Executive Summary - Informational

TO: **State Investment Board**

FROM: Dave Hunter

DATE: November 15, 2019

SUBJECT: **SIB Meeting Materials – November 22, 2019**

Our November board meeting will focus on Callan's quarterly investment performance review of SIB client returns for periods ended September 30, 2019. RIO will also provide an update of recent SIB Audit and Securities Litigation Committee meetings in addition to the latest Legacy Fund Earnings Committee meeting.

The November SIB meeting materials will address the following topics:

1. **Asset and Performance Overview** – RIO will highlight continued growth in SIB client assets and investment results for each of our 25 SIB client portfolios. **RIO notes that 99% of our SIB clients (based on Assets Under Management or "AUM") generated net investment returns which exceeded their approved policy benchmark for the 5-years ended September 30, 2019, while adhering to approved risk levels.** Excess returns for our five largest clients including the Legacy Fund ($6.4 billion), PERS ($3.1 billion), TFFR ($2.6 billion), WSI ($2.1 billion) and Budget Stabilization Fund ($669 million) surpassed approved performance benchmarks by at least 0.44% (and up to 1.02%) per annum for the 5-years ended September 30, 2019.

2. **Callan Quarterly 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 30 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. **Investment Consulting Update –** During the past year, RIO reached out to the ten largest investment consulting firms to discover which firms were most interested in working with the SIB and to gain a better understanding of which firms appear to be most well suited to assist us in future investment consulting engagements. RIO will share the results of this review process and highlight firms which offer the most compelling investment consulting service opportunities at this time.

4. **SIB Audit Committee Update** – RIO's Supervisor of Internal Audit will review the 1st Quarter Audit Activities Report and proposed revisions to the Audit Committee Charter. **The SIB will be requested to accept the Audit Committee Report and the proposed revisions to the Audit Committee Charter in addition to RIO's Financial Audit Report as of June 30, 2019.** *CliftonLarsonAllen issued an unmodified "clean" opinion that RIO's financial statements are presented fairly, in all material respects, in conformity with U.S. Generally Accepted Accounting Principles and there were no material weaknesses or significant deficiencies identified in their report on internal control over financial reporting and compliance.*

5. **SIB Securities Litigation Committee (SLC) Update** – Based on recent SLC discussions with approved outside counsel, **the SIB will be requested to confirm the SLC is duly authorized to "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".** The SLC is seeking this confirmation given practical time constraints inherent in pursuing "opt-out" securities litigation cases in the U.S. The "opt-out" claim filing period of 60-days constructively impairs, if not prohibits, the SIB from seeking direct litigation in the U.S. unless the SLC is duly authorized to take this action during interim periods between scheduled SIB meetings.

6. **Legacy Fund Earnings Committee Update** – RIO will review a recent presentation made to the Legacy Fund Earnings Committee which included an overview of U.S. Sovereign Wealth Funds (SWF). **This presentation identified the benefits of the Percent of Market Value (POMV) approach as a prudent, responsible and transparent method for defining future earnings and included simple examples with "smoothing periods" of 3 or 5 years and an assumed 4% annual spending rate.** RIO also emphasized the POMV approach is commonly used by most other U.S. SWF's, including *North Dakota's Common Schools Trust Fund,* in developing a sustainable spending policy. Senator Wardner referenced the POMV approach is his presentation which included a 4% annual spending rate. Mr. David Teal, Director, Alaska Division of Legislative Finance, also cited the benefits the POMV approach in his presentation "*Alaska Permanent Fund and Its Impact on the State Budget – Implications for North Dakota*".

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 provide a brief update on the Investment and Compliance Officer interview process and succession planning for TFFR's Chief Retirement Officer and RIO's Deputy Executive Director.

ND STATE INVESTMENT BOARD MEETING

Friday, November 22, 2019, 8:30 a.m.
Fort Union Room, State Capitol
600 E Blvd, Bismarck, ND

Agenda

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA

II. ACCEPTANCE OF MINUTES (October 25, 2019)

III. INVESTMENTS

A. Asset and Performance Overview - Mr. Hunter (15 min) *Informational*
B. Callan Review – Mr. Paul Erlendson, Mr. Alex Browning (1 hour) **Board Acceptance**
   1. Pension Trust
   2. Insurance Trust
   3. Legacy Fund
   4. Private Markets Discussion – Mr. Pete Keliuotis (15 minutes) *Informational*
C. Investment Consulting Update – Mr. Hunter (15 minutes) **Board Acceptance**

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

IV. GOVERNANCE (1 hour)

A. SIB Audit Committee Update
   1. SIB Audit Committee Report – Ms. Sara Sauter **Board Acceptance**
   2. RIO Financial Audit Report June 30, 2019 – Mr. Hunter **Board Acceptance**
B. SIB Securities Litigation Update – Mr. Hunter **Board Acceptance**
C. Legacy Fund Earnings Committee Update – Mr. Hunter *Informational*
D. SIB Informational Request Update – Mr. Hunter *Informational* (hand-out)

V. OTHER

Next Meetings: SIB - January 24, 2020, 8:30 am - Capitol Fort Union Room
Securities Litigation - February 4, 2020, 1:00 pm - RIO Conference Room
Audit Committee - February 27, 2020, 3:00 p.m. - RIO Conference Room

VI. ADJOURNMENT

Any individual requiring an auxiliary aid or service, please contact the Retirement and Investment Office (701) 328-9885 at least three (3) days prior to the scheduled meeting.

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
OCTOBER 25, 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
PRESENT:	Amy Carlson, Investment Acct Eric Chin, Senior Investment Officer Connie Flanagan, Chief Financial Officer Bonnie Heit, Admin Svs Suprv David Hunter, Exec Dir/CIO Sara Sauter, Suprv of Internal Audit Darren Schulz, Dep CIO Susan Walcker, Senior Financial Acct
GUESTS:	Michael Jaje, Atlanta Capital Anders Odegaard, Attorney General Counsel Keith Read, Cerberus Chip Reed, Atlanta Capital Bryan Reinhardt, PERS Daniel Wolf, Cerberus

CALL TO ORDER:

Lt. Governor Sanford, Chair, called the State Investment Board (SIB) regular meeting to order at 8:30 a.m. on Friday, October 25, 2019, at the State Capitol, Ft. Union Room, Bismarck, ND.

AGENDA:

The Board considered the agenda for the October 25, 2019, meeting,

IT WAS MOVED BY DR. LECH AND SECONDED BY MS. SMITH AND CARRIED BY A VOICE VOTE TO ACCEPT THE AGENDA FOR THE OCTOBER 25, 2019, MEETING.

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

MINUTES:

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO APPROVE THE SEPTEMBER 27, 2019, MINUTES AS DISTRIBUTED.

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

INVESTMENTS:

Public Equity – Mr. Schulz provided an update on the US small cap equity strategy. RIO investment personnel are focusing their efforts on replicating mandates across all three investment pools when appropriate. Mr. Schulz reviewed Atlanta Capital Management Company’s mandate and recommended expanding their role to include the Insurance Pool and Legacy Fund. By expanding the pools, staff also recommended a transition of the PIMCO Enhanced RAFI US Small Strategy to Atlanta Capital Management.

Atlanta Capital Management representatives reviewed the SIB’s portfolio currently under their management. After the review and further discussion on the recommendation,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY DR. LECH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF’S RECOMMENDATION AND EXPAND THE ATLANTA CAPITAL MANAGEMENT COMPANY’S LLC HIGH QUALITY SMALL CAP VEHICLE TO ALSO INCLUDE THE INSURANCE TRUST AND LEGACY FUND ALONG WITH THE EXISTING PENSION TRUST. THIS ACTION WOULD TRANSITION THE PIMCO ENHANCED RAFI US SMALL STRATEGY TO ATLANTA.

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

Fixed Income – Mr. Chin reviewed the SIB’s current direct lending mandates with Ares and Cerberus. As of September 30, 2019, the commitments are nearly fully drawn. As a result of the growth in assets in the Pension Pool and the Legacy Fund, RIO investment personnel recommend increasing the commitment to the direct lending strategies to maintain target percent allocations in the Pension Pool and the Legacy Fund.

Cerberus representatives reviewed the SIB’s portfolio currently under their management. After the review and further discussion on the recommendation,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. KLIPFEL AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION AND EXPAND THE COMMITMENT TO THE CERBERUS ND PRIVATE CREDIT FUND, LLC BY UP TO $100 MILLION.

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

GOVERNANCE/EDUCATION:

RIO vs Ends – Mr. Hunter reviewed RIO versus governance policy Ends for the period ending June 30, 2019.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE RIO VS ENDS REPORT FOR THE PERIOD ENDING JUNE 30, 2019.

AYES: MS. GUMERINGER, COMMISSIONER SMITH, MS. SMITH, MR. KLIPFEL, TREASURER SCHMIDT, COMMISSIONER GODFREAD, MR. OLSON, MR. SEIBEL, MR. MILLER, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: DR. LECH

Investment Fees/Expenses – Mr. Hunter reviewed investment fees and expenses for the period ending June 30, 2019. Over the last 5 years, the vast majority of the SIB's clients outperformed their approved policy benchmarks earning at least 0.50% of excess return, while investment fees and expenses remained at or below 0.50% per annum since 2015. Based on $10 billion of assets under management, a 0.20% decline in fees between fiscal 2013 and fiscal 2019 translated into $20 million of annual fee savings for SIB clients.

