large C	MSCI EAFE	MSCI EAFE Value	Callan Intl Lg Cap VI MF
Dev Europe/Mid East	63.9%	63.7%	62.5%	57.9%
Emerging Markets	1.8%	0.0%	0.0%	9.9%
Japan	24.8%	23.7%	24.3%	16.6%
North America	0.5%	0.0%	0.0%	8.5%
Pacific Basin	9.0%	12.7%	13.2%	7.2%

*Disclosure: Portfolio Characteristics are as of June 30, 2019, using the most recently available manager holdings.

Peer Group Rankings: Callan Intl Lg Cap VI MF

Index: MSCI EAFE

The data contained herein reflects information submitted by the investment manager organization to Callan regarding their investment management capabilities, for which information Callan has not necessarily verified the accuracy or completeness of or updated. The information provided to Callan has been summarized in this report for your consideration. Unless otherwise noted, performance figures reflect a commingled fund or a composite of discretionary accounts. All written comments in this report are based on Callan's standard evaluation procedures which are designed to provide objective comments based upon facts provided to Callan. Statements in this report are made as of the date they are expressed. This report is for informational purposes only and should not be considered as legal or tax advice on any matter. Any decision you make on the basis of the content is your sole responsibility. You should consult with legal and tax advisers before applying any of this information to your particular situation. Reference to or inclusion in this report of any product, service or entity should not be construed as a(n) recommendation, approval, affiliation or endorsement of such product, service or entity by Callan. Past performance is no guarantee of future results.

June 30, 2019



North Dakota State Investment Board Insurance Trust

**Investment Measurement Service
Quarterly Review**

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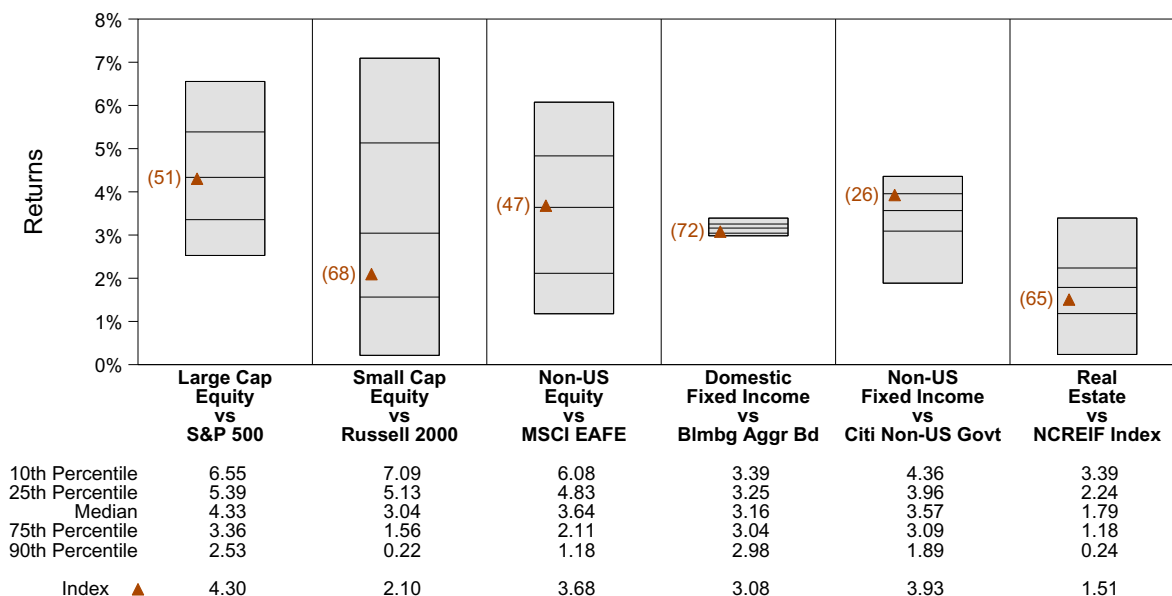
Market Overview

Active Management vs Index Returns

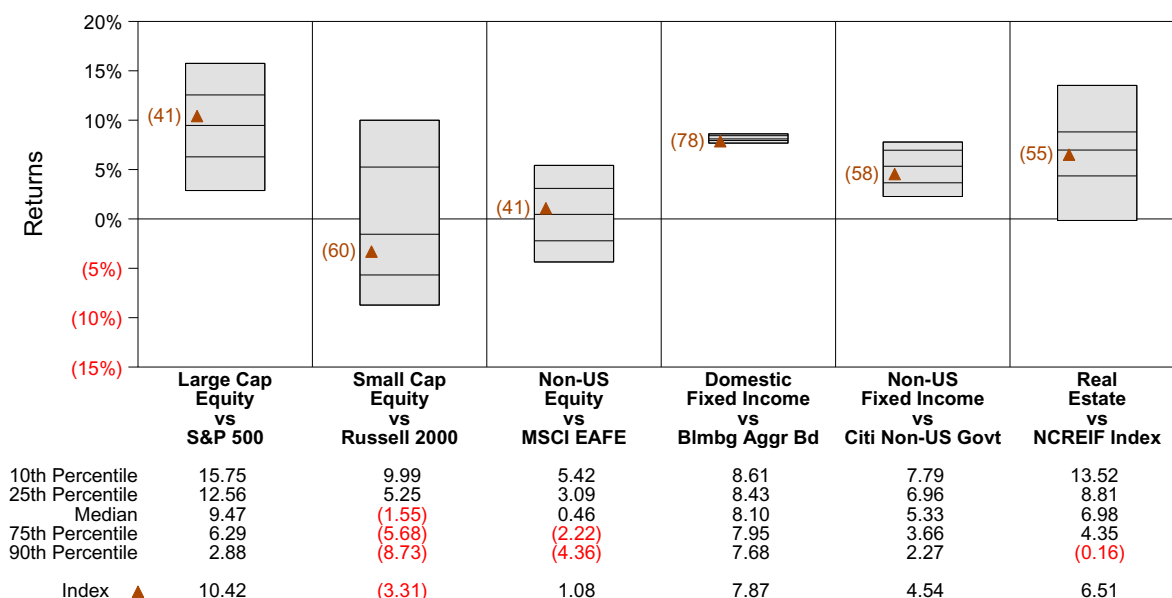
Market Overview

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

Range of Separate Account Manager Returns by Asset Class One Quarter Ended June 30, 2019



Range of Separate Account Manager Returns by Asset Class One Year Ended June 30, 2019



The Fed: 'A Mid-Cycle Adjustment to Policy'

ECONOMY

2 The economic news for the U.S. during the second quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, describing it as "a mid-cycle adjustment to policy."

Big Focus on Fed, Possible Correction

INSTITUTIONAL INVESTORS

4 Institutional investors, as measured by the Callan Total Fund Sponsor Database Group, gained 3.3% in the second quarter. That compares to the 4.0% increase generated by a benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.

U.S. Stocks Hit Highs; Global Gains Muted

EQUITY

6 U.S. equities neared record highs in the second quarter on expectations of easing from the Fed. Global equity markets were largely positive although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued.

Rally for Treasuries Lifts Sovereign Bonds

FIXED INCOME

8 The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Non-U.S. developed market sovereign bonds rose in tandem with the rally in Treasuries.

Real Estate Gains; Real Assets Fall

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index gained 1.5% during the second quarter. The NCREIF Open-End Diversified Core Equity Index rose 0.8%. U.S. REITs and global REITs both gained, but lagged broad equity indices. The Bloomberg Commodity Index fell 1.2%.

Value Is in the Eye of the Beholder

PRIVATE EQUITY

12 Fundraising, company purchase prices, and IPOs increased in the second quarter. But private M&A investment and exit measures were flat to markedly down. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

Continuing Rally Aids Most Strategies

HEDGE FUNDS/MACs

13 Risk-on sentiment supported virtually all hedge fund strategies. The continuing rally also lifted long-biased MACs, but risk premia languished again. Hedge funds are well positioned defensively for a downturn. But without a sustained pick-up in volatility, they are likely to lag.

Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION

15 The Callan DC Index™ rebounded in the first quarter, gaining 9.6%, and the Age 45 Target Date Fund did even better. After two quarters of negative flows, balances saw sizable growth. And TDFs retook their spot as the top destination for inflows.

Broad Market Quarterly Returns

U.S. Equity
Russell 3000

4.1%

Non-U.S. Equity
MSCI ACWI ex USA

3.0%

U.S. Fixed Income
Bloomberg Barclays Agg

3.1%

Non-U.S. Fixed Income
Bloomberg Barclays GBI ex US

3.4%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Fed Speaks: 'A Mid-Cycle Adjustment to Policy'

ECONOMY | Jay Kloepfer

The U.S. economy continued its now-record expansion in the second quarter with a 2.1% gain in GDP, slower than the robust 3.1% in the first quarter but well ahead of expectations. Consumer spending rose 4.3% in the quarter, supported by solid gains in the job market and disposable income growth of 5% in each of the first two quarters of 2019. Offsetting the gains in consumption were hits to GDP from exports, non-residential business investment, residential investment, and a drawdown in inventories. The economic news for the U.S. during the quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, lowering the Federal Funds rate target by 25 basis points.

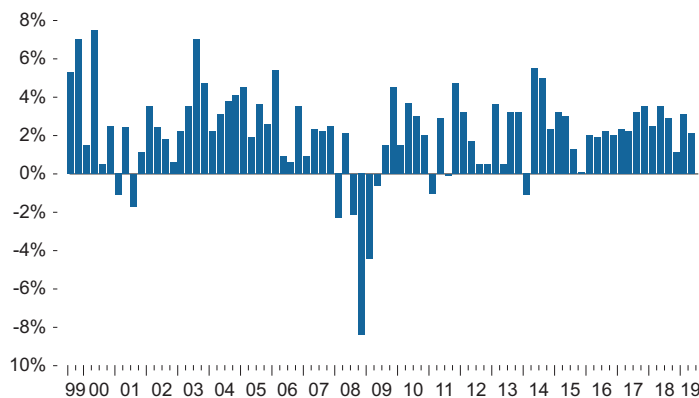
How did we get to a situation where the expansion continues but the Fed acts to cut rates? In classic Fed-speak, the announced reasoning is “a mid-cycle adjustment to policy.” To be fair, while the job market and overall GDP data are coming in solid for the U.S., the global economy is clearly showing signs of slowing, and the uncertainty stemming from trade tensions is top of mind. Chairman Jerome Powell noted three reasons for the rate cut: (1) to insure against downside risks from slowing global growth and trade tensions; (2) to mitigate the effects those factors are already having on the U.S. outlook, even if they haven't shown up in the data; and (3) to enable a faster return to the Federal Reserve's symmetric 2% inflation target.

It is important to note that the Fed made clear this July rate cut is not likely to be the first in a series. After initial confusion, the markets simply interpreted this Fed comment as fewer rate cuts this year than were previously priced into bond yields.

Key to the Fed's perceived latitude to lower rates is the persistent surprise of low inflation. After breaking through the Fed's 2% target in 2018, inflation has once again subsided. Headline CPI rose 1.6% in June (year-over-year), dragged down by a 3.4% decline in energy costs. In fact, core CPI (less food and energy) rose 2.1% over the past 12 months, pushed up by the

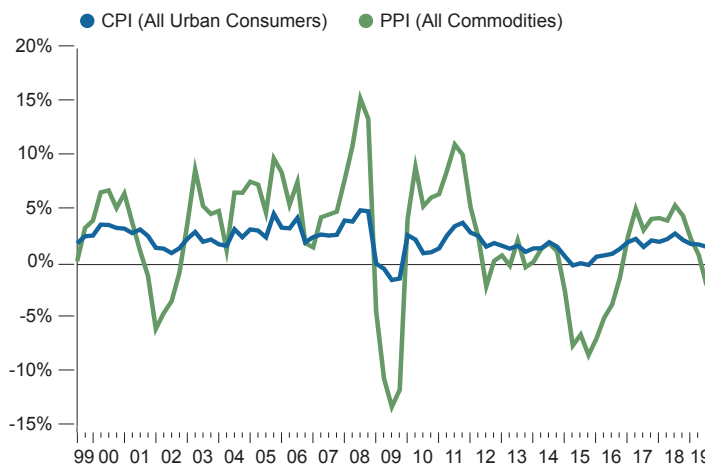
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

rising cost of shelter, apparel, and used vehicles. While annual wage gains have moved above 3% for the first time since the Global Financial Crisis (GFC), wage pressures have yet to show up in headline inflation. The impact of tariffs on consumer prices has not affected the broad CPI data, as the tariffs to date have been narrowly targeted.

Foreshadowing the expected slowdown in the U.S. economy is the Purchasing Managers' Index (PMI), a forward-looking measure of business expectations for manufacturing demand and

production. The mid-year 2019 reading of the PMI hit 50.6, very close to the line dividing expansion from contraction (50), and the lowest reading since 2009. Producers cite the twin worries of slowing global growth and trade tensions; the 5% drop in exports and the softening of business spending in the second quarter data certainly support these concerns. Other concerns about a material slowdown to GDP growth include the waning impact on domestic spending that has come from rising stock prices and fiscal stimulus since the GFC. Further concerns include the effects of potential new tariffs, and the slowdown in inventory accumulation. The U.S. economy is also approaching capacity constraints as the expansion reaches into record territory. Unemployment has hit a generational low of 3.6%; at some point firms' difficulties in finding new and replacement staff will weigh on overall workforce growth.

The nine interest rate hikes enacted by the Fed through 2018 raised the cost of borrowing for both businesses and consumers, and while the reversal of Fed policy since January halted the trajectory of rates, the impact of the increases since 2016 is still working its way through the economy. Higher mortgage rates slowed housing markets, pulling existing home sales down by more than 10% over the course of 2018. Rates for 30-year mortgages have fallen by more than 110 bps since November 2018, and home sales have bounced back since the start of the year, but the recovery has been uneven, concentrated in the South and the West. Investment in new homes, as measured by permits, began slipping in 2018 and is still down more than 10% (year over year) through June. New residential construction, restricted in many locations by supply and cost factors, has lagged the pace set in typical expansions since the GFC.

The Long-Term View

Index	2019 2nd Qtr	Periods ended Dec. 31, 2018			
		Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	4.1	-5.2	7.9	13.2	9.0
S&P 500	4.3	-4.4	8.5	13.1	9.1
Russell 2000	2.1	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	3.7	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	3.0	-14.2	0.7	6.6	--
MSCI Emerging Markets	0.6	-14.6	1.6	8.0	--
MSCI ACWI ex USA Small Cap	1.2	-18.2	2.0	10.0	--
Fixed Income					
Bloomberg Barclays Agg	3.1	0.0	2.5	3.5	5.1
90-Day T-Bill	0.6	1.9	0.6	0.4	2.5
Bloomberg Barclays Long G/C	6.6	-4.7	5.4	5.9	6.8
Bloomberg Barclays GI Agg ex US	3.4	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.5	6.7	9.3	7.5	9.3
FTSE Nareit Equity	1.2	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	2.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.9	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.2	-11.2	-8.8	-3.8	2.0
Gold Spot Price	8.9	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.8	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of March 31, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17
Employment Cost–Total Compensation Growth	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%	2.5%
Nonfarm Business–Productivity Growth	1.8%*	3.4%	1.3%	1.9%	2.9%	0.7%	-0.3%	2.3%
GDP Growth	2.1%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%	3.2%
Manufacturing Capacity Utilization	75.7%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%	74.9%
Consumer Sentiment Index (1966=100)	98.4	94.5	98.2	98.1	98.3	98.9	98.4	95.1

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

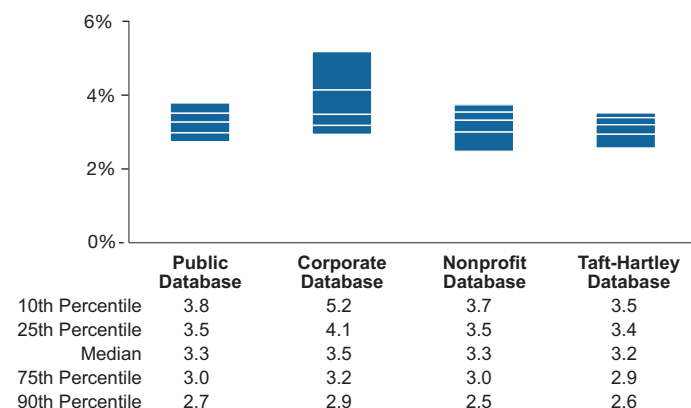
* Estimated figure provided by IHS Markit

Big Focus on Possible Correction, Future Action by Fed

INSTITUTIONAL INVESTORS

- Institutional investors, as measured by the **Callan Total Fund Sponsor Database Group**, gained 3.3% in the second quarter, with corporate plans faring best (+3.5%). Those results compare to the 4.0% gain of a quarterly rebalanced benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.
- Over the last 15 years, corporate plans (+6.9%) have fared the best, followed by nonprofits, public plans, and Taft-Hartley plans. Over that same period, the 60-40 index has seen a gain of 7.2%, annualized. Larger institutional investors have tended to do better than smaller ones over that time period, with the exception of Taft-Hartley plans; investors with more than \$1 billion in assets gained 7.0% over the 15-year period, followed by 6.7% for medium investors (\$100 million-\$1 billion), and 6.6% for small plans (under \$100 million).
- For institutional investors, strategic allocation decisions are focused on the anticipation of a market correction, volatility, and their desires to seek additional diversification opportunities. As a result, investors are re-evaluating the purpose and implementation of asset classes including real assets, hedge funds and liquid alternatives, fixed income, and equity.

Quarterly Returns, Callan Database Groups



Source: Callan

- Increasingly, investors are focused on the disparity of performance between growth and value. As value continues to underperform, investors are wondering if “value is dead.” They are also questioning whether there is any hope for active management. Will its promise to protect in a downturn be fulfilled?

Callan Database Median and Index Returns* for Periods ended June 30, 2019

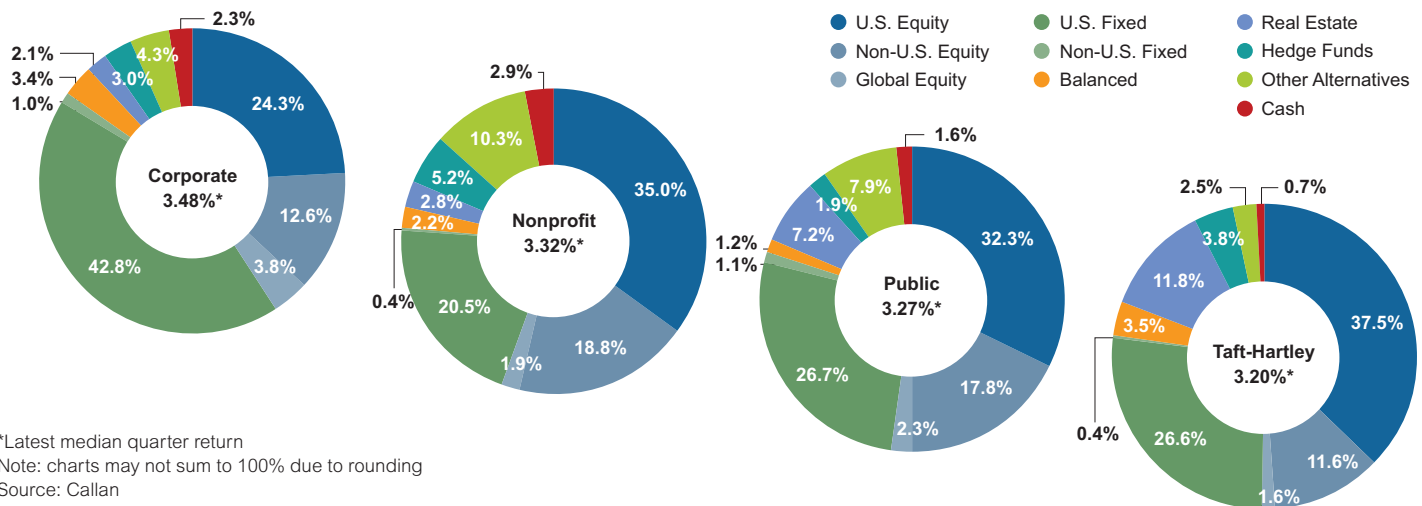
Database Group	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Public Database	3.27	6.19	8.91	5.96	9.20	6.74
Corporate Database	3.48	7.26	8.21	5.96	9.24	6.85
Nonprofit Database	3.32	5.78	9.11	5.62	9.06	6.76
Taft-Hartley Database	3.20	6.34	9.03	6.54	9.42	6.67
All Institutional Investors	3.32	6.31	8.85	5.97	9.24	6.75
Large (>\$1 billion)	3.24	6.35	9.03	6.17	9.39	7.04
Medium (\$100mm - \$1bn)	3.31	6.43	8.84	6.04	9.28	6.71
Small (<\$100 million)	3.34	6.20	8.76	5.73	9.03	6.59

*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, nonprofits, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- Plans continue to retain a strong tilt toward growth assets (at least 70% and as high as 90%). Many investors said they employ such a tilt to meet funding requirements. This has coincided with a refined definition of growth to include high yield, convertibles, low-volatility equity, hedge funds, MACs, and option-based strategies.
- Callan has consulted on a surge in asset-liability studies, with substantial changes to many policy portfolios. The focus is on de-risking (less equity) and risk mitigation (diversification and implementation), but dissatisfaction remains with hedge funds, risk premia, and absolute return products.
- In the current capital market environment, investors are focused on how long the expansion will continue. They are also examining how the reversal in Fed policy changes the landscape. Equity markets cheered, but doesn't accommodation imply leaner times ahead? And while LDI pays off when rates fall, lower rates can wreak havoc with liability-driven investing glidepaths.
- In discussions of asset class structures, investors are examining the role of fixed income in a total return portfolio: Is pursuit of return a goal?
- The relentless cost pressure is driving passive implementation in all asset classes, particularly equity.
- Public plans are focused on the return from private markets, but they face mounting pressure to control costs. One approach is the "bar-belled" pursuit of active in private markets and alternatives, and all passive in equity, more passive in fixed, and cheaper liquid alternatives with "passive" exposures to betas and factors.
- Liquidity needs are top of mind for public plans looking to increase private investments in pursuit of a growth engine aside from public equity.
- Corporate plans moving down de-risking glidepaths continue to reconsider their equity structures, moving to passive to control costs and attain broad beta exposure in the declining growth allocation.

Average Asset Allocation, Callan Database Groups



Equity

U.S. Equities

Markets continued to march upward, and U.S. equities neared record highs. Growth outpaced value, as the dovish stance of the Fed was a headwind for valuation-sensitive stocks. Small cap stocks lagged large caps, possibly from economic weakness.

Large Cap ► S&P 500: +4.3% | Russell 1000: +4.2%

- U.S. equity showed strong gains as market participants anticipated another round of monetary easing from the Fed.
- Financials (+8.0%) was the best-performing sector; Energy (-2.8%) was the only sector to experience negative returns over the quarter.
- Trade rhetoric weighed on U.S. stocks in May followed by a June rebound.
- Given the increase in risk appetite, cyclicals outperformed while defensive sectors such as Utilities underperformed.

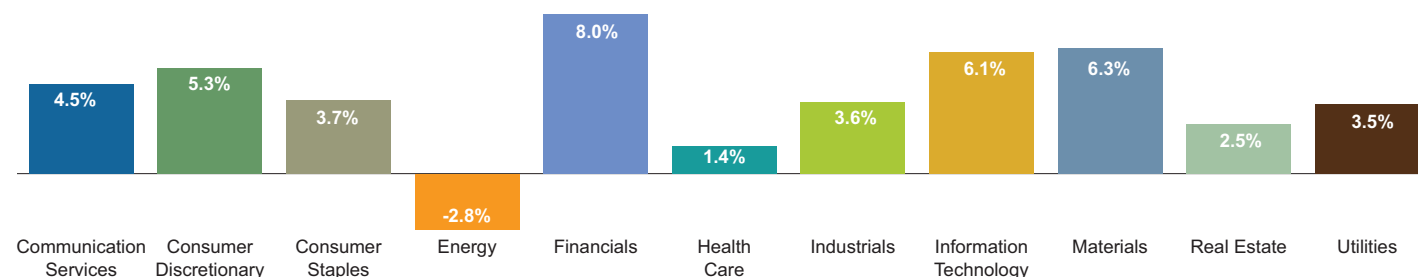
Small Cap ► Russell 2000: +2.1%

- Market conditions (e.g., more dovish Fed, strong U.S. dollar, trade tensions) should have benefited small cap companies, but did not.
- A slowing economy may explain weakness for small caps. Large caps tend to have stronger balance sheets and are more capable of weathering downturns.

Growth vs. Value ► Russell 1000 Growth: +4.6% | Russell 1000 Value: +3.8%

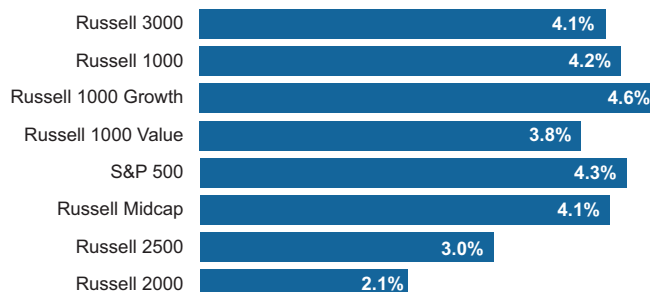
- Value factors (P/B, P/E trailing, yield) were mixed; growth factors (EPS growth, sales growth) were positive.

Quarterly Performance of Industry Sectors



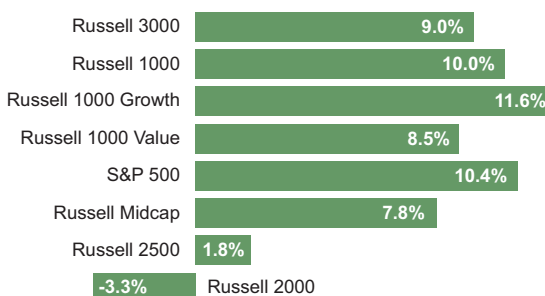
Source: Standard & Poor's

U.S. Equity: Quarterly Returns



Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Non-U.S./Global Equities

Global equity markets were largely positive in the second quarter although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued. Some non-U.S. markets benefited from a weakening U.S. dollar relative to local currencies. Global equities were boosted by dovish central bank commentary that led to lower interest rates around the globe.

Developed ► *MSCI EAFE: +3.7% | MSCI ACWI ex USA: +3.0% | MSCI Europe: +4.5% | MSCI Japan: +1.0%*

- Developed markets rallied as central banks around the world expressed more accommodative paths with interest rates and quantitative easing.
- U.K. equities finished the quarter slightly up (+0.9%) as Brexit uncertainty continues. Prime Minister Theresa May announced her resignation during the quarter.
- Relative to other non-U.S. developed markets, Europe had a strong quarter fueled by robust returns from Germany, France, and Switzerland (30% combined weight), which benefited from declining bond yields.
- EAFE sector performance was positive across the board with the exception of real estate. Cyclical drove the majority of returns as these are highly correlated with U.S. cyclical, which benefited from declining interest rates.
- Factor performance in non-U.S. developed markets favored growth over value, large caps over small caps, and cyclical over defensives.

Emerging Markets ► *MSCI Emerging Markets Index: +0.6%*

- Emerging market returns were lackluster although, regionally, returns were bar-belled as many Asian countries were held back by trade concerns while EM ex-Asia tended to perform well. Russia (+16.9%) performed strongly with the help of the ruble appreciating by 4.2% relative to the U.S. dollar. Brazil (+7.2%) was also a top contributor due to the initial success of keeping pension reforms on track. China (-4.0%) faltered on tariff concerns.
- Argentina (+31.7%) was the top country performer, aided by the announcement of its inclusion in the **MSCI Emerging Markets Index** at the end of May (eight stocks in total).

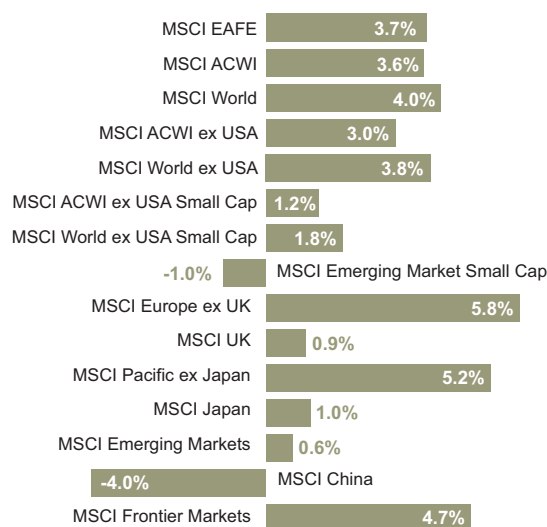
- The **MSCI EM Value Index** outperformed the **MSCI EM Growth Index** as many growth-oriented sector and country returns were impacted by trade disputes.

Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: +1.8% | MSCI EM Small Cap: +1.0%*

- Non-U.S. small caps lagged large caps as investors preferred lower earnings risk and higher earnings momentum. Emerging market small caps lagged large caps as investors searched for a combination of lower volatility and higher growth that was absent in smaller companies as tariff uncertainty persisted.

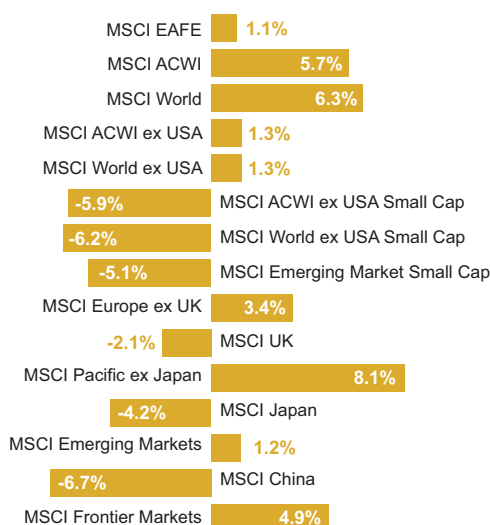
Non-U.S. Equity: Quarterly Returns

(U.S. Dollar)



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

(U.S. Dollar)



Source: MSCI

Fixed Income

U.S. Fixed Income

U.S. economic data continued to be mixed as a strong labor market and rising personal income offset waning business confidence and declining industrial production. The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Uncertainty surrounding trade policy and muted inflation data provided the Fed with additional cover for its rationale to potentially cut rates later this year.

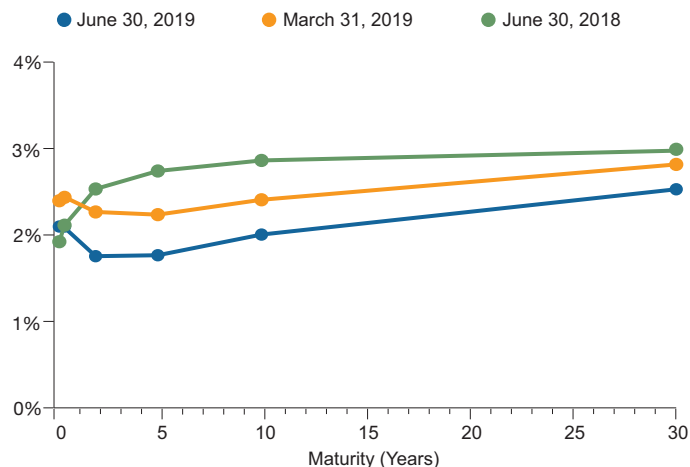
Core Fixed Income ► Bloomberg Barclays US Agg: +3.1%

- U.S. Treasuries gained 3.0% as the U.S. Treasury yield curve shifted lower across maturities, most dramatically at the 2-year key rate, as traders priced in expectations for the Fed to pre-emptively ease in order to boost domestic economic growth.
- The overall shape of the yield curve did not materially change during the quarter. The yield differential between the 10-year and 2-year key rates remained positive and widened 11 basis points during the quarter to close at 25 bps. However, the front-end of the curve remained inverted, with the 5-year offering roughly the same yield as the 2-year key rate.
- Nominal Treasuries outperformed TIPS as inflation expectations fell; the 10-year breakeven spread was only 1.69% as of quarter-end versus 1.88% at the end of the first quarter.

Investment-Grade Corporates ► Bloomberg Barclays Corporate (Inv. Grade): +4.5%

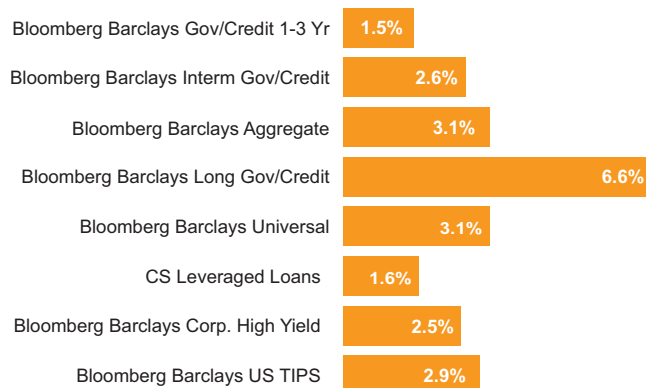
- Credit spreads rallied on the back of dovish Fed policy.
- Gross new corporate supply this quarter was \$290.5 billion, which was 14% lower than a year ago. Year-to-date supply was 18% lower than in the first half of 2018. New issuance favored the 6-12 year maturities relative to last year.
- AAA-rated corporates (+5.0%) were the best performers in absolute return terms. BBB-rated lagged AAA by 18 bps, but posted a positive excess return over the index (+1.4%).

U.S. Treasury Yield Curves



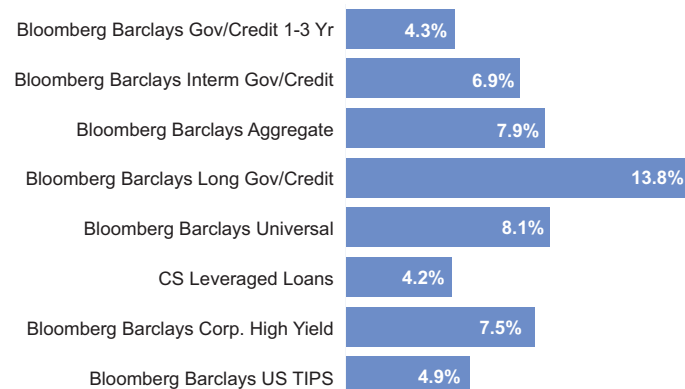
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

FIXED INCOME (Continued)

High Yield ► *Bloomberg Barclays Corporate HY: +2.5%*

- High yield corporates posted positive results for the quarter, but lagged investment grade corporates on both absolute and excess returns. High yield gained 9.9% for the first half of 2019.
- Interest rate-sensitive BB-rated issues posted the highest return (+3.1%) while CCC-rated issues rose 0.3%.

Leveraged Loans ► *CS Leveraged Loans: +1.6%*

- Bank loans participated in the risk-on rally, but lagged both longer duration IG and HY corporates as interest rates declined.
- Retail outflows remain unabated as the Fed's dovish tone dampened enthusiasm for floating rate assets. New CLO issuance running ahead of expectations has also put technical pressure on the sector as investors absorbed the new float.
- Bank loans have less sensitivity to interest rates, but may have a similar spread duration profile to that of high yield bonds.

Non-U.S. Fixed Income

Global Fixed Income ► *Bloomberg Barclays Global Aggregate: +3.3%*

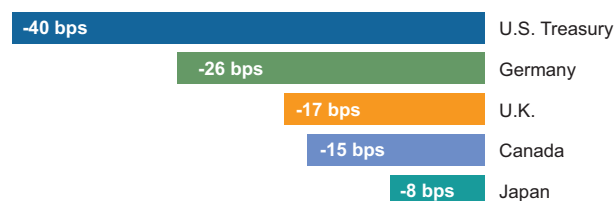
- Other developed market sovereign bonds rose in tandem with the rally in Treasuries and have pushed European sovereigns further into negative yields. The U.S. dollar depreciated modestly versus the euro and yen, but gained versus the U.K. pound.

Emerging Market Debt (\$US) ► *JPM EMBI Global Diversified: +4.1% | (Local currency) ► JPM GBI-EM Global Diversified: +5.6%*

- Most emerging market currencies appreciated against the U.S. dollar.
- Top performers included Russia (+10.4%) and Turkey (+10.1%), while Argentina was the worst performer (-5.0%), and one of the few countries to post a negative result this quarter.

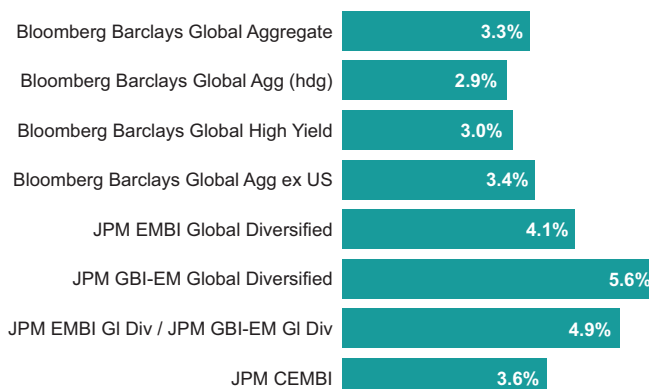
Change in 10-Year Global Government Bond Yields

1Q19 to 2Q19



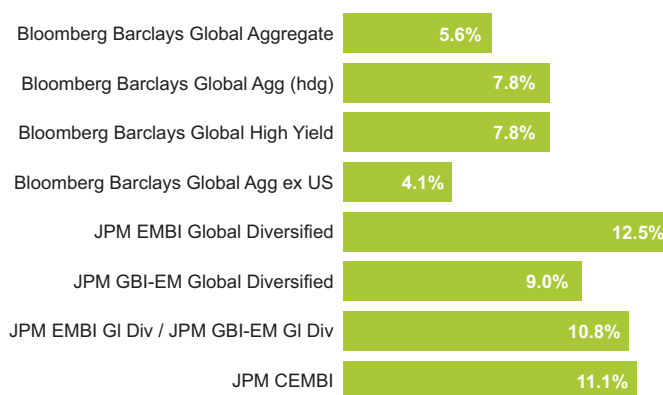
Source: Bloomberg Barclays

Non-U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

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



Sources: Bloomberg Barclays and JPMorgan Chase

Real Estate Gains; Real Assets Mostly Fall

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

Income Produces Bulk of Returns

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- The **NCREIF Property Index (NPI)**, a measure of U.S. institutional real estate assets, gained 1.5% during the second quarter. The income return was 1.1%, while appreciation contributed 0.4%.
- Industrial led property sector performance with a return of 3.4%. Retail finished last, falling 0.1%.
- Regionally, the West led with a 1.9% return, while the Midwest was the worst performer at 0.7%.
- The **NCREIF Open-End Diversified Core Equity Index** (value-weighted, net of fees), representing equity ownership positions in U.S. core real estate, generated a 0.8% total return during the second quarter, with income providing 0.8% and appreciation 0.0%.
- Defensive posturing is becoming more prevalent.

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metro areas.
- Within the NPI, the vacancy rate for U.S. offices was 9.8% in the second quarter, the lowest in over 12 years.
- Net operating income has been growing annually and is expected to be the primary return driver.

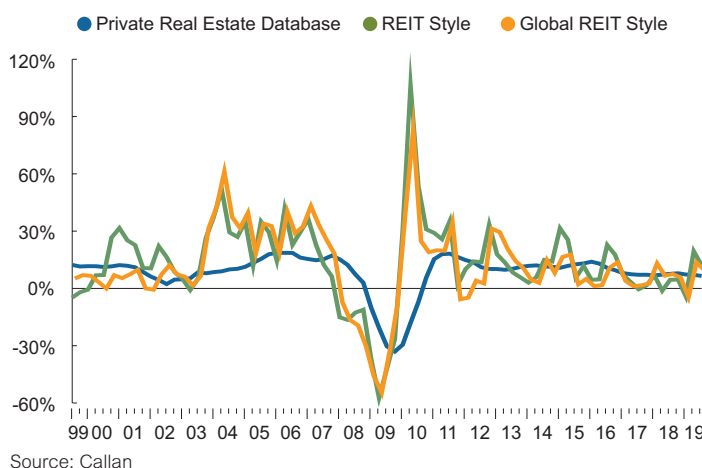
Pricing remains expensive in the U.S.

- Transaction volumes increased and remain robust.
- Cap rates fell slightly; market remains near full valuations

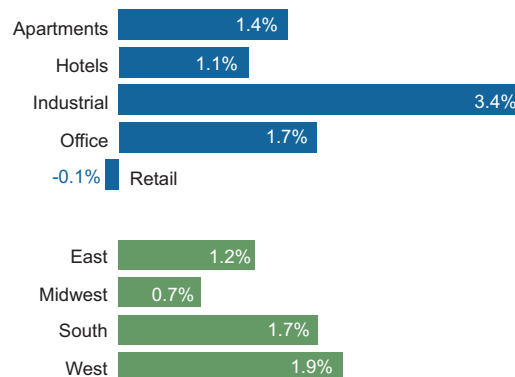
REITs underperformed global equities

- U.S. REITs advanced 1.2% in the second quarter, underperforming the S&P 500 Index, which rose 4.3%.
- Global REITs fell 0.1% in the second quarter compared to a 3.4% gain for global equities (MSCI ACWI IMI).
- Both U.S. and non-U.S. REITs are trading at NAV.
- Large cap REITs, especially those with lower debt levels, modestly underperformed.

Rolling One-Year Returns



Sector Quarterly Returns by Property Type and Region



Non-U.S. Real Estate

Asia

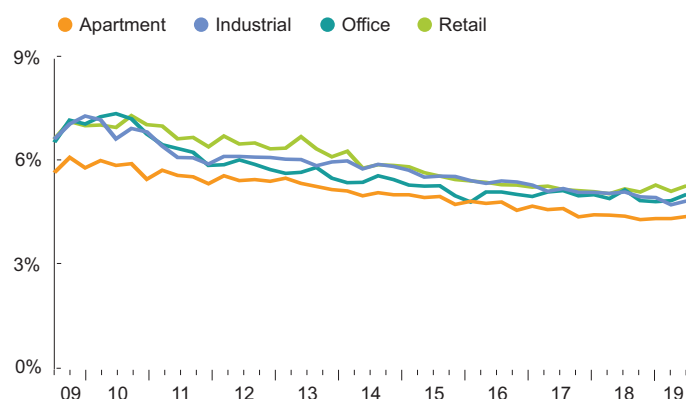
- The growth of the middle class in Asia is steady and the demand for institutional quality real estate is commensurate.
- The number of open-end core funds focused on the Asia Pacific market has increased over recent years and includes both sector-diversified and sector-specific (e.g., logistics) funds, supporting the development of the institutional real estate market in the region. In the first half of the year, India had the first successful IPO for a REIT, which substantiates the institutionalization of the asset class in that country.

REAL ESTATE/REAL ASSETS (Continued)

Europe

- Political uncertainty continues to weigh on overall growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Institutional interest and investment in multifamily properties keeps expanding, as housing prices continue to grow faster than incomes in major markets across Europe, and demand is supported by continued urbanization and migration to major cities in Europe.

NCREIF Capitalization Rates by Property Type

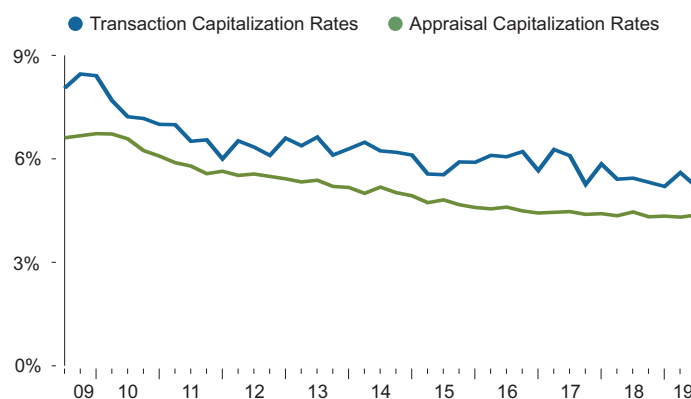


Source: NCREIF. Capitalization rates (net operating income / current market value (or sale price)) are appraisal-based.

Real Assets

- The **Bloomberg Commodity Index** fell 1.2% in the quarter.
- Both the Precious Metals and Agriculture commodity sectors were positive performers, driven by strong individual returns for gold as well as corn, wheat, and coffee.
- Meanwhile, the Livestock, Energy, and Industrial Metals commodity sectors all posted negative quarterly results.
- Oil pulled back but was roughly flat for the quarter, ending at \$58/barrel (West Texas intermediate).
- Natural gas within the **Bloomberg Energy Sub-Index** declined a precipitous 16.2%.
- MLPs (**Alerian MLP Index**: +0.1%) were flat.

NCREIF Transaction and Appraisal Capitalization Rates



Source: NCREIF
Note: Transaction capitalization rate is equal weighted.

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	1.55	3.12	6.53	7.15	9.51	9.07	6.79
NFI-ODCE (value wt net)	0.77	1.98	5.46	6.61	8.76	8.87	7.01
NCREIF Property	1.51	3.34	6.51	6.89	8.83	9.25	8.70
NCREIF Farmland	0.70	1.40	5.63	6.24	7.98	11.05	14.22
NCREIF Timberland	0.11	0.22	2.23	3.05	4.47	3.90	7.04
Public Real Estate							
Global Real Estate Style	1.20	16.17	9.66	6.17	6.54	12.22	8.56
FTSE EPRA Nareit Developed	-0.07	14.51	7.68	4.46	4.85	10.57	--
Global ex-U.S. Real Estate Style	0.35	13.95	7.84	8.97	5.45	9.97	8.10
FTSE EPRA Nareit Dev ex US	-0.58	12.89	6.09	6.79	3.47	8.26	--
U.S. REIT Style	2.06	19.28	12.11	5.17	8.60	16.15	9.90
EPRA Nareit Equity REITs	1.24	17.78	11.21	4.20	7.92	15.46	9.05

*Returns less than one year are not annualized.
Sources: Callan, FTSE Russell, NCREIF

Value Is in the Eye of the Beholder

PRIVATE EQUITY | Gary Robertson

Fundraising, company purchase prices, and IPOs increased in the second quarter. However, private M&A investment and exit measures were flat to markedly down. Average buyout company prices and leverage levels hit a record in 2019, tempering transaction activity. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

- **Fundraising** ► Based on preliminary data, final closes for private equity partnerships in the second quarter totaled \$143 billion of commitments in 203 partnerships. (Unless otherwise noted, all data in this commentary come from PitchBook.) The dollar volumes rose 8% and the number of funds rose 25% from the first quarter. For the first half, 2019 is running \$99 billion or 21% behind a year ago. We expect that the second half of 2019 will be larger than the first half, as some large fundraises are slated to start in the fourth quarter, and sought-after general partners are closing new funds quickly.
- **Buyouts** ► New buyout transactions continued declining in the quarter. Funds closed 1,424 investments with \$97 billion in disclosed deal value, representing a 12% decline in count and a 9% dip in dollar value from the first quarter. Average buyout prices leaped to 11.2x EBITDA in 2019 versus 10.6x in 2018, providing a headwind for investment volume.
- **VC Investments** ► New rounds of financing in venture capital companies totaled 4,656, with \$55 billion of announced value. The number of investments was down

Funds Closed January 1 to June 30, 2019

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	159	30,984	11%
Growth Equity	95	142,750	52%
Buyouts	37	26,682	10%
Mezzanine Debt	25	41,150	15%
Distressed	6	9,840	4%
Energy	6	12,266	4%
Secondary and Other	23	8,690	3%
Fund-of-funds	14	4,371	2%
Totals	365	276,733	100%

Source: PitchBook (Figures may not total due to rounding.)

- 15% but announced value rose 10%. Venture prices generally rose during the quarter, particularly for larger later-stage investments.
- **Exits** ► There were 336 private M&A exits of private equity-backed companies, with disclosed values totaling \$80 billion. The private sale count fell 28% but the announced dollar volume rose 4%. There were 35 private equity-backed IPOs in the second quarter raising an aggregate \$15 billion, up 250% and 650%, respectively, from the first quarter.
- Venture-backed M&A exits totaled 290 transactions with disclosed value of \$20 billion. The number of sales declined 14% from the first quarter, and announced value fell 62%. There were 54 VC-backed IPOs in the second quarter with a combined float of \$54 billion; the count jumped 116% and the issuance ballooned 340% as unicorns such as Uber, Slack, and Pinterest made their public debuts.

Private Equity Performance Database (%) (Pooled Horizon IRRs through March 31, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	5.71	19.54	13.70	14.32	14.38	11.37	15.71
Growth Equity	6.14	16.87	16.41	13.05	15.05	13.23	13.76
All Buyouts	4.52	10.65	15.56	12.25	15.63	13.78	12.23
Mezzanine	2.25	7.56	11.67	10.30	11.09	10.47	8.83
Distressed	2.28	4.65	9.89	6.31	16.26	9.70	10.24
All Private Equity	4.13	4.60	10.73	7.71	13.11	10.60	10.66
S&P 500	4.86	12.66	14.66	12.08	15.15	12.79	12.55

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and Standard & Poor's

*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of *Capital Market Review* and other Callan publications.

Continuing Rally Boosts Most Strategies

HEDGE FUNDS/MACs | Jim McKee

Top-Down Jumps Ahead; Bottom-Up Plods Forward

- Risk-on sentiment in equities and rates supported virtually all hedge fund strategies.
- *Global Macro* (+4.6%) and *Managed Futures* (+4.7%) led, supported by continuing trends/bets in the rates markets.
- Most relative value strategies slogged forward; *Equity Market Neutral* (-0.3%) slipped, indicating challenges with stock-specific risk factors.
- *Long/Short Equity* (+1.3%) lagged equities; *Event-Driven Multi-Strategy* (+2.9%) performed better with soft catalyst-driven stocks continuing to rebound from the fourth quarter sell-off.
- *Risk Arb* (+0.7%) and *Distressed* (+1.5%) edged ahead with their process-driven or hard-catalyst trades.
- Hedge fund portfolios with more exposure to macro or long-biased strategies beat absolute return, particularly those trading equity fundamentals without beta exposure.

- The median manager in the **Callan Hedge Fund-of-Funds Database Group**, net of fees, gained 1.9% in the second quarter. Within that broad grouping, the *Long/Short Equity FOF Style Group* (+2.2%) saw the biggest increase, followed by *Core Diversified* (+1.6%) and *Absolute Return* (+1.1%).

Hedge Fund-of-Funds Style Group Returns



Sources: Callan, Credit Suisse, and Federal Reserve

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	1.85	5.06	2.69	5.14	4.59	4.59
Callan Absolute Return FOF Style	1.13	4.42	2.84	5.00	4.00	4.00
Callan Core Diversified FOF Style	1.56	4.52	2.16	4.95	4.61	4.61
Callan Long/Short Equity FOF Style	2.17	6.76	3.46	5.52	5.47	5.47
Credit Suisse Hedge Fund	2.35	4.34	2.36	5.03	5.01	5.01
CS Convertible Arbitrage	1.25	3.99	2.18	5.68	3.81	3.81
CS Distressed	1.52	5.23	1.22	5.82	5.63	5.63
CS Emerging Markets	1.41	6.19	4.08	5.73	6.57	6.57
CS Equity Market Neutral	-0.25	1.39	0.31	1.73	-0.26	-0.26
CS Event-Driven Multi	2.86	4.82	-0.09	4.19	5.20	5.20
CS Fixed Income Arb	1.21	5.19	3.36	6.55	3.78	3.78
CS Global Macro	4.55	4.81	3.01	5.23	6.26	6.26
CS Long/Short Equity	1.25	5.46	3.39	5.66	5.80	5.80
CS Managed Futures	4.73	-1.65	2.50	1.57	3.23	3.23
CS Multi-Strategy	2.11	4.87	4.45	6.93	5.95	5.95
CS Risk Arbitrage	0.70	3.89	2.04	3.03	3.74	3.74
HFRI Asset Wtd Composite	2.12	5.15	3.00	5.15	--	--
90-Day T-Bill + 5%	1.84	6.38	5.87	5.49	6.38	6.38

*Gross of fees. Sources: Bloomberg Barclays, Callan, Credit Suisse, Hedge Fund Research, Societe Generale, and Standard & Poor's

Continuing Rally Lifts Long-Biased MACs; Risk Premia Languished Again

- **HFR Risk Parity Index** targeting 12% volatility gained 4.9%, propelled by rising stock and bond markets, amplified by portfolio leverage.
- Across these risk premia represented by HFR's Risk Premia indexes, *Rates Momentum* (+18.6%) benefited from global yields continuing their slide. Negative effects from other risk premia, especially in equities and commodities, dragged down overall performance.
- The **Callan Multi-Asset Class (MAC) Database Group** increased 2.3% in the quarter. Within that group, the *Risk Parity MAC Style Group* rose 4.6%, followed by *Long Biased* (+2.6%) and *Absolute Return* (+1.8%). *Risk Premia* fell 1.3%.

Volatility Settles Down Again with Risk-On Sentiment

- Markets are discounting continued growth with lower expected rates priced into valuations.
- If hard economic data does not confirm the market's buoyant sentiment, hedge funds are well positioned defensively for a downturn.
- Without a sustained pick-up in volatility, hedge funds are likely to lag.

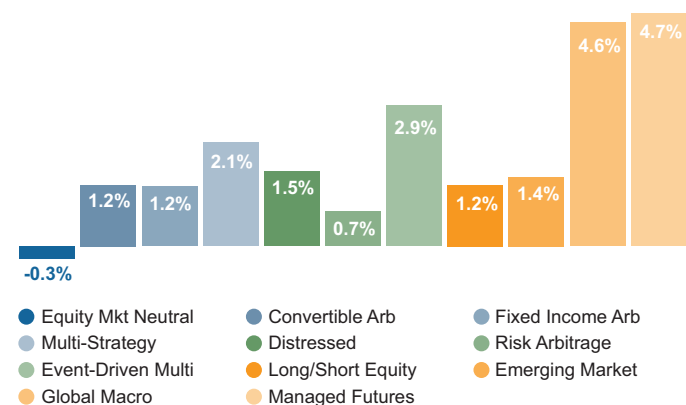
Flat Yield Curve Continues to Level Playing Field

- While both long and short rates settled to lower levels, today's positive short-term rates are still providing support to hedge funds on cash holdings and short interest rebates.
- If the Fed lowers rates aggressively from here due to weakening economic growth, fixed income and diversifying strategies of "hedged" funds will likely benefit at the expense of equities suffering from lowered earnings expectations.

Economic Divergence Creates More Opportunity

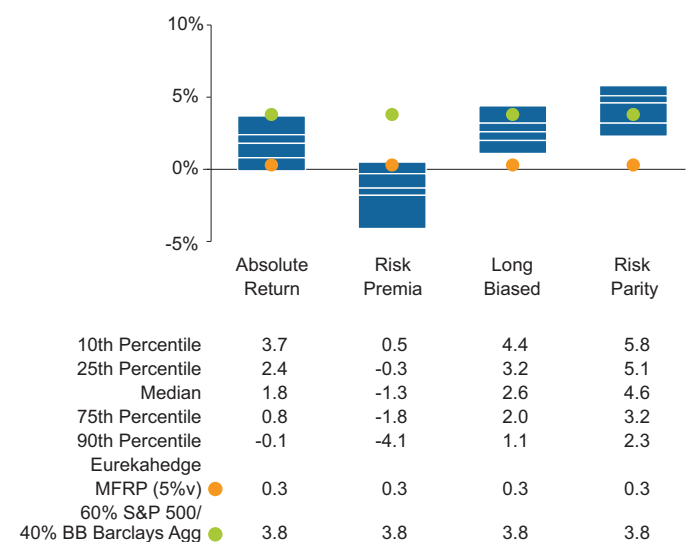
- Global macro tensions can lead to more fundamental and technical imbalances for hedge funds to trade.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



Sources: Bloomberg Barclays, Callan, Eurekahedge, Standard & Poor's

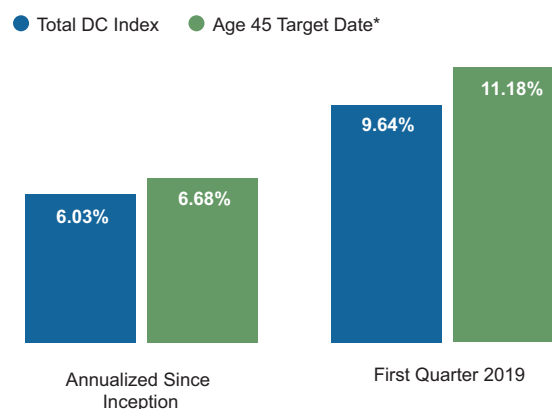
Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION | Patrick Wisdom

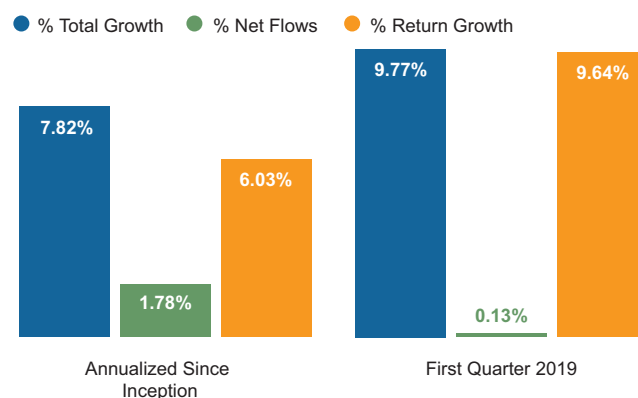
- After a rough finish to 2018, the Callan DC Index™ rebounded in the first quarter of 2019, gaining 9.6%. The Age 45 Target Date Fund posted even stronger results, gaining 11.2%, largely attributable to the Age 45 TDF's higher equity allocation (78% vs. 69%).
- After two quarters of negative flows, strong investment results and cash flows led to sizeable growth in balances in the first quarter, a reversal from two consecutive quarters of negative flows. The 9.8% total gain in market value for the quarter marked the highest since the first quarter of 2012 (9.9%).
- After an aberration in the fourth quarter, target date funds saw the largest inflows in the first quarter. Moreover, stable value experienced relatively large outflows after having the largest inflows the previous quarter. Despite strong equity gains in the first quarter, both U.S. and non-U.S. equity saw large outflows. At the same time, U.S. fixed and money market funds experienced relatively large inflows, perhaps indicating a shift toward safer securities within the core lineup.
- First quarter turnover (i.e., net transfer activity levels within DC plans) increased slightly to 0.48% from the previous quarter's 0.41%.
- After equities rebounded in the first quarter, the share of equity rose to 69.5% from 68.8% the previous quarter.
- Target date funds ended the quarter with 30% of assets, down from 33% the previous quarter. Among asset classes that increased, U.S. large cap (25%) and U.S./global balanced (7%) were up roughly 1 percentage point.
- Stable value's prevalence within DC plans rose for the sixth consecutive quarter and is now at 76%. Additionally, more plans are now offering emerging market equity (18%) as an option compared to the previous quarter.

The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over \$150 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.

Investment Performance



Growth Sources



Net Cash Flow Analysis (First Quarter 2019) (Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	73.22%
U.S. Fixed Income	21.27%
U.S./Global Balanced	-16.65%
U.S. Large Cap	-24.86%
Total Turnover**	0.48%

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

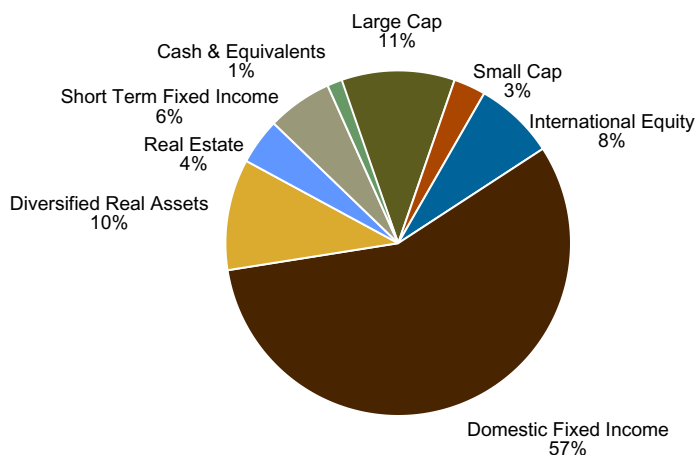
* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

** Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

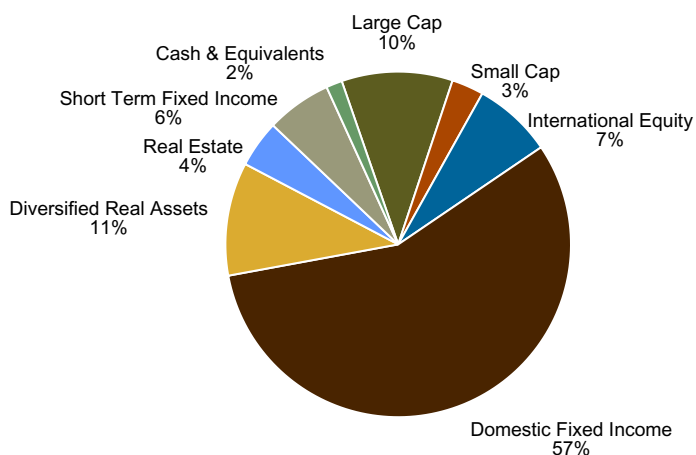
Actual vs Target Asset Allocation As of June 30, 2019

The first chart below shows the Fund's asset allocation as of June 30, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



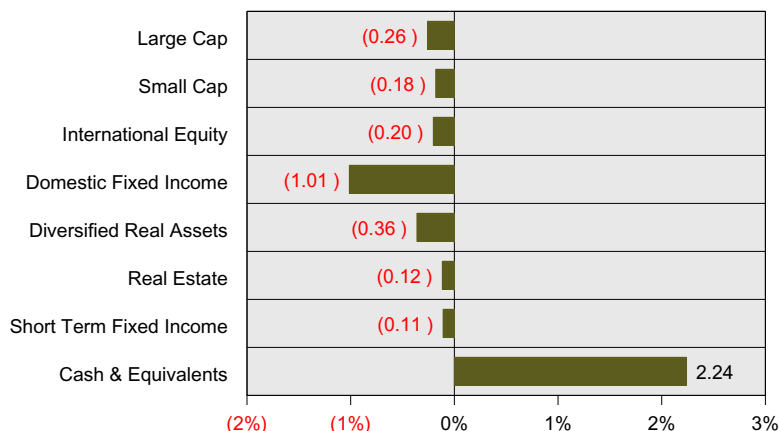
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	252,963	10.7%	10.4%	0.2%	5,779
Small Cap	70,403	3.0%	3.0%	(0.0%)	(39)
International Equity	178,776	7.5%	7.4%	0.1%	2,897
Domestic Fixed Income	1,346,993	56.7%	56.6%	0.2%	3,592
Diversified Real Assets	246,754	10.4%	10.6%	(0.2%)	(5,578)
Real Estate	101,176	4.3%	4.4%	(0.1%)	(2,165)
Short Term Fixed Income	145,741	6.1%	6.1%	(0.0%)	(13)
Cash & Equivalents	32,228	1.4%	1.5%	(0.2%)	(4,473)
Total	2,375,034	100.0%	100.0%		

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

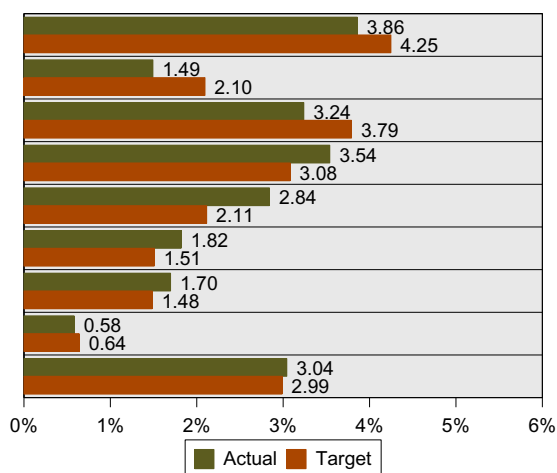
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

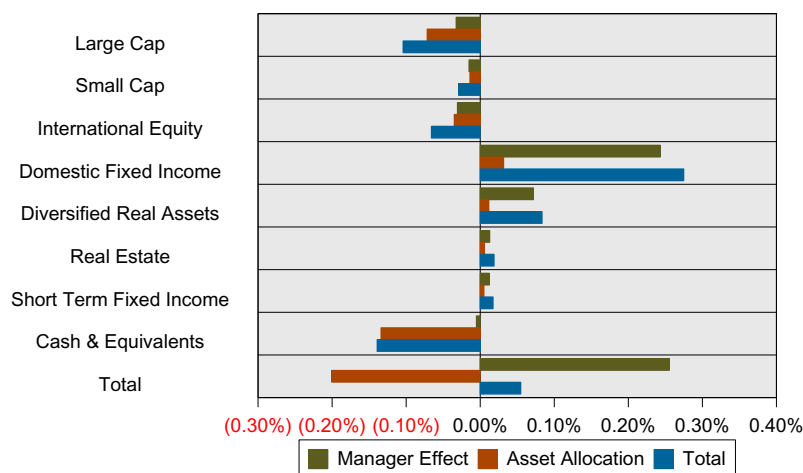
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

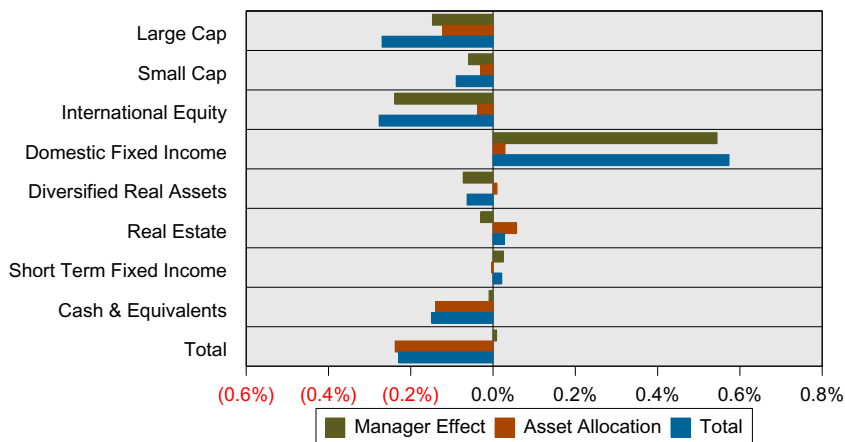
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	10%	3.86%	4.25%	(0.03%)	(0.07%)	(0.10%)
Small Cap	3%	3%	1.49%	2.10%	(0.02%)	(0.01%)	(0.03%)
International Equity	7%	7%	3.24%	3.79%	(0.03%)	(0.04%)	(0.07%)
Domestic Fixed Income	53%	54%	3.54%	3.08%	0.24%	0.03%	0.27%
Diversified Real Assets	10%	10%	2.84%	2.11%	0.07%	0.01%	0.08%
Real Estate	4%	4%	1.82%	1.51%	0.01%	0.01%	0.02%
Short Term Fixed Income	6%	6%	1.70%	1.48%	0.01%	0.01%	0.02%
Cash & Equivalents	8%	6%	0.58%	0.64%	(0.01%)	(0.13%)	(0.14%)
Total			3.04%	2.99%	+ 0.26%	+ (0.20%)	0.05%

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

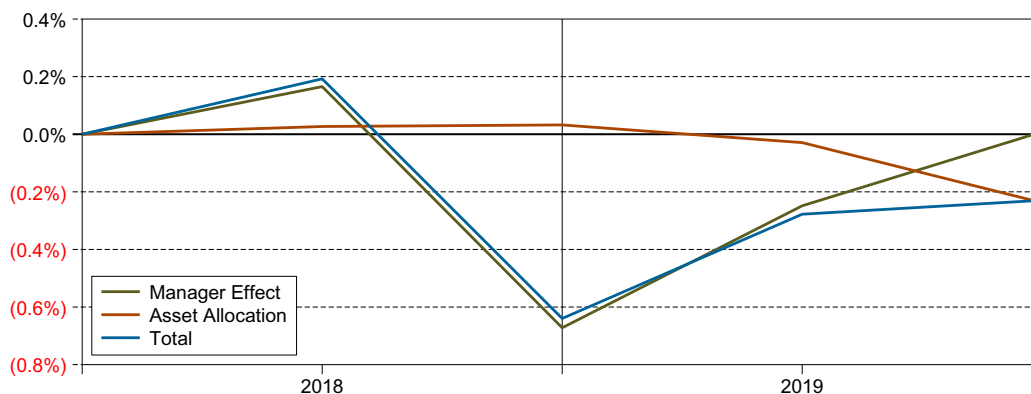
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

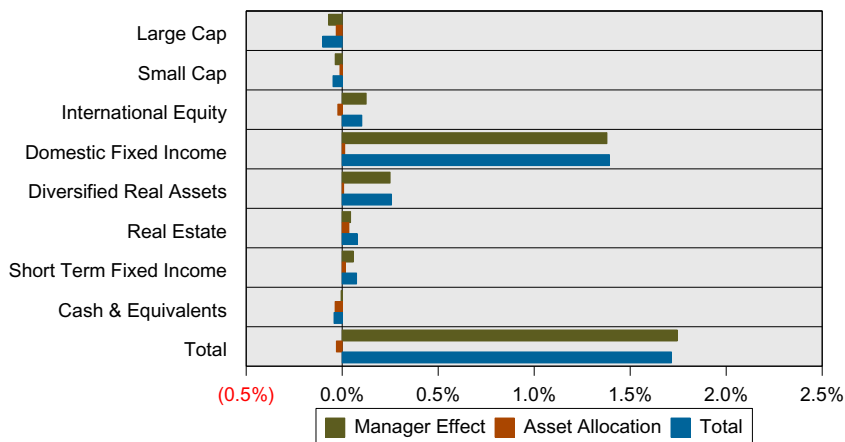
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	10%	8.43%	10.02%	(0.15%)	(0.12%)	(0.27%)
Small Cap	3%	3%	(5.14%)	(3.31%)	(0.06%)	(0.03%)	(0.09%)
International Equity	7%	7%	(2.16%)	1.29%	(0.24%)	(0.04%)	(0.28%)
Domestic Fixed Income	53%	54%	8.94%	7.87%	0.54%	0.03%	0.57%
Diversified Real Assets	11%	11%	4.25%	4.71%	(0.07%)	0.01%	(0.06%)
Real Estate	5%	4%	5.74%	6.51%	(0.03%)	0.06%	0.03%
Short Term Fixed Income	6%	6%	4.68%	4.27%	0.02%	(0.00%)	0.02%
Cash & Equivalents	5%	5%	2.15%	2.31%	(0.01%)	(0.14%)	(0.15%)
Total			6.58%	6.81%	0.01%	(0.24%)	(0.23%)

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

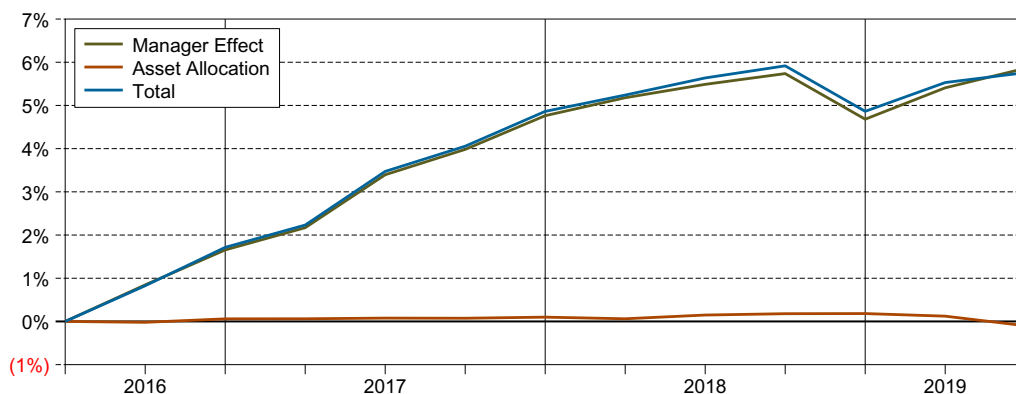
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

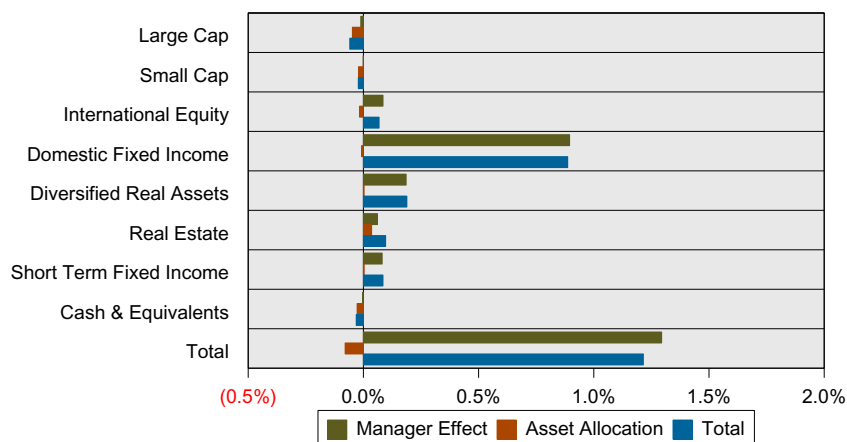
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	13.39%	14.15%	(0.07%)	(0.03%)	(0.10%)
Small Cap	3%	3%	11.14%	12.30%	(0.04%)	(0.01%)	(0.05%)
International Equity	8%	8%	10.37%	9.01%	0.12%	(0.02%)	0.10%
Domestic Fixed Income	51%	52%	5.07%	2.31%	1.38%	0.01%	1.39%
Diversified Real Assets	12%	12%	5.25%	3.20%	0.25%	0.01%	0.26%
Real Estate	6%	5%	7.44%	6.89%	0.04%	0.03%	0.08%
Short Term Fixed Income	6%	6%	1.99%	1.49%	0.06%	0.02%	0.07%
Cash & Equivalents	4%	4%	1.26%	1.38%	(0.01%)	(0.04%)	(0.04%)
Total			6.66%	4.94%	+ 1.74%	+ (0.03%)	1.71%

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

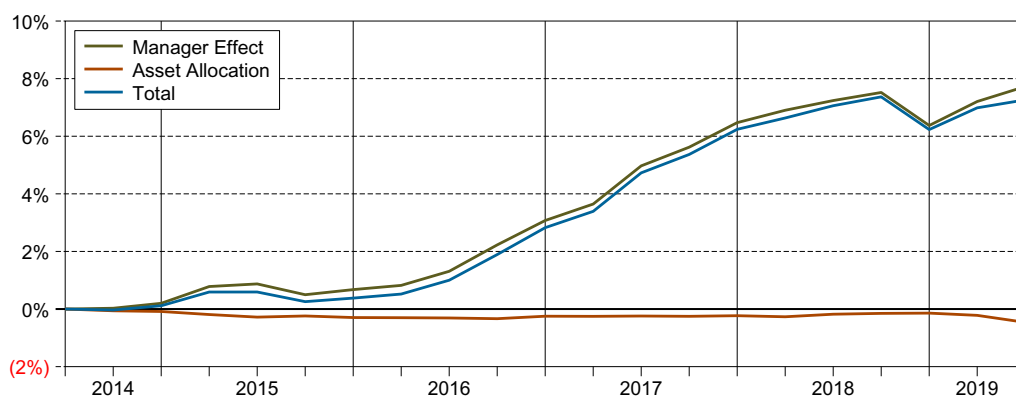
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

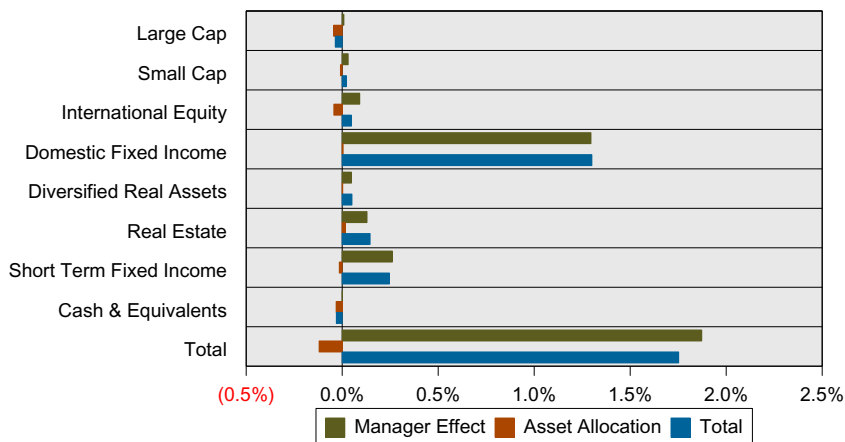
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	10.34%	10.45%	(0.01%)	(0.05%)	(0.06%)
Small Cap	4%	4%	7.02%	7.06%	(0.00%)	(0.02%)	(0.02%)
International Equity	8%	8%	3.35%	2.19%	0.09%	(0.02%)	0.07%
Domestic Fixed Income	46%	47%	4.79%	2.95%	0.89%	(0.01%)	0.89%
Diversified Real Assets	11%	11%	3.64%	2.04%	0.19%	0.00%	0.19%
Real Estate	5%	5%	9.78%	8.83%	0.06%	0.04%	0.10%
Short Term Fixed Income	11%	11%	1.92%	1.33%	0.08%	0.00%	0.08%
Cash & Equivalents	3%	3%	0.78%	0.87%	(0.00%)	(0.03%)	(0.03%)
Total			5.17%	3.95%	+ 1.29%	+ (0.08%)	1.22%

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

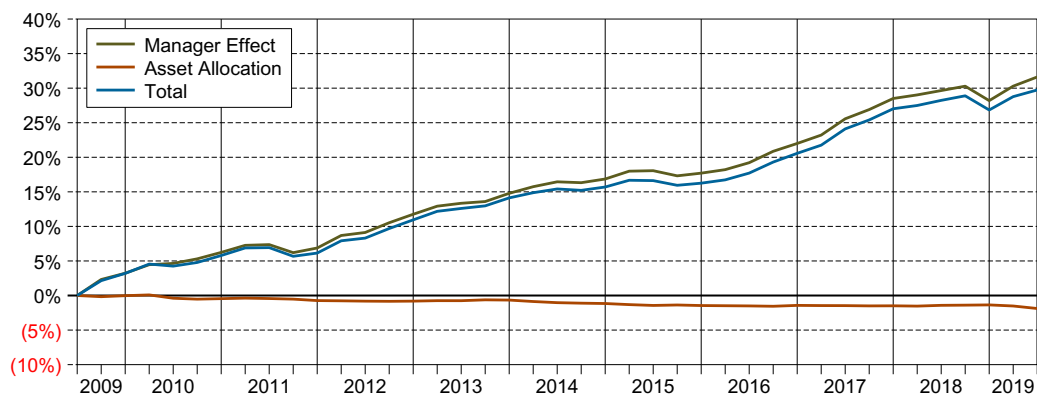
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Ten Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Ten Year Annualized Relative Attribution Effects

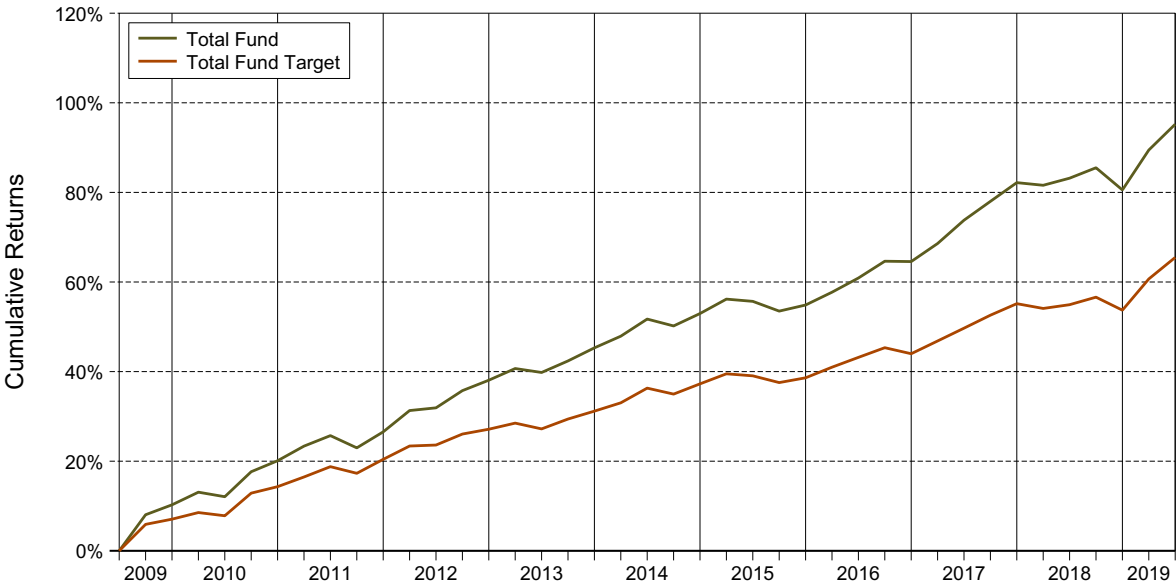
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	10%	14.86%	14.68%	0.01%	(0.04%)	(0.04%)
Small Cap	3%	3%	14.49%	13.45%	0.03%	(0.01%)	0.02%
International Equity	7%	7%	8.04%	6.56%	0.09%	(0.04%)	0.05%
Domestic Fixed Income	42%	42%	7.08%	3.90%	1.30%	0.00%	1.30%
Diversified Real Assets	13%	13%	4.59%	3.91%	0.05%	0.00%	0.05%
Real Estate	5%	4%	11.15%	9.25%	0.13%	0.02%	0.15%
Short Term Fixed Income	17%	17%	2.85%	1.39%	0.26%	(0.01%)	0.25%
Cash & Equivalents	4%	3%	0.51%	0.49%	0.00%	(0.03%)	(0.03%)
Total			6.92%	5.17%	1.87%	(0.12%)	1.75%

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

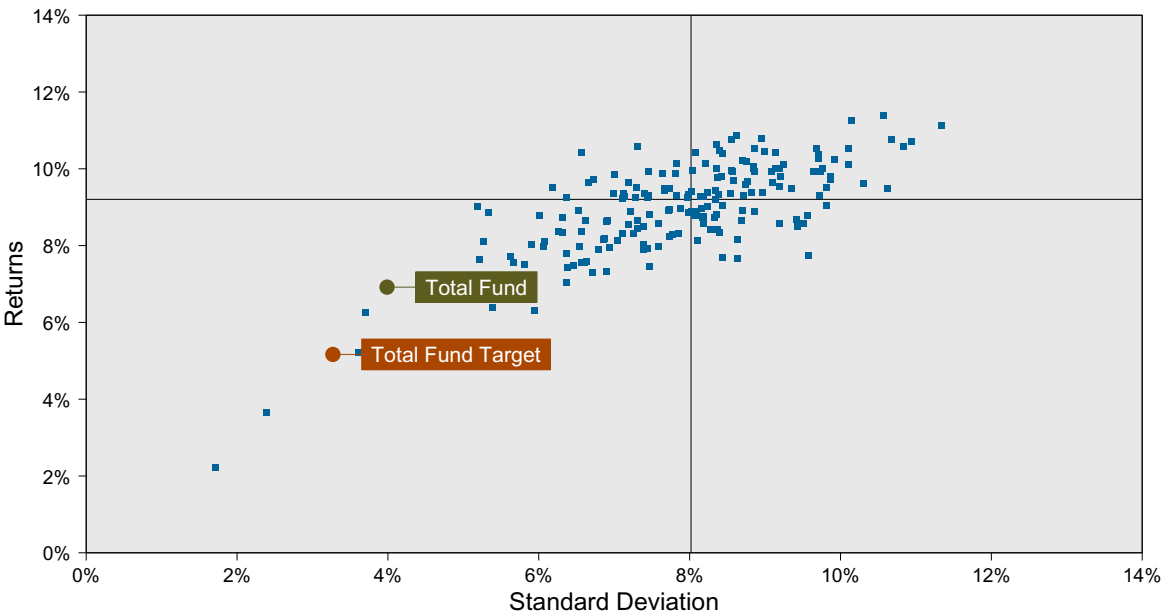
Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Sponsor Database.

Cumulative Returns Actual vs Target



Ten Year Annualized Risk vs Return



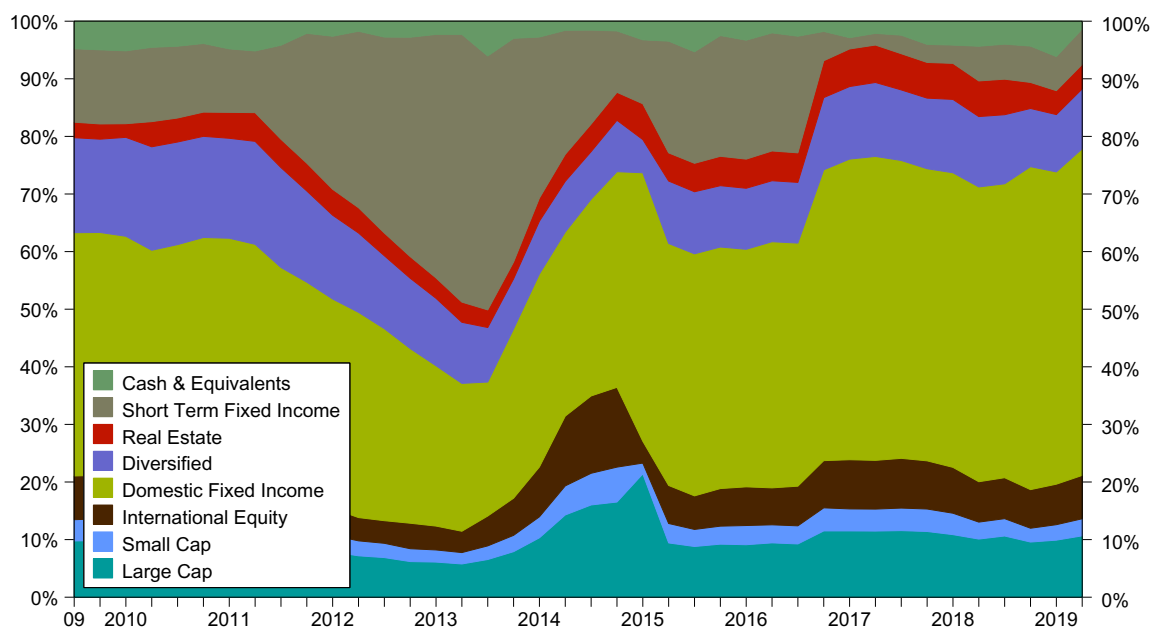
Squares represent membership of the Callan Public Fund Sponsor Database

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

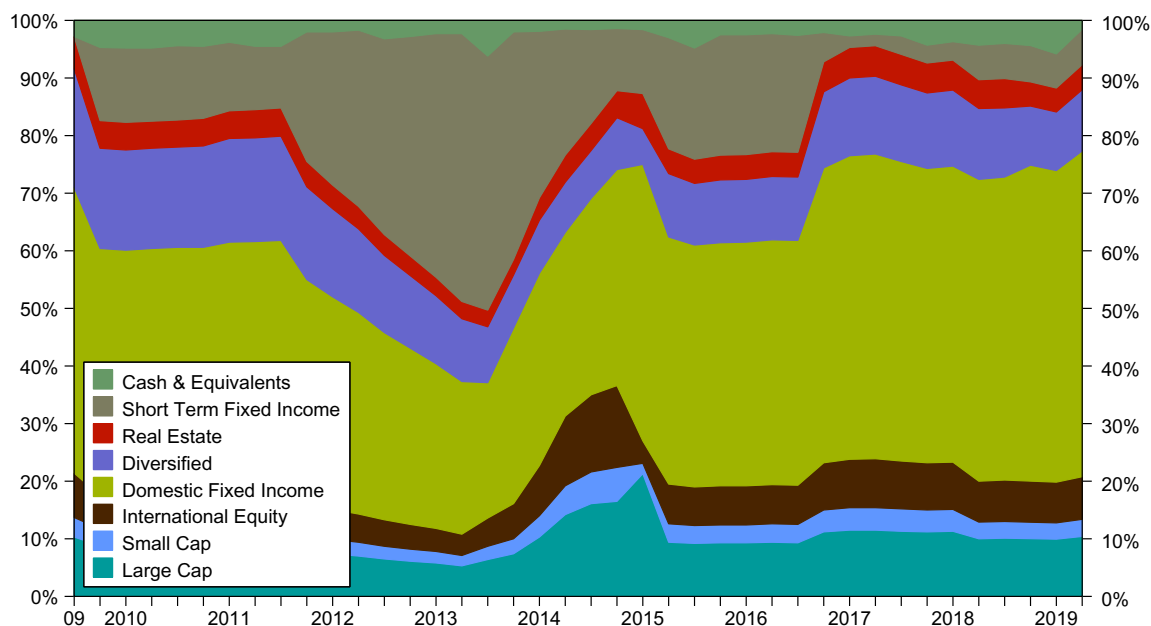
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, and the fund's historical target asset allocation.