IT WAS MOVED BY MS. SMITH AND SECONDED BY COMMISSIONER GODFREAD AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE FEES AND EXPENSES REPORT.

AYES: MR. OLSON, MR. SEIBEL, COMMISSIONER SMITH, MS. GUMERINGER, COMMISSIONER GODFREAD, MS. SMITH, MR. MILLER, TREASURER SCHMIDT, MR. KLIPFEL, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: DR. LECH

Client Satisfaction Report – Ms. Sauter reviewed the 2019 SIB client satisfaction survey results. Overall rating was 3.62 percent based on a 4.0 scale. Average for the last three years has been 3.6%. Fifteen evaluation forms were submitted with 11 responses received.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY COMMISSIONER GODFREAD AND CARRIED BY A VOICE VOTE TO ACCEPT THE CLIENT SATISFACTION SURVEY RESULTS.

AYES: COMMISSIONER GODFREAD, MR. KLIPFEL, MS. GUMERINGER, MS. SMITH, MR. SEIBEL, MR. MILLER, MR. OLSON, TREASURER SCHMIDT, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH, DR. LECH

Audit Committee Report – Ms. Sauter reviewed Audit Committee activities for the period of July 1, 2018 – June 30, 2019. The following activities were completed; agency-wide risk assessment, four Teachers' Fund for Retirement (TFFR) employer reporting reviews, Benefit Payment Cost Efficiency Audit, TFFR Refund/Purchase Audit, Salary Verification Project, and Executive Limitations Audit. Internal Audit also provided assistance to CliftonLarsonAllen during the 2018 financial audit of RIO as well as the GASB 68 Census Data audits. The Audit Committee received the results of the financial audit of RIO for the fiscal year ended June 30, 2018. The Audit Committee also reviewed the financial audit plan for RIO for the fiscal year ended June 30, 2019. The Audit Committee approved a workplan and budgeted hours for fiscal year July 1, 2018 – June 30, 2019.

Ms. Sauter also reviewed the workplan for the period of July 1, 2019 – June 30, 2020. The workplan, as outlined at the SIB October 25, 2019, meeting, allocates 62.5% of time to the TFFR program and 37.5% to the SIB and RIO programs. The workplan represents what Internal Audit anticipates will be accomplished in the upcoming year, however needs and priorities may change and the workplan may require adjustments.

Ms. Sauter also reviewed an investment due diligence audit which was completed as of July 31, 2019. Internal Audit developed an audit program to review the ongoing due diligence process for the SIB investment managers. Ms. Sauter handed out a report detailing the ongoing due diligence being conducted by RIO investment personnel on current SIB managers as well as prospects.

IT WAS MOVED BY MS. SMITH AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO ACCEPT THE AUDIT COMMITTEE REPORT FOR THE PERIOD OF JULY 1, 2018 – JUNE 30, 2019.

AYES: MS. GUMERINGER, MS. SMITH, TREASURER SCHMIDT, COMMISSIONER GODFREAD, MR. OLSON, MR. SEIBEL, MR. MILLER, MR. KLIPFEL, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH, DR. LECH

Governance Review - Mr. Hunter reviewed SIB Governance Manual Section E – Investments. Discussion followed on proxy voting. The SIB voiced concerns on oversite of third party voting and the ramifications to the State of North Dakota. Mr. Hunter will follow-up and provide additional options for over-seeing proxy voting. Mr. Hunter and Commissioner Smith will be working together to revise the SIB and Dept. of Trust Land proxy voting policies so as to best serve the interests of the State of North Dakota. After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY COMMISSIONER GODFREAD AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE SECOND READING OF ENDS (EXHIBIT D-1/ACCEPTING THE ND OFFICE OF THE ATTORNEY GENERAL AS A CLIENT).

AYES: MR. OLSON, MS. GUMERINGER, MR. MILLER, MR. SEIBEL, MR. KLIPFEL, COMMISSIONER GODFREAD, TREASURER SCHMIDT, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: MS. SMITH, COMMISSIONER SMITH, AND DR. LECH

Legacy Fund Earnings Committee – Mr. Hunter will be joining the Legacy Fund Earnings Committee at their next meetings, November 12-13, 2019, in Fargo, ND.

MONITORING:

The following monitoring reports for the period of June 30, 2019 and September 30, 2019 were presented for the SIB's acceptance – Executive Limitations/Staff Relations, Budget/Financial Conditions, Investment Program, Retirement Program, and Watch List (LSV since May 24, 2019).

IT WAS MOVED BY MR. OLSON AND SECONDED BY MS. GUMERINGER AND CARRIED BY A VOICE VOTE TO ACCEPT THE QUARTERLY MONITORING REPORTS FOR THE PERIOD OF JUNE 30, 2019, AND SEPTEMBER 30, 2019.

AYES: MR. KLIPFEL, MR. OLSON, COMMISSIONER GODFREAD, TREASURER SCHMIDT, MR. SEIBEL, MR. MILLER, MS. GUMERINGER, AND LT. GOVERNOR SANFORD
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH, DR. LECH, AND MS. SMITH

OTHER:

The next meeting of the Securities Litigation Committee is scheduled for November 7, 2019, at 3:00 p.m. at the Retirement and Investment Office.

The next meeting of the SIB Audit Committee is scheduled for November 13, 2019, at 3:00 p.m. at the Retirement and Investment Office.

The next meeting of the SIB for regular business has been scheduled for November 22, 2019, at 8:30 a.m., at the State Capitol, Ft. Union Room.

ADJOURNMENT:

With no further business to come before the SIB, Lt. Governor Sanford adjourned the meeting at 10:35 a.m.

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Lt. Governor Sanford, Chair
State Investment Board

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Bonnie Heit
Recorder

Informational

Asset and Performance Overview

Annual Investment Review as of September 30, 2019

November 22, 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, Chief Risk Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

State Investment Board – Client Assets Under Management

Fund Name	Market Values as of 9/30/19 [1]	Market Values as of 6/30/19 [2]	Market Values as of 9/30/18 [1]
Pension Trust Fund			
Public Employees Retirement System (PERS)	3,150,599,381	3,152,930,087	3,087,115,472
Teachers' Fund for Retirement (TFFR)	2,558,890,944	2,573,622,554	2,526,452,653
City of Bismarck Employees Pension	105,331,198	104,517,247	100,990,920
City of Grand Forks Employees Pension	67,161,633	68,419,301	67,199,301
City of Bismarck Police Pension	42,120,857	41,862,976	40,888,393
Grand Forks Park District	7,189,546	7,176,427	7,013,895
Subtotal Pension Trust Fund	**5,931,293,559**	**5,948,528,592**	**5,829,660,634**
Insurance Trust Fund			
Workforce Safety & Insurance (WSI)	2,080,687,083	2,065,400,398	1,933,569,800
Budget Stabilization Fund	669,122,565	118,707,130	114,023,036
City of Fargo FargoDome Permanent Fund	43,455,983	44,840,633	45,665,193
PERS Group Insurance Account	30,903,038	31,067,120	29,257,455
State Fire and Tornado Fund	23,414,508	22,761,457	23,646,363
ND Association of Counties (NDACo) Fund	6,444,175	6,333,052	6,031,900
Petroleum Tank Release Compensation Fund	6,085,251	5,994,235	6,200,882
State Risk Management Workers Comp Fund	5,284,244	5,187,879	3,699,994
State Risk Management Fund	4,146,083	4,909,623	4,663,817
State Bonding Fund	3,668,398	3,609,422	3,429,976
ND Board of Medicine	2,378,355	2,362,384	2,279,087
Insurance Regulatory Trust Fund	1,174,507	6,218,781	1,101,023
Attorney General Settlement Fund	1,130,484		
Bismarck Deferred Sick Leave Account	792,876	779,596	742,505
Lewis & Clark Interpretive Center Endowment Fund	764,761	751,763	716,108
Cultural Endowment Fund	481,236	475,311	462,684
Subtotal Insurance Trust Fund	**2,879,933,547**	**2,319,398,784**	**2,175,489,823**
Legacy Trust Fund			
Legacy Fund	6,364,879,674	6,580,759,920	5,886,115,867
PERS Retiree Insurance Credit Fund	137,230,513	135,962,521	130,443,712
Job Service of North Dakota Pension	97,559,212	97,285,279	96,681,300
ND Tobacco Prevention and Control Trust Fund	9,349,107	9,300,127	48,864,750
Total Assets Under SIB Management	**15,420,245,612**	**15,091,235,223**	**14,167,256,086**

[1] *Market values are unaudited and subject to change.*

[2] *6/30/19 market values as stated in the Comprehensive Annual Financial Report.*

- **SIB client investments totaled approximately $15.4 billion as of September 30, 2019,** with the Pension Trust at $5.9 billion, Insurance Trust approaching $2.9 billion and Legacy Fund exceeding $6.3 billion.
- **Equity markets posted mixed results in the third quarter, aided by two rate cuts by the Fed, healthy consumer spending, and low unemployment.** Bonds posted gains as rates rallied across maturities and credit spreads were range-bound. In total, global public equities were slightly negative in the 3rd quarter of 2019, while core fixed income returned 2.3%.
- **The Pension Trust posted a net return of 3.4% in the last year.** During the last 5-years, the Pension Trust generated a net annualized return of 6.5%, exceeding the performance benchmark of 6.1%.
- **The Insurance Trust generated a net return of 6.7% in the last year.** During the last 5-years, the Insurance Trust posted a net annualized return of 5.5%, exceeding the performance benchmark of 4.5%.
- **Legacy Fund generated a net return of 3.8% last year.** During the last 5-years, Legacy Fund earned a net annualized return of 6.3%, exceeding the performance benchmark of 5.7% noting the Fund was not fully invested in its current asset allocation until 2015.