Actual Historical Asset Allocation



Target Historical Asset Allocation

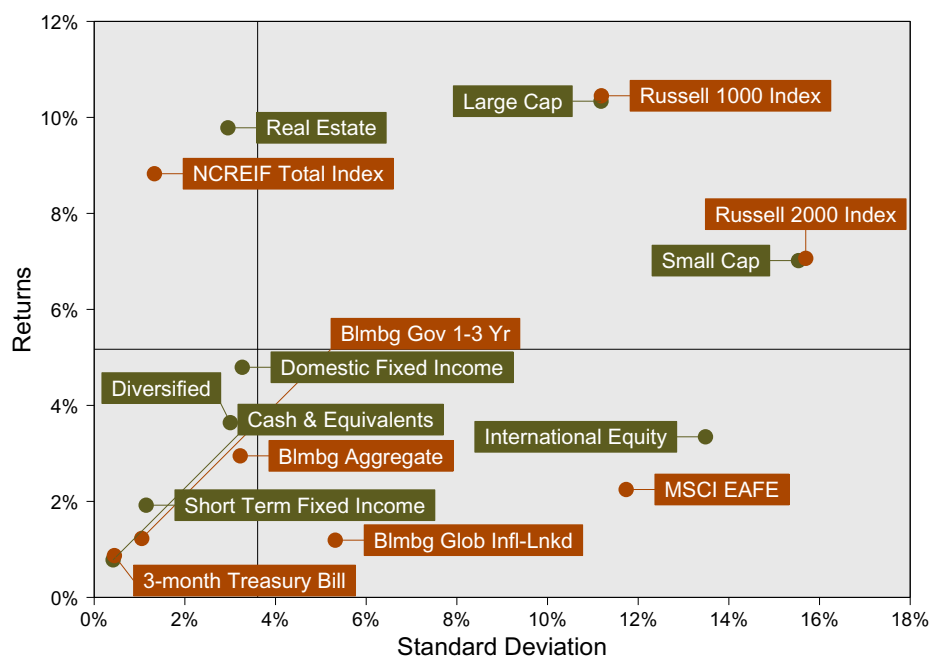


* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

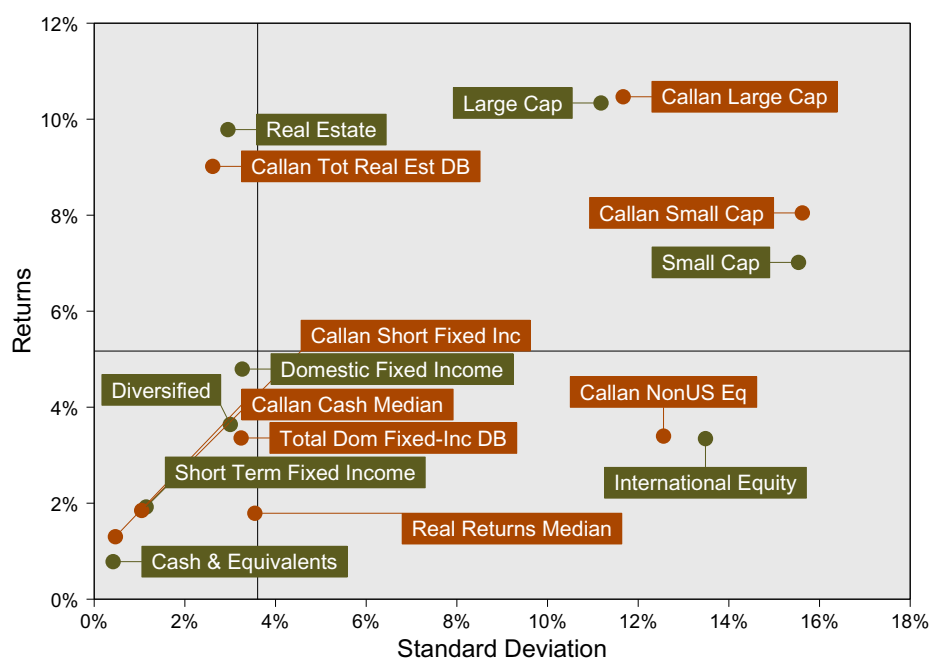
Asset Class Risk and Return

The charts below show the five year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

Five Year Annualized Risk vs Return Asset Classes vs Benchmark Indices



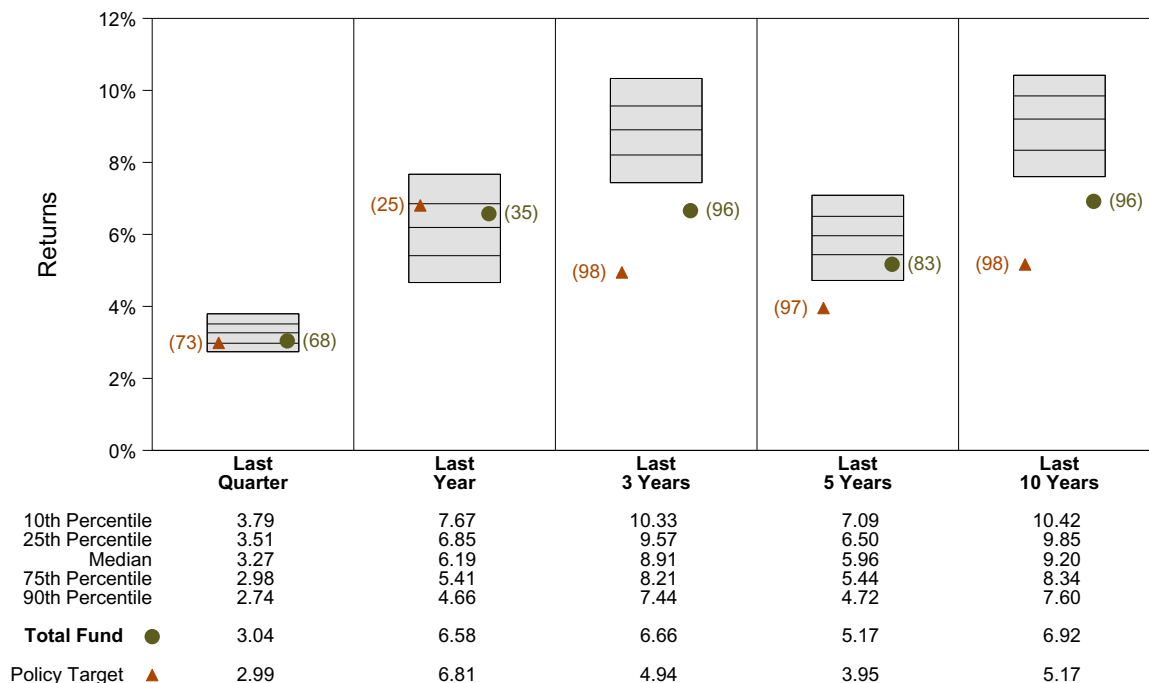
Five Year Annualized Risk vs Return Asset Classes vs Asset Class Median



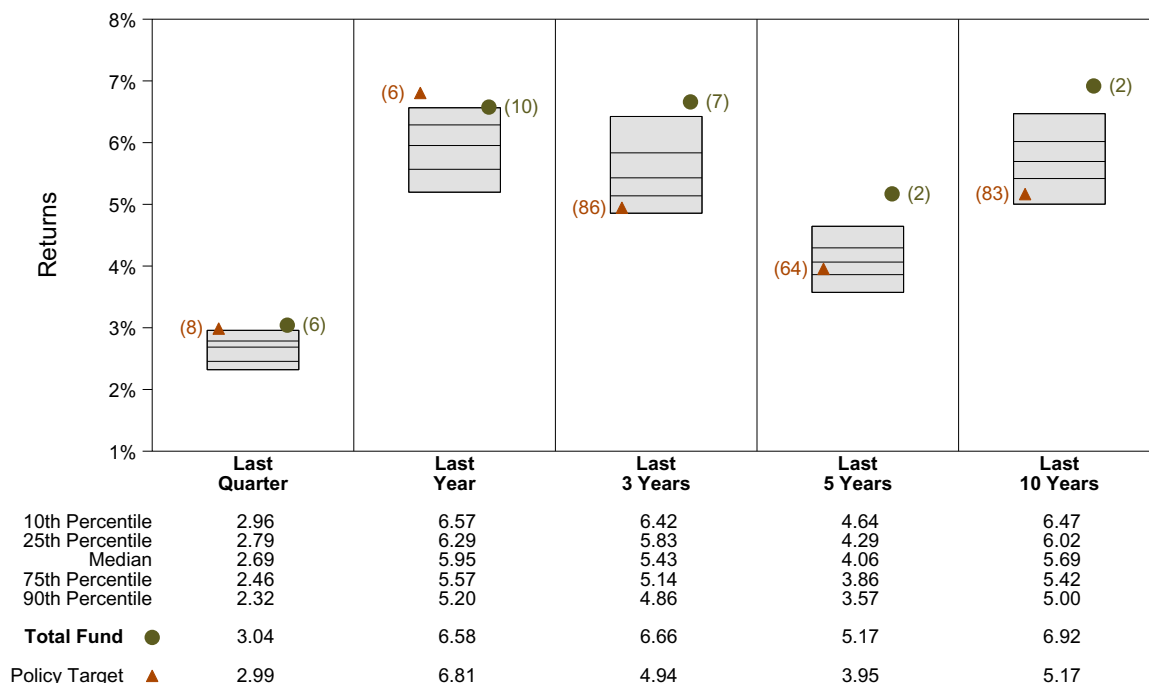
Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended June 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

Callan Public Fund Sponsor Database



Asset Allocation Adjusted Ranking

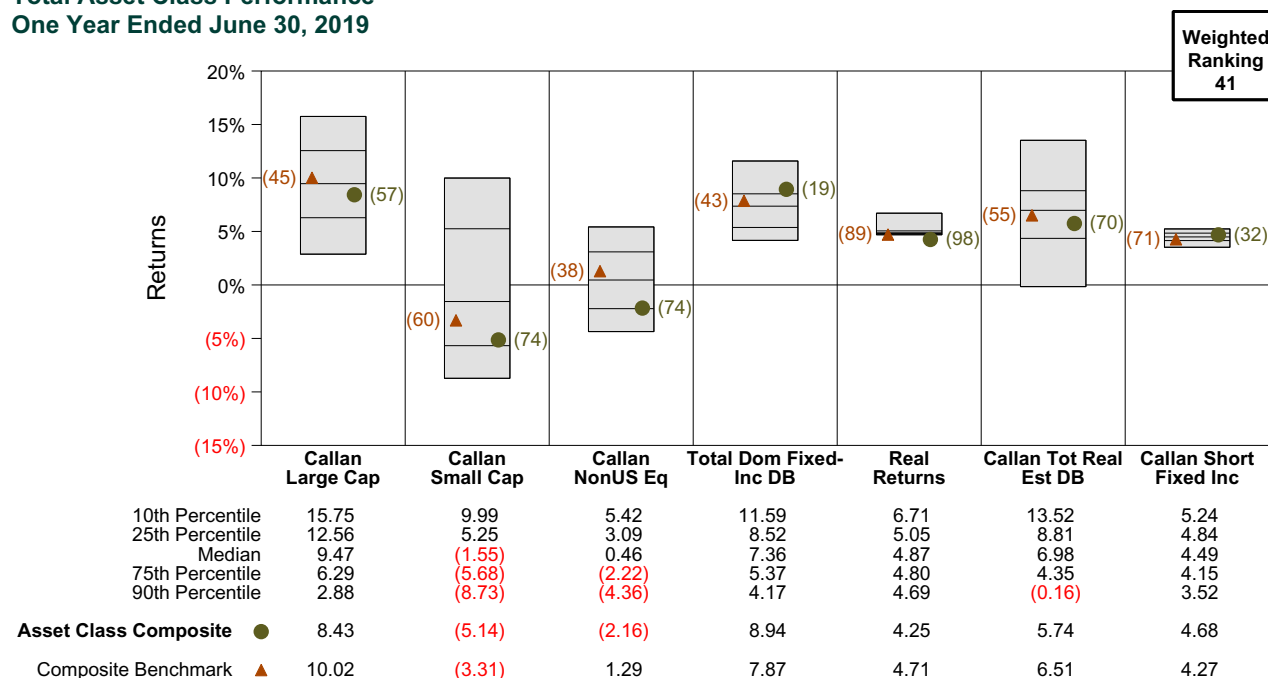


* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

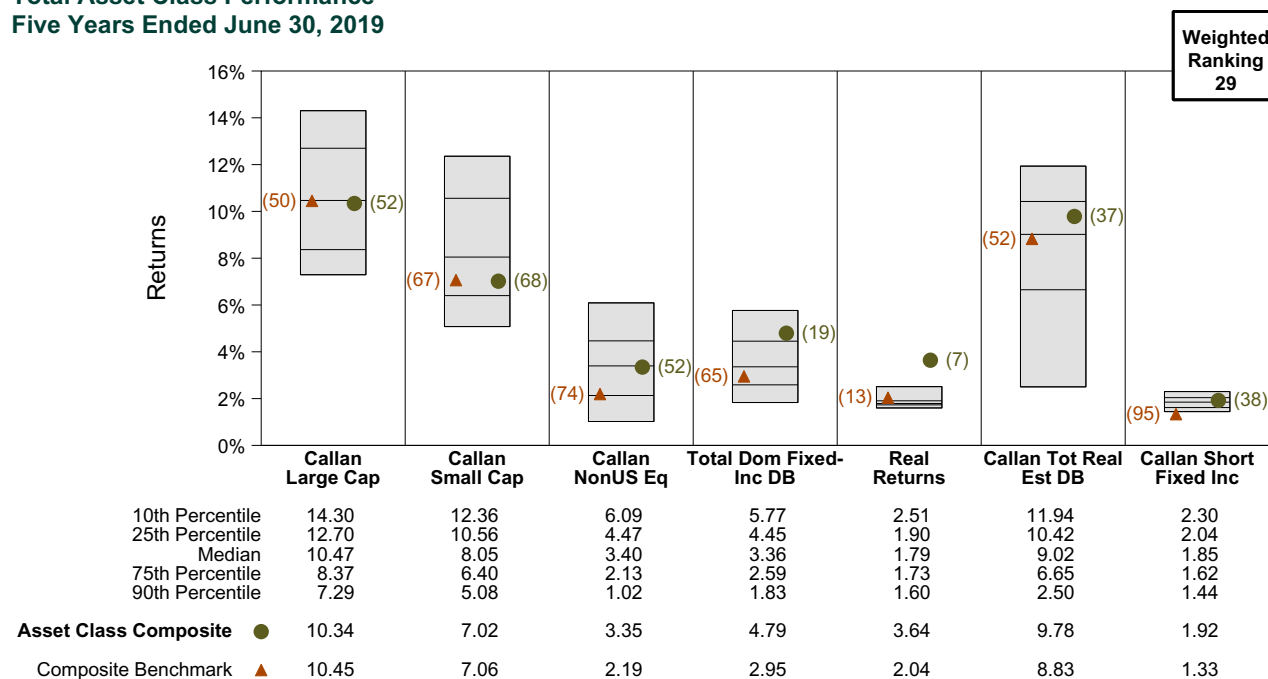
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Five Years Ended June 30, 2019



* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equity	\$502,141,611	21.14%	\$10,946,098	\$16,227,439	\$474,968,073	19.62%
Domestic Equity	\$323,366,030	13.62%	\$8,076,540	\$10,612,049	\$304,677,442	12.59%
Large Cap	\$252,962,816	10.65%	\$3,897,009	\$9,348,631	\$239,717,177	9.90%
Parametric Clifton Large Cap	51,981,053	2.19%	1,000,000	2,226,823	48,754,229	2.01%
L.A. Capital Large Cap Growth	77,797,475	3.28%	961,382	3,655,746	73,180,347	3.02%
L.A. Capital Enhanced	52,155,741	2.20%	1,986,565	1,769,951	48,399,225	2.00%
LSV Large Cap Value	71,028,548	2.99%	(50,938)	1,696,110	69,383,375	2.87%
Small Cap	\$70,403,214	2.96%	\$4,179,531	\$1,263,418	\$64,960,265	2.68%
Parametric Clifton Small Cap	35,341,520	1.49%	1,600,000	815,229	32,926,291	1.36%
PIMCO RAE	35,061,694	1.48%	2,579,531	448,189	32,033,974	1.32%
International Equity	\$178,775,580	7.53%	\$2,869,559	\$5,615,390	\$170,290,631	7.04%
DFA Int'l Small Cap Value	17,820,535	0.75%	1,000,000	37,987	16,782,548	0.69%
LSV Intl Value	66,860,204	2.82%	(64,394)	722,677	66,201,922	2.73%
Vanguard Intl Explorer Fund	18,391,313	0.77%	1,000,000	310,578	17,080,734	0.71%
William Blair	75,703,528	3.19%	933,953	4,544,148	70,225,427	2.90%
Domestic Fixed Income	\$1,346,992,559	56.71%	\$(11,524,644)	\$46,300,526	\$1,312,216,677	54.21%
Declaration Total Return	91,947,505	3.87%	(50,059)	2,120,723	89,876,841	3.71%
PIMCO Core Plus Constrained	153,247,435	6.45%	150,000,000	3,247,435	-	-
PIMCO DiSCO II	84,464,145	3.56%	0	1,367,651	83,096,494	3.43%
PIMCO Bravo II Fund	28,634,489	1.21%	(1,888,308)	2,298,317	28,224,480	1.17%
Prudential	332,753,794	14.01%	26,835,577	11,296,754	294,621,463	12.17%
SSgA US Govt Credit Bd Idx	180,632,336	7.61%	(2,914)	6,196,361	174,438,888	7.21%
Wells Capital	106,406,242	4.48%	(172,108,612)	7,921,021	270,593,833	11.18%
Western Asset Management	368,906,614	15.53%	(14,310,328)	11,852,264	371,364,678	15.34%
Global Real Assets	\$347,929,996	14.65%	\$(2,266,124)	\$8,661,216	\$341,534,905	14.11%
Real Estate	\$101,176,354	4.26%	\$(1,169,718)	\$1,818,260	\$100,527,812	4.15%
Invesco Core Real Estate	52,590,695	2.21%	(501,696)	1,117,924	51,974,467	2.15%
JP Morgan RE Inc & Growth	48,585,659	2.05%	(668,022)	700,336	48,553,344	2.01%
Diversified	\$246,753,642	10.39%	\$(1,096,406)	\$6,842,956	\$241,007,093	9.96%
Western Asset TIPS	135,293,057	5.70%	(37,165)	3,981,782	131,348,439	5.43%
JP Morgan Infrastructure	44,477,897	1.87%	(1,007,249)	1,672,986	43,812,159	1.81%
Eastern Timber Opportunities	53,916,906	2.27%	(51,993)	961,949	53,006,950	2.19%
Grosvenor Cust. Infrastructure	13,065,783	0.55%	0	226,238	12,839,545	0.53%
Short Term Fixed Income	\$145,741,136	6.14%	\$(94,628)	\$2,432,114	\$143,403,650	5.92%
JP Morgan Short Term Bonds	145,741,136	6.14%	(94,628)	2,432,114	143,403,650	5.92%
Cash	\$32,228,397	1.36%	\$(117,378,247)	\$1,132,511	\$148,474,133	6.13%
Northern Trust Cash Account	4,777,452	0.20%	(68,108,285)	370,699	72,515,037	3.00%
Bank of ND	27,450,945	1.16%	(49,269,961)	761,811	75,959,095	3.14%
Securities Lending Income	\$0	0.00%	\$(35,164)	\$35,164	-	-
Total Fund	\$2,375,033,699	100.0%	\$(120,352,709)	\$74,788,970	\$2,420,597,438	100.0%

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Equity					
Gross	3.31%	2.72%	-	-	-
Net	3.26%	2.51%	-	-	-
Weighted Benchmark	3.79%	4.99%	-	-	-
Domestic Equity					
Gross	3.35%	5.36%	13.03%	9.59%	14.84%
Net	3.31%	5.19%	12.80%	9.36%	14.46%
Weighted Benchmark	3.77%	6.96%	-	-	-
Large Cap					
Gross	3.86%	8.43%	13.39%	10.34%	14.86%
Net	3.81%	8.25%	13.17%	10.13%	14.53%
Benchmark(1)	4.25%	10.02%	14.15%	10.45%	14.68%
Parametric Clifton Large Cap - Gross	4.47%	10.39%	13.97%	10.81%	15.29%
Parametric Clifton Large Cap - Net	4.47%	10.39%	13.89%	10.73%	14.72%
S&P 500 Index	4.30%	10.42%	14.19%	10.71%	14.70%
L.A. Capital - Gross	4.97%	12.22%	15.55%	12.86%	16.23%
L.A. Capital - Net	4.92%	11.98%	15.31%	12.63%	15.99%
Russell 1000 Growth Index	4.64%	11.56%	18.07%	13.39%	16.28%
L.A. Capital Enhanced - Gross	3.58%	10.82%	13.00%	10.64%	15.01%
L.A. Capital Enhanced - Net	3.55%	10.69%	12.86%	10.50%	14.84%
Russell 1000 Index	4.25%	10.02%	14.15%	10.45%	14.77%
LSV Asset Management - Gross	2.44%	1.42%	10.65%	7.08%	13.98%
LSV Asset Management - Net	2.37%	1.13%	10.32%	6.77%	13.63%
Russell 1000 Value Index	3.84%	8.46%	10.19%	7.46%	13.19%
Small Cap					
Gross	1.49%	(5.14%)	11.14%	7.02%	14.49%
Net	1.46%	(5.26%)	10.85%	6.71%	13.97%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.45%
Parametric Clifton Small Cap - Gross	2.14%	(3.67%)	12.30%	7.69%	14.70%
Parametric Clifton SmallCap - Net	2.14%	(3.67%)	12.02%	7.38%	14.09%
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.45%
PIMCO RAE - Gross	0.83%	(6.64%)	9.96%	6.16%	14.26%
PIMCO RAE - Net	0.77%	(6.88%)	9.68%	5.88%	13.84%
Russell 2000	2.10%	(3.31%)	12.30%	7.06%	13.45%
International Equity					
Gross	3.24%	(2.16%)	10.37%	3.35%	8.04%
Net	3.16%	(2.46%)	10.04%	3.02%	7.71%
Benchmark(2)	3.79%	1.29%	9.01%	2.19%	6.56%
DFA Intl Small Cap Value - Net	0.15%	(11.54%)	6.29%	1.05%	8.17%
World ex US SC Va	0.92%	(6.40%)	7.72%	1.89%	8.40%
LSV Asset Management - Gross	1.09%	(4.94%)	8.53%	1.87%	6.91%
LSV Asset Management - Net	0.99%	(5.30%)	8.11%	1.47%	6.53%
Benchmark(3)	3.68%	1.08%	9.11%	2.25%	6.58%
Vanguard Intl Explorer Fund - Net	1.68%	(11.72%)	7.60%	3.05%	8.63%
BMI, EPAC, <\$2 B	0.02%	(9.91%)	6.36%	3.29%	8.09%
William Blair - Gross	6.40%	5.54%	13.60%	-	-
William Blair - Net	6.31%	5.13%	13.18%	-	-
MSCI ACWI ex US IMI	2.74%	0.26%	9.17%	2.25%	6.78%

(1) S&P 500 Index through 12/31/2011 and Russell 1000 Index thereafter.

(2) MSCI EAFE through 9/30/2000; 50% Hedged EAFE through 3/31/2011; MSCI EAFE again through 6/30/2016; MSCI World ex-US thereafter.

(3) MSCI EAFE through 9/30/2000; 50% Hedged EAFE through 3/31/2011; MSCI EAFE again thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Fixed Income					
Gross	3.54%	8.94%	5.07%	4.79%	7.08%
Net	3.51%	8.82%	4.95%	4.67%	6.93%
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Declaration Total Return - Net	2.36%	6.47%	4.93%	4.18%	-
Libor-3 Month	0.63%	2.61%	1.78%	1.21%	0.78%
PIMCO DiSCO II - Net	1.65%	5.90%	10.90%	8.24%	-
PIMCO Bravo II Fund - Net	8.39%	3.10%	7.41%	7.91%	-
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Prudential - Gross	3.61%	9.47%	4.28%	4.44%	6.48%
Prudential - Net	3.56%	9.24%	4.02%	4.18%	6.29%
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Wells Capital - Gross	5.11%	11.75%	5.63%	4.99%	7.56%
Wells Capital - Net	5.07%	11.58%	5.46%	4.81%	7.35%
Blmbg Credit Baa	4.80%	11.39%	4.67%	4.18%	6.59%
Western Asset - Gross	3.24%	9.07%	4.07%	4.35%	6.51%
Western Asset - Net	3.21%	8.94%	3.94%	4.21%	6.35%
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
SSgA US Govt Cr Bd Idx - Gross	3.55%	8.57%	2.43%	3.12%	-
SSgA US Govt Cr Bd Idx - Net	3.55%	8.55%	2.40%	3.09%	-
Blmbg Govt/Credit Bd	3.53%	8.52%	2.41%	3.11%	4.09%
Global Real Assets					
Gross	2.54%	4.81%	-	-	-
Net	2.41%	4.49%	-	-	-
Weighted Benchmark	1.94%	5.21%	-	-	-
Real Estate					
Gross	1.82%	5.74%	7.44%	9.78%	11.15%
Net	1.55%	5.15%	6.83%	9.10%	10.19%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.25%
Invesco Core Real Estate - Gross	2.16%	7.09%	7.96%	10.20%	-
Invesco Core Real Estate - Net	1.99%	6.69%	7.58%	9.81%	-
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.25%
JP Morgan - Gross	1.45%	4.21%	6.85%	9.40%	11.31%
JP Morgan - Net	1.07%	3.43%	6.04%	8.45%	10.14%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.25%

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Diversified					
Gross	2.84%	4.25%	5.25%	3.64%	4.59%
Net	2.76%	4.05%	5.00%	3.36%	4.24%
Weighted Benchmark	2.11%	4.71%	3.20%	2.04%	3.91%
Western Asset TIPS - Gross	3.03%	3.71%	2.41%	1.39%	3.22%
Western Asset TIPS - Net	3.00%	3.58%	2.28%	1.26%	3.03%
Benchmark(1)	2.95%	4.61%	2.93%	1.38%	3.57%
JP Morgan Infrastructure - Gross	3.83%	7.58%	8.40%	6.00%	6.68%
JP Morgan Infrastructure - Net	3.49%	6.92%	7.70%	5.15%	5.58%
Benchmark(2)	1.15%	3.91%	2.83%	1.74%	1.95%
Eastern Timber Opportunities - Net	1.82%	(0.44%)	5.77%	4.27%	4.13%
NCREIF Timberland Index	1.04%	3.18%	3.37%	4.67%	4.00%
Grosvenor Cust. Infrastructure - Net	1.76%	3.58%	6.44%	6.62%	-
Benchmark(2)	1.15%	3.91%	2.83%	1.74%	1.95%
Short Term Fixed Income					
Gross	1.70%	4.68%	1.99%	1.92%	2.85%
Net	1.63%	4.55%	1.80%	1.74%	2.73%
Benchmark(3)	1.48%	4.27%	1.49%	1.33%	-
JP Morgan Short Term Bds - Gross	1.70%	4.68%	1.79%	1.66%	-
JP Morgan Short Term Bds - Net	1.63%	4.55%	1.61%	1.51%	-
Blmbg Gov/Credit 1-3 Y	1.48%	4.27%	1.59%	1.46%	1.59%
Cash & Equivalents - Net	0.58%	2.15%	1.26%	0.78%	0.51%
Cash Account- Net	0.55%	2.09%	1.16%	0.72%	0.48%
Bank of ND - Net	0.59%	2.27%	-	-	-
90 Day Treasury Bills	0.64%	2.31%	1.38%	0.87%	0.49%
Total Fund					
Gross	3.04%	6.58%	6.66%	5.17%	6.92%
Net	2.99%	6.41%	6.47%	4.97%	6.68%
Target*	2.99%	6.81%	4.94%	3.95%	5.17%

* Current Quarter Target = 56.6% Blmbg Aggregate, 10.6% NDSIB INS DRA Weighted Benchmark, 10.4% Russell 1000 Index, 7.4% MSCI World ex US, 6.1% Blmbg Gov/Cred 1-3 Yr, 4.4% NCREIF Total Index, 3.0% Russell 2000 Index and 1.5% 3-month Treasury Bill.

(1) Blmbg US TIPS through 12/31/2009; Blmbg Global Inflation-Linked through 10/31/18; Blmbg US Government Inflation Bond Index thereafter.

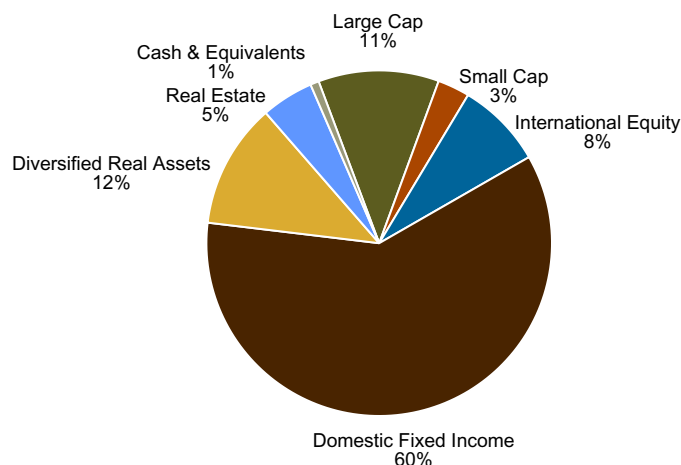
(2) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

(3) Blmbg Gov 1-3 Yr through March 31, 2017 and Blmbg Gov/Credit 1-3 Yr thereafter.

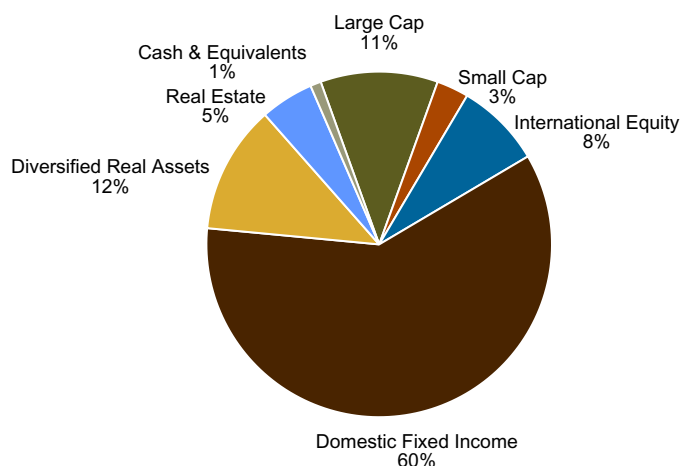
Actual vs Target Asset Allocation As of June 30, 2019

The first chart below shows the Fund's asset allocation as of June 30, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



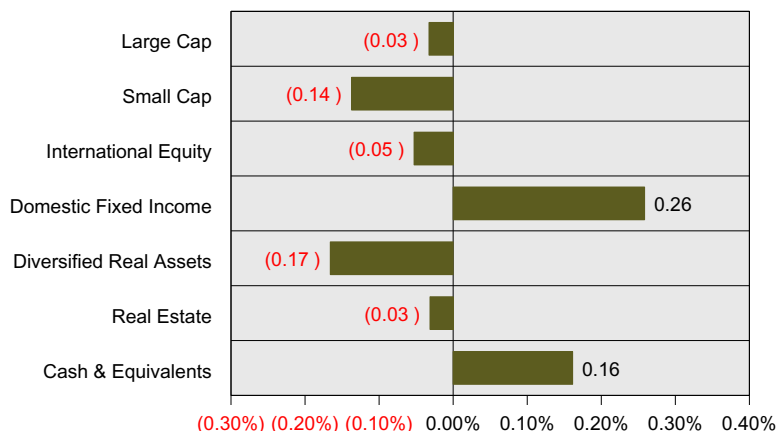
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	232,923	11.3%	11.0%	0.3%	5,729
Small Cap	61,960	3.0%	3.0%	(0.0%)	(2)
International Equity	168,036	8.1%	8.0%	0.1%	2,804
Domestic Fixed Income	1,242,884	60.2%	60.0%	0.2%	3,644
Diversified Real Assets	242,302	11.7%	12.0%	(0.3%)	(5,546)
Real Estate	101,105	4.9%	5.0%	(0.1%)	(2,165)
Cash & Equivalents	16,189	0.8%	1.0%	(0.2%)	(4,465)
Total	2,065,400	100.0%	100.0%		

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

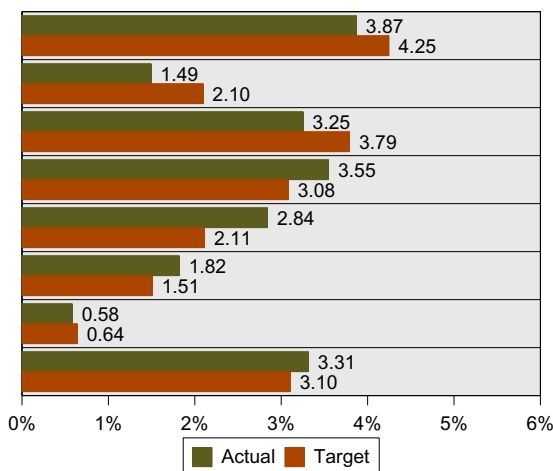
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

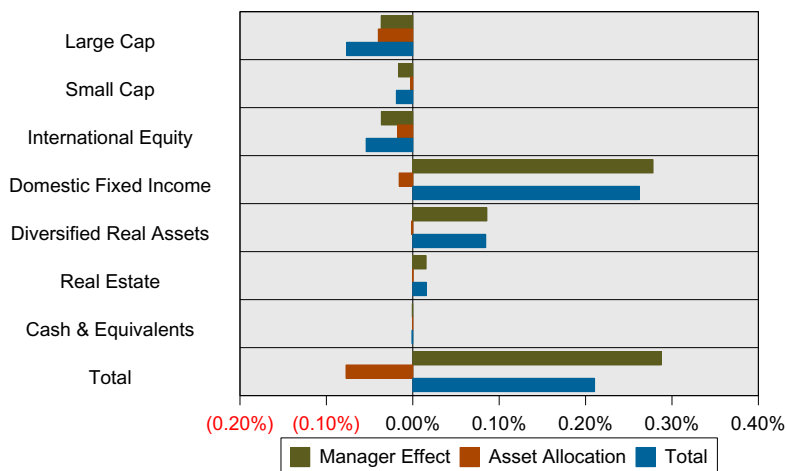
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

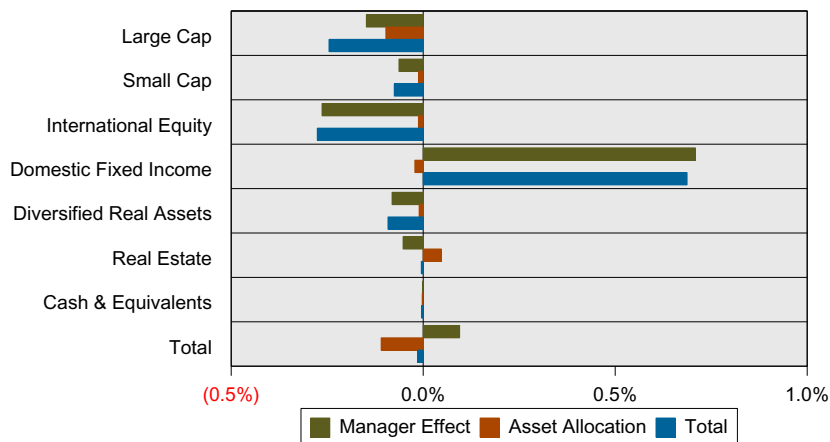
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	3.87%	4.25%	(0.04%)	(0.04%)	(0.08%)
Small Cap	3%	3%	1.49%	2.10%	(0.02%)	(0.00%)	(0.02%)
International Equity	8%	8%	3.25%	3.79%	(0.04%)	(0.02%)	(0.05%)
Domestic Fixed Income	60%	60%	3.55%	3.08%	0.28%	(0.02%)	0.26%
Diversified Real Assets	12%	12%	2.84%	2.11%	0.09%	(0.00%)	0.08%
Real Estate	5%	5%	1.82%	1.51%	0.02%	0.00%	0.02%
Cash & Equivalents	1%	1%	0.58%	0.64%	(0.00%)	(0.00%)	(0.00%)
Total			3.31%	3.10%	+ 0.29%	+ (0.08%)	0.21%

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

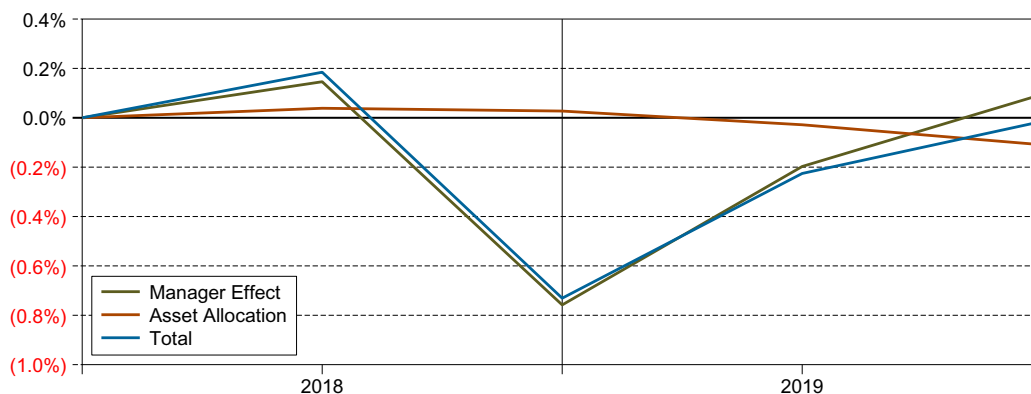
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

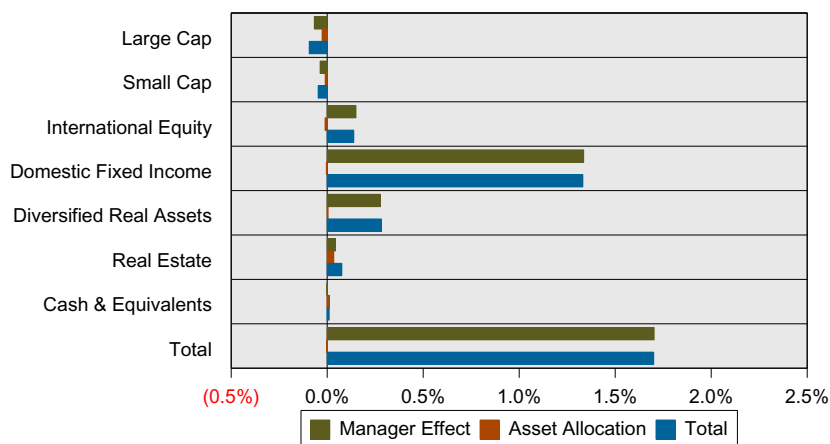
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	8.59%	10.02%	(0.15%)	(0.10%)	(0.25%)
Small Cap	3%	3%	(5.16%)	(3.31%)	(0.06%)	(0.01%)	(0.08%)
International Equity	8%	8%	(2.07%)	1.29%	(0.26%)	(0.01%)	(0.28%)
Domestic Fixed Income	58%	59%	9.12%	7.87%	0.71%	(0.02%)	0.69%
Diversified Real Assets	13%	13%	4.28%	4.72%	(0.08%)	(0.01%)	(0.09%)
Real Estate	6%	5%	5.74%	6.51%	(0.05%)	0.05%	(0.00%)
Cash & Equivalents	1%	1%	2.17%	2.31%	(0.00%)	(0.00%)	(0.00%)
Total			7.05%	7.06%	+ 0.09%	+ (0.11%)	(0.01%)

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

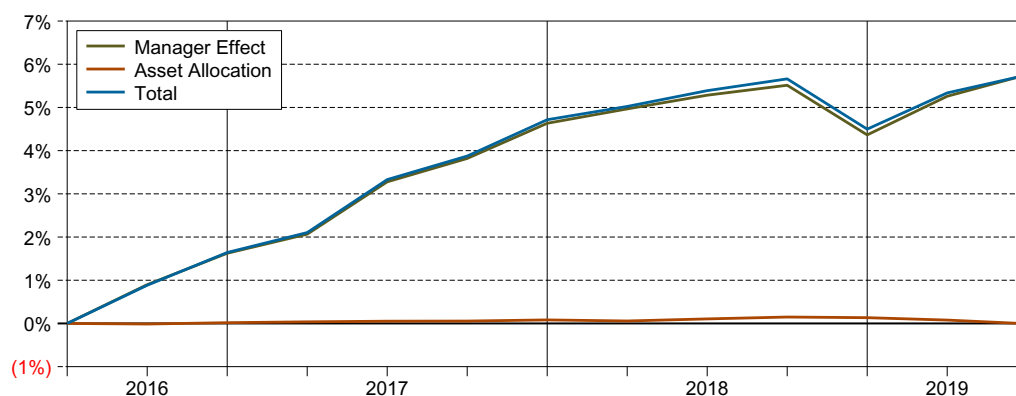
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

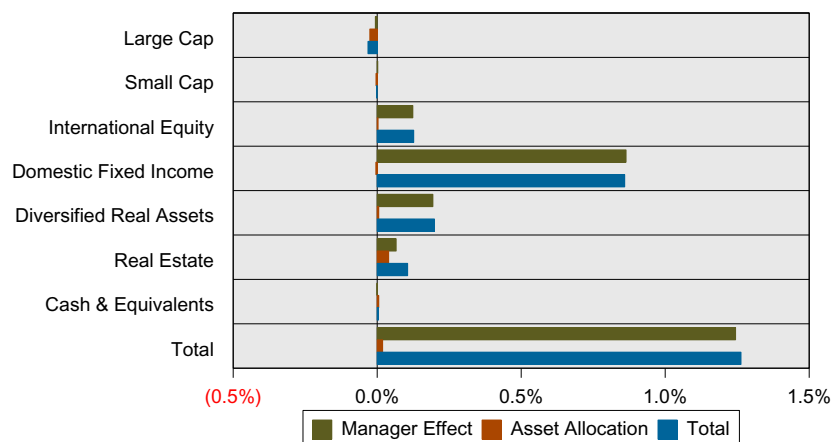
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	13.46%	14.15%	(0.07%)	(0.03%)	(0.09%)
Small Cap	4%	4%	11.13%	12.30%	(0.04%)	(0.01%)	(0.05%)
International Equity	9%	9%	10.42%	9.01%	0.15%	(0.01%)	0.14%
Domestic Fixed Income	55%	55%	4.76%	2.31%	1.34%	(0.00%)	1.33%
Diversified Real Assets	14%	14%	5.27%	3.29%	0.28%	0.00%	0.28%
Real Estate	7%	6%	7.44%	6.89%	0.04%	0.03%	0.08%
Cash & Equivalents	1%	1%	1.27%	1.38%	(0.00%)	0.01%	0.01%
Total			7.03%	5.33%	+ 1.70%	(0.00%)	1.70%

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

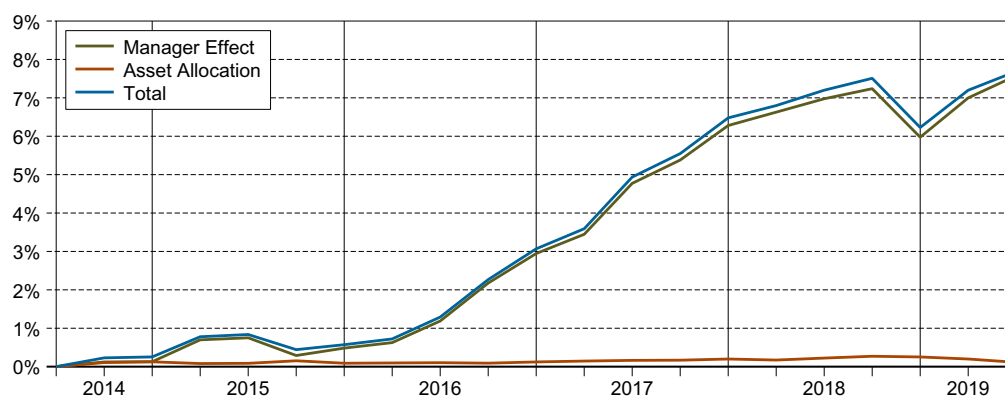
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

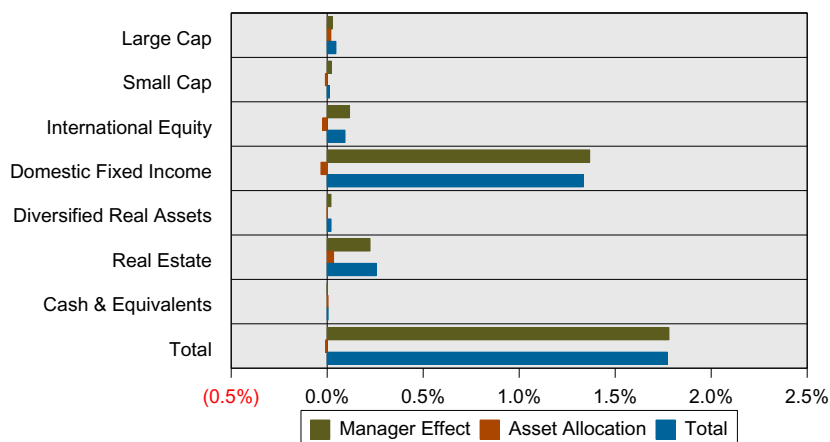
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	10.37%	10.45%	(0.01%)	(0.03%)	(0.03%)
Small Cap	4%	4%	7.02%	7.06%	0.00%	(0.00%)	(0.00%)
International Equity	9%	9%	3.37%	2.19%	0.12%	0.00%	0.13%
Domestic Fixed Income	54%	54%	4.57%	2.95%	0.86%	(0.00%)	0.86%
Diversified Real Assets	14%	15%	3.84%	2.50%	0.19%	0.01%	0.20%
Real Estate	7%	6%	9.79%	8.83%	0.07%	0.04%	0.11%
Cash & Equivalents	1%	1%	0.79%	0.87%	(0.00%)	0.01%	0.00%
Total			5.67%	4.41%	+ 1.24%	+ 0.02%	1.26%

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

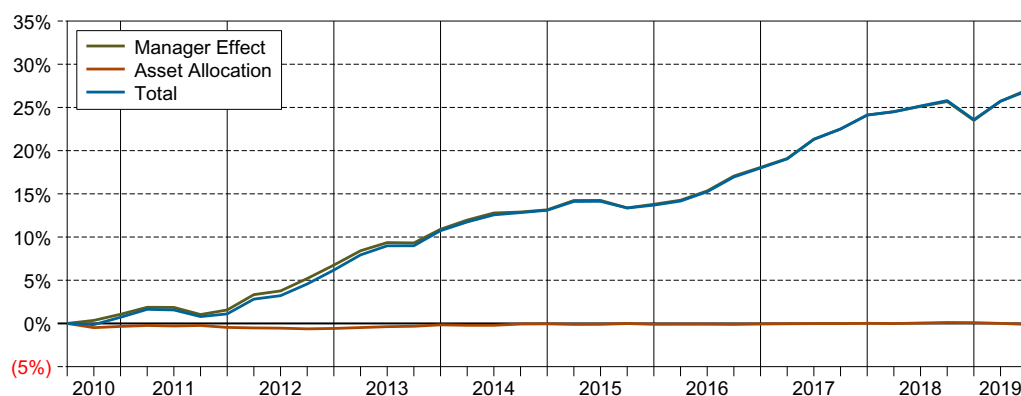
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Nine Year Annualized Relative Attribution Effects



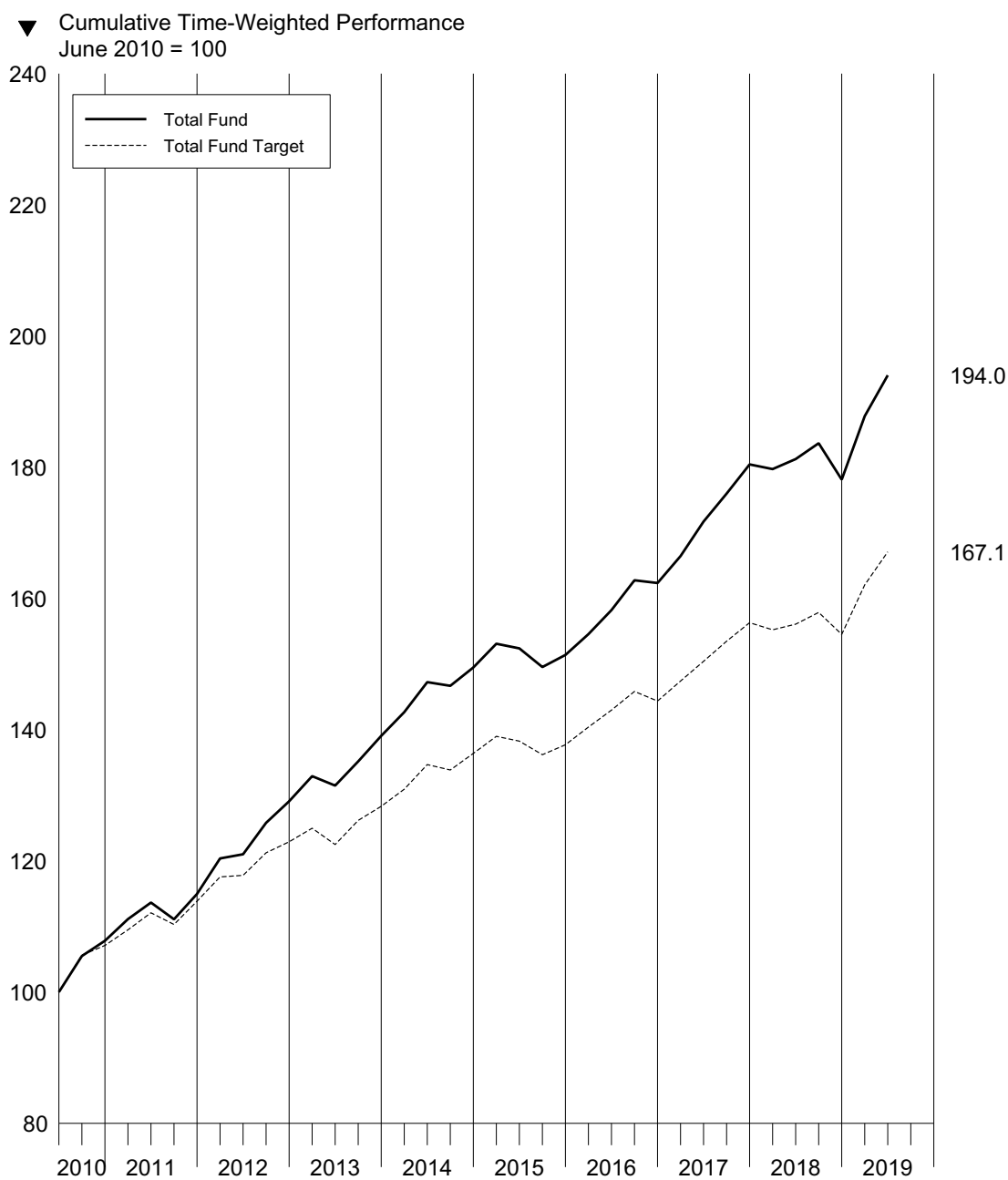
Cumulative Relative Attribution Effects



Nine Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	14.96%	14.71%	0.03%	0.02%	0.05%
Small Cap	4%	4%	13.18%	12.59%	0.02%	(0.01%)	0.01%
International Equity	8%	8%	7.69%	6.35%	0.12%	(0.02%)	0.09%
Domestic Fixed Income	53%	53%	5.88%	3.29%	1.37%	(0.03%)	1.33%
Diversified Real Assets	17%	18%	4.76%	4.48%	0.02%	0.00%	0.02%
Real Estate	6%	6%	14.20%	10.51%	0.22%	0.03%	0.26%
Cash & Equivalents	1%	1%	0.53%	0.53%	0.00%	0.00%	0.00%
Total			7.64%	5.87%	+ 1.78%	+ (0.01%)	1.77%

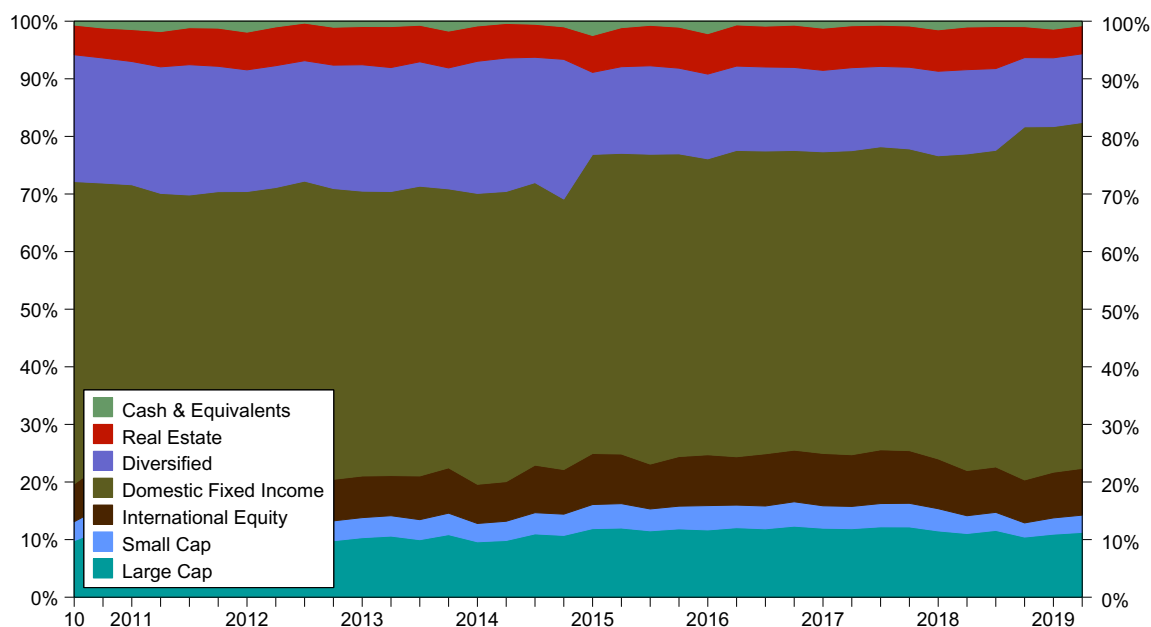
* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.



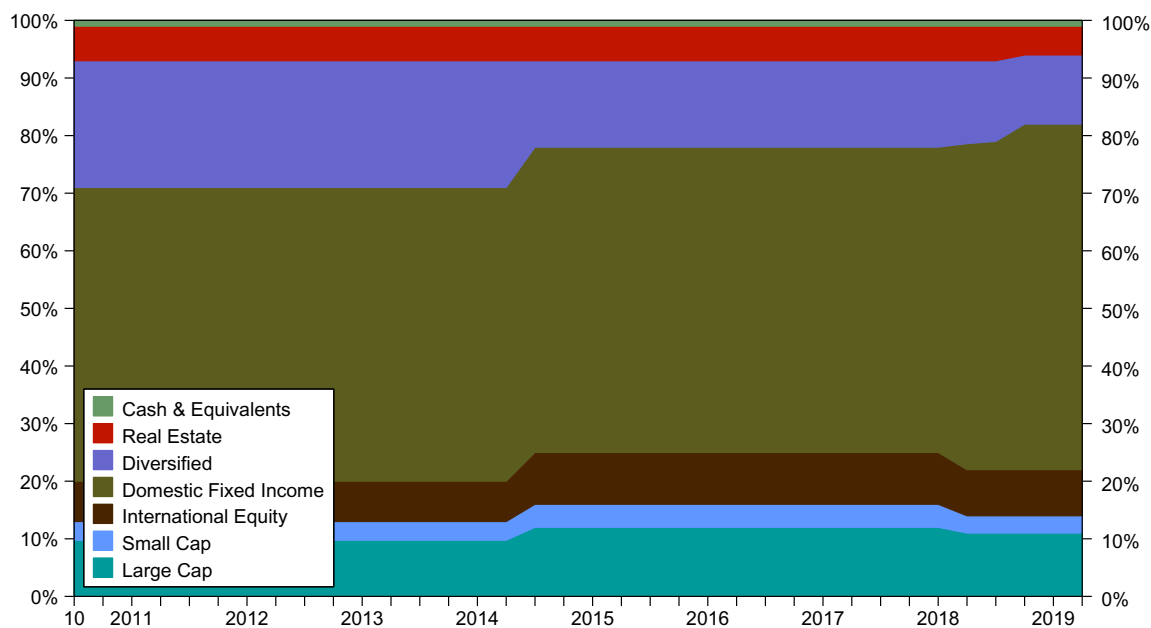
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, and the fund's historical target asset allocation.

Actual Historical Asset Allocation



Target Historical Asset Allocation

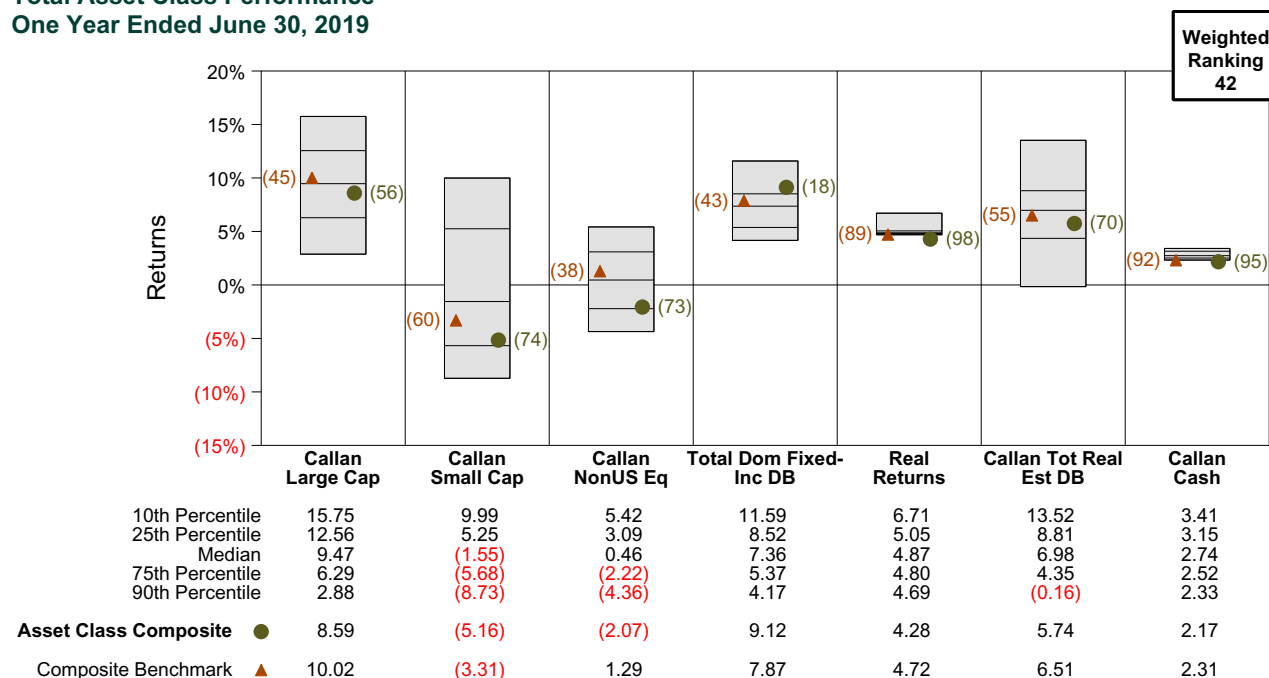


* Current Quarter Target = 60.0% Blmgb Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

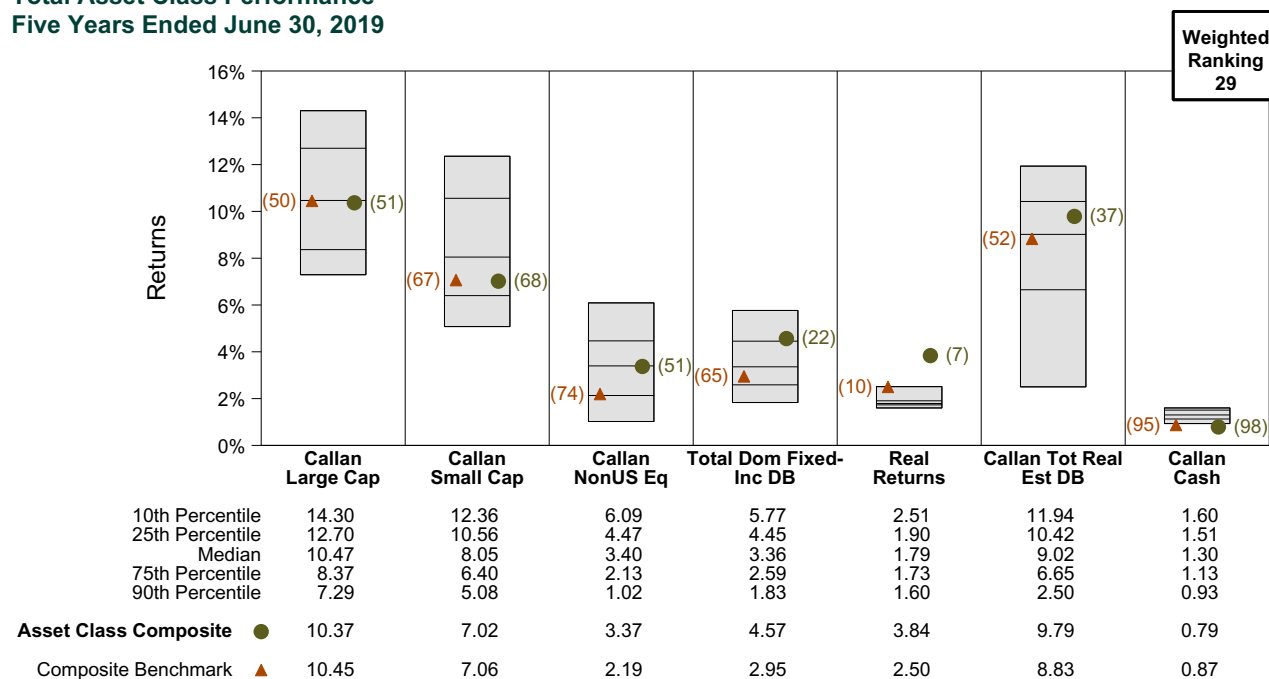
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Five Years Ended June 30, 2019



* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Class Allocation

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equity	\$462,919,904	22.41%	\$9,760,654	\$14,945,340	\$438,213,910	21.75%
Domestic Equity	\$294,883,591	14.28%	\$7,311,272	\$9,671,392	\$277,900,927	13.79%
Large Cap	232,923,119	11.28%	3,416,017	8,565,444	220,941,658	10.97%
Small Cap	61,960,472	3.00%	3,895,255	1,105,948	56,959,269	2.83%
International Equity	\$168,036,312	8.14%	\$2,449,382	\$5,273,947	\$160,312,983	7.96%
Domestic Fixed Income	\$1,242,883,912	60.18%	\$(11,339,899)	\$42,835,583	\$1,211,388,228	60.13%
Global Real Assets	\$343,407,580	16.63%	\$(2,241,440)	\$8,533,759	\$337,115,260	16.73%
Real Estate	101,105,470	4.90%	(1,170,911)	1,817,012	100,459,368	4.99%
Diversified	242,302,110	11.73%	(1,070,529)	6,716,747	236,655,892	11.75%
Cash	\$16,189,005	0.78%	\$(11,781,788)	\$136,452	\$27,834,341	1.38%
Securities Lending Income	\$0	0.00%	\$(31,385)	\$31,385	-	-
Total Fund	\$2,065,400,400	100.0%	\$(15,633,857)	\$66,482,519	\$2,014,551,739	100.0%

PLEASE REFER TO PAGE 30 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

Asset Class Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Global Equity					
Gross	3.33%	2.86%	-	-	-
Net	3.28%	2.64%	-	-	-
Weighted Benchmark	3.79%	5.02%	-	-	-
Domestic Equity					
Gross	3.38%	5.57%	13.09%	9.66%	14.58%
Net	3.33%	5.40%	12.86%	9.43%	14.26%
Weighted Benchmark	3.78%	7.08%	-	-	-
Large Cap					
Gross	3.87%	8.59%	13.46%	10.37%	14.96%
Net	3.82%	8.40%	13.25%	10.16%	14.71%
Benchmark(1)	4.25%	10.02%	14.15%	10.45%	14.71%
Small Cap					
Gross	1.49%	(5.16%)	11.13%	7.02%	13.18%
Net	1.46%	(5.28%)	10.85%	6.71%	12.69%
Russell 2000	2.10%	(3.31%)	12.30%	7.06%	12.59%
International Equity					
Gross	3.25%	(2.07%)	10.42%	3.37%	7.69%
Net	3.17%	(2.37%)	10.08%	3.05%	7.31%
Benchmark(2)	3.79%	1.29%	9.01%	2.19%	6.35%
Domestic Fixed Income					
Gross	3.55%	9.12%	4.76%	4.57%	5.88%
Net	3.52%	8.99%	4.63%	4.44%	5.72%
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	3.29%
Global Real Assets					
Gross	2.54%	4.83%	-	-	-
Net	2.40%	4.51%	-	-	-
Weighted Benchmark	1.93%	5.22%	-	-	-
Real Estate					
Gross	1.82%	5.74%	7.44%	9.79%	14.20%
Net	1.55%	5.15%	6.83%	9.11%	13.29%
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	10.51%
Diversified					
Gross	2.84%	4.28%	5.27%	3.84%	4.76%
Net	2.76%	4.08%	5.02%	3.54%	4.43%
Weighted Benchmark	2.11%	4.72%	3.29%	2.50%	4.48%
Cash & Equivalents - Net	0.58%	2.17%	1.27%	0.79%	0.53%
90 Day Treasury Bills	0.64%	2.31%	1.38%	0.87%	0.53%
Total Fund					
Gross	3.31%	7.05%	7.03%	5.67%	7.64%
Net	3.26%	6.87%	6.83%	5.45%	7.37%
Target*	3.10%	7.06%	5.33%	4.41%	5.87%

* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

(1) S&P 500 Index through 12/31/2011 and Russell 1000 Index thereafter.

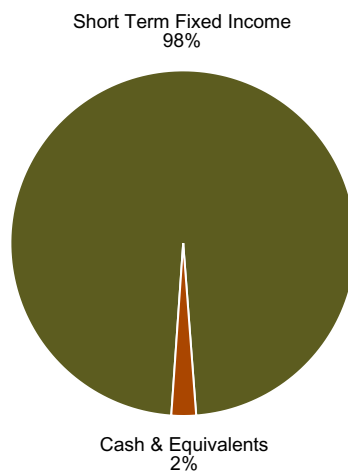
(2) MSCI EAFE through 9/30/2000; 50% Hedged EAFE through 3/31/2011; MSCI EAFE again through 6/30/2016; MSCI World ex-US thereafter.

PLEASE REFER TO PAGE 31-33 FOR INVESTMENT MANAGER LEVEL RETURNS.

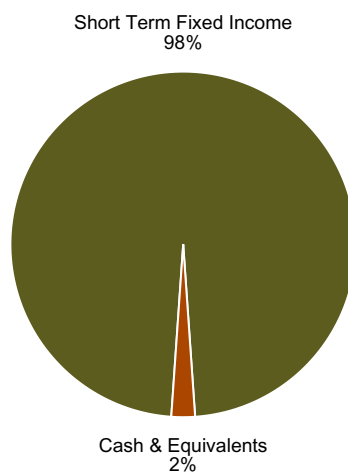
Actual vs Target Asset Allocation As of June 30, 2019

The first chart below shows the Fund's asset allocation as of June 30, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



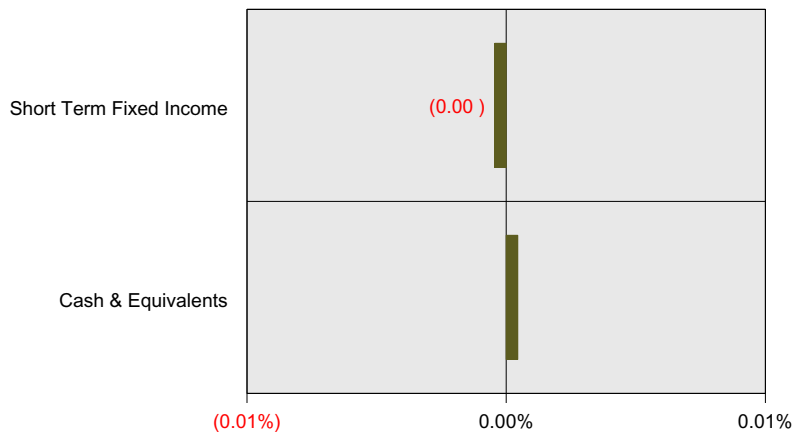
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Short Term Fixed Income	116,031	97.7%	97.8%	(0.0%)	(17)
Cash & Equivalents	2,676	2.3%	2.2%	0.0%	17
Total	118,707	100.0%	100.0%		

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

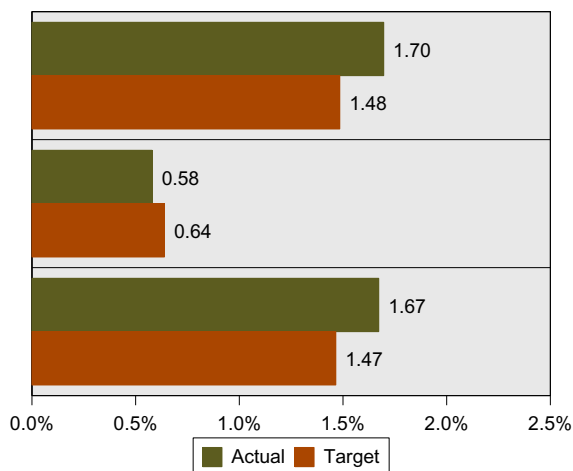
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

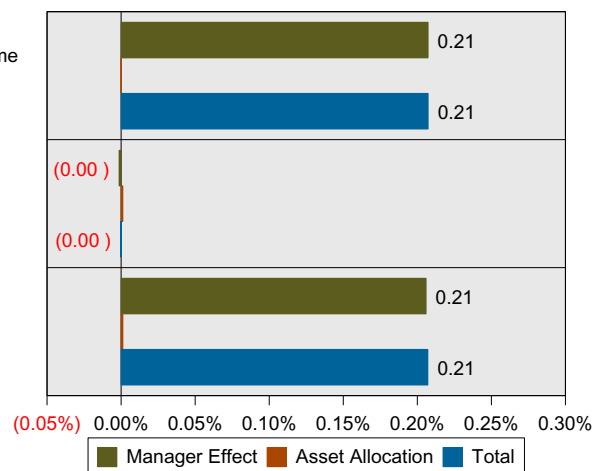
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

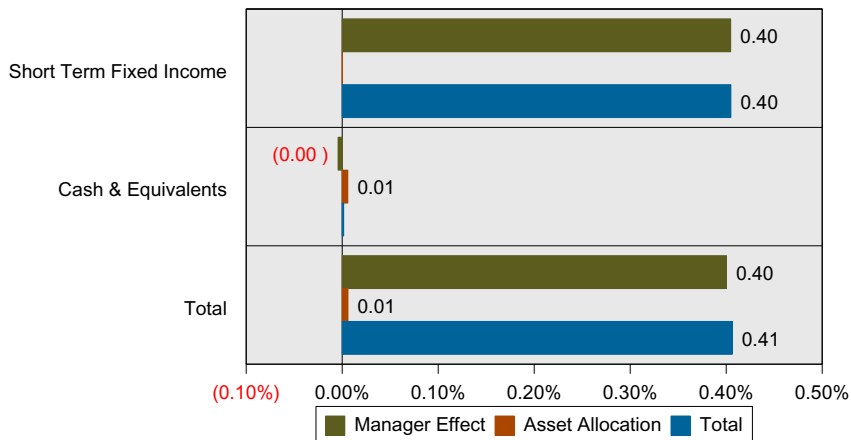
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	98%	98%	1.70%	1.48%	0.21%	0.00%	0.21%
Cash & Equivalents	2%	2%	0.58%	0.64%	(0.00%)	0.00%	(0.00%)
Total			1.67%	1.47%	+ 0.21%	+ 0.00%	0.21%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

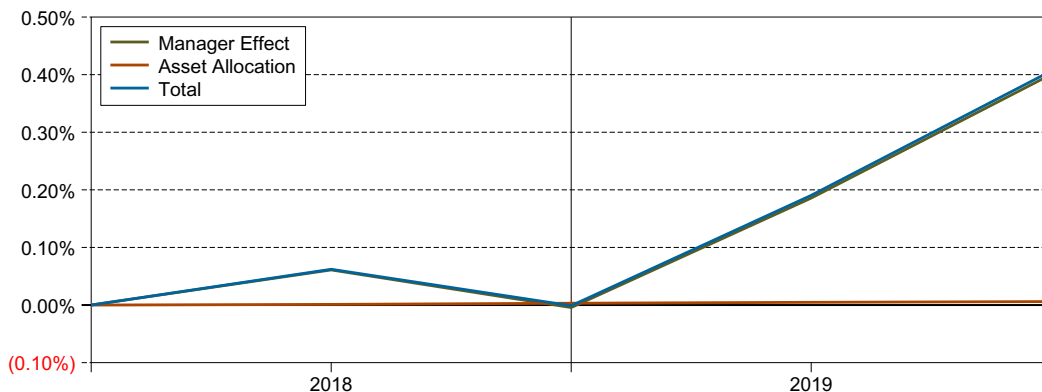
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

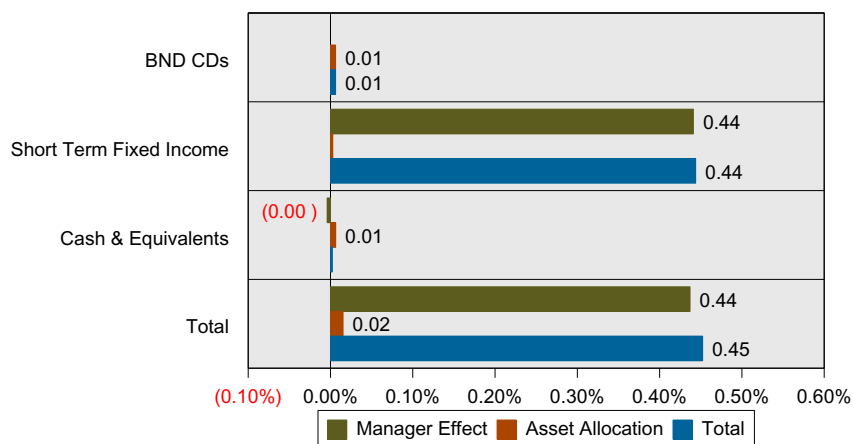
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	97%	97%	4.68%	4.27%	0.40%	0.00%	0.40%
Cash & Equivalents	3%	3%	2.17%	2.31%	(0.00%)	0.01%	0.00%
Total			4.64%	4.23%	+ 0.40%	+ 0.01%	0.41%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

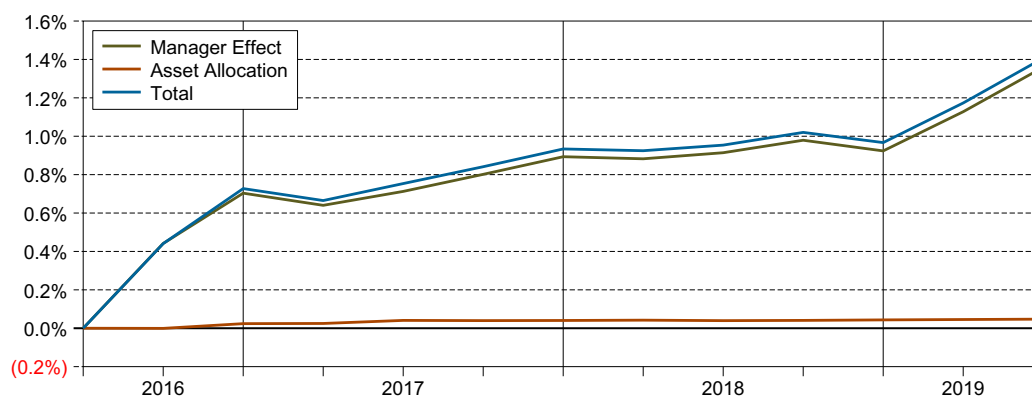
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

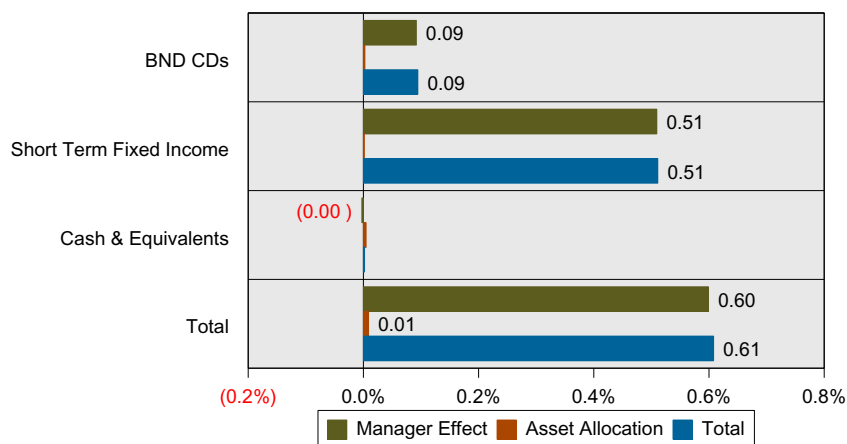
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
BND CDs	4%	4%	-	-	0.00%	0.01%	0.01%
Short Term Fixed Income	92%	92%	1.99%	1.49%	0.44%	0.00%	0.44%
Cash & Equivalents	4%	4%	1.26%	1.38%	(0.00%)	0.01%	0.00%
Total			2.05%	1.60%	+ 0.44%	+ 0.02%	0.45%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

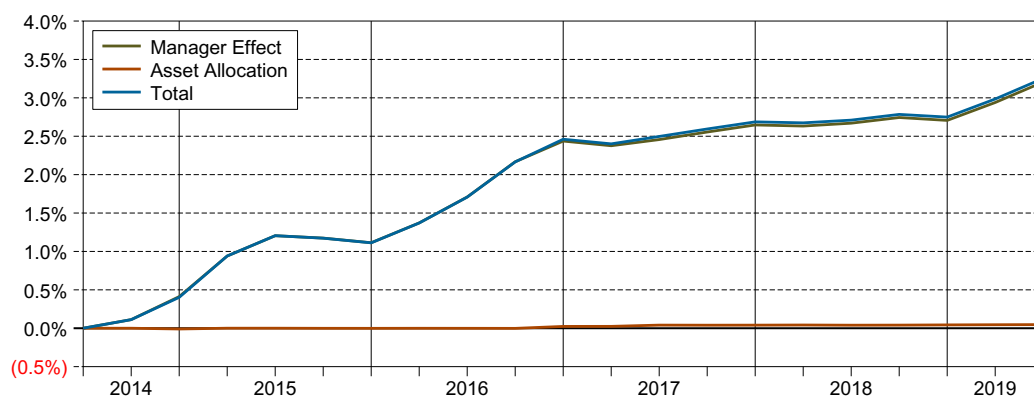
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

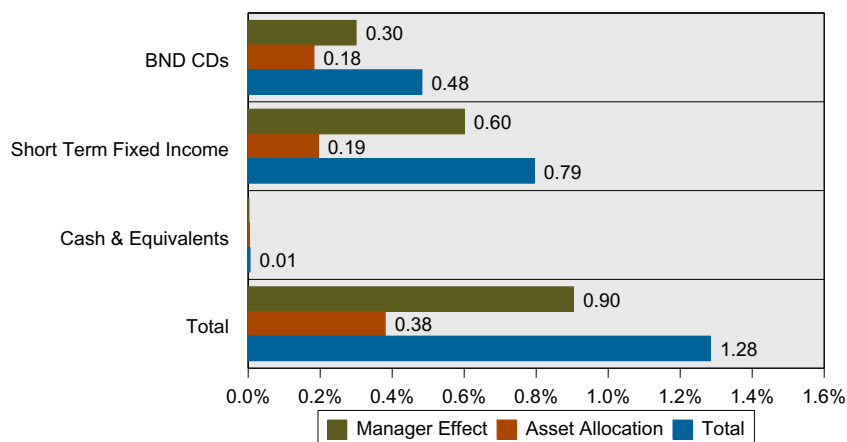
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
BND CDs	9%	9%	-	-	0.09%	0.00%	0.09%
Short Term Fixed Income	88%	88%	1.93%	1.33%	0.51%	0.00%	0.51%
Cash & Equivalents	3%	3%	0.78%	0.87%	(0.00%)	0.00%	0.00%
Total			2.01%	1.41%	+ 0.60%	+ 0.01%	0.61%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

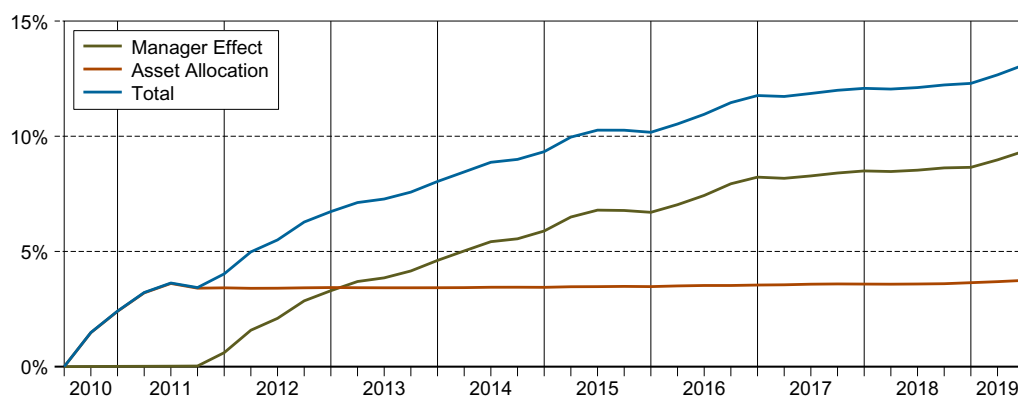
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Nine Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects

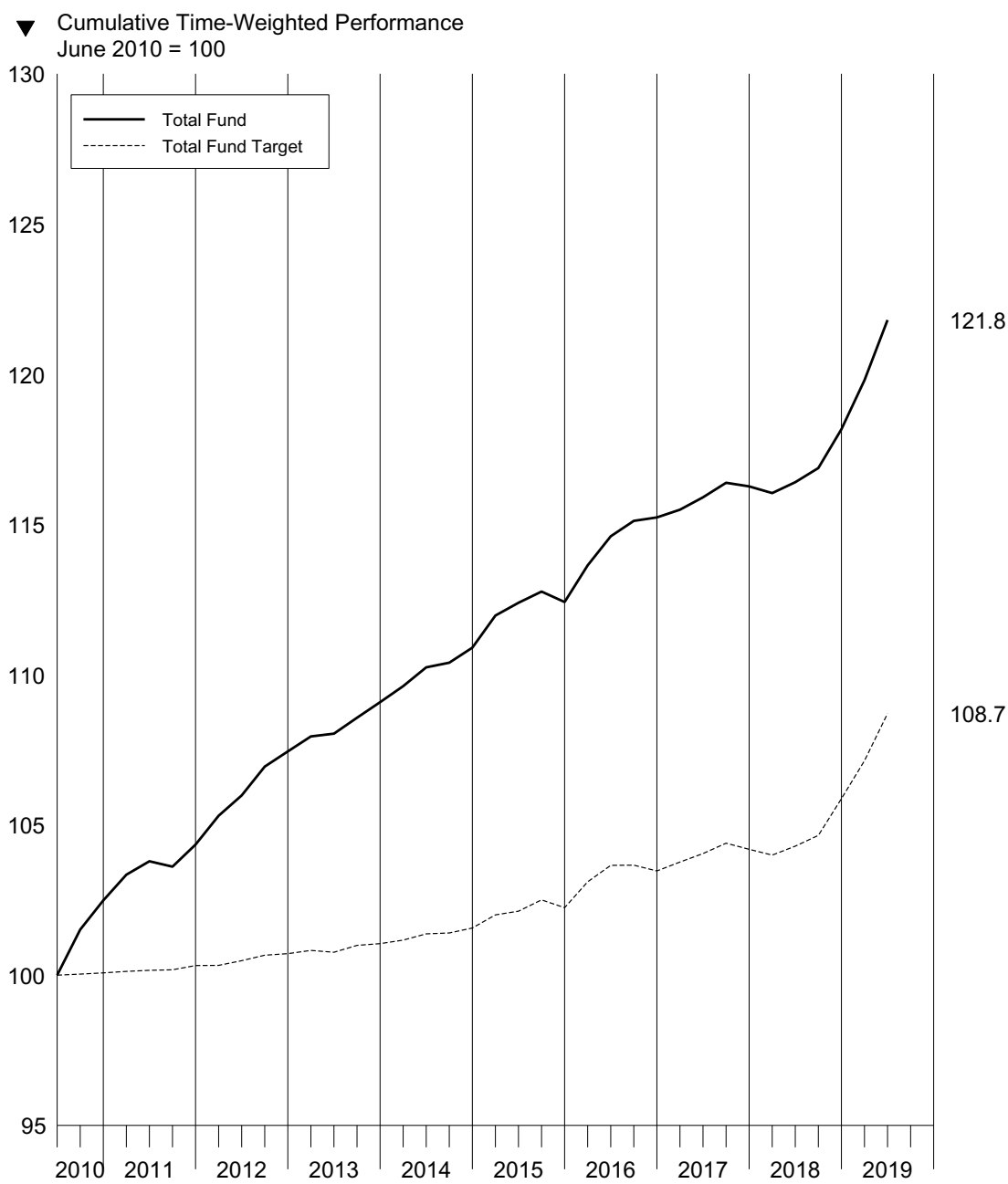


Nine Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
BND CDs	16%	12%	-	-	0.30%	0.18%	0.48%
Short Term Fixed Income	80%	72%	2.01%	1.25%	0.60%	0.19%	0.79%
Cash & Equivalents	4%	16%	0.53%	0.53%	0.00%	0.00%	0.01%
Total			2.22%	0.93%	+ 0.90%	+ 0.38%	1.28%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

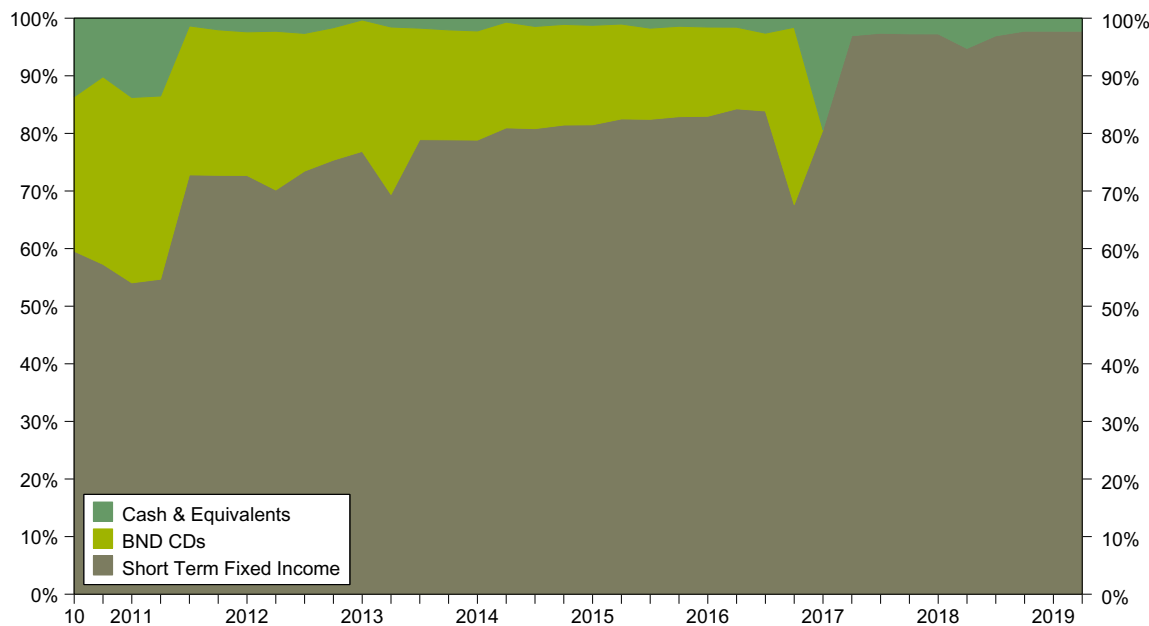
NDSIB - Budget Stabilization Fund
Cumulative Results



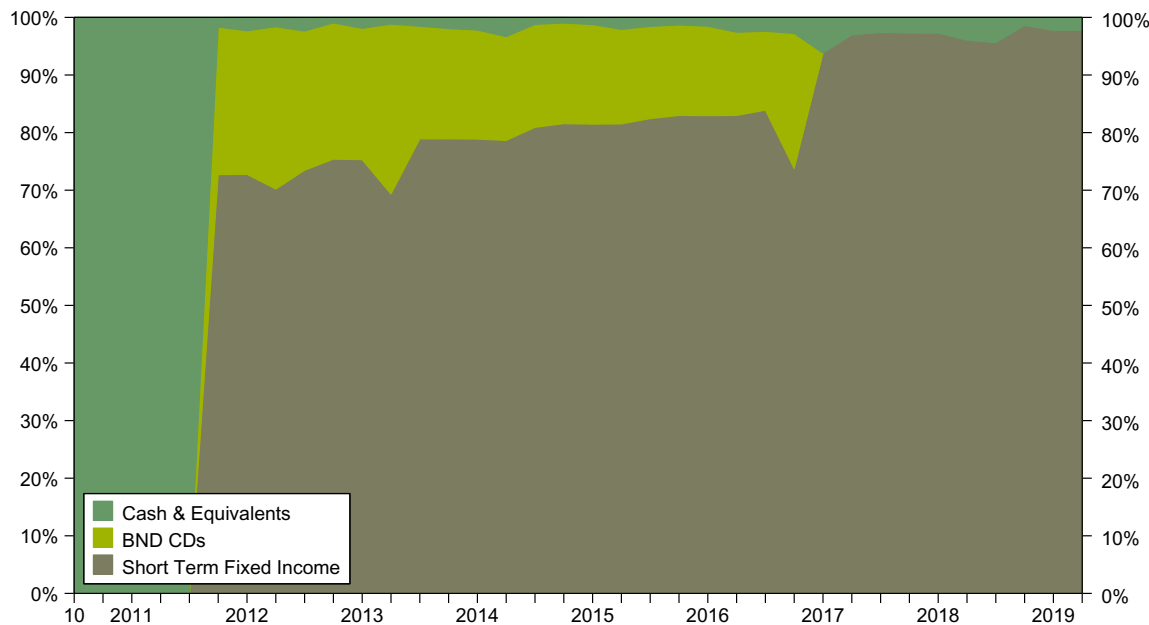
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, and the fund's historical target asset allocation.

Actual Historical Asset Allocation



Target Historical Asset Allocation



* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Class Allocation

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Short Term Fixed Income	\$116,031,262	97.75%	\$(102,551)	\$1,936,633	\$114,197,180	97.74%
Cash & Equivalents	\$2,675,869	2.25%	\$24,090	\$15,297	\$2,636,482	2.26%
Securities Lending Income	\$0	0.00%	\$(1,395)	\$1,395	-	-
Total Fund	\$118,707,130	100.0%	\$(79,855)	\$1,953,324	\$116,833,661	100.0%

PLEASE REFER TO PAGE 30 FOR INVESTMENT MANAGER LEVEL ASSET ALLOCATION.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019					
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
Short Term Fixed Income					
Gross	1.70%	4.68%	1.99%	1.93%	2.01%
Net	1.63%	4.55%	1.77%	1.75%	1.86%
Blended Benchmark(1)	1.48%	4.27%	1.49%	1.33%	-
Cash & Equivalents - Net	0.58%	2.17%	1.26%	0.78%	0.53%
3-month Treasury Bill	0.64%	2.31%	1.38%	0.87%	0.53%
Total Fund					
Gross	1.67%	4.64%	2.05%	2.01%	2.22%
Net	1.61%	4.51%	1.86%	1.85%	2.09%
Target*	1.47%	4.23%	1.60%	1.41%	0.93%

* Current Quarter Target = 97.8% Blmbg Gov/Cred 1-3 Yr and 2.2% 3-month Treasury Bill.

(1) Blmbg Gov 1-3 Yr through March 31, 2017 and Blmbg Gov/Credit 1-3 Yr thereafter.

PLEASE REFER TO PAGES 31-33 FOR INVESTMENT MANAGER LEVEL RETURNS.

Large Cap Period Ended June 30, 2019

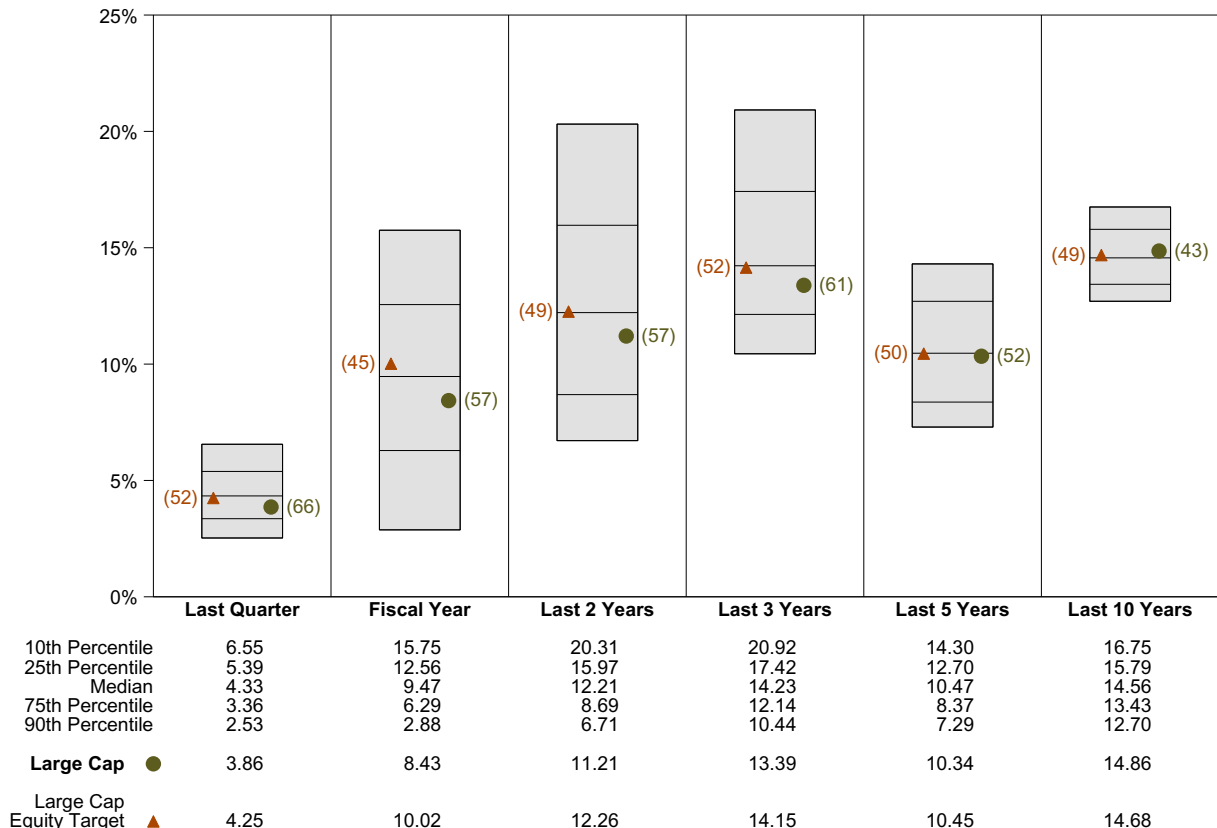
Quarterly Summary and Highlights

- Large Cap's portfolio posted a 3.86% return for the quarter placing it in the 66 percentile of the Callan Large Capitalization group for the quarter and in the 57 percentile for the last year.
- Large Cap's portfolio underperformed the Large Cap Equity Target by 0.39% for the quarter and underperformed the Large Cap Equity Target for the year by 1.59%.

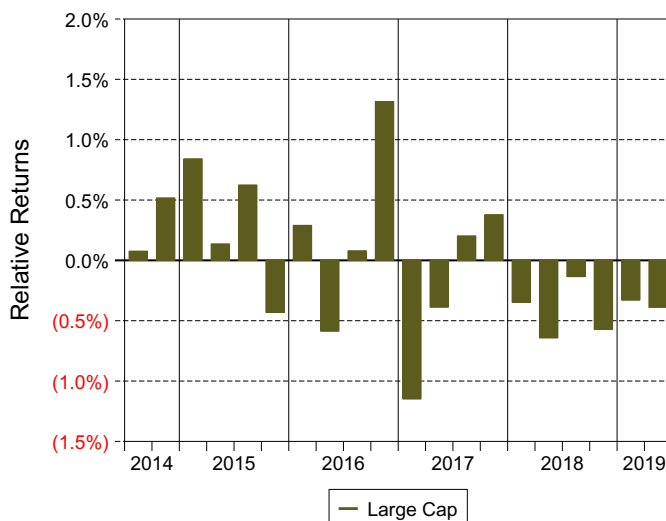
Quarterly Asset Growth

Beginning Market Value	\$239,717,177
Net New Investment	\$3,897,009
Investment Gains/(Losses)	\$9,348,631
Ending Market Value	\$252,962,816

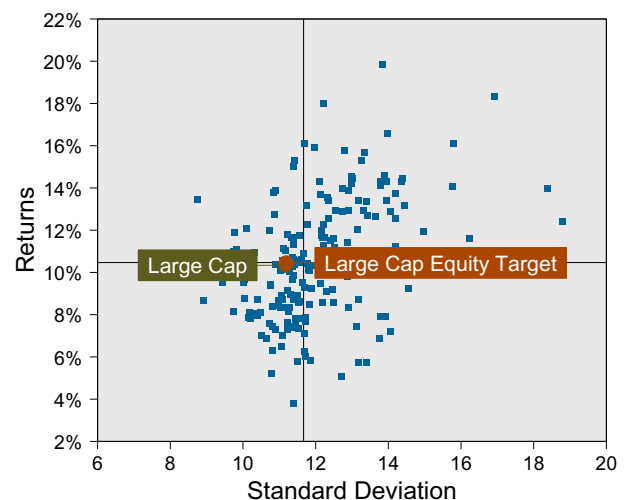
Performance vs Callan Large Capitalization (Gross)



Relative Return vs Large Cap Equity Target



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



Parametric Clifton Large Cap Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

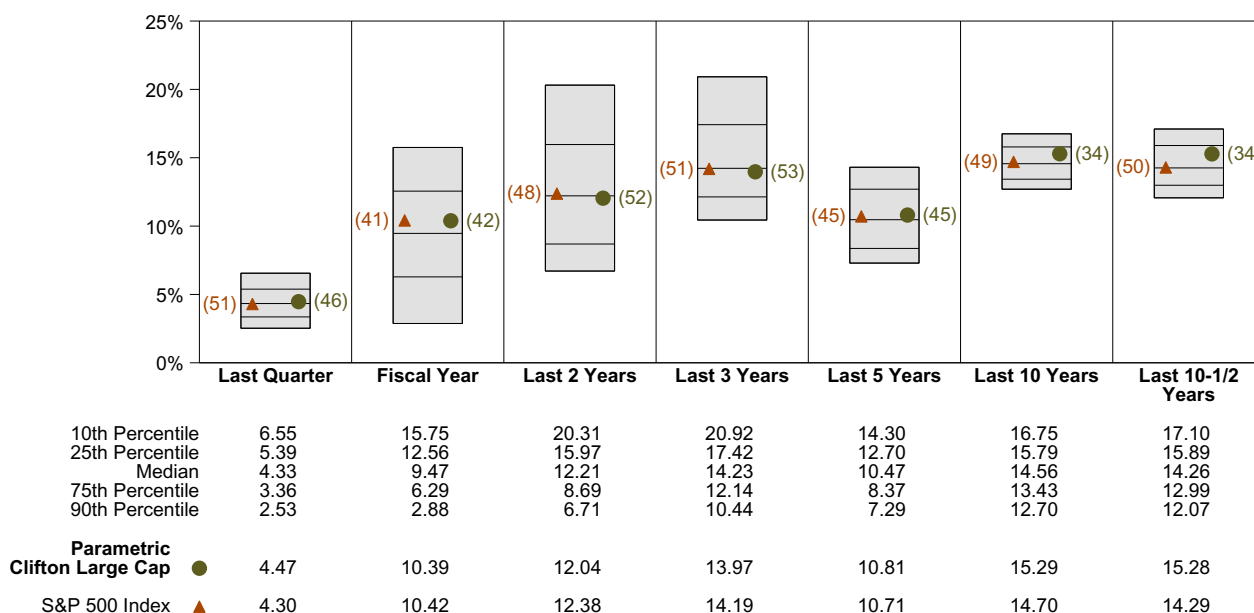
Quarterly Summary and Highlights

- Parametric Clifton Large Cap's portfolio posted a 4.47% return for the quarter placing it in the 46 percentile of the Callan Large Capitalization group for the quarter and in the 42 percentile for the last year.
- Parametric Clifton Large Cap's portfolio outperformed the S&P 500 Index by 0.17% for the quarter and underperformed the S&P 500 Index for the year by 0.03%.