Investment Performance – September 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 0.37% per annum over the last 5-years (including 0.45% for PERS and 0.44% for TFFR), while adhering to approved risk levels and generating positive Risk Adjusted Excess Return.

PERS and TFFR earned 6.5% per annum for the 5-years ended September 30, 2019. Public equities performed in line with the overall market earning 7.1% the last 5-years (consistent with the MSCI World Equity Index) with U.S. Equities up 10.7% while International Equities were up only 4.4% the last 5-years. Private equity was disappointing earning only 1.8% per annum the last 5-years, but trending upward in recent years. Fixed Income earned 4.8% annualized over the last 5-years outperforming the Bloomberg Aggregate U.S. Benchmark of 3.4%. Real Assets earned 6.6% per annum for the 5-years ended Sep. 30, 2019, with Real Estate up 9.5% (versus 8.6% benchmark), Infrastructure up 4.4% (trailing expectations), and Timber significantly underperforming the last 5-years (-0.07% versus +4.4% for NCREIF Timber Index) albeit improving in the past year (up 4.1% vs NCREIF Timber +2.1%).

Non-Pension Pool:

Every Non-Pension client generated positive Excess Return of at least 0.47% per annum for the 5-years ended Sep.30, 2019, with two exceptions for PERS Retiree Health Insurance Credit Fund (-0.34% excess return) and PERS Group Insurance (+0.04% excess return). PERS Retiree Health was the only SIB client portfolio with a negative Risk Adjusted Excess Return over the last 5 years.

The Legacy Fund earned 6.3% per annum for the 5-years ended September 30, 2019, surpassing the performance benchmark return of 5.7% (while 3-year returns were over 7.0% per annum exceeding the performance benchmark of 6.7%). Legacy's U.S. Equity portfolio earned 10% per annum over the last 5-years, while International Equities only earned 4.2% (with both U.S. and International Equities outperforming their respective benchmarks). Fixed Income returned over 4.8% per annum the last 5-years, surpassing the Bloomberg Aggregate Index which was up 3.4%. Real Asset returns were mixed with Real Estate up 8.8% over the last 5-year, Infrastructure up 8% the last 3 years, and Global Inflation Linked Debt Securities up only 2% the last 5-years.

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

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

Note: Amount and returns are unaudited and subject to change.

Pension Pool Return & Risk Summary – Sep. 30, 2019

	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019	Risk 5 Yrs Ended 9/30/2019	Risk Adj Excess Return 5 Yrs Ended 9/30/2019
PERS - $3.15 billion					
Total Fund Return - Net	3.41%	8.04%	6.54%	6.5%	0.09%
Policy Benchmark Return	4.20%	7.62%	6.09%	6.1%	
Total Relative Return	-0.80%	0.42%	0.45%	107%	
TFFR - $2.56 billion					
Total Fund Return - Net	3.42%	7.98%	6.51%	6.5%	0.15%
Policy Benchmark Return	4.15%	7.59%	6.07%	6.1%	
Total Relative Return	-0.73%	0.39%	0.44%	105%	
Bismarck Employee $105 million					
Total Fund Return - Net	4.85%	7.54%	6.28%	5.4%	0.39%
Policy Benchmark Return	4.83%	6.80%	5.70%	5.2%	
Total Relative Return	0.02%	0.74%	0.58%	104%	

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

5-Yr. Returns Sep. 30, 2019	Asset Allocation	Benchmark Return	Allocation x Return
Asset Class	*a*	*b*	*a x b*
Equity	58%	7.1%	4.1%
Fixed Income	23%	3.7%	0.9%
Real Assets	19%	6.0%	1.1%
Policy Benchmark Return (5-years)			6.09%

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).

Note: Amounts are unaudited and subject to change.

Pension Pool Return & Risk Summary – **Sep. 30, 2019**

	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019	Risk 5 Yrs Ended 9/30/2019	Risk Adj Excess Return 5 Yrs Ended 9/30/2019
Bismarck Police $42 million					
Total Fund Return - Net	4.38%	7.73%	6.34%	5.8%	0.37%
Policy Benchmark Return	4.32%	7.09%	5.82%	5.6%	
Total Relative Return	0.05%	0.64%	0.52%	103%	
Job Service $98 million					
Total Fund Return - Net	6.05%	5.40%	5.33%	3.4%	0.15%
Policy Benchmark Return	5.60%	5.86%	4.96%	3.3%	
Total Relative Return	0.45%	-0.46%	0.37%	105%	
Grand Forks Employee $67 million					
Total Fund Return - Net	3.95%	8.41%	6.68%	6.6%	0.31%
Policy Benchmark Return	3.98%	7.90%	6.28%	6.5%	
Total Relative Return	-0.04%	0.51%	0.39%	101%	
Grand Forks Park District $7 million					
Total Fund Return - Net	3.15%	8.25%	6.63%	6.5%	0.06%
Policy Benchmark Return	3.81%	7.86%	6.21%	6.1%	
Total Relative Return	-0.66%	0.39%	0.43%	107%	

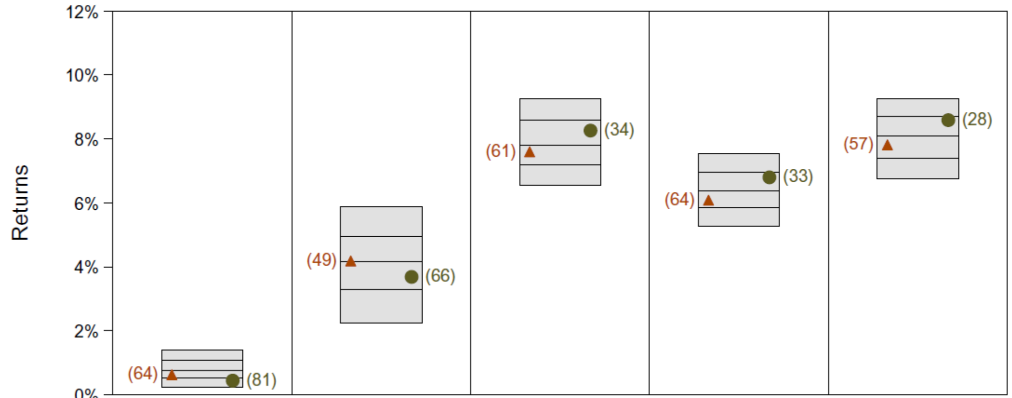
Risk Adjusted Excess Returns for the 5-years ended June 30, 2019, were positive for all Pension Pool clients.

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.

Note: Amounts are unaudited and subject to change.

Callan Public Fund Sponsor Database



		Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile		1.39	5.88	9.26	7.55	9.25
25th Percentile		1.07	4.94	8.58	6.96	8.71
Median		0.75	4.17	7.80	6.39	8.10
75th Percentile		0.51	3.28	7.20	5.84	7.41
90th Percentile		0.24	2.25	6.55	5.27	6.75
Total Fund	●	0.44	3.68	8.26	6.80	8.59
Policy Target	▲	0.63	4.18	7.60	6.09	7.82

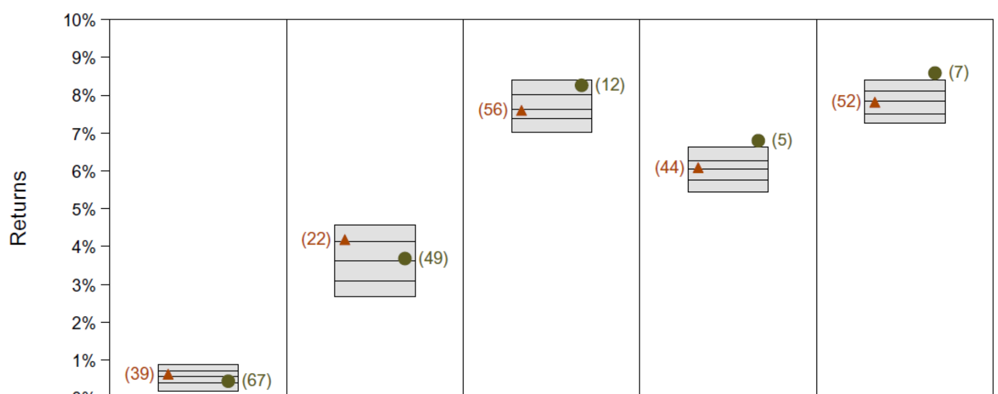
Callan

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 Sep. 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



		Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile		0.87	4.57	8.41	6.62	8.40
25th Percentile		0.71	4.14	8.01	6.28	8.11
Median		0.56	3.63	7.63	6.06	7.85
75th Percentile		0.39	3.10	7.37	5.77	7.52
90th Percentile		0.19	2.67	7.02	5.45	7.27
Total Fund	●	0.44	3.68	8.26	6.80	8.59
Policy Target	▲	0.63	4.18	7.60	6.09	7.82

Non-Pension Pool Return & Risk Summary – **Sep. 30, 2019**

	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019	Risk 5 Yrs Ended 9/30/2019	Risk Adj Excess Return 5 Yrs Ended 9/30/2019
WSI $2.08 billion					
Total Fund Return - Net	7.28%	6.44%	5.90%	3.88%	0.33%
Policy Benchmark Return	7.56%	5.21%	4.87%	3.33%	
Total Relative Return	-0.28%	1.23%	1.02%	OK	
Legacy Fund $6.4 billion					
Total Fund Return - Net	3.79%	7.04%	6.32%	6.37%	0.24%
Policy Benchmark Return	4.88%	6.67%	5.68%	5.91%	
Total Relative Return	-1.08%	0.37%	0.63%	OK	
Budget Stabilization $669 million					
Total Fund Return - Net	5.08%	2.03%	2.02%	1.06%	0.39%
Policy Benchmark Return	4.61%	1.83%	1.54%	0.97%	
Total Relative Return	0.48%	0.20%	0.47%	OK	
Fire & Tornado $23 million					
Total Fund Return - Net	5.91%	6.44%	5.86%	4.97%	0.33%
Policy Benchmark Return	6.31%	5.57%	4.98%	4.40%	
Total Relative Return	-0.40%	0.87%	0.88%	OK	
State Bonding $3.7 million					
Total Fund Return - Net	6.97%	3.30%	3.11%	1.93%	0.75%
Policy Benchmark Return	6.69%	2.32%	2.31%	1.87%	
Total Relative Return	0.28%	0.98%	0.80%	OK	
Ins.Reg.Trust Fund $1.2 million					
Total Fund Return - Net	4.49%	5.17%	4.49%	4.05%	0.11%
Policy Benchmark Return	4.78%	4.74%	4.01%	3.63%	
Total Relative Return	-0.29%	0.43%	0.48%	OK	

Returns and Risk: Fourteen out of Fifteen Non-Pension Pool clients generated positive Excess Return and Risk Adjusted Excess Return for the 5 years ended Sep. 30, 2019. PERS Retiree Health Insurance Credit Fund under-performed by 0.34%. 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.

Note: Amounts are unaudited and subject to change.

Non-Pension Pool Return & Risk Summary – **Sep. 30, 2019**

	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019	Risk 5 Yrs Ended 9/30/2019	Risk Adj Excess Return 5 Yrs Ended 9/30/2019
Petrol.Tank Release $6.1 million					
Total Fund Return - Net	6.48%	3.13%	2.91%	1.75%	0.69%
Policy Benchmark Return	6.29%	2.25%	2.19%	1.72%	
Total Relative Return	0.19%	0.88%	0.72%	OK	
Risk Mgmt. $4.1 million					
Total Fund Return - Net	7.26%	6.73%	6.37%	4.61%	0.42%
Policy Benchmark Return	7.36%	5.72%	5.42%	4.16%	
Total Relative Return	-0.10%	1.01%	0.95%	OK	
Risk Mgmt W/C $5.3 million					
Total Fund Return - Net	6.70%	7.25%	6.80%	5.26%	0.37%
Policy Benchmark Return	6.88%	6.40%	5.96%	4.84%	
Total Relative Return	-0.19%	0.85%	0.84%	OK	
NDACo $6.4 million					
Total Fund Return - Net	6.80%	6.21%	5.60%	4.96%	0.28%
Policy Benchmark Return	7.02%	5.36%	4.73%	4.34%	
Total Relative Return	-0.23%	0.86%	0.87%	OK	
Bismarck Def. Sick Leave $793,000					
Total Fund Return - Net	6.88%	6.32%	5.84%	4.66%	0.43%
Policy Benchmark Return	7.15%	5.18%	4.75%	4.04%	
Total Relative Return	-0.27%	1.14%	1.09%	OK	
FargoDome $43.5 million					
Total Fund Return - Net	3.97%	7.25%	6.46%	6.61%	0.28%
Policy Benchmark Return	4.71%	6.62%	5.71%	6.05%	
Total Relative Return	-0.74%	0.63%	0.75%		

SIB Client Commentary:

Most Non-Pension Pool funds generated positive Risk Adjusted Excess Returns for the 5-years ended Sep. 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 managed by SEI).

Note: Amounts are unaudited and subject to change.

Non-Pension Pool Return & Risk Summary – **Sep. 30, 2019**

	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019	Risk 5 Yrs Ended 9/30/2019	Risk Adj Excess Return 5 Yrs Ended 9/30/2019
Cultural Endowment $481,000					
Total Fund Return - Net	4.06%	8.01%	7.33%	6.91%	0.18%
Policy Benchmark Return	4.78%	7.70%	6.77%	6.49%	
Total Relative Return	-0.72%	0.31%	0.56%	OK	
Board of Medicine $2.4 million					
Total Fund Return - Net	4.69%	4.17%	3.85%		
Policy Benchmark Return	4.73%	3.89%	3.30%		
Total Relative Return	-0.04%	0.28%	0.56%		
PERS Retiree Health $137 million					
Total Fund Return - Net	4.13%	7.42%	6.16%	7.40%	-0.77%
Policy Benchmark Return	4.75%	7.57%	6.50%	6.78%	
Total Relative Return	-0.63%	-0.15%	-0.34%	OK	
PERS Group Insurance $31 million					
Total Fund Return - Net	4.64%	1.79%	1.38%	1.05%	0.01%
Policy Benchmark Return	4.14%	1.70%	1.34%	0.95%	
Total Relative Return	0.50%	0.09%	0.04%	OK	
Tobacco Prevention $9.3 million					
Total Fund Return - Net	4.04%	2.66%	N/A		
Policy Benchmark Return	3.96%	2.65%	N/A		
Total Relative Return	0.08%	0.01%	N/A		
Lewis & Clark $765,000					
Total Fund Return - Net	6.89%	N/A	N/A		
Policy Benchmark Return	7.02%	N/A	N/A		
Total Relative Return	0.27%	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 6.16%) but disappointing on a risk adjusted excess return basis of -0.77%. Given significant legislative actions impacting this fund, PERS is re-evaluating this portfolio in 2019-20.

PERS Group Insurance returns improved materially in the past year largely due to Fed reducing short-term rates and the underlying managers maintaining moderately longer portfolio duration.

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 next quarter, RIO intends to conduct annual investment performance reviews with the following client boards, committees or representatives:
  - City of Bismarck Employee and Police Pension
  - Insurance Commission
  - Risk Management Division (OMB)
  - ND Counties
  - ND Council on Arts
  - FargoDome
  - ND Parks and Recreation

Watch List Update: RIO does not recommend any changes at this time, but note that LSV investment returns have improved significantly in recent months.

North Dakota State Investment Board
Investment Manager Roster
As of November 15, 2019

During the past year, RIO has engaged with several existing investment firms including BlackRock, Goldman Sachs and JPMorgan to review our outstanding public equity portfolios, managers and strategies.

During the past month, RIO has been able to confirm specific investment strategies which should be optimized across our three largest investment pools (Legacy, Pension and Insurance) in order to improve overall risk adjusted returns, enhance downside risk protection and reduce investment strategy concentration risk while remaining keenly focused on fees and expenses (and the targeted excess return expected to be generated on the underlying investment fees).

RIO intends to meet with Callan to review and confirm our preliminary assessments and recommended actions in the upcoming months in advance of requesting SIB approval of the proposed public equity portfolio changes in early-to-mid-2020.

RIO expects the next several steps in our equity optimization plan will be similar to recent actions approved by the SIB including the decision to increase our overall exposure to Atlanta Capital in U.S. Small Cap Equity by expanding this strategy from the Pension Pool to the Legacy Fund and Insurance Pool (while trimming our exposure to Research Affiliates).

If the SIB and Callan concur, RIO will likely recommend lower target allocations to our three largest equity managers in the upcoming years, while seeking to expand developing strategic relationships with firms like BlackRock, Wellington and GSAM (Goldman Sachs), in order to reduce investment manager/strategy concentration risk while seeking to enhance risk adjusted returns in a prudent, practical and cost efficient manner.