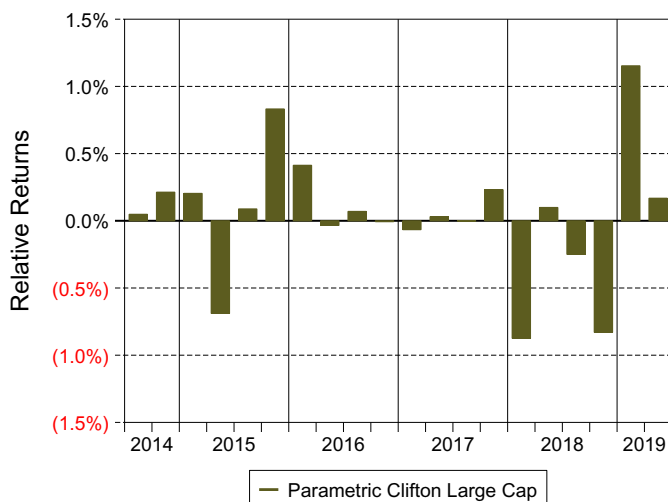
Quarterly Asset Growth

Beginning Market Value	\$48,754,229
Net New Investment	\$1,000,000
Investment Gains/(Losses)	\$2,226,823
Ending Market Value	\$51,981,053

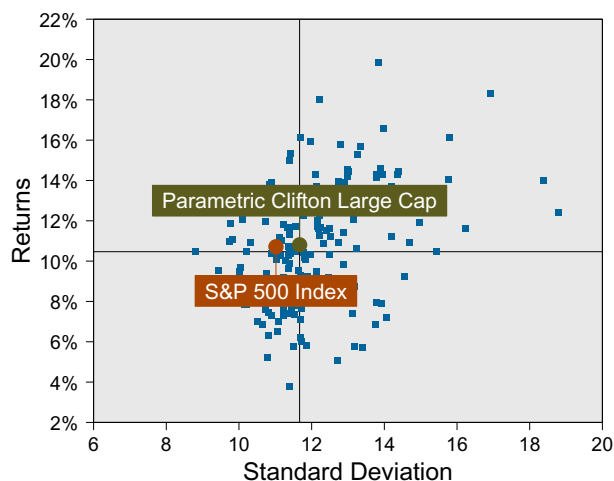
Performance vs Callan Large Capitalization (Gross)



Relative Return vs S&P 500 Index



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



L.A. Capital Period Ended June 30, 2019

Investment Philosophy

The LA Capital Structured portfolio is a large growth portfolio benchmarked to the Russell 1000 Growth Index. It is an active assignment meaning that it targets a 2% alpha and constrains its risk budget (tracking error) to 4% relative to the benchmark. LA Capital believes that investment results are driven by Investor Preferences and thus recognize that when preferences shift a different posture related to that factor is warranted.

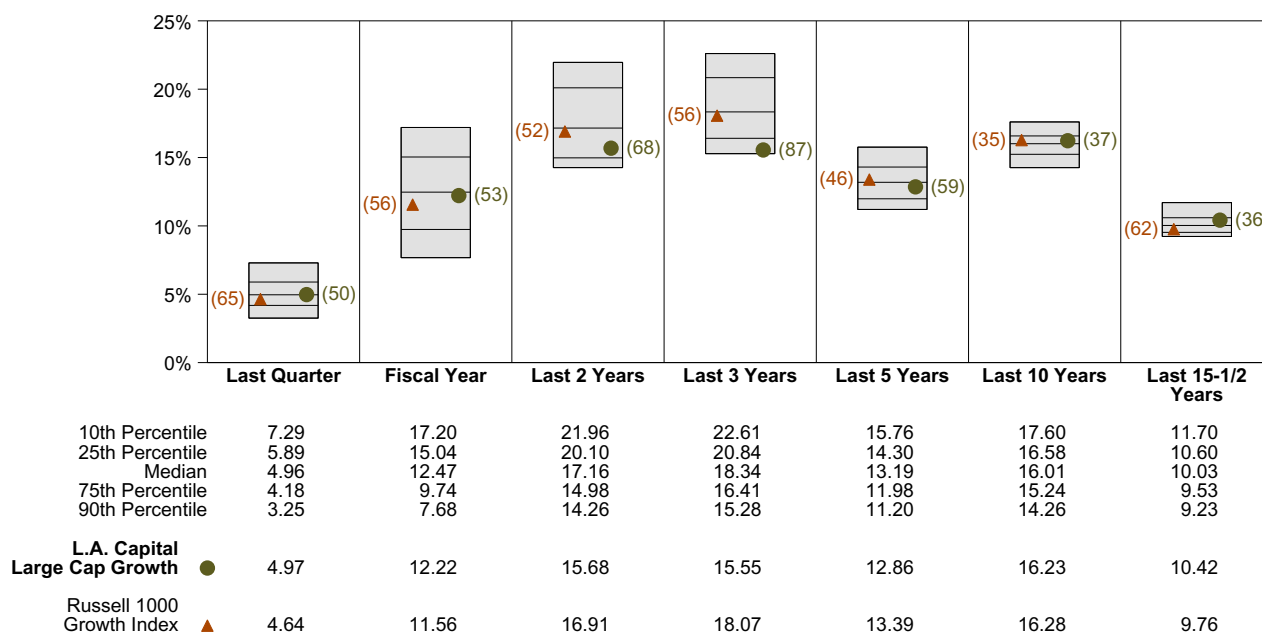
Quarterly Summary and Highlights

- L.A. Capital Large Cap Growth's portfolio posted a 4.97% return for the quarter placing it in the 50 percentile of the Callan Large Cap Growth group for the quarter and in the 53 percentile for the last year.
- L.A. Capital Large Cap Growth's portfolio outperformed the Russell 1000 Growth Index by 0.33% for the quarter and outperformed the Russell 1000 Growth Index for the year by 0.66%.

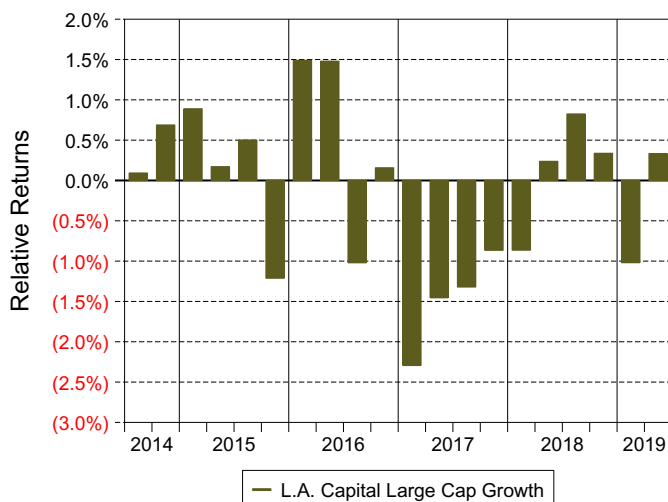
Quarterly Asset Growth

Beginning Market Value	\$73,180,347
Net New Investment	\$961,382
Investment Gains/(Losses)	\$3,655,746
Ending Market Value	\$77,797,475

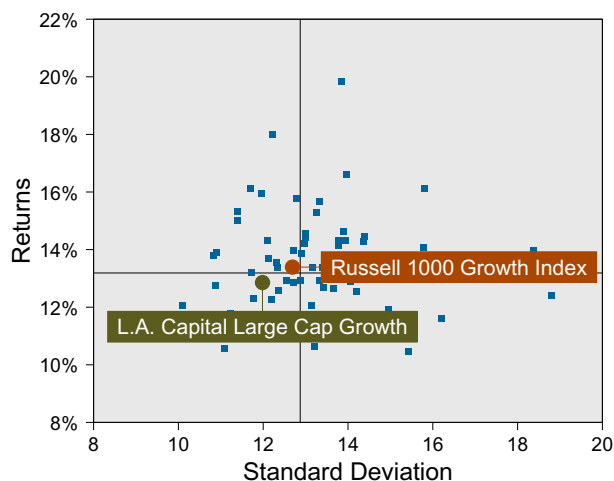
Performance vs Callan Large Cap Growth (Gross)



Relative Return vs Russell 1000 Growth Index



Callan Large Cap Growth (Gross) Annualized Five Year Risk vs Return



L.A. Capital Enhanced Period Ended June 30, 2019

Investment Philosophy

The LA Capital Enhanced portfolio is a large core portfolio benchmarked to the Russell 1000 Index. Characterized as an enhanced index assignment, its objective is to track the benchmark with lower variability. The pension portfolio began in August of 2000 and the insurance portfolio was initiated in April of 2004. Since October of 2006 a small portion of each of the two core accounts was allocated into the Large Cap Alpha Fund with intent to add incremental alpha to the assignment given that the information ratio was expected to be higher.

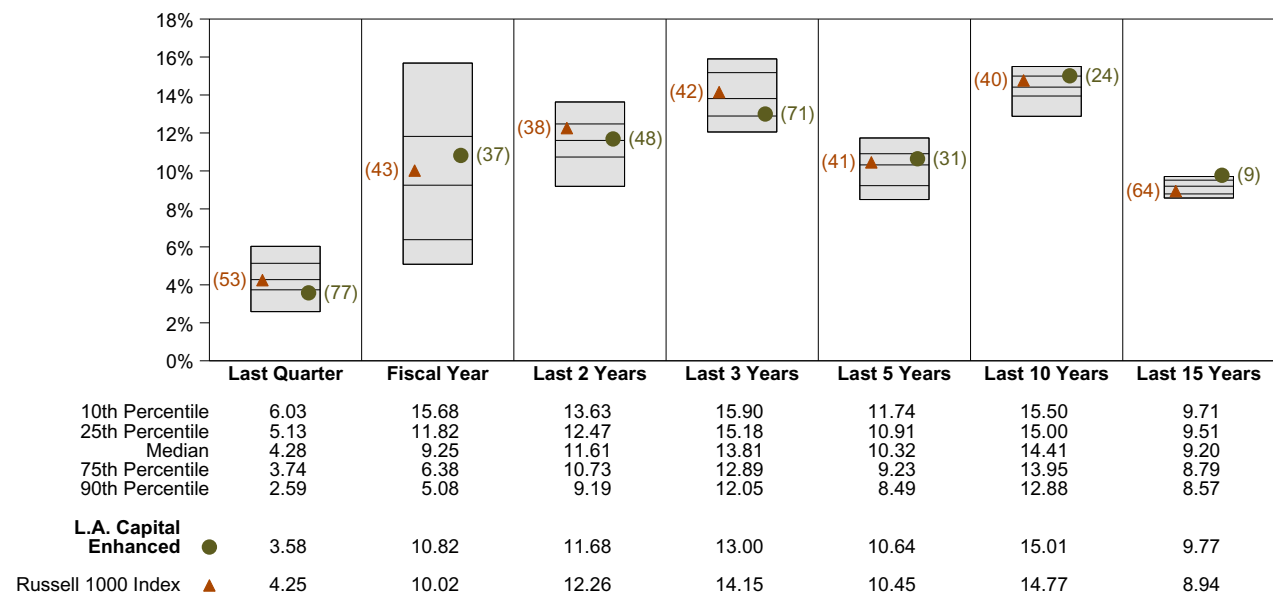
Quarterly Summary and Highlights

- L.A. Capital Enhanced's portfolio posted a 3.58% return for the quarter placing it in the 77 percentile of the Callan Large Cap Core group for the quarter and in the 37 percentile for the last year.
- L.A. Capital Enhanced's portfolio underperformed the Russell 1000 Index by 0.67% for the quarter and outperformed the Russell 1000 Index for the year by 0.80%.

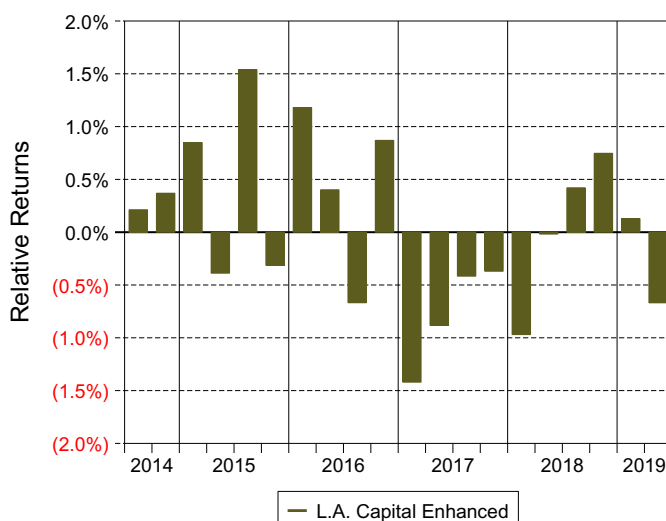
Quarterly Asset Growth

Beginning Market Value	\$48,399,225
Net New Investment	\$1,986,565
Investment Gains/(Losses)	\$1,769,951
Ending Market Value	\$52,155,741

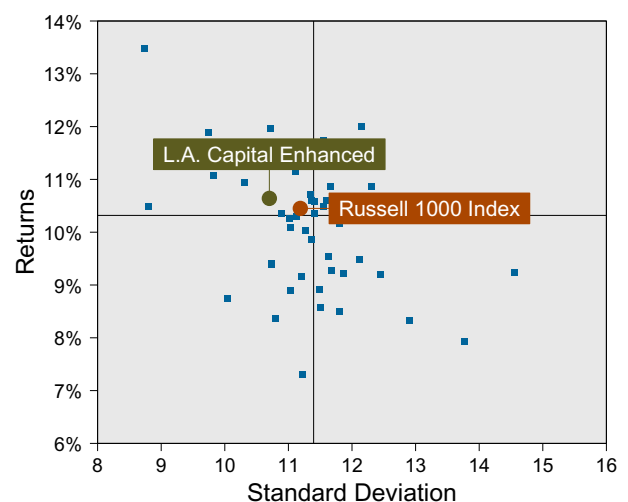
Performance vs Callan Large Cap Core (Gross)



Relative Return vs Russell 1000 Index



Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



LSV Asset Management Period Ended June 30, 2019

Investment Philosophy

The objective of LSV Asset Management's Large Cap Value Equity (U.S.) strategy is to outperform the Russell 1000 Value by at least 200 basis points (gross of fees) per annum over a 3-5 year period with a tracking error of approximately 4%. Their stock selection process is a quantitative approach that ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 100 stocks in the most attractive securities possible within strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio is broadly diversified across industry groups and fully invested.

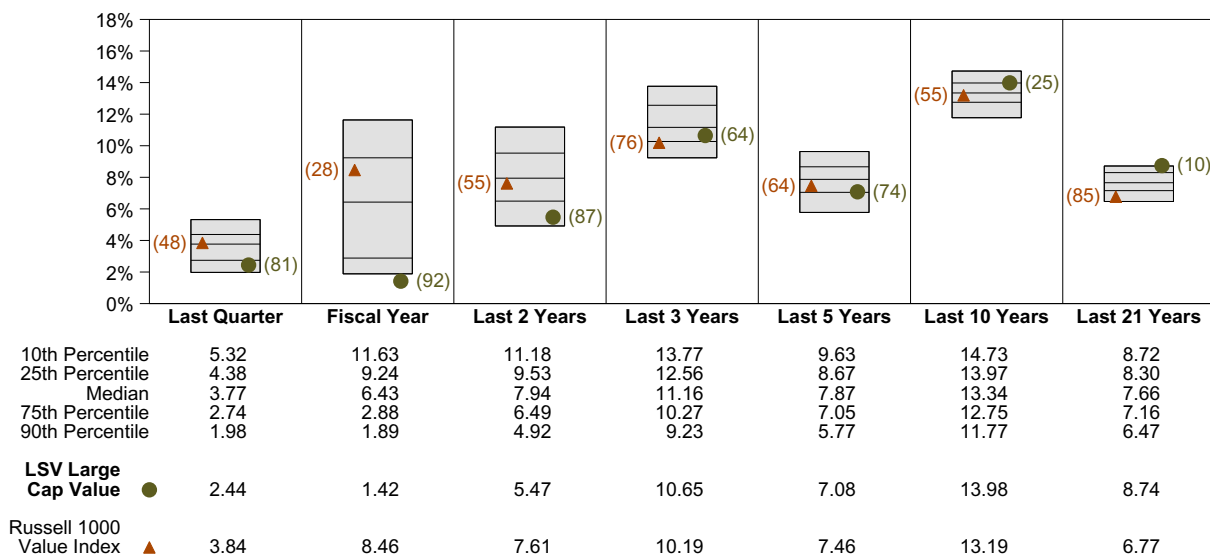
Quarterly Summary and Highlights

- LSV Large Cap Value's portfolio posted a 2.44% return for the quarter placing it in the 81 percentile of the Callan Large Cap Value group for the quarter and in the 92 percentile for the last year.
- LSV Large Cap Value's portfolio underperformed the Russell 1000 Value Index by 1.40% for the quarter and underperformed the Russell 1000 Value Index for the year by 7.04%.

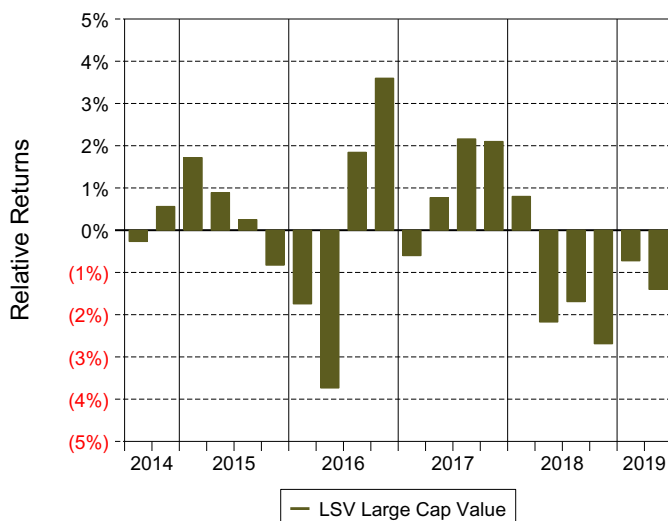
Quarterly Asset Growth

Beginning Market Value	\$69,383,375
Net New Investment	\$-50,938
Investment Gains/(Losses)	\$1,696,110
Ending Market Value	\$71,028,548

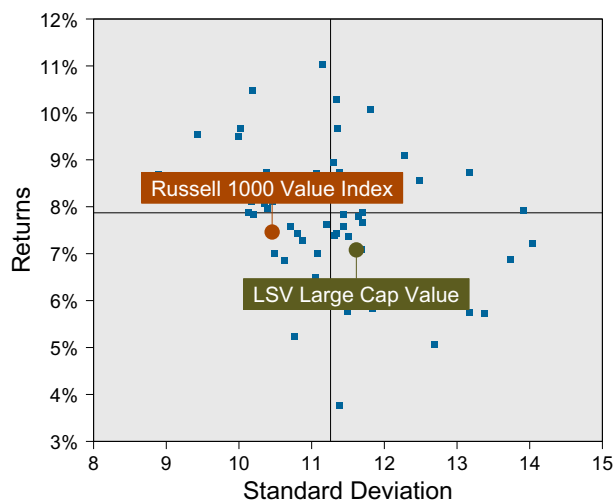
Performance vs Callan Large Cap Value (Gross)



Relative Return vs Russell 1000 Value Index



Callan Large Cap Value (Gross) Annualized Five Year Risk vs Return



Small Cap Period Ended June 30, 2019

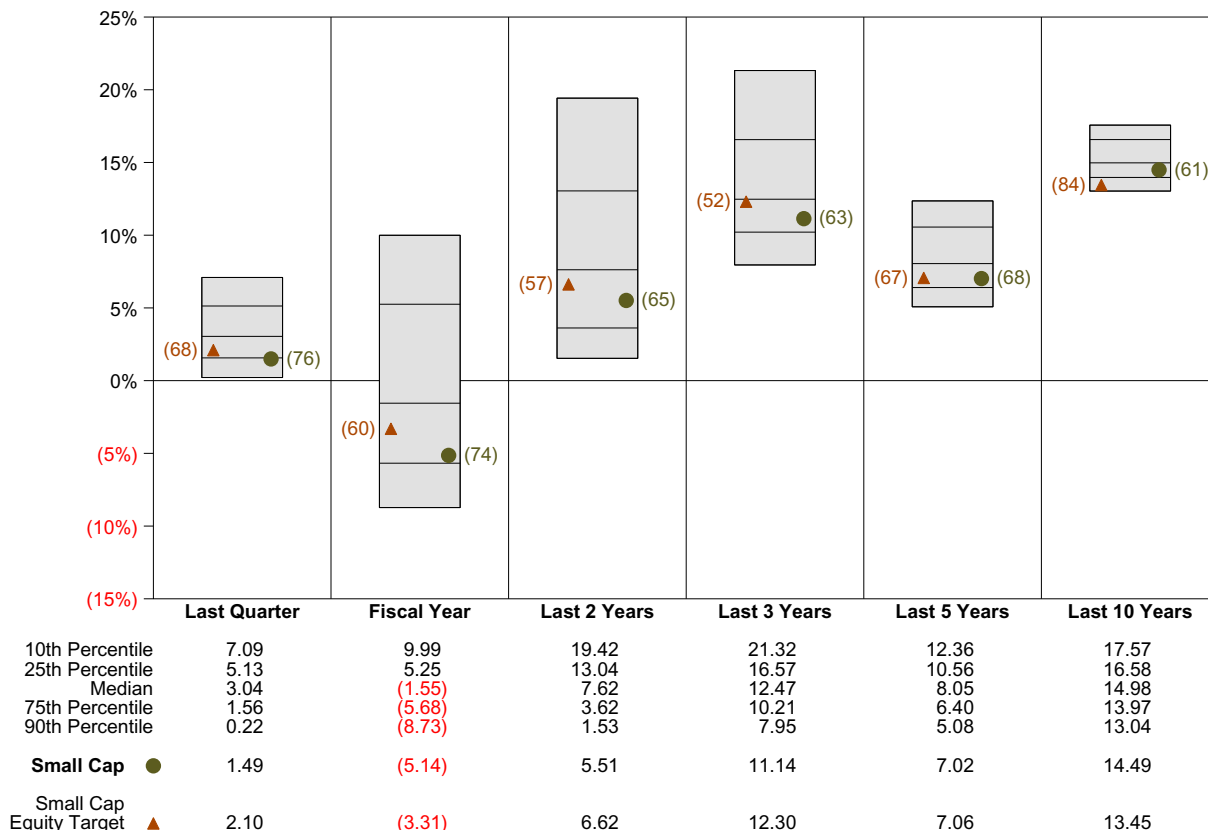
Quarterly Summary and Highlights

- Small Cap's portfolio posted a 1.49% return for the quarter placing it in the 76 percentile of the Callan Small Capitalization group for the quarter and in the 74 percentile for the last year.
- Small Cap's portfolio underperformed the Small Cap Equity Target by 0.60% for the quarter and underperformed the Small Cap Equity Target for the year by 1.83%.

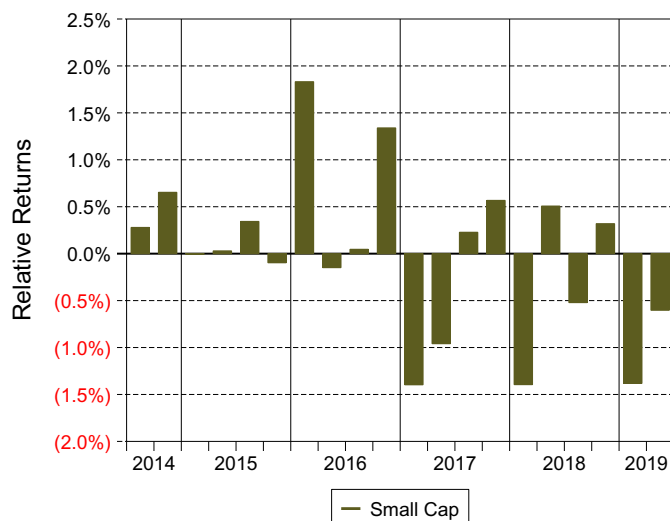
Quarterly Asset Growth

Beginning Market Value	\$64,960,265
Net New Investment	\$4,179,531
Investment Gains/(Losses)	\$1,263,418
Ending Market Value	\$70,403,214

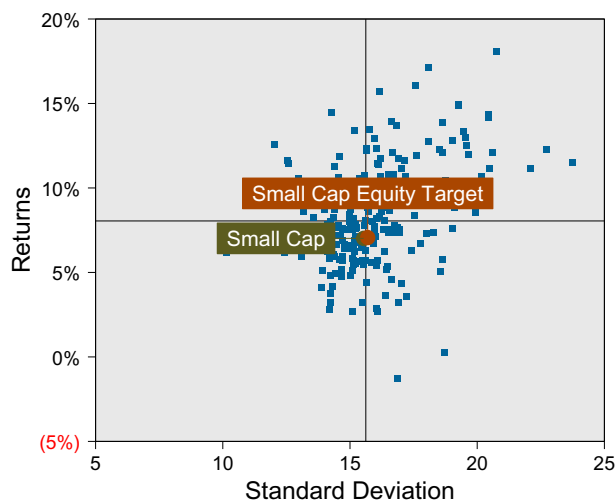
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Small Cap Equity Target



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



Parametric Clifton SmallCap Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

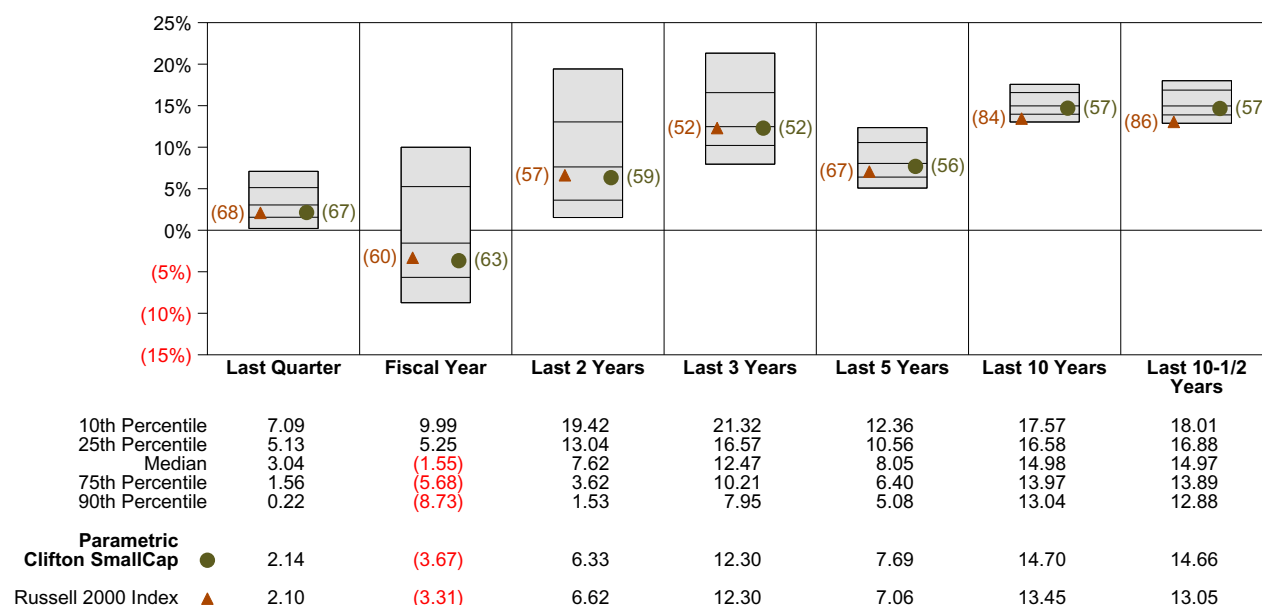
Quarterly Summary and Highlights

- Parametric Clifton SmallCap's portfolio posted a 2.14% return for the quarter placing it in the 67 percentile of the Callan Small Capitalization group for the quarter and in the 63 percentile for the last year.
- Parametric Clifton SmallCap's portfolio outperformed the Russell 2000 Index by 0.04% for the quarter and underperformed the Russell 2000 Index for the year by 0.36%.

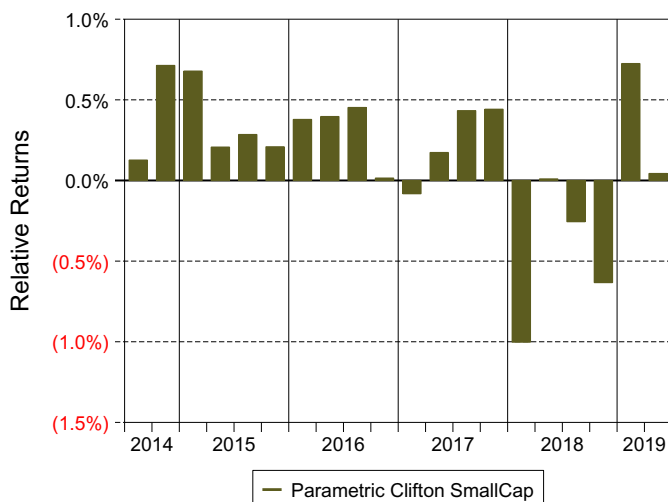
Quarterly Asset Growth

Beginning Market Value	\$32,926,291
Net New Investment	\$1,600,000
Investment Gains/(Losses)	\$815,229
Ending Market Value	\$35,341,520

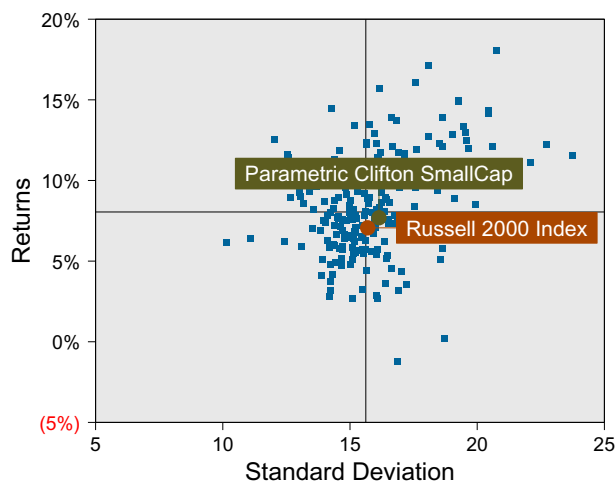
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Russell 2000 Index



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



PIMCO RAE Period Ended June 30, 2019

Investment Philosophy

Small company value equity portfolio utilizing the index strategy and philosophy described as the Enhanced RAFI US Small strategy which relies on portfolio weights derived from firm fundamentals (free cash flow, book equity value, total sales and gross dividend), instead of market capitalization. Additionally, the enhanced portfolio strategy uses a quality of earnings screening and a financial distress screening to augment portfolio returns and reduce portfolio volatility.

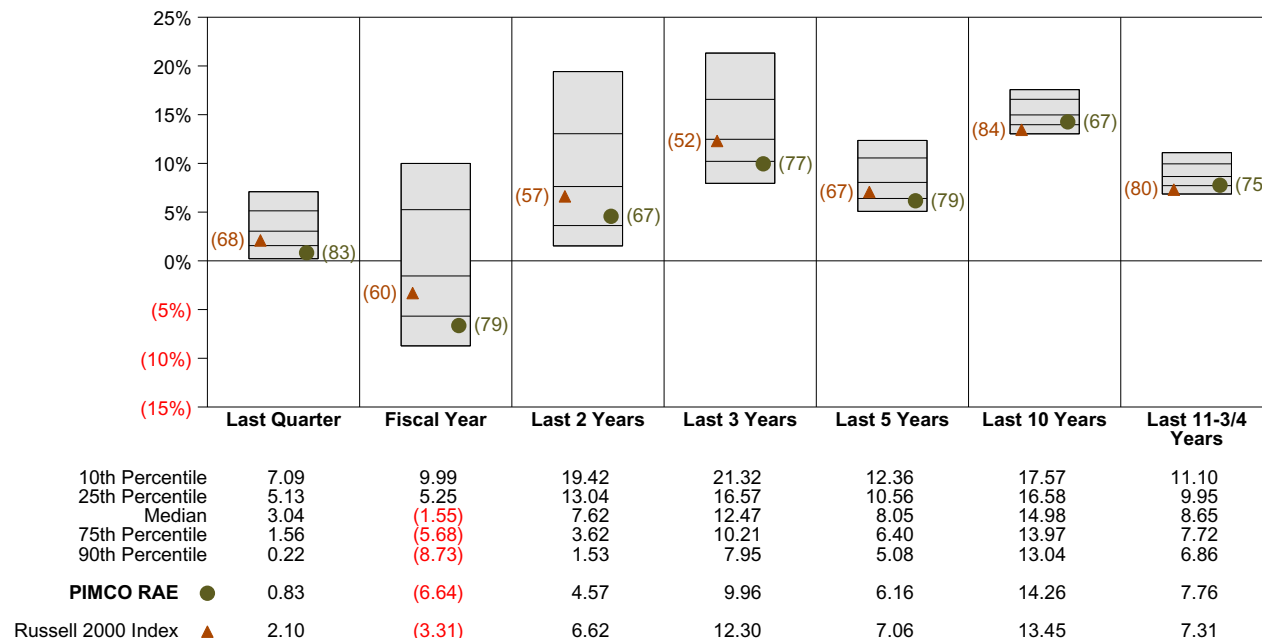
Quarterly Summary and Highlights

- PIMCO RAE's portfolio posted a 0.83% return for the quarter placing it in the 83 percentile of the Callan Small Capitalization group for the quarter and in the 79 percentile for the last year.
- PIMCO RAE's portfolio underperformed the Russell 2000 Index by 1.27% for the quarter and underperformed the Russell 2000 Index for the year by 3.33%.

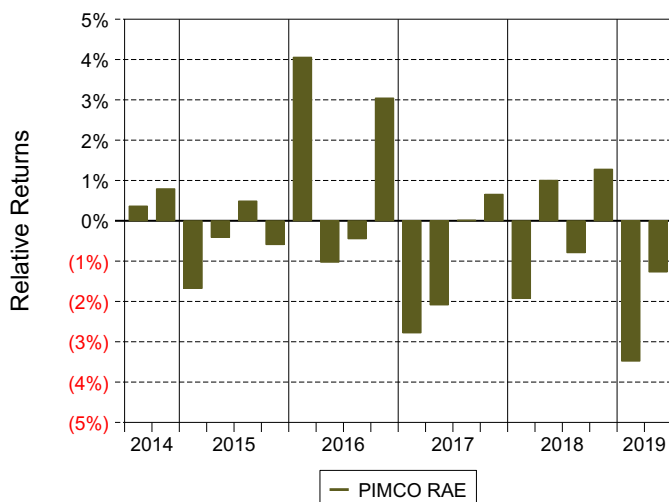
Quarterly Asset Growth

Beginning Market Value	\$32,033,974
Net New Investment	\$2,579,531
Investment Gains/(Losses)	\$448,189
Ending Market Value	\$35,061,694

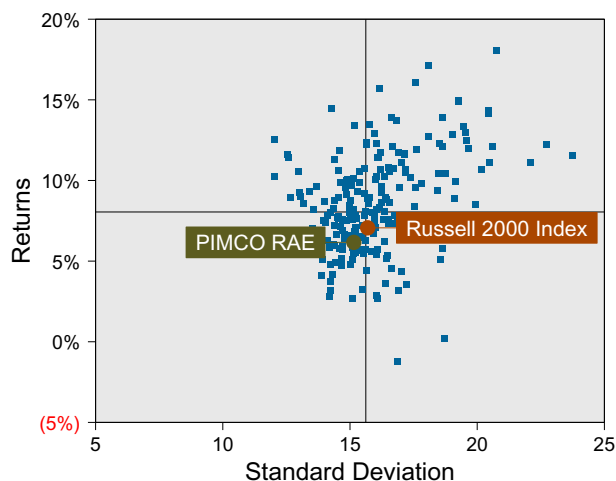
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Russell 2000 Index



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



International Equity Period Ended June 30, 2019

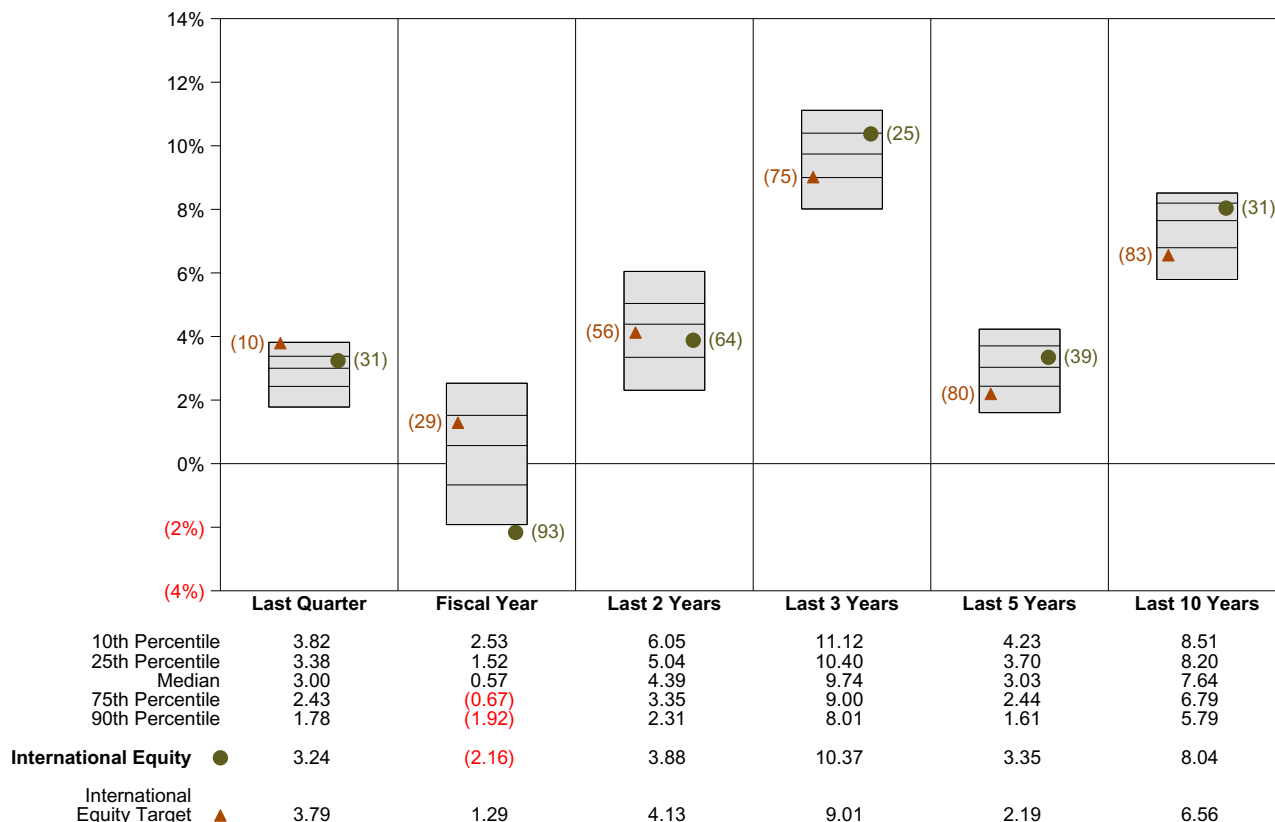
Quarterly Summary and Highlights

- International Equity's portfolio posted a 3.24% return for the quarter placing it in the 31 percentile of the Public Fund - International Equity group for the quarter and in the 93 percentile for the last year.
- International Equity's portfolio underperformed the International Equity Target by 0.55% for the quarter and underperformed the International Equity Target for the year by 3.45%.

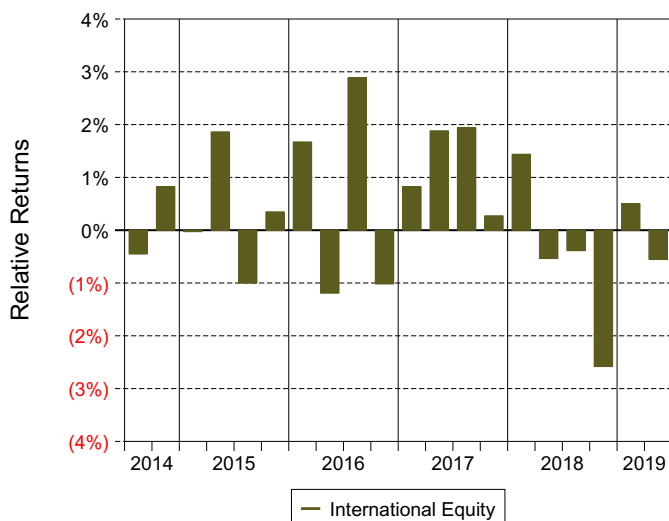
Quarterly Asset Growth

Beginning Market Value	\$170,290,631
Net New Investment	\$2,869,559
Investment Gains/(Losses)	\$5,615,390
Ending Market Value	\$178,775,580

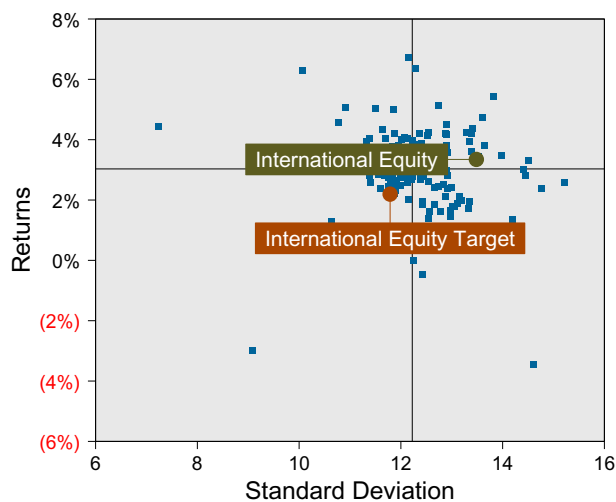
Performance vs Public Fund - International Equity (Gross)



Relative Return vs International Equity Target



Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return



DFA Intl Small Cap Value Period Ended June 30, 2019

Investment Philosophy

The International Small Cap Value Portfolio invests in the stocks of small, non-US developed markets companies that Dimensional believes to be value stocks at the time of purchase. Specifically, it looks at companies that fall within the smallest 8-10% of each country's market capitalization, and who's shares have a high book value in relation to their market value (BtM). It does not invest in emerging markets.

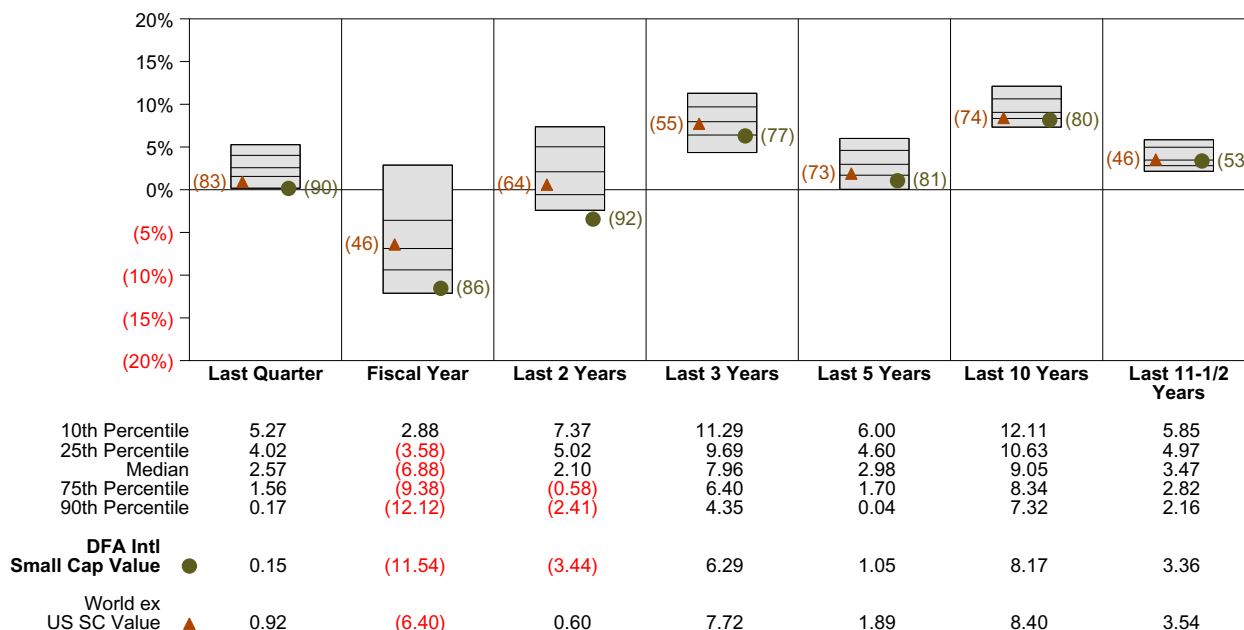
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a 0.15% return for the quarter placing it in the 90 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 86 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.77% for the quarter and underperformed the World ex US SC Value for the year by 5.14%.

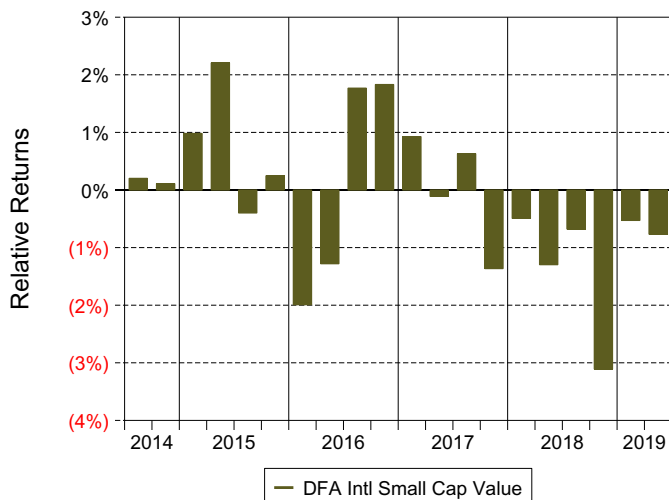
Quarterly Asset Growth

Beginning Market Value	\$16,782,548
Net New Investment	\$1,000,000
Investment Gains/(Losses)	\$37,987
Ending Market Value	\$17,820,535

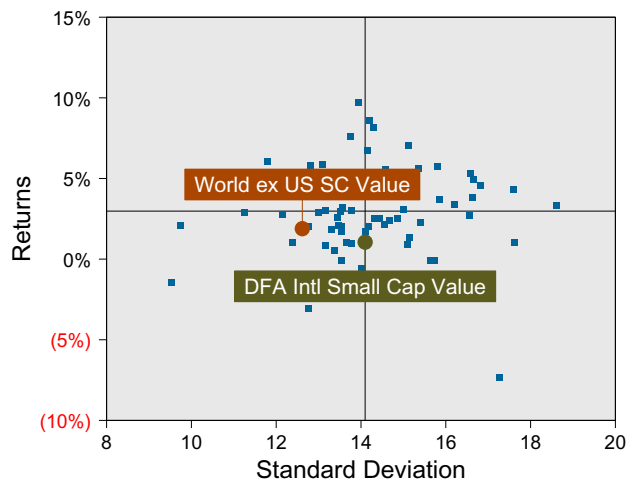
Performance vs Callan International Small Cap Mut Funds (Net)



Relative Return vs World ex US SC Value



Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



LSV Intl Value Period Ended June 30, 2019

Investment Philosophy

The objective of LSV Asset Management's International Large Cap Value strategy is to outperform the MSCI EAFE Index by at least 250 basis points (gross of fees) per annum over an annualized 3-5 year period with a tracking error of approximately 5-6%. Their stock selection process is a quantitative approach that ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 150 stocks in the most attractive securities possible within strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio is broadly diversified across industry groups and fully invested. LSV weights countries at a neutral weight relative to the benchmark country weights. 50% of the portfolio is US dollar hedged. ***MSCI EAFE through 9/30/2000; 50% Hedged EAFE through 3/31/2011 and MSCI EAFE again thereafter.**

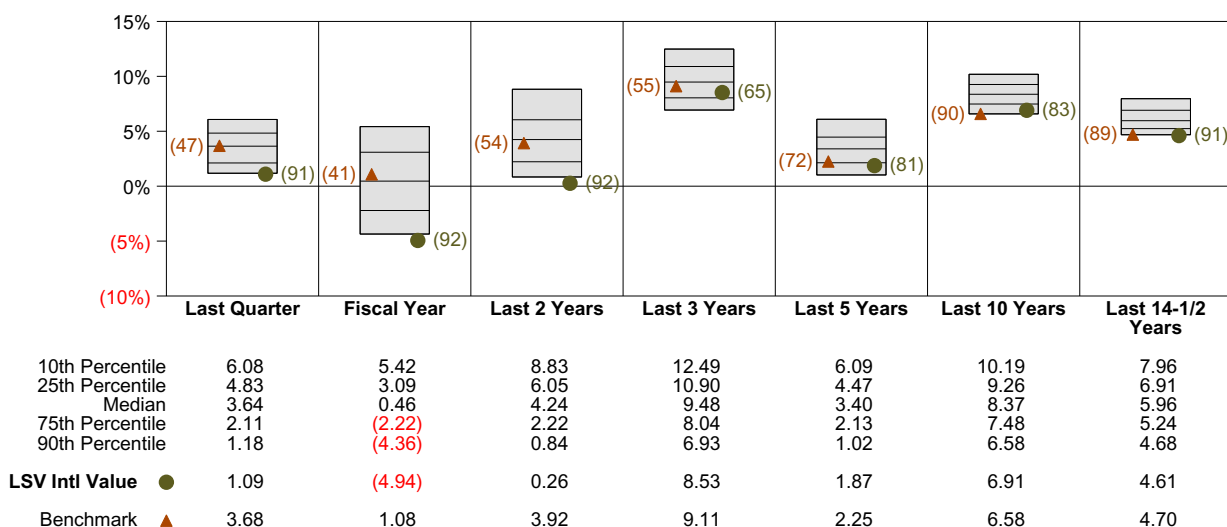
Quarterly Summary and Highlights

- LSV Intl Value's portfolio posted a 1.09% return for the quarter placing it in the 91 percentile of the Callan Non-US Equity group for the quarter and in the 92 percentile for the last year.
- LSV Intl Value's portfolio underperformed the Benchmark by 2.59% for the quarter and underperformed the Benchmark for the year by 6.02%.

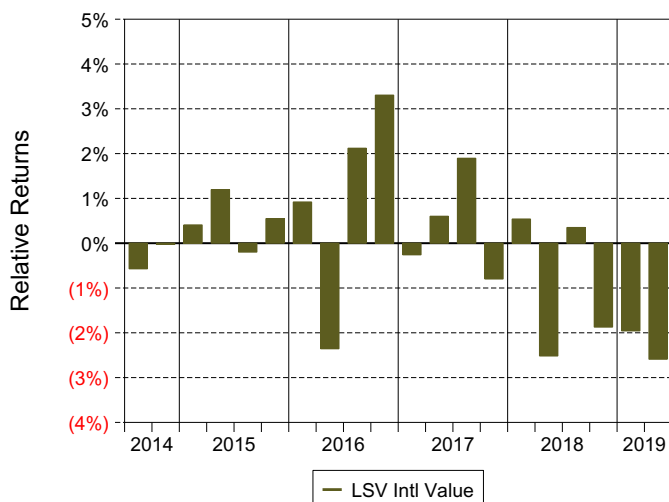
Quarterly Asset Growth

Beginning Market Value	\$66,201,922
Net New Investment	\$-64,394
Investment Gains/(Losses)	\$722,677
Ending Market Value	\$66,860,204

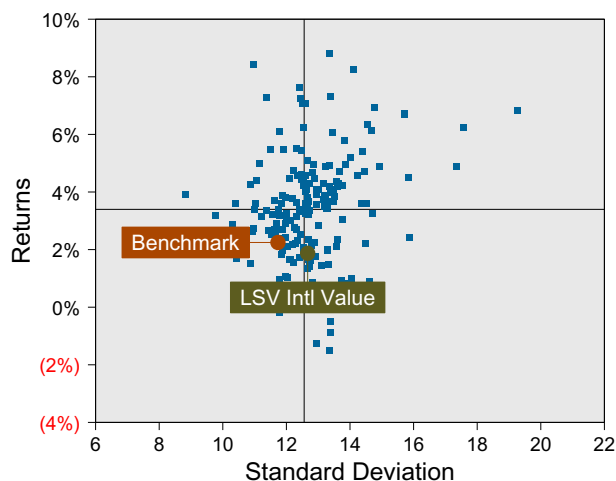
Performance vs Callan Non-US Equity (Gross)



Relative Return vs Benchmark



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



Vanguard Intl Explorer Fund

Period Ended June 30, 2019

Investment Philosophy

Vanguard International Explorer Fund invests primarily in the equity securities of small-capitalization companies located outside the United States that the advisor believes offer the potential for long-term capital appreciation. The advisor considers, among other things, whether a company is likely to have above-average earnings growth, whether the company's securities are attractively valued, and whether the company has any proprietary advantages.

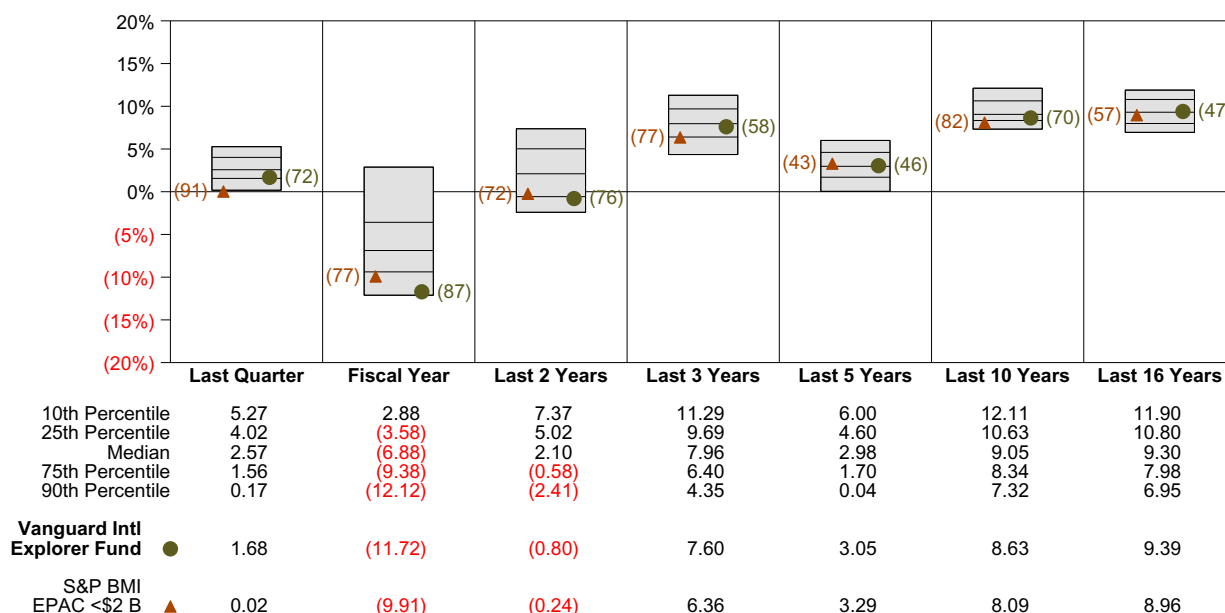
Quarterly Summary and Highlights

- Vanguard Intl Explorer Fund's portfolio posted a 1.68% return for the quarter placing it in the 72 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 87 percentile for the last year.
- Vanguard Intl Explorer Fund's portfolio outperformed the S&P BMI EPAC <\$2 B by 1.66% for the quarter and underperformed the S&P BMI EPAC <\$2 B for the year by 1.80%.

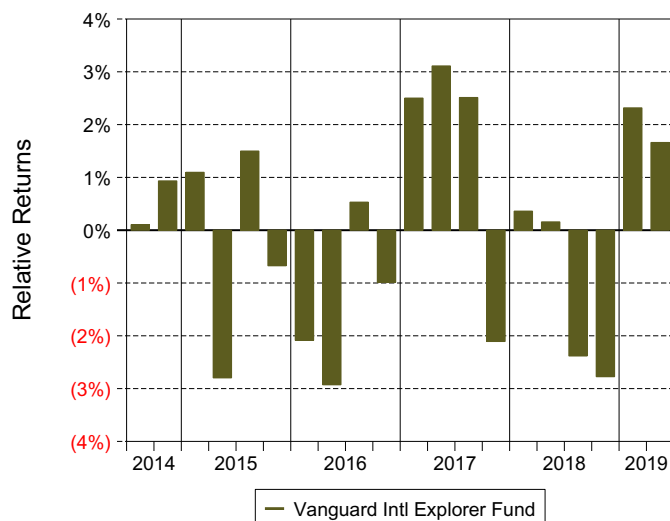
Quarterly Asset Growth

Beginning Market Value	\$17,080,734
Net New Investment	\$1,000,000
Investment Gains/(Losses)	\$310,578
Ending Market Value	\$18,391,313

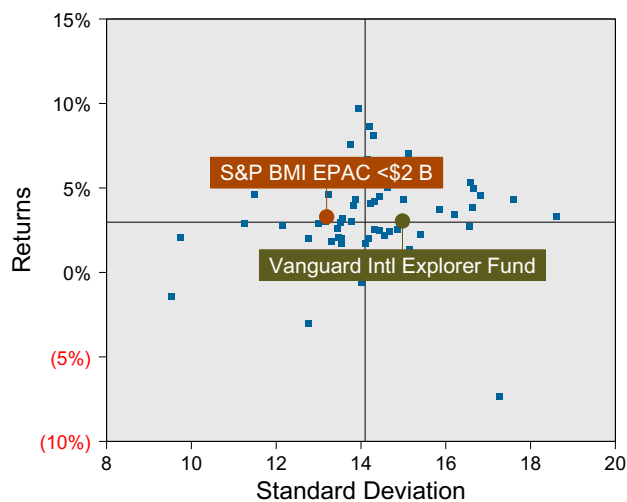
Performance vs Callan International Small Cap Mut Funds (Net)



Relative Return vs S&P BMI EPAC <\$2 B



Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



William Blair Period Ended June 30, 2019

Investment Philosophy

One of the basic investment tenets of William Blair & Company has been its focus on quality growth companies. They believe that investing in quality growth companies will generate above average results with generally less risk than the market. This opportunity exists because they believe the market underestimates the durability and rate of growth in companies that have the following characteristics: strong management with a unique vision, competitive advantages that prolong the duration and size of earnings growth, and conservative financing. Internationally, they believe that this philosophy can be combined with strategic flexibility in managing geographic exposure, capitalization, sector emphasis, and relative growth and valuation at the portfolio level in order to provide an appropriate degree of adaptability to cyclical conditions.

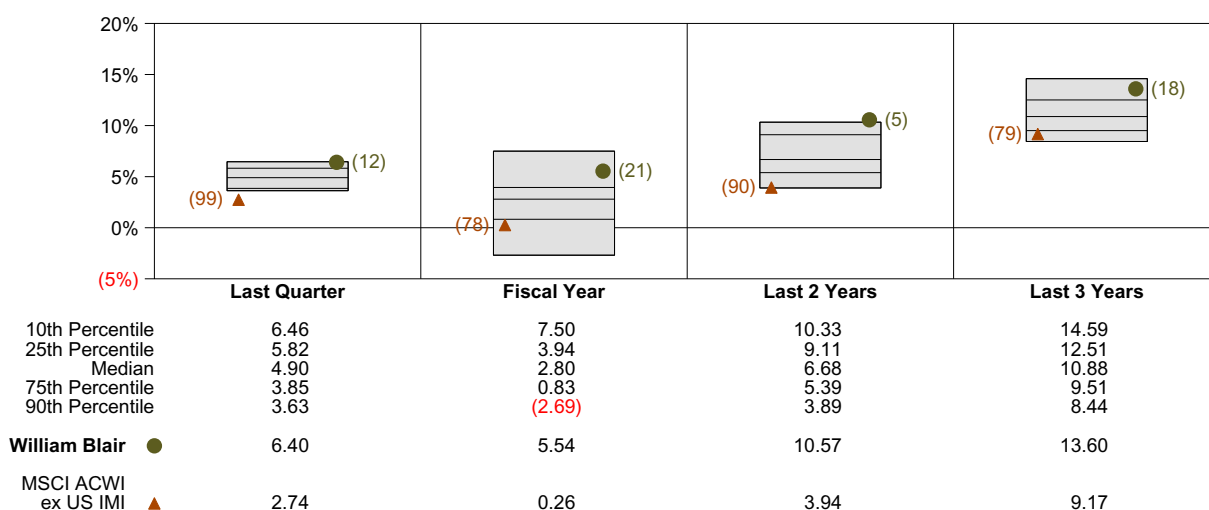
Quarterly Summary and Highlights

- William Blair's portfolio posted a 6.40% return for the quarter placing it in the 12 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 21 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 3.66% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 5.28%.

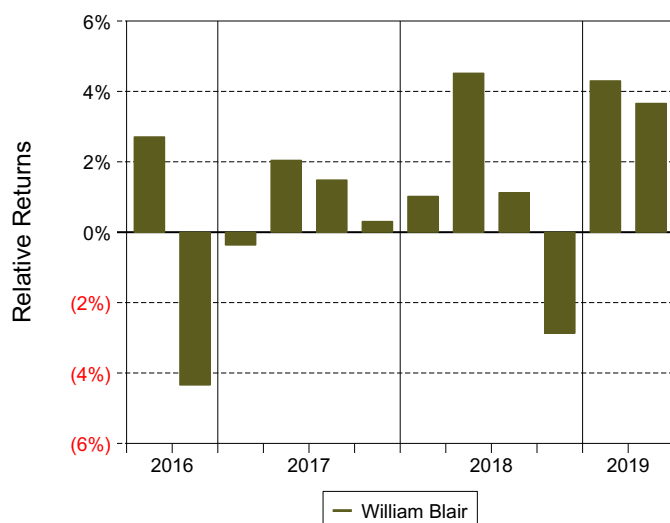
Quarterly Asset Growth

Beginning Market Value	\$70,225,427
Net New Investment	\$933,953
Investment Gains/(Losses)	\$4,544,148
Ending Market Value	\$75,703,528

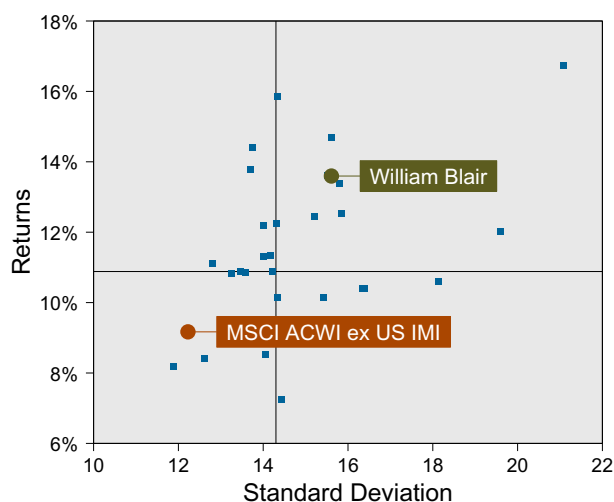
Performance vs Callan Non-US All Country Growth Equity (Gross)



Relative Return vs MSCI ACWI ex US IMI



Callan Non-US All Country Growth Equity (Gross) Annualized Three Year Risk vs Return



Domestic Fixed Income Period Ended June 30, 2019

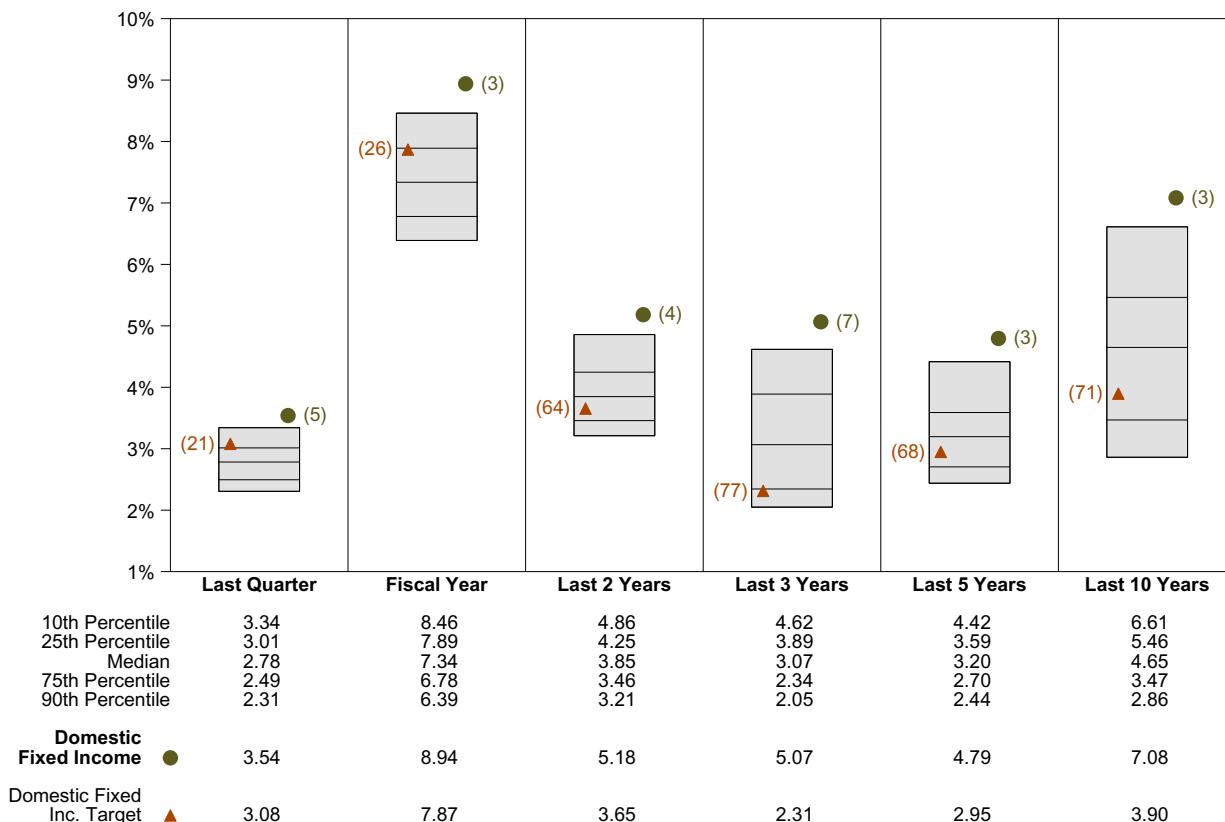
Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 3.54% return for the quarter placing it in the 5 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 3 percentile for the last year.
- Domestic Fixed Income's portfolio outperformed the Domestic Fixed Inc. Target by 0.46% for the quarter and outperformed the Domestic Fixed Inc. Target for the year by 1.07%.

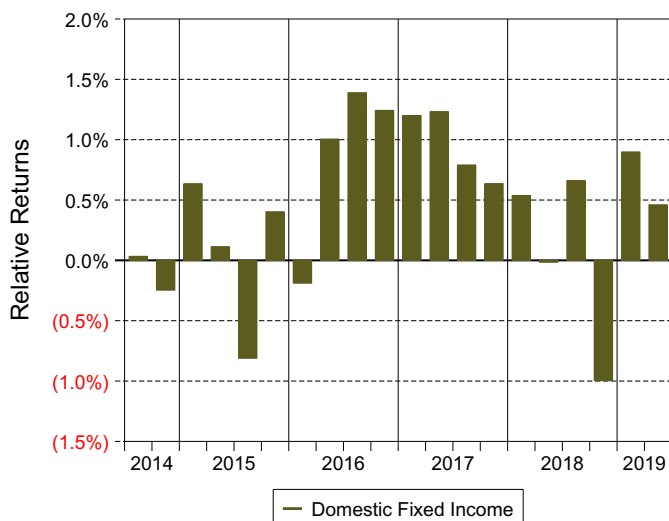
Quarterly Asset Growth

Beginning Market Value	\$1,312,216,677
Net New Investment	\$-11,524,644
Investment Gains/(Losses)	\$46,300,526
Ending Market Value	\$1,346,992,559

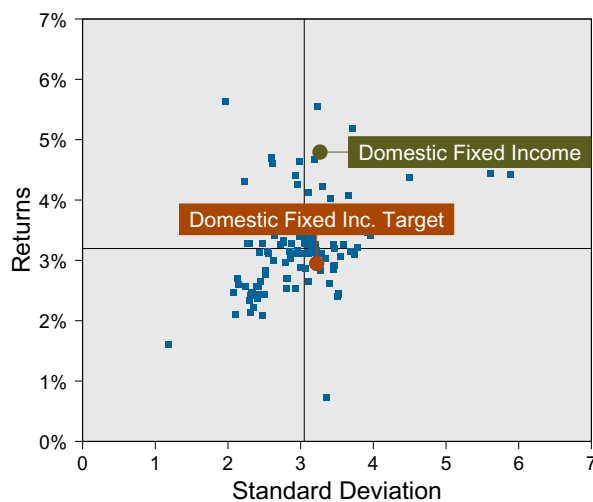
Performance vs Public Fund - Domestic Fixed (Gross)



Relative Return vs Domestic Fixed Inc. Target



Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return



Declaration Total Return Period Ended June 30, 2019

Investment Philosophy

The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies (Non-Agency RMBS) and government agencies (Agency MBS) and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). Portfolio holdings may range from short tenure senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. Smaller portfolio allocations may include consumer asset-backed securities (ABS), or other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only (IO) MBS.

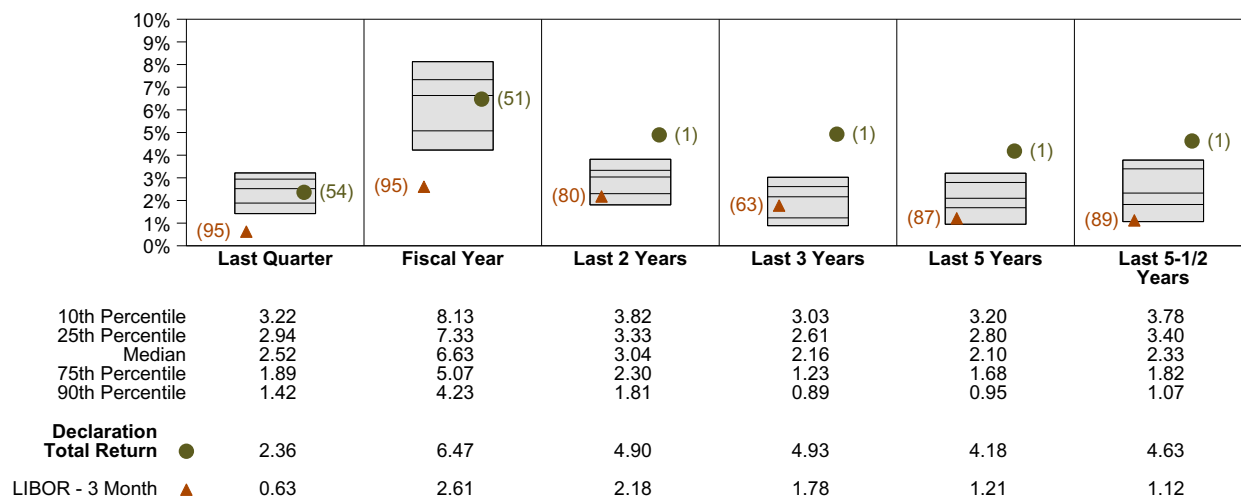
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 2.36% return for the quarter placing it in the 54 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 51 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.73% for the quarter and outperformed the LIBOR - 3 Month for the year by 3.87%.

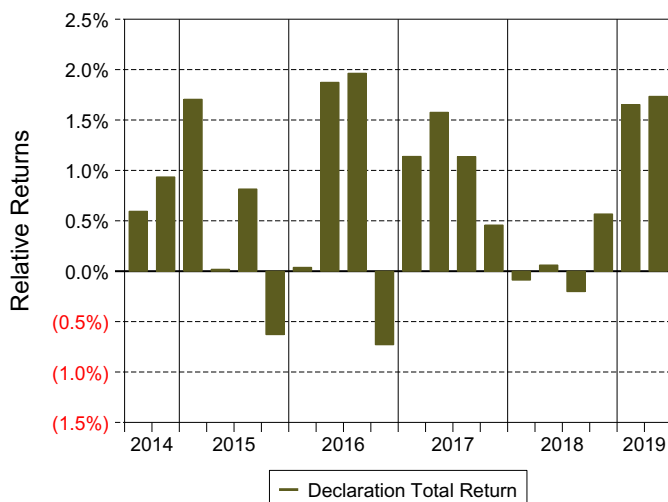
Quarterly Asset Growth

Beginning Market Value	\$89,876,841
Net New Investment	\$-50,059
Investment Gains/(Losses)	\$2,120,723
Ending Market Value	\$91,947,505

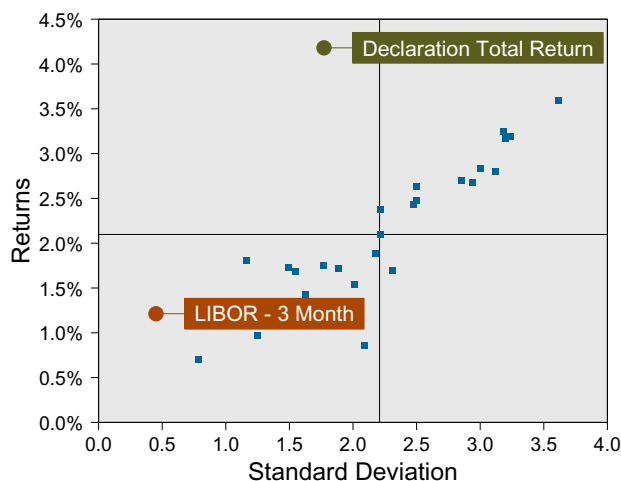
Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)



Relative Return vs LIBOR - 3 Month



Callan Intermediate Fixed Inc Mut Funds (Net) Annualized Five Year Risk vs Return



PIMCO DiSCO II

Period Ended June 30, 2019

Investment Philosophy

The PIMCO Distressed Senior Credit Opportunities Fund is an opportunistic private-equity style Fund which seeks to provide investors enhanced returns principally through long-biased investments in undervalued senior and super senior structured credit securities that are expected to produce attractive levels of current income and that may also appreciate in value over the long term. The fund will look to capitalize on forced sales by liquidity constrained investors.

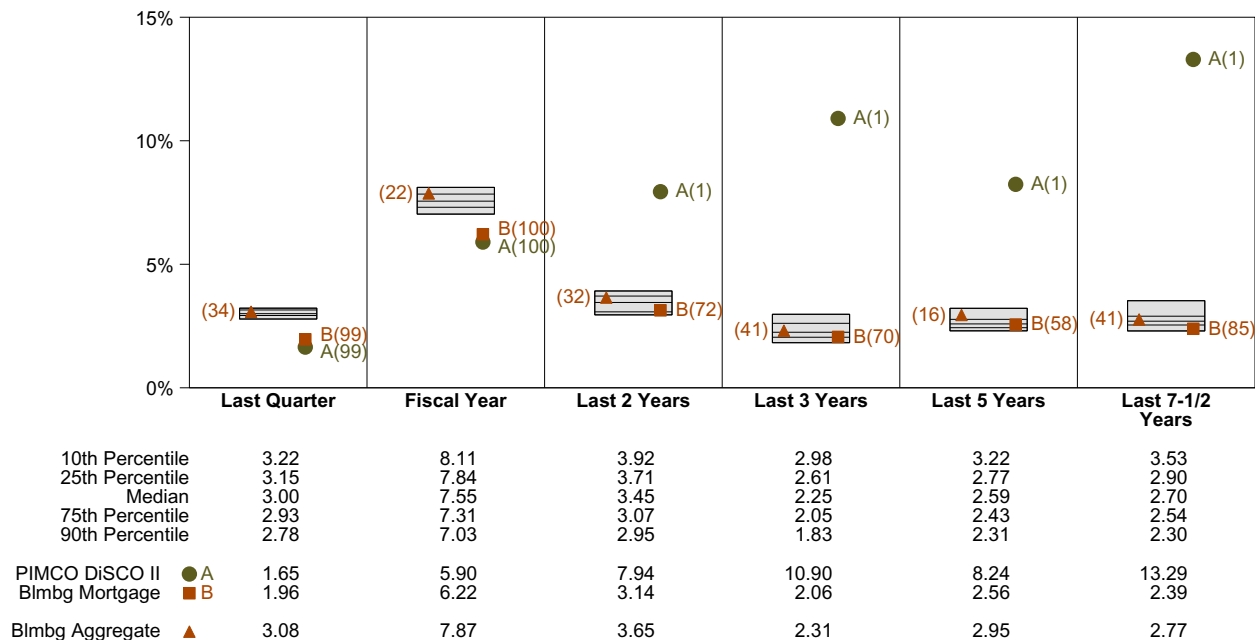
Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 1.65% return for the quarter placing it in the 99 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 100 percentile for the last year.
- PIMCO DiSCO II's portfolio underperformed the Blmbg Aggregate by 1.43% for the quarter and underperformed the Blmbg Aggregate for the year by 1.97%.

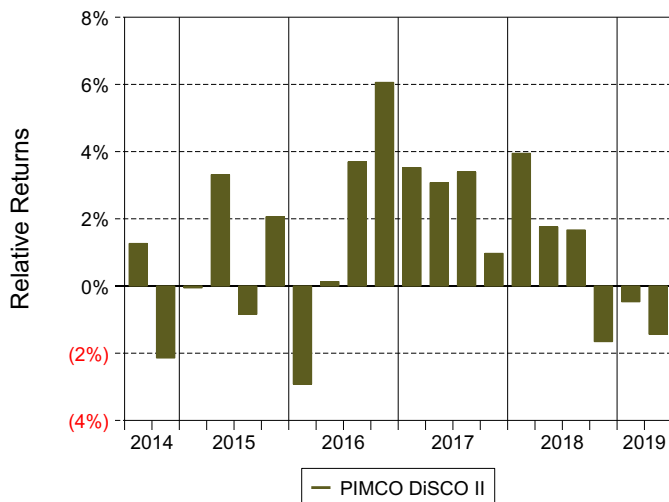
Quarterly Asset Growth

Beginning Market Value	\$83,096,494
Net New Investment	\$0
Investment Gains/(Losses)	\$1,367,651
Ending Market Value	\$84,464,145

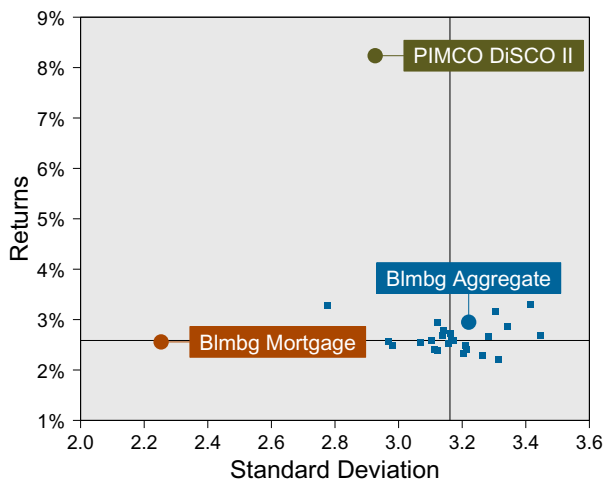
Performance vs Callan Core Bond Mutual Funds (Net)



Relative Return vs Blmbg Aggregate



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



PIMCO Bravo II Fund Period Ended June 30, 2019

Investment Philosophy

The BRAVO II Fund is a private equity style fund targeting an annualized IRR of 15-20% and multiple of 1.8-2x, net of fees and carried interest with an initial 5-year term. The fund will seek to capitalize on non-economic asset sale decisions by global financial institutions. The fund will have the flexibility to acquire attractively discounted, less liquid loans, structured credit and other assets tied to residential or commercial real estate markets in the U.S. and Europe.

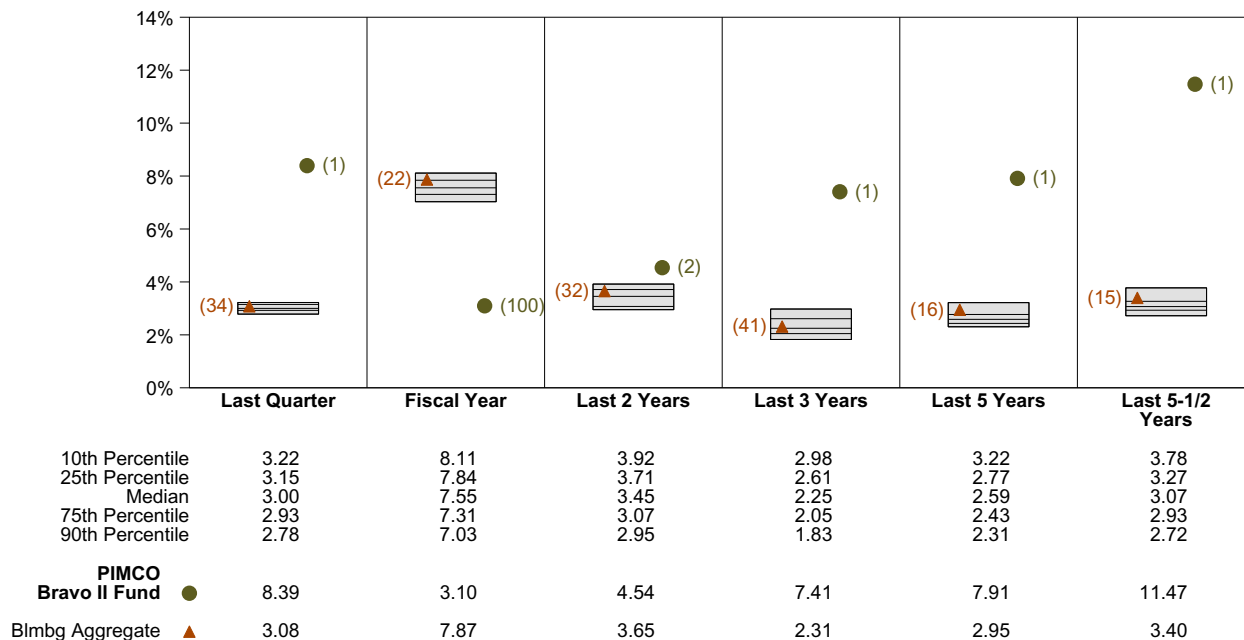
Quarterly Summary and Highlights

- PIMCO Bravo II Fund's portfolio posted a 8.39% return for the quarter placing it in the 1 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 100 percentile for the last year.
- PIMCO Bravo II Fund's portfolio outperformed the Blmbg Aggregate by 5.31% for the quarter and underperformed the Blmbg Aggregate for the year by 4.77%.

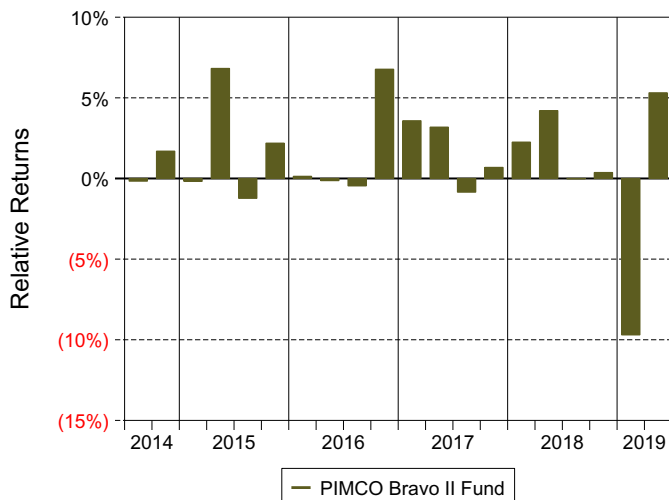
Quarterly Asset Growth

Beginning Market Value	\$28,224,480
Net New Investment	\$-1,888,308
Investment Gains/(Losses)	\$2,298,317
Ending Market Value	\$28,634,489

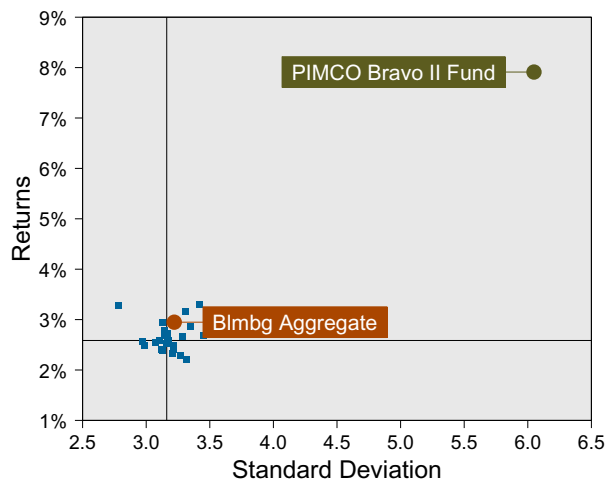
Performance vs Callan Core Bond Mutual Funds (Net)



Relative Return vs Blmbg Aggregate



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



Prudential Core Plus Period Ended June 30, 2019

Investment Philosophy

PGIM Fixed Income's Core Plus Strategy is an actively-managed strategy that seeks +150 bps over the Bloomberg Barclays U.S. Aggregate Bond Index or similar benchmark annualized over a market cycle (three to five years.) The Strategy seeks about half of its excess return from active sector allocation and up to one-third each from subsector/security selection and duration/yield curve/currencies, depending on market opportunities.

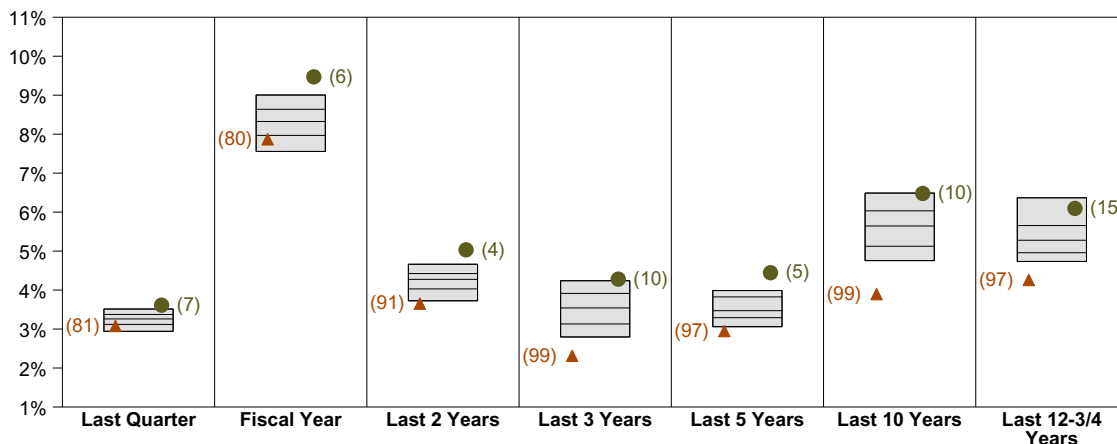
Quarterly Summary and Highlights

- Prudential Core Plus's portfolio posted a 3.61% return for the quarter placing it in the 7 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 6 percentile for the last year.
- Prudential Core Plus's portfolio outperformed the Blmbg Aggregate by 0.53% for the quarter and outperformed the Blmbg Aggregate for the year by 1.60%.

Quarterly Asset Growth

Beginning Market Value	\$294,621,463
Net New Investment	\$26,835,577
Investment Gains/(Losses)	\$11,296,754
Ending Market Value	\$332,753,794

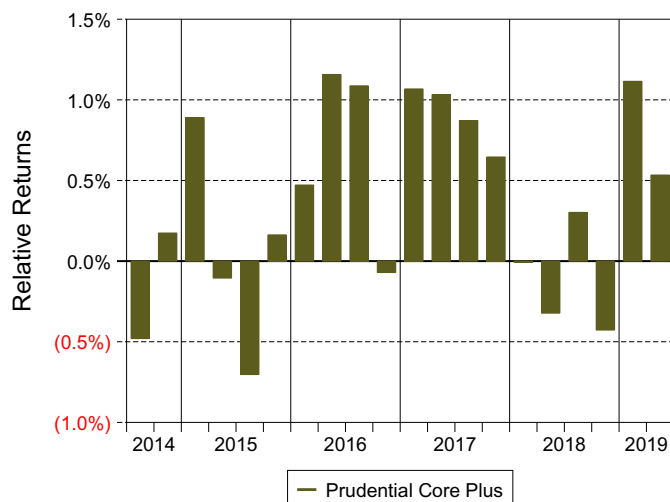
Performance vs Callan Core Plus Fixed Income (Gross)



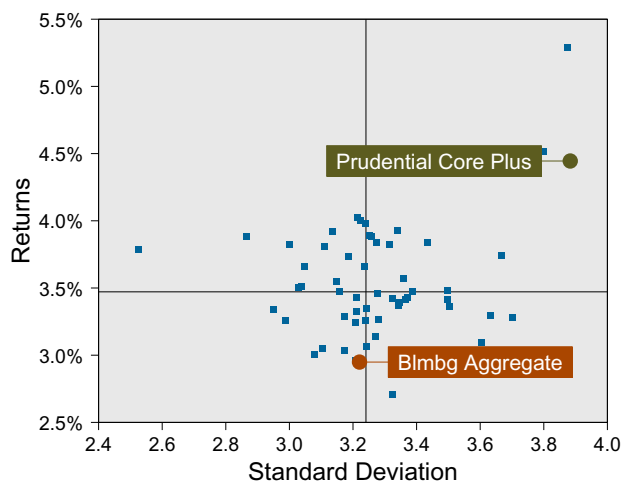
10th Percentile	3.51	9.00	4.66	4.24	3.99	6.49	6.37
25th Percentile	3.37	8.64	4.42	3.91	3.83	6.03	5.66
Median	3.26	8.33	4.27	3.54	3.47	5.64	5.28
75th Percentile	3.12	7.97	4.03	3.13	3.29	5.12	4.96
90th Percentile	2.94	7.56	3.73	2.80	3.06	4.76	4.73

Prudential Core Plus	●	3.61	9.47	5.03	4.28	4.44	6.48	6.09
Blmbg Aggregate	▲	3.08	7.87	3.65	2.31	2.95	3.90	4.26

Relative Return vs Blmbg Aggregate



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



SSgA US Govt Cr Bd Index Period Ended June 30, 2019

Investment Philosophy

The Fund seeks an investment return that approximates as closely as practicable, before expenses, the performance of the Barclays Capital U.S. Government/Credit Bond Index over the long term.

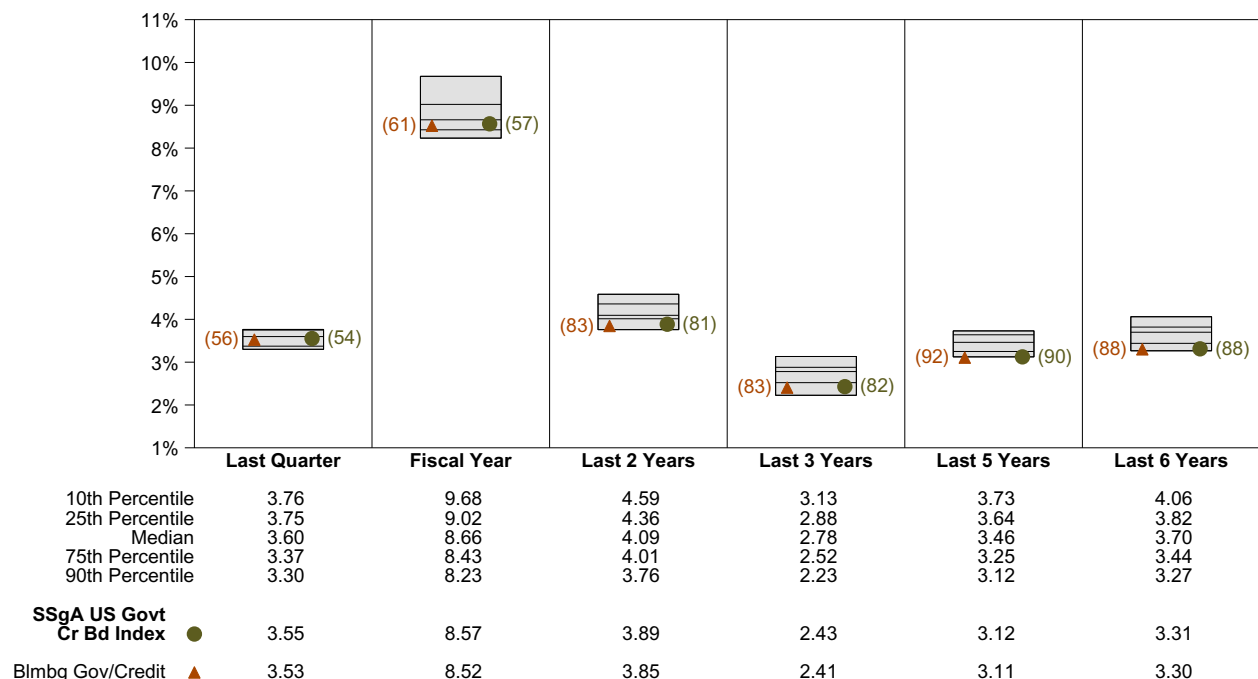
Quarterly Summary and Highlights

- SSgA US Govt Cr Bd Index's portfolio posted a 3.55% return for the quarter placing it in the 54 percentile of the Callan Government/Credit group for the quarter and in the 57 percentile for the last year.
- SSgA US Govt Cr Bd Index's portfolio outperformed the Blmbg Gov/Credit by 0.03% for the quarter and outperformed the Blmbg Gov/Credit for the year by 0.04%.

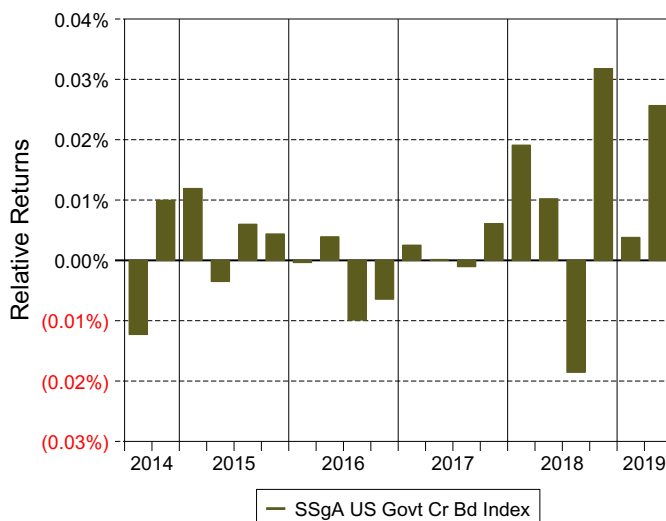
Quarterly Asset Growth

Beginning Market Value	\$174,438,888
Net New Investment	\$-2,914
Investment Gains/(Losses)	\$6,196,361
Ending Market Value	\$180,632,336

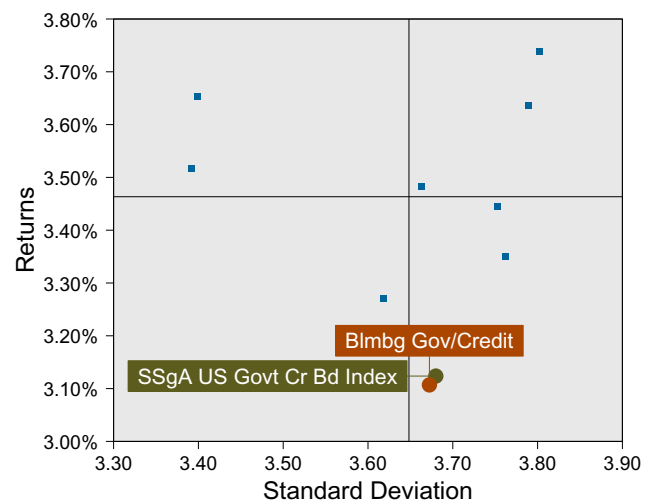
Performance vs Callan Government/Credit (Gross)



Relative Return vs Blmbg Gov/Credit



Callan Government/Credit (Gross) Annualized Five Year Risk vs Return



Wells Capital Period Ended June 30, 2019

Investment Philosophy

The Medium Quality Credit fixed income strategy is designed to maximize total return from the high-grade corporate bond market while maintaining a strategic allocation to the BBB portion of the high yield market. The investment process for this fund starts with a "top-down" strategy. Security selection is determined by in-depth credit research, holding that in-depth knowledge of industries, companies, and their management teams can help identify credit trends that can lead to investment opportunities. Furthermore, a disciplined relative value framework is applied to help determine the optimal position to invest within an industry and within an individual issuer's capital structure.

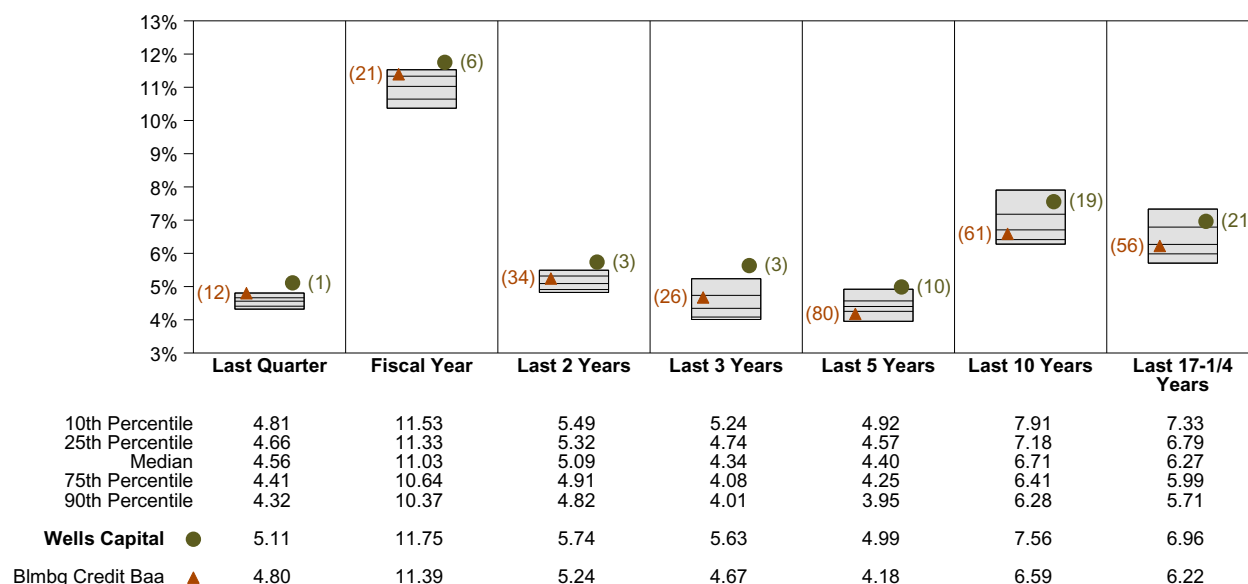
Quarterly Summary and Highlights

- Wells Capital's portfolio posted a 5.11% return for the quarter placing it in the 1 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 6 percentile for the last year.
- Wells Capital's portfolio outperformed the Blmbg Credit Baa by 0.31% for the quarter and outperformed the Blmbg Credit Baa for the year by 0.36%.

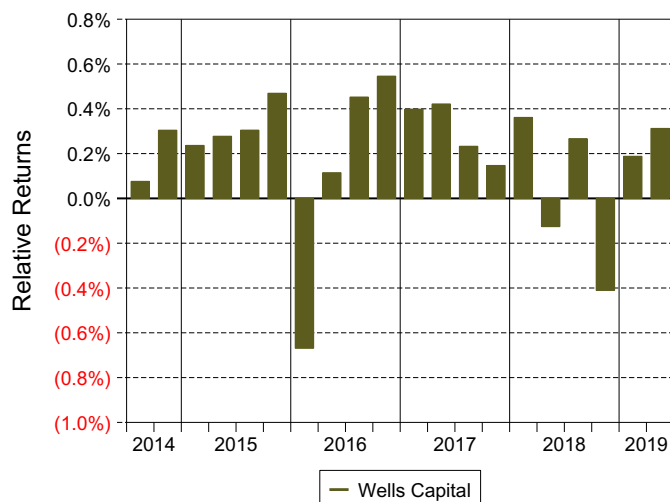
Quarterly Asset Growth

Beginning Market Value	\$270,593,833
Net New Investment	\$-172,108,612
Investment Gains/(Losses)	\$7,921,021
Ending Market Value	\$106,406,242

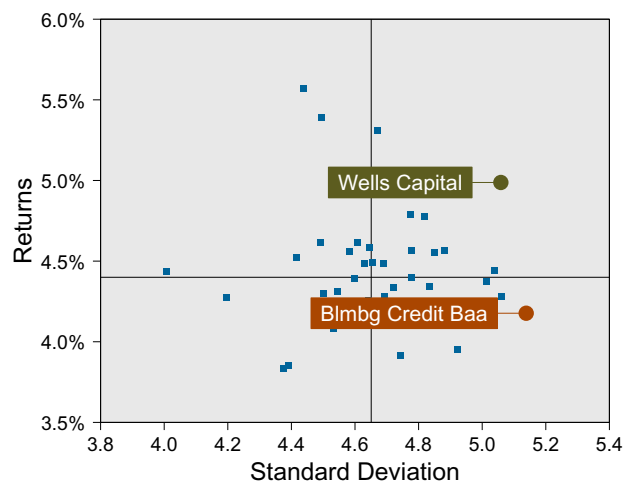
Performance vs Callan Investment Grade Credit Fixed Inc (Gross)



Relative Return vs Blmbg Credit Baa



Callan Investment Grade Credit Fixed Inc (Gross) Annualized Five Year Risk vs Return



Western Asset Management Company

Period Ended June 30, 2019

Investment Philosophy

Western Asset designs this portfolio using all major fixed-income sectors with a bias towards non-Treasuries, especially corporate, mortgage-backed and asset-backed securities. Value can be added through sector rotation, issue selection, duration and term structure weighting.

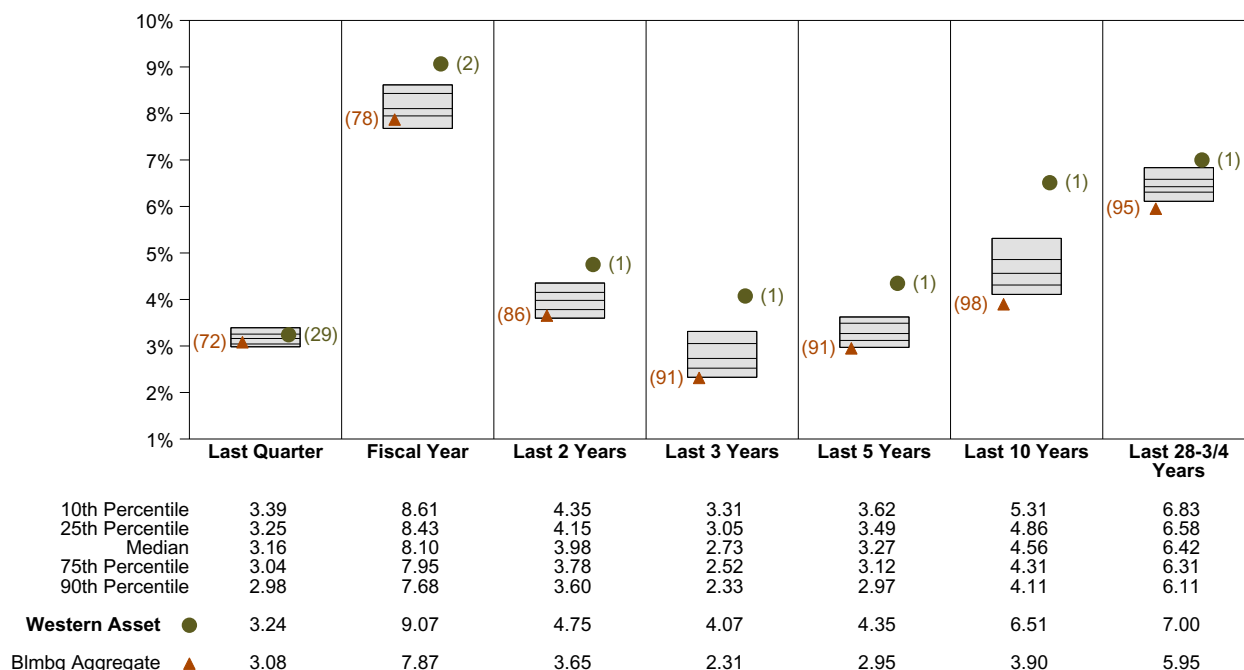
Quarterly Summary and Highlights

- Western Asset's portfolio posted a 3.24% return for the quarter placing it in the 29 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 2 percentile for the last year.
- Western Asset's portfolio outperformed the Blmbg Aggregate by 0.16% for the quarter and outperformed the Blmbg Aggregate for the year by 1.20%.

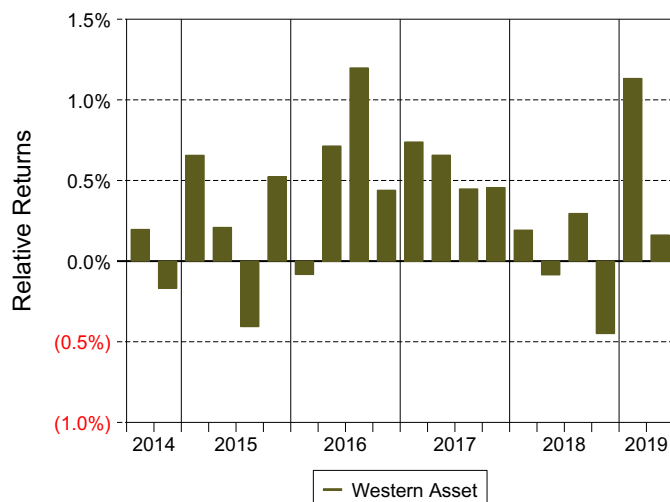
Quarterly Asset Growth

Beginning Market Value	\$371,364,678
Net New Investment	\$-14,310,328
Investment Gains/(Losses)	\$11,852,264
Ending Market Value	\$368,906,614

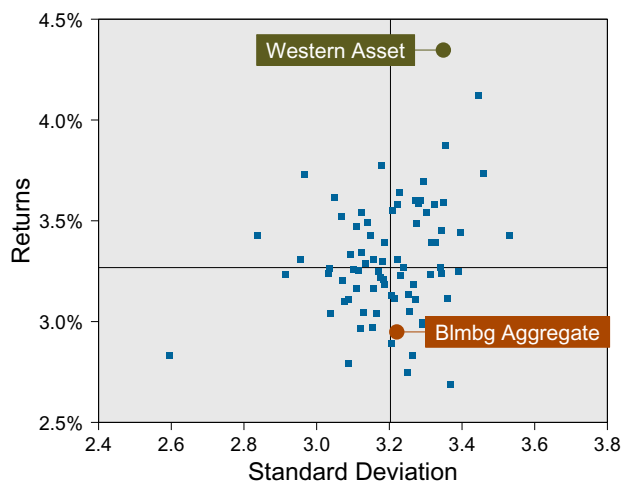
Performance vs Callan Core Bond Fixed Income (Gross)



Relative Return vs Blmbg Aggregate



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



Real Estate Period Ended June 30, 2019

Quarterly Summary and Highlights

- Real Estate's portfolio posted a 1.82% return for the quarter placing it in the 22 percentile of the Public Fund - Real Estate group for the quarter and in the 97 percentile for the last year.
- Real Estate's portfolio outperformed the NCREIF Total Index by 0.31% for the quarter and underperformed the NCREIF Total Index for the year by 0.77%.

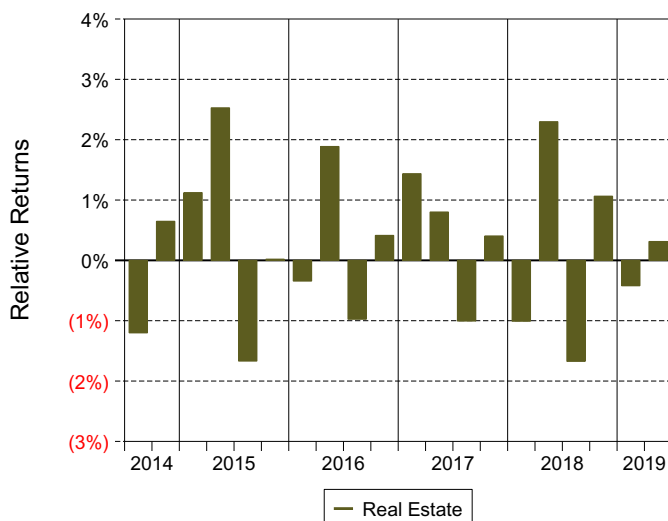
Quarterly Asset Growth

Beginning Market Value	\$100,527,812
Net New Investment	\$-1,169,718
Investment Gains/(Losses)	\$1,818,260
Ending Market Value	\$101,176,354

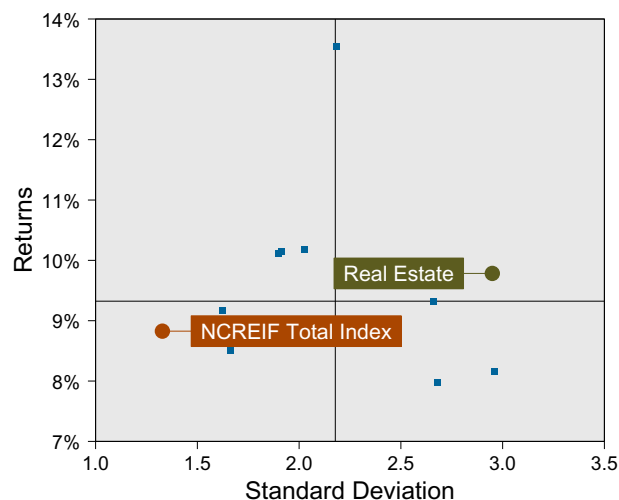
Performance vs Public Fund - Real Estate (Gross)



Relative Return vs NCREIF Total Index



Public Fund - Real Estate (Gross) Annualized Five Year Risk vs Return



Invesco Core Real Estate Period Ended June 30, 2019

Investment Philosophy

IRE's investment philosophy is comprised of two fundamental principles: (1) maximize the predictability and consistency of investment returns and (2) minimize the risk of capital loss. This philosophy forms the cornerstone of the company's real estate investment philosophy.

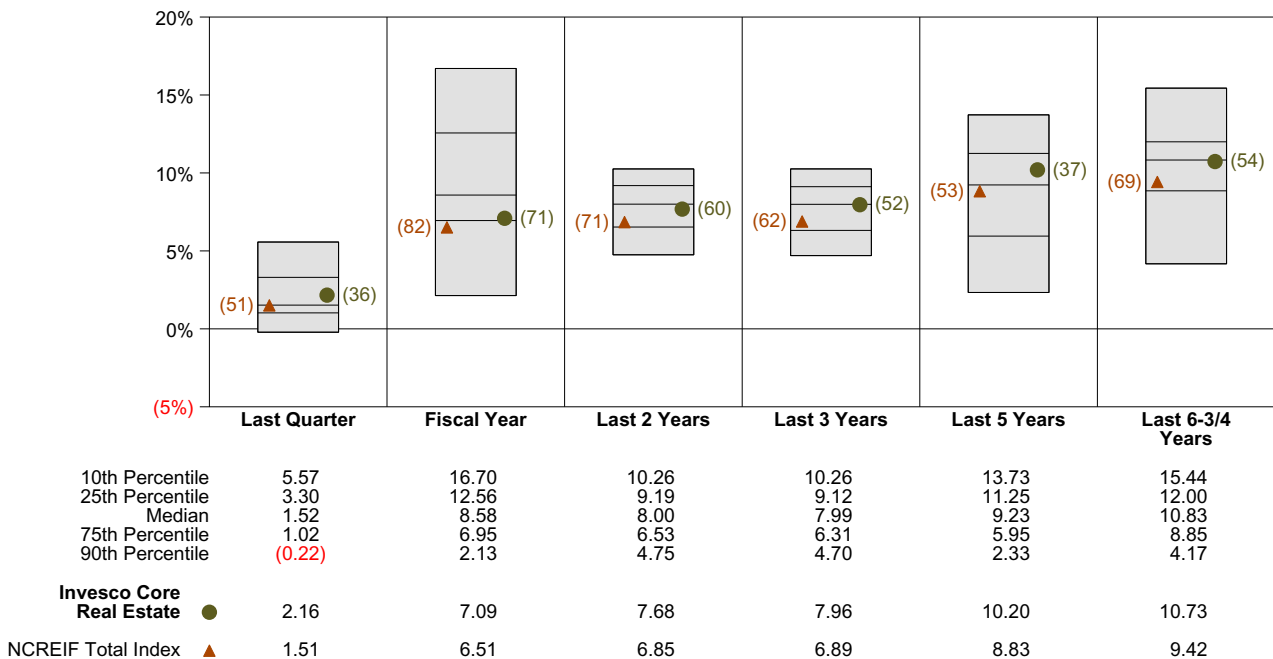
Quarterly Summary and Highlights

- Invesco Core Real Estate's portfolio posted a 2.16% return for the quarter placing it in the 36 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 71 percentile for the last year.
- Invesco Core Real Estate's portfolio outperformed the NCREIF Total Index by 0.66% for the quarter and outperformed the NCREIF Total Index for the year by 0.58%.

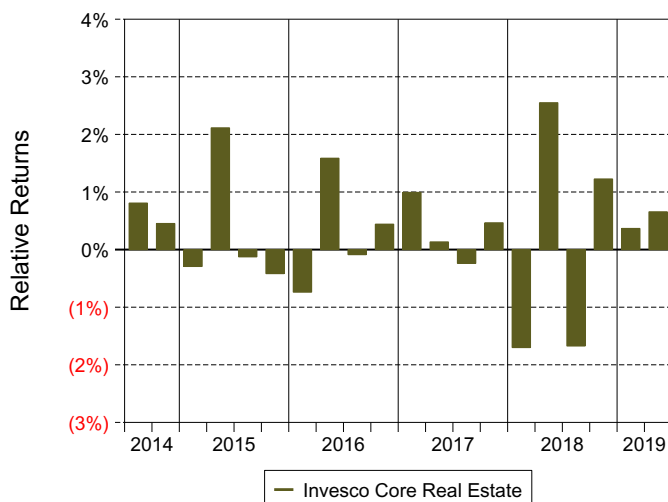
Quarterly Asset Growth

Beginning Market Value	\$51,974,467
Net New Investment	\$-501,696
Investment Gains/(Losses)	\$1,117,924
Ending Market Value	\$52,590,695

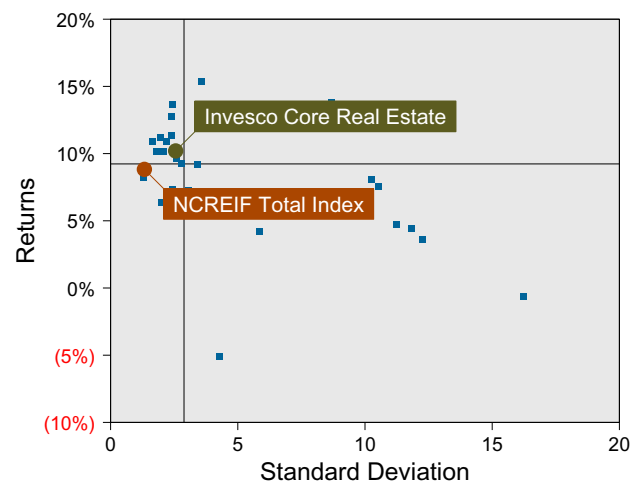
Performance vs Callan Total Domestic Real Estate DB (Gross)



Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross) Annualized Five Year Risk vs Return



JP Morgan Real Estate Period Ended June 30, 2019

Investment Philosophy

The J.P. Morgan U.S. Real Estate Income and Growth Fund seeks to construct and opportunistically manage a portfolio of core direct real estate investments, complemented by other real estate and real estate-related assets. The Fund pursues a broadly diversified absolute-return strategy and pursues all property investments on an opportunistic basis. The majority of the Fund's investments will be in direct core properties in the office, industrial, retail and residential sectors.

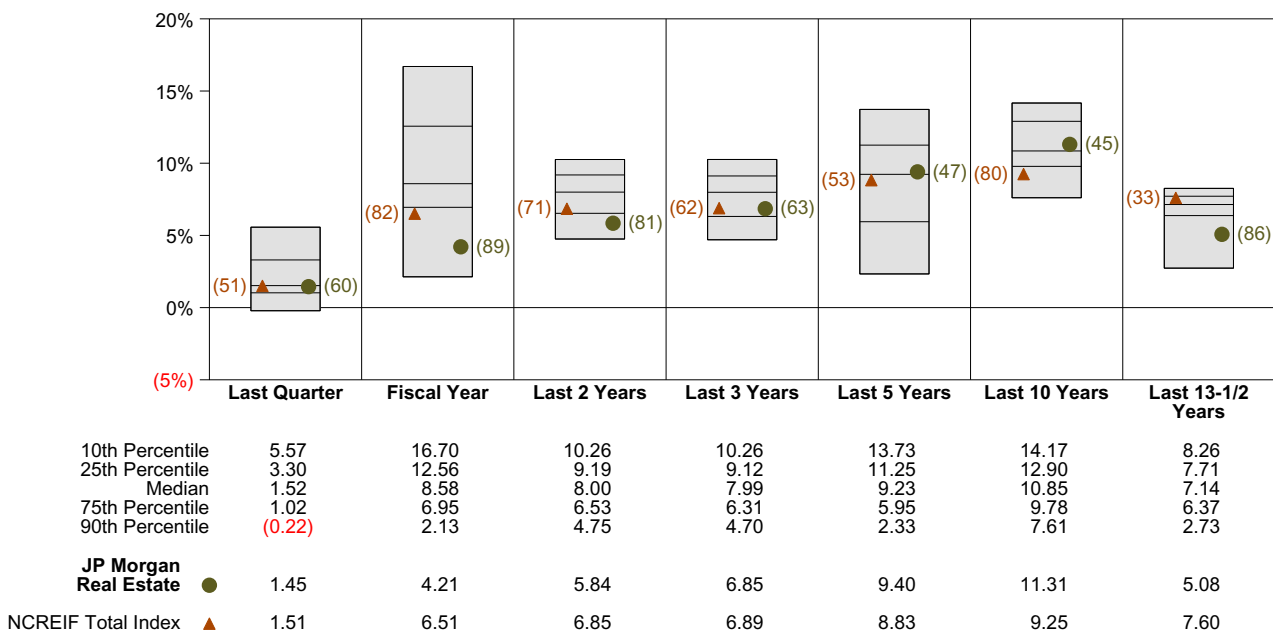
Quarterly Summary and Highlights

- JP Morgan Real Estate's portfolio posted a 1.45% return for the quarter placing it in the 60 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 89 percentile for the last year.
- JP Morgan Real Estate's portfolio underperformed the NCREIF Total Index by 0.06% for the quarter and underperformed the NCREIF Total Index for the year by 2.30%.

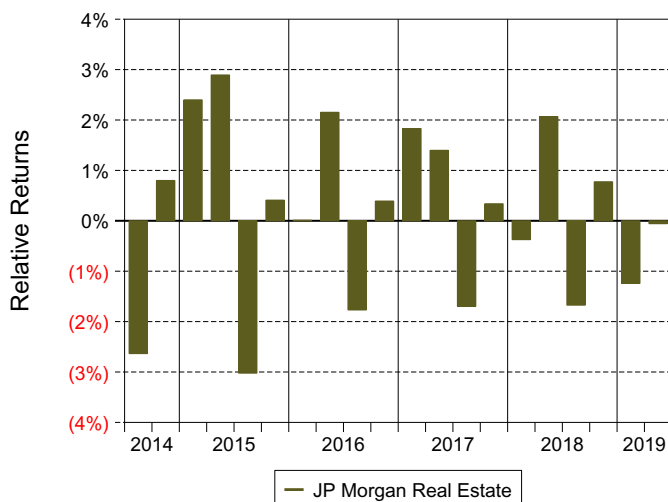
Quarterly Asset Growth

Beginning Market Value	\$48,553,344
Net New Investment	\$-668,022
Investment Gains/(Losses)	\$700,336
Ending Market Value	\$48,585,659

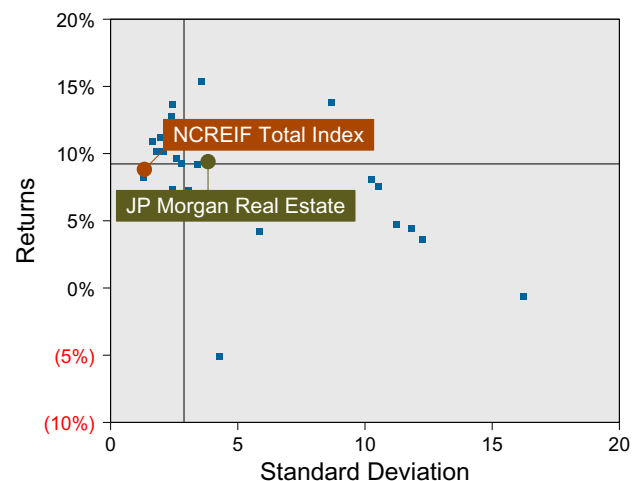
Performance vs Callan Total Domestic Real Estate DB (Gross)



Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross) Annualized Five Year Risk vs Return



Western Asset TIPS Period Ended June 30, 2019

Investment Philosophy

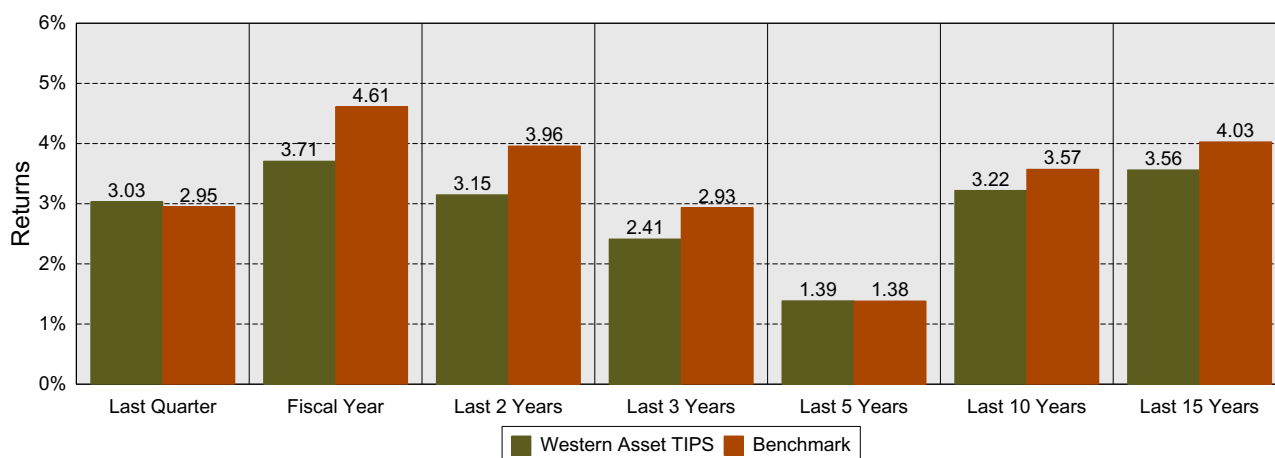
The Western Asset US TIPS Full Discretion strategy is an inflation-protected strategy that aims to maximize total return and add value through duration and curve positioning, sector allocation, and security selection, while approximating benchmark risk. The strategy invests in a diversified portfolio using higher-yielding inflation-protected instruments with a bias toward Treasury Inflation-Protected Securities (TIPS). Opportunistic investments include high-yield, emerging markets, non-dollar securities, commodities and bank loans that may also be employed using derivatives. **Benchmark: Bloomberg US TIPS through 12/31/2009; Bloomberg Global Inflation-Linked through 10/31/2018; Bloomberg US Govt Inflation Linked Bond Index thereafter.**

Quarterly Summary and Highlights

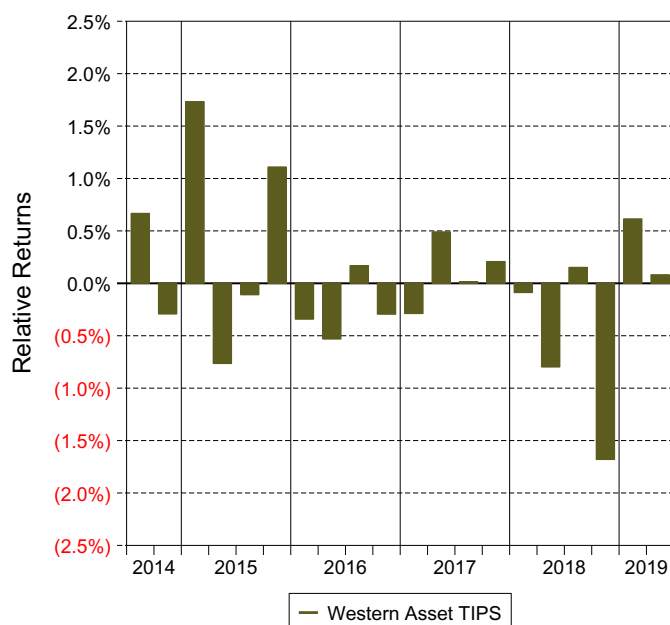
- Western Asset TIPS's portfolio outperformed the Benchmark by 0.08% for the quarter and underperformed the Benchmark for the year by 0.90%.

Quarterly Asset Growth

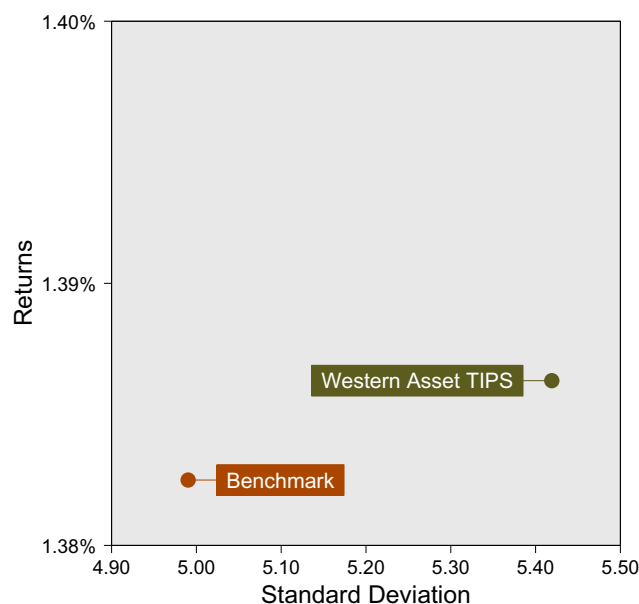
Beginning Market Value	\$131,348,439
Net New Investment	\$-37,165
Investment Gains/(Losses)	\$3,981,782
Ending Market Value	\$135,293,057



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Eastern Timber Opportunities Period Ended June 30, 2019

Investment Philosophy

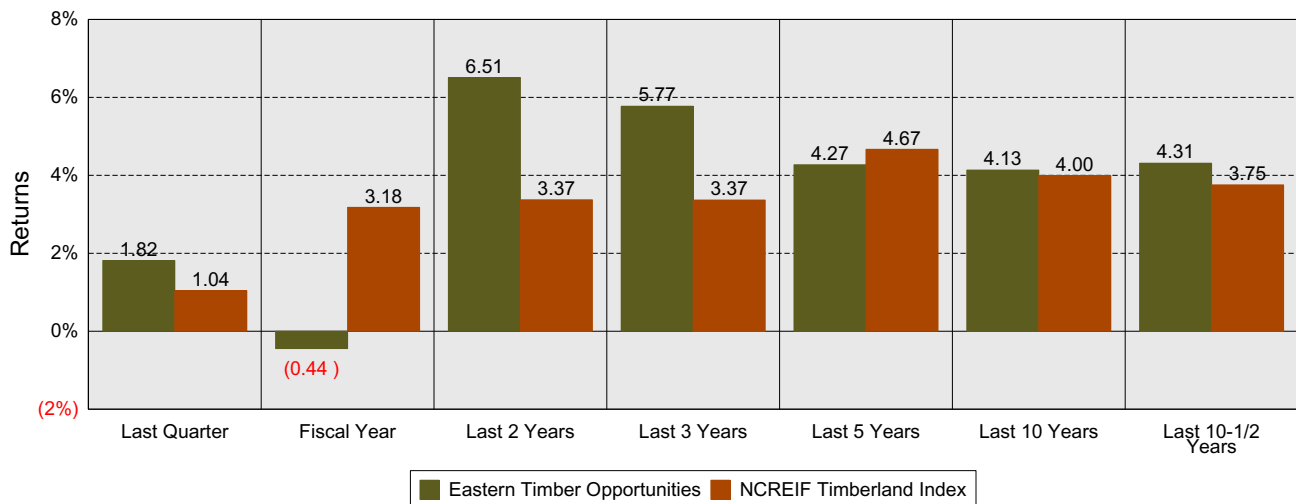
The investment objective of the Eastern Timberland Opportunities fund is to provide competitive timberland investment returns from Eastern US timberland investments by pursuing management strategies to increase timber production and land values through the investment term. TIR will maximize timber values within the portfolio with the application of intensive forest management techniques to accelerate the growth in timber volume and movement into higher value product categories. Additional value will be captured by realizing higher and better use opportunities for select timberland properties throughout the portfolio.

Quarterly Summary and Highlights

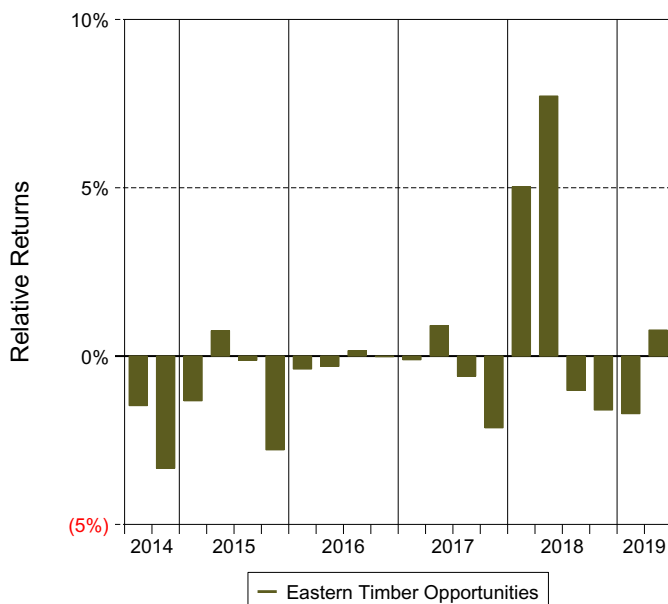
- Eastern Timber Opportunities's portfolio outperformed the NCREIF Timberland Index by 0.77% for the quarter and underperformed the NCREIF Timberland Index for the year by 3.62%.

Quarterly Asset Growth

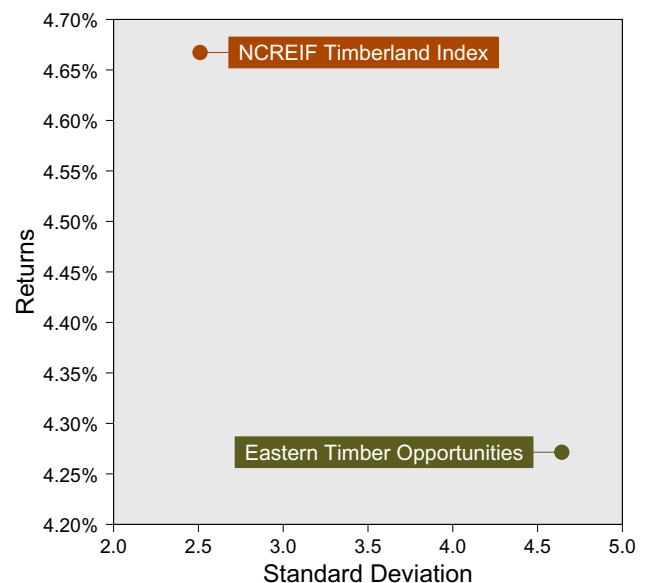
Beginning Market Value	\$53,006,950
Net New Investment	\$-51,993
Investment Gains/(Losses)	\$961,949
Ending Market Value	\$53,916,906



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



JP Morgan Infrastructure Period Ended June 30, 2019

Investment Philosophy

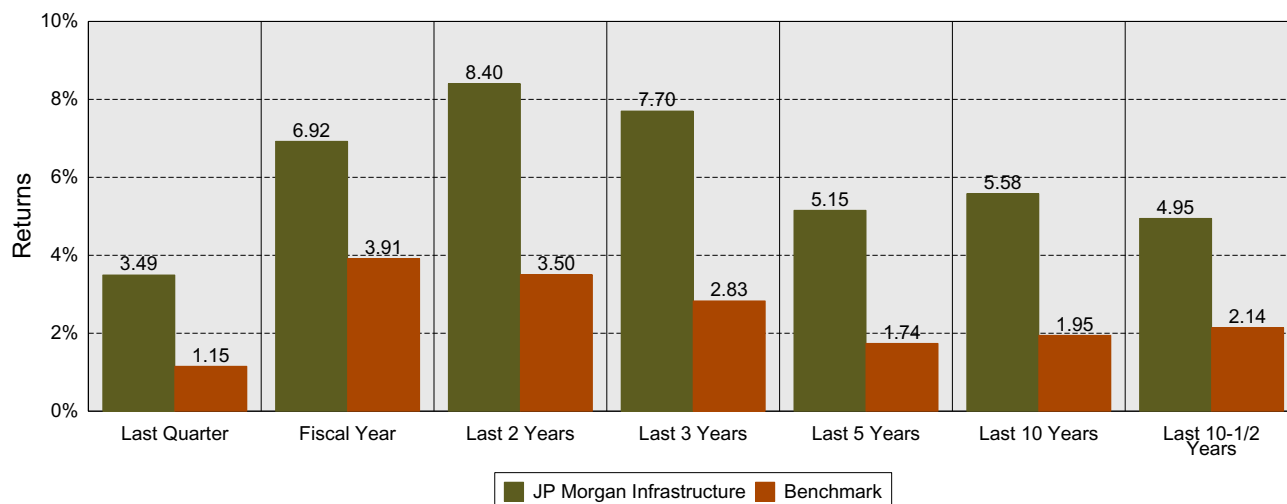
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas pipelines; electricity transmission and distribution facilities; contracted power generation assets; water distribution; waste-water collection and processing; railway lines and rapid rail links; and seaports and airports. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

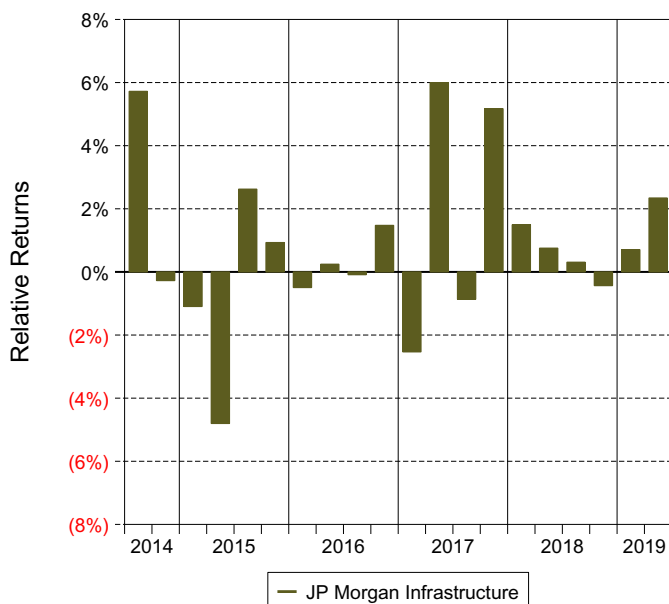
- JP Morgan Infrastructure's portfolio outperformed the Benchmark by 2.34% for the quarter and outperformed the Benchmark for the year by 3.01%.

Quarterly Asset Growth

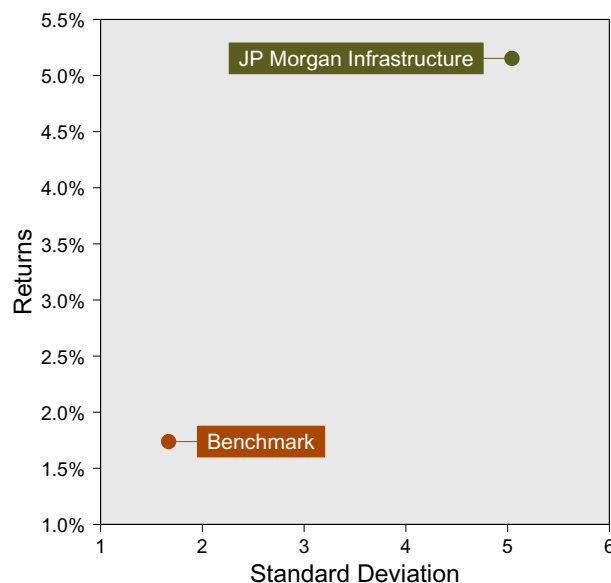
Beginning Market Value	\$43,812,159
Net New Investment	\$-861,644
Investment Gains/(Losses)	\$1,527,382
Ending Market Value	\$44,477,897



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Grosvenor Cust. Infrastructure Period Ended June 30, 2019

Investment Philosophy

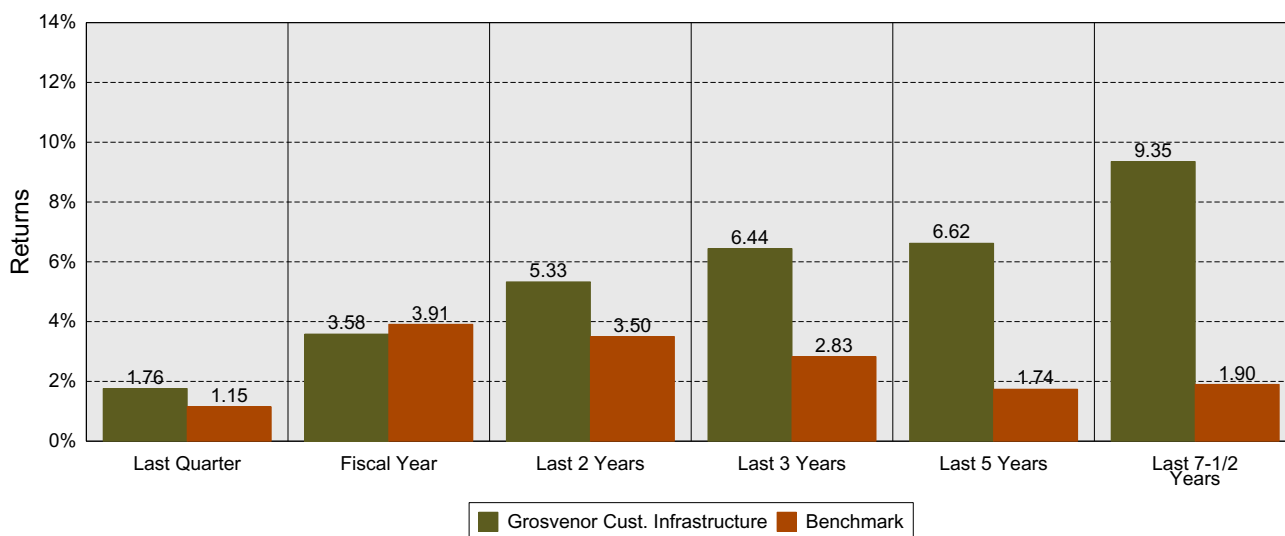
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

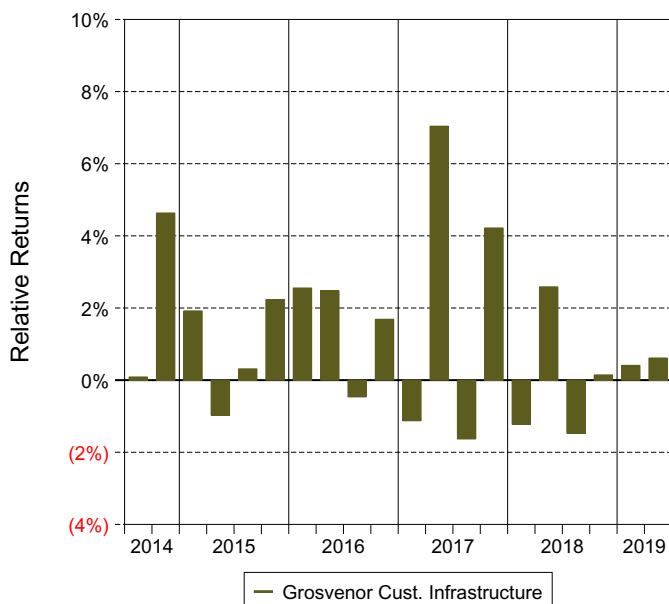
- Grosvenor Cust. Infrastructure's portfolio outperformed the Benchmark by 0.61% for the quarter and underperformed the Benchmark for the year by 0.33%.

Quarterly Asset Growth

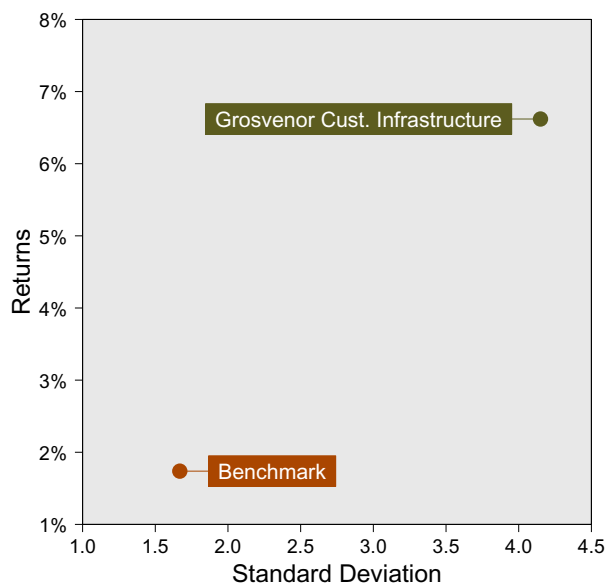
Beginning Market Value	\$12,839,545
Net New Investment	\$0
Investment Gains/(Losses)	\$226,238
Ending Market Value	\$13,065,783



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Short Term Fixed Income Period Ended June 30, 2019

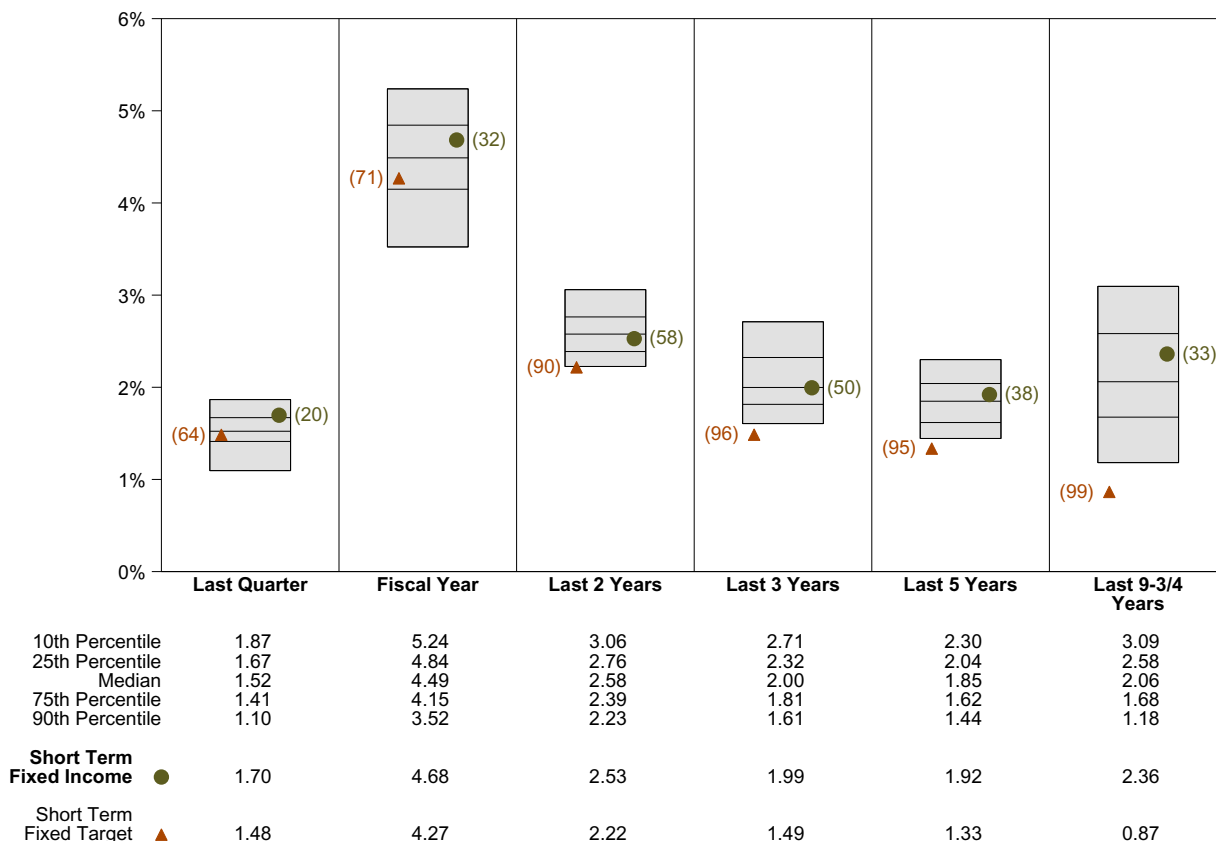
Quarterly Summary and Highlights

- Short Term Fixed Income's portfolio posted a 1.70% return for the quarter placing it in the 20 percentile of the Callan Short Term Fixed Income group for the quarter and in the 32 percentile for the last year.
- Short Term Fixed Income's portfolio outperformed the Short Term Fixed Target by 0.21% for the quarter and outperformed the Short Term Fixed Target for the year by 0.42%.

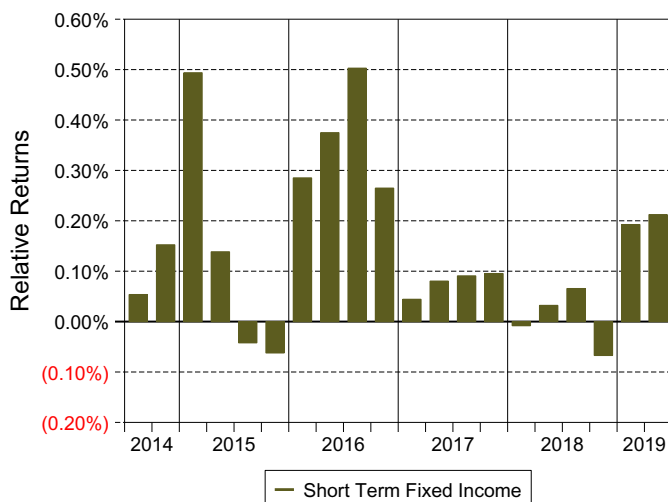
Quarterly Asset Growth

Beginning Market Value	\$143,403,650
Net New Investment	\$-94,628
Investment Gains/(Losses)	\$2,432,114
Ending Market Value	\$145,741,136

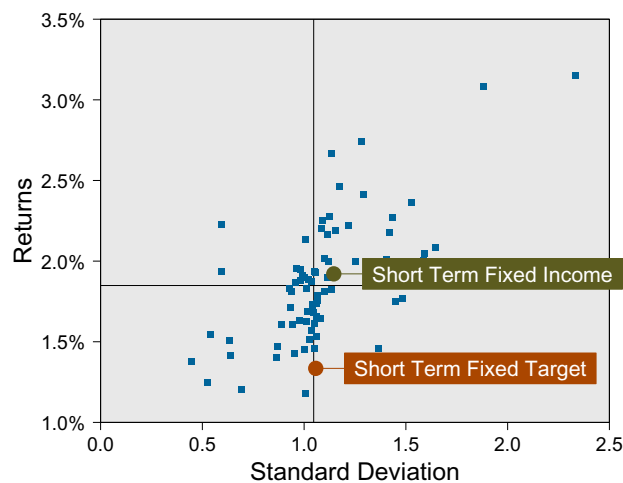
Performance vs Callan Short Term Fixed Income (Gross)



Relative Return vs Short Term Fixed Target



Callan Short Term Fixed Income (Gross) Annualized Five Year Risk vs Return



JP Morgan Short Term Bonds Period Ended June 30, 2019

Investment Philosophy

The investment objective of this account is to outperform the Barclays Capital 1-3 year Government/Credit Index while maintaining total return risk similar to that of the benchmark as measured over a market cycle. The weighted average effective duration of the portfolio will typically remain within +/- 30% of the benchmark.

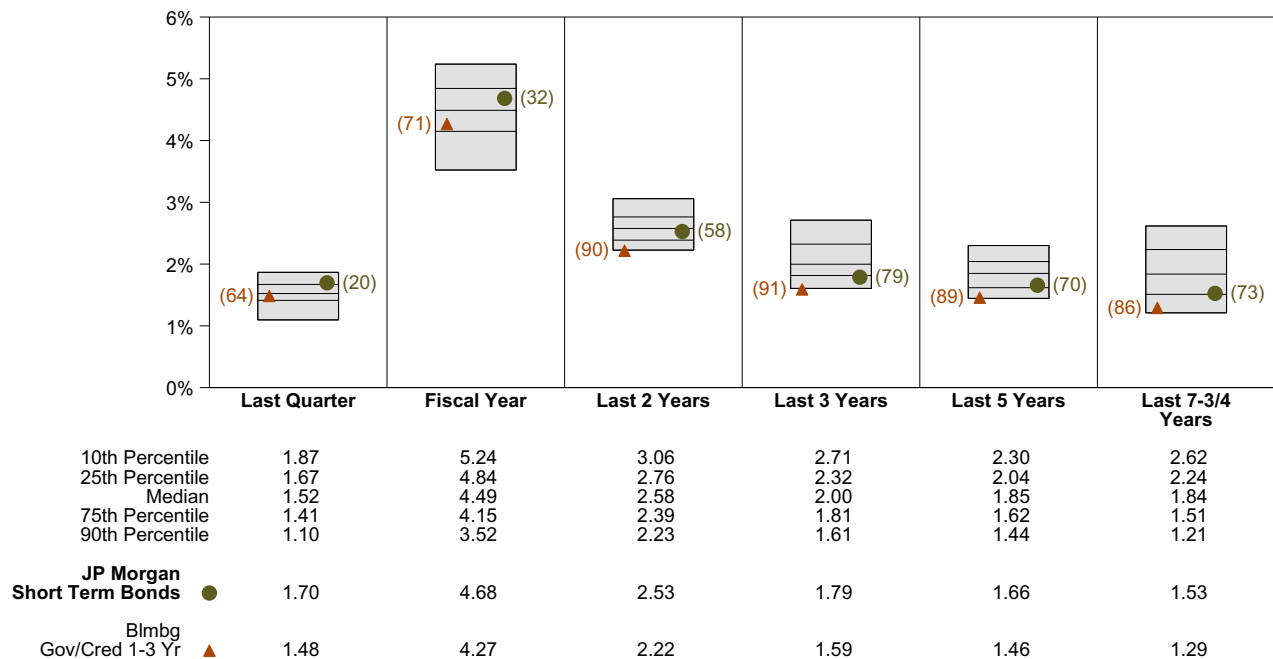
Quarterly Summary and Highlights

- JP Morgan Short Term Bonds's portfolio posted a 1.70% return for the quarter placing it in the 20 percentile of the Callan Short Term Fixed Income group for the quarter and in the 32 percentile for the last year.
- JP Morgan Short Term Bonds's portfolio outperformed the Blmbg Gov/Cred 1-3 Yr by 0.21% for the quarter and outperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.42%.

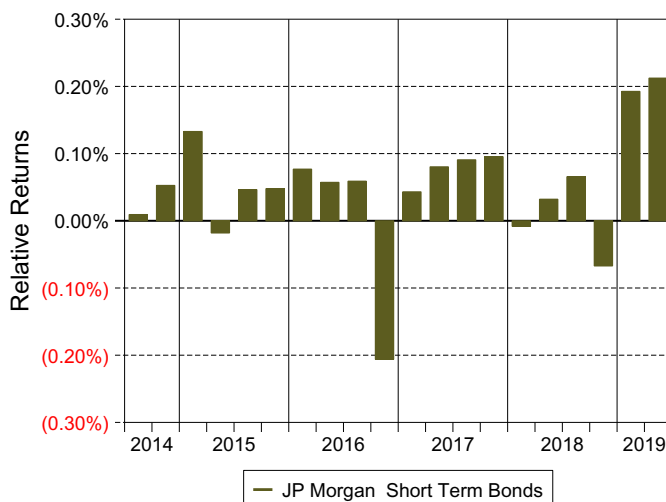
Quarterly Asset Growth

Beginning Market Value	\$143,403,650
Net New Investment	\$-94,628
Investment Gains/(Losses)	\$2,432,114
Ending Market Value	\$145,741,136

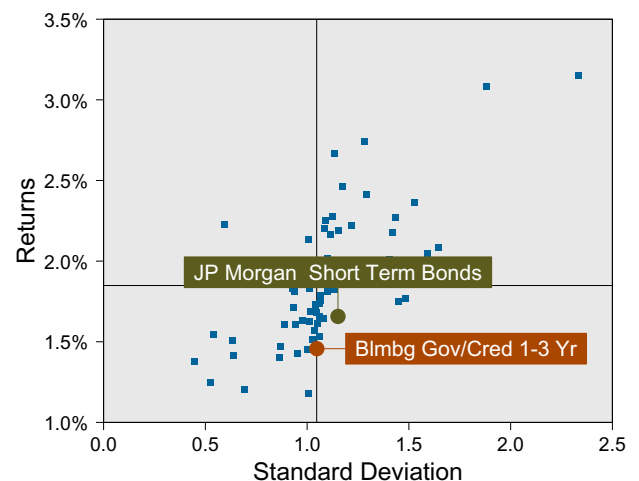
Performance vs Callan Short Term Fixed Income (Gross)



Relative Return vs Blmbg Gov/Cred 1-3 Yr



Callan Short Term Fixed Income (Gross) Annualized Five Year Risk vs Return



Research and Educational Programs

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

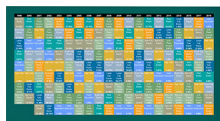
The OCIO Model: How Do We Measure Success? | This paper outlines the key issues for evaluating the success of outsourced chief investment officer (OCIO) services.

Perspectives on Investing: The Evolution of Strategic Allocations | In this video, Callan experts discuss the key challenges of evaluating non-U.S. equity investments.

Opportunities & Challenges: Investing in Private Equity Partnerships | In this video, Callan experts discuss investing directly in private equity partnerships.

Building a Pool of Transition Managers: Both an Art and a Science | Transition management is the restructuring of institutional portfolios from single or multiple investment managers/asset classes to a new allocation over a short-term horizon. This paper offers guidance on building a pool of transition managers.

Callan's Periodic Table Explained | The popular Callan Periodic Table of Investment Returns turned 20 this year. This animated feature discusses the benefits and some of the history of the table.



The Cobbler's Shoes: How Asset Managers Run Their Own 401(k) Plans | Can investment manager-sponsored DC plans provide insights on plan design and implementation? To help answer this question, Callan examined the 401(k) plans of investment



managers. The industry scored high on retirement savings metrics. But in contrast to the industry consensus, asset managers generally embraced complexity over simplicity in their investment designs.

How to Distinguish Between Growth Equity and Late-Stage VC



Both growth equity and late-stage venture capital are growth-oriented but differ significantly in the types of companies they invest in, the structure of their investments, the way in which they create value, and the trade-offs between risk and return.

Nurturing Strong Cultures at Professional Firms | In this paper, Callan Executive Chairman Ron Peyton offers advice for building effective and transparent corporate cultures.

Opening Doors of Opportunity | This paper reviews the types of co-investment opportunities offered by hedge funds and funds-of-funds (FOFs).

Quarterly Periodicals

Private Equity Trends | A newsletter on private equity activity, covering both the fundraising cycle and performance over time.

Market Pulse Flipbook | A market reference guide covering trends in the U.S. economy, developments for fund sponsors, and the latest data for U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution plans.

Active vs. Passive Charts | This series of charts compares active managers alongside relevant benchmarks over the long term.

Capital Market Review | A newsletter providing analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Events

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

Please mark your calendar and look forward to upcoming invitations.

October Regional Workshops

October 22, 2019 – Denver

October 24, 2019 – Chicago

2020 National Conference

January 27-29, 2020 – San Francisco

Please also keep your eye out for upcoming Webinars in 2019! We will be sending invitations for these and also will have registration links on our website at www.callan.com/events.

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

The Center for Investment Training Educational Sessions

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

Introduction to Investments

San Francisco, July 23-24, 2019

Atlanta, October 8-9, 2019

Chicago, October 22-23, 2019

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

“Callan College” on Alternative Investments

Chicago, October 29-30, 2019

The “Callan College” on Alternative Investments will cover: private equity, private credit, hedge funds, real estate, and real assets. Tuition for the “Callan College” on Alternative Investments session is \$2,500 per person. Tuition includes instruction, all materials, and breakfast and lunch on each day.

Learn more at www.callan.com/events/callan-college-intro

Education: By the Numbers

525

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

50+

Unique pieces of research the Institute generates each year

3,700

Total attendees of the “Callan College” since 1994

1980

Year the Callan Institute was founded



“Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry.”

Greg Allen, CEO and Chief Research Officer

List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

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

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g. attending and educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

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

Manager Name
Aberdeen Standard Investments
Acadian Asset Management LLC
AEGON USA Investment Management
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Pioneer Asset Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford International, LLC
Baird Advisors
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Asset Management
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
BrightSphere Investment Group
Brown Brothers Harriman & Company
Cambiar Investors, LLC
Capital Group
Carillon Tower Advisers
CastleArk Management, LLC
Causeway Capital Management
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Credit Suisse Asset Management
DePrince, Race & Zollo, Inc.
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Management Co.
DWS
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
Financial Engines
First Hawaiian Bank Wealth Management Division
First State Investments
Fisher Investments
Franklin Templeton
Fred Alger Management, Inc.
GAM (USA) Inc.
Glenmeade Investment Management, LP
GlobeFlex Capital, L.P.
Goldman Sachs
Green Square Capital LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.
Heitman LLC

Manager Name
Hotchkis & Wiley Capital Management, LLC
HSBC Global Asset Management
Income Research + Management, Inc.
Insight Investment Management Limited
Intech Investment Management, LLC
Intercontinental Real Estate Corporation
Invesco
Investec Asset Management
Ivy Investments
J.P. Morgan
Janus
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
Logan Circle Partners, L.P.
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
MacKay Shields LLC
Macquarie Investment Management (MIM)
Manulife Asset Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
MFS Investment Management
MidFirst Bank
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
Mountain Pacific Advisors, LLC
MUFG Union Bank, N.A.
Natixis Investment Managers
Neuberger Berman
Newton Investment Management
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management
Nuveen
OFI Global Asset Management
Osterweis Capital Management, LLC
P/E Investments

Manager Name
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, Inc.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Principal Global Investors
Putnam Investments, LLC
QMA LLC
RBC Global Asset Management
Regions Financial Corporation
Robeco Institutional Asset Management, US Inc.
Rockefeller Capital Management
Rothschild & Co. Asset Management US
Russell Investments
Schroder Investment Management North America Inc.
Smith Graham & Co. Investment Advisors, L.P.
Smith Group Asset Management
South Texas Money Management, Ltd.
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
The Boston Company Asset Management
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
Thornburg Investment Management, Inc.
Tri-Star Trust Bank
UBS Asset Management
VanEck
Versus Capital Group
Victory Capital Management Inc.
Virtus Investment Partners, Inc.
Vontobel Asset Management, Inc.
Voya
WCM Investment Management
WEDGE Capital Management
Wellington Management Company, LLP
Wells Fargo Asset Management
Western Asset Management Company LLC
Westfield Capital Management Company, LP
William Blair & Company LLC

June 30, 2019



North Dakota State Investment Board Legacy Fund

**Investment Measurement Service
Quarterly Review**

Information contained herein includes confidential, trade secret and proprietary information. Neither this Report nor any specific information contained herein is to be used other than by the intended recipient for its intended purpose or disseminated to any other person without Callan's permission. Certain information herein has been compiled by Callan and is based on information provided by a variety of sources believed to be reliable for which Callan has not necessarily verified the accuracy or completeness of or updated. This content may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact. This content is for informational purposes only and should not be construed as legal or tax advice on any matter. Any decision you make on the basis of this content is your sole responsibility. You should consult with legal and tax advisers before applying any of this information to your particular situation. Past performance is no guarantee of future results. For further information, please see Appendix for Important Information and Disclosures.

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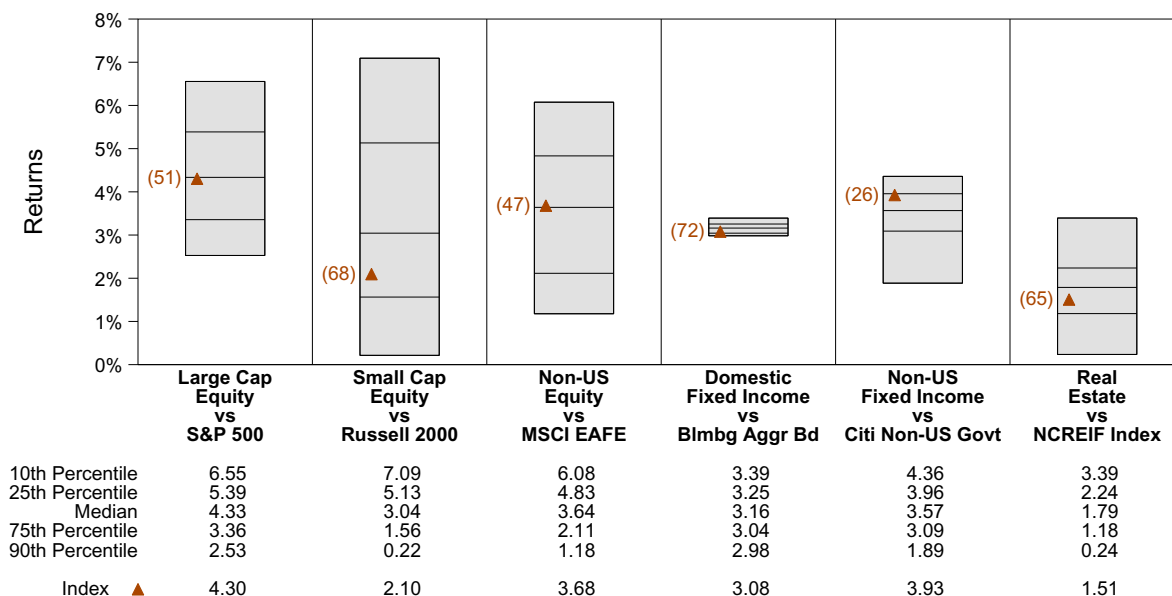
Market Overview

Active Management vs Index Returns

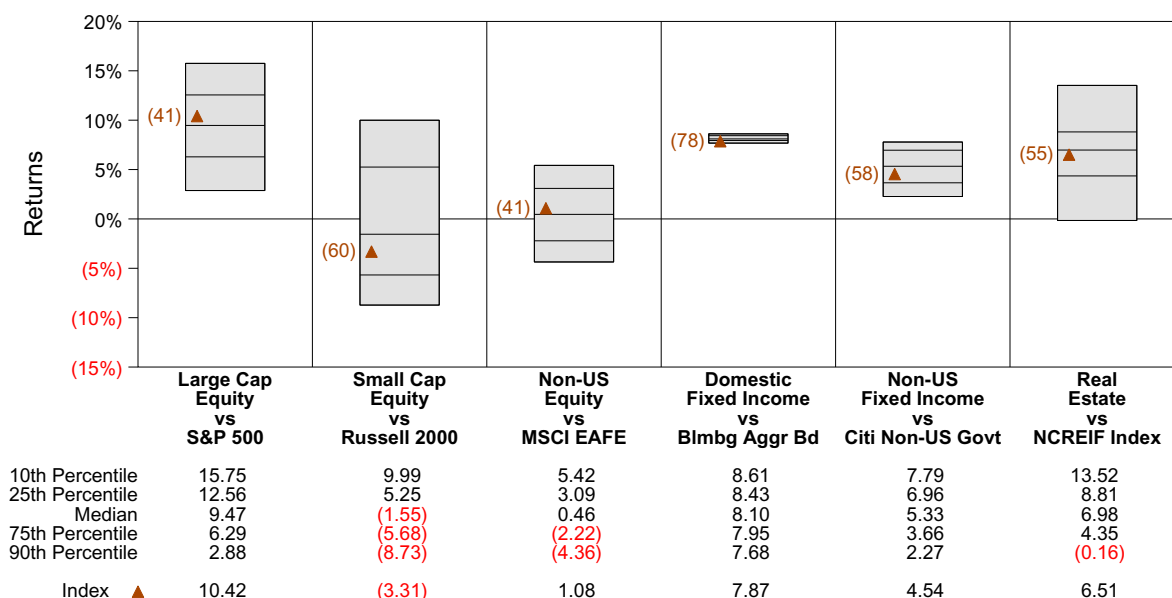
Market Overview

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

Range of Separate Account Manager Returns by Asset Class One Quarter Ended June 30, 2019



Range of Separate Account Manager Returns by Asset Class One Year Ended June 30, 2019



The Fed: 'A Mid-Cycle Adjustment to Policy'

ECONOMY

2 The economic news for the U.S. during the second quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, describing it as "a mid-cycle adjustment to policy."

Big Focus on Fed, Possible Correction

INSTITUTIONAL INVESTORS

4 Institutional investors, as measured by the Callan Total Fund Sponsor Database Group, gained 3.3% in the second quarter. That compares to the 4.0% increase generated by a benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.

U.S. Stocks Hit Highs; Global Gains Muted

EQUITY

6 U.S. equities neared record highs in the second quarter on expectations of easing from the Fed. Global equity markets were largely positive although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued.

Rally for Treasuries Lifts Sovereign Bonds

FIXED INCOME

8 The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Non-U.S. developed market sovereign bonds rose in tandem with the rally in Treasuries.

Real Estate Gains; Real Assets Fall

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index gained 1.5% during the second quarter. The NCREIF Open-End Diversified Core Equity Index rose 0.8%. U.S. REITs and global REITs both gained, but lagged broad equity indices. The Bloomberg Commodity Index fell 1.2%.

Value Is in the Eye of the Beholder

PRIVATE EQUITY

12 Fundraising, company purchase prices, and IPOs increased in the second quarter. But private M&A investment and exit measures were flat to markedly down. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

Continuing Rally Aids Most Strategies

HEDGE FUNDS/MACs

13 Risk-on sentiment supported virtually all hedge fund strategies. The continuing rally also lifted long-biased MACs, but risk premia languished again. Hedge funds are well positioned defensively for a downturn. But without a sustained pick-up in volatility, they are likely to lag.

Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION

15 The Callan DC Index™ rebounded in the first quarter, gaining 9.6%, and the Age 45 Target Date Fund did even better. After two quarters of negative flows, balances saw sizable growth. And TDFs retook their spot as the top destination for inflows.

Broad Market Quarterly Returns

U.S. Equity
Russell 3000

4.1%

Non-U.S. Equity
MSCI ACWI ex USA

3.0%

U.S. Fixed Income
Bloomberg Barclays Agg

3.1%

Non-U.S. Fixed Income
Bloomberg Barclays GBI ex US

3.4%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Fed Speaks: 'A Mid-Cycle Adjustment to Policy'

ECONOMY | Jay Kloepfer

The U.S. economy continued its now-record expansion in the second quarter with a 2.1% gain in GDP, slower than the robust 3.1% in the first quarter but well ahead of expectations. Consumer spending rose 4.3% in the quarter, supported by solid gains in the job market and disposable income growth of 5% in each of the first two quarters of 2019. Offsetting the gains in consumption were hits to GDP from exports, non-residential business investment, residential investment, and a drawdown in inventories. The economic news for the U.S. during the quarter was largely good, and better than the headlines would lead us to believe. Yet the Fed proceeded with a widely anticipated (and clearly signaled) interest rate cut in July, lowering the Federal Funds rate target by 25 basis points.

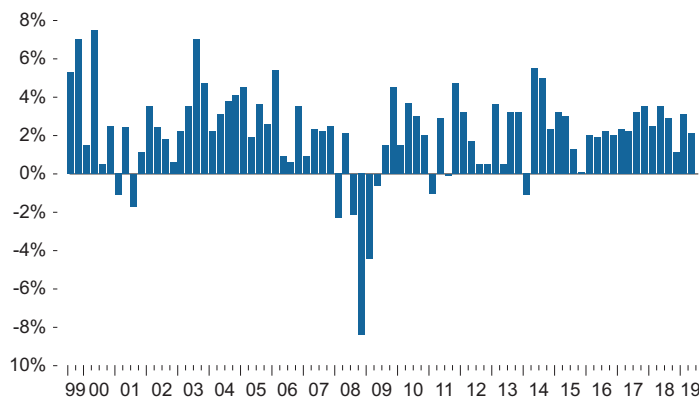
How did we get to a situation where the expansion continues but the Fed acts to cut rates? In classic Fed-speak, the announced reasoning is “a mid-cycle adjustment to policy.” To be fair, while the job market and overall GDP data are coming in solid for the U.S., the global economy is clearly showing signs of slowing, and the uncertainty stemming from trade tensions is top of mind. Chairman Jerome Powell noted three reasons for the rate cut: (1) to insure against downside risks from slowing global growth and trade tensions; (2) to mitigate the effects those factors are already having on the U.S. outlook, even if they haven't shown up in the data; and (3) to enable a faster return to the Federal Reserve's symmetric 2% inflation target.

It is important to note that the Fed made clear this July rate cut is not likely to be the first in a series. After initial confusion, the markets simply interpreted this Fed comment as fewer rate cuts this year than were previously priced into bond yields.

Key to the Fed's perceived latitude to lower rates is the persistent surprise of low inflation. After breaking through the Fed's 2% target in 2018, inflation has once again subsided. Headline CPI rose 1.6% in June (year-over-year), dragged down by a 3.4% decline in energy costs. In fact, core CPI (less food and energy) rose 2.1% over the past 12 months, pushed up by the

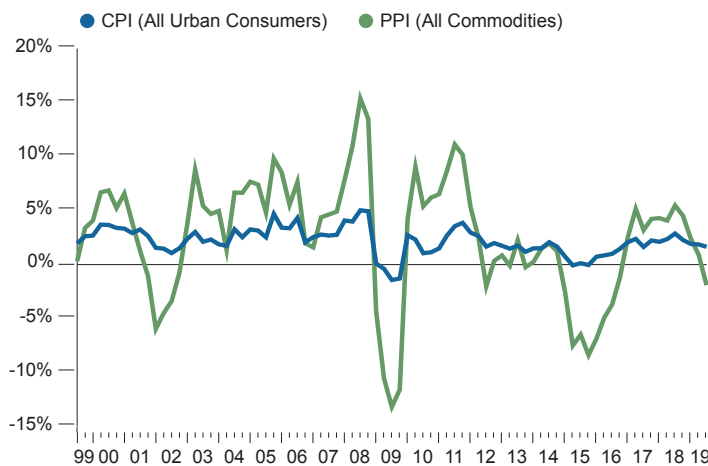
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

rising cost of shelter, apparel, and used vehicles. While annual wage gains have moved above 3% for the first time since the Global Financial Crisis (GFC), wage pressures have yet to show up in headline inflation. The impact of tariffs on consumer prices has not affected the broad CPI data, as the tariffs to date have been narrowly targeted.

Foreshadowing the expected slowdown in the U.S. economy is the Purchasing Managers' Index (PMI), a forward-looking measure of business expectations for manufacturing demand and

production. The mid-year 2019 reading of the PMI hit 50.6, very close to the line dividing expansion from contraction (50), and the lowest reading since 2009. Producers cite the twin worries of slowing global growth and trade tensions; the 5% drop in exports and the softening of business spending in the second quarter data certainly support these concerns. Other concerns about a material slowdown to GDP growth include the waning impact on domestic spending that has come from rising stock prices and fiscal stimulus since the GFC. Further concerns include the effects of potential new tariffs, and the slowdown in inventory accumulation. The U.S. economy is also approaching capacity constraints as the expansion reaches into record territory. Unemployment has hit a generational low of 3.6%; at some point firms' difficulties in finding new and replacement staff will weigh on overall workforce growth.

The nine interest rate hikes enacted by the Fed through 2018 raised the cost of borrowing for both businesses and consumers, and while the reversal of Fed policy since January halted the trajectory of rates, the impact of the increases since 2016 is still working its way through the economy. Higher mortgage rates slowed housing markets, pulling existing home sales down by more than 10% over the course of 2018. Rates for 30-year mortgages have fallen by more than 110 bps since November 2018, and home sales have bounced back since the start of the year, but the recovery has been uneven, concentrated in the South and the West. Investment in new homes, as measured by permits, began slipping in 2018 and is still down more than 10% (year over year) through June. New residential construction, restricted in many locations by supply and cost factors, has lagged the pace set in typical expansions since the GFC.

The Long-Term View

Index	2019 2nd Qtr	Periods ended Dec. 31, 2018			
		Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	4.1	-5.2	7.9	13.2	9.0
S&P 500	4.3	-4.4	8.5	13.1	9.1
Russell 2000	2.1	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	3.7	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	3.0	-14.2	0.7	6.6	--
MSCI Emerging Markets	0.6	-14.6	1.6	8.0	--
MSCI ACWI ex USA Small Cap	1.2	-18.2	2.0	10.0	--
Fixed Income					
Bloomberg Barclays Agg	3.1	0.0	2.5	3.5	5.1
90-Day T-Bill	0.6	1.9	0.6	0.4	2.5
Bloomberg Barclays Long G/C	6.6	-4.7	5.4	5.9	6.8
Bloomberg Barclays GI Agg ex US	3.4	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.5	6.7	9.3	7.5	9.3
FTSE Nareit Equity	1.2	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	2.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.9	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.2	-11.2	-8.8	-3.8	2.0
Gold Spot Price	8.9	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.8	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of March 31, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17
Employment Cost–Total Compensation Growth	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%	2.5%
Nonfarm Business–Productivity Growth	1.8%*	3.4%	1.3%	1.9%	2.9%	0.7%	-0.3%	2.3%
GDP Growth	2.1%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%	3.2%
Manufacturing Capacity Utilization	75.7%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%	74.9%
Consumer Sentiment Index (1966=100)	98.4	94.5	98.2	98.1	98.3	98.9	98.4	95.1

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

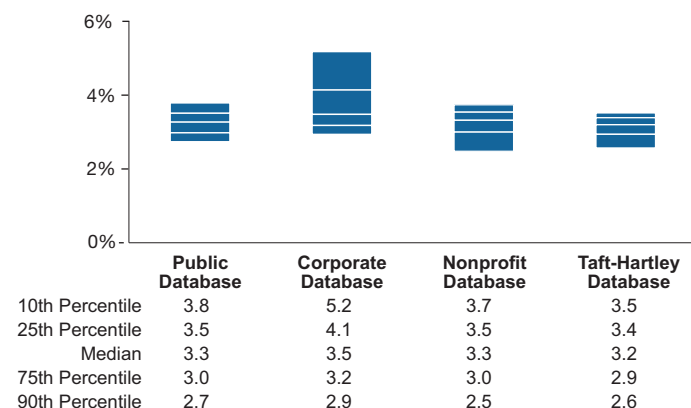
* Estimated figure provided by IHS Markit

Big Focus on Possible Correction, Future Action by Fed

INSTITUTIONAL INVESTORS

- Institutional investors, as measured by the **Callan Total Fund Sponsor Database Group**, gained 3.3% in the second quarter, with corporate plans faring best (+3.5%). Those results compare to the 4.0% gain of a quarterly rebalanced benchmark composed of 60% S&P 500/40% Bloomberg Barclays US Aggregate.
- Over the last 15 years, corporate plans (+6.9%) have fared the best, followed by nonprofits, public plans, and Taft-Hartley plans. Over that same period, the 60-40 index has seen a gain of 7.2%, annualized. Larger institutional investors have tended to do better than smaller ones over that time period, with the exception of Taft-Hartley plans; investors with more than \$1 billion in assets gained 7.0% over the 15-year period, followed by 6.7% for medium investors (\$100 million-\$1 billion), and 6.6% for small plans (under \$100 million).
- For institutional investors, strategic allocation decisions are focused on the anticipation of a market correction, volatility, and their desires to seek additional diversification opportunities. As a result, investors are re-evaluating the purpose and implementation of asset classes including real assets, hedge funds and liquid alternatives, fixed income, and equity.

Quarterly Returns, Callan Database Groups



Source: Callan

- Increasingly, investors are focused on the disparity of performance between growth and value. As value continues to underperform, investors are wondering if “value is dead.” They are also questioning whether there is any hope for active management. Will its promise to protect in a downturn be fulfilled?

Callan Database Median and Index Returns* for Periods ended June 30, 2019

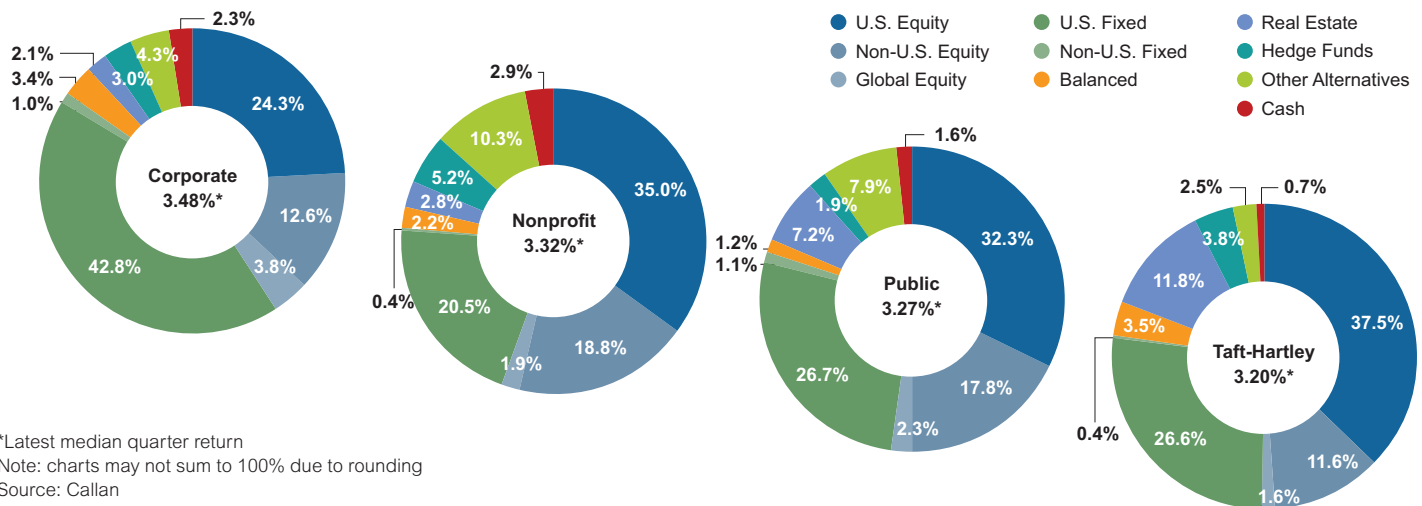
Database Group	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Public Database	3.27	6.19	8.91	5.96	9.20	6.74
Corporate Database	3.48	7.26	8.21	5.96	9.24	6.85
Nonprofit Database	3.32	5.78	9.11	5.62	9.06	6.76
Taft-Hartley Database	3.20	6.34	9.03	6.54	9.42	6.67
All Institutional Investors	3.32	6.31	8.85	5.97	9.24	6.75
Large (>\$1 billion)	3.24	6.35	9.03	6.17	9.39	7.04
Medium (\$100mm - \$1bn)	3.31	6.43	8.84	6.04	9.28	6.71
Small (<\$100 million)	3.34	6.20	8.76	5.73	9.03	6.59

*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, nonprofits, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- Plans continue to retain a strong tilt toward growth assets (at least 70% and as high as 90%). Many investors said they employ such a tilt to meet funding requirements. This has coincided with a refined definition of growth to include high yield, convertibles, low-volatility equity, hedge funds, MACs, and option-based strategies.
- Callan has consulted on a surge in asset-liability studies, with substantial changes to many policy portfolios. The focus is on de-risking (less equity) and risk mitigation (diversification and implementation), but dissatisfaction remains with hedge funds, risk premia, and absolute return products.
- In the current capital market environment, investors are focused on how long the expansion will continue. They are also examining how the reversal in Fed policy changes the landscape. Equity markets cheered, but doesn't accommodation imply leaner times ahead? And while LDI pays off when rates fall, lower rates can wreak havoc with liability-driven investing glidepaths.
- In discussions of asset class structures, investors are examining the role of fixed income in a total return portfolio: Is pursuit of return a goal?
- The relentless cost pressure is driving passive implementation in all asset classes, particularly equity.
- Public plans are focused on the return from private markets, but they face mounting pressure to control costs. One approach is the "bar-belled" pursuit of active in private markets and alternatives, and all passive in equity, more passive in fixed, and cheaper liquid alternatives with "passive" exposures to betas and factors.
- Liquidity needs are top of mind for public plans looking to increase private investments in pursuit of a growth engine aside from public equity.
- Corporate plans moving down de-risking glidepaths continue to reconsider their equity structures, moving to passive to control costs and attain broad beta exposure in the declining growth allocation.

Average Asset Allocation, Callan Database Groups



Equity

U.S. Equities

Markets continued to march upward, and U.S. equities neared record highs. Growth outpaced value, as the dovish stance of the Fed was a headwind for valuation-sensitive stocks. Small cap stocks lagged large caps, possibly from economic weakness.

Large Cap ► S&P 500: +4.3% | Russell 1000: +4.2%

- U.S. equity showed strong gains as market participants anticipated another round of monetary easing from the Fed.
- Financials (+8.0%) was the best-performing sector; Energy (-2.8%) was the only sector to experience negative returns over the quarter.
- Trade rhetoric weighed on U.S. stocks in May followed by a June rebound.
- Given the increase in risk appetite, cyclicals outperformed while defensive sectors such as Utilities underperformed.

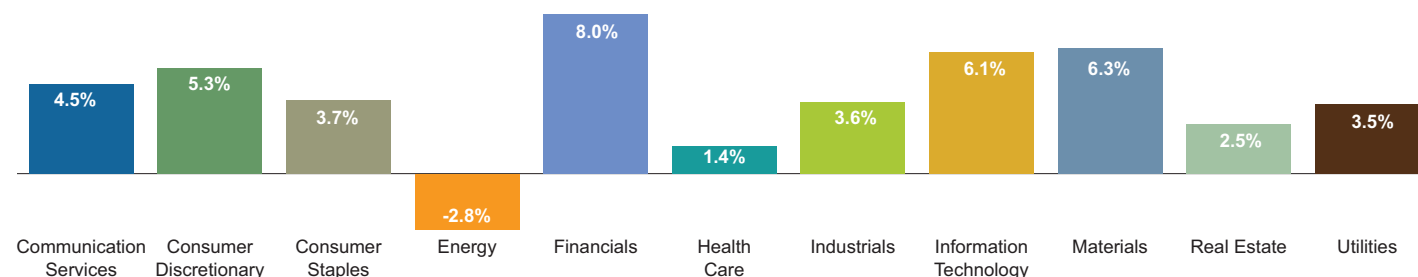
Small Cap ► Russell 2000: +2.1%

- Market conditions (e.g., more dovish Fed, strong U.S. dollar, trade tensions) should have benefited small cap companies, but did not.
- A slowing economy may explain weakness for small caps. Large caps tend to have stronger balance sheets and are more capable of weathering downturns.

Growth vs. Value ► Russell 1000 Growth: +4.6% | Russell 1000 Value: +3.8%

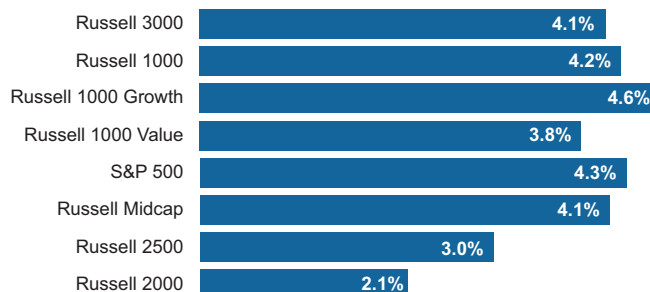
- Value factors (P/B, P/E trailing, yield) were mixed; growth factors (EPS growth, sales growth) were positive.

Quarterly Performance of Industry Sectors



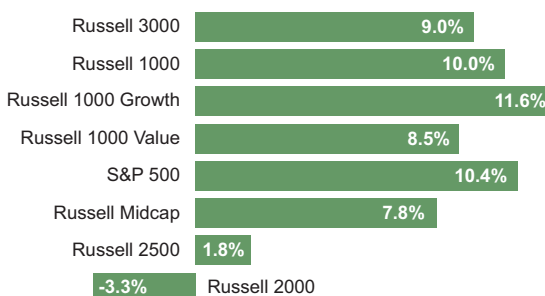
Source: Standard & Poor's

U.S. Equity: Quarterly Returns



Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Non-U.S./Global Equities

Global equity markets were largely positive in the second quarter although investor sentiment was fairly muted as both U.S./China tariff fatigue and Brexit uncertainty continued. Some non-U.S. markets benefited from a weakening U.S. dollar relative to local currencies. Global equities were boosted by dovish central bank commentary that led to lower interest rates around the globe.

Developed ► *MSCI EAFE: +3.7% | MSCI ACWI ex USA: +3.0% | MSCI Europe: +4.5% | MSCI Japan: +1.0%*

- Developed markets rallied as central banks around the world expressed more accommodative paths with interest rates and quantitative easing.
- U.K. equities finished the quarter slightly up (+0.9%) as Brexit uncertainty continues. Prime Minister Theresa May announced her resignation during the quarter.
- Relative to other non-U.S. developed markets, Europe had a strong quarter fueled by robust returns from Germany, France, and Switzerland (30% combined weight), which benefited from declining bond yields.
- EAFE sector performance was positive across the board with the exception of real estate. Cyclical drove the majority of returns as these are highly correlated with U.S. cyclical, which benefited from declining interest rates.
- Factor performance in non-U.S. developed markets favored growth over value, large caps over small caps, and cyclical over defensives.

Emerging Markets ► *MSCI Emerging Markets Index: +0.6%*

- Emerging market returns were lackluster although, regionally, returns were bar-belled as many Asian countries were held back by trade concerns while EM ex-Asia tended to perform well. Russia (+16.9%) performed strongly with the help of the ruble appreciating by 4.2% relative to the U.S. dollar. Brazil (+7.2%) was also a top contributor due to the initial success of keeping pension reforms on track. China (-4.0%) faltered on tariff concerns.
- Argentina (+31.7%) was the top country performer, aided by the announcement of its inclusion in the **MSCI Emerging Markets Index** at the end of May (eight stocks in total).