1	**LSV (SEI)**	**$**	**1,637**
2	Western Asset Management Co.	$	1,566
3	**LA Capital**	**$**	**1,502**
4	PGIM (Prudential)	$	1,325
5	JPMorgan	$	1,153
6	**Clifton Parametric (Eaton Vance)**	**$**	**1,051**
7	William Blair	$	853
8	PIMCO	$	699
9	NTAM (Northern Trust)	$	635
10	Invesco	$	626
11	State Street	$	591
12	Epoch (TD Bank Group)	$	483
13	Declaration (ManuLife)	$	378
14	Barings (Mass Mutual)	$	349
15	Dimensional Fund Advisors	$	297
16	**Research Affiliates (PIMCO)**	**$**	**295**
17	Wells Capital	$	289
18	Other (SEI)	$	238
19	TIR (Timber)	$	186
20	Cerberus	$	176
21	Ares	$	168
22	Loomis Sayles (Natixis)	$	167
23	**Atlanta Capital (Eaton Vance)**	**$**	**163**
24	Axiom Investors (NT Custodian)	$	162
25	Vanguard	$	156
26	Macquarie	$	118
27	GCM Grosvenor	$	104
28	Adams Street	$	100
29	**BlackRock**	**$**	**82**
30	**Wellington**	**$**	**76**
31	Bank of North Dakota	$	73
32	ISQ Global	$	49
33	Capital International	$	31
34	The Rohatyn Group (JPM AIRRO)	$	19
35	Corsair	$	13
36	Matlin Patterson	$	13
37	Lewis & Clark	$	6
38	EIG	$	4
39	Quantum	$	1
40	**GSAM (Goldman Sachs)**	**$**	**1**
	Total	$	15,835

Callan

November 2019

North Dakota State Investment Board

Performance Evaluation as of September 30, 2019

Paul Erlendson
Senior Vice President

Alex Browning
Senior Vice President

Callan

Market Update

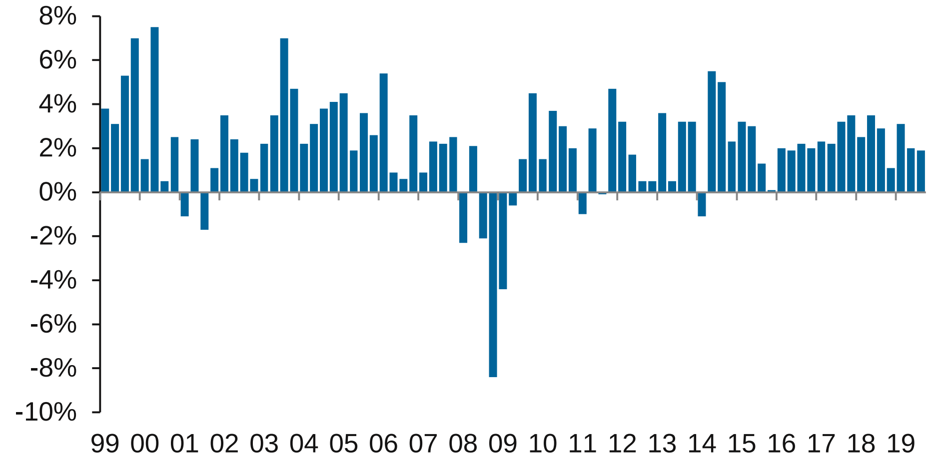
Third Quarter 2019

Global Economic Update

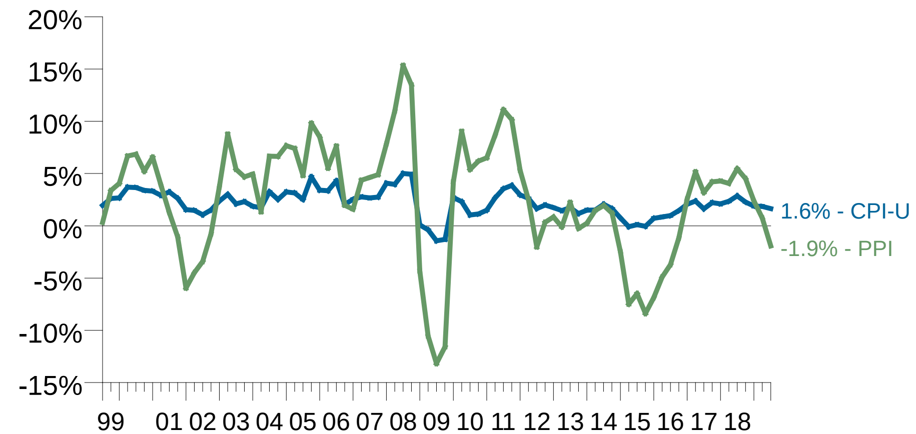
The Big Picture

- The initial estimate of annualized third quarter GDP was 1.9%, slightly ahead of consensus projections.
  - Consumer and government spending were contributors while business investment was a detractor.
- The headline Consumer Price Index (CPI) was flat in September but climbed 1.7% over the trailing 12 months. Core inflation rose 0.1% in the month, bringing year-over-year growth to 2.4%.
- The unemployment rate dropped to 3.5% in September, down from 3.7% in June. The participation rate climbed 0.3 percentage points from June to end September at 63.2%.
- Euro zone GDP grew at an annualized 0.2% in the second quarter, and 1.2% over the trailing year. The unemployment rate remained unchanged through the first quarter of the year, before falling slightly to close out the first half at 7.5%.
- The Federal Reserve cut rates in both July and September in response to lackluster economic data.
- The ECB continues to take a more dovish stance on rates and asset purchases as GDP growth in the Eurozone remains a concern.

Quarterly Real GDP Growth



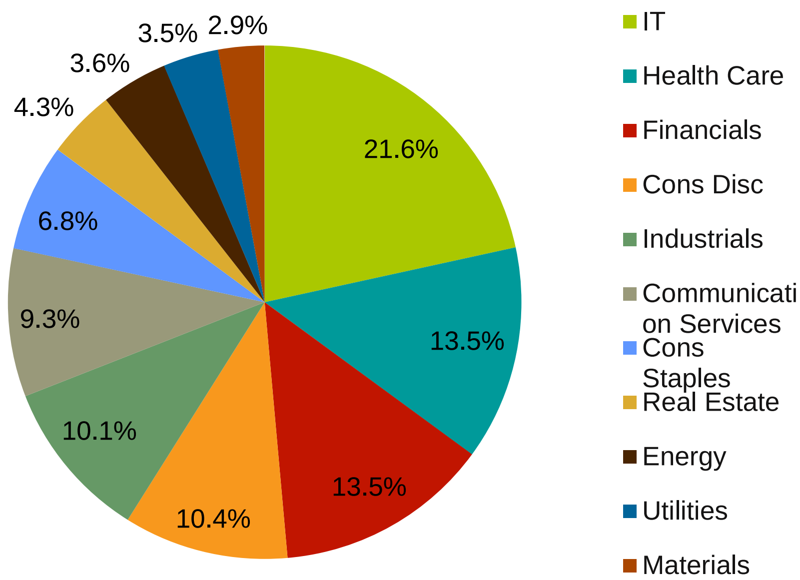
Inflation Year-Over-Year



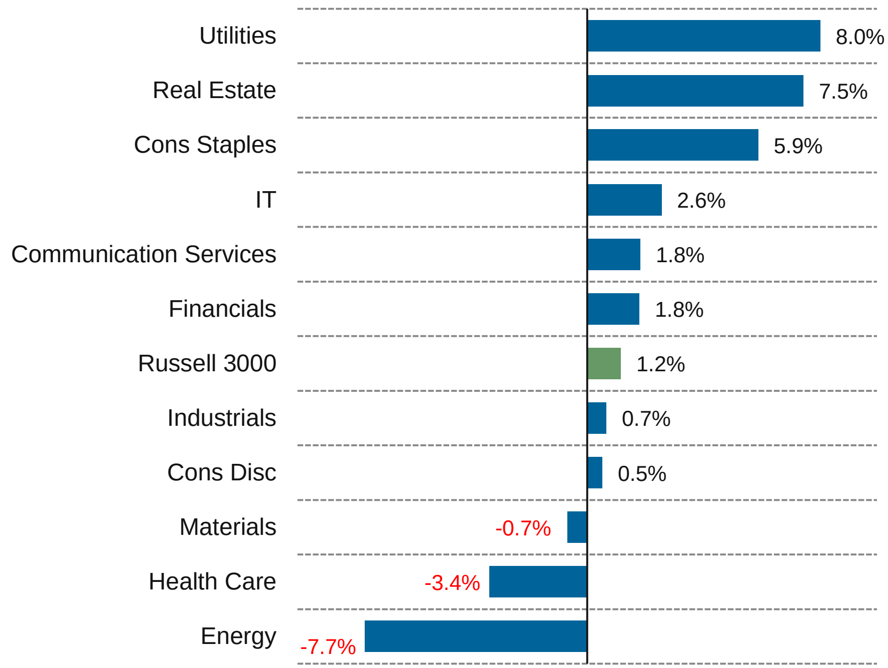
U.S. Equity Returns

September 30, 2019

Economic Sector Exposure (Russell 3000)



Quarterly Returns (Russell 3000)

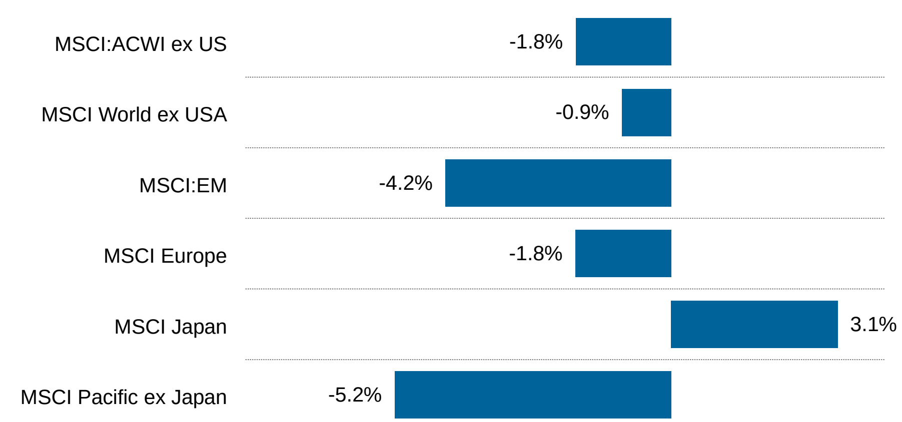


- The Russell 1000 Index rose 1.4% in the third quarter. Gains were driven by the Utilities sector (+8.3%), followed by Real Estate (+7.8%) and Consumer Staples (+6.0%).
- The Russell 2000 Index fell 2.4% in the third quarter. Losses were driven by the Energy sector (-20.7%), followed by Health Care (-9.3%) and Communication Services (-8.1%).