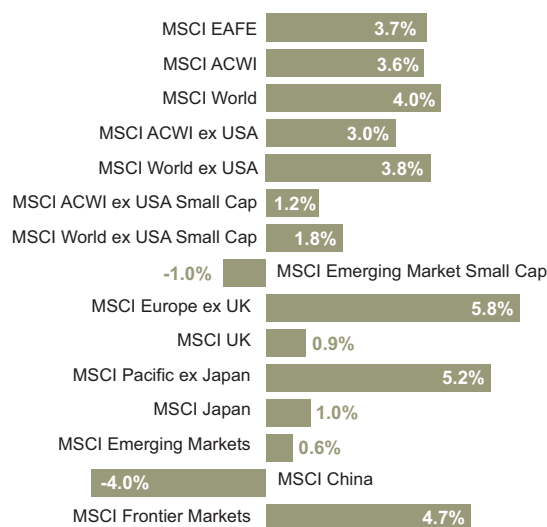
- The **MSCI EM Value Index** outperformed the **MSCI EM Growth Index** as many growth-oriented sector and country returns were impacted by trade disputes.

Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: +1.8% | MSCI EM Small Cap: +1.0%*

- Non-U.S. small caps lagged large caps as investors preferred lower earnings risk and higher earnings momentum. Emerging market small caps lagged large caps as investors searched for a combination of lower volatility and higher growth that was absent in smaller companies as tariff uncertainty persisted.

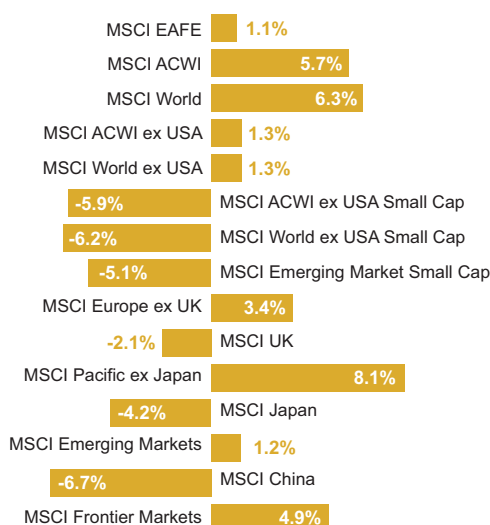
Non-U.S. Equity: Quarterly Returns

(U.S. Dollar)



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

(U.S. Dollar)



Source: MSCI

Fixed Income

U.S. Fixed Income

U.S. economic data continued to be mixed as a strong labor market and rising personal income offset waning business confidence and declining industrial production. The Federal Reserve's dovish statements and announced policy objective to "sustain the expansion" caused risk assets and U.S. Treasury yields to rally. Uncertainty surrounding trade policy and muted inflation data provided the Fed with additional cover for its rationale to potentially cut rates later this year.

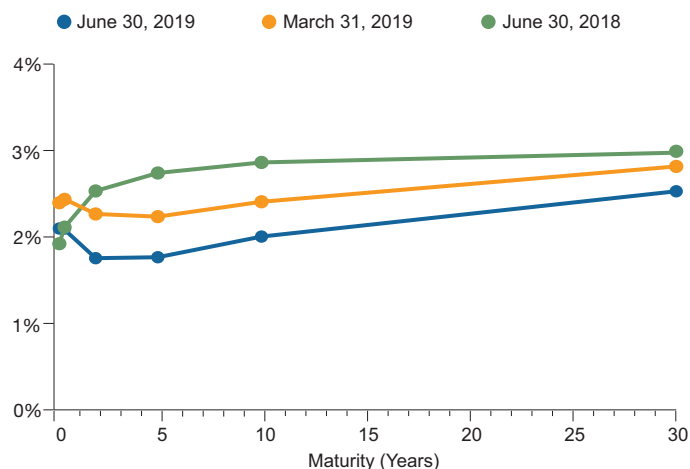
Core Fixed Income ► Bloomberg Barclays US Agg: +3.1%

- U.S. Treasuries gained 3.0% as the U.S. Treasury yield curve shifted lower across maturities, most dramatically at the 2-year key rate, as traders priced in expectations for the Fed to pre-emptively ease in order to boost domestic economic growth.
- The overall shape of the yield curve did not materially change during the quarter. The yield differential between the 10-year and 2-year key rates remained positive and widened 11 basis points during the quarter to close at 25 bps. However, the front-end of the curve remained inverted, with the 5-year offering roughly the same yield as the 2-year key rate.
- Nominal Treasuries outperformed TIPS as inflation expectations fell; the 10-year breakeven spread was only 1.69% as of quarter-end versus 1.88% at the end of the first quarter.

Investment-Grade Corporates ► Bloomberg Barclays Corporate (Inv. Grade): +4.5%

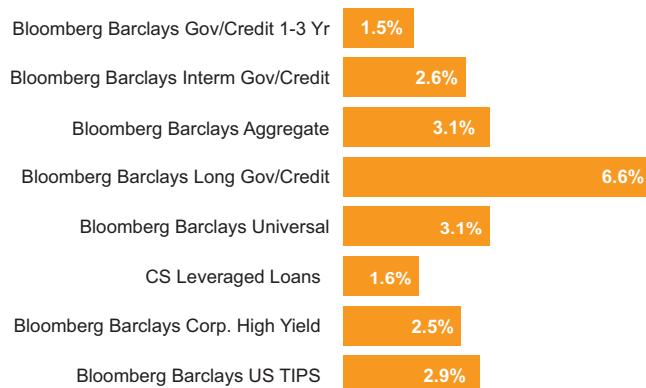
- Credit spreads rallied on the back of dovish Fed policy.
- Gross new corporate supply this quarter was \$290.5 billion, which was 14% lower than a year ago. Year-to-date supply was 18% lower than in the first half of 2018. New issuance favored the 6-12 year maturities relative to last year.
- AAA-rated corporates (+5.0%) were the best performers in absolute return terms. BBB-rated lagged AAA by 18 bps, but posted a positive excess return over the index (+1.4%).

U.S. Treasury Yield Curves



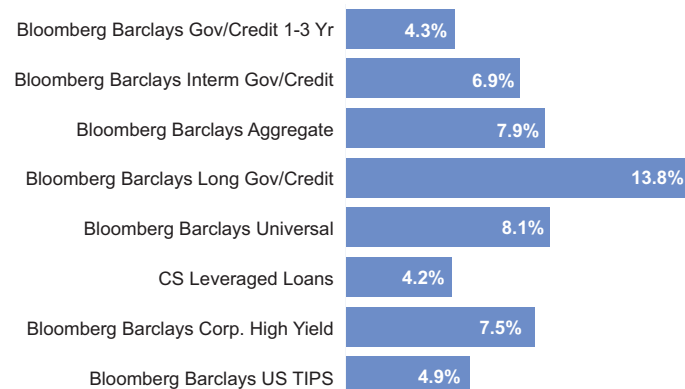
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

FIXED INCOME (Continued)

High Yield ► *Bloomberg Barclays Corporate HY: +2.5%*

- High yield corporates posted positive results for the quarter, but lagged investment grade corporates on both absolute and excess returns. High yield gained 9.9% for the first half of 2019.
- Interest rate-sensitive BB-rated issues posted the highest return (+3.1%) while CCC-rated issues rose 0.3%.

Leveraged Loans ► *CS Leveraged Loans: +1.6%*

- Bank loans participated in the risk-on rally, but lagged both longer duration IG and HY corporates as interest rates declined.
- Retail outflows remain unabated as the Fed's dovish tone dampened enthusiasm for floating rate assets. New CLO issuance running ahead of expectations has also put technical pressure on the sector as investors absorbed the new float.
- Bank loans have less sensitivity to interest rates, but may have a similar spread duration profile to that of high yield bonds.

Non-U.S. Fixed Income

Global Fixed Income ► *Bloomberg Barclays Global Aggregate: +3.3%*

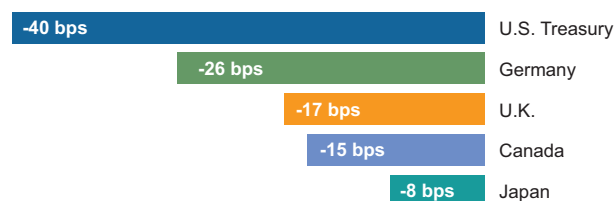
- Other developed market sovereign bonds rose in tandem with the rally in Treasuries and have pushed European sovereigns further into negative yields. The U.S. dollar depreciated modestly versus the euro and yen, but gained versus the U.K. pound.

Emerging Market Debt (\$US) ► *JPM EMBI Global Diversified: +4.1% | (Local currency) ► JPM GBI-EM Global Diversified: +5.6%*

- Most emerging market currencies appreciated against the U.S. dollar.
- Top performers included Russia (+10.4%) and Turkey (+10.1%), while Argentina was the worst performer (-5.0%), and one of the few countries to post a negative result this quarter.

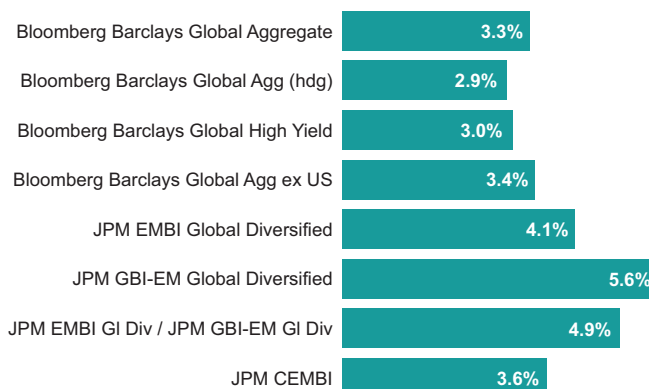
Change in 10-Year Global Government Bond Yields

1Q19 to 2Q19



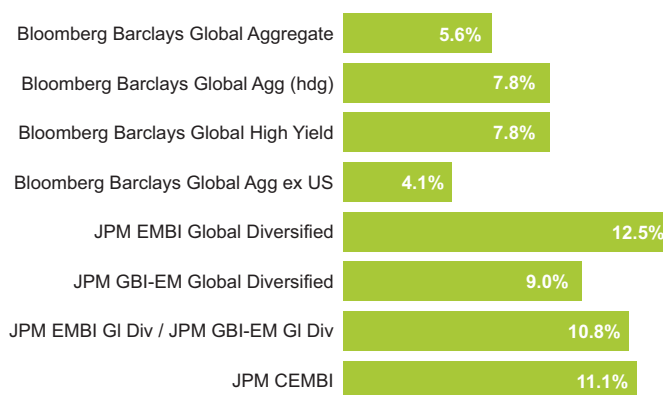
Source: Bloomberg Barclays

Non-U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

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



Sources: Bloomberg Barclays and JPMorgan Chase

Real Estate Gains; Real Assets Mostly Fall

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

Income Produces Bulk of Returns

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- The **NCREIF Property Index (NPI)**, a measure of U.S. institutional real estate assets, gained 1.5% during the second quarter. The income return was 1.1%, while appreciation contributed 0.4%.
- Industrial led property sector performance with a return of 3.4%. Retail finished last, falling 0.1%.
- Regionally, the West led with a 1.9% return, while the Midwest was the worst performer at 0.7%.
- The **NCREIF Open-End Diversified Core Equity Index** (value-weighted, net of fees), representing equity ownership positions in U.S. core real estate, generated a 0.8% total return during the second quarter, with income providing 0.8% and appreciation 0.0%.
- Defensive posturing is becoming more prevalent.

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metro areas.
- Within the NPI, the vacancy rate for U.S. offices was 9.8% in the second quarter, the lowest in over 12 years.
- Net operating income has been growing annually and is expected to be the primary return driver.

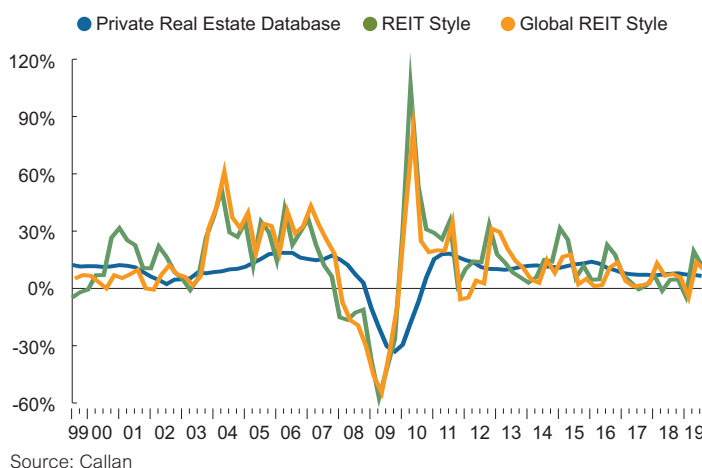
Pricing remains expensive in the U.S.

- Transaction volumes increased and remain robust.
- Cap rates fell slightly; market remains near full valuations

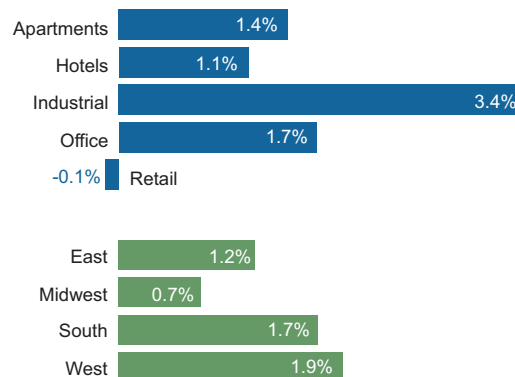
REITs underperformed global equities

- U.S. REITs advanced 1.2% in the second quarter, underperforming the S&P 500 Index, which rose 4.3%.
- Global REITs fell 0.1% in the second quarter compared to a 3.4% gain for global equities (MSCI ACWI IMI).
- Both U.S. and non-U.S. REITs are trading at NAV.
- Large cap REITs, especially those with lower debt levels, modestly underperformed.

Rolling One-Year Returns



Sector Quarterly Returns by Property Type and Region



Source: NCREIF

Non-U.S. Real Estate

Asia

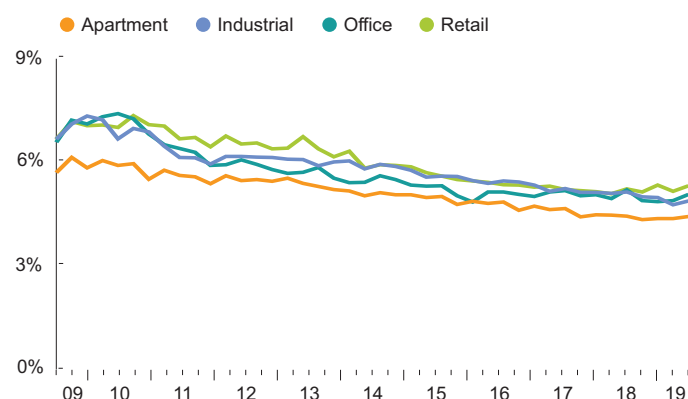
- The growth of the middle class in Asia is steady and the demand for institutional quality real estate is commensurate.
- The number of open-end core funds focused on the Asia Pacific market has increased over recent years and includes both sector-diversified and sector-specific (e.g., logistics) funds, supporting the development of the institutional real estate market in the region. In the first half of the year, India had the first successful IPO for a REIT, which substantiates the institutionalization of the asset class in that country.

REAL ESTATE/REAL ASSETS (Continued)

Europe

- Political uncertainty continues to weigh on overall growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Institutional interest and investment in multifamily properties keeps expanding, as housing prices continue to grow faster than incomes in major markets across Europe, and demand is supported by continued urbanization and migration to major cities in Europe.

NCREIF Capitalization Rates by Property Type

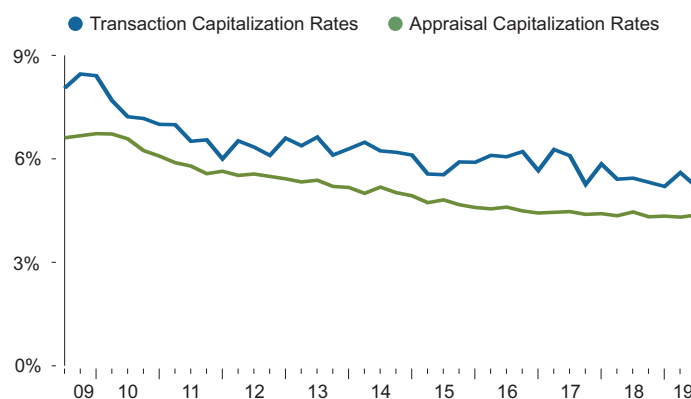


Source: NCREIF. Capitalization rates (net operating income / current market value (or sale price)) are appraisal-based.

Real Assets

- The **Bloomberg Commodity Index** fell 1.2% in the quarter.
- Both the Precious Metals and Agriculture commodity sectors were positive performers, driven by strong individual returns for gold as well as corn, wheat, and coffee.
- Meanwhile, the Livestock, Energy, and Industrial Metals commodity sectors all posted negative quarterly results.
- Oil pulled back but was roughly flat for the quarter, ending at \$58/barrel (West Texas intermediate).
- Natural gas within the **Bloomberg Energy Sub-Index** declined a precipitous 16.2%.
- MLPs (**Alerian MLP Index**: +0.1%) were flat.

NCREIF Transaction and Appraisal Capitalization Rates



Source: NCREIF
Note: Transaction capitalization rate is equal weighted.

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	1.55	3.12	6.53	7.15	9.51	9.07	6.79
NFI-ODCE (value wt net)	0.77	1.98	5.46	6.61	8.76	8.87	7.01
NCREIF Property	1.51	3.34	6.51	6.89	8.83	9.25	8.70
NCREIF Farmland	0.70	1.40	5.63	6.24	7.98	11.05	14.22
NCREIF Timberland	0.11	0.22	2.23	3.05	4.47	3.90	7.04
Public Real Estate							
Global Real Estate Style	1.20	16.17	9.66	6.17	6.54	12.22	8.56
FTSE EPRA Nareit Developed	-0.07	14.51	7.68	4.46	4.85	10.57	--
Global ex-U.S. Real Estate Style	0.35	13.95	7.84	8.97	5.45	9.97	8.10
FTSE EPRA Nareit Dev ex US	-0.58	12.89	6.09	6.79	3.47	8.26	--
U.S. REIT Style	2.06	19.28	12.11	5.17	8.60	16.15	9.90
EPRA Nareit Equity REITs	1.24	17.78	11.21	4.20	7.92	15.46	9.05

*Returns less than one year are not annualized.
Sources: Callan, FTSE Russell, NCREIF

Value Is in the Eye of the Beholder

PRIVATE EQUITY | Gary Robertson

Fundraising, company purchase prices, and IPOs increased in the second quarter. However, private M&A investment and exit measures were flat to markedly down. Average buyout company prices and leverage levels hit a record in 2019, tempering transaction activity. Private equity returns remained positive, despite the fourth quarter public equity sell-off.

- **Fundraising** ► Based on preliminary data, final closes for private equity partnerships in the second quarter totaled \$143 billion of commitments in 203 partnerships. (Unless otherwise noted, all data in this commentary come from PitchBook.) The dollar volumes rose 8% and the number of funds rose 25% from the first quarter. For the first half, 2019 is running \$99 billion or 21% behind a year ago. We expect that the second half of 2019 will be larger than the first half, as some large fundraises are slated to start in the fourth quarter, and sought-after general partners are closing new funds quickly.
- **Buyouts** ► New buyout transactions continued declining in the quarter. Funds closed 1,424 investments with \$97 billion in disclosed deal value, representing a 12% decline in count and a 9% dip in dollar value from the first quarter. Average buyout prices leaped to 11.2x EBITDA in 2019 versus 10.6x in 2018, providing a headwind for investment volume.
- **VC Investments** ► New rounds of financing in venture capital companies totaled 4,656, with \$55 billion of announced value. The number of investments was down

Funds Closed January 1 to June 30, 2019

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	159	30,984	11%
Growth Equity	95	142,750	52%
Buyouts	37	26,682	10%
Mezzanine Debt	25	41,150	15%
Distressed	6	9,840	4%
Energy	6	12,266	4%
Secondary and Other	23	8,690	3%
Fund-of-funds	14	4,371	2%
Totals	365	276,733	100%

Source: PitchBook (Figures may not total due to rounding.)

- 15% but announced value rose 10%. Venture prices generally rose during the quarter, particularly for larger later-stage investments.
- **Exits** ► There were 336 private M&A exits of private equity-backed companies, with disclosed values totaling \$80 billion. The private sale count fell 28% but the announced dollar volume rose 4%. There were 35 private equity-backed IPOs in the second quarter raising an aggregate \$15 billion, up 250% and 650%, respectively, from the first quarter.
- Venture-backed M&A exits totaled 290 transactions with disclosed value of \$20 billion. The number of sales declined 14% from the first quarter, and announced value fell 62%. There were 54 VC-backed IPOs in the second quarter with a combined float of \$54 billion; the count jumped 116% and the issuance ballooned 340% as unicorns such as Uber, Slack, and Pinterest made their public debuts.

Private Equity Performance Database (%) (Pooled Horizon IRRs through March 31, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	5.71	19.54	13.70	14.32	14.38	11.37	15.71
Growth Equity	6.14	16.87	16.41	13.05	15.05	13.23	13.76
All Buyouts	4.52	10.65	15.56	12.25	15.63	13.78	12.23
Mezzanine	2.25	7.56	11.67	10.30	11.09	10.47	8.83
Distressed	2.28	4.65	9.89	6.31	16.26	9.70	10.24
All Private Equity	4.13	4.60	10.73	7.71	13.11	10.60	10.66
S&P 500	4.86	12.66	14.66	12.08	15.15	12.79	12.55

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and Standard & Poor's

*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of *Capital Market Review* and other Callan publications.

Continuing Rally Boosts Most Strategies

HEDGE FUNDS/MACs | Jim McKee

Top-Down Jumps Ahead; Bottom-Up Plods Forward

- Risk-on sentiment in equities and rates supported virtually all hedge fund strategies.
- *Global Macro* (+4.6%) and *Managed Futures* (+4.7%) led, supported by continuing trends/bets in the rates markets.
- Most relative value strategies slogged forward; *Equity Market Neutral* (-0.3%) slipped, indicating challenges with stock-specific risk factors.
- *Long/Short Equity* (+1.3%) lagged equities; *Event-Driven Multi-Strategy* (+2.9%) performed better with soft catalyst-driven stocks continuing to rebound from the fourth quarter sell-off.
- *Risk Arb* (+0.7%) and *Distressed* (+1.5%) edged ahead with their process-driven or hard-catalyst trades.
- Hedge fund portfolios with more exposure to macro or long-biased strategies beat absolute return, particularly those trading equity fundamentals without beta exposure.

- The median manager in the **Callan Hedge Fund-of-Funds Database Group**, net of fees, gained 1.9% in the second quarter. Within that broad grouping, the *Long/Short Equity FOF Style Group* (+2.2%) saw the biggest increase, followed by *Core Diversified* (+1.6%) and *Absolute Return* (+1.1%).

Hedge Fund-of-Funds Style Group Returns



Sources: Callan, Credit Suisse, and Federal Reserve

Callan Database Median and Index Returns* for Periods ended June 30, 2019

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	1.85	5.06	2.69	5.14	4.59	4.59
Callan Absolute Return FOF Style	1.13	4.42	2.84	5.00	4.00	4.00
Callan Core Diversified FOF Style	1.56	4.52	2.16	4.95	4.61	4.61
Callan Long/Short Equity FOF Style	2.17	6.76	3.46	5.52	5.47	5.47
Credit Suisse Hedge Fund	2.35	4.34	2.36	5.03	5.01	5.01
CS Convertible Arbitrage	1.25	3.99	2.18	5.68	3.81	3.81
CS Distressed	1.52	5.23	1.22	5.82	5.63	5.63
CS Emerging Markets	1.41	6.19	4.08	5.73	6.57	6.57
CS Equity Market Neutral	-0.25	1.39	0.31	1.73	-0.26	-0.26
CS Event-Driven Multi	2.86	4.82	-0.09	4.19	5.20	5.20
CS Fixed Income Arb	1.21	5.19	3.36	6.55	3.78	3.78
CS Global Macro	4.55	4.81	3.01	5.23	6.26	6.26
CS Long/Short Equity	1.25	5.46	3.39	5.66	5.80	5.80
CS Managed Futures	4.73	-1.65	2.50	1.57	3.23	3.23
CS Multi-Strategy	2.11	4.87	4.45	6.93	5.95	5.95
CS Risk Arbitrage	0.70	3.89	2.04	3.03	3.74	3.74
HFRI Asset Wtd Composite	2.12	5.15	3.00	5.15	--	--
90-Day T-Bill + 5%	1.84	6.38	5.87	5.49	6.38	6.38

*Gross of fees. Sources: Bloomberg Barclays, Callan, Credit Suisse, Hedge Fund Research, Societe Generale, and Standard & Poor's

Continuing Rally Lifts Long-Biased MACs; Risk Premia Languished Again

- **HFR Risk Parity Index** targeting 12% volatility gained 4.9%, propelled by rising stock and bond markets, amplified by portfolio leverage.
- Across these risk premia represented by HFR's Risk Premia indexes, *Rates Momentum* (+18.6%) benefited from global yields continuing their slide. Negative effects from other risk premia, especially in equities and commodities, dragged down overall performance.
- The **Callan Multi-Asset Class (MAC) Database Group** increased 2.3% in the quarter. Within that group, the *Risk Parity MAC Style Group* rose 4.6%, followed by *Long Biased* (+2.6%) and *Absolute Return* (+1.8%). *Risk Premia* fell 1.3%.

Volatility Settles Down Again with Risk-On Sentiment

- Markets are discounting continued growth with lower expected rates priced into valuations.
- If hard economic data does not confirm the market's buoyant sentiment, hedge funds are well positioned defensively for a downturn.
- Without a sustained pick-up in volatility, hedge funds are likely to lag.

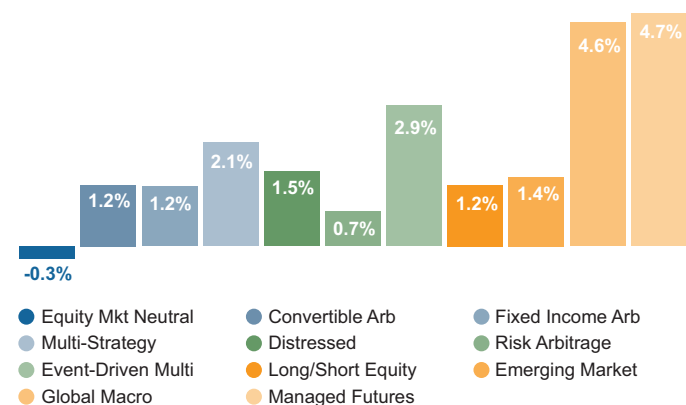
Flat Yield Curve Continues to Level Playing Field

- While both long and short rates settled to lower levels, today's positive short-term rates are still providing support to hedge funds on cash holdings and short interest rebates.
- If the Fed lowers rates aggressively from here due to weakening economic growth, fixed income and diversifying strategies of "hedged" funds will likely benefit at the expense of equities suffering from lowered earnings expectations.

Economic Divergence Creates More Opportunity

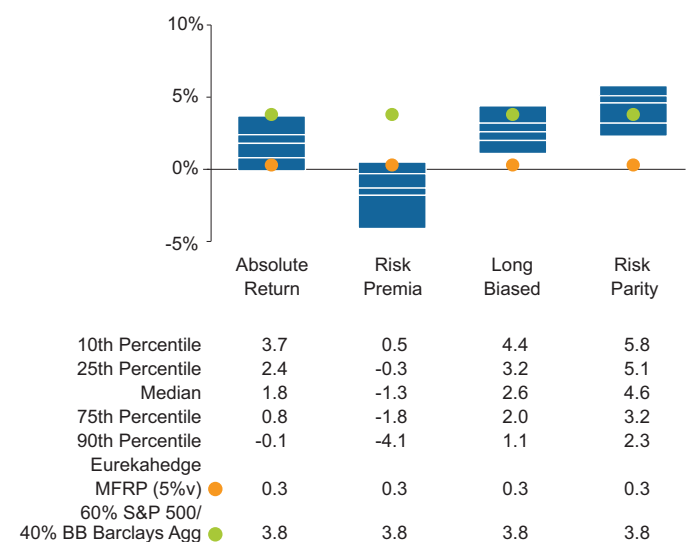
- Global macro tensions can lead to more fundamental and technical imbalances for hedge funds to trade.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



Sources: Bloomberg Barclays, Callan, Eurekahedge, Standard & Poor's

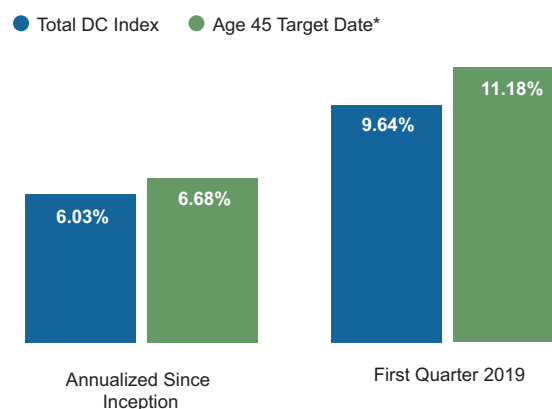
Returns, Inflows Both Rebound for DC Index

DEFINED CONTRIBUTION | Patrick Wisdom

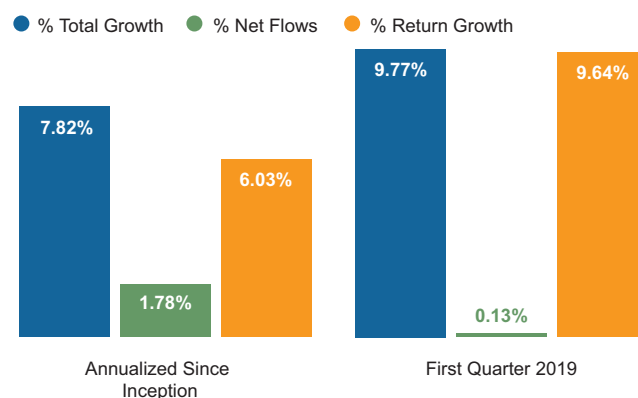
- After a rough finish to 2018, the Callan DC Index™ rebounded in the first quarter of 2019, gaining 9.6%. The Age 45 Target Date Fund posted even stronger results, gaining 11.2%, largely attributable to the Age 45 TDF's higher equity allocation (78% vs. 69%).
- After two quarters of negative flows, strong investment results and cash flows led to sizeable growth in balances in the first quarter, a reversal from two consecutive quarters of negative flows. The 9.8% total gain in market value for the quarter marked the highest since the first quarter of 2012 (9.9%).
- After an aberration in the fourth quarter, target date funds saw the largest inflows in the first quarter. Moreover, stable value experienced relatively large outflows after having the largest inflows the previous quarter. Despite strong equity gains in the first quarter, both U.S. and non-U.S. equity saw large outflows. At the same time, U.S. fixed and money market funds experienced relatively large inflows, perhaps indicating a shift toward safer securities within the core lineup.
- First quarter turnover (i.e., net transfer activity levels within DC plans) increased slightly to 0.48% from the previous quarter's 0.41%.
- After equities rebounded in the first quarter, the share of equity rose to 69.5% from 68.8% the previous quarter.
- Target date funds ended the quarter with 30% of assets, down from 33% the previous quarter. Among asset classes that increased, U.S. large cap (25%) and U.S./global balanced (7%) were up roughly 1 percentage point.
- Stable value's prevalence within DC plans rose for the sixth consecutive quarter and is now at 76%. Additionally, more plans are now offering emerging market equity (18%) as an option compared to the previous quarter.

The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over \$150 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.

Investment Performance



Growth Sources



Net Cash Flow Analysis (First Quarter 2019) (Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	73.22%
U.S. Fixed Income	21.27%
U.S./Global Balanced	-16.65%
U.S. Large Cap	-24.86%
Total Turnover**	0.48%

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

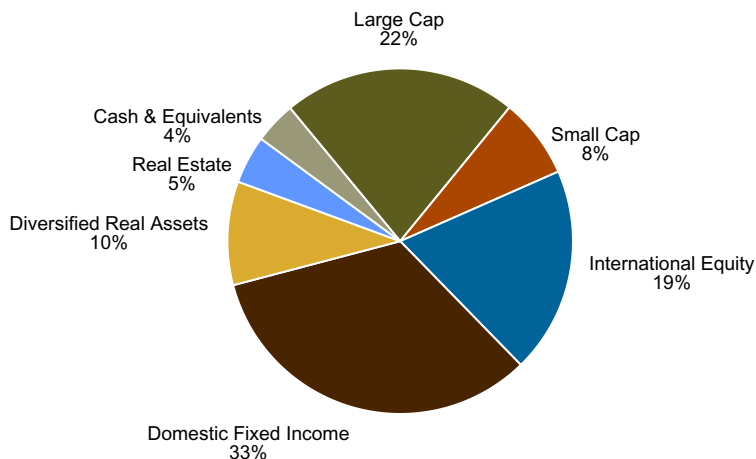
* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

** Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

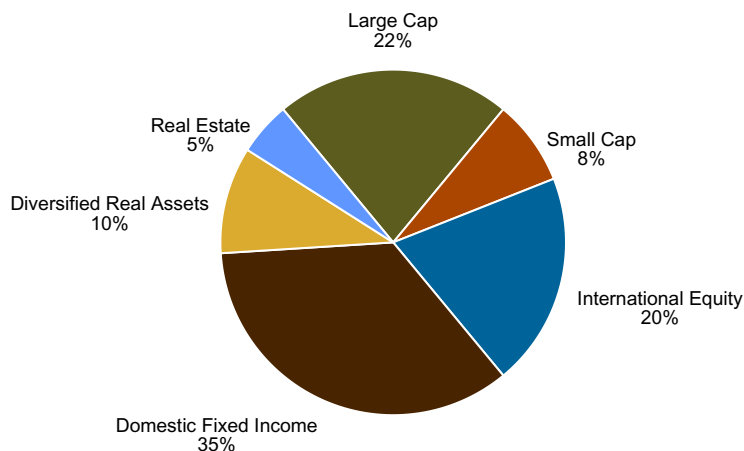
Actual vs Target Asset Allocation As of June 30, 2019

The first chart below shows the Fund's asset allocation as of June 30, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



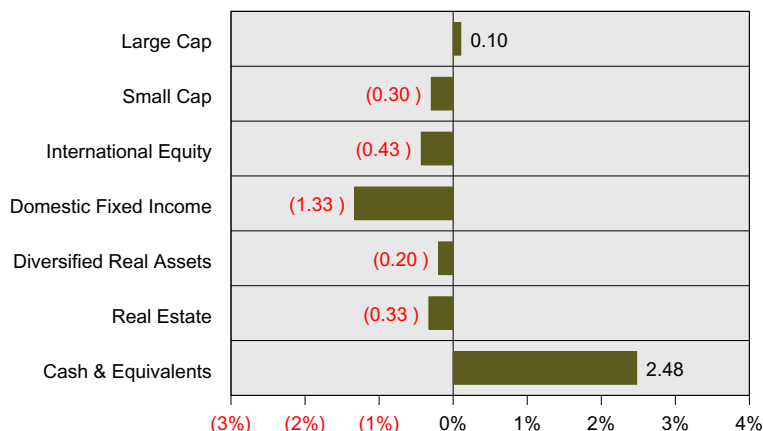
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Large Cap	1,442,421	21.9%	22.0%	(0.1%)	(5,346)
Small Cap	495,696	7.5%	8.0%	(0.5%)	(30,765)
International Equity	1,272,823	19.3%	20.0%	(0.7%)	(43,329)
Domestic Fixed Income	2,181,598	33.2%	35.0%	(1.8%)	(121,668)
Diversified Real Assets	635,160	9.7%	10.0%	(0.3%)	(22,916)
Real Estate	297,218	4.5%	5.0%	(0.5%)	(31,820)
Cash & Equivalents	255,844	3.9%	0.0%	3.9%	255,844
Total	6,580,760	100.0%	100.0%		

* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI EAFE, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

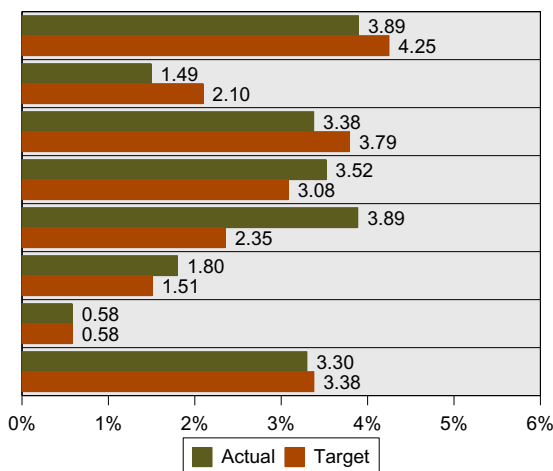
Quarterly Total Fund Relative Attribution - June 30, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

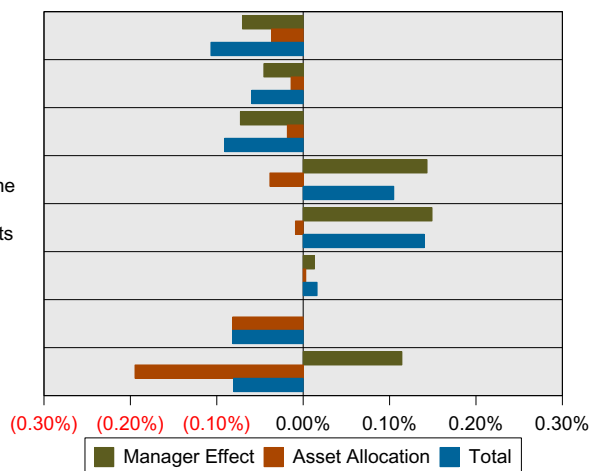
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended June 30, 2019

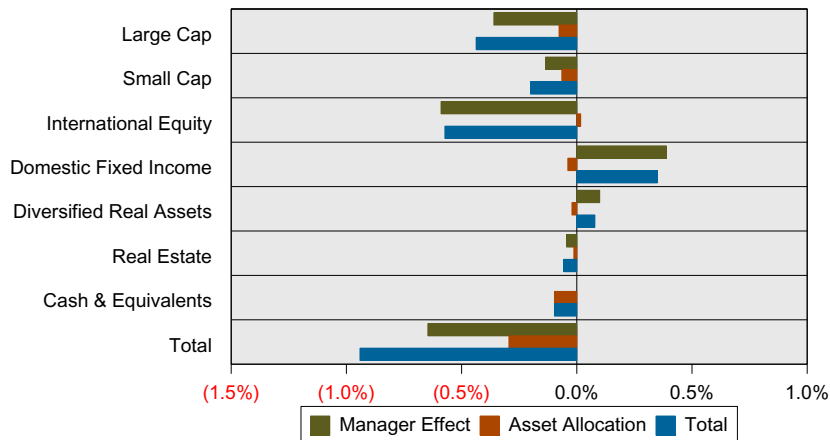
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	3.89%	4.25%	(0.07%)	(0.04%)	(0.11%)
Small Cap	8%	8%	1.49%	2.10%	(0.05%)	(0.01%)	(0.06%)
International Equity	20%	20%	3.38%	3.79%	(0.07%)	(0.02%)	(0.09%)
Domestic Fixed Income	34%	35%	3.52%	3.08%	0.14%	(0.04%)	0.10%
Diversified Real Assets	10%	10%	3.89%	2.35%	0.15%	(0.01%)	0.14%
Real Estate	5%	5%	1.80%	1.51%	0.01%	0.00%	0.02%
Cash & Equivalents	2%	0%	0.58%	0.58%	0.00%	(0.08%)	(0.08%)
Total			3.30%	3.38%	+ 0.11%	+ (0.19%)	(0.08%)

* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

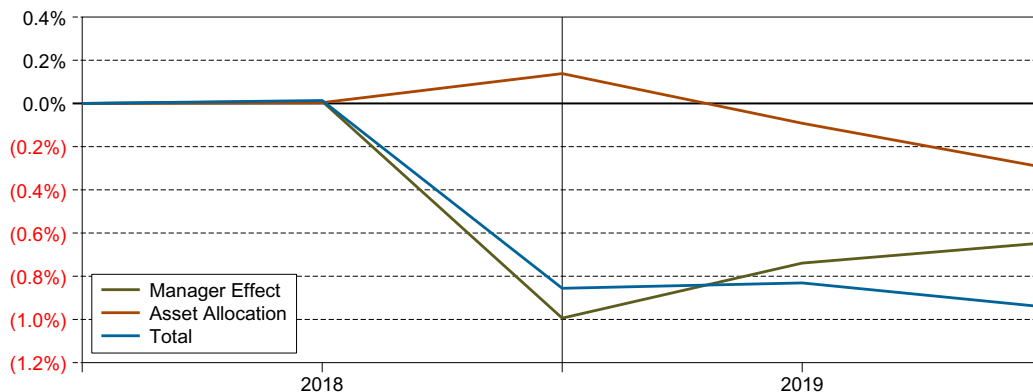
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

One Year Relative Attribution Effects



Cumulative Relative Attribution Effects



One Year Relative Attribution Effects

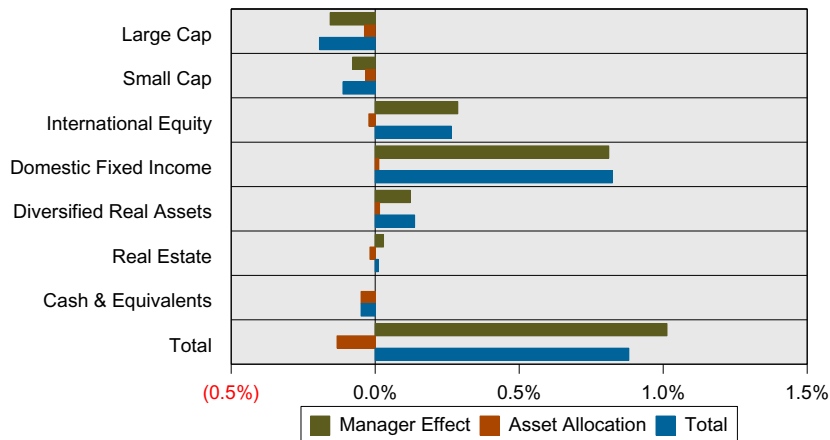
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	8.30%	10.02%	(0.36%)	(0.08%)	(0.44%)
Small Cap	8%	8%	(4.83%)	(3.31%)	(0.14%)	(0.07%)	(0.20%)
International Equity	19%	20%	(1.73%)	1.29%	(0.59%)	0.02%	(0.57%)
Domestic Fixed Income	35%	35%	9.11%	7.87%	0.39%	(0.04%)	0.35%
Diversified Real Assets	10%	10%	5.33%	4.28%	0.10%	(0.02%)	0.08%
Real Estate	5%	5%	5.57%	6.51%	(0.04%)	(0.01%)	(0.06%)
Cash & Equivalents	1%	0%	2.16%	2.16%	0.00%	(0.10%)	(0.10%)
Total			5.18%	6.12%	(0.65%)	(0.29%)	(0.94%)

* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

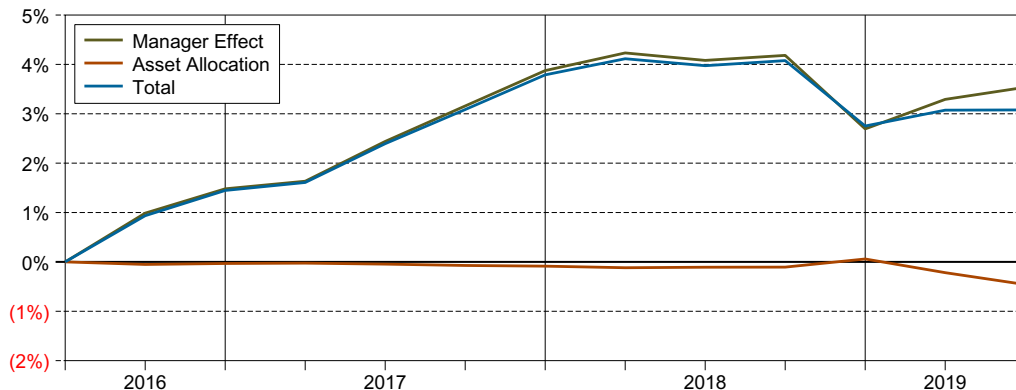
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Three Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Three Year Annualized Relative Attribution Effects

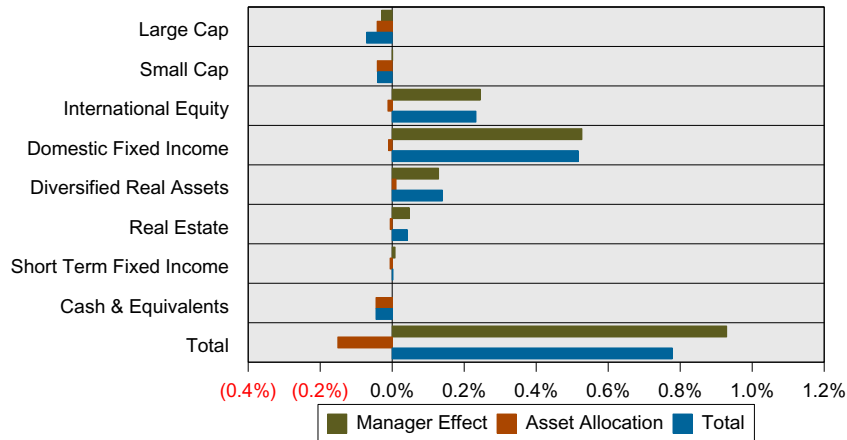
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	13.40%	14.15%	(0.16%)	(0.04%)	(0.19%)
Small Cap	8%	8%	11.29%	12.30%	(0.08%)	(0.03%)	(0.11%)
International Equity	20%	20%	10.37%	9.01%	0.29%	(0.02%)	0.26%
Domestic Fixed Income	35%	35%	4.62%	2.31%	0.81%	0.01%	0.82%
Diversified Real Assets	10%	10%	4.11%	2.86%	0.12%	0.02%	0.14%
Real Estate	5%	5%	7.39%	6.89%	0.03%	(0.02%)	0.01%
Cash & Equivalents	1%	0%	1.27%	1.27%	0.00%	(0.05%)	(0.05%)
Total			8.38%	7.50%	+ 1.01%	(0.13%)	0.88%

* Current Quarter Target = 35.0% Bimbg Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

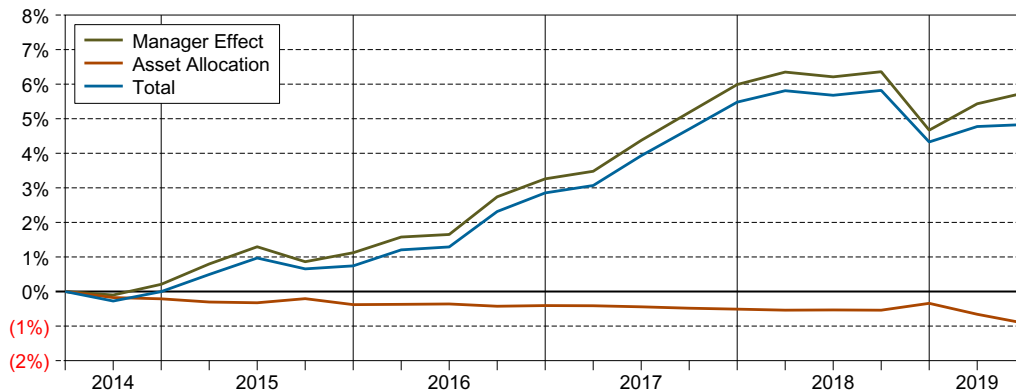
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Five Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Five Year Annualized Relative Attribution Effects

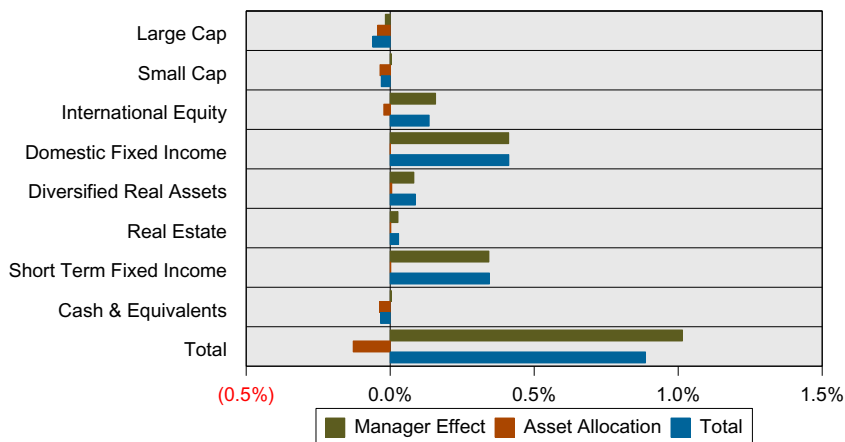
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	10.33%	10.45%	(0.03%)	(0.04%)	(0.07%)
Small Cap	8%	8%	7.12%	7.06%	0.00%	(0.04%)	(0.04%)
International Equity	20%	20%	3.33%	2.19%	0.24%	(0.01%)	0.23%
Domestic Fixed Income	34%	34%	4.50%	2.95%	0.53%	(0.01%)	0.52%
Diversified Real Assets	9%	10%	2.74%	1.37%	0.13%	0.01%	0.14%
Real Estate	5%	5%	9.75%	8.83%	0.05%	(0.01%)	0.04%
Short Term Fixed Income	1%	1%	-	-	0.01%	(0.01%)	0.00%
Cash & Equivalents	1%	0%	0.78%	0.78%	0.00%	(0.04%)	(0.04%)
Total			5.96%	5.18%	+ 0.93%	+ (0.15%)	0.78%

* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

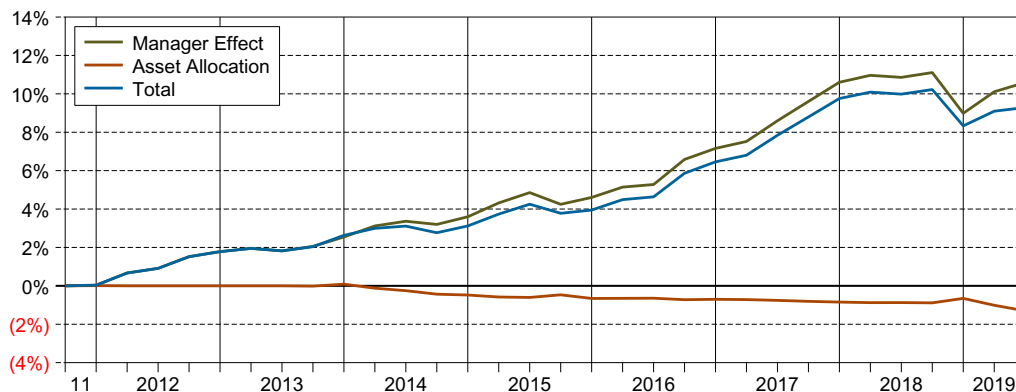
Cumulative Total Fund Relative Attribution - June 30, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

Seven and Three-Quarter Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Seven and Three-Quarter Year Annualized Relative Attribution Effects

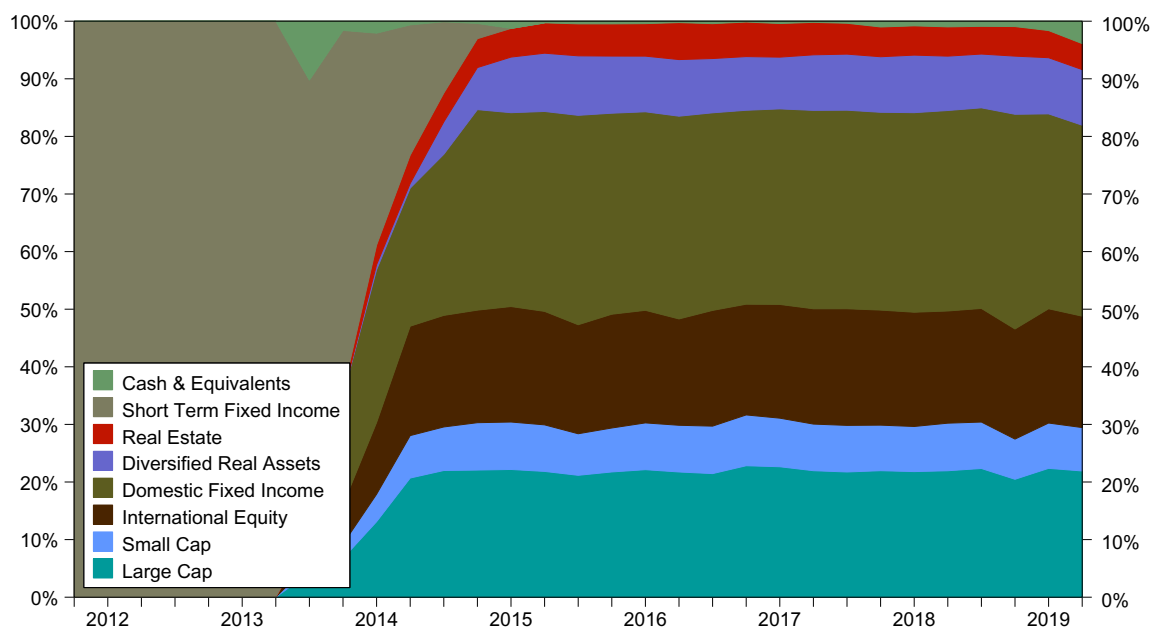
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	15%	15%	-	-	(0.02%)	(0.04%)	(0.06%)
Small Cap	6%	6%	-	-	0.00%	(0.04%)	(0.03%)
International Equity	14%	14%	-	-	0.16%	(0.02%)	0.14%
Domestic Fixed Income	24%	24%	-	-	0.41%	0.00%	0.41%
Diversified Real Assets	6%	6%	-	-	0.08%	0.01%	0.09%
Real Estate	4%	3%	-	-	0.03%	0.00%	0.03%
Short Term Fixed Income	29%	29%	-	-	0.34%	0.00%	0.34%
Cash & Equivalents	3%	2%	0.55%	0.55%	0.00%	(0.04%)	(0.03%)
Total			5.01%	4.13%	+ 1.01%	+ (0.13%)	0.89%

* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

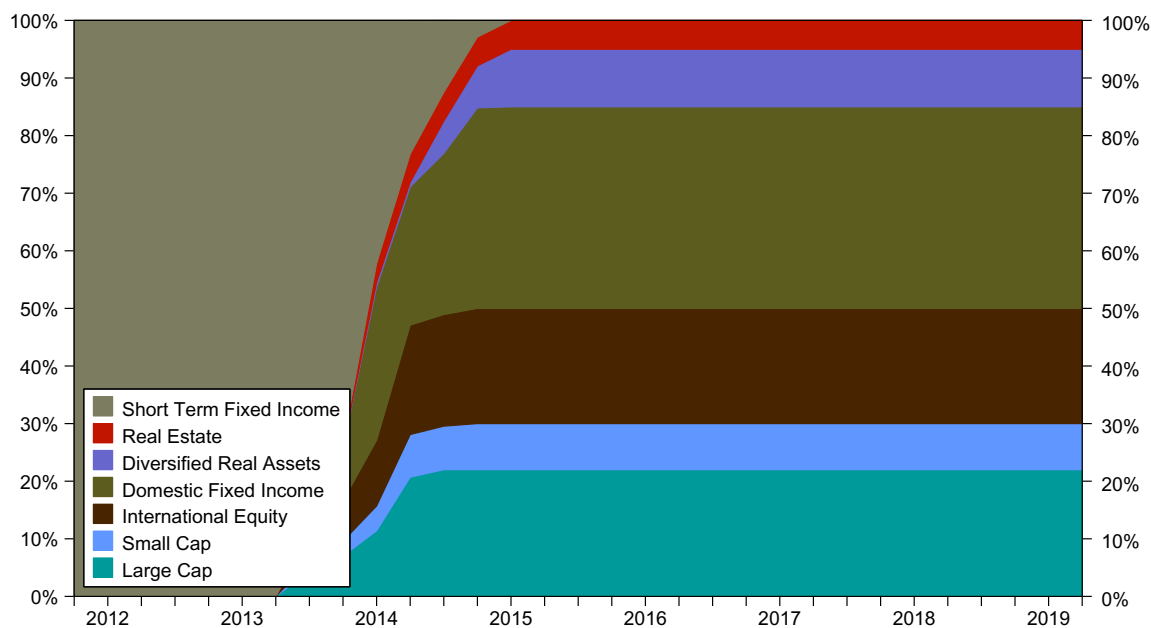
Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, and the fund's historical target asset allocation.

Actual Historical Asset Allocation



Target Historical Asset Allocation

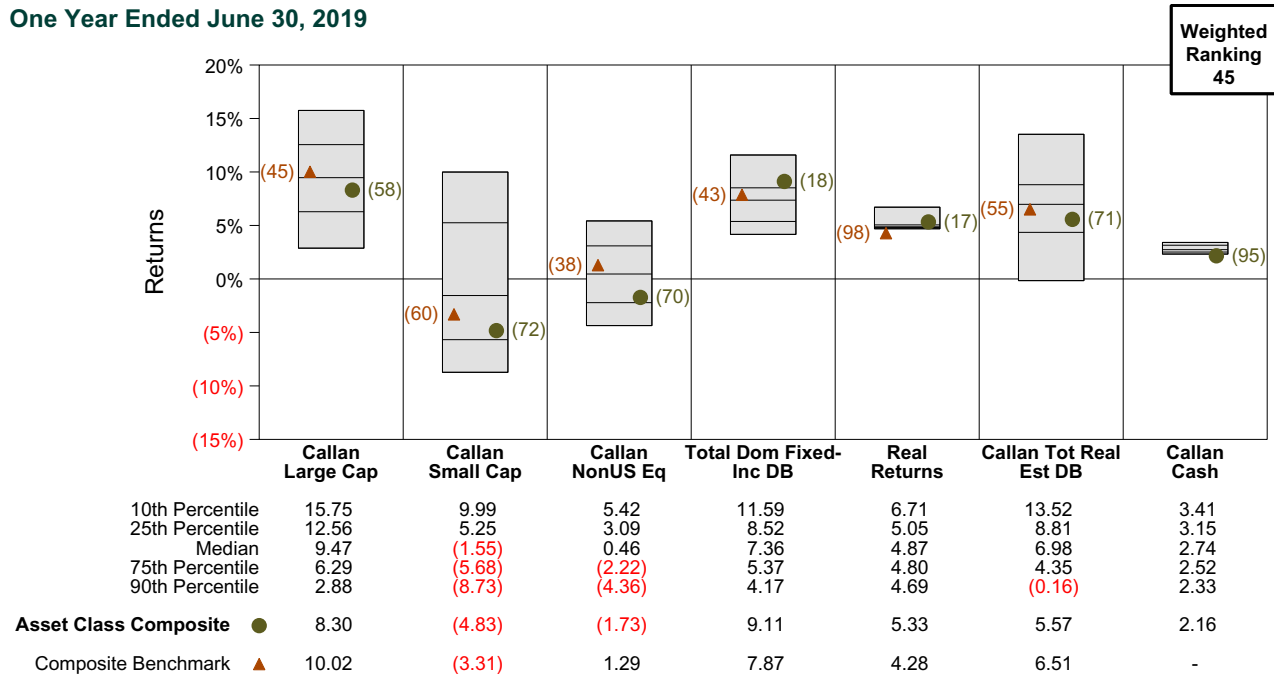


* Current Quarter Target = 35.0% Blmgb Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

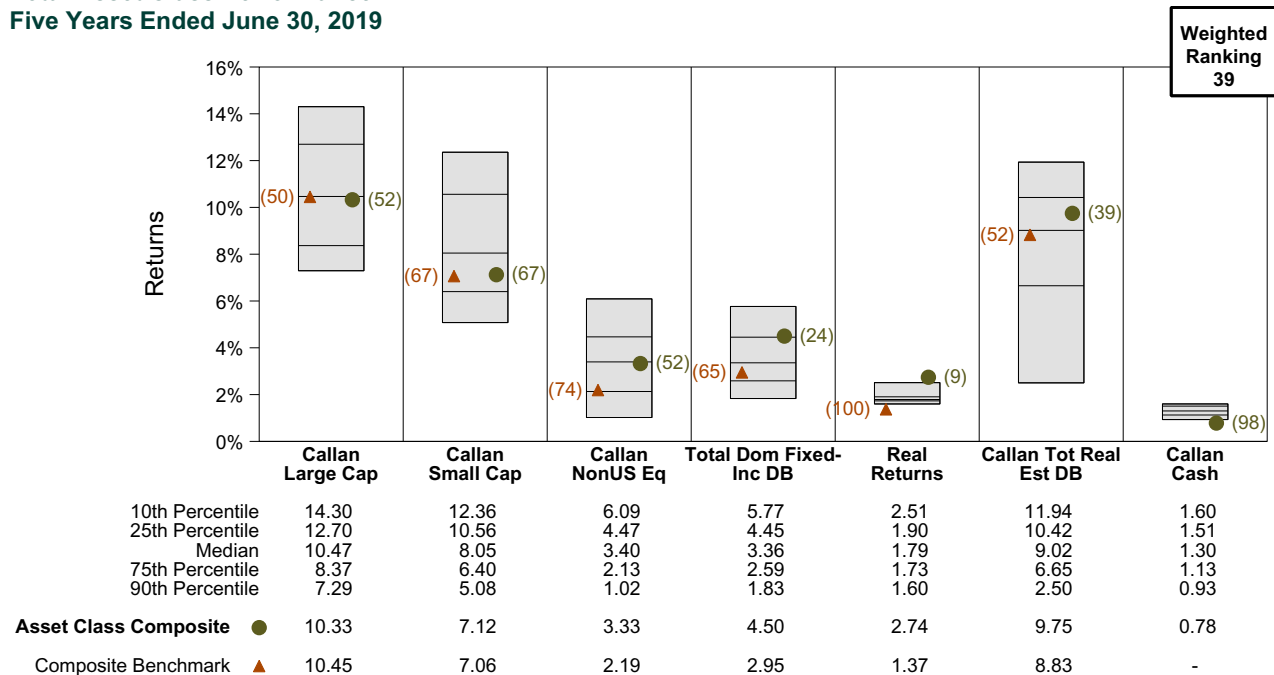
Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

Total Asset Class Performance One Year Ended June 30, 2019



Total Asset Class Performance Five Years Ended June 30, 2019



* Current Quarter Target = 35.0% Bimbg Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2019, with the distribution as of March 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Class Allocation

	June 30, 2019				March 31, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equity	\$3,210,940,307	48.79%	\$(1,648,603)	\$102,980,382	\$3,109,608,528	50.08%
Domestic Equity	\$1,938,117,087	29.45%	\$(726,371)	\$61,384,822	\$1,877,458,635	30.24%
Large Cap	\$1,442,421,117	21.92%	\$(583,451)	\$54,083,700	\$1,388,920,868	22.37%
L.A. Capital Enhanced	289,714,464	4.40%	(88,015)	11,703,827	278,098,653	4.48%
L.A. Capital Large Cap Growth	447,984,666	6.81%	(214,094)	20,054,560	428,144,201	6.90%
Parametric Clifton Large Cap	291,471,887	4.43%	0	12,630,672	278,841,215	4.49%
LSV Large Cap Value	413,250,100	6.28%	(281,342)	9,694,642	403,836,799	6.50%
Small Cap	\$495,695,970	7.53%	\$(142,919)	\$7,301,122	\$488,537,767	7.87%
Parametric Clifton SmallCap	253,529,445	3.85%	0	5,476,541	248,052,904	3.99%
PIMCO RAE	242,166,525	3.68%	(142,919)	1,824,581	240,484,863	3.87%
International Equity	\$1,272,823,220	19.34%	\$(922,233)	\$41,595,560	\$1,232,149,893	19.84%
DFA Intl SmallCap Value	116,598,229	1.77%	0	179,101	116,419,129	1.87%
LSV Intl Value	484,716,545	7.37%	(454,262)	6,261,734	478,909,073	7.71%
Vanguard Intl Explorer Fund	122,254,697	1.86%	0	2,024,324	120,230,373	1.94%
William Blair	549,253,750	8.35%	(467,971)	33,130,402	516,591,319	8.32%
Domestic Fixed Income	\$2,181,597,582	33.15%	\$6,701,812	\$74,164,599	\$2,100,731,172	33.83%
Ares ND Credit Strategies Fd	55,136,433	0.84%	0	2,238,748	52,897,685	0.85%
BND CDs	37,648,617	0.57%	(1,699,702)	394,577	38,953,742	0.63%
Cerberus ND Private Credit Fd	60,926,193	0.93%	10,000,000	1,031,256	49,894,937	0.80%
Declaration Total Return	165,218,383	2.51%	(89,951)	3,810,681	161,497,653	2.60%
Prudential	697,181,556	10.59%	281,780,080	21,336,894	394,064,583	6.35%
SSgA US Govt Credit Bd Idx	307,904,493	4.68%	(4,967)	10,562,269	297,347,191	4.79%
Wells Capital	187,329,651	2.85%	(282,183,045)	13,477,894	456,034,803	7.34%
Western Asset Management	614,935,431	9.34%	(177,028)	19,519,247	595,593,212	9.59%
Pooled Fixed Income(1)	55,316,825	0.84%	(923,576)	1,793,034	54,447,367	0.88%
Global Real Assets	\$932,378,137	14.17%	\$4,842,907	\$29,040,831	\$898,494,398	14.47%
Real Estate	\$297,218,243	4.52%	\$(923,453)	\$5,262,596	\$292,879,099	4.72%
Invesco Core Real Estate	146,247,927	2.22%	(249,683)	3,096,780	143,400,829	2.31%
JP Morgan RE Inc & Growth	150,970,316	2.29%	(673,770)	2,165,816	149,478,270	2.41%
Diversified	\$635,159,894	9.65%	\$5,766,360	\$23,778,235	\$605,615,299	9.75%
Western Asset TIPS	420,949,062	6.40%	(121,373)	12,483,028	408,587,408	6.58%
ISQ Global Infrastructure II	20,599,874	0.31%	281,738	4,156,944	16,161,192	0.26%
JP Morgan Infrastructure	119,092,377	1.81%	(2,696,972)	4,479,527	117,309,823	1.89%
Grosvenor Cust. Infrastructure	45,244,969	0.69%	0	2,694,398	42,550,571	0.69%
Macquarie Infrac. Partners IV	29,273,611	0.44%	8,302,968	(35,662)	21,006,305	0.34%
Cash	\$255,843,916	3.89%	\$154,387,949	\$917,647	\$100,538,320	1.62%
Insurance Cash Pool Account	318,084	0.00%	(101,056,887)	836,652	100,538,320	1.62%
Northern Trust Cash Account	48,189,431	0.73%	48,174,875	14,556	-	-
Bank of ND	207,336,401	3.15%	207,269,961	66,440	-	-
Securities Lending Income	\$0	0.00%	\$(213,382)	\$213,382	-	-
Total Fund	\$6,580,759,942	100.0%	\$164,070,683	\$207,316,841	\$6,209,372,418	100.0%

(1) Comprised of PIMCO DiSCO II and PIMCO Bravo II.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7-3/4 Years
Global Equity					
Gross	3.31%	2.10%	-	-	-
Net	3.26%	1.89%	-	-	-
Weighted Benchmark	3.73%	4.39%	-	-	-
Domestic Equity					
Gross	3.27%	4.67%	12.87%	9.51%	-
Net	3.23%	4.51%	12.66%	9.28%	-
Weighted Benchmark	3.67%	6.36%	-	-	-
Large Cap					
Gross	3.89%	8.30%	13.40%	10.33%	-
Net	3.85%	8.12%	13.19%	10.12%	-
Russell 1000 Index	4.25%	10.02%	14.15%	10.45%	15.51%
L.A. Capital Enhanced - Gross	4.21%	10.56%	12.77%	10.47%	-
L.A. Capital Enhanced - Net	4.18%	10.42%	12.62%	10.32%	-
Russell 1000 Index	4.25%	10.02%	14.15%	10.45%	15.51%
L.A. Capital LargeCap Growth - Gross	4.69%	11.71%	15.47%	12.72%	-
L.A. Capital LargeCap Growth - Net	4.63%	11.48%	15.24%	12.49%	-
Russell 1000 Growth Index	4.64%	11.56%	18.07%	13.39%	17.07%
Parametric Clifton Large Cap - Gross	4.53%	10.60%	13.97%	10.87%	-
Parametric Clifton Large Cap - Net	4.53%	10.60%	13.91%	10.80%	-
S&P 500 Index	4.30%	10.42%	14.19%	10.71%	15.52%
LSV Large Cap Value - Gross	2.40%	1.92%	11.20%	7.44%	-
LSV Large Cap Value - Net	2.33%	1.64%	10.89%	7.14%	-
Russell 1000 Value Index	3.84%	8.46%	10.19%	7.46%	13.85%
Small Cap					
Gross	1.49%	(4.83%)	11.29%	7.12%	-
Net	1.47%	(4.94%)	11.04%	6.84%	-
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.71%
Parametric Clifton Small Cap - Gross	2.21%	(3.12%)	12.52%	7.86%	-
Parametric Clifton Small Cap - Net	2.21%	(3.12%)	12.30%	7.58%	-
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.71%
PIMCO RAE - Gross	0.76%	(6.59%)	9.89%	6.10%	-
PIMCO RAE - Net	0.70%	(6.81%)	9.63%	5.83%	-
Russell 2000 Index	2.10%	(3.31%)	12.30%	7.06%	13.71%
International Equity					
Gross	3.38%	(1.73%)	10.37%	3.33%	-
Net	3.30%	(2.02%)	10.05%	3.02%	-
Benchmark(1)	3.79%	1.29%	9.01%	2.19%	7.40%
DFA Intl Small Cap Value	0.15%	(11.54%)	6.29%	1.05%	-
World ex US SC Va	0.92%	(6.40%)	7.72%	1.89%	7.93%
LSV Intl Value - Gross	1.31%	(4.30%)	8.55%	1.96%	-
LSV Intl Value - Net	1.21%	(4.66%)	8.14%	1.57%	-
MSCI EAFE Index	3.68%	1.08%	9.11%	2.25%	7.43%
Vanguard Intl Explorer Fund	1.68%	(11.72%)	7.60%	3.05%	-
BMI, EPAC, <\$2 B	0.02%	(9.91%)	6.36%	3.29%	7.96%
William Blair - Gross	6.42%	5.65%	13.63%	-	-
William Blair - Net	6.32%	5.26%	13.23%	-	-
MSCI ACWI ex US IMI	2.74%	0.26%	9.17%	2.25%	6.72%

(1) MSCI EAFE through 6/30/2016 and MSCI World ex-US thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended June 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7-3/4 Years
Domestic Fixed Income					
Gross	3.52%	9.11%	4.62%	4.50%	-
Net	3.49%	8.99%	4.50%	4.37%	-
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	2.82%
Ares ND Credit Strategies Fd - Net	4.23%	8.03%	-	-	-
Cerberus ND Private Credit Fd - Net	1.71%	8.89%	-	-	-
S&P/LSTA Leveraged Loan B	1.72%	4.22%	5.52%	3.90%	5.36%
BND CDs - Net	1.03%	3.55%	-	-	-
Declaration Total Return - Net	2.36%	6.47%	4.93%	4.18%	-
Labor-3 Month	0.63%	2.61%	1.78%	1.21%	0.91%
Prudential - Gross	3.65%	9.54%	4.50%	4.62%	-
Prudential - Net	3.60%	9.32%	4.25%	4.36%	-
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	2.82%
Wells Capital - Gross	5.10%	11.74%	5.51%	4.92%	-
Wells Capital - Net	5.06%	11.57%	5.34%	4.75%	-
Blmbg Credit Baa	4.80%	11.39%	4.67%	4.18%	5.12%
Western Asset - Gross	3.28%	9.21%	3.99%	4.23%	-
Western Asset - Net	3.25%	9.08%	3.86%	4.09%	-
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	2.82%
SSgA US Govt Credit Bd Idx - Gross	3.55%	8.57%	2.43%	3.12%	-
SSgA US Govt Credit Bd Idx - Net	3.55%	8.55%	2.40%	3.09%	-
Blmbg Govt/Credit Bd	3.53%	8.52%	2.41%	3.11%	2.97%
Pooled Fixed Income - Net(1)	3.32%	4.98%	9.63%	-	-
Blmbg Aggregate	3.08%	7.87%	2.31%	2.95%	2.82%
Global Real Assets					
Gross	3.21%	5.48%	-	-	-
Net	3.06%	5.14%	-	-	-
Weighted Benchmark	2.07%	5.02%	-	-	-
Real Estate					
Gross	1.80%	5.57%	7.39%	9.75%	-
Net	1.52%	4.99%	6.79%	9.08%	-
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.63%
Invesco Core Real Estate - Gross	2.16%	7.05%	7.95%	10.19%	-
Invesco Core Real Estate - Net	1.99%	6.69%	7.58%	9.81%	-
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.63%
JP Morgan RE Inc & Growth - Gross	1.45%	4.17%	6.85%	9.42%	-
JP Morgan RE Inc & Growth - Net	1.07%	3.40%	6.04%	8.47%	-
NCREIF Total Index	1.51%	6.51%	6.89%	8.83%	9.63%
Diversified					
Gross	3.89%	5.33%	4.11%	2.74%	-
Net	3.80%	5.11%	3.87%	2.51%	-
Weighted Benchmark	2.35%	4.28%	2.86%	1.37%	-
Western Asset TIPS - Gross	3.06%	3.78%	2.43%	1.41%	-
Western Asset TIPS - Net	3.03%	3.66%	2.31%	1.28%	-
Benchmark(4)	2.95%	4.61%	2.93%	1.38%	2.62%
JP Morgan Infrastructure - Gross	3.83%	7.56%	8.36%	-	-
JP Morgan Infrastructure - Net	3.49%	6.86%	7.66%	-	-
Grosvenor Cust. Infrastructure - Net	6.33%	16.38%	9.08%	-	-
Benchmark(2)	1.15%	3.91%	2.83%	1.74%	1.75%
Macquarie Infrs. Partners IV - Net	(0.92%)	-	-	-	-
ISQ Global Infrastructure II - Net	25.71%	3.39%	-	-	-
Benchmark(3)	1.15%	3.91%	-	-	-
Cash & Equivalents - Net	0.58%	2.16%	1.27%	0.78%	0.55%
Insurance Cash Pool - Net	0.58%	2.16%	1.27%	0.78%	0.55%
90 Day Treasury Bills	0.64%	2.31%	1.38%	0.87%	0.59%
Total Fund					
Gross	3.30%	5.18%	8.38%	5.96%	5.01%
Net	3.24%	4.98%	8.15%	5.72%	4.83%
Target*	3.38%	6.12%	7.50%	5.18%	4.13%

* Current Quarter Target = 35.0% Blmbg Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

(1) Comprised of PIMCO DiSCO II and PIMCO Bravo II.

(2) CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.

(3) 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.

(4) Blmbg Global Inflation-Linked through 10/31/2018 and Blmbg US Govt Inflation Linked Bond Index thereafter.

Domestic Equity Period Ended June 30, 2019

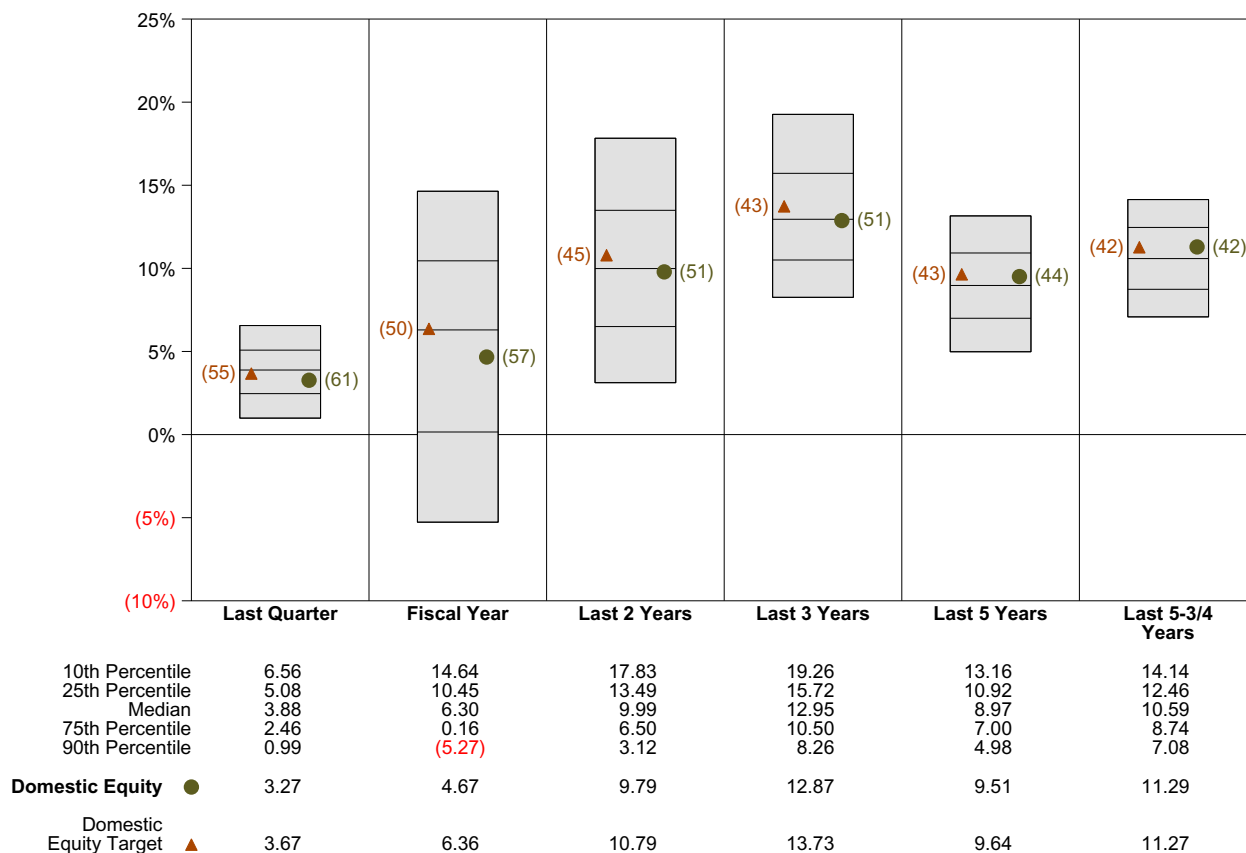
Quarterly Summary and Highlights

- Domestic Equity's portfolio posted a 3.27% return for the quarter placing it in the 61 percentile of the Total Domestic Equity Database group for the quarter and in the 57 percentile for the last year.
- Domestic Equity's portfolio underperformed the Domestic Equity Target by 0.40% for the quarter and underperformed the Domestic Equity Target for the year by 1.70%.

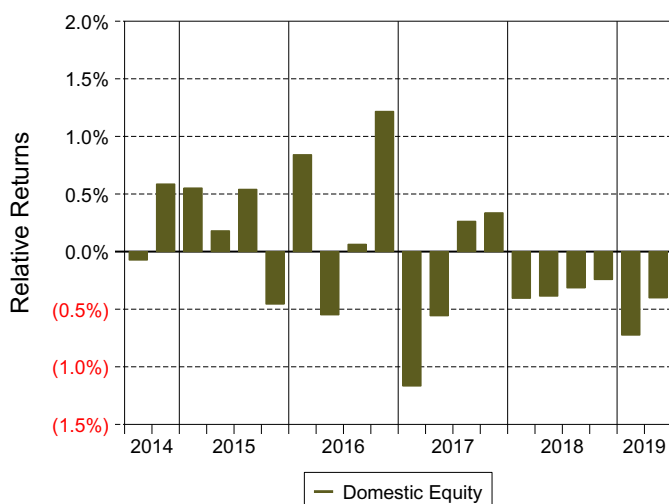
Quarterly Asset Growth

Beginning Market Value	\$1,877,458,635
Net New Investment	\$-726,371
Investment Gains/(Losses)	\$61,384,822
Ending Market Value	\$1,938,117,087

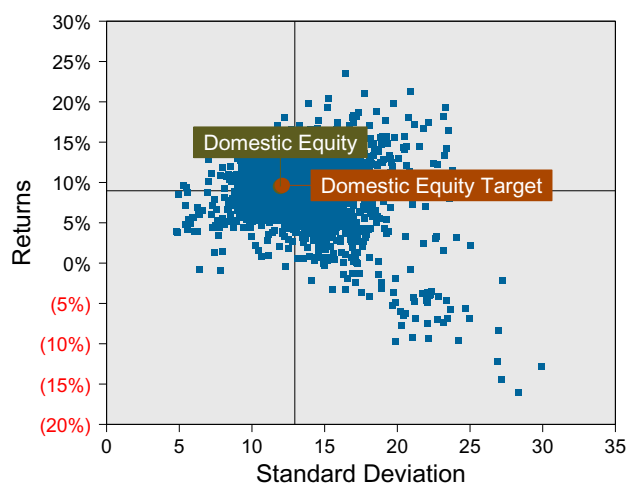
Performance vs Total Domestic Equity Database (Gross)



Relative Return vs Domestic Equity Target



Total Domestic Equity Database (Gross) Annualized Five Year Risk vs Return



Parametric Clifton Large Cap Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

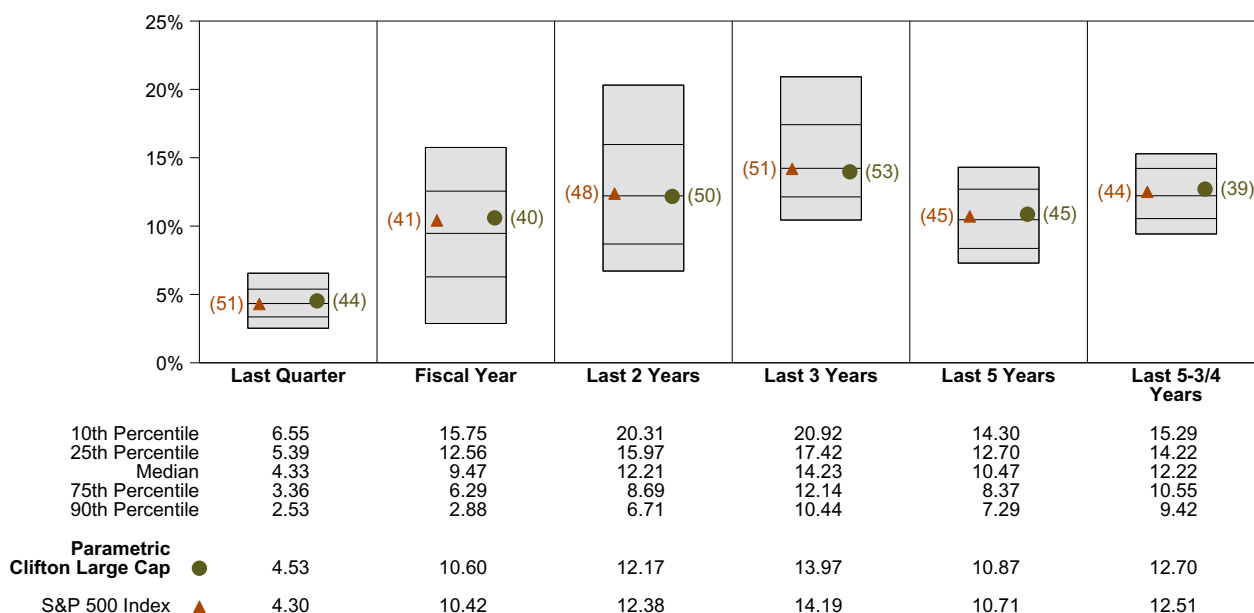
Quarterly Summary and Highlights

- Parametric Clifton Large Cap's portfolio posted a 4.53% return for the quarter placing it in the 44 percentile of the Callan Large Capitalization group for the quarter and in the 40 percentile for the last year.
- Parametric Clifton Large Cap's portfolio outperformed the S&P 500 Index by 0.23% for the quarter and outperformed the S&P 500 Index for the year by 0.19%.

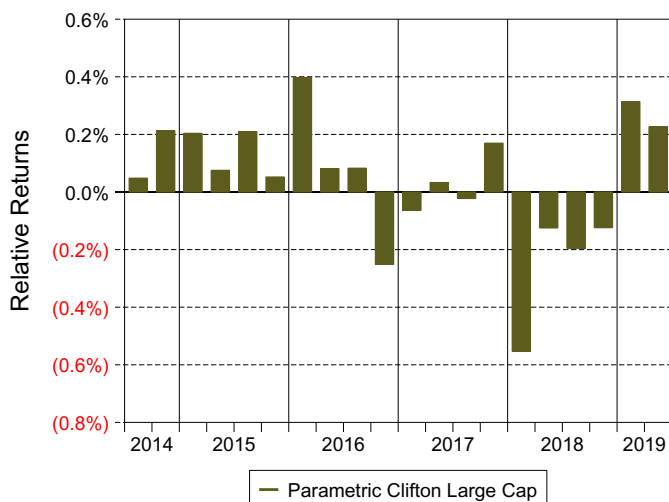
Quarterly Asset Growth

Beginning Market Value	\$278,841,215
Net New Investment	\$0
Investment Gains/(Losses)	\$12,630,672
Ending Market Value	\$291,471,887

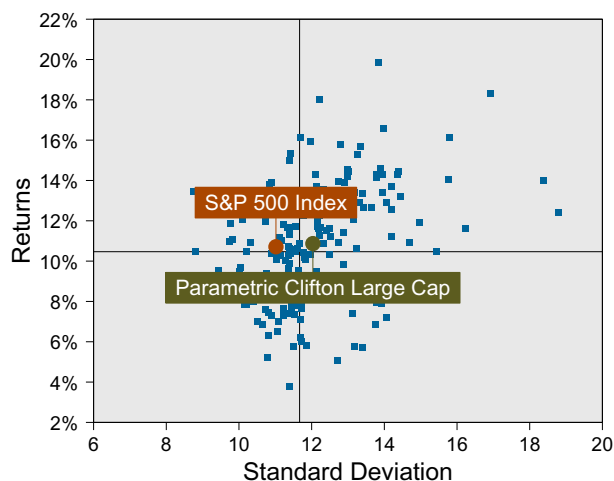
Performance vs Callan Large Capitalization (Gross)



Relative Return vs S&P 500 Index



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



L.A. Capital Period Ended June 30, 2019

Investment Philosophy

The LA Capital Structured portfolio is a large growth portfolio benchmarked to the Russell 1000 Growth Index. It is an active assignment meaning that it targets a 2% alpha and constrains its risk budget (tracking error) to 4% relative to the benchmark. LA Capital believes that investment results are driven by Investor Preferences and thus recognize that when preferences shift a different posture related to that factor is warranted.

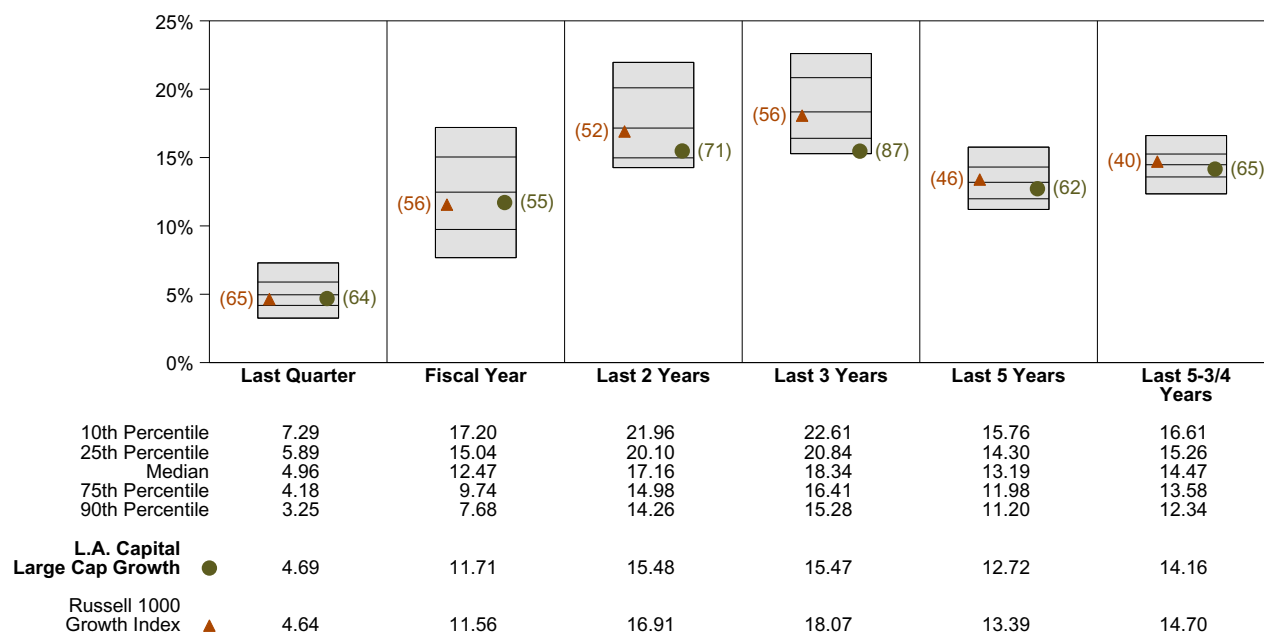
Quarterly Summary and Highlights

- L.A. Capital Large Cap Growth's portfolio posted a 4.69% return for the quarter placing it in the 64 percentile of the Callan Large Cap Growth group for the quarter and in the 55 percentile for the last year.
- L.A. Capital Large Cap Growth's portfolio outperformed the Russell 1000 Growth Index by 0.05% for the quarter and outperformed the Russell 1000 Growth Index for the year by 0.15%.

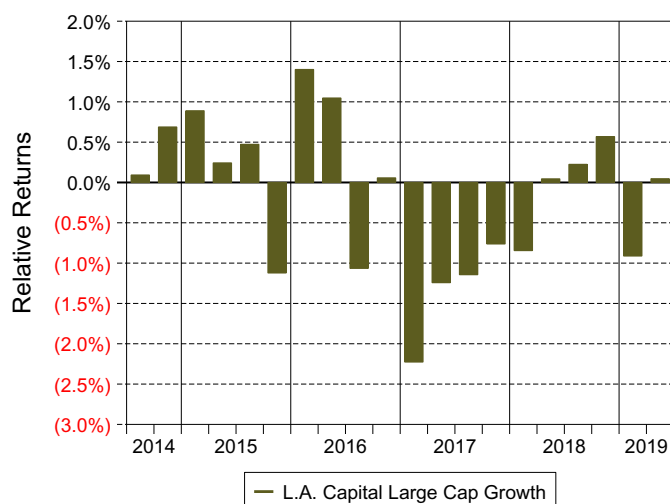
Quarterly Asset Growth

Beginning Market Value	\$428,144,201
Net New Investment	\$-214,094
Investment Gains/(Losses)	\$20,054,560
Ending Market Value	\$447,984,666

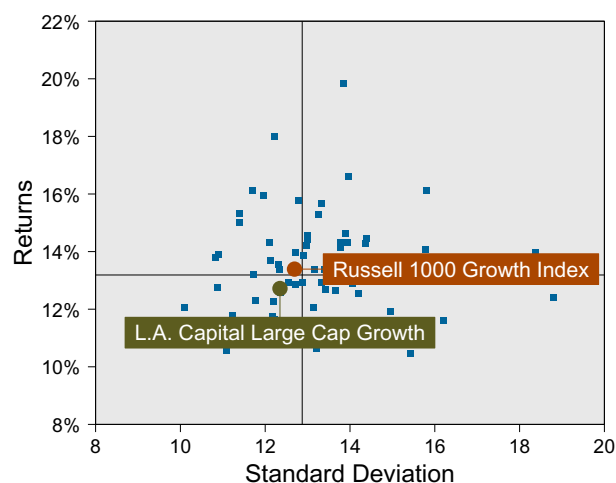
Performance vs Callan Large Cap Growth (Gross)



Relative Return vs Russell 1000 Growth Index



Callan Large Cap Growth (Gross) Annualized Five Year Risk vs Return



L.A. Capital Enhanced Period Ended June 30, 2019

Investment Philosophy

The LA Capital Enhanced portfolio is a large core portfolio benchmarked to the Russell 1000 Index. Characterized as an enhanced index assignment, its objective is to track the benchmark with lower variability. The pension portfolio began in August of 2000 and the insurance portfolio was initiated in April of 2004. Since October of 2006 a small portion of each of the two core accounts was allocated into the Large Cap Alpha Fund with intent to add incremental alpha to the assignment given that the information ratio was expected to be higher.

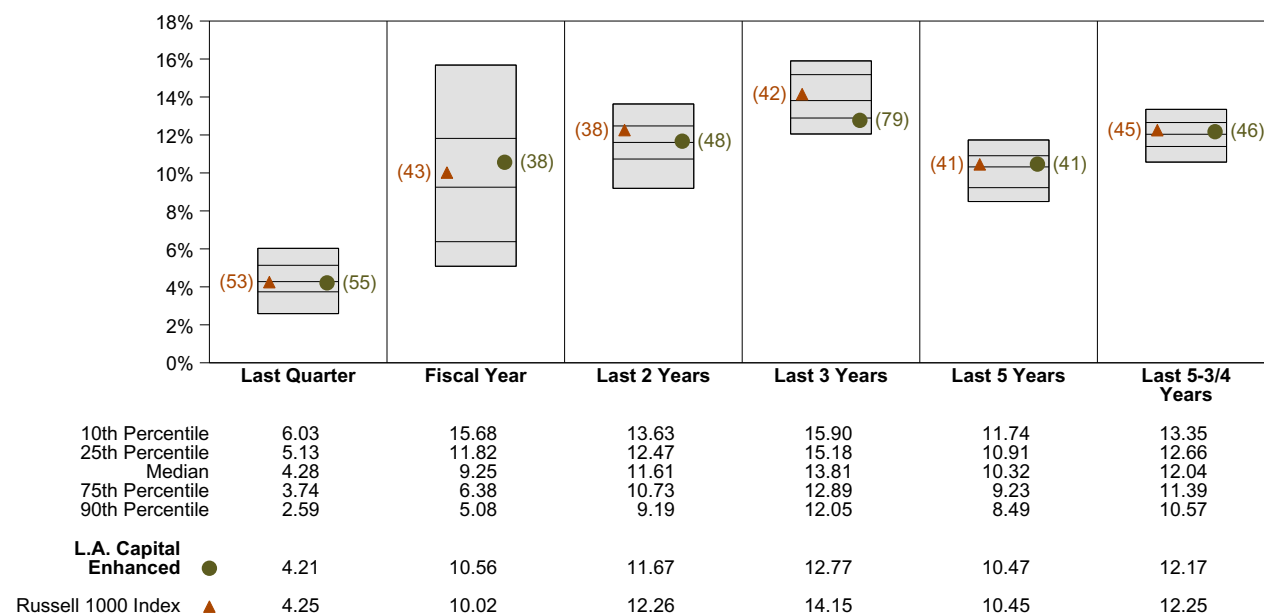
Quarterly Summary and Highlights

- L.A. Capital Enhanced's portfolio posted a 4.21% return for the quarter placing it in the 55 percentile of the Callan Large Cap Core group for the quarter and in the 38 percentile for the last year.
- L.A. Capital Enhanced's portfolio underperformed the Russell 1000 Index by 0.04% for the quarter and outperformed the Russell 1000 Index for the year by 0.54%.

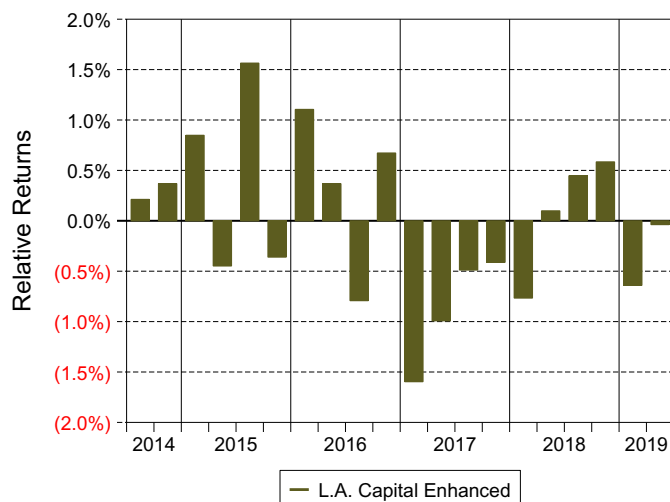
Quarterly Asset Growth

Beginning Market Value	\$278,098,653
Net New Investment	\$-88,015
Investment Gains/(Losses)	\$11,703,827
Ending Market Value	\$289,714,464

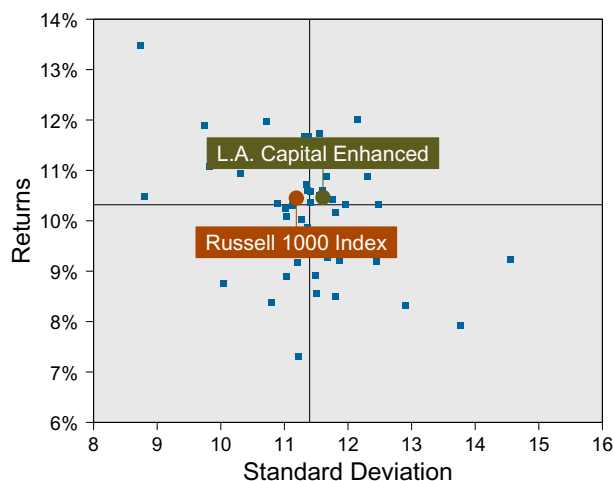
Performance vs Callan Large Cap Core (Gross)



Relative Return vs Russell 1000 Index



Callan Large Cap Core (Gross) Annualized Five Year Risk vs Return



LSV Asset Management

Period Ended June 30, 2019

Investment Philosophy

The objective of LSV Asset Management's Large Cap Value Equity (U.S.) strategy is to outperform the Russell 1000 Value by at least 200 basis points (gross of fees) per annum over a 3-5 year period with a tracking error of approximately 4%. Their stock selection process is a quantitative approach that ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 100 stocks in the most attractive securities possible within strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio is broadly diversified across industry groups and fully invested.

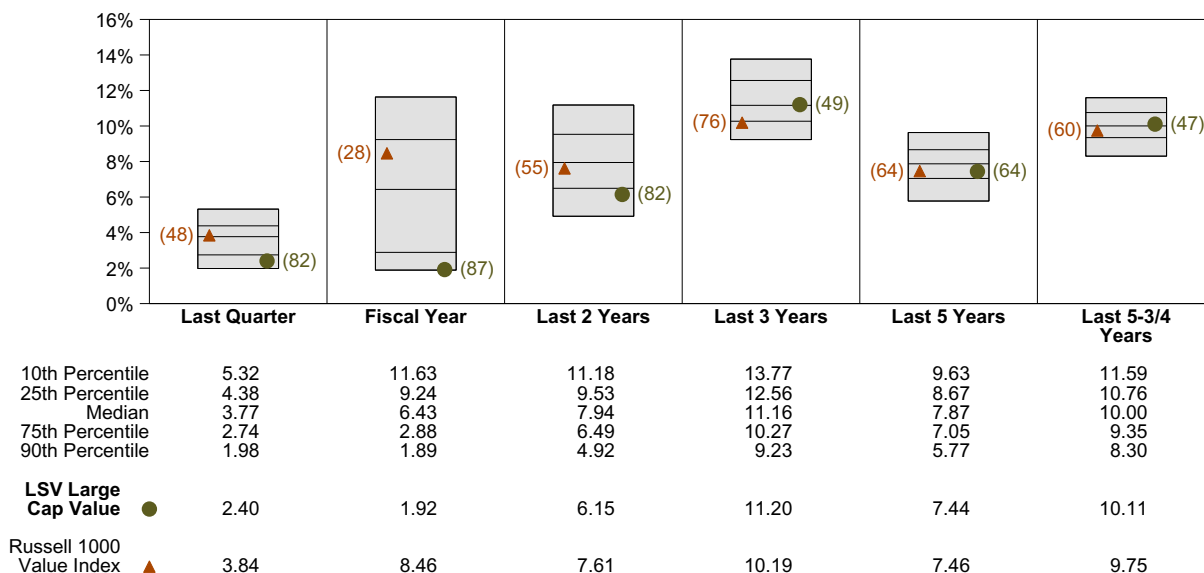
Quarterly Summary and Highlights

- LSV Large Cap Value's portfolio posted a 2.40% return for the quarter placing it in the 82 percentile of the Callan Large Cap Value group for the quarter and in the 87 percentile for the last year.
- LSV Large Cap Value's portfolio underperformed the Russell 1000 Value Index by 1.45% for the quarter and underperformed the Russell 1000 Value Index for the year by 6.55%.

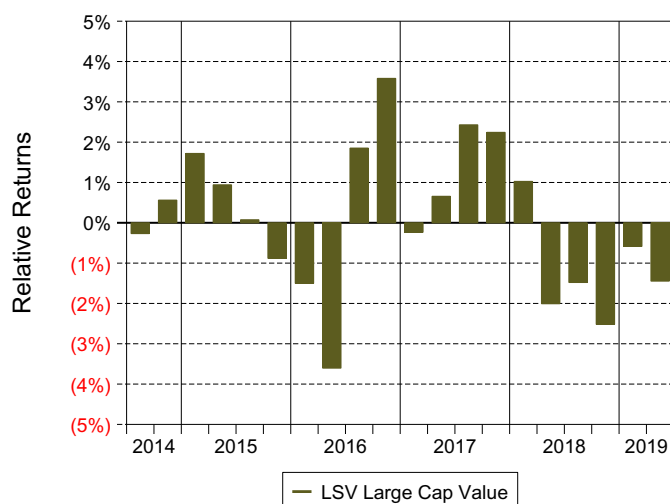
Quarterly Asset Growth

Beginning Market Value	\$403,836,799
Net New Investment	\$-281,342
Investment Gains/(Losses)	\$9,694,642
Ending Market Value	\$413,250,100

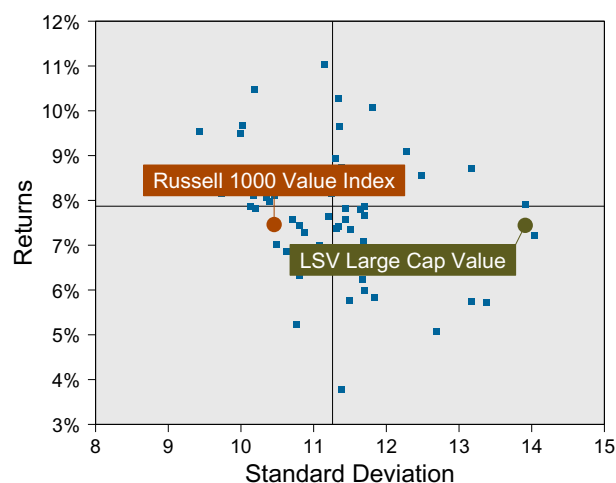
Performance vs Callan Large Cap Value (Gross)



Relative Return vs Russell 1000 Value Index



Callan Large Cap Value (Gross) Annualized Five Year Risk vs Return



Parametric Clifton Small Cap Period Ended June 30, 2019

Investment Philosophy

Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed income portfolio. Over market cycles excess return generated by the short duration portfolio, when added to the performance of futures is expected to allow the strategy to achieve 0.50% to 1.00% of gross excess annual performance.

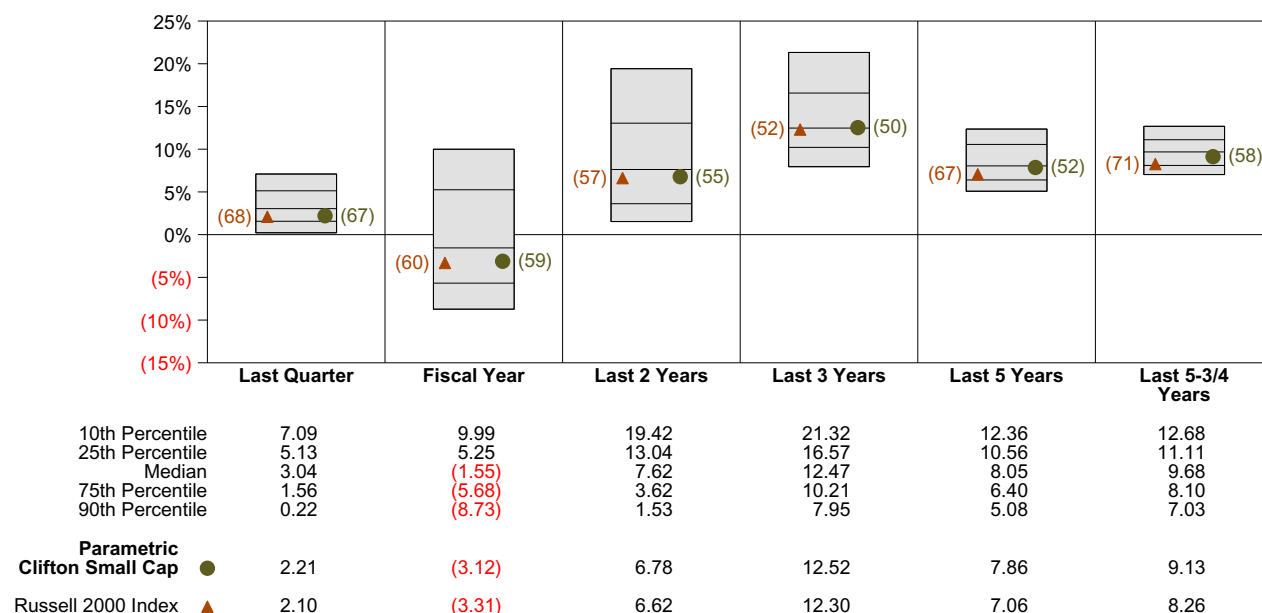
Quarterly Summary and Highlights

- Parametric Clifton Small Cap's portfolio posted a 2.21% return for the quarter placing it in the 67 percentile of the Callan Small Capitalization group for the quarter and in the 59 percentile for the last year.
- Parametric Clifton Small Cap's portfolio outperformed the Russell 2000 Index by 0.11% for the quarter and outperformed the Russell 2000 Index for the year by 0.19%.

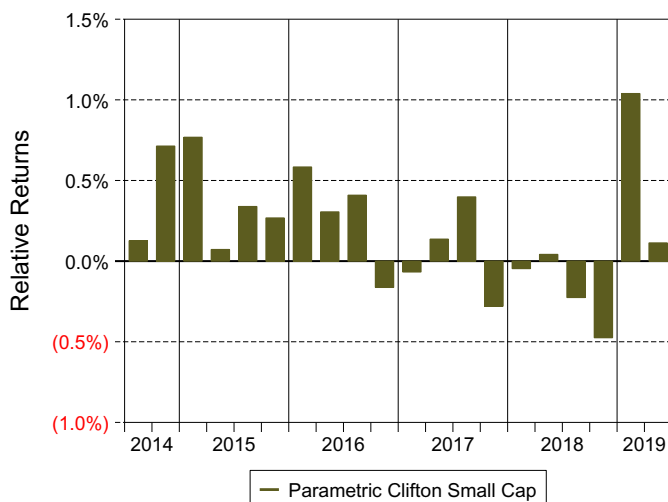
Quarterly Asset Growth

Beginning Market Value	\$248,052,904
Net New Investment	\$0
Investment Gains/(Losses)	\$5,476,541
Ending Market Value	\$253,529,445

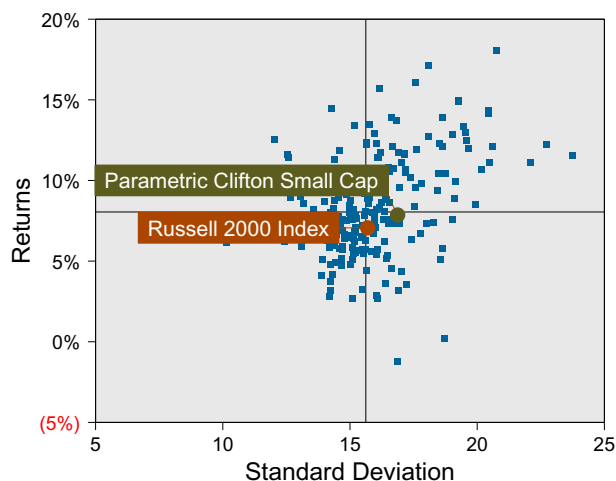
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Russell 2000 Index



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



PIMCO RAE Period Ended June 30, 2019

Investment Philosophy

Small company value equity portfolio utilizing the index strategy and philosophy described as the Enhanced RAFI US Small strategy which relies on portfolio weights derived from firm fundamentals (free cash flow, book equity value, total sales and gross dividend), instead of market capitalization. Additionally, the enhanced portfolio strategy uses a quality of earnings screening and a financial distress screening to augment portfolio returns and reduce portfolio volatility.

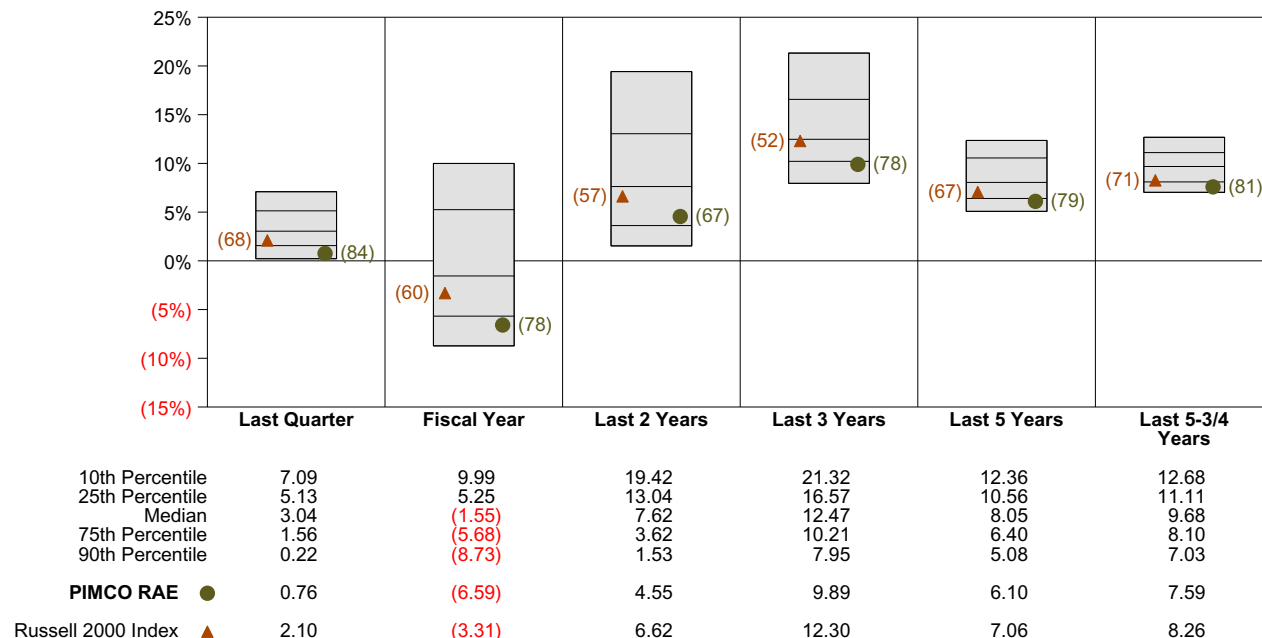
Quarterly Summary and Highlights

- PIMCO RAE's portfolio posted a 0.76% return for the quarter placing it in the 84 percentile of the Callan Small Capitalization group for the quarter and in the 78 percentile for the last year.
- PIMCO RAE's portfolio underperformed the Russell 2000 Index by 1.34% for the quarter and underperformed the Russell 2000 Index for the year by 3.28%.

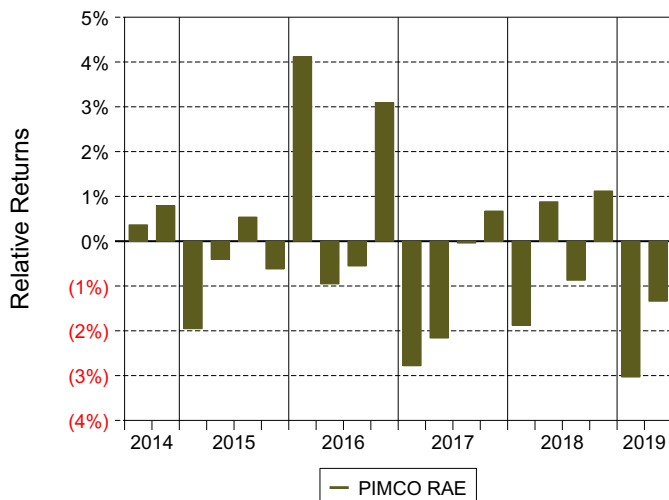
Quarterly Asset Growth

Beginning Market Value	\$240,484,863
Net New Investment	\$-142,919
Investment Gains/(Losses)	\$1,824,581
Ending Market Value	\$242,166,525

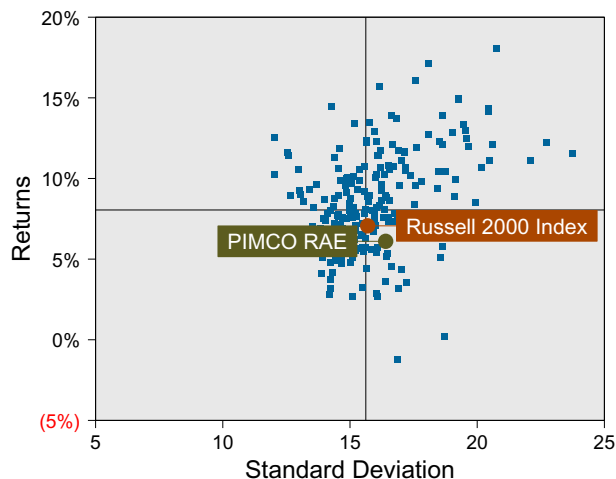
Performance vs Callan Small Capitalization (Gross)



Relative Return vs Russell 2000 Index



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



International Equity Period Ended June 30, 2019

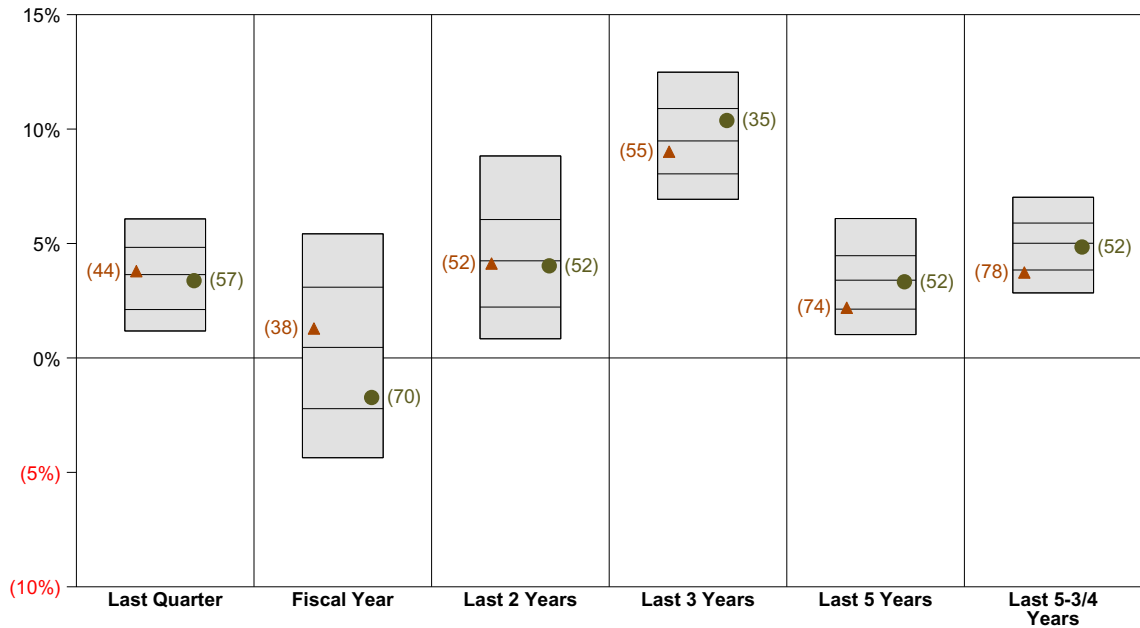
Quarterly Summary and Highlights

- International Equity's portfolio posted a 3.38% return for the quarter placing it in the 57 percentile of the Callan Non-US Equity group for the quarter and in the 70 percentile for the last year.
- International Equity's portfolio underperformed the International Equity Target by 0.41% for the quarter and underperformed the International Equity Target for the year by 3.02%.

Quarterly Asset Growth

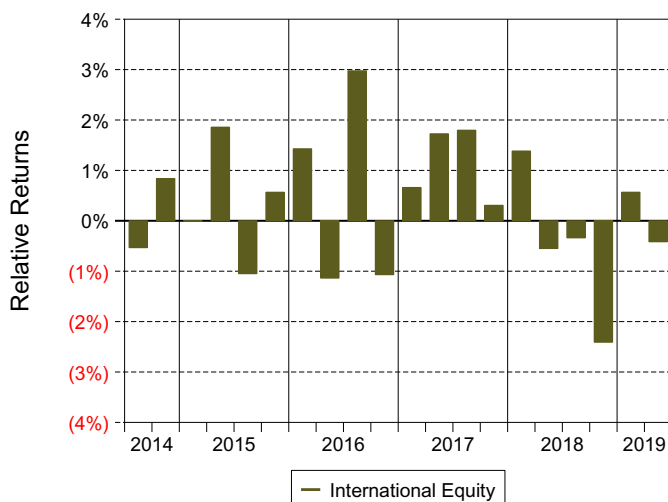
Beginning Market Value	\$1,232,149,893
Net New Investment	\$-922,233
Investment Gains/(Losses)	\$41,595,560
Ending Market Value	\$1,272,823,220

Performance vs Callan Non-US Equity (Gross)

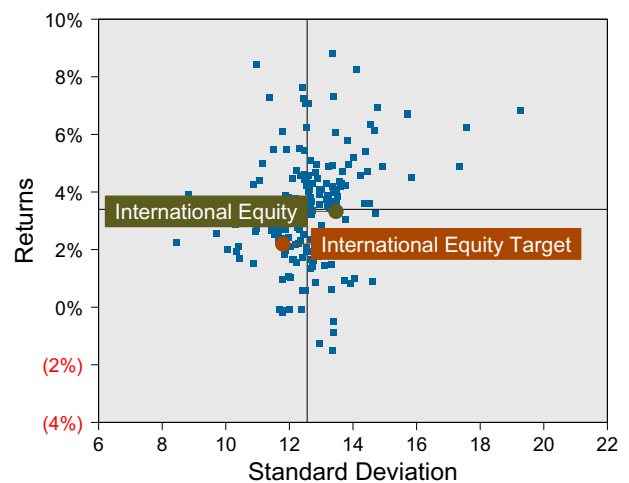


10th Percentile	6.08	5.42	8.83	12.49	6.09	7.02
25th Percentile	4.83	3.09	6.05	10.90	4.47	5.89
Median	3.64	0.46	4.24	9.48	3.40	5.01
75th Percentile	2.11	(2.22)	2.22	8.04	2.13	3.84
90th Percentile	1.18	(4.36)	0.84	6.93	1.02	2.84
International Equity	3.38	(1.73)	4.02	10.37	3.33	4.85
International Equity Target	3.79	1.29	4.13	9.01	2.19	3.73

Relative Return vs International Equity Target



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



DFA Intl Small Cap Value Period Ended June 30, 2019

Investment Philosophy

The International Small Cap Value Portfolio invests in the stocks of small, non-US developed markets companies that Dimensional believes to be value stocks at the time of purchase. Specifically, it looks at companies that fall within the smallest 8-10% of each country's market capitalization, and who's shares have a high book value in relation to their market value (BtM). It does not invest in emerging markets.

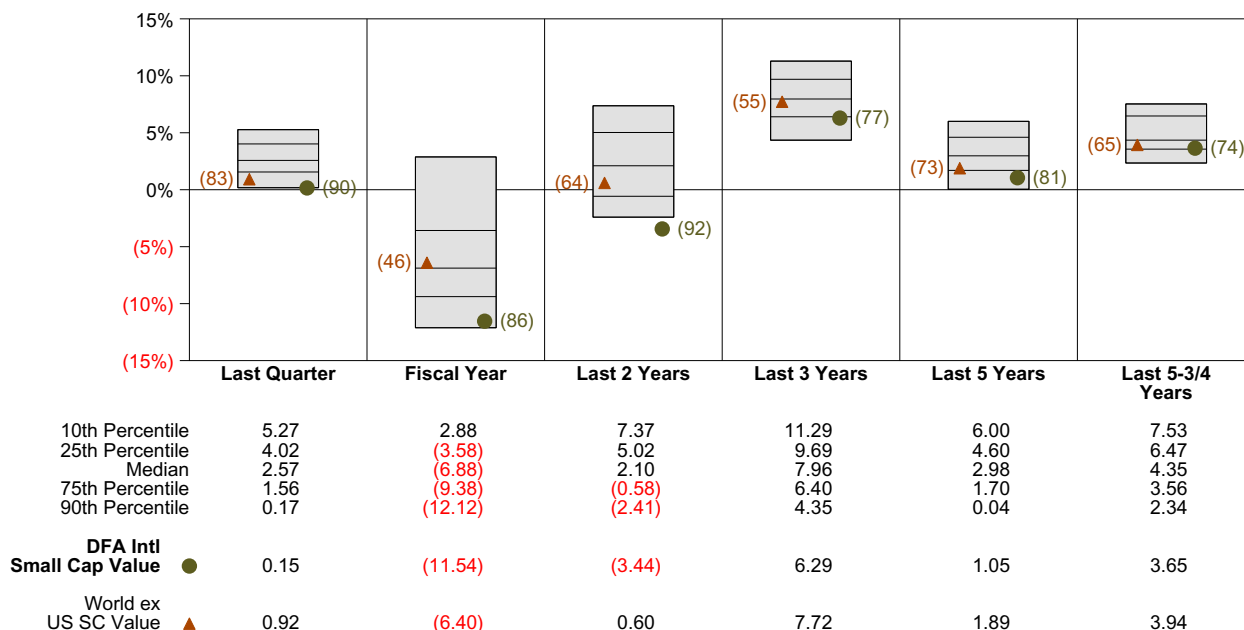
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a 0.15% return for the quarter placing it in the 90 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 86 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.77% for the quarter and underperformed the World ex US SC Value for the year by 5.14%.

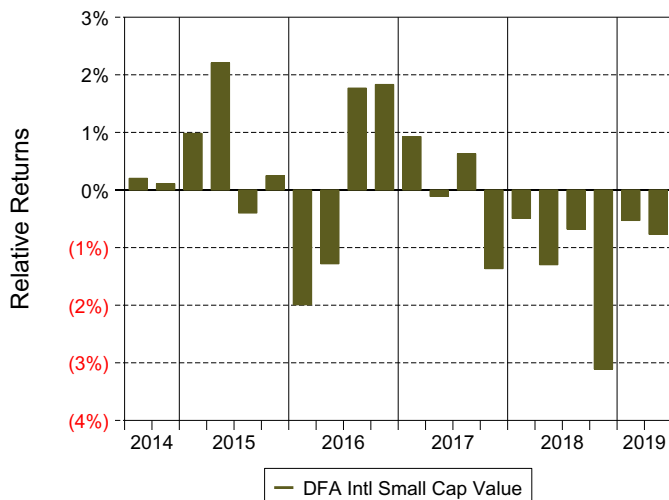
Quarterly Asset Growth

Beginning Market Value	\$116,419,129
Net New Investment	\$0
Investment Gains/(Losses)	\$179,101
Ending Market Value	\$116,598,229

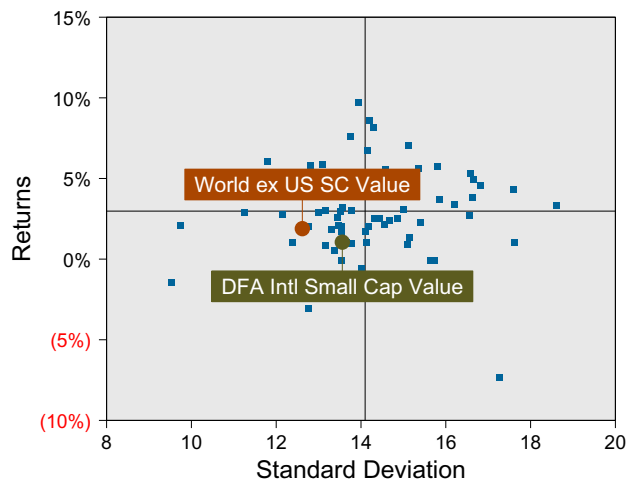
Performance vs Callan International Small Cap Mut Funds (Net)



Relative Return vs World ex US SC Value



Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



LSV Intl Value Period Ended June 30, 2019

Investment Philosophy

The objective of LSV Asset Management's International Large Cap Value strategy is to outperform the MSCI EAFE Index by at least 250 basis points (gross of fees) per annum over an annualized 3-5 year period with a tracking error of approximately 5-6%. Their stock selection process is a quantitative approach that ranks a broad universe of stocks on a combination of value and momentum factors and seeks to invest approximately 150 stocks in the most attractive securities possible within strict risk parameters to control the portfolio's tracking error relative to the benchmark. The resulting portfolio is broadly diversified across industry groups and fully invested. LSV weights countries at a neutral weight relative to the benchmark country weights. 50% of the portfolio is US dollar hedged.

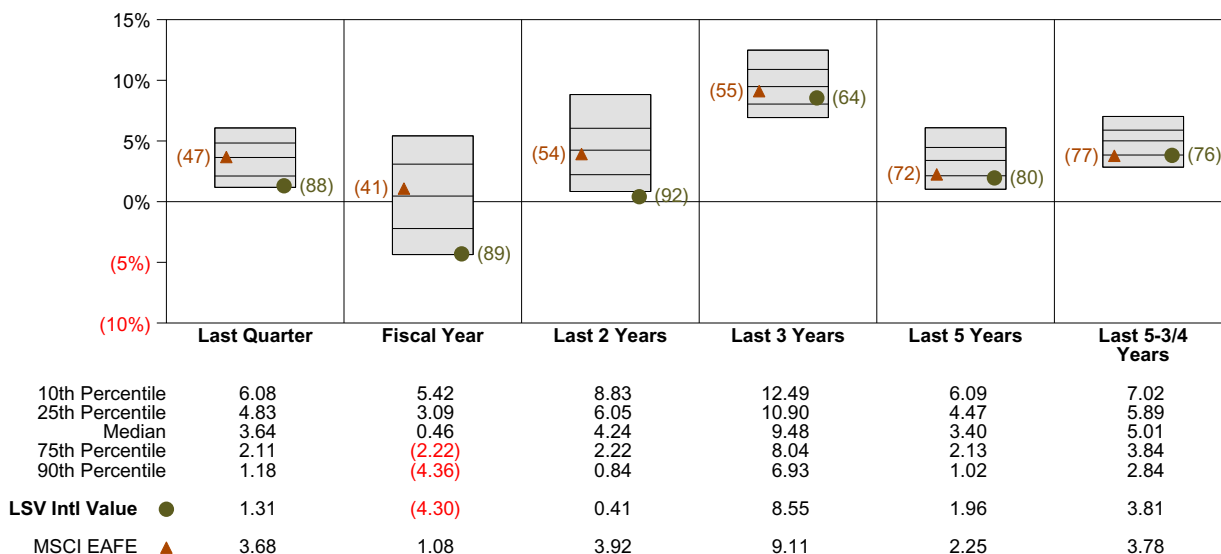
Quarterly Summary and Highlights

- LSV Intl Value's portfolio posted a 1.31% return for the quarter placing it in the 88 percentile of the Callan Non-US Equity group for the quarter and in the 89 percentile for the last year.
- LSV Intl Value's portfolio underperformed the MSCI EAFE by 2.37% for the quarter and underperformed the MSCI EAFE for the year by 5.38%.

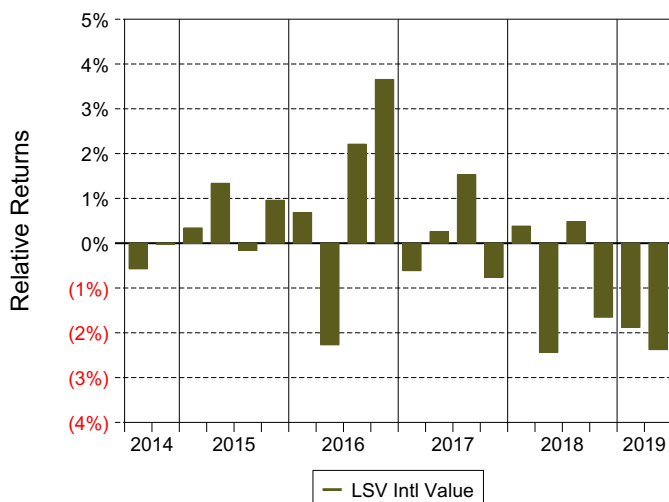
Quarterly Asset Growth

Beginning Market Value	\$478,909,073
Net New Investment	\$-454,262
Investment Gains/(Losses)	\$6,261,734
Ending Market Value	\$484,716,545

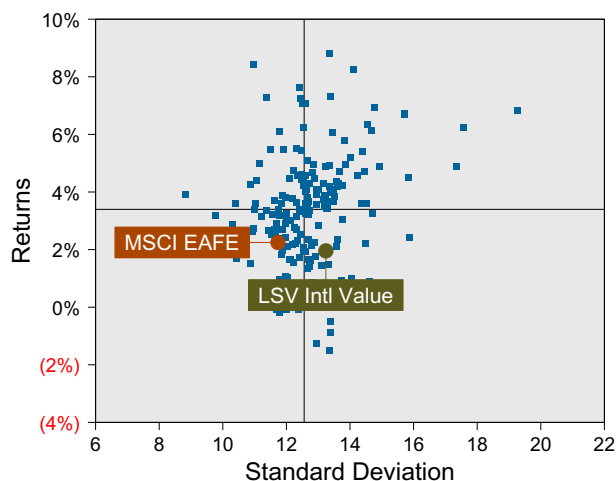
Performance vs Callan Non-US Equity (Gross)



Relative Return vs MSCI EAFE



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



Vanguard Intl Explorer Fund

Period Ended June 30, 2019

Investment Philosophy

Vanguard International Explorer Fund invests primarily in the equity securities of small-capitalization companies located outside the United States that the advisor believes offer the potential for long-term capital appreciation. The advisor considers, among other things, whether a company is likely to have above-average earnings growth, whether the company's securities are attractively valued, and whether the company has any proprietary advantages.

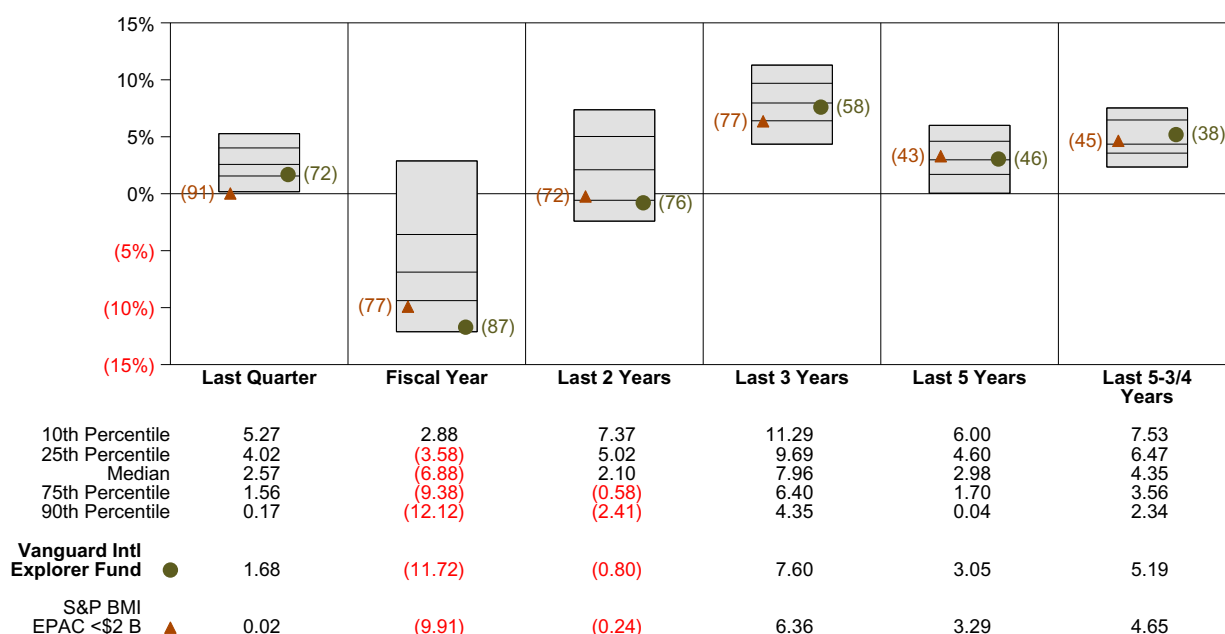
Quarterly Summary and Highlights

- Vanguard Intl Explorer Fund's portfolio posted a 1.68% return for the quarter placing it in the 72 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 87 percentile for the last year.
- Vanguard Intl Explorer Fund's portfolio outperformed the S&P BMI EPAC <\$2 B by 1.66% for the quarter and underperformed the S&P BMI EPAC <\$2 B for the year by 1.80%.

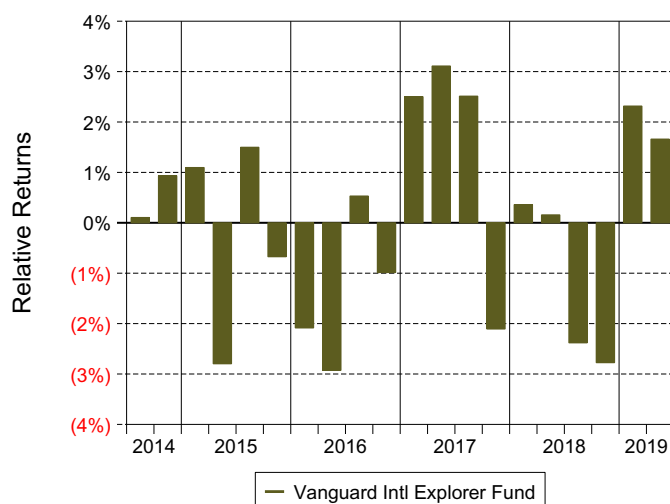
Quarterly Asset Growth

Beginning Market Value	\$120,230,373
Net New Investment	\$0
Investment Gains/(Losses)	\$2,024,324
Ending Market Value	\$122,254,697

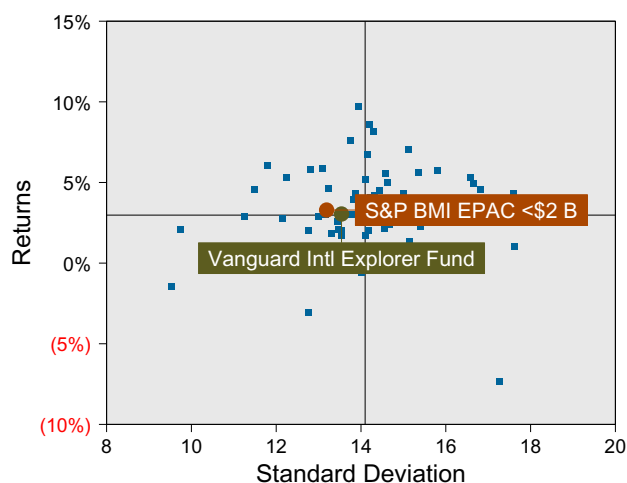
Performance vs Callan International Small Cap Mut Funds (Net)



Relative Return vs S&P BMI EPAC <\$2 B



Callan International Small Cap Mut Funds (Net) Annualized Five Year Risk vs Return



William Blair Period Ended June 30, 2019

Investment Philosophy

One of the basic investment tenets of William Blair & Company has been its focus on quality growth companies. They believe that investing in quality growth companies will generate above average results with generally less risk than the market. This opportunity exists because they believe the market underestimates the durability and rate of growth in companies that have the following characteristics: strong management with a unique vision, competitive advantages that prolong the duration and size of earnings growth, and conservative financing. Internationally, they believe that this philosophy can be combined with strategic flexibility in managing geographic exposure, capitalization, sector emphasis, and relative growth and valuation at the portfolio level in order to provide an appropriate degree of adaptability to cyclical conditions.

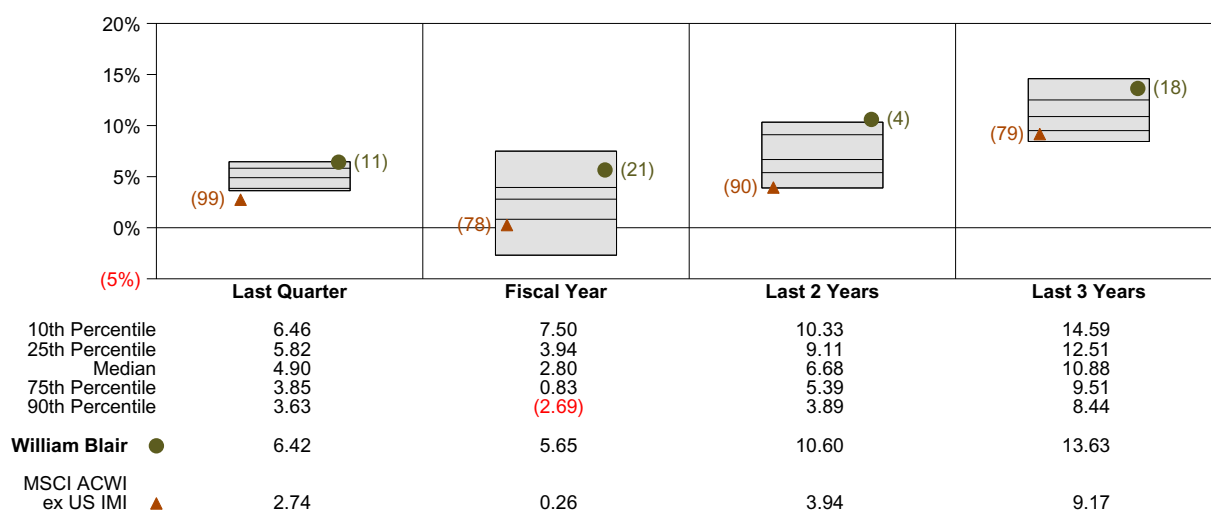
Quarterly Summary and Highlights

- William Blair's portfolio posted a 6.42% return for the quarter placing it in the 11 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 21 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 3.67% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 5.39%.

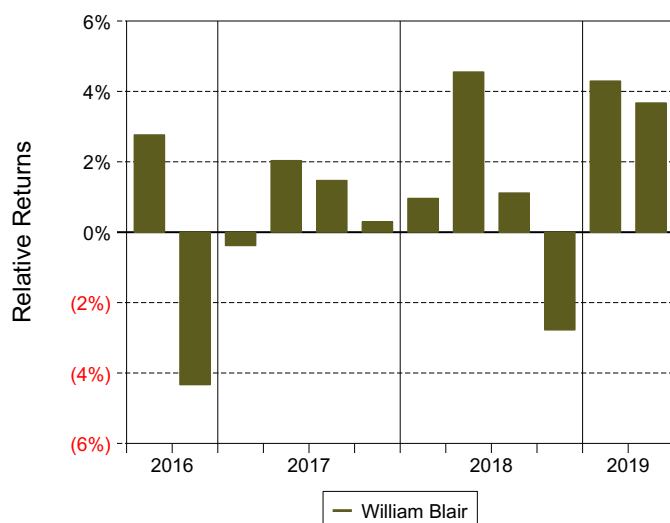
Quarterly Asset Growth

Beginning Market Value	\$516,591,319
Net New Investment	\$-467,971
Investment Gains/(Losses)	\$33,130,402
Ending Market Value	\$549,253,750

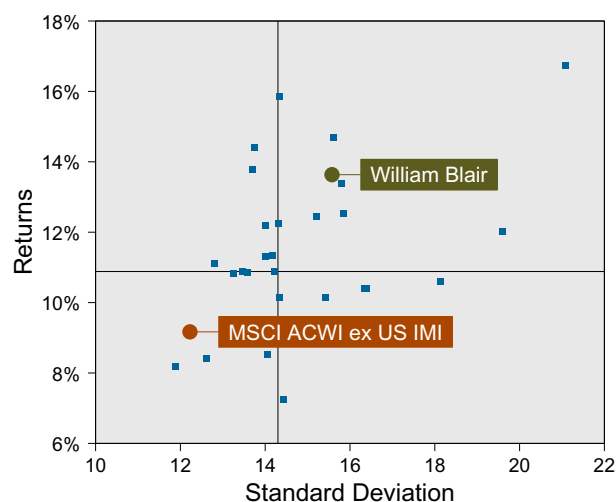
Performance vs Callan Non-US All Country Growth Equity (Gross)



Relative Return vs MSCI ACWI ex US IMI



Callan Non-US All Country Growth Equity (Gross) Annualized Three Year Risk vs Return



Domestic Fixed Income Period Ended June 30, 2019

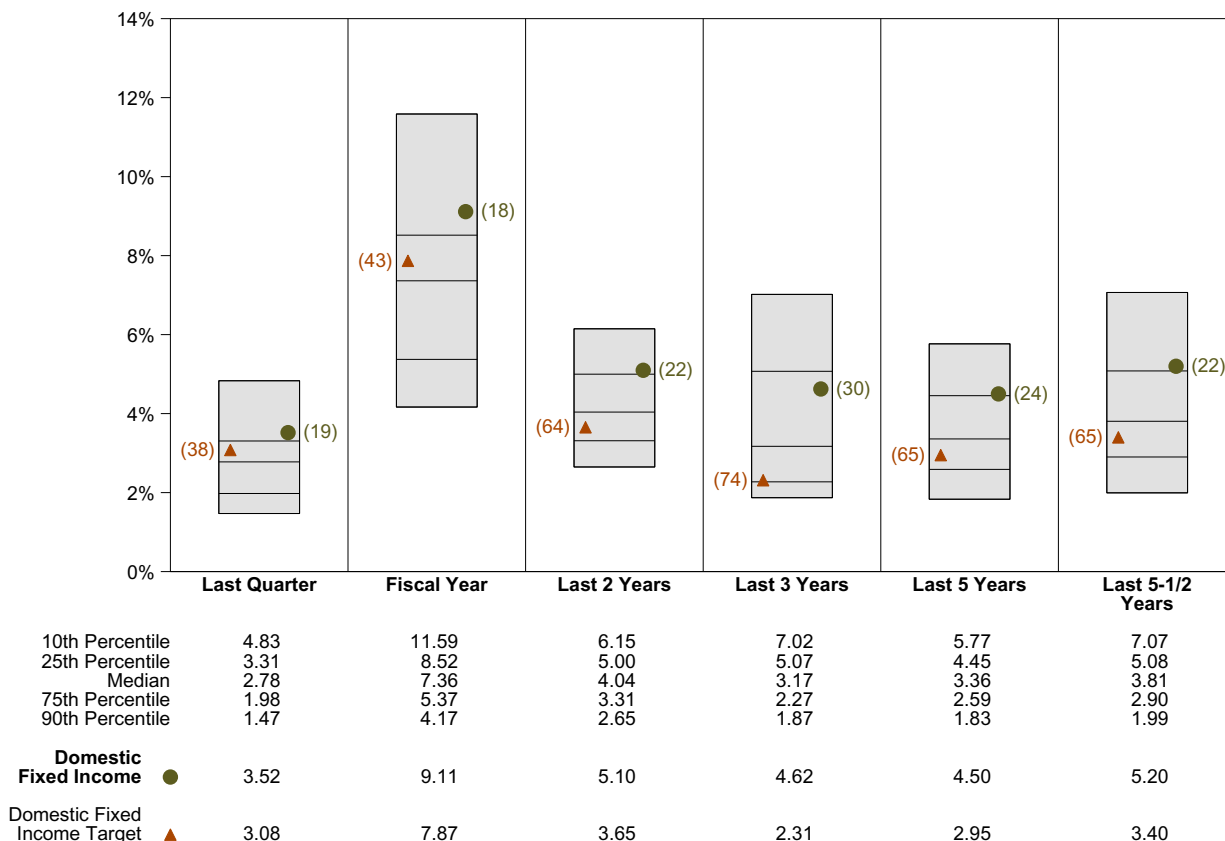
Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 3.52% return for the quarter placing it in the 19 percentile of the Total Domestic Fixed-Inc Database group for the quarter and in the 18 percentile for the last year.
- Domestic Fixed Income's portfolio outperformed the Domestic Fixed Income Target by 0.44% for the quarter and outperformed the Domestic Fixed Income Target for the year by 1.24%.

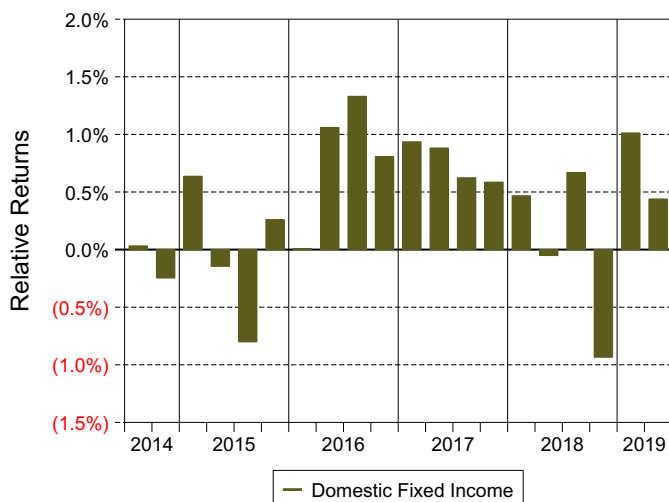
Quarterly Asset Growth

Beginning Market Value	\$2,100,731,172
Net New Investment	\$6,701,812
Investment Gains/(Losses)	\$74,164,599
Ending Market Value	\$2,181,597,582

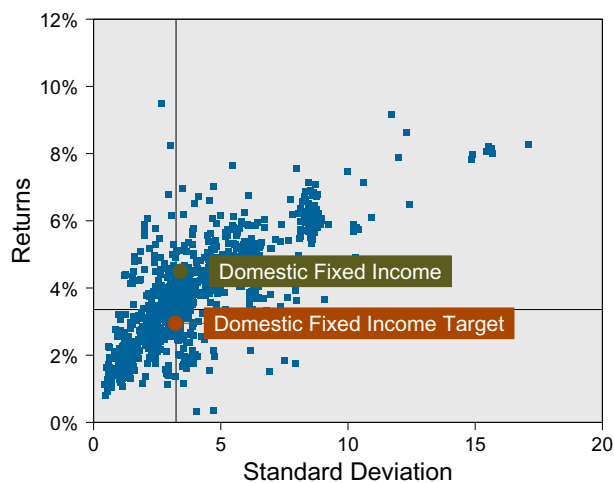
Performance vs Total Domestic Fixed-Inc Database (Gross)



Relative Returns vs Domestic Fixed Income Target



Total Domestic Fixed-Inc Database (Gross) Annualized Five Year Risk vs Return



Ares ND Credit Strategies Fd Period Ended June 30, 2019

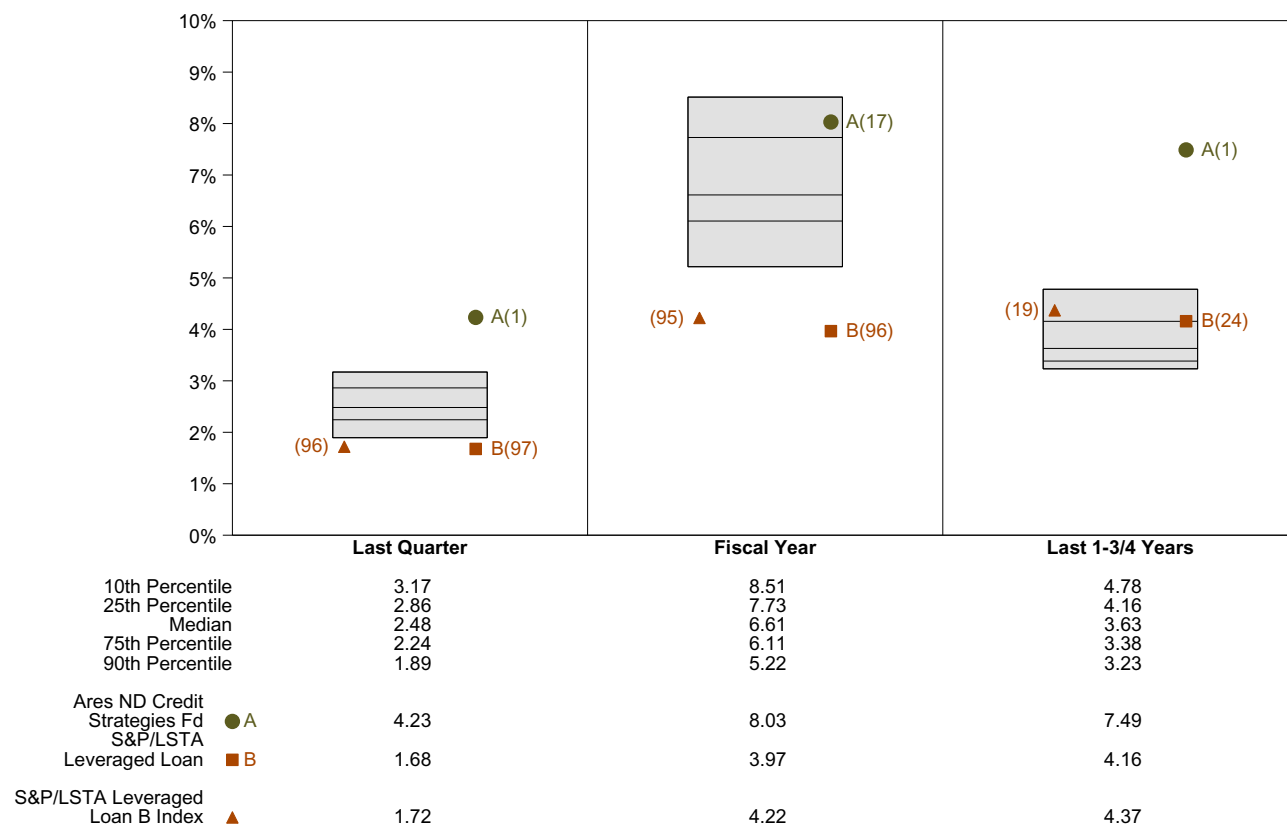
Quarterly Summary and Highlights

- Ares ND Credit Strategies Fd's portfolio posted a 4.23% return for the quarter placing it in the 1 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 17 percentile for the last year.
- Ares ND Credit Strategies Fd's portfolio outperformed the S&P/LSTA Leveraged Loan B Index by 2.51% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 3.81%.

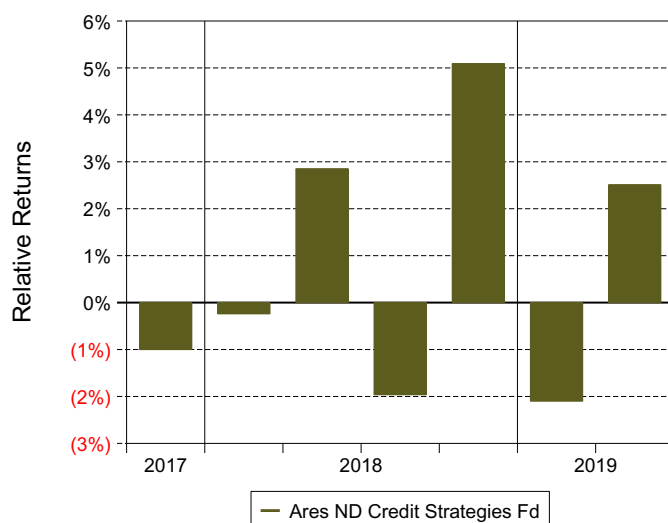
Quarterly Asset Growth

Beginning Market Value	\$52,897,685
Net New Investment	\$0
Investment Gains/(Losses)	\$2,238,748
Ending Market Value	\$55,136,433

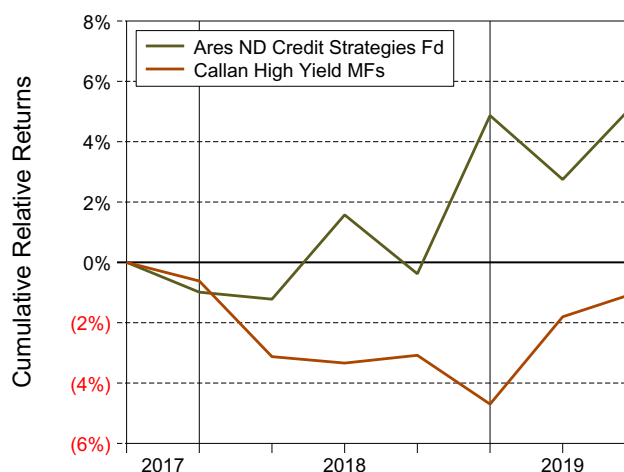
Performance vs Callan High Yield Mutual Funds (Net)



Relative Returns vs S&P/LSTA Leveraged Loan B Index



Cumulative Returns vs S&P/LSTA Leveraged Loan B Index



Cerberus ND Private Credit Fd Period Ended June 30, 2019

Investment Philosophy

The investment objective of the LLC is to achieve superior risk-adjusted rates of return primarily through origination of, and investment in, secured debt assets consistent with the Loan Opportunities Strategy of the Cerberus Business Finance lending platform ("CBF", "Cerberus Business Finance" or the "Cerberus Lending Platform"). The Cerberus Lending Platform is a direct origination and lending business focused on providing secured debt primarily to U.S. middle-market companies. The LLC expects to generate both current income and capital appreciation.

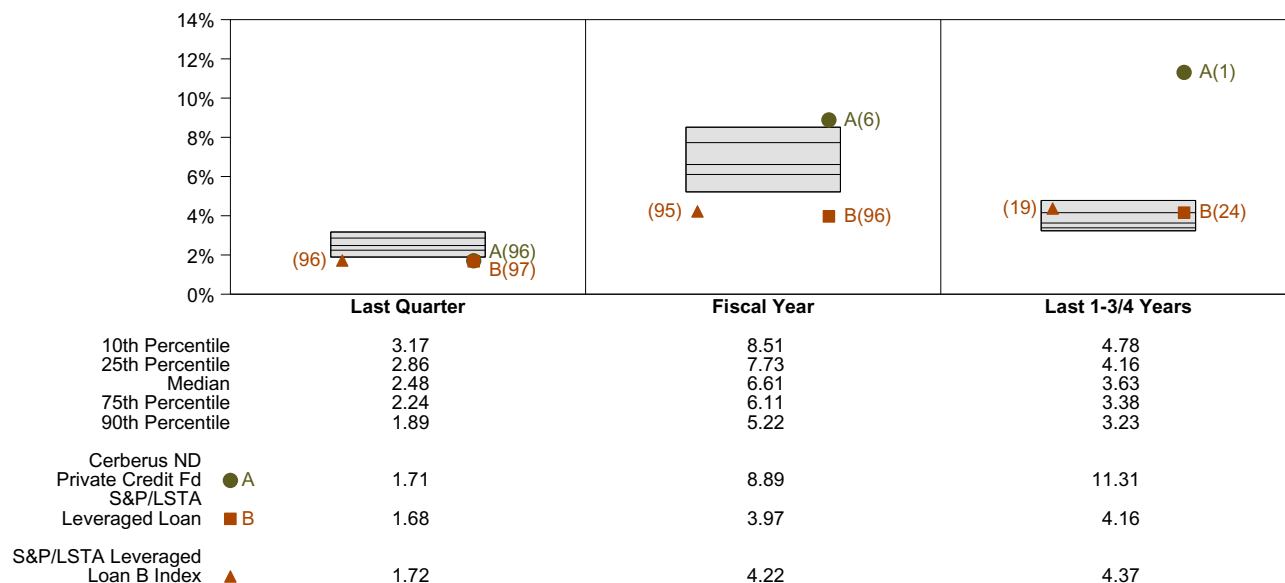
Quarterly Summary and Highlights

- Cerberus ND Private Credit Fd's portfolio posted a 1.71% return for the quarter placing it in the 96 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 6 percentile for the last year.
- Cerberus ND Private Credit Fd's portfolio underperformed the S&P/LSTA Leveraged Loan B Index by 0.02% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 4.66%.

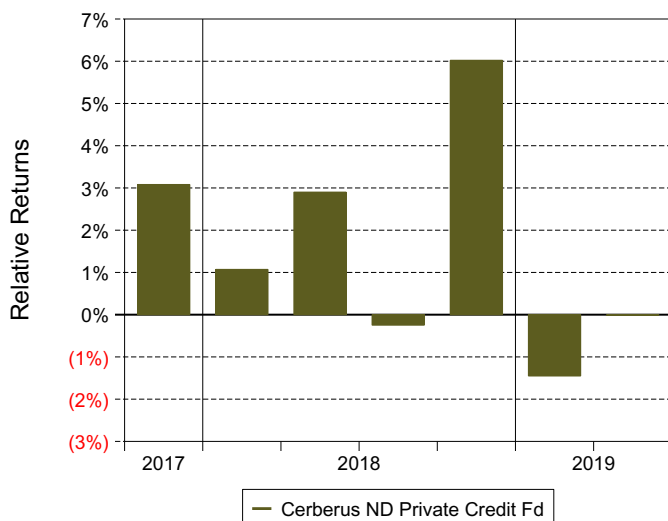
Quarterly Asset Growth

Beginning Market Value	\$49,894,937
Net New Investment	\$10,000,000
Investment Gains/(Losses)	\$1,031,256
Ending Market Value	\$60,926,193

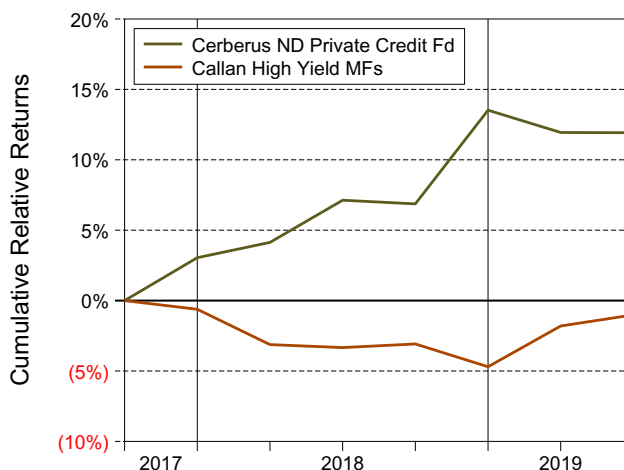
Performance vs Callan High Yield Mutual Funds (Net)



Relative Returns vs S&P/LSTA Leveraged Loan B Index



Cumulative Returns vs S&P/LSTA Leveraged Loan B Index



Declaration Total Return Period Ended June 30, 2019

Investment Philosophy

The Fund's portfolio holdings consist primarily of RMBS issued by private sector companies (Non-Agency RMBS) and government agencies (Agency MBS) and CMBS issued by private sector companies. Agency MBS includes securities issued by the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). Portfolio holdings may range from short tenure senior classes to stressed issues or subordinated securities with substantial risk of non-payment and correspondingly higher yields. Smaller portfolio allocations may include consumer asset-backed securities (ABS), or other structured credit securities and corporate bonds. As a diversification strategy and a potential hedge to credit risk, the Fund may invest in securities which tend to benefit from slow mortgage prepayments and economic growth, such as interest only (IO) MBS.

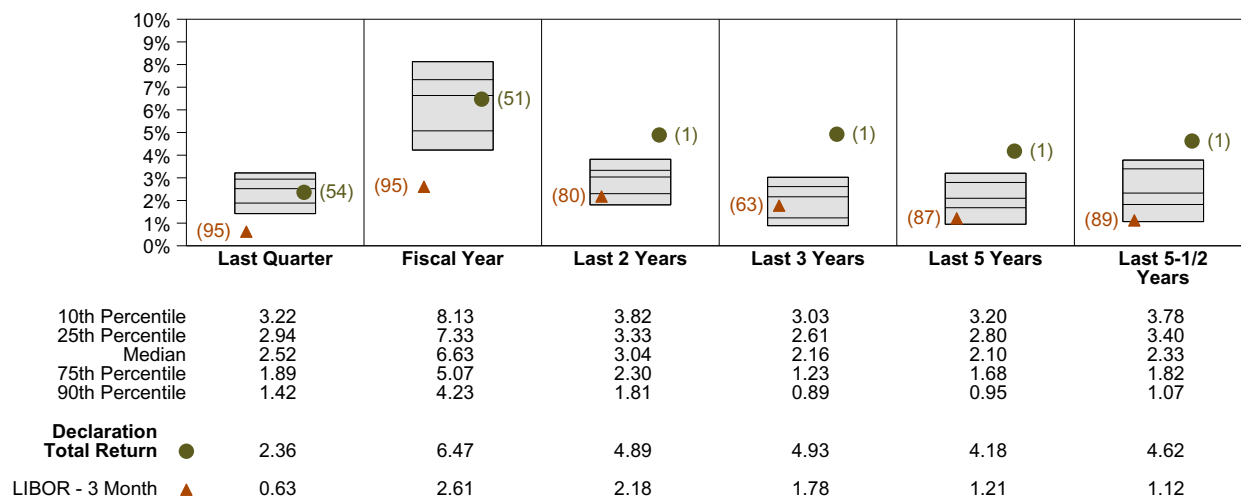
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 2.36% return for the quarter placing it in the 54 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 51 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.73% for the quarter and outperformed the LIBOR - 3 Month for the year by 3.86%.

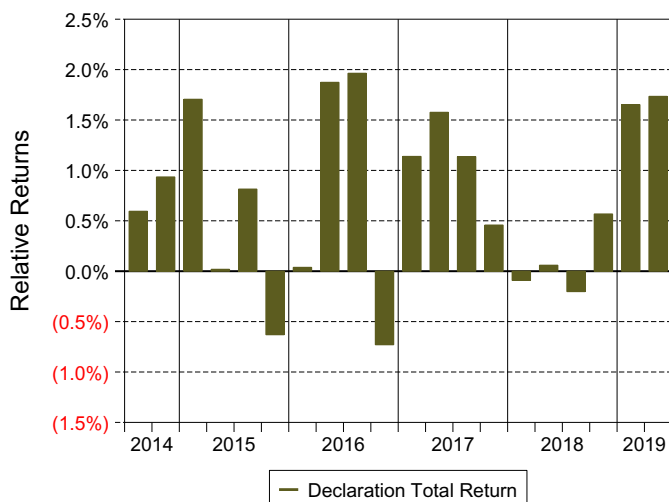
Quarterly Asset Growth

Beginning Market Value	\$161,497,653
Net New Investment	\$-89,951
Investment Gains/(Losses)	\$3,810,681
Ending Market Value	\$165,218,383

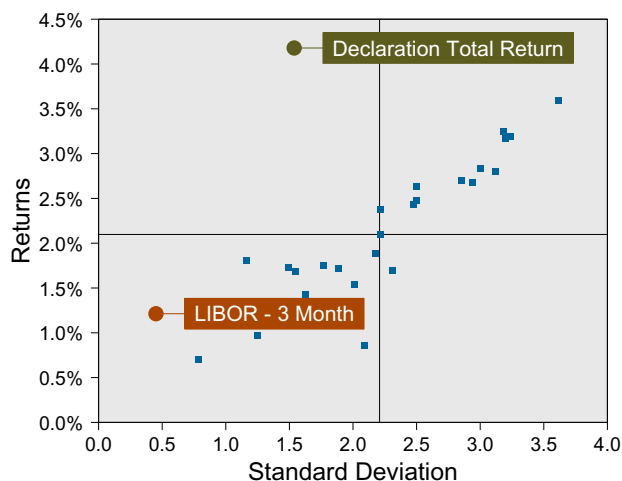
Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)



Relative Return vs LIBOR - 3 Month



Callan Intermediate Fixed Inc Mut Funds (Net) Annualized Five Year Risk vs Return



Prudential

Period Ended June 30, 2019

Investment Philosophy

PGIM Fixed Income's Core Plus Strategy is an actively-managed strategy that seeks +150 bps over the Bloomberg Barclays U.S. Aggregate Bond Index or similar benchmark annualized over a market cycle (three to five years.) The Strategy seeks about half of its excess return from active sector allocation and up to one-third each from subsector/security selection and duration/yield curve/currencies, depending on market opportunities.

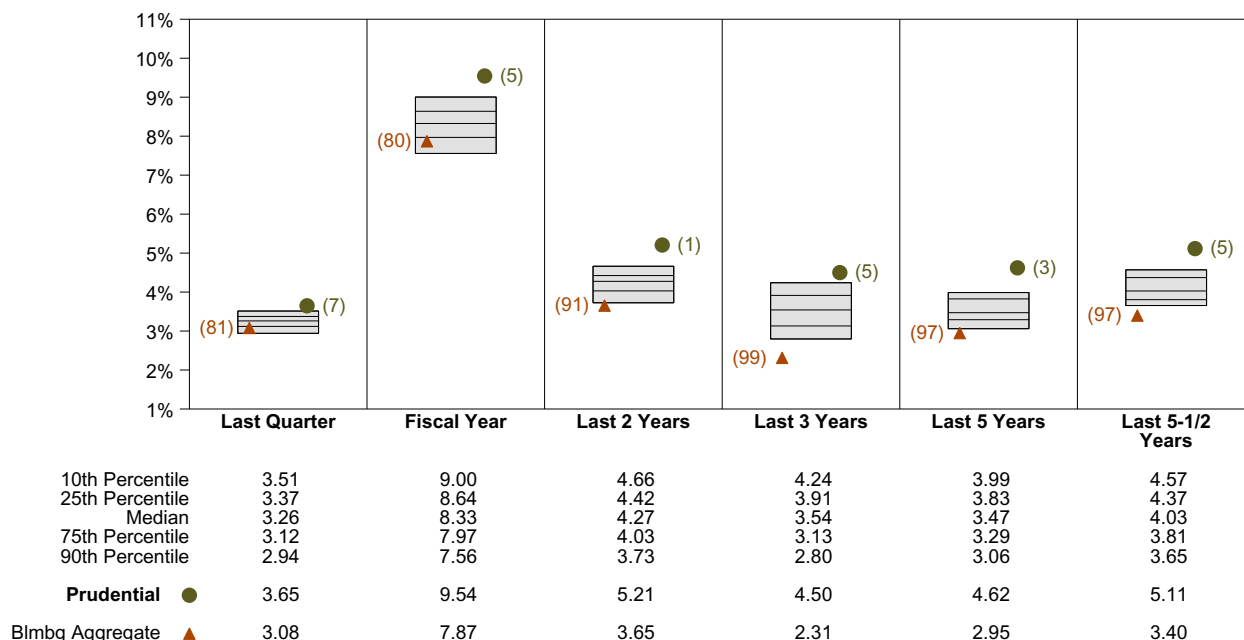
Quarterly Summary and Highlights

- Prudential's portfolio posted a 3.65% return for the quarter placing it in the 7 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 5 percentile for the last year.
- Prudential's portfolio outperformed the Blmbg Aggregate by 0.57% for the quarter and outperformed the Blmbg Aggregate for the year by 1.68%.

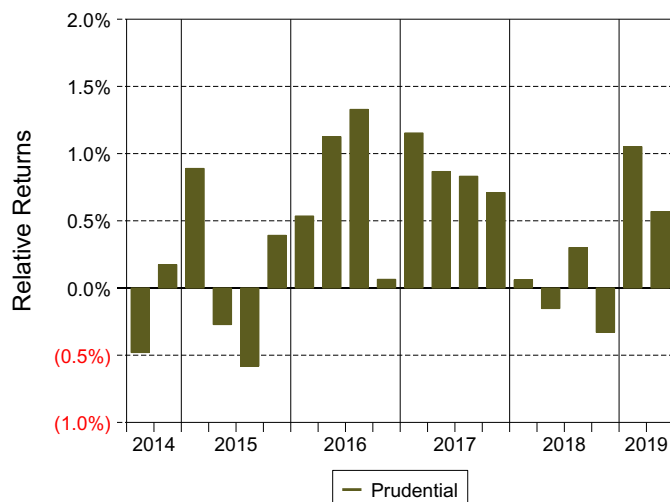
Quarterly Asset Growth

Beginning Market Value	\$394,064,583
Net New Investment	\$281,780,080
Investment Gains/(Losses)	\$21,336,894
Ending Market Value	\$697,181,556

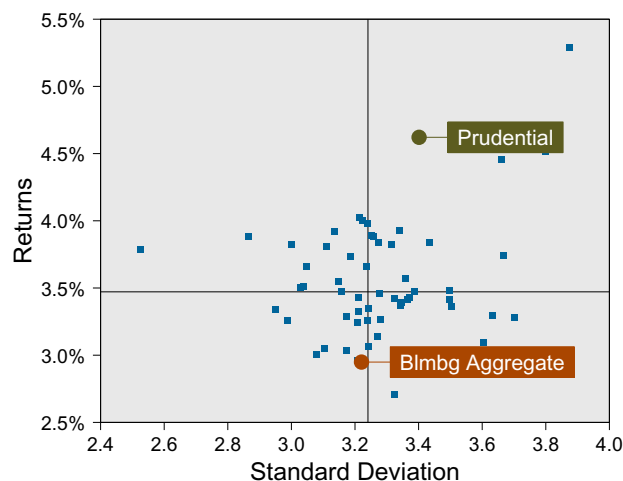
Performance vs Callan Core Plus Fixed Income (Gross)



Relative Return vs Blmbg Aggregate



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



SSgA US Govt Credit Bd Idx Period Ended June 30, 2019

Investment Philosophy

The Fund seeks an investment return that approximates as closely as practicable, before expenses, the performance of the Barclays Capital U.S. Government/Credit Bond Index over the long term.

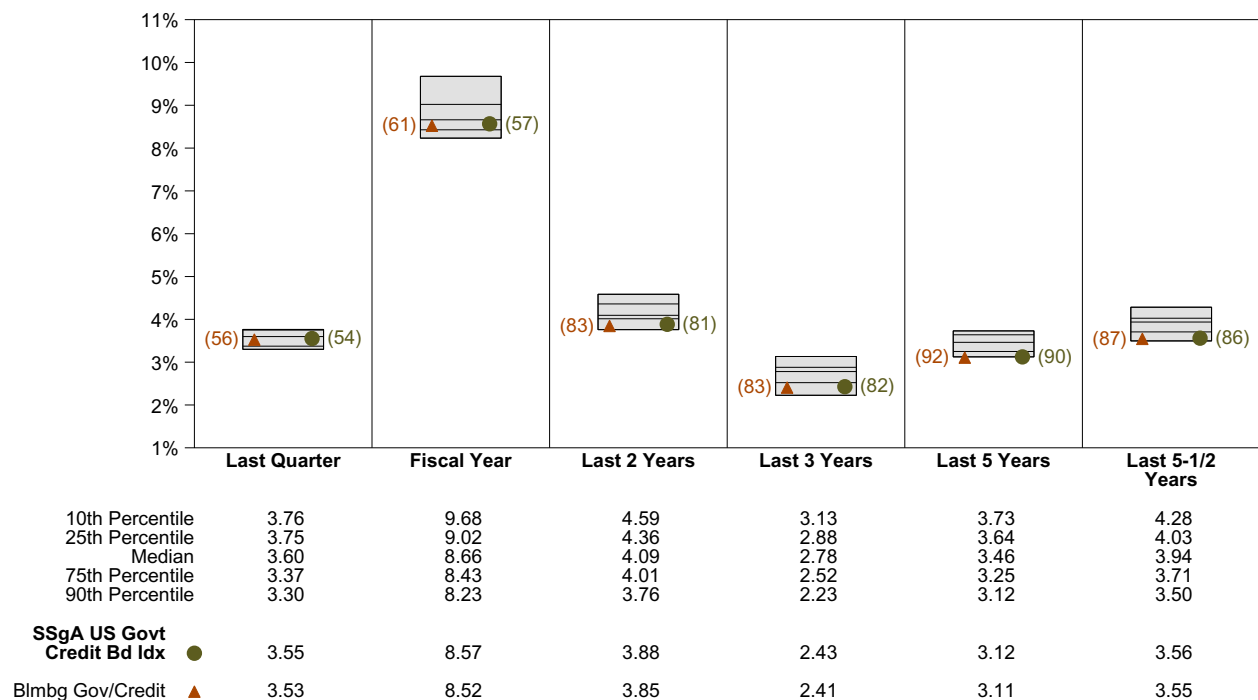
Quarterly Summary and Highlights

- SSgA US Govt Credit Bd Idx's portfolio posted a 3.55% return for the quarter placing it in the 54 percentile of the Callan Government/Credit group for the quarter and in the 57 percentile for the last year.
- SSgA US Govt Credit Bd Idx's portfolio outperformed the Blmbg Gov/Credit by 0.03% for the quarter and outperformed the Blmbg Gov/Credit for the year by 0.04%.

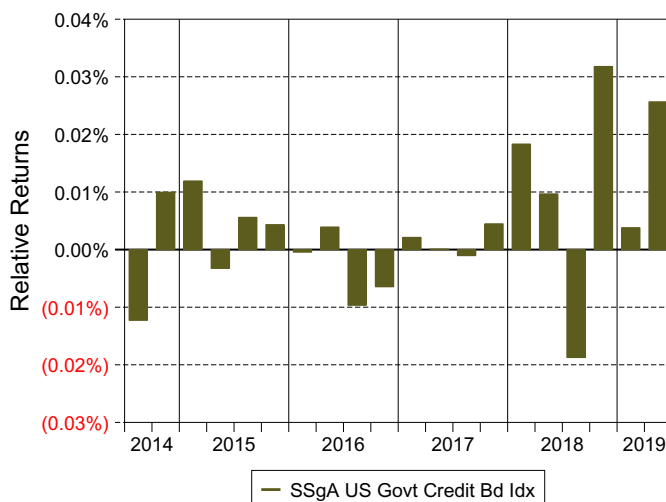
Quarterly Asset Growth

Beginning Market Value	\$297,347,191
Net New Investment	\$-4,967
Investment Gains/(Losses)	\$10,562,269
Ending Market Value	\$307,904,493

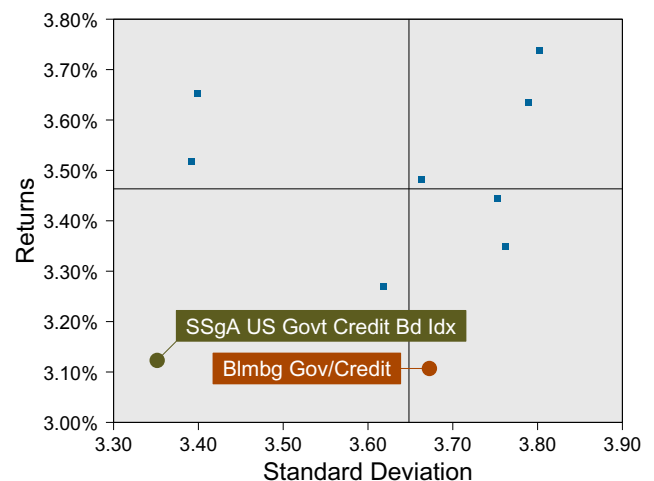
Performance vs Callan Government/Credit (Gross)



Relative Return vs Blmbg Gov/Credit



Callan Government/Credit (Gross) Annualized Five Year Risk vs Return



Wells Capital Period Ended June 30, 2019

Investment Philosophy

The Medium Quality Credit fixed income strategy is designed to maximize total return from the high-grade corporate bond market while maintaining a strategic allocation to the BBB portion of the high yield market. The investment process for this fund starts with a "top-down" strategy. Security selection is determined by in-depth credit research, holding that in-depth knowledge of industries, companies, and their management teams can help identify credit trends that can lead to investment opportunities. Furthermore, a disciplined relative value framework is applied to help determine the optimal position to invest within an industry and within an individual issuer's capital structure.

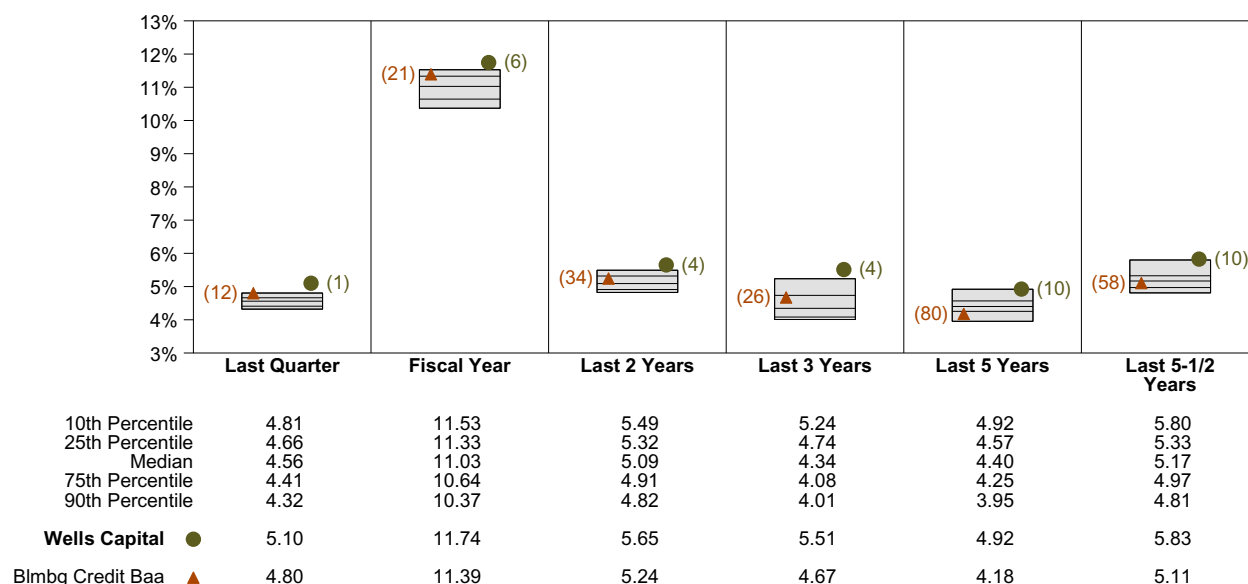
Quarterly Summary and Highlights

- Wells Capital's portfolio posted a 5.10% return for the quarter placing it in the 1 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 6 percentile for the last year.
- Wells Capital's portfolio outperformed the Blmbg Credit Baa by 0.30% for the quarter and outperformed the Blmbg Credit Baa for the year by 0.35%.

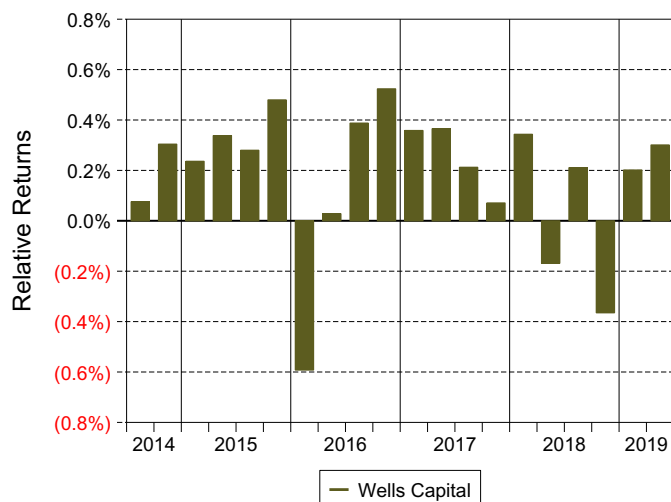
Quarterly Asset Growth

Beginning Market Value	\$456,034,803
Net New Investment	\$-282,183,045
Investment Gains/(Losses)	\$13,477,894
Ending Market Value	\$187,329,651

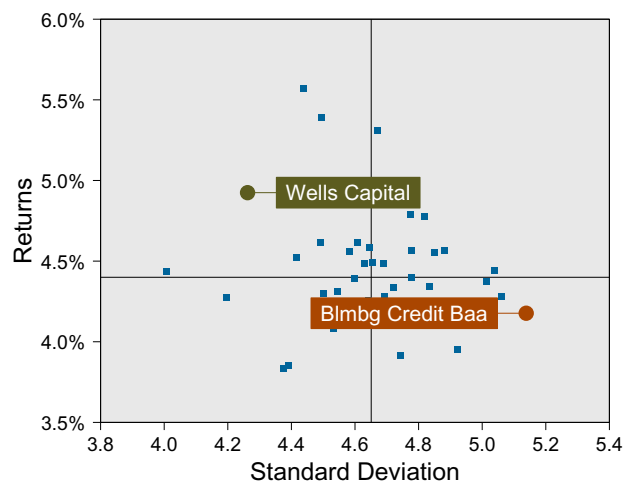
Performance vs Callan Investment Grade Credit Fixed Inc (Gross)



Relative Return vs Blmbg Credit Baa



Callan Investment Grade Credit Fixed Inc (Gross) Annualized Five Year Risk vs Return



Western Asset Management Company

Period Ended June 30, 2019

Investment Philosophy

Western Asset designs this portfolio using all major fixed-income sectors with a bias towards non-Treasuries, especially corporate, mortgage-backed and asset-backed securities. Value can be added through sector rotation, issue selection, duration and term structure weighting.

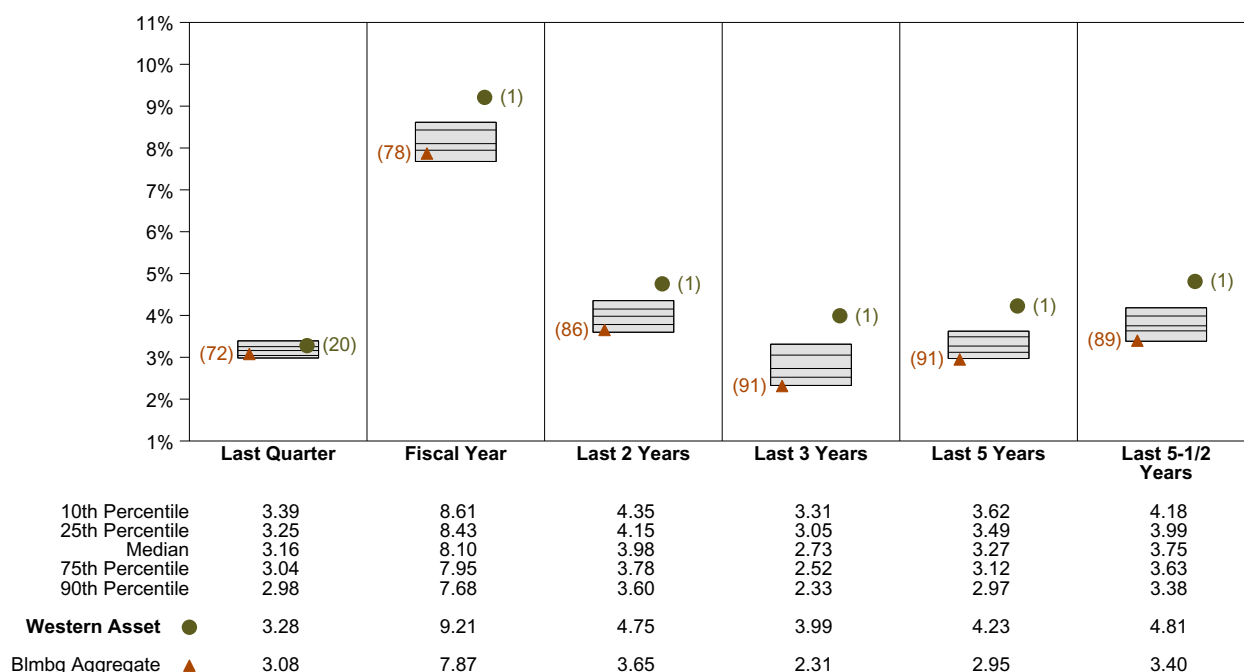
Quarterly Summary and Highlights

- Western Asset's portfolio posted a 3.28% return for the quarter placing it in the 20 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 1 percentile for the last year.
- Western Asset's portfolio outperformed the Blmbg Aggregate by 0.20% for the quarter and outperformed the Blmbg Aggregate for the year by 1.34%.

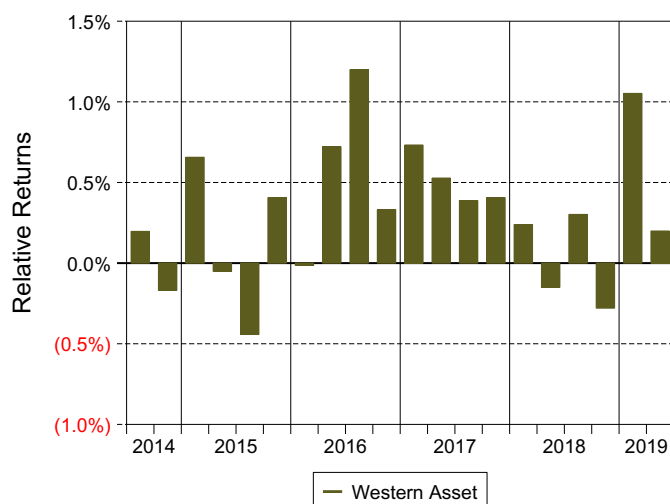
Quarterly Asset Growth

Beginning Market Value	\$595,593,212
Net New Investment	\$-177,028
Investment Gains/(Losses)	\$19,519,247
Ending Market Value	\$614,935,431

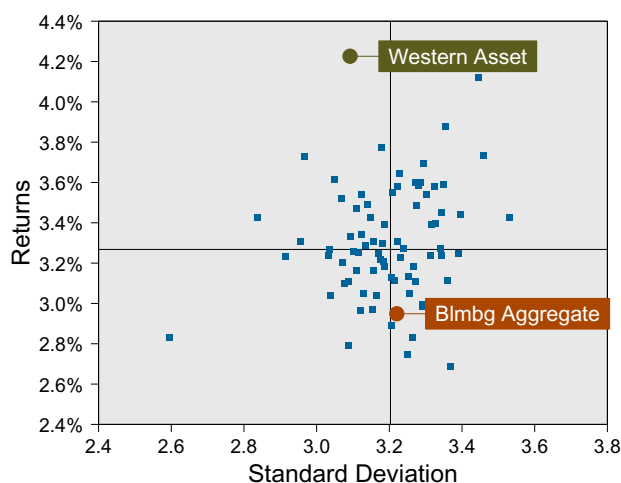
Performance vs Callan Core Bond Fixed Income (Gross)



Relative Return vs Blmbg Aggregate



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



Invesco Core Real Estate Period Ended June 30, 2019

Investment Philosophy

IRE's investment philosophy is comprised of two fundamental principles: (1) maximize the predictability and consistency of investment returns and (2) minimize the risk of capital loss. This philosophy forms the cornerstone of the company's real estate investment philosophy.