International Equity Returns

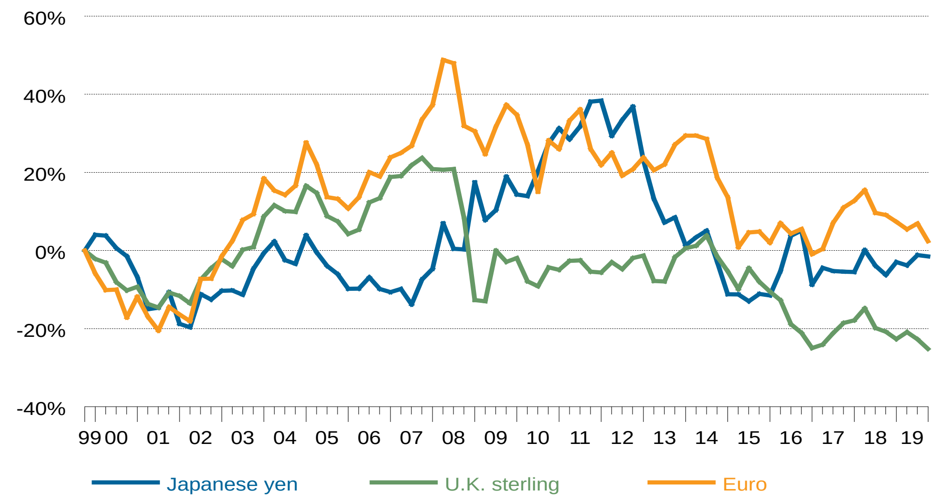
September 30, 2019

Regional Quarterly Performance (U.S. Dollar)



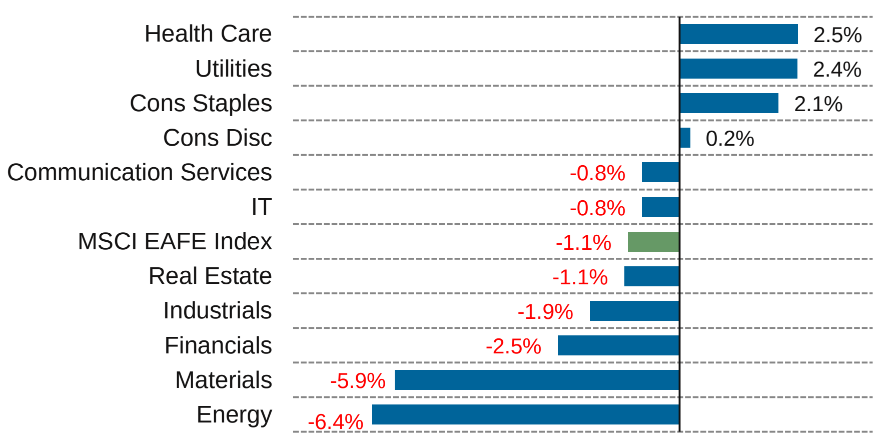
Source: MSCI

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: -1.1%). Japan was a standout region, gaining 3.1%.
- Energy and Materials were the primary detractors while the Health Care and Utilities sectors fared better in the quarter.
- The euro (-4.3%), yen (-0.3%), and British pound (-3.2%) all fell against the dollar in the quarter.

U.S. Equity Market

September 30, 2019

- The S&P 500 Index appreciated 1.7% in the third quarter
  - The index provided positive returns in July and September, but negative returns in August.
  - Utilities was the strongest performing sector at +8.0% (Russell 3000), while Energy was the weakest returning -7.7%.
  - Growth slightly outperformed Value in the third quarter.
    - *R1000 Growth climbed 1.5% in the quarter, while R1000 Value grew 1.4%.*
- Large caps outperformed in the third quarter, followed by mid cap and finally, small caps
  - Last quarter, the R1000 was up 1.4% vs. the R2000 which was down 2.4%.

Large Cap Equity	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell 1000 Index	1.42	20.53	3.87	13.19	10.62	13.23
Russell 1000 Growth	1.49	23.30	3.71	16.89	13.39	14.94
Russell 1000 Value	1.36	17.81	4.00	9.43	7.79	11.46
Mid Cap Equity						
Russell Midcap Index	0.48	21.93	3.19	10.69	9.10	13.07
Russell Midcap Growth	-0.67	25.23	5.20	14.50	11.12	14.08
Russell Midcap Value	1.22	19.47	1.60	7.82	7.55	12.29
Small Cap Equity						
Russell 2000 Index	-2.40	14.18	-8.89	8.23	8.19	11.19
Russell 2000 Growth	-4.17	15.34	-9.63	9.79	9.08	12.25
Russell 2000 Value	-0.57	12.82	-8.24	6.54	7.17	10.06

Relative Sector Returns and Style Index Returns Last 12 1/2 Years

Data as of June 30, 2019

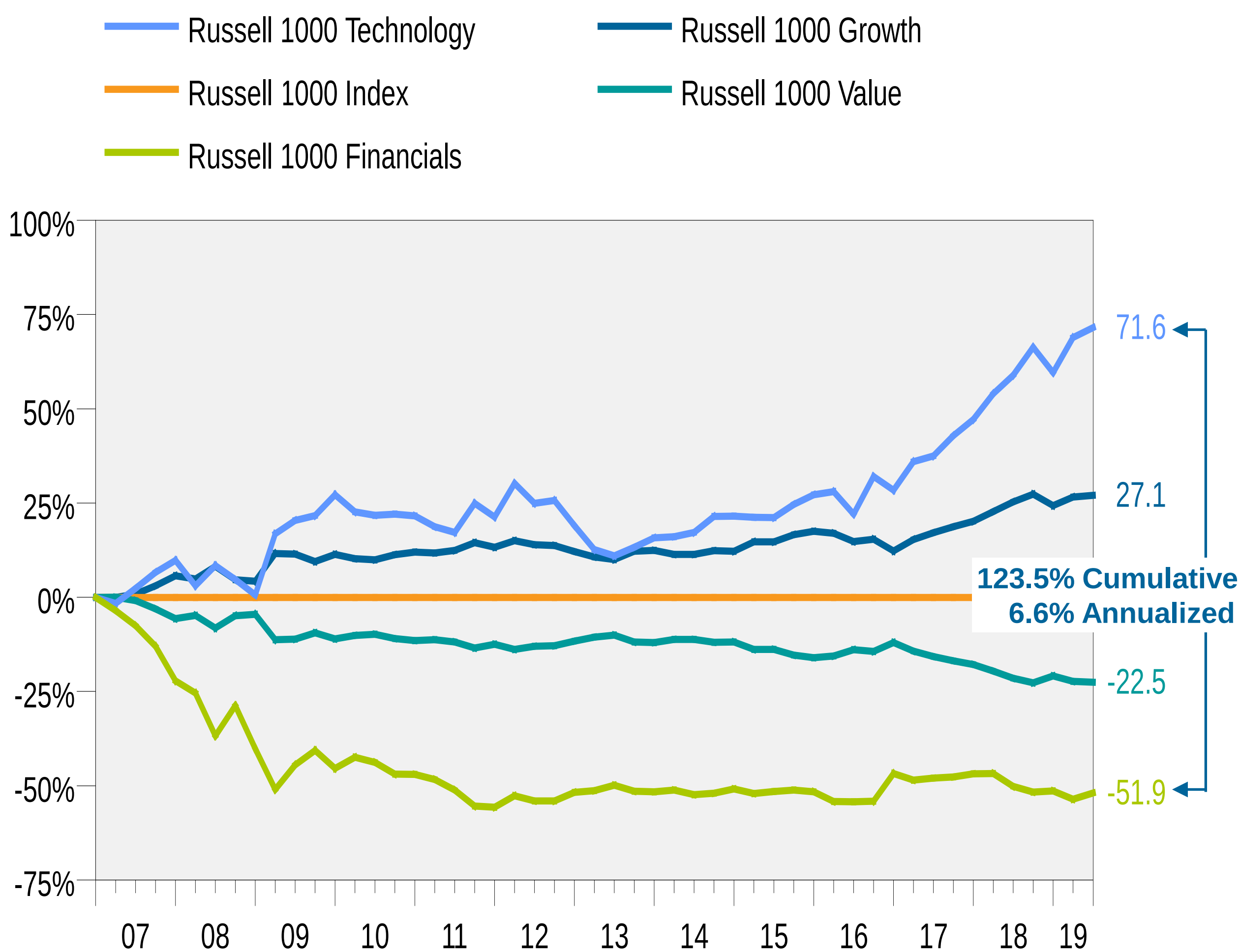
An interesting pattern has been identified that helps explain the recent differences between the Growth and Value style's results.