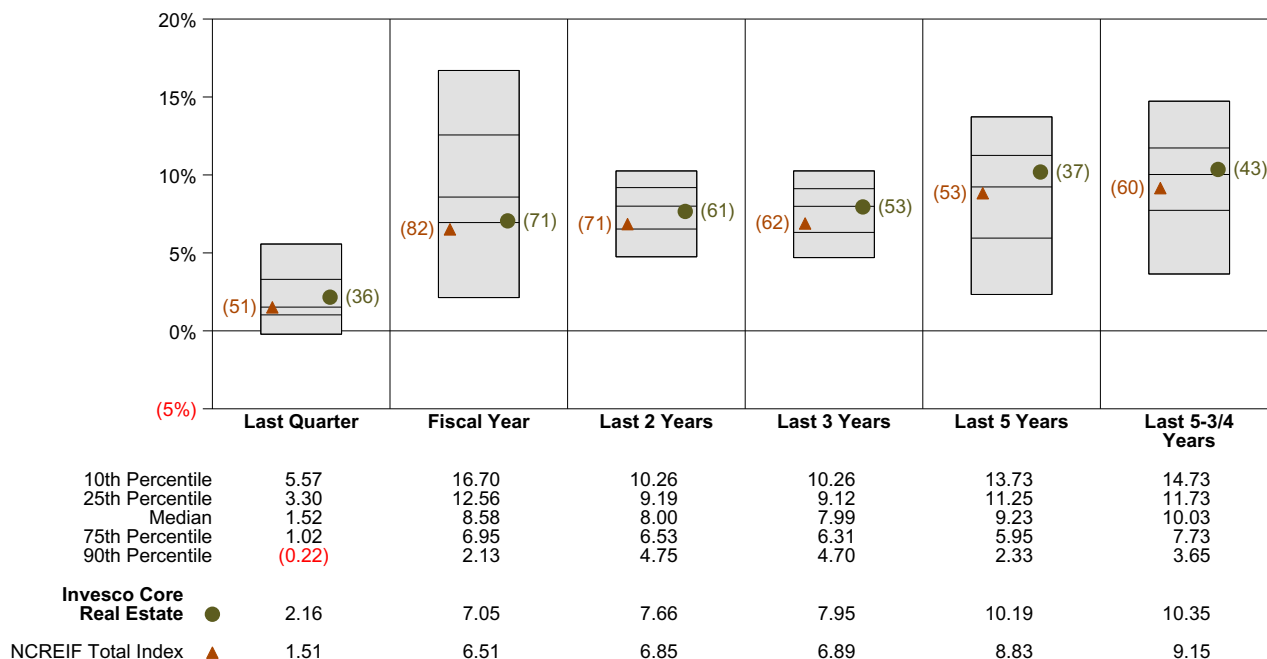
Quarterly Summary and Highlights

- Invesco Core Real Estate's portfolio posted a 2.16% return for the quarter placing it in the 36 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 71 percentile for the last year.
- Invesco Core Real Estate's portfolio outperformed the NCREIF Total Index by 0.65% for the quarter and outperformed the NCREIF Total Index for the year by 0.55%.

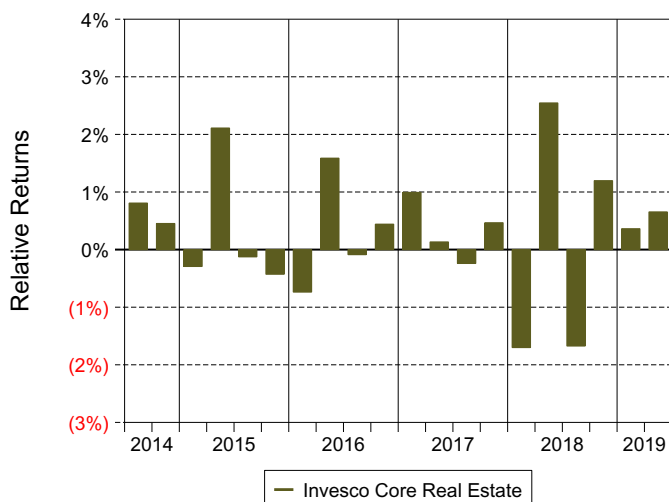
Quarterly Asset Growth

Beginning Market Value	\$143,400,829
Net New Investment	\$-249,683
Investment Gains/(Losses)	\$3,096,780
Ending Market Value	\$146,247,927

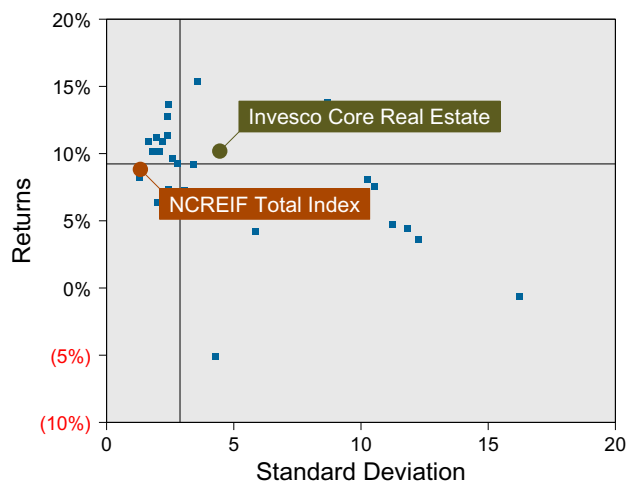
Performance vs Callan Total Domestic Real Estate DB (Gross)



Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross) Annualized Five Year Risk vs Return



JP Morgan RE Inc & Growth Period Ended June 30, 2019

Investment Philosophy

The J.P. Morgan U.S. Real Estate Income and Growth Fund seeks to construct and opportunistically manage a portfolio of core direct real estate investments, complemented by other real estate and real estate-related assets. The Fund pursues a broadly diversified absolute-return strategy and pursues all property investments on an opportunistic basis. The majority of the Fund's investments will be in direct core properties in the office, industrial, retail and residential sectors.

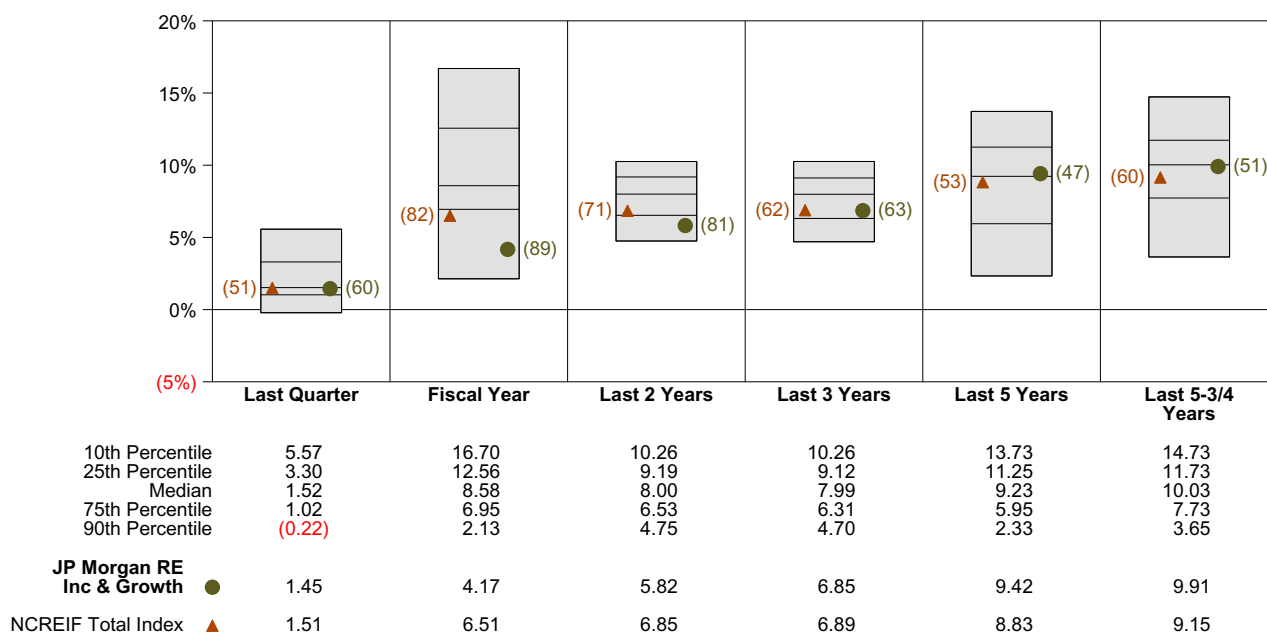
Quarterly Summary and Highlights

- JP Morgan RE Inc & Growth's portfolio posted a 1.45% return for the quarter placing it in the 60 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 89 percentile for the last year.
- JP Morgan RE Inc & Growth's portfolio underperformed the NCREIF Total Index by 0.06% for the quarter and underperformed the NCREIF Total Index for the year by 2.34%.

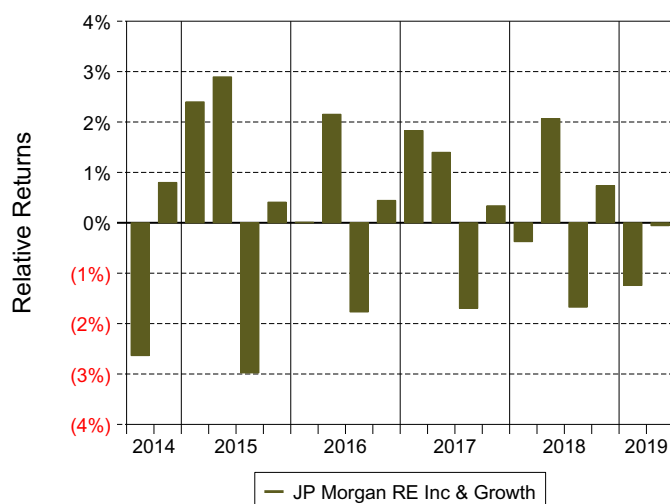
Quarterly Asset Growth

Beginning Market Value	\$149,478,270
Net New Investment	\$-673,770
Investment Gains/(Losses)	\$2,165,816
Ending Market Value	\$150,970,316

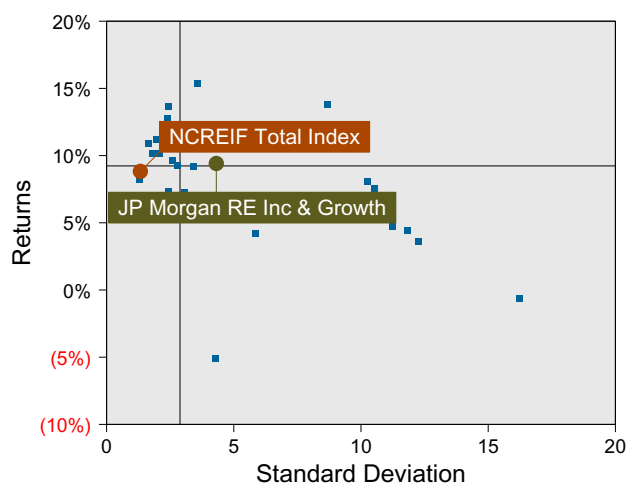
Performance vs Callan Total Domestic Real Estate DB (Gross)



Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross) Annualized Five Year Risk vs Return



Western Asset TIPS Period Ended June 30, 2019

Investment Philosophy

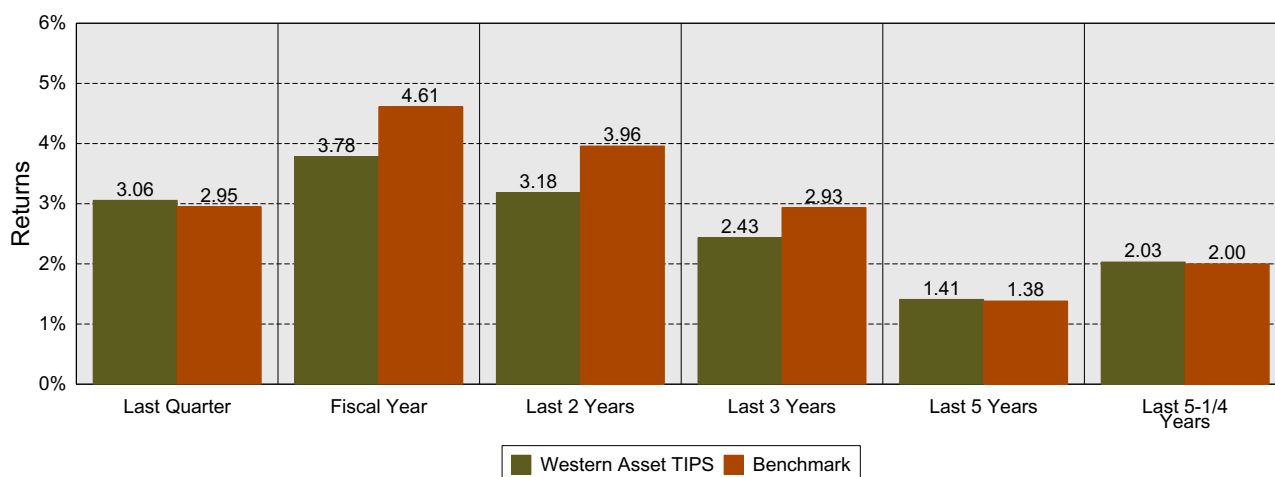
The Western Asset US TIPS Full Discretion strategy is an inflation-protected strategy that aims to maximize total return and add value through duration and curve positioning, sector allocation, and security selection, while approximating benchmark risk. The strategy invests in a diversified portfolio using higher-yielding inflation-protected instruments with a bias toward Treasury Inflation-Protected Securities (TIPS). Opportunistic investments include high-yield, emerging markets, non-dollar securities, commodities and bank loans that may also be employed using derivatives. **Benchmark: Bloomberg US TIPS through 12/31/2009; Bloomberg Global Inflation-Linked through 10/31/2018; Bloomberg US Govt Inflation Linked Bond Index thereafter.**

Quarterly Summary and Highlights

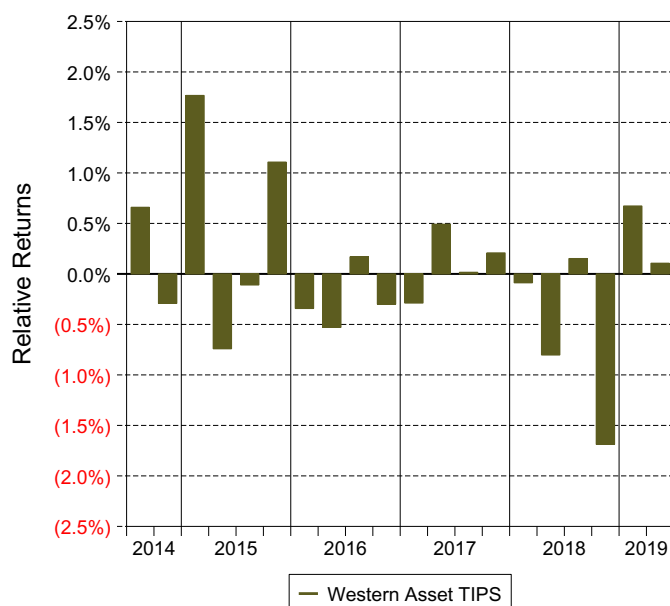
- Western Asset TIPS's portfolio outperformed the Benchmark by 0.11% for the quarter and underperformed the Benchmark for the year by 0.83%.

Quarterly Asset Growth

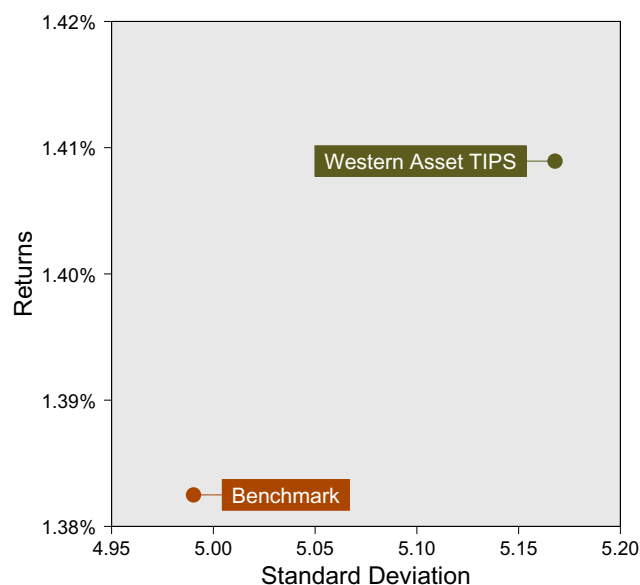
Beginning Market Value	\$408,587,408
Net New Investment	\$-121,373
Investment Gains/(Losses)	\$12,483,028
Ending Market Value	\$420,949,062



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



ISQ Global Infrastructure II Period Ended June 30, 2019

Investment Philosophy

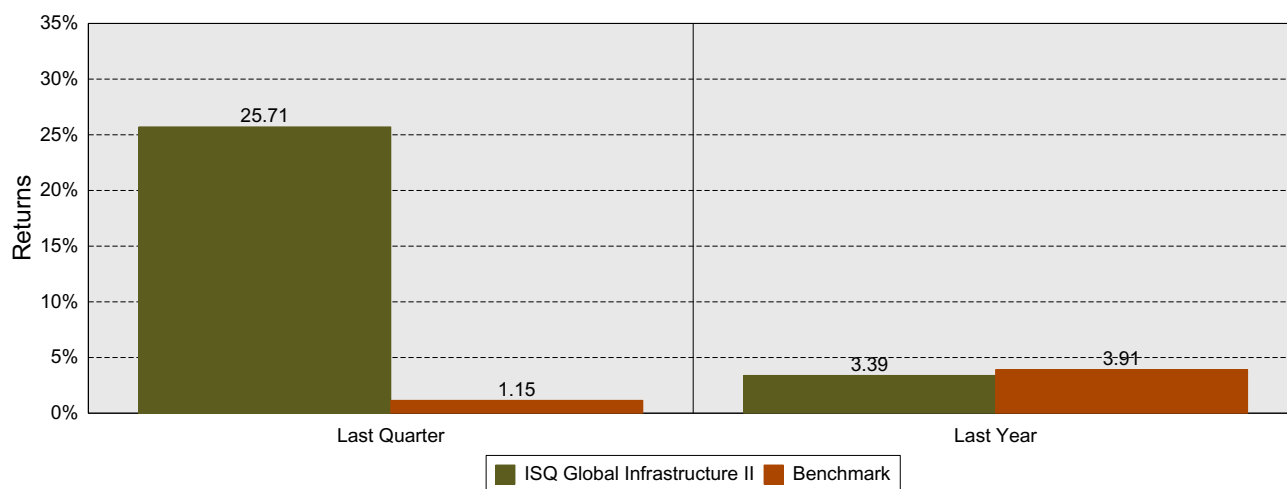
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia and Latin America. The Fund may also invest in debt Securities that have equity-like returns or an equity component, or are related to its equity investments, including without limitation convertible debt, bank loans and participations and other similar instruments. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

Quarterly Summary and Highlights

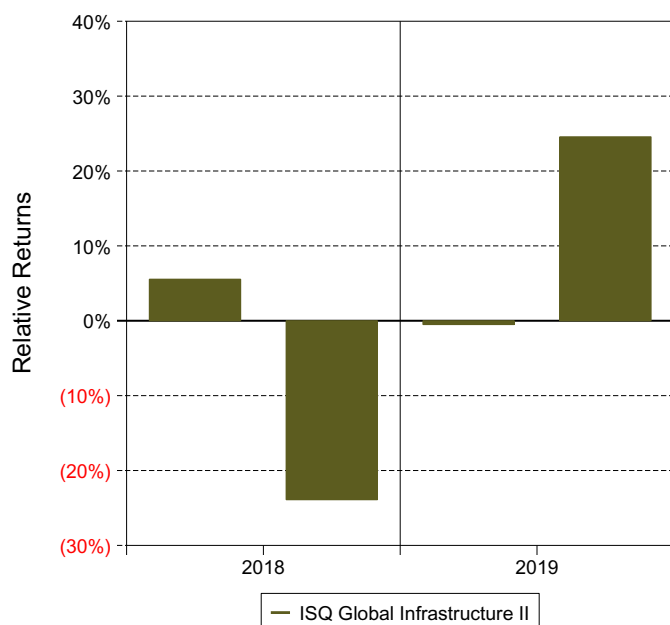
- ISQ Global Infrastructure II's portfolio outperformed the Benchmark by 24.56% for the quarter and underperformed the Benchmark for the year by 0.52%.

Quarterly Asset Growth

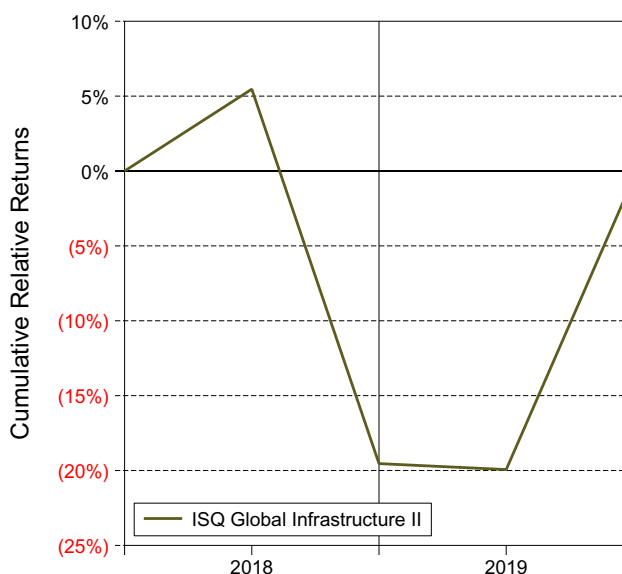
Beginning Market Value	\$16,161,192
Net New Investment	\$281,738
Investment Gains/(Losses)	\$4,156,944
Ending Market Value	\$20,599,874



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



JP Morgan Infrastructure Period Ended June 30, 2019

Investment Philosophy

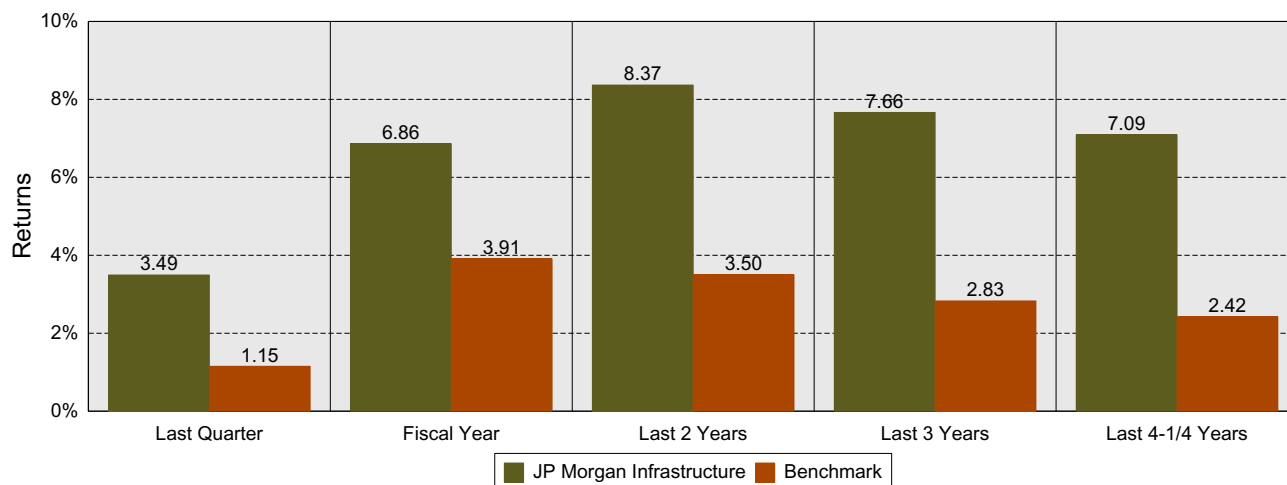
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas pipelines; electricity transmission and distribution facilities; contracted power generation assets; water distribution; waste-water collection and processing; railway lines and rapid rail links; and seaports and airports. **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

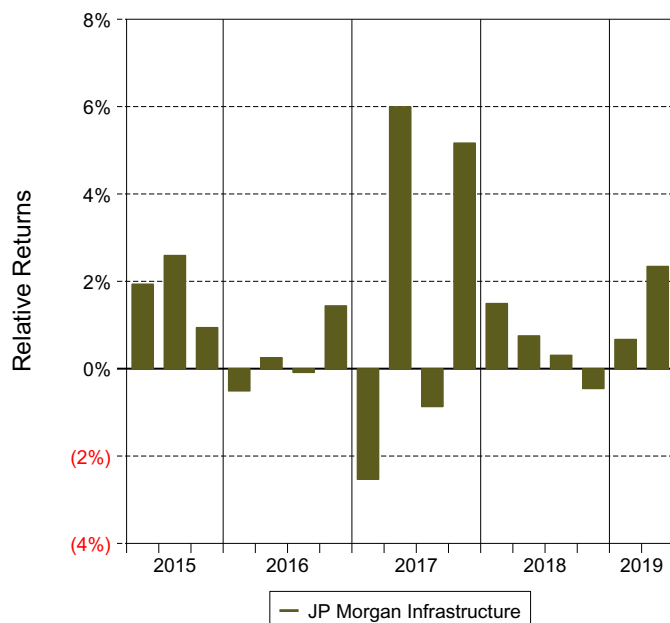
- JP Morgan Infrastructure's portfolio outperformed the Benchmark by 2.34% for the quarter and outperformed the Benchmark for the year by 2.95%.

Quarterly Asset Growth

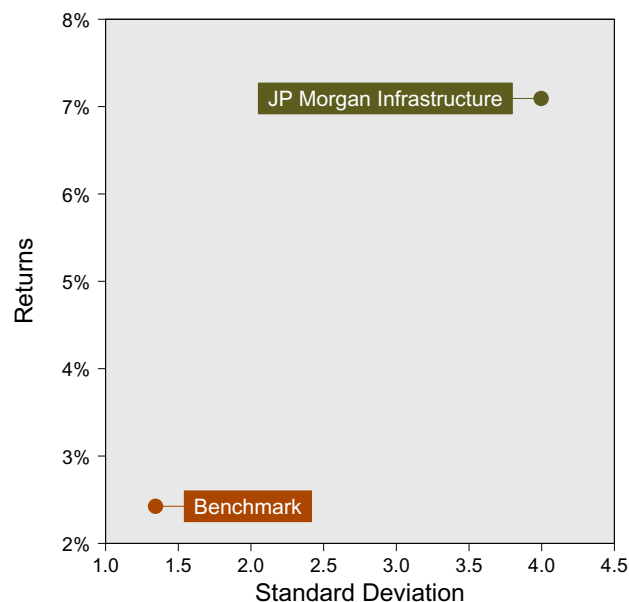
Beginning Market Value	\$117,309,823
Net New Investment	\$-2,307,108
Investment Gains/(Losses)	\$4,089,662
Ending Market Value	\$119,092,377



Relative Return vs Benchmark



Annualized Four and One-Quarter Year Risk vs Return



Grosvenor Cust. Infrastructure Period Ended June 30, 2019

Investment Philosophy

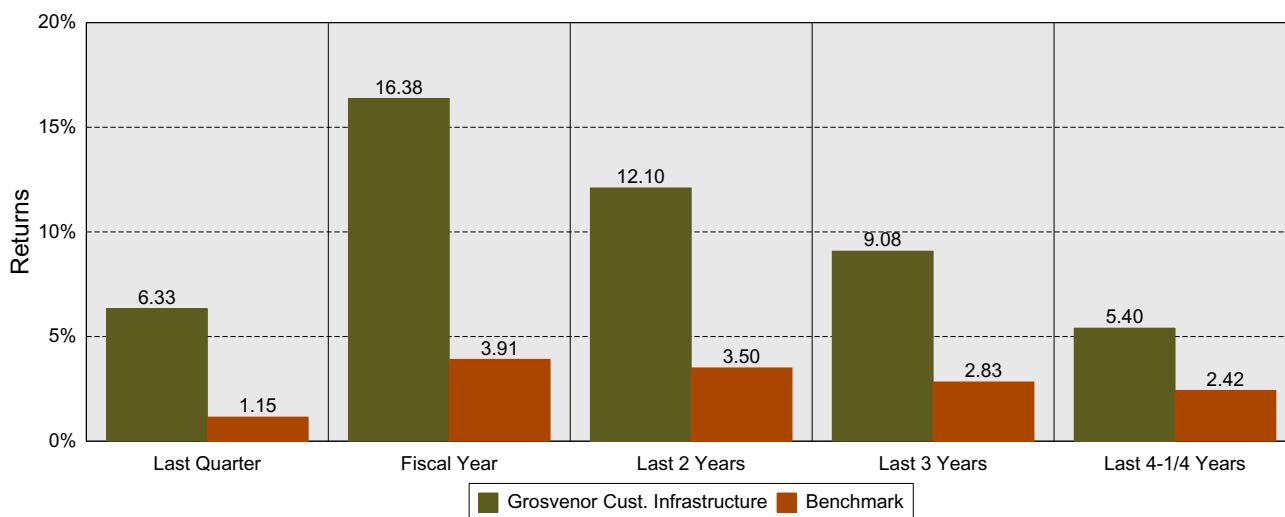
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified portfolio of primary core and core plus infrastructure funds (30%), co-investments (40%) and opportunistic secondary fund purchases (30%). **The Benchmark is comprised of CPI-W through June 30, 2018; 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net thereafter.**

Quarterly Summary and Highlights

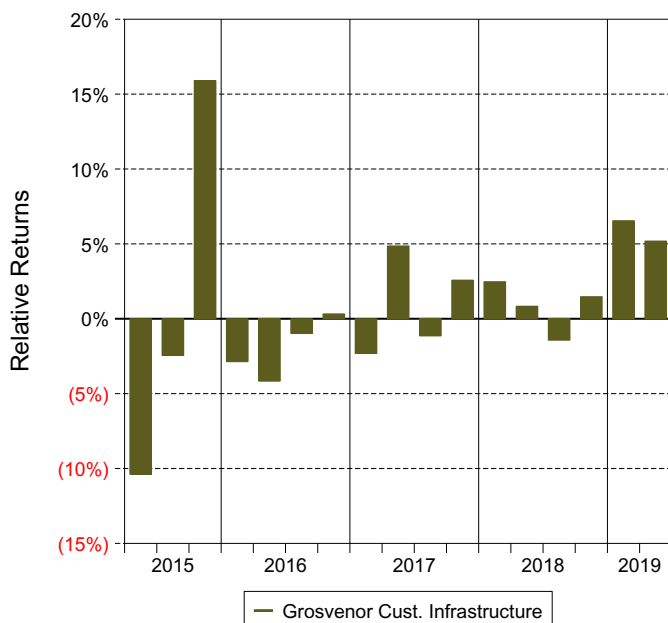
- Grosvenor Cust. Infrastructure's portfolio outperformed the Benchmark by 5.18% for the quarter and outperformed the Benchmark for the year by 12.47%.

Quarterly Asset Growth

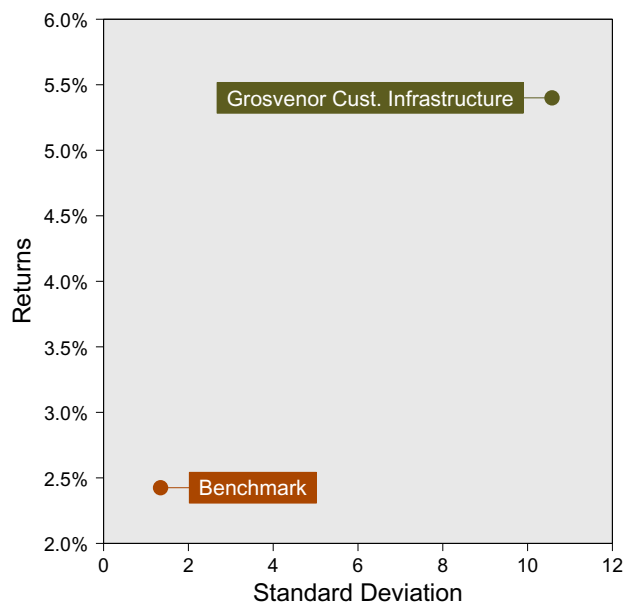
Beginning Market Value	\$42,550,571
Net New Investment	\$0
Investment Gains/(Losses)	\$2,694,398
Ending Market Value	\$45,244,969



Relative Return vs Benchmark



Annualized Four and One-Quarter Year Risk vs Return



Macquarie Infrac. Partners IV Period Ended June 30, 2019

Investment Philosophy

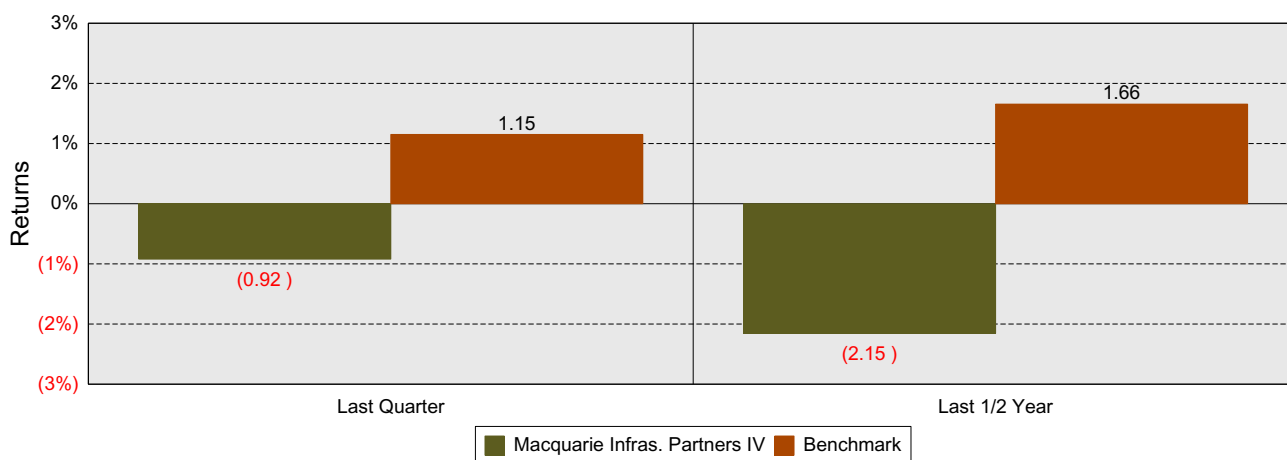
Macquarie's principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team's sector expertise and operating experience will provide a competitive advantage in sourcing and due diligence. Furthermore, the manager will also continue to focus on opportunities where its active management capabilities can add value for investors in terms of enhancing returns and the substantial mitigation and/or elimination of material operational risks. **The Benchmark is comprised of 50% CPI-U lagged one quarter and 50% NFI-ODCE Equal Weight Net.**

Quarterly Summary and Highlights

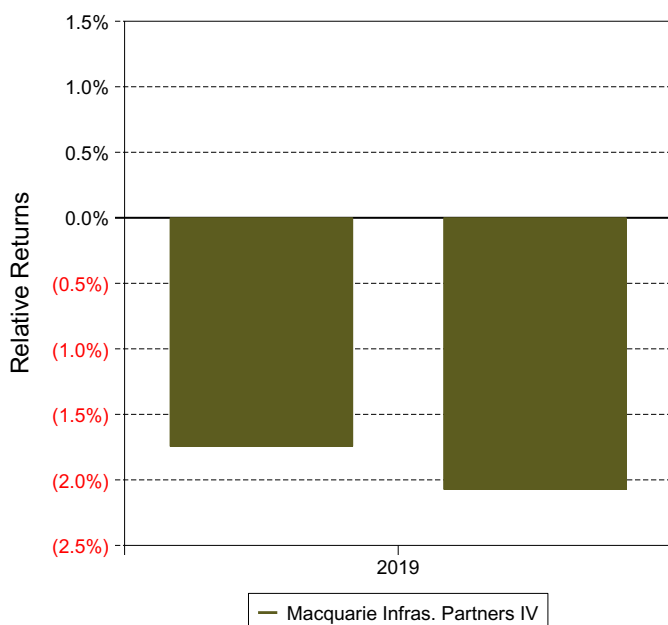
- Macquarie Infrac. Partners IV's portfolio underperformed the Benchmark by 2.07% for the quarter and underperformed the Benchmark for the one-half year by 3.81%.

Quarterly Asset Growth

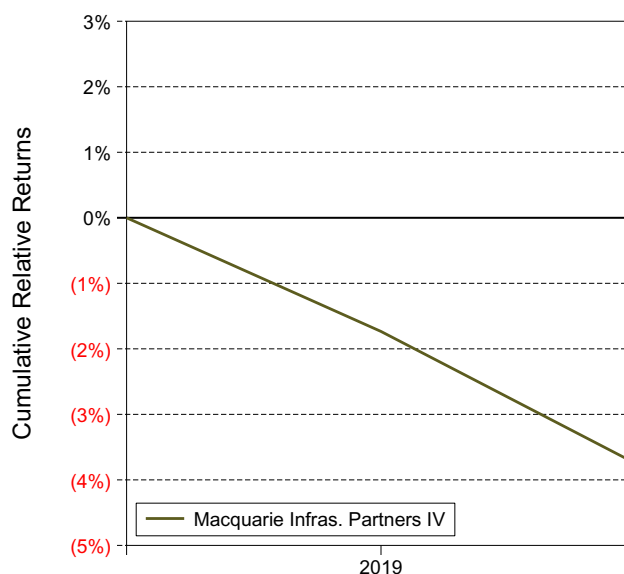
Beginning Market Value	\$21,006,305
Net New Investment	\$8,302,968
Investment Gains/(Losses)	\$-35,662
Ending Market Value	\$29,273,611



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



Research and Educational Programs

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

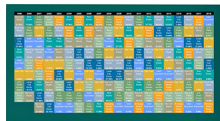
The OCIO Model: How Do We Measure Success? | This paper outlines the key issues for evaluating the success of outsourced chief investment officer (OCIO) services.

Perspectives on Investing: The Evolution of Strategic Allocations | In this video, Callan experts discuss the key challenges of evaluating non-U.S. equity investments.

Opportunities & Challenges: Investing in Private Equity Partnerships | In this video, Callan experts discuss investing directly in private equity partnerships.

Building a Pool of Transition Managers: Both an Art and a Science | Transition management is the restructuring of institutional portfolios from single or multiple investment managers/asset classes to a new allocation over a short-term horizon. This paper offers guidance on building a pool of transition managers.

Callan's Periodic Table Explained | The popular Callan Periodic Table of Investment Returns turned 20 this year. This animated feature discusses the benefits and some of the history of the table.



The Cobbler's Shoes: How Asset Managers Run Their Own 401(k) Plans | Can investment manager-sponsored DC plans provide insights on plan design and implementation? To help answer this question, Callan examined the 401(k) plans of investment



managers. The industry scored high on retirement savings metrics. But in contrast to the industry consensus, asset managers generally embraced complexity over simplicity in their investment designs.

How to Distinguish Between Growth Equity and Late-Stage VC



Both growth equity and late-stage venture capital are growth-oriented but differ significantly in the types of companies they invest in, the structure of their investments, the way in which they create value, and the trade-offs between risk and return.

Nurturing Strong Cultures at Professional Firms | In this paper, Callan Executive Chairman Ron Peyton offers advice for building effective and transparent corporate cultures.

Opening Doors of Opportunity | This paper reviews the types of co-investment opportunities offered by hedge funds and funds-of-funds (FOFs).

Quarterly Periodicals

Private Equity Trends | A newsletter on private equity activity, covering both the fundraising cycle and performance over time.

Market Pulse Flipbook | A market reference guide covering trends in the U.S. economy, developments for fund sponsors, and the latest data for U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution plans.

Active vs. Passive Charts | This series of charts compares active managers alongside relevant benchmarks over the long term.

Capital Market Review | A newsletter providing analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Events

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

Please mark your calendar and look forward to upcoming invitations.

October Regional Workshops

October 22, 2019 – Denver

October 24, 2019 – Chicago

2020 National Conference

January 27-29, 2020 – San Francisco

Please also keep your eye out for upcoming Webinars in 2019! We will be sending invitations for these and also will have registration links on our website at www.callan.com/events.

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

The Center for Investment Training Educational Sessions

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

Introduction to Investments

San Francisco, July 23-24, 2019

Atlanta, October 8-9, 2019

Chicago, October 22-23, 2019

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

“Callan College” on Alternative Investments

Chicago, October 29-30, 2019

The “Callan College” on Alternative Investments will cover: private equity, private credit, hedge funds, real estate, and real assets. Tuition for the “Callan College” on Alternative Investments session is \$2,500 per person. Tuition includes instruction, all materials, and breakfast and lunch on each day.

Learn more at www.callan.com/events/callan-college-intro

Education: By the Numbers

525

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

50+

Unique pieces of research the Institute generates each year

3,700

Total attendees of the “Callan College” since 1994

1980

Year the Callan Institute was founded



“Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry.”

Greg Allen, CEO and Chief Research Officer

List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

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

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g. attending and educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

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

Manager Name
Aberdeen Standard Investments
Acadian Asset Management LLC
AEGON USA Investment Management
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Pioneer Asset Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford International, LLC
Baird Advisors
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Asset Management
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
BrightSphere Investment Group
Brown Brothers Harriman & Company
Cambiar Investors, LLC
Capital Group
Carillon Tower Advisers
CastleArk Management, LLC
Causeway Capital Management
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Credit Suisse Asset Management
DePrince, Race & Zollo, Inc.
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Management Co.
DWS
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
Financial Engines
First Hawaiian Bank Wealth Management Division
First State Investments
Fisher Investments
Franklin Templeton
Fred Alger Management, Inc.
GAM (USA) Inc.
Glenmeade Investment Management, LP
GlobeFlex Capital, L.P.
Goldman Sachs
Green Square Capital LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.
Heitman LLC

Manager Name
Hotchkis & Wiley Capital Management, LLC
HSBC Global Asset Management
Income Research + Management, Inc.
Insight Investment Management Limited
Intech Investment Management, LLC
Intercontinental Real Estate Corporation
Invesco
Investec Asset Management
Ivy Investments
J.P. Morgan
Janus
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
Logan Circle Partners, L.P.
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
MacKay Shields LLC
Macquarie Investment Management (MIM)
Manulife Asset Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
MFS Investment Management
MidFirst Bank
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
Mountain Pacific Advisors, LLC
MUFG Union Bank, N.A.
Natixis Investment Managers
Neuberger Berman
Newton Investment Management
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management
Nuveen
OFI Global Asset Management
Osterweis Capital Management, LLC
P/E Investments

Manager Name
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, Inc.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Principal Global Investors
Putnam Investments, LLC
QMA LLC
RBC Global Asset Management
Regions Financial Corporation
Robeco Institutional Asset Management, US Inc.
Rockefeller Capital Management
Rothschild & Co. Asset Management US
Russell Investments
Schroder Investment Management North America Inc.
Smith Graham & Co. Investment Advisors, L.P.
Smith Group Asset Management
South Texas Money Management, Ltd.
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
The Boston Company Asset Management
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
Thornburg Investment Management, Inc.
Tri-Star Trust Bank
UBS Asset Management
VanEck
Versus Capital Group
Victory Capital Management Inc.
Virtus Investment Partners, Inc.
Vontobel Asset Management, Inc.
Voya
WCM Investment Management
WEDGE Capital Management
Wellington Management Company, LLP
Wells Fargo Asset Management
Western Asset Management Company LLC
Westfield Capital Management Company, LP
William Blair & Company LLC

Informational

TO: State Investment Board
FROM: Dave Hunter
DATE: September 20, 2019
SUBJECT: Summary of RVK U.S. Sovereign Wealth Fund Survey Report – September 2019

Overview of Peer Survey:

In August of 2019, RVK conducted a survey of U.S. Sovereign Wealth Funds (SWF) in order to gain additional insight and perspective on the governance structures, constraints, and spending models of U.S. based funds.

RVK noted these types of comparisons can be challenging due to the widely different governance structures, unique constraints and significant differences in liquidity needs, risk tolerances and return expectations. Historical comparisons can be helpful, but should be approached with a degree of caution as: 1) they rarely convey a full sense of the unique objectives and constraints of each institution; 2) they don't necessarily separate luck from skill; and 3) they don't tell you what will work best in the future.

RVK's presentation includes information gathered by RVK via the survey and interviews with investment staff across the various funds, RVK consulting teams that serve those funds, and publicly available performance and asset allocation data.

The survey focuses on: 1) Objectives, Asset Allocation and Performance; 2) Governance and Decision Making Structures; and 3) Constraints and Spending.

The following SWF's participated in the survey: 1) Alaska Permanent Fund; 2) Oklahoma State Land Commissioners; 3) Idaho Endowment Fund; 4) Montana Board of Investments; 5) New Mexico State Investment Council; 6) ND Legacy Fund; 7) ND State Land Board; 8) Texas Board of Education; 9) Utah School & Institutional Trust Fund Office (SITFO); and 10) Wyoming State Treasurer's Office.

RVK also included publicly available data from the following funds to enhance the universe sample size for some exhibits: 1) Alabama Trust Fund; 2) Arizona State Treasurer; 3) Louisiana Education Quality Trust Fund; 4) Minnesota Permanent School Fund; and 5) Texas University Fund.



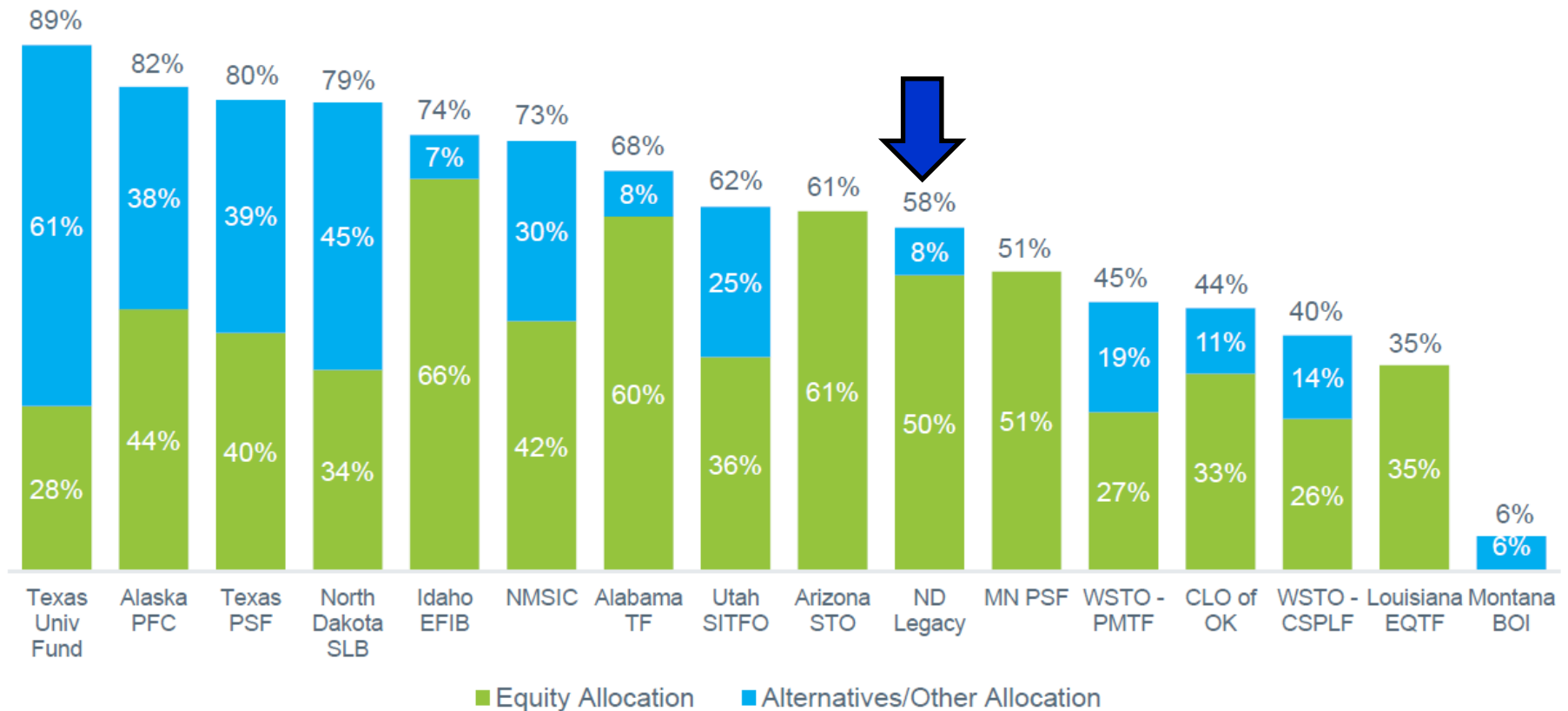
Key Survey Observations:

- 1) U.S. Equity and U.S. Fixed Income investment returns will likely be lower in the future;
- 2) “Intergenerational Equity” is the stated “Main Objective” for each US SWF;
- 3) “Commodities” are identified as the “Source of Funds” for each US SWF;
- 4) AUM ranges from \$1 billion to \$65 billion (Alaska) with the Legacy Fund at \$6 billion and ND State Land Board at \$5 billion;
- 5) There is a wide dispersion of “safe” vs “risk” asset allocations or “Fixed Income & Cash” vs “Equities & Alternative Assets”;

Allocation to Fixed Income & Cash as of June 30, 2018



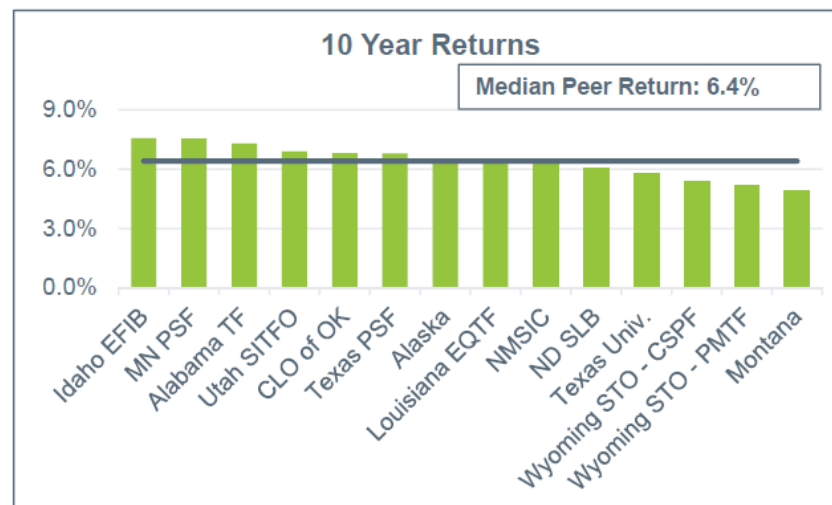
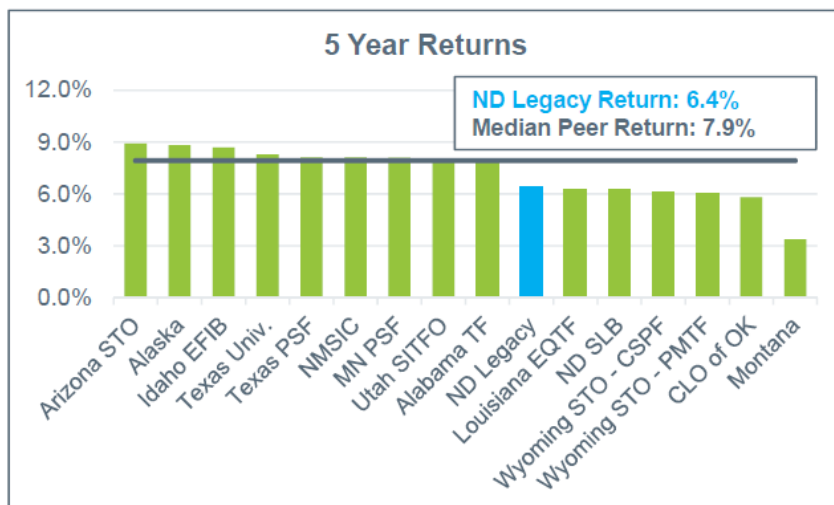
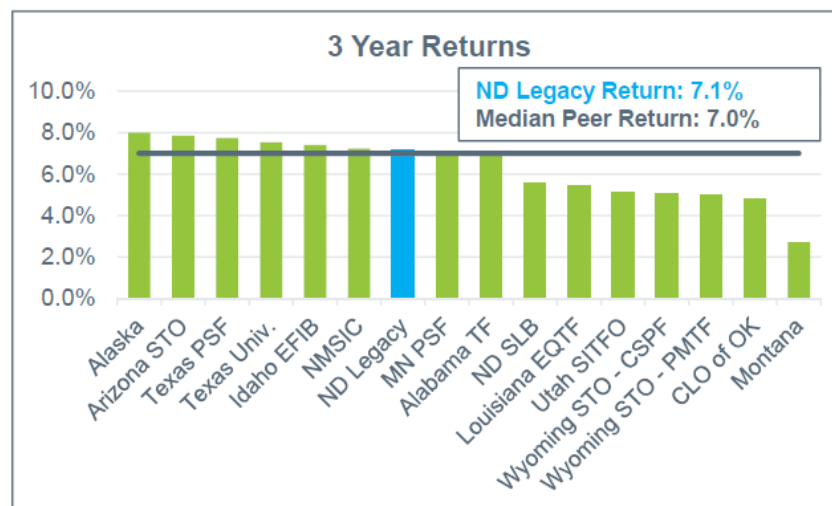
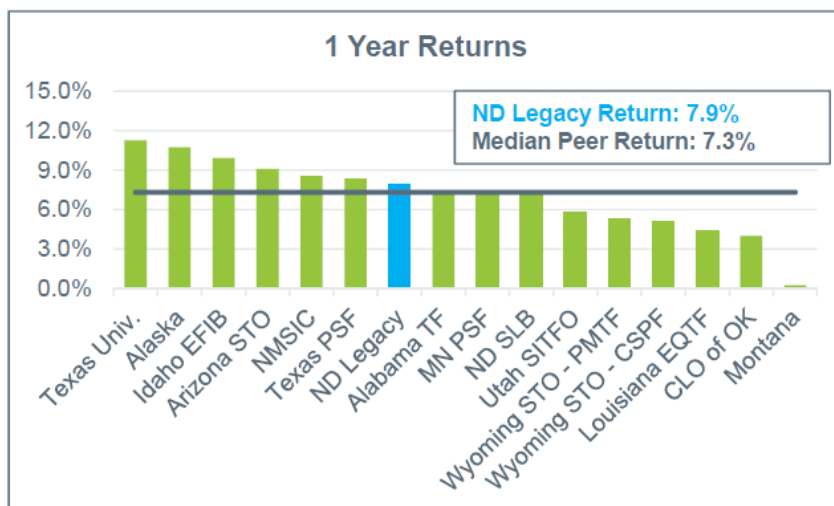
Allocation to Public Equities and Alternative Assets as of June 30, 2018



NOTE: The ND Legacy Fund is deemed to have the 7th “safest” asset allocation (out of 15) based on the two charts above, whereas the “Texas University Fund” is deemed to have the most “risk” (with a higher expected return), while the Montana Board of Investments is the most “safe” based on its higher asset allocation to “Fixed Income and Cash”. RIO notes this is a simplifying assumption as all “Fixed Income” investments are not created equal and this same statement is true for “Equities and Alternative Assets”. In general, however, “Fixed Income and Cash” are more “safe” than “Equities and Alternatives”, while noting that “Equities and Alternatives” are generally seeking a higher return and generally highly correlated with a higher level of expected “risk”. Portfolio construction including asset class correlations can also dampen overall investment volatility. As a result, it is difficult to make any definitive risk assessments based on this relatively simple comparison.

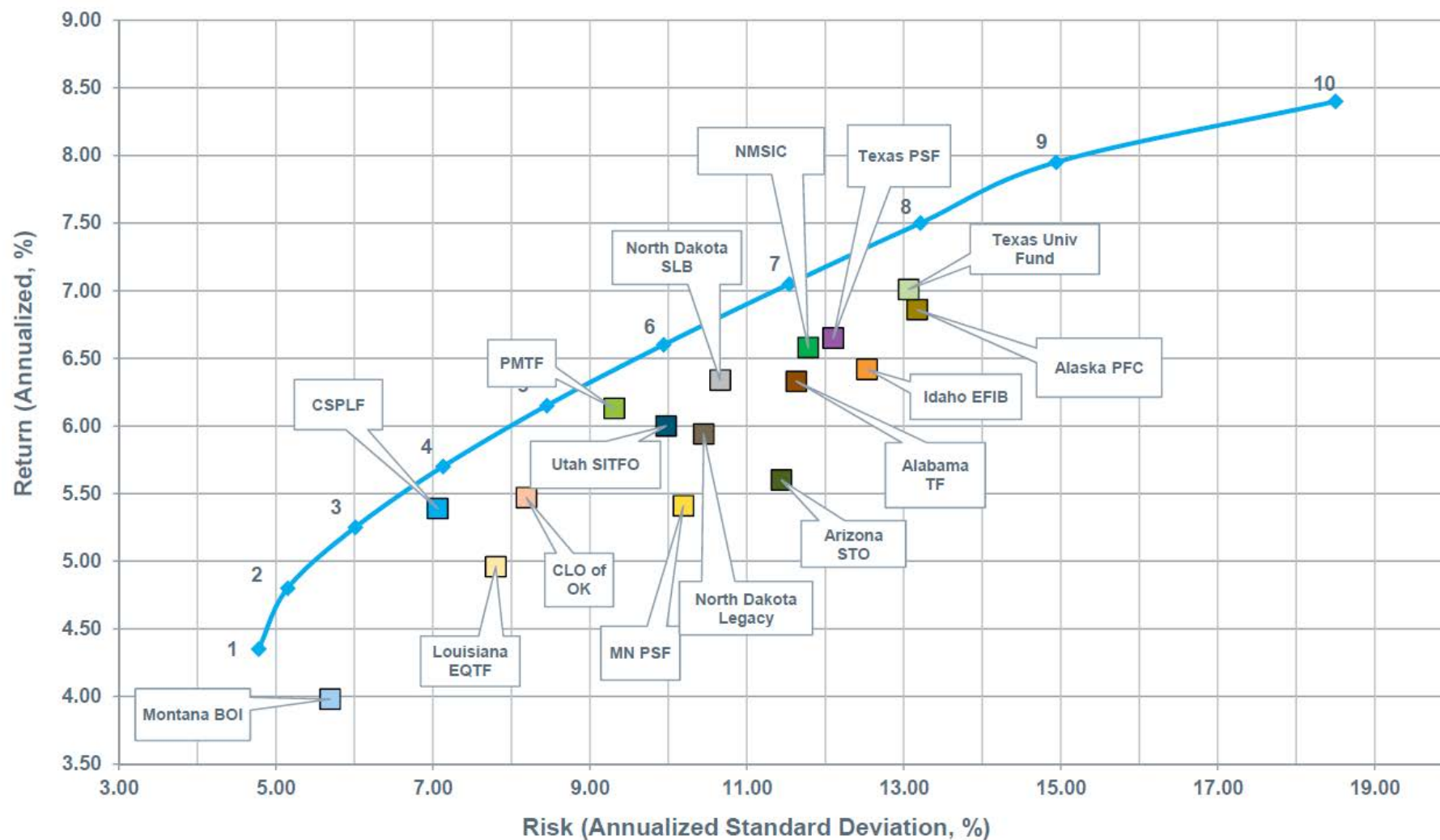
6) There is moderate diversion of investment returns over the last 1, 3, 5 and 10 year periods ended June 30, 2018 (see below)

Historical Fund Performance



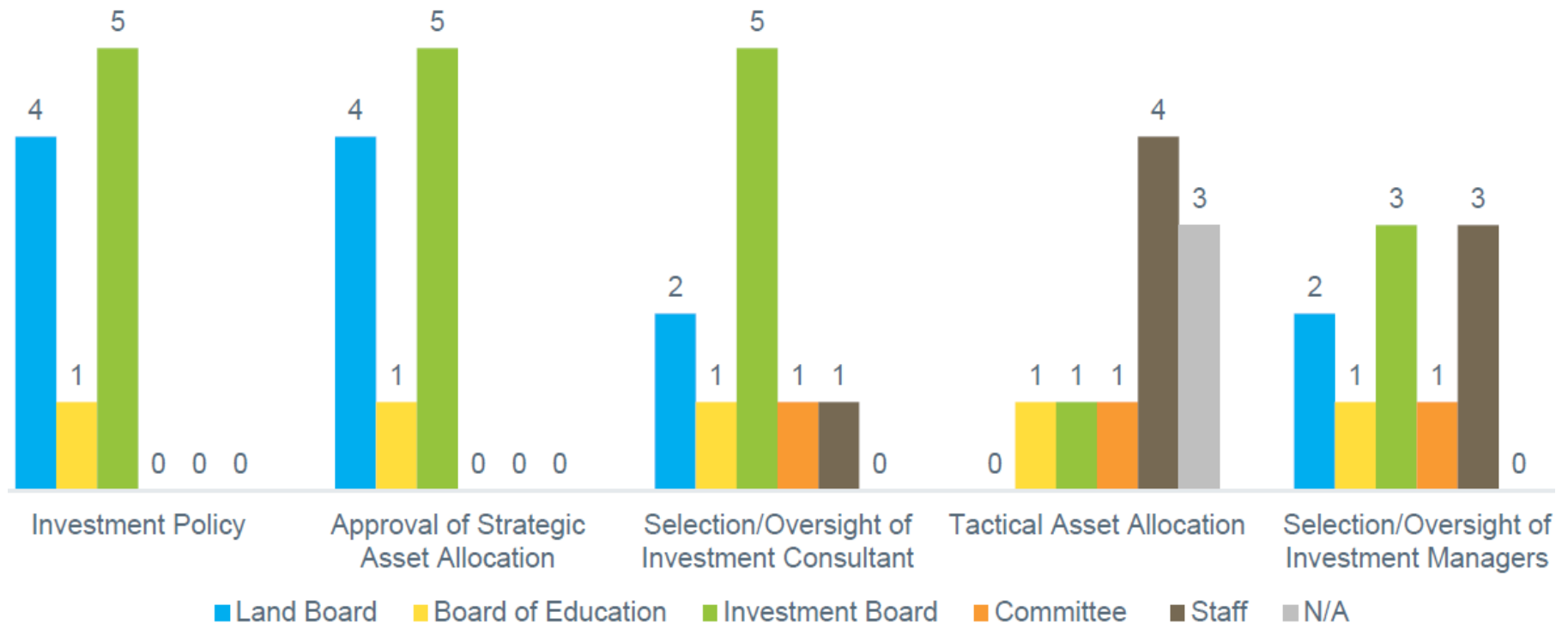
Note: The ND Legacy Fund (and ND State Land Board) were not fully implemented in their current target asset allocations during the last 5 years.

7) The expected risk and return of each US SWF is modeled below using RVK's 2019 capital market assumptions and fund allocations as of June 30, 2018:



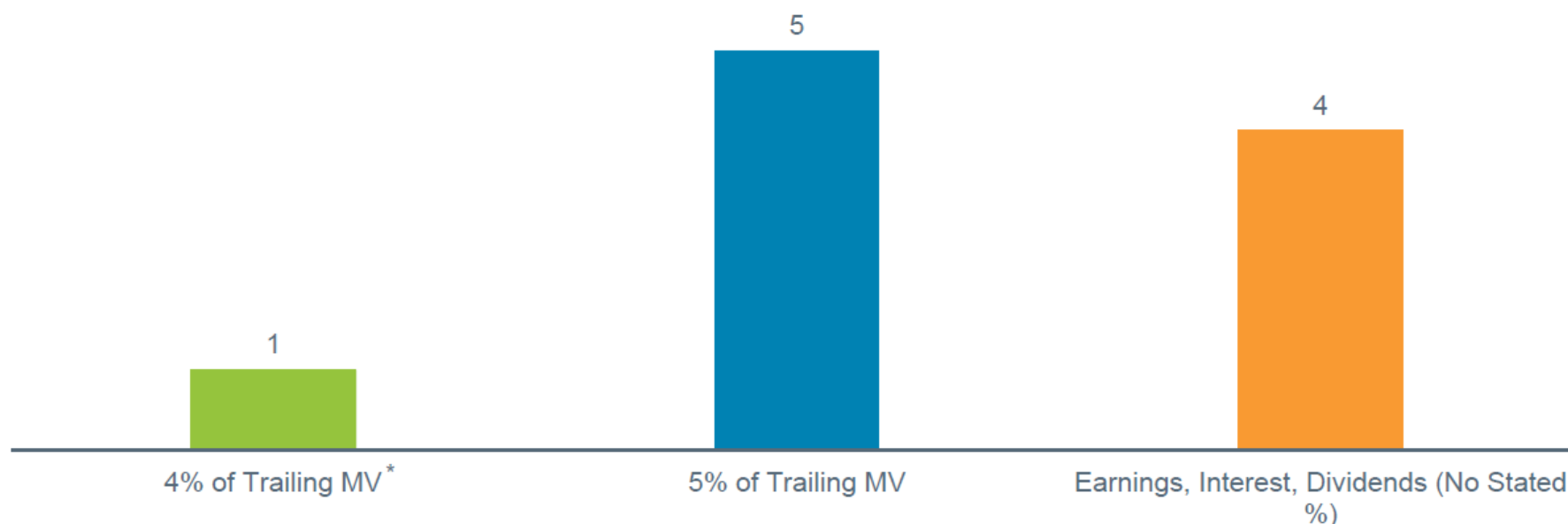
- 8) Governance and investment decision making varies although “some form of Investment Board is most likely to have the responsibility of approving the strategic asset allocation and investment policy”, while “tactical asset allocation and selection of managers are the tasks most likely to be delegation to (investment) staff”.

Survey Results - Primary Responsibilities



- 9) The two most commonly used frameworks for determining the level of distributions or spending are: A) a predetermined percentage (commonly 4-5%) applied to the trailing 3-5 year total fund market value; or B) investment income (interest, dividends, net realized gains/losses).

Survey Results - Spending Methodology



*Utah SITFO's spending policy is an average of: 4% of the average market value over the past 12 quarters & prior year distribution plus inflation. Spending is also capped at no greater than the trailing 4% of trailing 12 quarter average.



Concluding Thoughts: A) Asset allocation is the primary determinant of risk and returns. B) The ability to earn a 5% return above inflation over the next 10 years appears challenged, therefore, a sustainable spending policy rate is likely closer to 4% (using a Percent of Market Value approach). C) An “earnings only” distribution model introduces challenges and does appear to potentially influence asset allocation decision making in some cases (desire to avoid realized losses, emphasis on income producing assets). This has the potential to limit a SWF’s ability to achieve intergenerational equity if the resulting asset allocation is too conservative.



Survey of US Sovereign Wealth Funds – Asset Allocation, Performance, Governance Structures, Constraints & Spending Policies

North Dakota Legacy Fund



Table of Contents

Overview of Peer Survey	Tab 1
Asset Allocation and Performance	Tab 2
Governance/Investment Decision Making Models	Tab 3
Constraints and Distributions	Tab 4
International Perspective	Tab 5
Concluding Thoughts	Tab 6

Overview of Peer Survey



Overview of Peer Survey

- ❖ RVK conducted a survey of US Sovereign Wealth Funds (“SWFs”) in order to gain additional insight and perspective on the unique governance structures, constraints, and spending models of US based funds
- ❖ We have observed in working with various US SWFs that while there is a desire to understand how they compare to others, comparison can be extremely challenging due to the widely different governance structures and unique constraints
- ❖ This presentation includes information gathered by RVK via the survey and interviews with senior investment staff across the various funds, RVK consulting teams that serve those funds, and publicly available performance and asset allocation data
- ❖ The survey focused on the following:
 - Objectives, Asset Allocation, and Performance
 - Governance and Decision Making Structures
 - Constraints and Spending
- ❖ Where appropriate, we compare survey results to observed best practices

Overview of Peer Survey

US Sovereign Wealth Funds

- ❖ Alaska Permanent Fund*
- ❖ Commissioners of the Land, State of Oklahoma*
- ❖ Idaho Endowment Fund Investment Board*
- ❖ Montana Board of Investments*
- ❖ New Mexico State Investment Council*
- ❖ North Dakota Legacy Fund*
- ❖ North Dakota State Land Board*
- ❖ Texas Board of Education*
- ❖ Utah School & Institutional Trust Funds Office (“SITFO”)*
- ❖ Wyoming State Treasurer’s Office*
- ❖ Alabama Trust Fund
- ❖ Arizona State Treasurer
- ❖ Louisiana Education Quality Trust Fund
- ❖ Minnesota Permanent School Fund
- ❖ Texas University Fund

*Indicates survey respondent or RVK client. Publicly available data utilized for others to enhance universe sample size for some exhibits.

Overview of Peer Survey

A Note About Backwards Looking Peer Comparisons

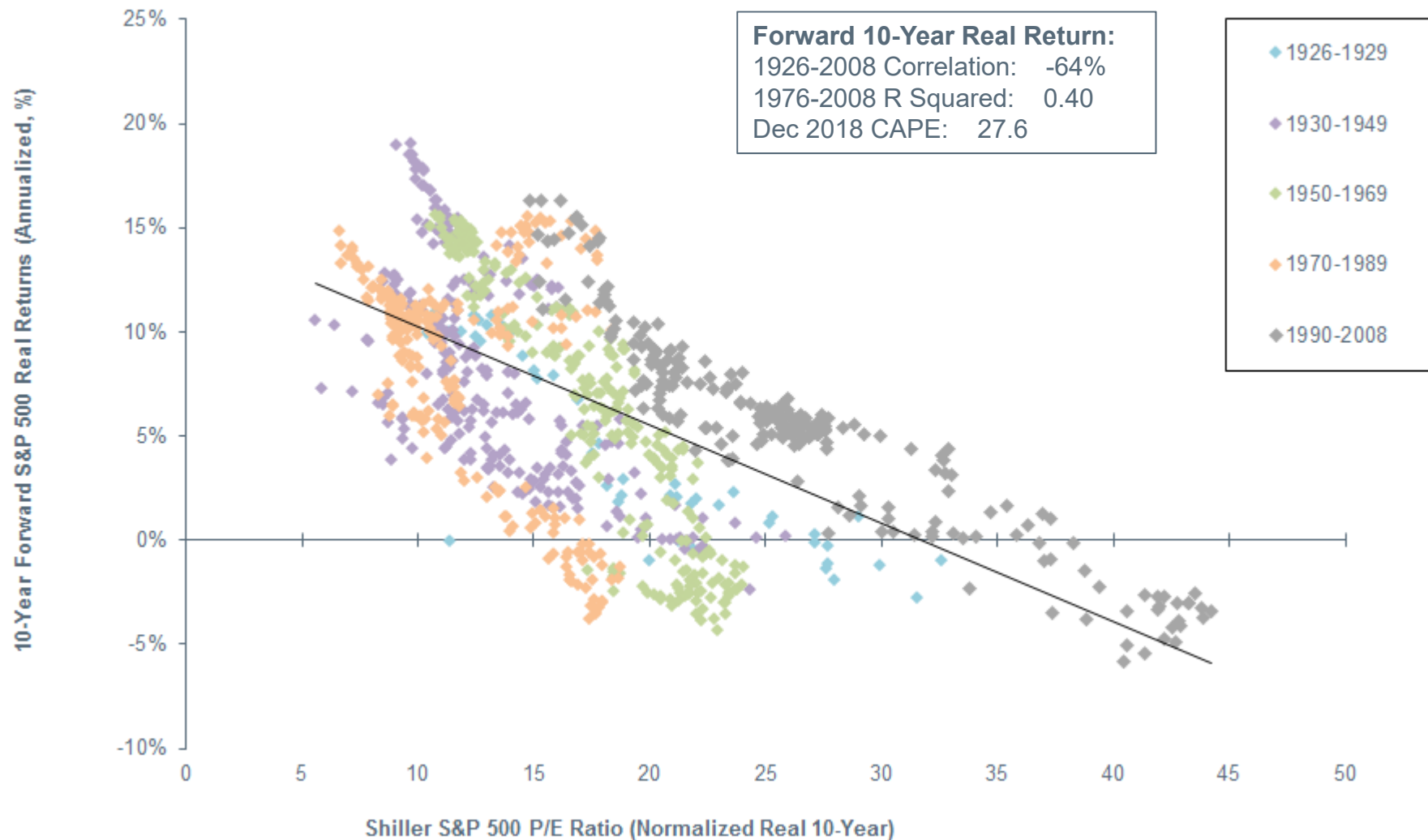
- ❖ Historical comparisons can be helpful, but should be approached with a degree of caution
 - They rarely convey a full sense of the unique objectives and constraints faced by each institution
 - They don't necessarily separate luck from skill
 - They don't tell you what will work best in the future
- ❖ Focus should be on the primary objectives of each institution, the road ahead, and the removal of as many obstacles as possible that stand in the way of achieving the objectives



Overview of Peer Survey

Forward Looking Perspective: Returns Likely to be Lower US Equity Valuations: Shiller P/E vs. Forward Returns

Trendline at 12/31/2018 = 1.6% Real Return



Overview of Peer Survey

Forward Looking Perspective: Returns Likely to be Lower

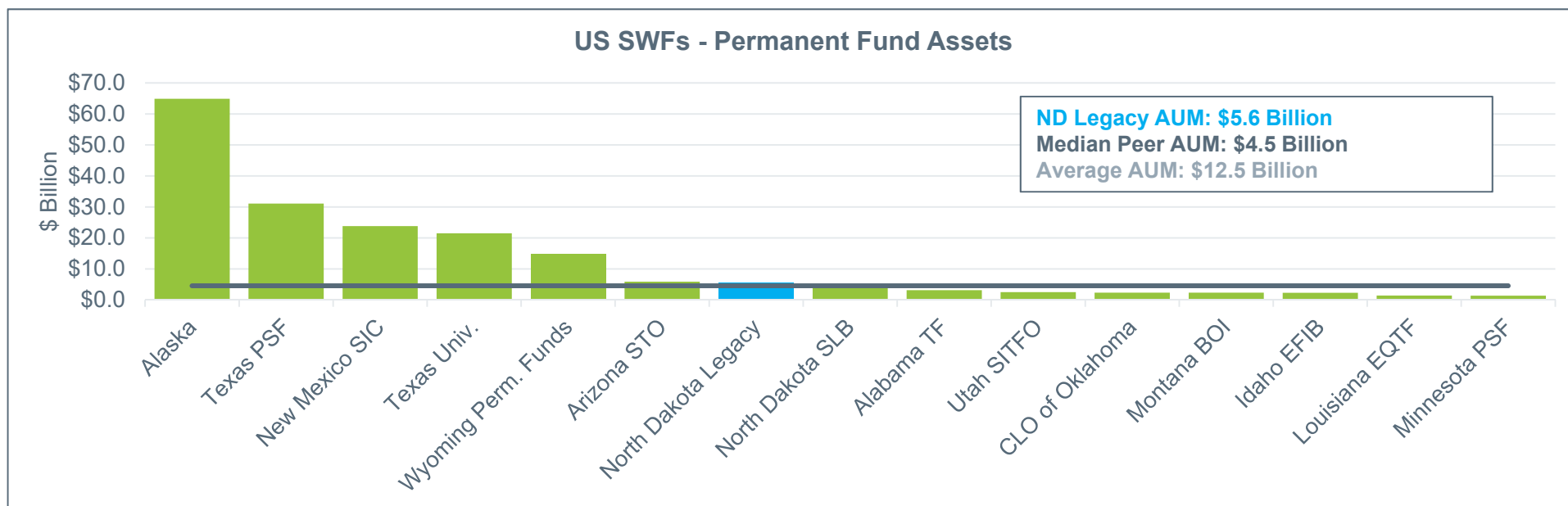
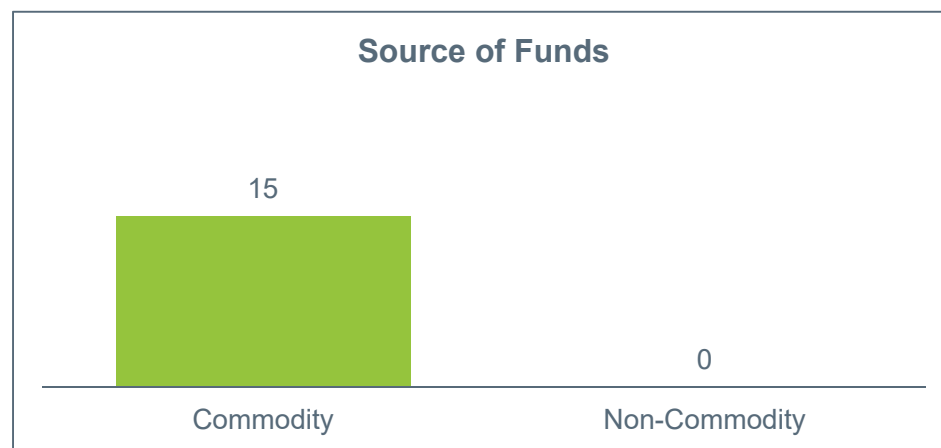
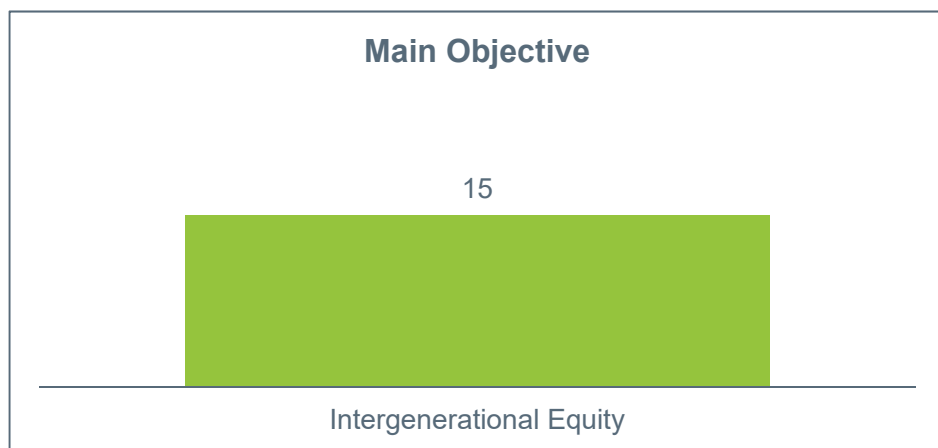
US Fixed Income Valuations: Current Yield vs. Forward Returns

Trendline at 12/31/2018 = 3.75% Nominal Return



Overview of Peer Survey

Universe Summary and Characteristics



Data is as of June 30, 2018. Assets reflect permanent fund assets only and may differ from total AUM reported by the entity.

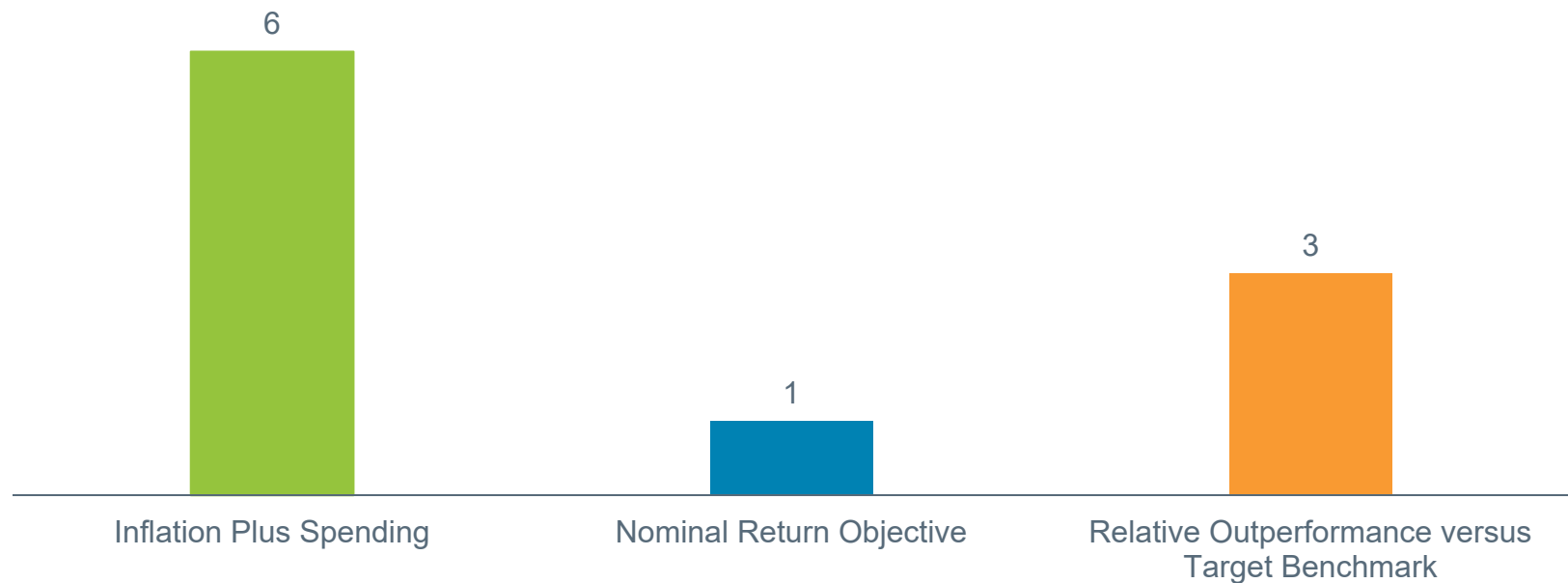
Asset Allocation and Performance



Objectives

- ❖ Stated performance objectives are commonly tied to the spending policy and preserving the purchasing power of the SWF for future generations
- ❖ All funds surveyed have a long-term perpetual nature

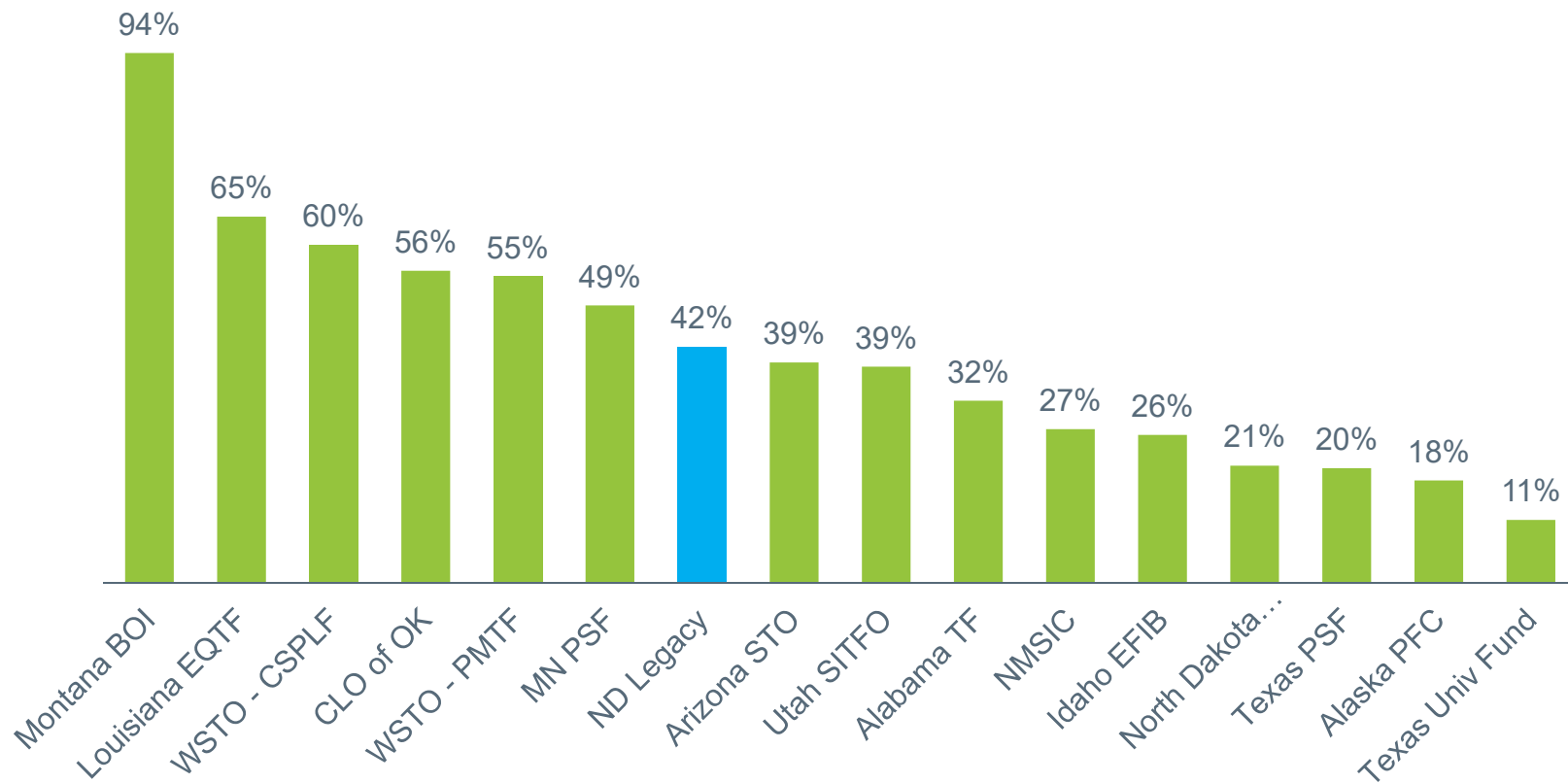
Survey Results - Return Objectives



Asset Allocation

- ❖ Although long-term objectives are similar, there is a wide dispersion of “safe” vs “risk” asset allocations

Allocation to Fixed Income & Cash as of June 30, 2018

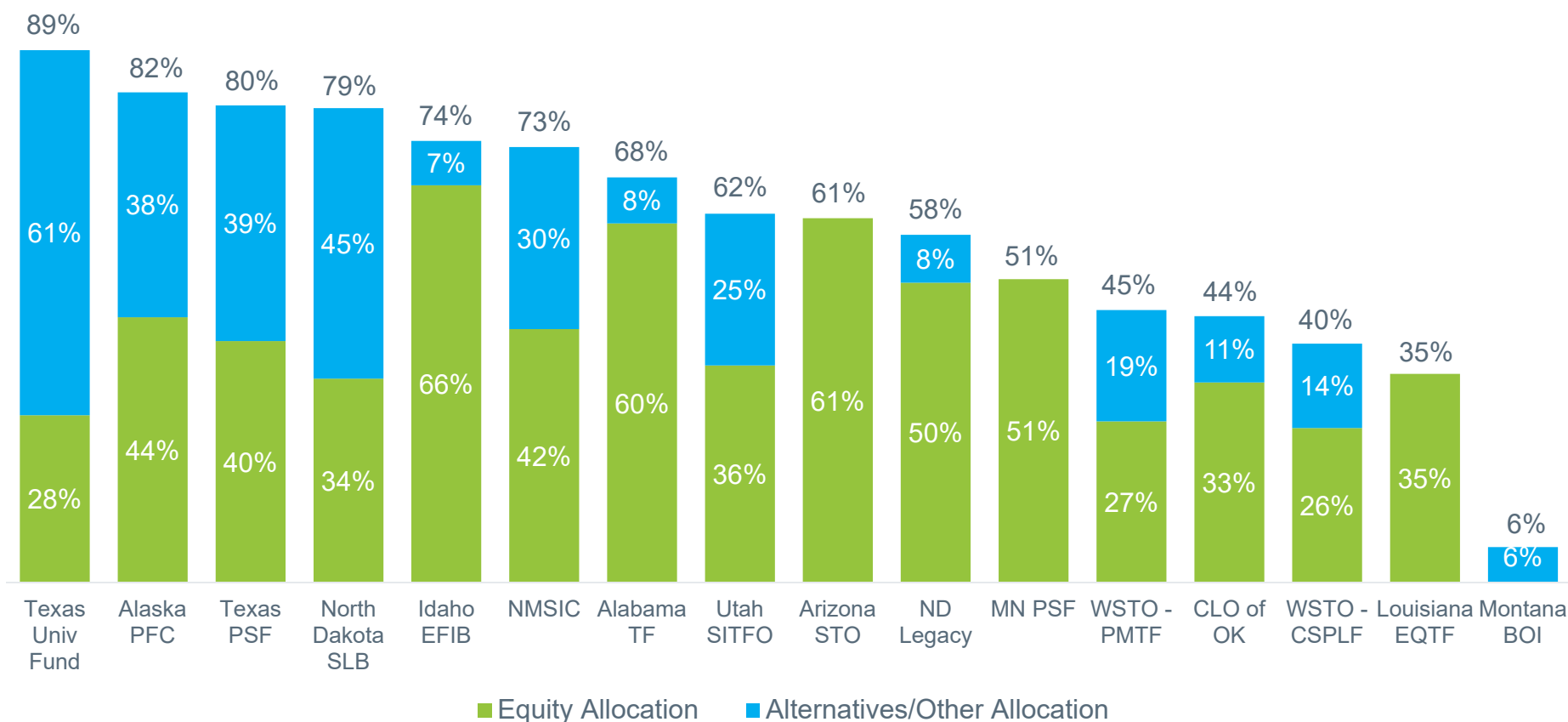


Allocations shown represent actual allocations as of June 30, 2018, not target.

Asset Allocation

- ❖ Although long-term objectives are similar, there is a wide dispersion of “safe” vs “risk” asset allocations.

Allocation to Public Equities and Alternative Assets as of June 30, 2018



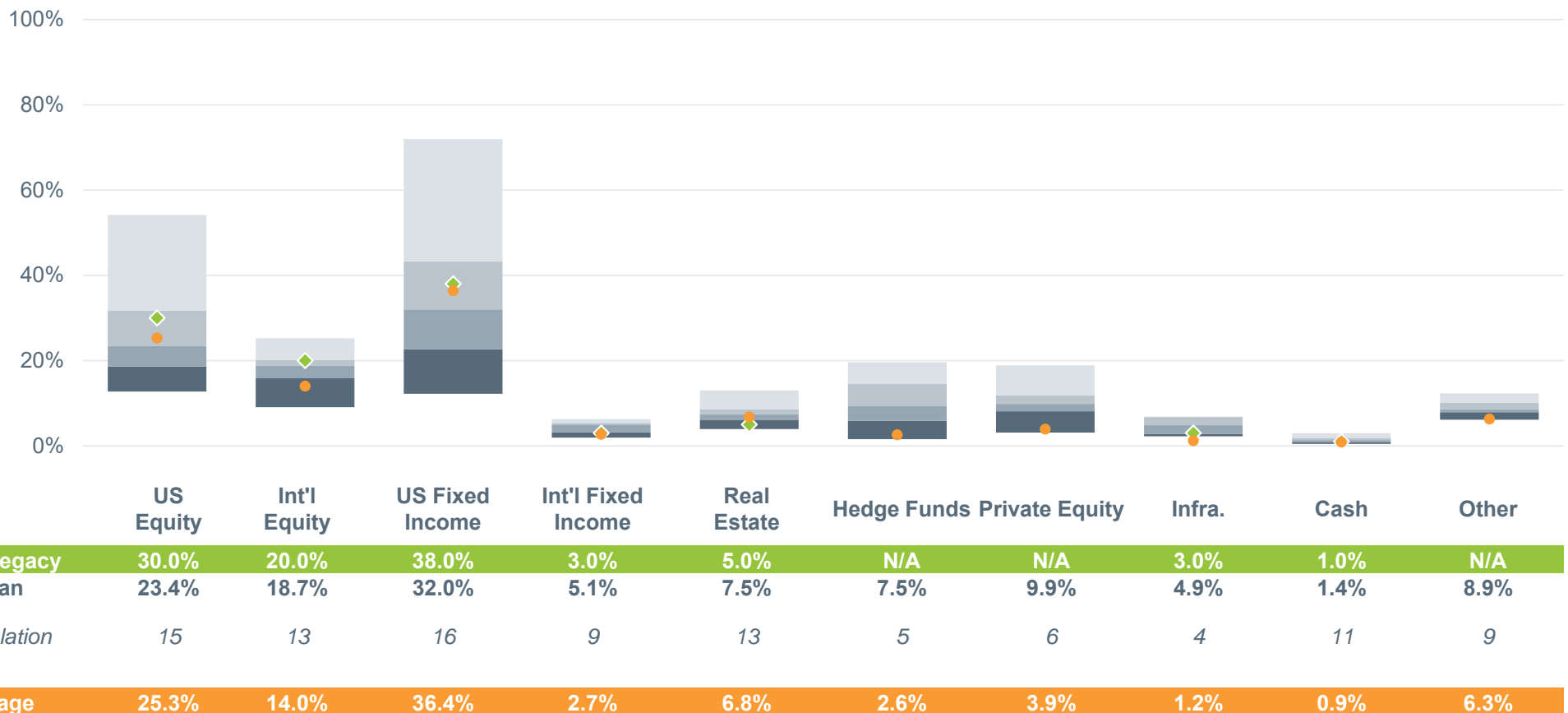
Allocations shown represent actual allocations as of June 30, 2018, not target.

Allocation to “Other” includes real return, GTAA, MLPs, risk parity, commodities and other alternative investments not broken out.

Asset Allocation

Asset Allocation

- ❖ North Dakota Legacy Fund has a higher allocation to US and International Equity and US Fixed Income, with lower allocations to real estate and alternatives compared to the median and average US sovereign wealth fund allocation.



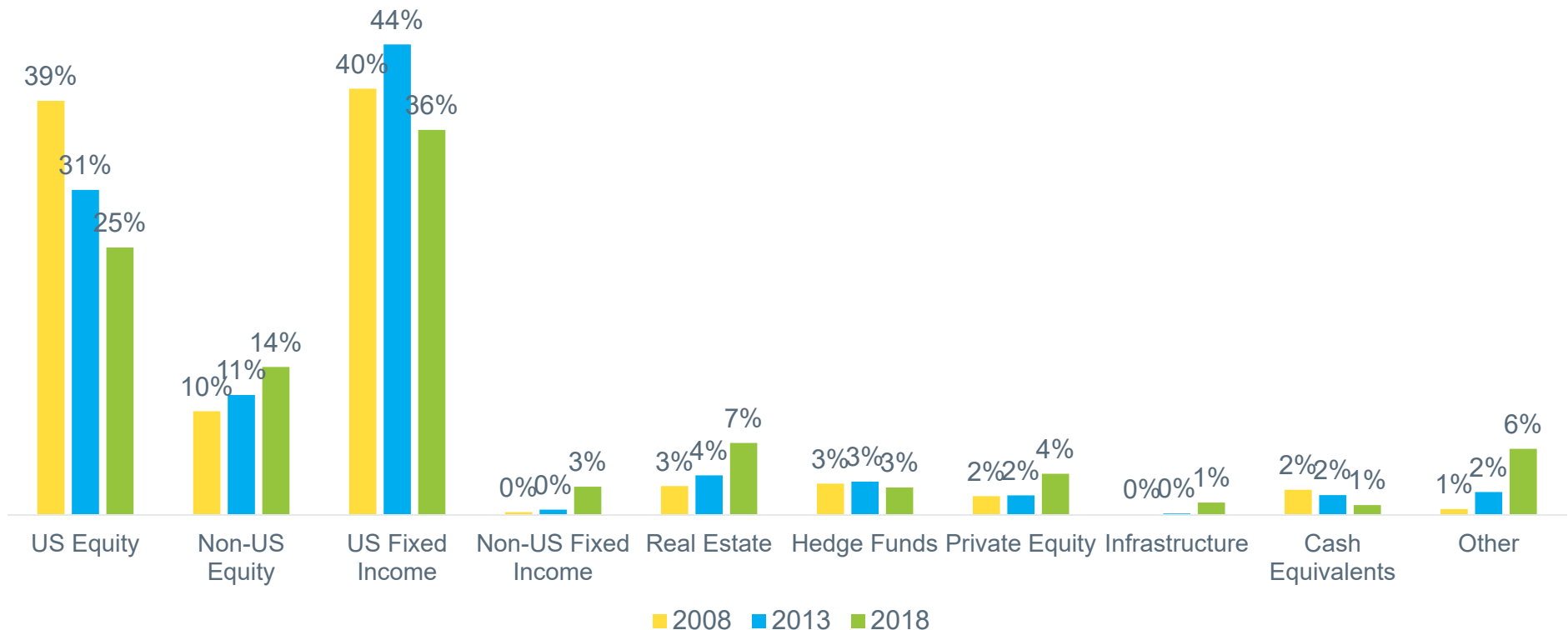
Allocation to "Other" includes real return, GTAA, MLPs, risk parity, commodities and other alternative investments not broken out.