Notice the similarities between the light blue line, Russell 1000 Technology ***sector***, and the dark blue line, Russell 1000 Growth ***style***.

The analogue is the green line, Russell 1000 Financial ***sector***, and the teal line, Russell 1000 Value ***style***.

The patterns are similar in both cases and the relative returns are very highly correlated.

Cumulative Relative Returns Relative To Russell 1000 Index



Source: Callan

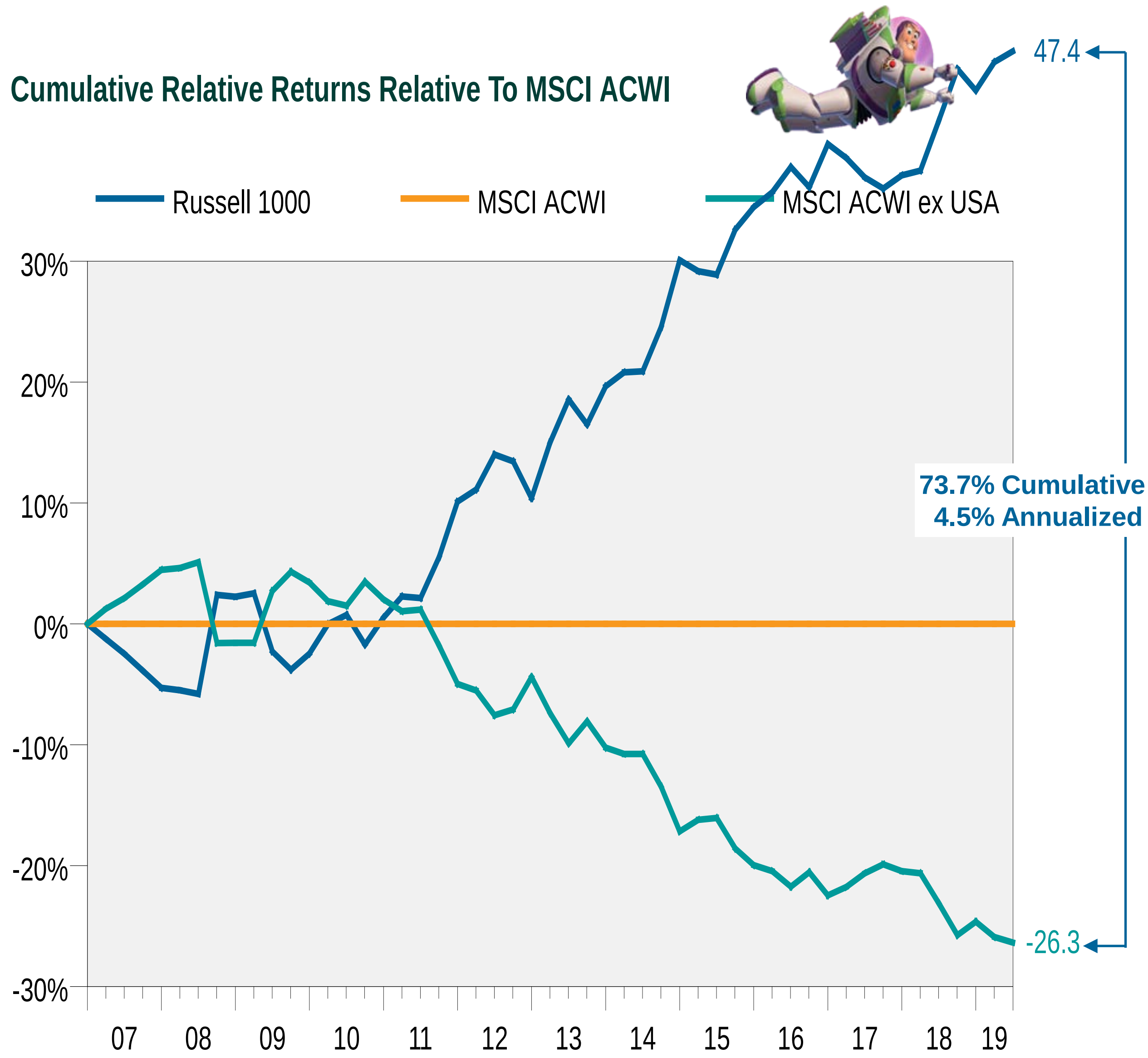
U.S. and Non-U.S. the Last 12 1/2 Years—Index

Data as of June 30, 2019

Oh, and by the way, there was a pretty big difference between U.S. equity and non-U.S. equity returns over this period

This wasn't a growth vs. value phenomenon and it wasn't a currency phenomenon

I wanted to keep the scales consistent across the charts and liked the visual effect of the U.S. equity line exiting the stratosphere



Source: Callan

So How Important Were the Two Persistent Sector Differences?

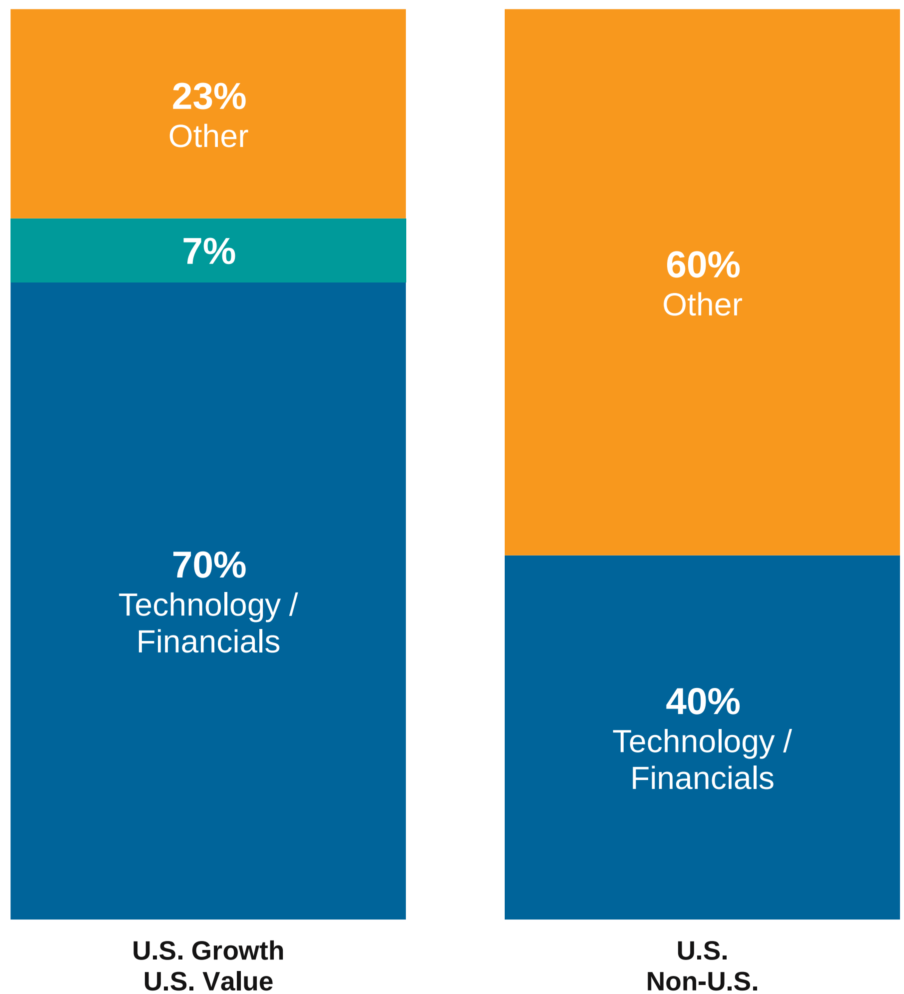
Data as of June 30, 2019

The Technology / Financial sector difference between U.S. growth and U.S. value explained 70% of the total difference in return over this period

The differences in return between the growth and value Technology sector and the growth and value Financial sector only explained 7% of the difference

Technology / Financials were also important in the U.S./non-U.S. equation, explaining about 40% of the relative return difference over this period