Asset Allocation

Asset Allocation Trends

- ❖ US Equity allocations have declined significantly over the past 10 years
- ❖ Allocations to Real Estate, Private Equity, and other investments (most commonly real return, absolute return/GTAA) have increased

Average Asset Allocation

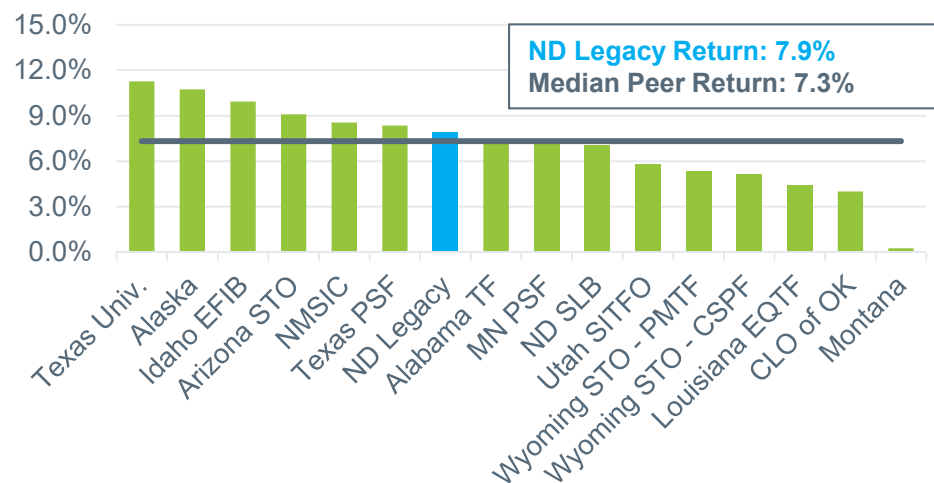


Allocation to "Other" includes real return, GTAA, MLPs, risk parity, commodities and other alternative investments not broken out.

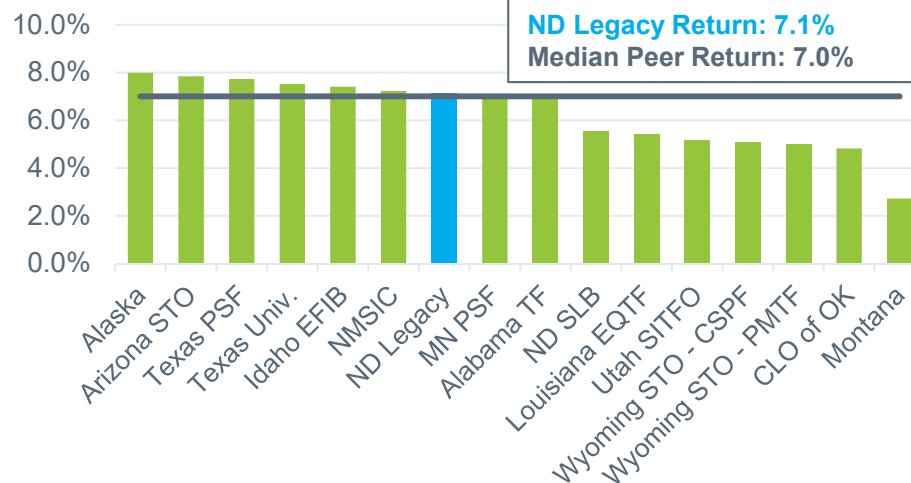
Performance

Historical Fund Performance

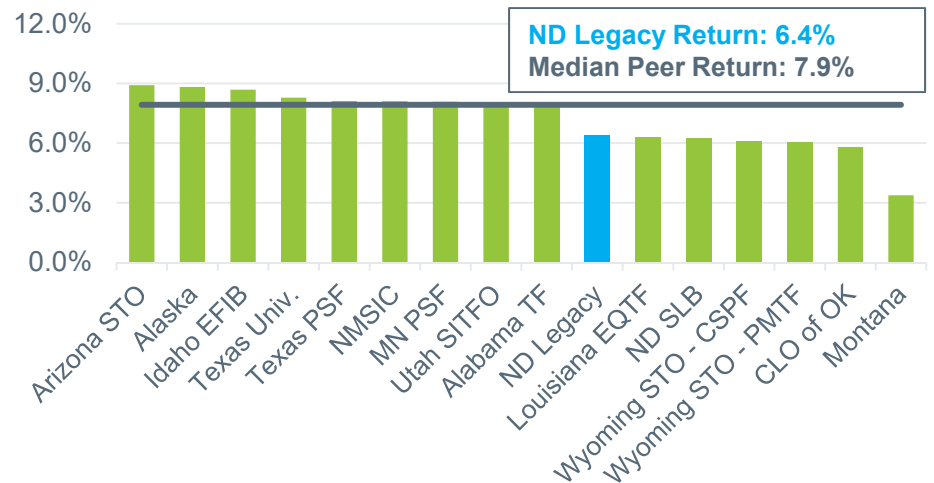
1 Year Returns



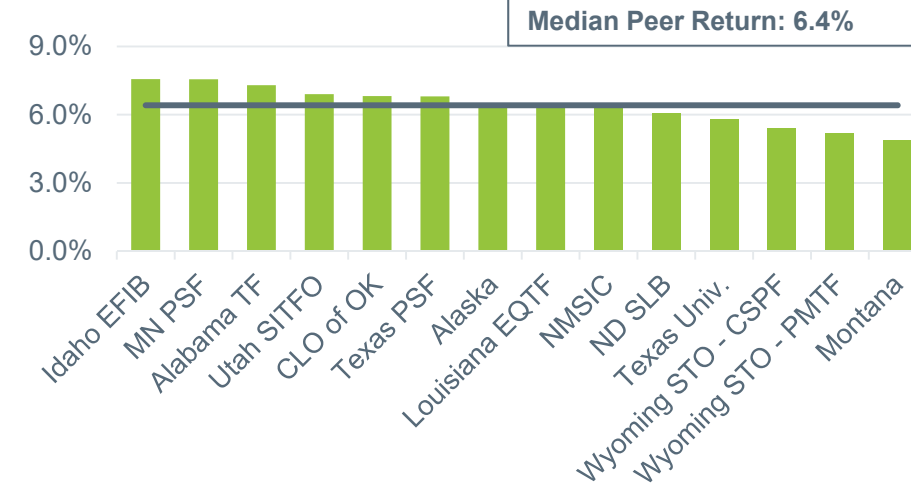
3 Year Returns



5 Year Returns



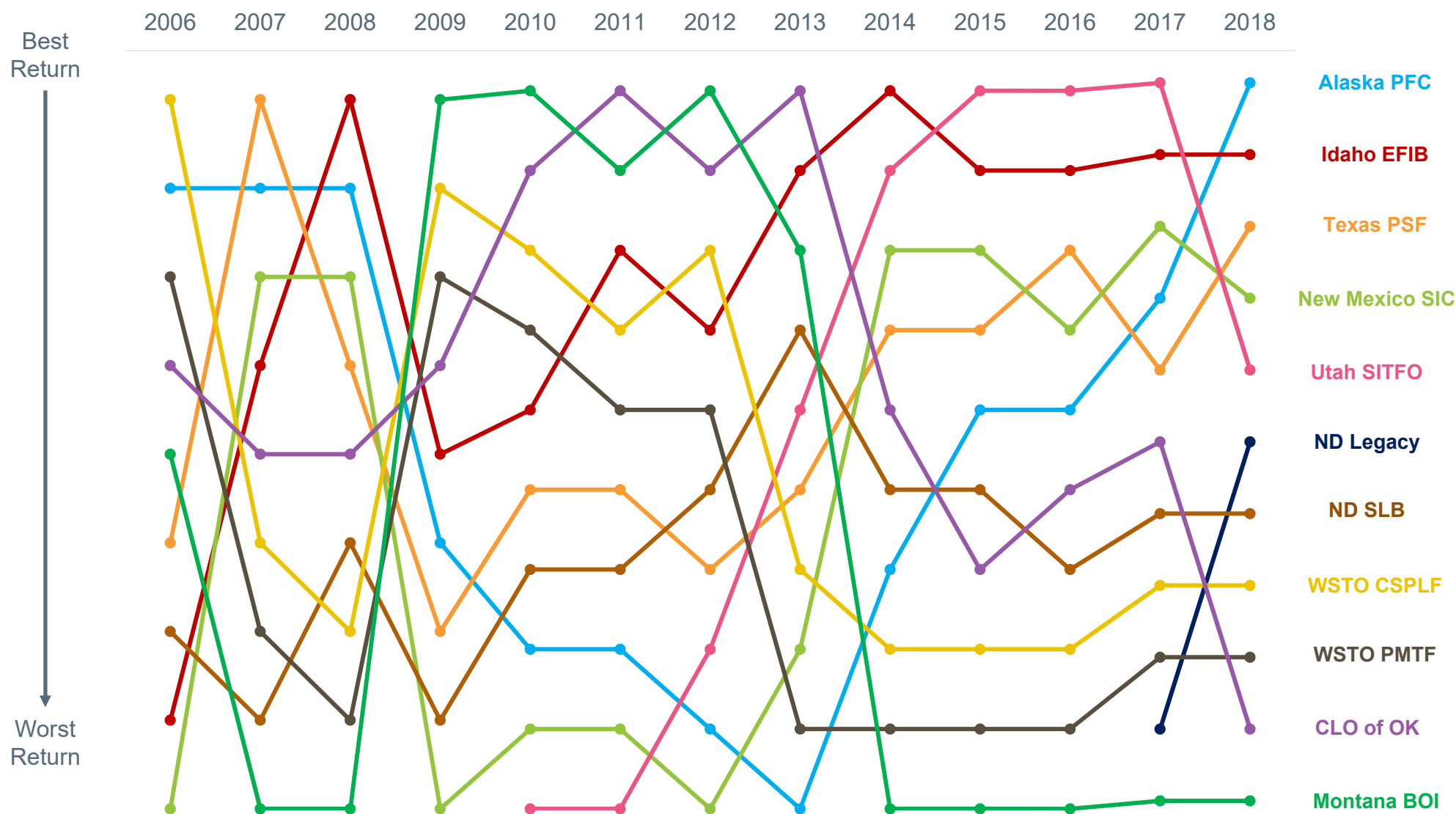
10 Year Returns



All data is as of June 30, 2018 and is gross of fees.
Performance shown for North Dakota SLB is net of fees prior to 2010.
Performance is reported in US Dollars and is reflective of permanent fund assets only.

Ranking of Rolling 5 Year Returns

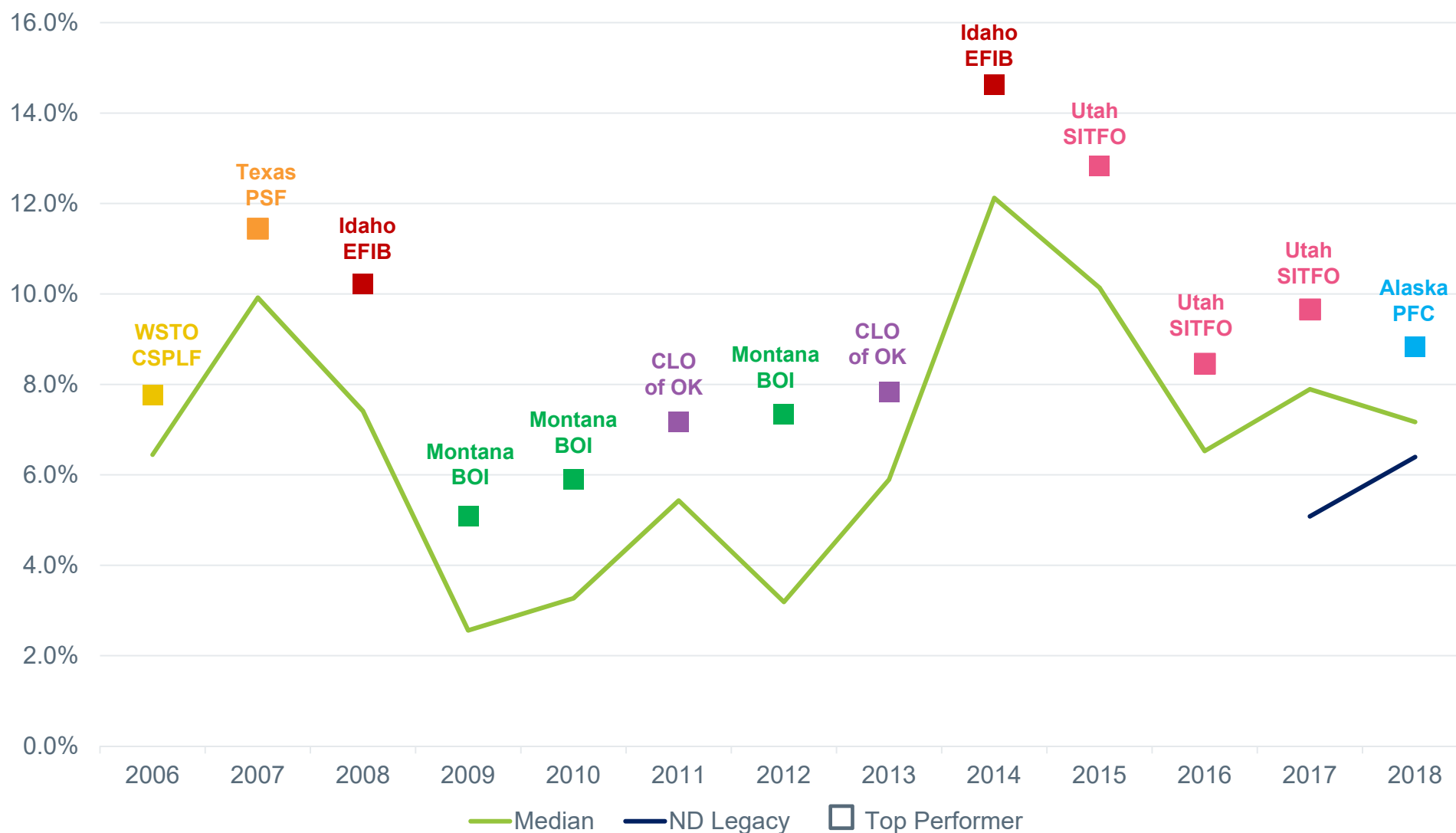
❖ The below chart ranks the 5-year return of each Fund from 2006 to 2018.



Performance is gross of fees.
Performance shown for North Dakota SLB is net of fees prior to 2010.

Rolling 5 Year Returns

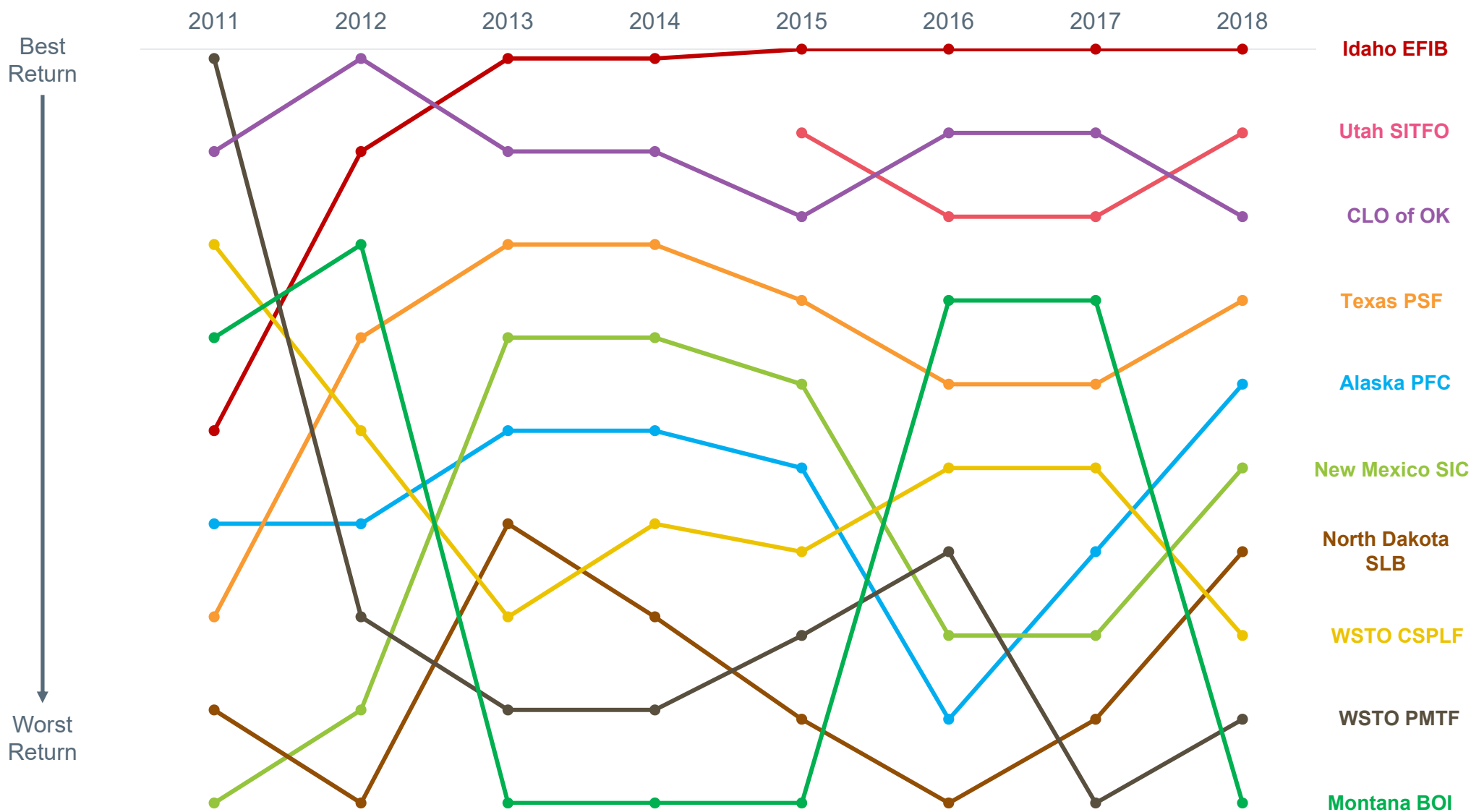
5-Year Rolling Performance



Performance is gross of fees.
Performance for North Dakota SLB is net of fees prior to 2010.

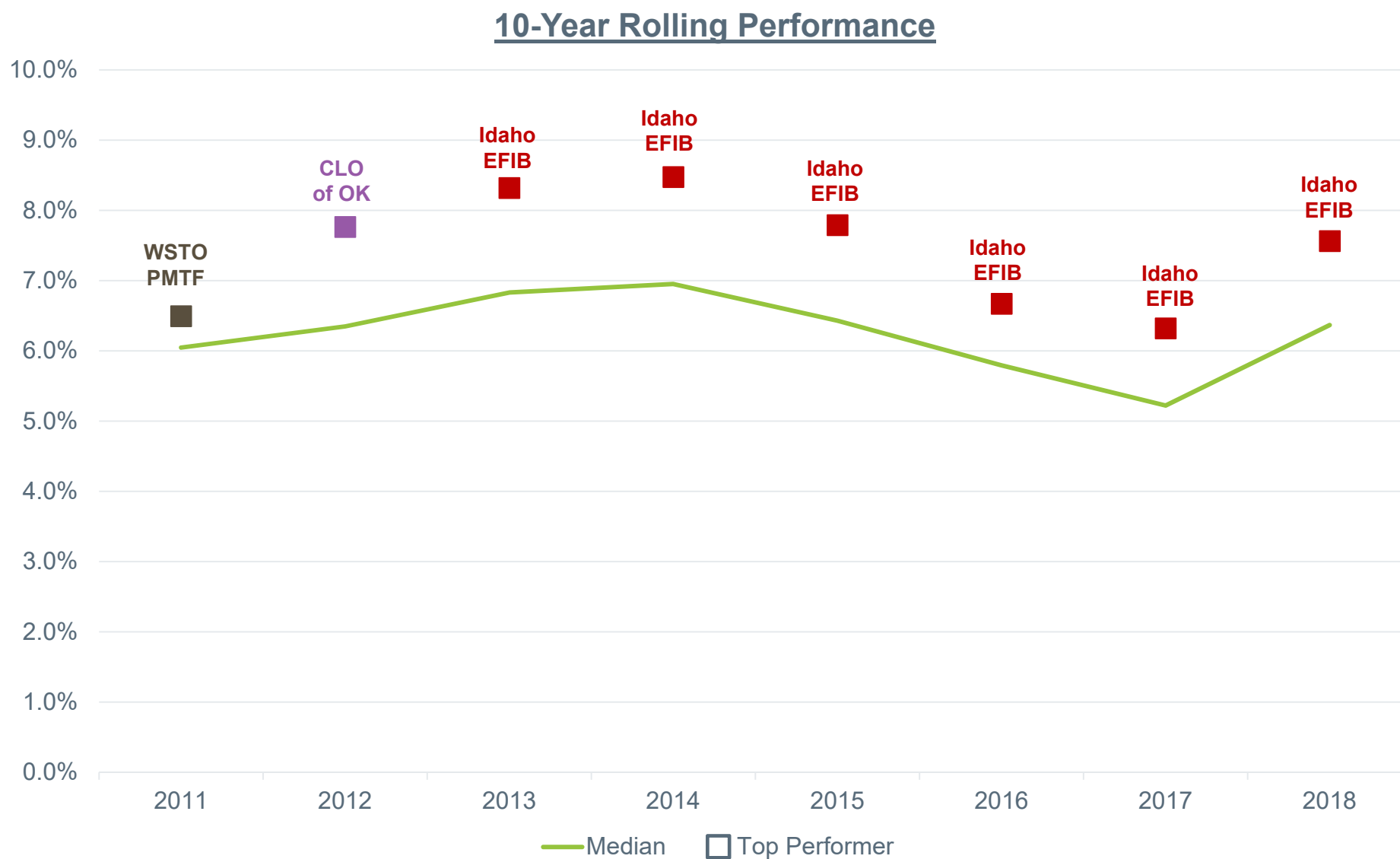
Ranking of Rolling 10 Year Returns

❖ The below chart ranks the 10-year return of each Fund from 2011 to 2018.



Performance is gross of fees.
Performance shown for North Dakota SLB is net of fees prior to 2010.

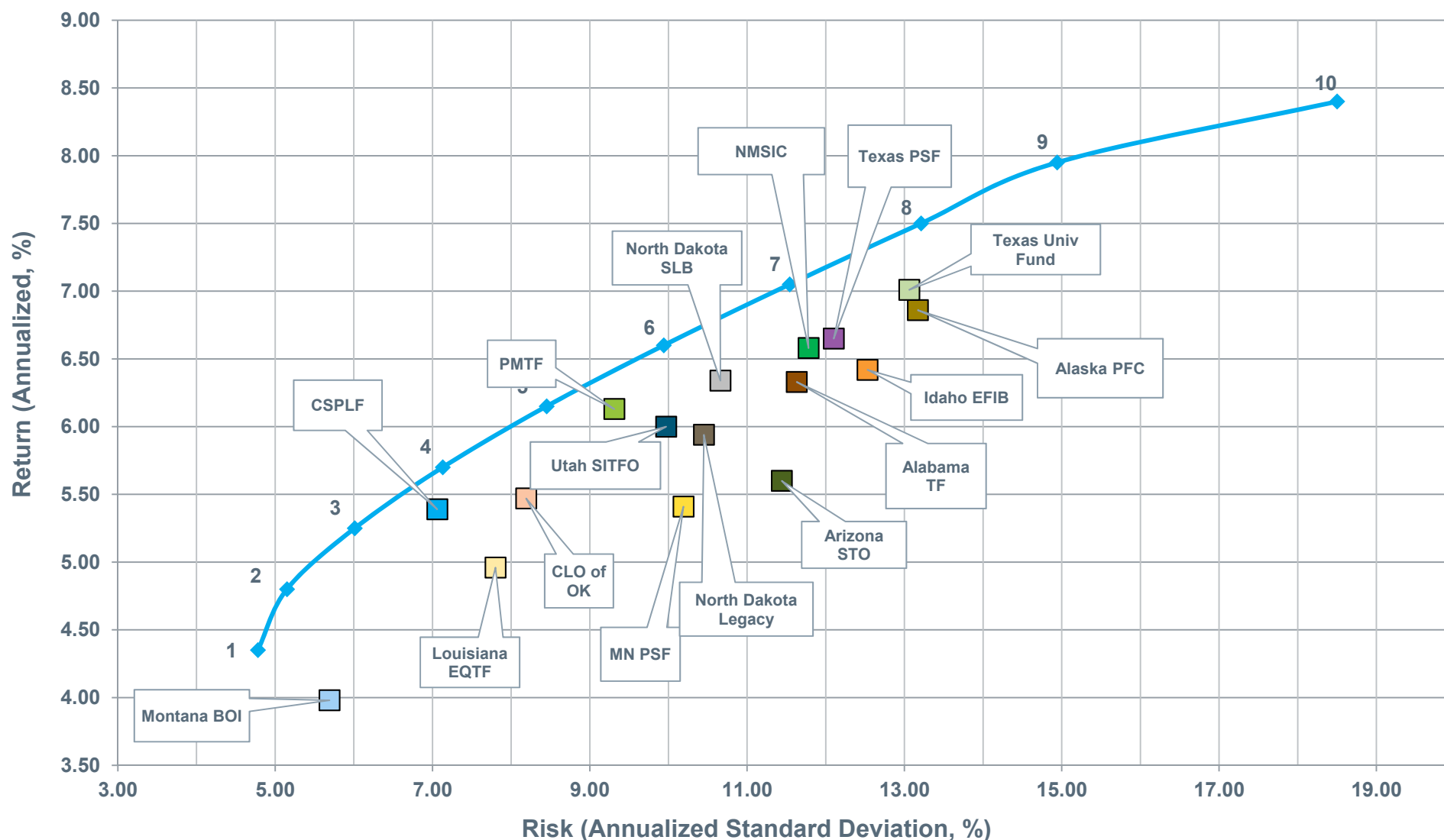
Rolling 10 Year Returns



Performance is gross of fees.
Performance for North Dakota SLB is net of fees prior to 2010.

Asset Allocation vs. Objectives

- ❖ The expected risk and return of each US SWF is modeled below using RVK's 2019 capital markets assumptions, and Fund asset allocations as of June 30, 2018.*



*Best efforts were made to accurately capture each funds asset allocation at 6/30/18, however may not fully portray all nuances associated with each funds allocation structure.

Asset Allocation vs. Objectives

- ❖ Using RVK's 2019 capital markets assumptions and Monte Carlo simulation, the North Dakota Legacy Fund has the following probabilities of achieving the below annualized real rates of return over a 10-year period.
- ❖ For reference, we also include the probabilities for a traditional "Endowment" allocation of 70% global equities and 30% US fixed income and the average peer allocation.

	North Dakota Legacy Fund	Average Peer Asset Allocation	70% Global Equity/30% US Fixed Income
3.0% Real Return	51%	52%	55%
4.0% Real Return	38%	37%	45%
5.0% Real Return	26%	24%	35%

Estimated Downside Risk (1-Year, 1 st Percentile nominal return)	-19.32%	-16.05%	-28.17%
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Governance & Decision Making Models



Governance and Investment Decision Making

Considerations for Governance and Decision Making

I	II	III	IV
<i>Defining the Scope of Authority</i>	<i>Selecting Committee Members</i>	<i>Maintaining Strategic Continuity</i>	<i>Optimizing Decision Making and Execution</i>
<ul style="list-style-type: none">❑ Determining the optimal scope of delegated committee authority❑ Identifying responsibilities to delegate to staff or third parties	<ul style="list-style-type: none">❑ Establishing an optimal Board size❑ Identifying key member roles❑ Identifying value-added member attributes❑ Recruiting qualified committee members❑ Evaluating committee member performance❑ Enforcing accountability	<ul style="list-style-type: none">❑ Educating new and existing committee members❑ Creating comprehensive and practical documentation❑ Establishing a continuous, disciplined strategic review process	<ul style="list-style-type: none">❑ Prioritizing issues appropriately❑ Creating impactful meeting materials❑ Ensuring consistent meeting attendance❑ Ensuring adequate meeting preparation❑ Executing meeting facilitation that balances efficiency and thoroughness
Common Obstacles			
<ul style="list-style-type: none">❑ <i>Stakeholder time availability</i>	<ul style="list-style-type: none">❑ <i>Organizational influence of committee members (e.g., major donors)</i>❑ <i>Candidate pool constraints, such as:</i><ul style="list-style-type: none">• <i>Current committee membership,</i>• <i>Legally required representation</i>	<ul style="list-style-type: none">❑ <i>Committee member turnover</i>❑ <i>Infrequency of committee meetings</i>❑ <i>Pre-existing investment biases of committee members</i>	<ul style="list-style-type: none">❑ <i>Meeting time constraints</i>❑ <i>Committee member availability and engagement</i>❑ <i>Cognitive decision-making biases</i>

- ❖ Although all aspects of the governance and investment decision making process are critical, for purposes of this survey, we are focused on Considerations I and III
 - Defining the Scope of Authority
 - Maintaining Strategic Continuity

Governance and Investment Decision Making

Defining the Scope of Authority

- ❖ Defining the scope of authority involves:
 1. Defining which group within the structure is responsible for (and has the authority to execute) which investment activities.
 2. Clearly documenting the decision making process so that there is no confusion about which group is responsible for certain activities.

- ❖ *“The institutional frameworks across SWFs differ. Regardless of the governance framework, the operational management of an SWF should be conducted on an independent basis to minimize potential political influence or interference that could hinder the achievement of the SWF’s objectives.”*
 - IMF Working Paper - Sovereign Wealth Funds: Aspects of Governance Structures and Investment Management

- ❖ *“Sound governance is critical to maintaining stakeholder and public confidence in the Guardians and the Fund. As an autonomous Crown entity, the Guardians is legally separate from the Crown. This means that, although we are still accountable to the Government, we have operational independence regarding investment decisions and are, instead, overseen by an independent Board.”*
 - New Zealand SuperFund (nzsuperfund.nz)

- ❖ *“Key determinates of APFC’s governance success include: an effective independent management and organizational structure, the adherence to accountability measures, defined legal and regulatory responsibilities, established policies and procedures, as well as being a leader in establishing best practice standards.”*
 - Alaska Permanent Fund Corporation (afpc.org)

Governance and Investment Decision Making

Defining the Scope of Authority

The Santiago Principles

- ❖ The Santiago Principles consists of 24 generally accepted principles and practices voluntarily endorsed by International Forum of Sovereign Wealth Funds (IFSWF) members.
- ❖ The Santiago Principles promote transparency, good governance, accountability and prudent investment practices whilst encouraging a more open dialogue and deeper understanding of SWF activities.
- ❖ Drafted by the International Working Group of SWFs and welcomed by the IMF's International Monetary Financial Committee in 2008, the objectives of the Santiago Principles are:
 - To help maintain a stable global financial system and free flow of capital and investment;
 - To comply with all applicable regulatory and disclosure requirements in the countries in which SWFs invest;
 - To ensure that SWFs invest on the basis of economic and financial risk and return-related considerations; and
 - To ensure that SWFs have in place a transparent and sound governance structure that provides adequate operational controls, risk management, and accountability.

Governance and Investment Decision Making

Defining the Scope of Authority

A Selection of Santiago Principles – Generally Accepted Principles and Practices (“GAPP”)

- ❖ GAPP 4: There should be clear and publicly disclosed policies, rules, procedures, or arrangements in relation to the SWF’s general approach to funding, withdrawal, and spending operations.
- ❖ GAPP 6: The governance framework for the SWF should be sound and establish a clear and effective division of roles and responsibilities in order to facilitate accountability and operational independence in the management of the SWF to pursue its objectives.
- ❖ GAPP 7: The owner should set the objectives of the SWF, appoint the members of its governing body(ies) in accordance with clearly defined procedures, and exercise oversight over the SWF’s operations.
- ❖ GAPP 9: The operational management of the SWF should implement the SWF’s strategies in an independent manner and in accordance with clearly defined responsibilities.
- ❖ GAPP 10: The accountability framework for the SWF’s operations should be clearly defined in the relevant legislation, charter, other constitutive documents, or management agreement.
- ❖ GAPP 13: Professional and ethical standards should be clearly defined and made known to the members of the SWF’s governing body(ies), management, and staff.
- ❖ GAPP 14: Dealing with third parties for the purpose of the SWF’s operational management should be based on economic and financial grounds, and follow clear rules and procedures.
- ❖ GAPP 16: The governance framework and objectives, as well as the manner in which the SWF’s management is operationally independent from the owner, should be publicly disclosed

Governance and Investment Decision Making

Defining the Scope of Authority

- ❖ Representative separation of roles and responsibilities in formulating and implementing investment policy between a SWF's owner and the fund manager

Responsibilities of the Owner

- Articulate fund objectives
- Define risk tolerances
- Define investment horizon
- Review investment performance

Retained or Delegated by the Owner to the Fund

- Approve:
 - Strategic asset allocation
 - Policy benchmarks
 - Active risk budget

Responsibilities of the Fund: Implementation of the Investment Policy

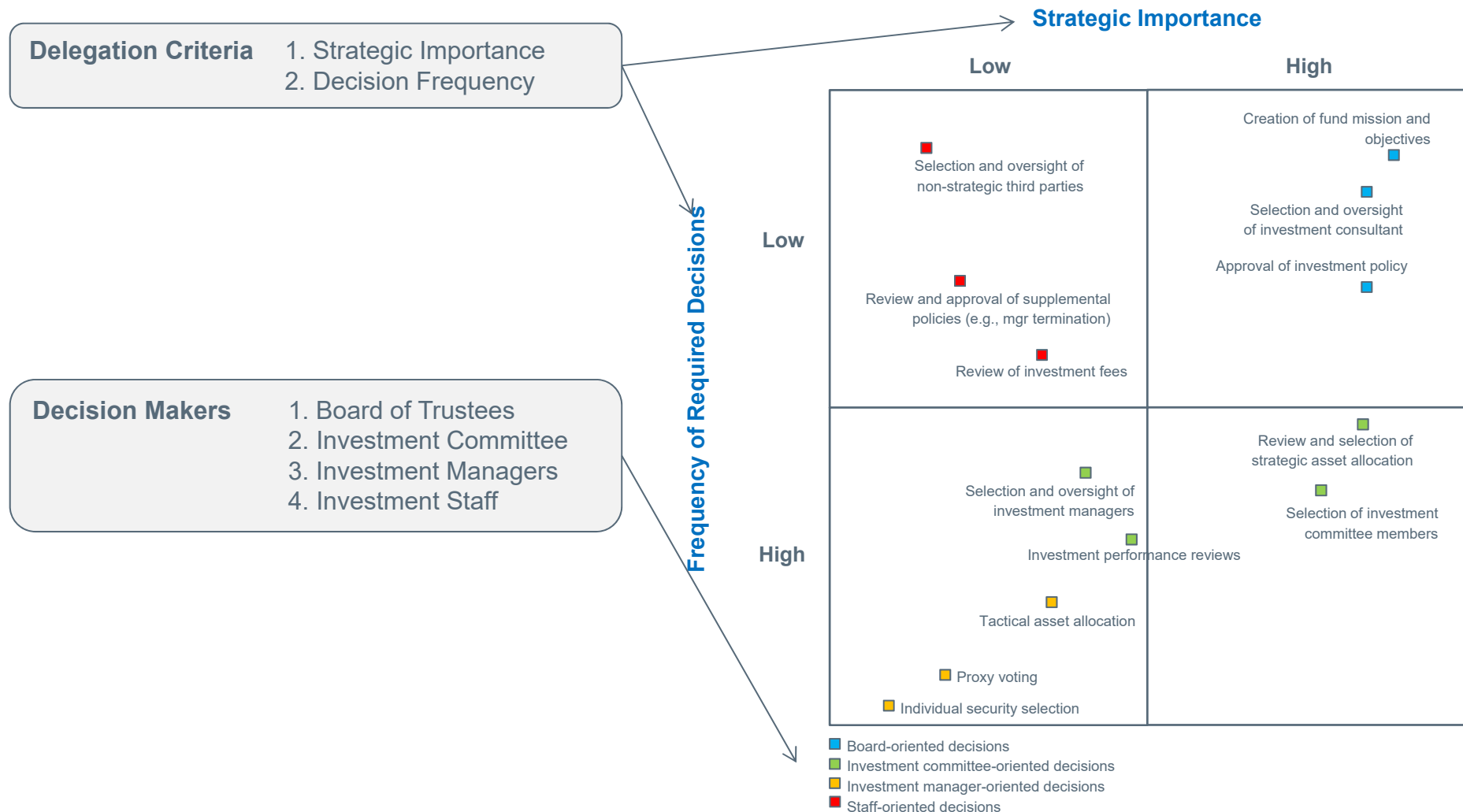
- Propose capital markets assumptions
- Implement strategic asset allocation
- Manage portfolios in-house or select external managers
- Measure risk and performance
- Report to the owner and stakeholders

Governance and Investment Decision Making

Defining the Scope of Authority

- ❖ A delegation framework exercise can be a helpful tool to establish who is responsible for each task

Delegation Framework

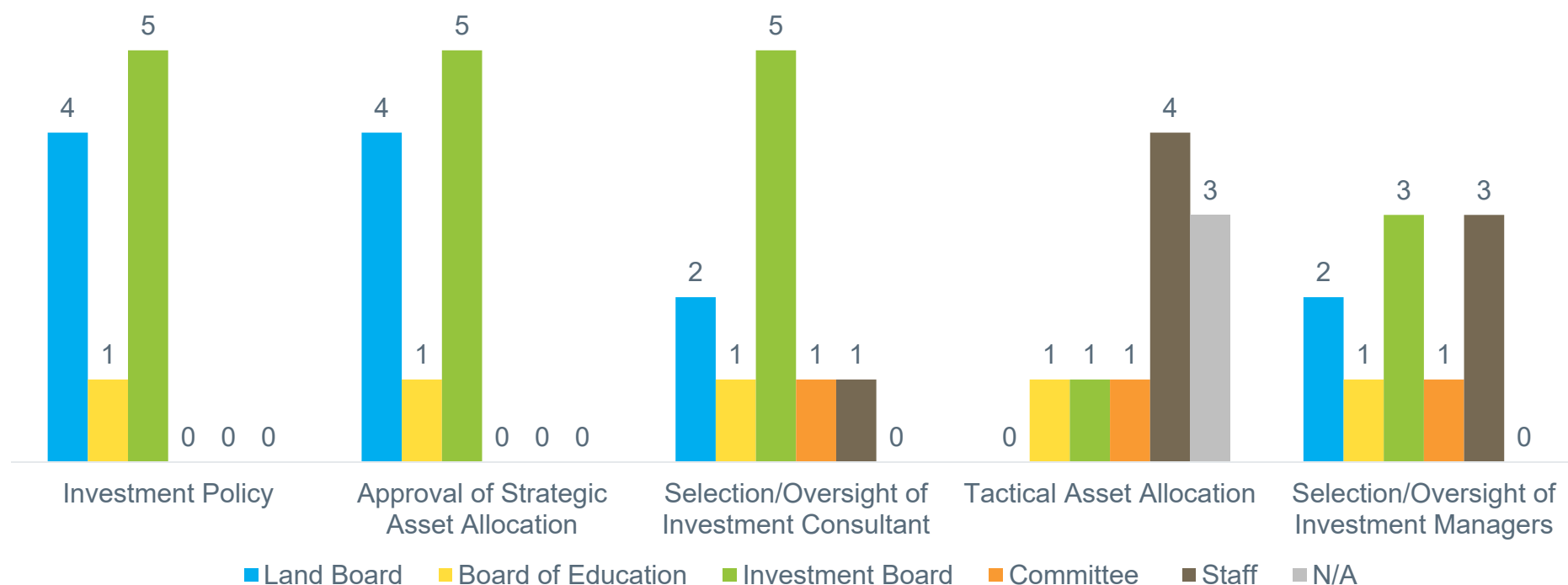


Governance and Investment Decision Making

Defining the Scope of Authority

- ❖ Out of the 10 Funds surveyed, some form of Investment Board* is most likely to have the responsibility of approving the strategic asset allocation and investment policy. The Land Board owns these decisions for 4 of the 10 funds.
- ❖ Tactical asset allocation and selection of asset managers are the tasks most likely to be delegated to staff.

Survey Results - Primary Responsibilities



*Investment Board refers to any Board, Council or Commission that has primary responsibility for investment decision making and is not entirely comprised of elected officials.

Governance and Investment Decision Making

Defining the Scope of Authority

- ❖ Composition of the entity with primary investment responsibility for each survey respondent

	Alaska PFC	CLO of OK	Idaho EFIB	Montana BOI	New Mexico SIC
Board Composition	Quasi-independent state agency. 6 Trustees appointed by Governor. Two must be cabinet members, and include the commissioner of revenue. Four public members.	Commissioners consist of Governor, Lt. Governor, Superintendent of Public Instruction, Audit and Inspector, Secretary of Agriculture).	Investment Board consists of six individuals from community with investment expertise appointed by Governor, 2 legislators, 1 representative from education. Investment Board reports to Land Board annually.	Attached to Dept. of Commerce but functions as an independent, quasi-judicial board. Consists of 9 members appointed by the Governor, including 7 members with a background in the financial community, small business, agriculture, or labor, and who are informed and experienced in the subject of investments. One member from PERS Board and one member from TRS Board.	Council consists of 11 members: Governor, Treasurer, Commissioner of Public Lands, Secretary of Finance and Administration, 4 public members appointed by Legislative Council, 3 public members appointed by the Governor.

Governance and Investment Decision Making

Defining the Scope of Authority

	North Dakota Legacy	North Dakota SLB	Texas PSF	Utah SITFO	Wyoming STO
Board Composition	State Investment Board – 11 member board includes Lt Governor, State Treasurer, Insurance Commissioner, Land Commissioner, Exec. Director of Workforce Safety and Insurance, plus 3 members of PERS and 3 members of TFFR.	Board consists of Governor, Secretary of State, Treasurer, Attorney General, Superintendent of Public Instruction.	Board of Education consists of 15 Elected Board Members. Chair is appointed by Governor.	Quasi-governmental agency that reports to the executive branch and the legislature. 5 Board members. 4 from the community with extensive investment experience. State Treasurer is Chair. Prior to 2016 Treasurer was sole fiduciary.	Board consists of Governor, Treasurer, Auditor, Secretary of State, Superintendent of Public Instruction.

Governance and Investment Decision Making

Maintaining Strategic Continuity

- ❖ Maintaining the strategic continuity of an investment program is a key to long-term success, therefore maximizing consistency of the key decision makers should be a top priority.
- ❖ There are inherent challenges when there are changes in the leadership of the governing body, but a commitment to the long-term strategic approach should be a top consideration.

Key Challenges

1. Investment Committee and Board Turnover
2. Creating comprehensive and practical documentation
3. Establishing a continuous, disciplined strategic review process
4. Hyper-reactivity to short-term market events

Tactics to Promote Strategic Continuity

1. Committee and Board Member Orientation
2. Annual Investment Strategy Reviews
3. Rolling Work Plans
4. Strategic Objective Statements

Governance and Investment Decision Making

Maintaining Strategic Continuity

- ❖ Board terms of survey respondents

	Alaska PFC	CLO of OK	Idaho EFIB	Montana BOI	New Mexico SIC
Term Length	4 Years (with one new appointee each year)	Members are defined by their term in office	4 Years	4 Years (coincides with gubernatorial term)	5 Years with staggered terms

	North Dakota Legacy	North Dakota SLB	Texas PSF	Utah SITFO	Wyoming STO
Term Length	Legislative member terms are defined by their time in office. PERS and TFFR members are determined by their respective Boards	Members are defined by their term in office	2 Years	6 Years	Members are defined by their term in office

Constraints and Spending



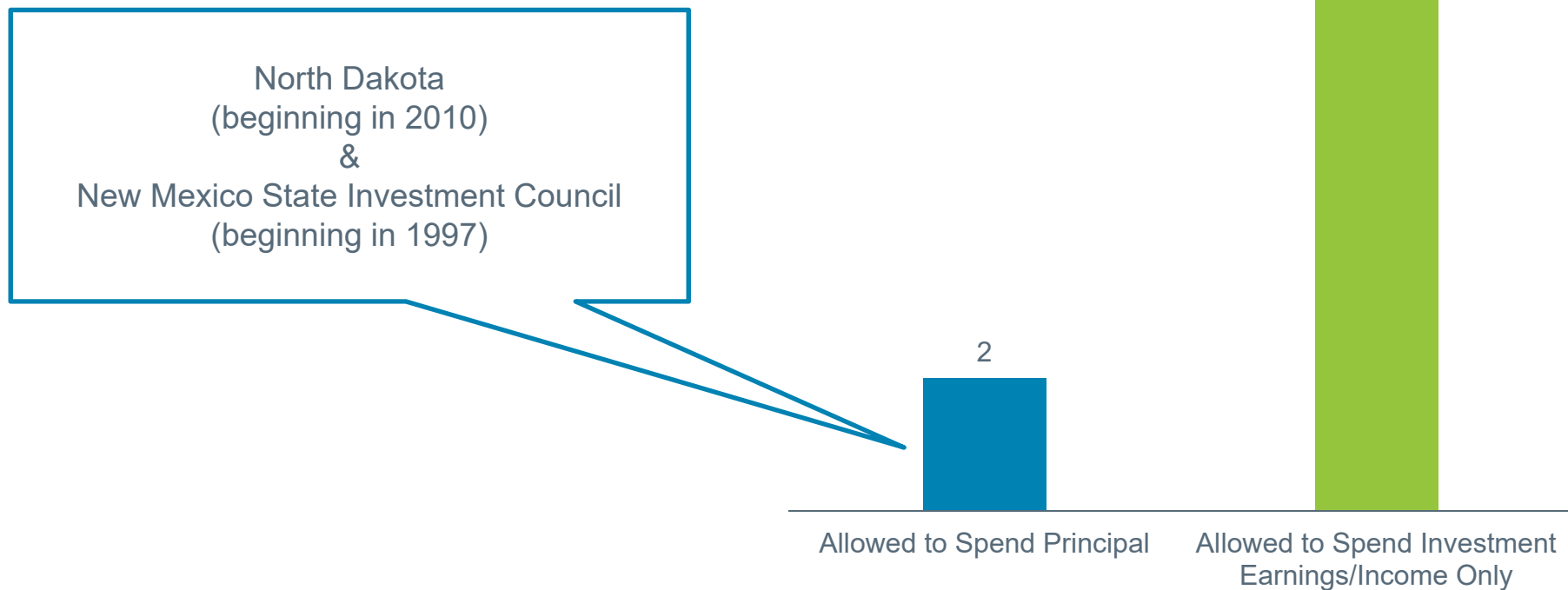
Constraints and Spending

Objective, Constraints, and Spending Policy

	North Dakota Legacy Fund
Fund Horizon:	<ul style="list-style-type: none">• Permanent Fund (Perpetual)
Investment Constraints:	<ul style="list-style-type: none">• Uncertainty around distribution amounts and timing requires relatively high liquidity level
Investment Goals:	<ul style="list-style-type: none">• Nominal rate of return of 6%
Spending Policy:	<ul style="list-style-type: none">• Investment earnings distributed to general fund at end of each biennium. Additionally up to 15% of corpus may be distributed every 2 years.
Observed Allocation Changes over Past 10 Years	<ul style="list-style-type: none">• Initial implementation of long-term asset allocation occurred in 2014.

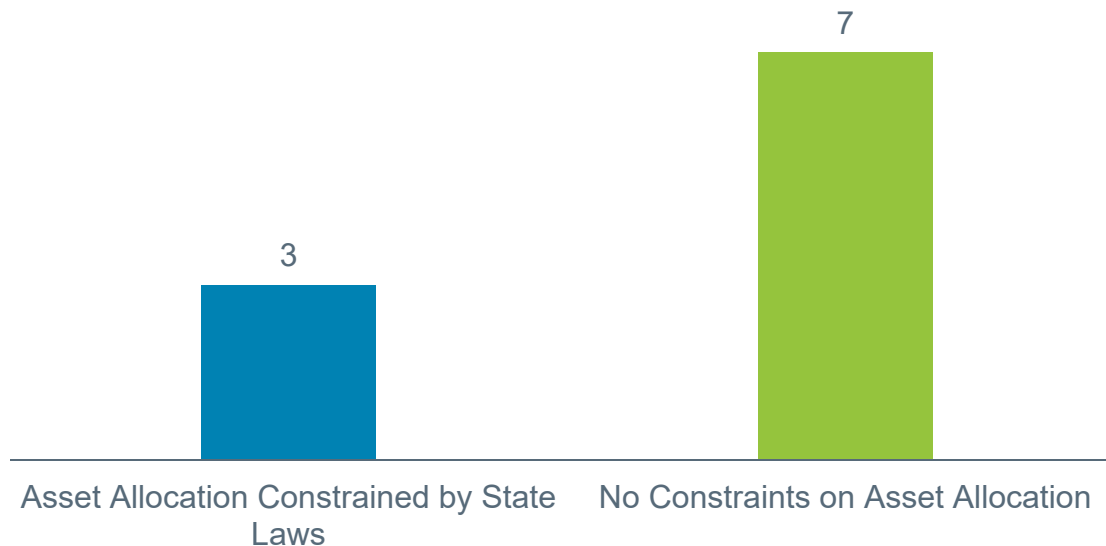
Constraints and Spending

- ❖ Out of the 10 Funds interviewed, there are two Funds that are not restricted to using income (interest, dividends, realized gains) for distributions.
- ❖ Because these funds are allowed to spend principal, they are free to pursue a true, “Total Return” investment approach.



Constraints and Spending

- ❖ There are 3 Funds with Statutory Constraints on Asset Allocation:
 - CLO of Oklahoma – maximum of 60% may be invested in equities
 - Wyoming STO – maximum of 70% may be invested in equities and alternative investments
 - Montana Board of Investment – may not invest in equities

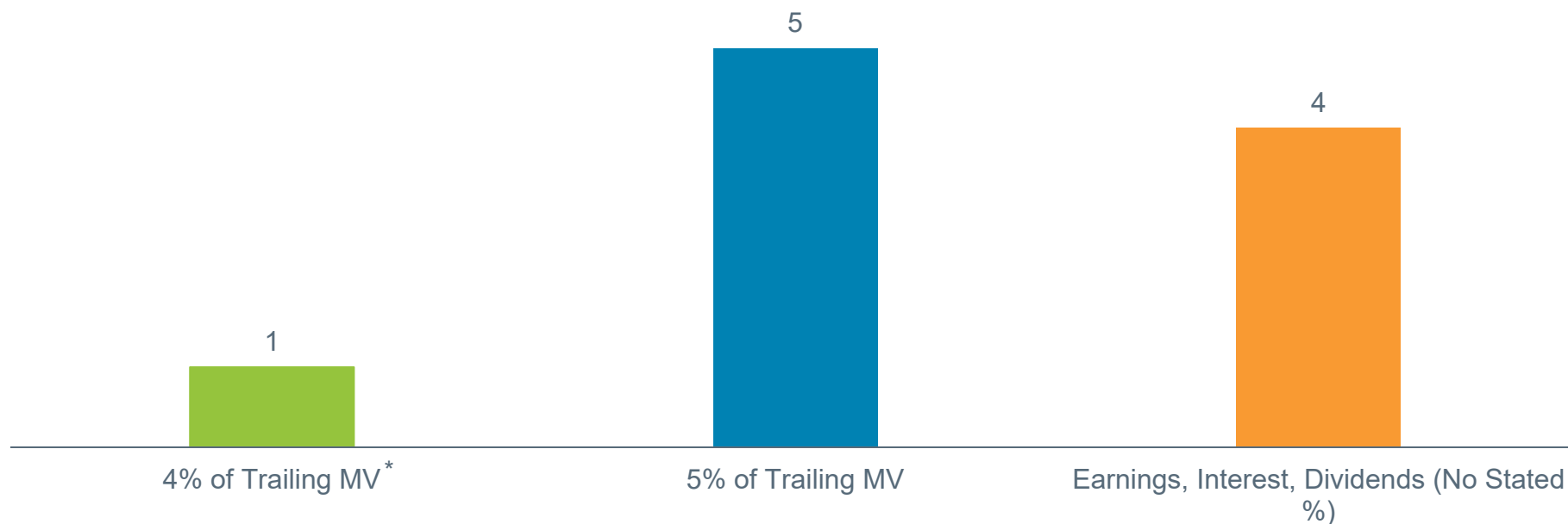


Constraints and Spending

Spending Framework

- ❖ There are two commonly used frameworks for determining the level of distributions.
 1. Predetermined percentage (commonly 4-5%) applied to the trailing 3-5 year total fund market value.
 2. Investment Income (realized gains/losses, interest, and dividends).

Survey Results - Spending Methodology



*Utah SITFO's spending policy is an average of: 4% of the average market value over the past 12 quarters & prior year distribution plus inflation. Spending is also capped at no greater than the trailing 4% of trailing 12 quarter average.

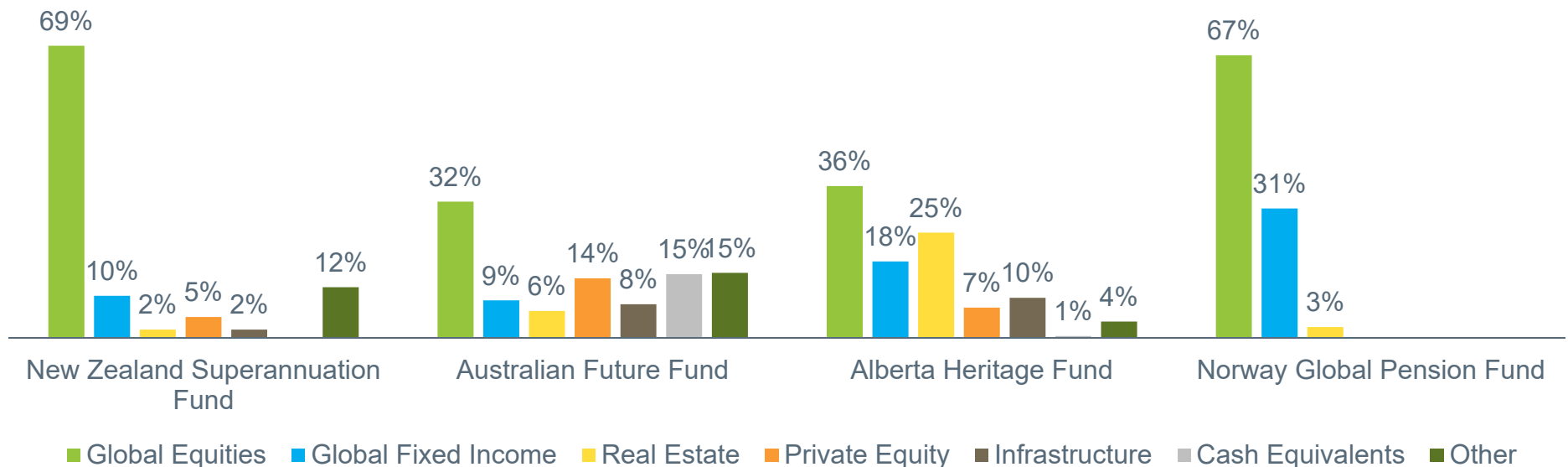
International Perspective



International Perspective

- ❖ Asset allocation for a subset of international SWFs is shown below (New Zealand Super Fund, Australian Future Fund, Alberta Heritage Fund, and Norway Global Pension Fund).
 - Fixed income allocations are low compared to US counterparts (all Fund allocations are lower than the peer median of 37%).

Asset Allocation as of June 30, 2018



New Zealand allocation to "Other" consists of timber (6%), other private markets (3%), other public markets (2%) and rural farmland (1%).
Australia allocation to "Other" consists of alternative assets not broken out (15%).
Alberta allocation to "Other" consists of timberland (3%) and overlays (1%).

Concluding Thoughts



Concluding Thoughts

❖ Asset Allocation

- Observations of asset allocation and performance appear to support the notion that asset allocation is the primary determinant of risk and returns. Although the US SWFs surveyed all have a perpetual nature and long-term objectives, there is a surprisingly high degree of risk asset allocation variance among the funds – which appears to be largely driven by current and historical constraints
- Ability to earn a return above inflation over the next 10 years that supports a 5% real return objective appears challenged, although other dynamics such as contributions and spending policy mechanisms likely influence how impactful this is for each institution
- Long-term, higher allocations to equities and other return seeking assets appears appropriate for perpetual funds with intergenerational objectives
 - Those looking to increase risk exposures may wish to take a gradual approach given current valuation levels

Concluding Thoughts

❖ Governance/Investment Decision Making

- Defining the Scope of Authority
 - Best practices suggest that fund owners should retain **formulation** of investment objectives, while **implementation** is independent of the political process
 - The majority of US SWFs surveyed appear to have moved in this direction, although there does still appear to be significant involvement by elected officials in the implementation process
 - Regardless of the structure chosen, it is critical to clearly define who is responsible for what, and clearly document
 - The process should be transparent, and provide appropriate accountability
 - The Santiago Principles are a useful filter through which to evaluate potential governance structures
- Maintaining Strategic Continuity
 - Strategic Continuity (consistent application of long-term asset allocation approach) is one of the most critical factors in successful long-term investing
 - Funds that have integrated community members (non-elected) with investment experience and lengthened Board terms may be in better position to maintain strategic continuity
 - To the extent that board turnover is experienced, it is important to establish procedures to educate new decision makers on the mission, objectives, history, constraints, asset allocation strategy, and the importance of strategic continuity

Concluding Thoughts

❖ Constraints and Spending

- Most funds do not appear to have asset allocation constraints codified in statute, although there are a handful that do. While it is appropriate for asset owners to determine risk tolerance, care should be taken to ensure that constraints do not interfere with achieving long-term objectives
- The majority of funds are not allowed to violate corpus, and can only distribute investment earnings, most commonly defined as interest, dividends, and net realized gains/losses
 - Two states have amended their constitution to remove this constraint and allow for a true total return approach.
- An “earnings only” distribution model introduces challenges and does appear to potentially influence asset allocation decision making in some cases (desire to avoid realized losses, emphasis on income producing assets)
 - This has the potential to limit a SWFs ability to achieve intergenerational equity if the resulting allocations are too conservative
 - Many SWFs utilize an earnings reserve fund to help stabilize current spending
 - Funds utilizing reserve accounts have widely varying approaches to the size of the reserves, how they are allocated, and whether or not the legislature can access reserve accounts
- Care should be taken to ensure that the unique constraints, spending policy, and distribution mechanisms do not unnecessarily prohibit a cohesive integration with the asset allocation strategy to maximize benefits for both current and future generations

PORTLAND

BOISE

CHICAGO

NEW YORK

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INFORMATIONAL

To: State Investment Board
From: Dave Hunter and Darren Schulz
Date: September 20, 2019
Subject: Legacy Fund Earnings Committee Assistance

The next Legacy Fund Earnings Committee (Committee) is tentatively scheduled on Tuesday, November 12th, and Wednesday, November 13th, in Fargo or West Fargo.

In response to a ND Legislative Council request to obtain the RVK Sovereign Wealth Fund (SWF) report for distribution to the Committee, RIO stated its willingness to present these survey results to the Legacy Fund Earnings Committee, if the Committee so desires. (RIO has already discussed this option with RVK representatives including RIO's Summary of RVK's US SWF report.)

RIO also stated its willingness to share recent discussions with several other SWF representatives including informed leaders from Alaska, Wyoming, New Mexico and others.

Recent SWF Conference Observations:

1. The Alaska Permanent Fund (Alaska) utilizes the Percent of Market Value (POMV) approach based on the fund's market value for the 5 prior fiscal year ends to establish an aggregate spending rate. Alaska's legislature then decides "how to 'split' the POMV between dividends and general spending". "The distribution formula is (1) 21% of the 5 years earnings and the (2) 50% of that number to the dividend." Earnings for the dividend distribution formula is defined as interest and dividend income plus net realized gains/losses (like ND's current earnings definition). The difference between the 5% POMV amount and the "Dividend" is distributed to the State's General Fund.
2. The Wyoming Permanent Mineral Trust Fund (Wyoming) utilizes the funds' market value for the prior 5 fiscal year ends in determining the spending rate for future years. Wyoming is currently using a 5% annual spending rate for FY 2020, however, they strive to reduce the rate to 4.75% in FY 2021 and 4.50% in FY 2020.

If the Committee so desires, RIO will share the above referenced materials and observations in addition to the attached one-page Estimated Legacy Fund Earnings Example.

North Dakota State Investment Board Meeting Minutes Excerpt – August 23, 2019:

Legacy Fund Earnings Committee – Mr. Hunter reviewed the conversations he has had with the Legacy Fund Earnings Committee. Mr. Hunter has provided information to the Committee on the investments and earnings of the Legacy Fund. He has also reviewed historical annual earnings, investment volatility, the current “earnings” definition, and an alternative approach for estimating future earnings. **Discussion has taken place on developing a sustainable spending policy using the Percent of Market Value (POMV) approach for estimating future “earnings” for potential distribution from the Fund.** Mr. Hunter indicated the POMV approach has been used by many other similar funds including Alaska’s Permanent Fund and the ND Common Schools Trust Fund. RIO investment personnel proposed a POMV approach based on the Legacy Fund’s current asset allocation policy and an assumed long-term rate of return of approximately 6% less an assumed inflation rate of 2%. This annual sustainable spending policy rate of 4% was suggested by Callan in early 2019 and is conservative when compared to the Alaska Permanent Fund at 5.25% per annum or the ND Common Schools Trust Fund at 10% per biennium or 5% per annum, noting the average spending rate for endowments has ranged 4.2% to 5.2% in the prior decade.

Discussion followed on the POMV. After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY DR. LECH AND CARRIED BY A ROLL CALL VOTE THAT THE SIB TAKE A POSITION TO SUPPORT A LEGACY FUND EARNINGS ESTIMATE FORMULA SIMILAR TO THAT OF THE ND COMMON SCHOOLS TRUST FUND WHICH IS A PERCENT OF MARKET VALUE APPROACH.

AYES: MR. OLSON, MR. SEIBEL, COMMISSIONER SMITH, MS. GUMERINGER, COMMISSIONER GODFREED, MS. SMITH, MR. MILLER, TREASURER SCHMIDT, MR. KLIPFEL, DR. LECH, AND LT. GOVERNOR SANFORD

NAYS: NONE

MOTION CARRIED

For the record, it is not the SIB’s fiduciary responsibility to determine the POMV percentage. However, the SIB deemed it to be reasonable and prudent to recommend a sustainable spending policy framework for the North Dakota Legacy Fund. The development of sustainable spending policy for the Legacy Fund should be a collaborative effort between RIO investment personnel, the SIB, the Legacy and Budget Stabilization Fund Advisory Board, the Legacy Fund Earnings Committee and North Dakota’s Legislative, Executive and Judicial branches.

North Dakota Legacy Fund

Estimated "Earnings" Examples Using Percent of Market Value (POMV) Approach

As of June 30, 2019

	Deposits	Total Net Earnings	Net Increase/ (Decrease)	Ending Net Position
FY2016	434,853,950	45,851,680	480,705,630	3,806,541,341
FY2017	399,501,134	479,595,256	879,096,390	4,685,637,731
FY2018	529,870,755	360,575,532	890,446,287	5,576,084,018
FY2019 *	692,568,943	308,838,126	1,001,407,069	6,577,491,087
FY2020 **	643,000,000	-	643,000,000	7,220,491,087
FY2021	<i>The most recent fiscal year end is excluded each biennium</i>			-
	Average net position in 5 prior FYE's			5,573,249,053

Wyoming Perm. Min. Trust Fund is reducing its Spending Policy (as a POMV for the 5 prior years) from:
 5.00% in FY 2020
 4.75% in FY2021
 4.50% in FY 2020

Assumed Annual Spending Rate	2.00%	3.00%	4.00%	5.00%
Biennial Spend Rate Policy (x 2)	2	2	2	2
Biennial Spending Rate Examples	222,929,962	334,394,943	445,859,924	557,324,905

** FY2019 amounts are unaudited and subject to change, but deemed to be materially accurate.*

** FY2020 Deposits are forecasted estimates whereas FY2020 Total Net Earnings are assumed to be zero until September of 2020.*

1. The Percent of Market Value approach is a prudent, responsible and transparent method for defining future Legacy Fund earnings.
2. The POMV approach is commonly used by similar investment funds, including North Dakota's Common Schools Trust Fund, in developing a sustainable spending policy. It is widely accepted as a best practice by many endowments and foundations.
3. The POMV approach uses the Legacy Fund's average ending market value from the prior five fiscal years and then applies an earnings distribution of 2, 3, 4, or 5 percent to establish a sustainable spending policy. The SIB encourages the Legislature to embrace this approach through legislation which should serve to benefit all North Dakotans in the future. This approach seeks to eliminate undue risk when developing a sustainable spending policy for future state budgeting and reporting purposes.
4. The Percent of Market Value approach increases transparency, is sustainable, and is a proven method that is used by other funds similar to the Legacy Fund. Moving to the POMV approach will give the Legislature a consistent approach for utilization in the budgeting process while protecting the integrity of the Legacy Fund.

All future values and estimates are unaudited and subject to change given the inherent volatility of commodities and the capital markets.

Agenda Item III.C.3.

State Investment Board puts Legacy Fund investments to work for North Dakotans, makes changes to further improve performance

Board increases loan fund for new businesses by \$100M, adopts best practice for defining Legacy Fund earnings

BISMARCK, N.D. – The North Dakota State Investment Board (SIB) has dedicated an additional \$100 million in Legacy Fund investments to providing cost-efficient financing to companies seeking to develop new businesses and infrastructure in North Dakota – one of several actions taken by the board to further improve the Legacy Fund’s performance and return for North Dakotans.

The \$100 million addition to the Bank of North Dakota’s Match Loan Certificates of Deposit (CD) Investment Program will increase the program’s total size from \$200 million to \$300 million.

The state-owned Bank of North Dakota requested the increase to support future anticipated growth in this economic development program, which has been in place for over 30 years.

“This increase in funding will provide greater access to capital for entrepreneurs looking to launch new manufacturing, processing and value-added businesses and important infrastructure in North Dakota, while also ensuring that more Legacy Fund dollars are being invested right here in North Dakota,” said Lt. Gov. Brent Sanford, who chairs the SIB.

In addition to increasing the match loan funding, the board also:

- Confirmed that the Percent of Market Value (POMV) approach is a prudent, responsible and transparent method for defining future earnings of the Legacy Fund.

“The POMV approach is commonly used by similar investment funds, including North Dakota’s Common Schools Trust Fund, in developing a sustainable spending policy,” said Dave Hunter, executive director of the state’s Retirement and Investment Office. “It is widely accepted as a best practice by many endowments and foundations and should serve to benefit all North Dakotans.”

The POMV approach uses the average ending market value of the Legacy Fund from the prior five fiscal years and then applies an earnings distribution of 2, 3, 4 or 5 percent to the state’s general fund to establish a sustainable spending policy for the future. The board encourages the Legislature to embrace this approach through legislation.

“This approach seeks to eliminate undue risk when developing a sustainable spending policy for future state budgeting and reporting purposes,” state Treasurer Kelly Schmidt said.

“The Percent of Market Value approach increases transparency, is sustainable, and is a proven method that is used by other funds similar to the Legacy Fund,” Insurance Commissioner Jon Godfread said. “Moving to the POMV approach will give the Legislature a consistent approach for utilization in the budgeting process while protecting the integrity of the Legacy Fund.”

- Approved up to a \$75 million commitment to Adams Street Partners 2019 Global Fund. Adams Street, and its predecessor firm Brinson Partners, have a strategic investment relationship with the NDSIB dating back over 30 years. Adams Street is the best-performing private equity manager for the SIB in addition to representing its largest private equity relationship.
- Approved the North Dakota Office of the Attorney General as a new contractual investment client of the SIB, contingent upon approval of the North Dakota Industrial Commission later this month.

The SIB has statutory responsibility for the administration of the investment programs of several funds including the Public Employees Retirement System (PERS), the Teachers' Fund for Retirement (TFFR) and the Workforce Safety & Insurance Fund. The SIB also maintains contractual relationships for investment management with certain political subdivisions. The 12-member Board consists of the lieutenant governor, state treasurer, state insurance commissioner, executive director of Workforce Safety & Insurance, state land commissioner, three representatives of PERS and three representatives of TFFR in addition to one non-voting member from the Legacy and Budget Stabilization Fund Advisory Board.

Update: This press release was sent to the Bismarck Tribune, Jack Dura, Forum Communications, John Hageman, Archie Ingersoll, Pat Singer, Associated Press, James McPherson (AP), Minot Daily News, North Decoder, Mike Nowatzki, and Prairie Public - Dave Thomson in addition to the Legacy Fund Advisory Board, SIB and numerous legislative leaders including Representative Chet Pollert and Senator Rich Wardner. In the future, RIO will also consider a *Business Brief* in the Bismarck Tribune (no cost), Fargo Forum (\$25 for 7" roughly 150-175 words plus \$10 each additional inch), Minot Daily News (\$360 Monday 1/4 page) and/or Grand Forks Herald (\$700 Sunday Tower 3.5" by 20").

https://bismarcktribune.com/business/business-digest--sept/article_9d8ba24f-ba19-53bd-b852-2ebea3b6ea24.html

Business Digest- Sept. 22, 2019

Sep 22, 2019

LAST CHANCE: JOIN FOR \$3

Board increases loan fund to \$300M

The North Dakota State Investment Board dedicated an additional \$100 million in Legacy Fund investments to provide cost-efficient financing to companies seeking to develop new businesses and infrastructure in North Dakota.

The addition to the Bank of North Dakota's Match Loan Certificates of Deposit Investment Program will increase the program's total size from \$200 million to \$300 million.

The bank requested the increase to support future anticipated growth in this economic development program, which has been in place for over 30 years.

"This increase in funding will provide greater access to capital for entrepreneurs looking to launch new manufacturing, processing and value-added businesses and important infrastructure in North Dakota, while also ensuring that more Legacy Fund dollars are being invested right here in North Dakota," said Lt. Gov. Brent Sanford, who chairs the State Investment Board.

The board has statutory responsibility for the administration of the investment programs of several funds including the Public Employees Retirement System, the Teachers' Fund for Retirement and the Workforce Safety and Insurance Fund.

BOARD ACTION

TO: State Investment Board
FROM: Dave Hunter
DATE: September 20, 2019
SUBJECT: Annual Review of Governance Manual – Cover Memo

In accordance with Section B-7 of the SIB Governance Manual, the Board Planning Cycle should include an “Annual Review of the Governance Manual”. In order to facilitate a meaningful review, **RIO intends to divide our review process over four months as follows:**

August 23, 2019 (Second Reading)

Section A – Executive Limitations (13 pages)

Section B – Governance Process (15 pages) (added Executive Review Committee)

September 27, 2019 (First Reading)

Section C – Board Staff Relationship (6 pages)

Section D – Ends (10 pages)

October 25, 2019

Section E - Investments (30 pages)

Section F – TFFR Ends (postponed pending ongoing TFFR Board review)

November 22, 2019

Section G – By-Laws (9 pages)

Section H – Century Code (5 pages)

RIO encourages board members and RIO staff to review the relevant sections of our SIB Governance Manual prior to each of the above scheduled board meetings.

At the conclusion of our monthly board discussions, the SIB may make a motion to accept the recommended “First Reading” or “Second Reading” changes, if any, to the Governance Manual. Alternatively, the Board may motion to recommend additional and/or different changes. All SIB recommended changes will be brought forward for further discussion and formally approved at our next regularly scheduled board meeting, assuming no additional changes are recommended.

<http://www.nd.gov/rio/SIB/Board/GovernanceManual/default.htm>

POLICY TYPE: GOVERNANCE PROCESS**POLICY TITLE: STANDING COMMITTEES**

The board's standing committees ~~are is that which is~~ set forth in this policy as follows:

1. Audit Committee
2. Securities Litigation Committee
3. **Executive Review Committee**

- A. The audit committee, securities litigation committee and **executive review committee** shall operate under the terms of a charter approved by the board.

INTRODUCTION – Audit Committee

An Audit Committee has been established as a standing committee of the State Investment Board (SIB). The Audit Committee will assist the SIB in carrying out its oversight responsibilities as they relate to the Retirement and Investment Office (RIO) internal and external audit programs, including financial and other reporting practices, internal controls, and compliance with laws, regulations, and ethics.

The primary objective of the internal audit function is to assist the SIB and management in the effective discharge of their responsibilities. To this end, internal auditing will furnish them with analyses, appraisals, recommendations, and pertinent information concerning the activities reviewed.

Functions and units within RIO will be reviewed at appropriate intervals to determine whether they are effectively carrying out their responsibilities of planning, organizing, directing, and controlling in accordance with SIB and management instructions, applicable laws, policies, and procedures, and in a manner consistent with both the RIO objectives and high standards of administrative practice.

POLICY OF THE STATE INVESTMENT BOARD – Audit Committee

The audit staff shall have full, free, and unrestricted access to all RIO activities, records, property, and personnel relative to the subject under review. The audit function will be conducted in a manner consistent with acceptable professional standards and coordinated with others to best achieve the audit objectives and the RIO objectives.

The Internal Audit Services Unit is responsible for developing and directing a broad, comprehensive program of internal auditing within RIO. The Internal Audit Services Unit will report administratively to management and functionally to the Audit Committee of the SIB.

The RIO unit supervisors are responsible for seeing that corrective action on reported weaknesses is either planned or taken within 30 days from the receipt of a report disclosing those weaknesses if known or applicable. The unit supervisors are also responsible for seeing that a written report of action planned or completed is sent to the executive director. If a plan for action is reported, a second report shall be made promptly upon completion of the plan.

INTRODUCTION – Securities Litigation Committee

A Securities Litigation Committee (SLC) has been established as a standing committee of the State Investment Board (SIB). The SLC will assist the SIB in fulfilling its fiduciary oversight responsibilities of monitoring the investment assets entrusted to it by the various statutory and contracted funds, and to serve as a communications link for the SIB, RIO's management and staff, third party securities litigation firms, and others.

The SLC will determine when an active role should be pursued in regards to securities litigation affecting investments within the SIB's portfolios based on the SIB approved Securities Litigation Policy and approved

POLICY OF THE STATE INVESTMENT BOARD – Securities Litigation Committee

The SLC is authorized to:

- Draft policy (to be formally approved by SIB) regarding dollar and/or risk thresholds for determining when to opt-out of class actions and/or seek direct litigation or lead plaintiff status;
- Based on SIB approved policy make decisions on the level of participation the SIB will take in direct litigation, opt-in or group litigation, anti-trust and other class actions; and
- Approve the selection of special assistant attorneys (in conjunction with the approval of the Office of the Attorney General) in cases of direct litigation.

RIO's management is responsible for ongoing monitoring of securities litigation and claims filing. RIO management and staff will enable the SLC to provide a periodic update to the SIB on the SLC's activities and related recommendations.

The SLC has the responsibility to provide oversight in the areas of:

- policy development;
- determination on direct litigation and/or lead plaintiff status; and
- approval of special assistant attorneys (outside counsel) with concurrence of the Attorney General.

INTRODUCTION – Executive Review Committee

SECOND READING

An Executive Review Committee (ERC) has been established as a standing committee of the SIB. The ERC will assist the SIB in fulfilling its fiduciary oversight responsibilities of “monitoring executive performance (which) is synonymous with monitoring organizational performance against board policies on *Ends* and *Executive Limitations*”. Internal audit will be responsible for preparing an annual summary of the required reports submitted to the SIB by the Executive Director in connection with its review of policy adherence to *Ends* and *Executive Limitations*. Internal audit will also assist the ERC in completing annual surveys of the Executive Director with the SIB, SIB clients, and RIO team members.

The ERC will conduct a formal evaluation of the Executive Director during the first half of every calendar year. This formal evaluation by the ERC will serve as the basis for an annual compensation recommendation to be reviewed and approved by the SIB on or before June 30th each year. Internal audit will also assist the SIB and ERC in administering the annual board self-assessment process.

POLICY OF THE STATE INVESTMENT BOARD – Executive Review Committee

The ERC is authorized to:

- Conduct a formal evaluation of the Executive Director annually;
- Obtain SIB approval of the annual performance evaluation of the Executive Director;
- Make a compensation recommendation to the SIB on or before June 30th of each year; and
- Administer a formal self-assessment of the SIB periodically (unless instructed otherwise).

The ERC and/or RIO will seek SIB approval prior to formally engaging any third party assistance in conducting the annual executive review process or board self-assessment.

The board will strive to govern with an emphasis on:

- Outward vision rather than an internal preoccupation.
- Encouragement of diversity in viewpoints.
- Strategic leadership more than administrative detail.
- Clear distinction of board and executive director roles.
- Collective rather than individual decisions.
- Future rather than past or present
- Proactivity rather than reactivity.

The board will:

1. Cultivate a sense of group responsibility. The board, not the staff, will be responsible for excellence in governing. The board will strive to be an initiator of policy, not merely a reactor to staff initiatives. The board will strive to use the expertise of individual members to enhance the ability of the board as a body, rather than to substitute the individual judgments for the board's values.
2. Direct, control, and inspire the organization through the careful establishment of the broadest written policies reflecting the board's values and perspectives. The board's major focus will be on the intended long-term impacts outside the operating organization (*Ends*), not on the administrative or programmatic means of attaining those effects.
3. Enforce upon itself whatever discipline is needed to govern with excellence. Discipline will apply to matters such as attendance, policy-making principles, respect of roles, and ensuring the continuity of governance capability.
4. After speaking with one voice, self-police any tendency to stray from adopted board governance policies. The board will not allow any officer, member, or committee of the board to hinder or be an excuse for not fulfilling its commitments. The board respects the right of any member, as an individual, to publicly disagree with an adopted board policy. Board members will accurately portray board policies and decisions.
5. Promote continual board development through orientation and mentoring of new members in the board's governance process and through periodic board discussion of process improvement. The board shall not delegate new member governance orientation to the executive director or any staff member.
 - A. Board mentors are encouraged to assist new members to understand their fiduciary duty and role. **Board members may engage the Board Chair if they would like to participate in an optional board mentorship program.**

ORGANIZATIONAL BENEFICIARIES

INVESTMENT CLIENTS:

Statutory:

1. Budget Stabilization Fund
2. Cultural Endowment Fund
3. Insurance Regulatory Trust Fund
4. Petroleum Tank Release Compensation Fund
5. Public Employees Retirement System Fund
6. Risk Management Fund
7. State Bonding Fund
8. State Fire and Tornado Fund
9. Teachers' Fund for Retirement
10. The Legacy Fund
11. Workforce Safety & Insurance Fund

Contractual:

1. City of Bismarck Deferred Sick Leave Fund
2. City of Bismarck Employees Retirement Fund
3. City of Bismarck Police Retirement Fund
4. City of Fargo Dome Permanent Fund
5. City of Grand Forks Park District Pension Fund
6. City of Grand Forks Pension Fund
7. ND Association of Counties Fund
8. ND Job Service Retirement Fund
9. Public Employees Retirement System Group Health Insurance Fund
10. Public Employees Retirement System Retiree Health Insurance Fund
11. ND Board of Medicine
12. ND Parks and Recreation
- 13. ND Office of the Attorney General**

ADMINISTRATIVE CLIENTS:

Statutory:

1. Teachers' Fund for Retirement Beneficiaries

Amended: ~~March 23, 2018~~ **September 27, 2019**



ND STATE INVESTMENT BOARD SECURITIES LITIGATION COMMITTEE MEETING

Friday, September 20, 2019 - 2:30 PM
North Dakota Retirement and Investment Office (RIO)
3442 East Century Avenue, Bismarck, ND 58503

AGENDA

1. Call to Order and Approval of Agenda - Chief Deputy Attorney General Seibel **Committee Action**
2. Minutes (November 5, 2018) **Committee Action**
3. Annual Review of Securities Litigation Committee Charter - Mr. Hunter (15 minutes) *Informational*
 - a. Annual Election of Chair and Vice Chair **Committee Action**
 - b. Committee Approved Securities Litigation Firms *Informational*
 - c. Biennial Agenda *Informational*
4. Annual Securities Litigation Report - Ms. Flanagan (15 minutes) **Committee Action**
 - a. Comparison of Recoveries versus Prior Years
5. Securities Litigation Firm Updates (15 minutes) *Informational*
 - a. Grant & Eisenhofer (VW and Danske Bank) - Mr. Marc Weinberg (TLCF) *
 - b. Other Cases - Mr. Hunter
6. Other - Next Proposed SIB Securities Litigation Committee Meeting

North Dakota Retirement and Investment Office
3442 E Century Ave, Bismarck, ND 58503
Thursday, November 7, 2019 at 3:00 PM

7. Adjournment

** Possible Executive Session for attorney consultation pursuant to NDCC §44-04-18.4(1), §44-04-19.1(9), & §44-04-19.2*

Any individual requiring an auxiliary aid or service should contact the Retirement and Investment Office at (701) 328-9885 at least (3) days prior to the scheduled meeting.

Securities Litigation Recoveries by Fiscal Year

<u>Fiscal Year</u>	<u>\$ Recovered</u>	<u># Cases</u>
2011	405,676	54
2012	692,958	47
2013	185,789	59
2014	153,480	55
2015	645,943	55
2016	457,616	42
2017	424,362	51
2018	189,006	54
2019	344,684	60

NORTH DAKOTA STATE INVESTMENT BOARD
SECURITIES LITIGATION SUBCOMMITTEE
MINUTES OF THE MAY 20, 2019, MEETING

BOARD MEMBERS PRESENT: Troy Seibel, Chair
Treasurer Kelly Schmidt, Vice Chair
Connie Flanagan, Chief Financial Officer
David Hunter, ED/CIO
Anders Odegaard, Attorney General's Office

STAFF PRESENT: Bonnie Heit, Admin Svs Suprv
Sara Sauter, Suprv of Internal Audit

GUESTS: Craig D'Alessio, Financial Recovery Technologies (Audio)
Emily Fortin, Financial Recovery Technologies

CALL TO ORDER:

Mr. Seibel, Chair, called the State Investment Board (SIB) Securities Litigation Committee meeting to order at 3:10 p.m. on Monday, May 20, 2019, at the Retirement and Investment Office, 3442 E Century Ave, Bismarck, ND.

AGENDA:

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. HUNTER AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE MAY 20, 2019, MEETING.

AYES: TREASURER SCHMIDT, MR. SEIBEL, MR. HUNTER, MS. FLANAGAN, AND MR. ODEGAARD
NAYS: NONE
MOTION CARRIED

MINUTES:

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MS. FLANAGAN AND CARRIED BY A VOICE VOTE TO ACCEPT THE MINUTES OF THE NOVEMBER 5, 2018, MEETING AS DISTRIBUTED.

AYES: MS. FLANAGAN, MR. ODEGAARD, TREASURER SCHMIDT, MR. SEIBEL, AND MR. HUNTER
NAYS: NONE
MOTION CARRIED

SECURITIES LITIGATION REVIEW:

The Committee reviewed the history of the Securities Litigation Committee, their Charter and Securities Litigation Policy.

Financial Recovery Technologies (FRT) - FRT representatives reviewed the US "Opt-Out" settlements, International "Opt-In" Actions and Jurisdictions, and Global Anti-Trust activity. FRT also reviewed recent litigation activity.

FRT recommended the following changes to the Securities Litigation Policy based on changing market conditions and observed best practices in securities litigation monitoring for "Non-U.S. Opt-In & Group Litigation Jurisdiction Thresholds" in the past year.

1. Increase the frequency of the Securities Monitoring and Litigation Policy review from every three years to annually.
2. Lower the dollar threshold in the Non-US Opt-In and Group Litigation Jurisdictions for Passive/Very Low Risk Thresholds from \$20,000 to zero.

After discussion,

IT WAS MOVED BY MR. HUNTER AND SECONDED BY TREASURER SCHMIDT AND CARRIED BY A ROLL CALL VOTE TO CONDUCT ANNUAL REVIEWS OF THE SECURITIES MONITORING AND LITIGATION POLICY AND LOWER THE DOLLAR THRESHOLD IN THE NON-US OPT-IN AND GROUP LITIGATION JURISDICTIONS FOR PASSIVE/VERY LOW RISK THRESHOLDS FROM \$20,000 TO ZERO.

AYES: MR. ODEGAARD, MR. HUNTER, MS. FLANAGAN, MR. SEIBEL, AND TREASURER SCHMIDT

NAYS: NONE

MOTION CARRIED

Ms. Fortin reviewed the Danske Bank litigation. Danske Bank laundered more than \$200 billion through its Estonian Branch between 2007 and 2015. FRT is estimating the SIB has potentially lost \$2 million dollars.

After discussion,

IT WAS MOVED BY MR. HUNTER AND SECONDED BY MR. ODEGAARD AND CARRIED BY A ROLL CALL VOTE TO ENGAGE GRANT & EISENHOWER AND FRT TO PURSUE AN OPT IN LITIGATION POSITION ON THE DANSKE BANK CASE.

AYES: MR. HUNTER, MS. FLANAGAN, MR. SEIBEL, TREASURER SCHMIDT, AND MR. ODEGAARD

NAYS: NONE

MOTION CARRIED

Ms. Fortin continued with the review of opt-in opportunities for passive/very low, low, moderate, and high risk jurisdictions as well as anti-trust cases.

Ms. Fortin notified the Committee a disbursement of \$36,473.64 was recovered as a result of their efforts in the Tesco PLSC Compensation Scheme (KPMG) on November 20, 2018.

Mortgage Related Securities Litigation - Mr. Hunter reviewed mortgage related securities litigation recoveries. As of April 30, 2019, \$622,854.81 has been recovered.

Treasurer Schmidt requested a footnote be added to clarify the information. The following footnote will be added:

"The above information was based on the best available data using our prior claims filing agent. Please note that no conclusions should be drawn from individual line items or "Amount Recovered" in relation to "Total RL" (Recognized Loss) due to different methodologies used to derive a historical estimate. The main point to be drawn is that clients of the North Dakota State Investment Board have recovered at least \$622,854 of cash proceeds from class action claims filings relating to mortgage related securities litigation actions as of April 30, 2019."

SECURITIES LITIGATION UPDATE:

Committee Membership - Treasurer Schmidt no longer desires to serve on the Securities Litigation Committee. New Committee members will be appointed by the SIB at their July 26, 2019, meeting.

Committee Meeting Schedule - The next Committee meetings are scheduled for August 22, 2019, and November 7, 2019. The 2020 schedule will be established at the November 7, 2019 meeting. The Committee concurred with the schedule.

Securities Litigation Firms - On November 5, 2018, the Committee identified three firms to serve as pre-approved law firms to be utilized on a case by case basis. The firms - Bernstein Litowitz Berger & Grossman, Grant & Eisenhofer, and Labaton Sucharow will represent the SIB when new securities litigation related cases are raised for further consideration by FRT.

Kasowitz Benson Torres (General Motors case) and K&L Gates (Tribune case) have been engaged by the SIB. Grant & Eisenhofer (as a plaintiff's attorney) was engaged to recover investment losses resulting from international securities litigation involving Volkswagen and other related parties.

FRT has been retained since March 1, 2018, to recover investment losses in US and international securities litigation cases to include those involving anti-trust actions in addition to US class action claims filing.

Northern Trust, the SIB custodian, continues to seek US class action claim filing recoveries prior to March 1, 2018.

Since 2011, annual cash recoveries have varied significantly ranging from a low of \$153,480 in fiscal 2014 to a high of \$692,958 in fiscal year 2012. Securities litigation recoveries were approximately \$189,000 for the fiscal year ended June 30, 2018.

Biennial Agenda - Mr. Hunter reviewed a draft biennial agenda for 2019-21. After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MS. FLANAGAN AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE BIENNIAL AGENDA FOR 2019-21.

AYES: TREASURER SCHMIDT, MR. SEIBEL, MR. HUNTER, MS. FLANAGAN, AND MR. ODEGAARD

NAYS: NONE


MOTION CARRIED

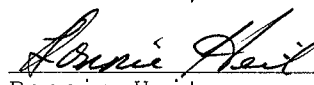
OTHER:

The next Securities Litigation meeting is scheduled for August 22, 2019, at the Retirement and Investment Office, 3442 East Century Avenue, Bismarck, ND.

ADJOURNMENT:

With no further business to come before the Committee, Mr. Seibel adjourned the meeting at 4:03 p.m.


Mr. Seibel, Chair


Bonnie Heit
Recorder

Informational

TO: State Investment Board
FROM: Dave Hunter
DATE: September 27, 2019
SUBJECT: Board Education – Conferences and Workshops

RIO encourages all SIB members to attend approved investment education conferences in the upcoming year including Callan's National Conference on January 27-29, 2020. Callan lists all upcoming conferences and workshops in their Quarterly Investment Performance Reports (see last four pages of each report).

Research and Educational Programs

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

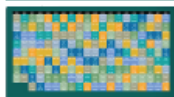
The OCIO Model: How Do We Measure Success? | This paper outlines the key issues for evaluating the success of outsourced chief investment officer (OCIO) services.

Perspectives on Investing: The Evolution of Strategic Allocations | In this video, Callan experts discuss the key challenges of evaluating non-U.S. equity investments.

Opportunities & Challenges: Investing in Private Equity Partnerships | In this video, Callan experts discuss investing directly in private equity partnerships.

Building a Pool of Transition Managers: Both an Art and a Science | Transition management is the restructuring of institutional portfolios from single or multiple investment managers/asset classes to a new allocation over a short-term horizon. This paper offers guidance on building a pool of transition managers.

Callan's Periodic Table Explained | The popular Callan Periodic Table of Investment Returns turned 20 this year. This animated feature discusses the benefits and some of the history of the table.



The Cobbler's Shoes: How Asset Managers Run Their Own 401(k) Plans | Can investment manager-sponsored DC plans provide insights on plan design and implementation? To help answer this question, Callan examined the 401(k) plans of investment managers.



The industry scored high on retirement savings metrics. But in contrast to the industry consensus, asset managers generally embraced complexity over simplicity in their investment designs.

How to Distinguish Between Growth Equity and Late-Stage VC



Both growth equity and late-stage venture capital are growth-oriented but differ significantly in the types of companies they invest in, the structure of their investments, the way in which they create value, and the trade-offs between risk and return.

Nurturing Strong Cultures at Professional Firms | In this paper, Callan Executive Chairman Ron Peyton offers advice for building effective and transparent corporate cultures.

Opening Doors of Opportunity | This paper reviews the types of co-investment opportunities offered by hedge funds and funds-of-funds (FOFs).

Quarterly Periodicals

Private Equity Trends | A newsletter on private equity activity, covering both the fundraising cycle and performance over time.

Market Pulse Flipbook | A market reference guide covering trends in the U.S. economy, developments for fund sponsors, and the latest data for U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution plans.

Active vs. Passive Charts | This series of charts compares active managers alongside relevant benchmarks over the long term.

Capital Market Review | A newsletter providing analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes.



Events

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

Please mark your calendar and look forward to upcoming invitations.

October Regional Workshops

October 22, 2019 – Denver

October 24, 2019 – Chicago

2020 National Conference

January 27-29, 2020 – San Francisco

Please also keep your eye out for upcoming Webinars in 2019! We will be sending invitations for these and also will have registration links on our website at www.callan.com/events.

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

The Center for Investment Training Educational Sessions

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

Introduction to Investments

San Francisco, July 23-24, 2019

Atlanta, October 8-9, 2019

Chicago, October 22-23, 2019

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

"Callan College" on Alternative Investments

Chicago, October 29-30, 2019

The "Callan College" on Alternative Investments will cover: private equity, private credit, hedge funds, real estate, and real assets. Tuition for the "Callan College" on Alternative Investments session is \$2,500 per person. Tuition includes instruction, all materials, and breakfast and lunch on each day.

Learn more at www.callan.com/events/callan-college-intro

Education: By the Numbers

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

50+ Unique pieces of research the Institute generates each year

3,700 Total attendees of the "Callan College" since 1994

1980 Year the Callan Institute was founded



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."

Greg Allen, CEO and Chief Research Officer

Callan Institute

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[in](https://www.linkedin.com/company/callan) Callan

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE

RIO AGENCY UPDATE

Interim Report for Quarter Ended September 30, 2019

As noted in prior quarterly updates, RIO was fully staffed as of June 30, 2019. In late June, however, RIO was informed that our compliance officer accepted a new position with the North Dakota Securities Department effective July 10th. Also as you likely recall, RIO's budget for the 2019-21 biennium added one new FTE to support our growing investment program.

Based on current and forecasted budget availability, we intend to fill both vacant positions as soon as possible. We are also taking advantage of this opportunity to make RIO more efficient by redefining roles and responsibilities to address areas of increased emphasis (including investment risk management and enhanced due diligence reporting and compliance monitoring). We posted for the Investment Accountant position in August and extended an offer of employment for this position in September. I am pleased to report the offer was accepted and our new Investment Accountant is scheduled to start on October 1, 2019.

We also posted for our new Investment and Compliance Officer position and received over two dozen applications. These candidates will be scored and ranked by HRMS in September and RIO expects to commence interviewing the top candidates in October and fill this important position later this year.

TFFR Pension Administration System Project Update:

RIO and ITD are working together to develop a project charter for our TFFR Pension Administration System project. This included a kick-off meeting with Justin Data, Enterprise ITD Division Manager – Reinvention Division in addition to PERS Executive Director Scott Miller and PERS CFO and COO Derrick Hohbein. RIO intends to work closely with ITD and the Governor's Office to ensure we adhere to all state procurement guidelines and remaining keenly focused on our fiduciary responsibility to our valued TFFR clients and constituents.

On September 19, ITD informed RIO that Kristine Vollmer was named our ITD Project Manager.

RIO notes the State's Chief Information Officer Shaun Riley and COO Jodi Uecker scheduled a "Pension System Replacement Project Collaboration" meeting with RIO on September 20.

RIO looks forward to providing a further update at our next SIB meeting on September 27.