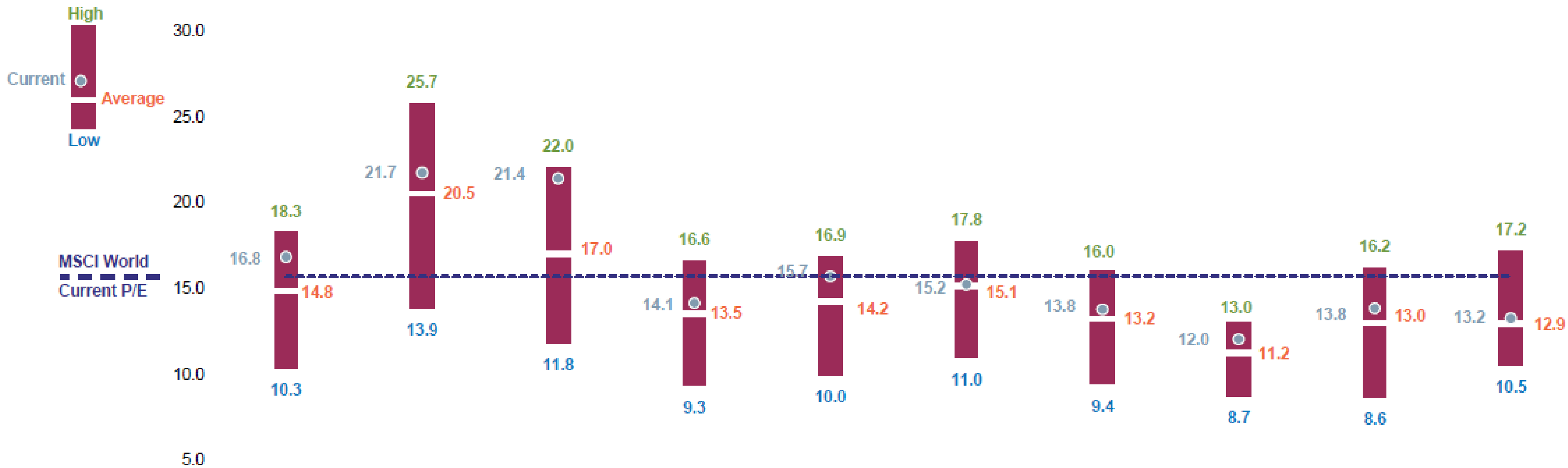
Relative Return Attribution



Source: Callan

Global Equity Valuations

September 30, 2019



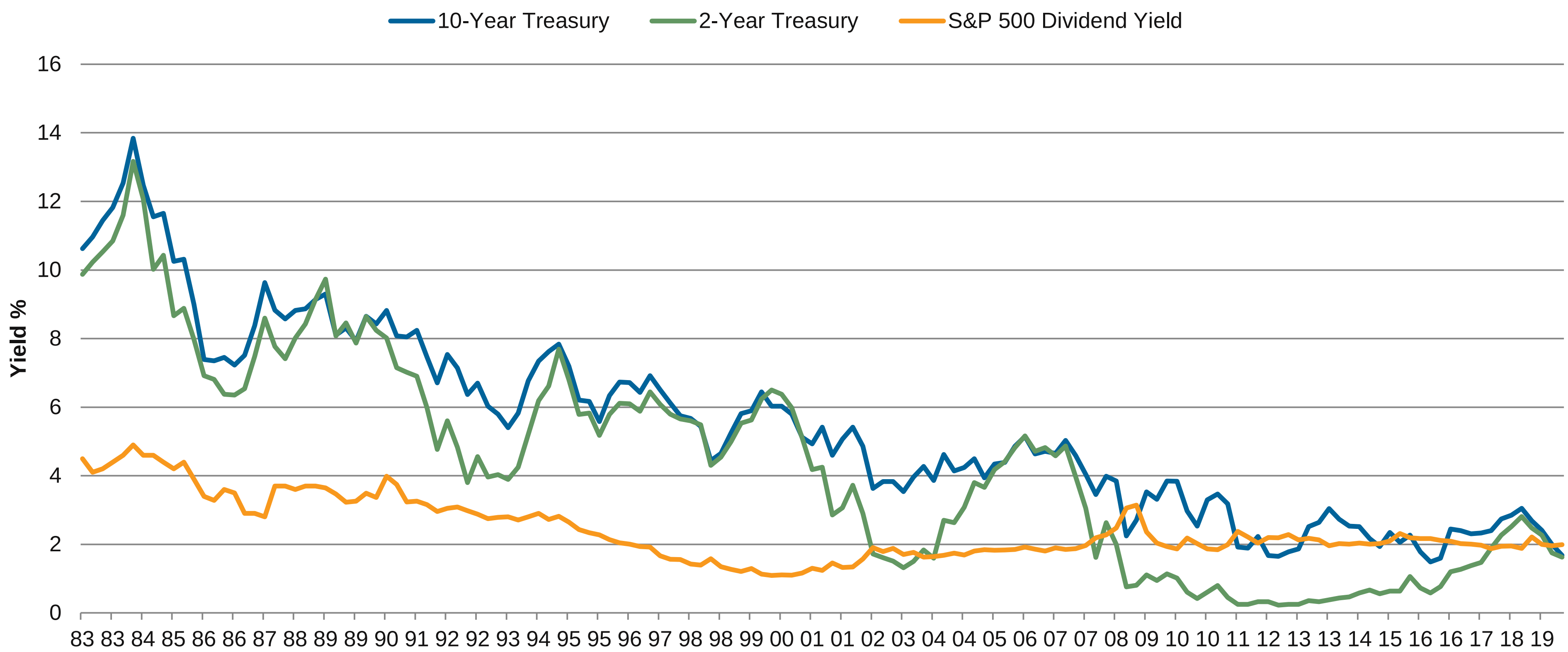
	S&P 500	Russell 2000	Russell 1000 Growth	Russell 1000 Value	MSCI World	MSCI World ex USA Small Cap	MSCI EAFE	MSCI EM	MSCI Europe	MSCI AC Asia Pac
High Date	11/17	9/17	7/19	2/17	1/18	5/15	5/15	1/18	3/15	10/09
Low Date	9/11	9/11	9/11	9/11	9/11	9/11	9/11	9/11	9/11	9/11

Source: Eaton Vance Monthly Market Monitor

FactSet as of 9/30/19. NTM P/E is market price per share divided by expected earnings per share over the next twelve months.

Long Period of Zero Interest Rate Policy Skews Memories of 'Normal Markets'

Yields on 2- and 10-year Treasury notes below the level of the S&P dividend yield



- Long-term historical relationship between bond yields and dividends has been distorted by 10 years of extreme policy intervention.
- After Fed rate hikes starting in 2017, 2-year Treasury yields rose above dividends. Both 2- and 10-year Treasury yields fell back to the level of stock dividends in Q2 2019 and have since dipped below in the third quarter.

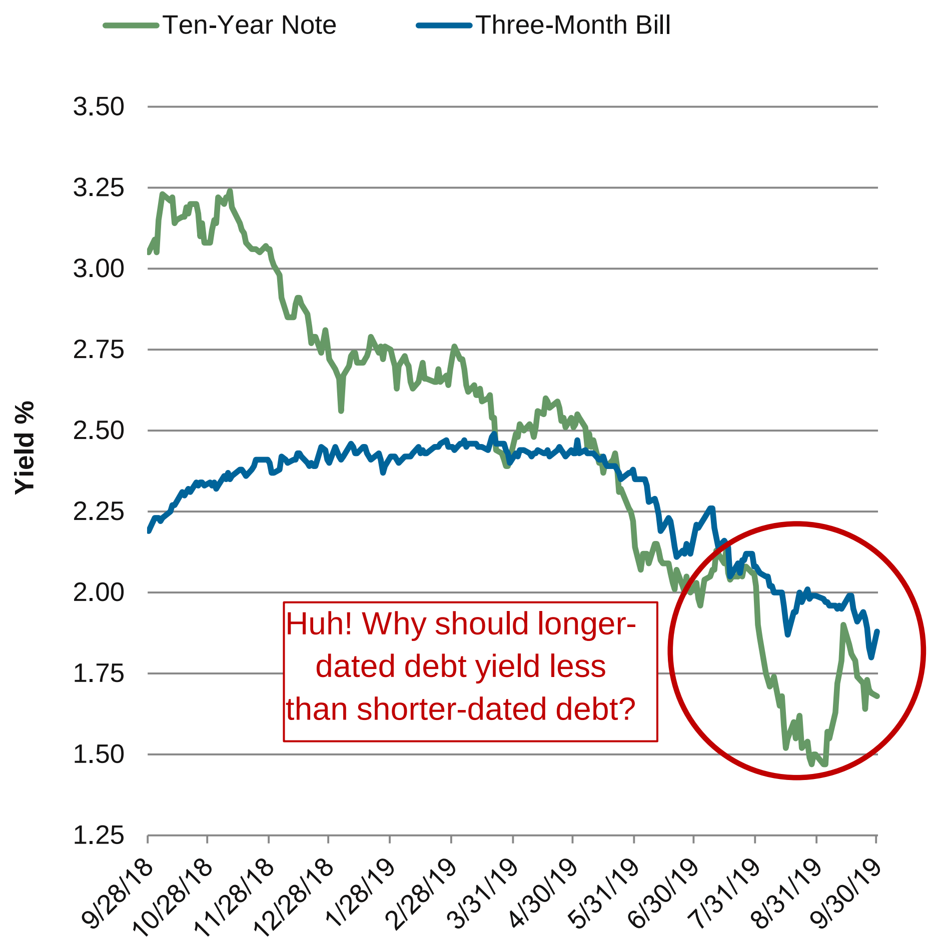
Source: Callan

Inverted Yield Curve Points to Recession, a Normal Part of the Economic Cycle

Built into the 10-year forecast

- Timing of recession following yield curve inversion is long and variable – 6 to 18 months
- Consensus expectation for U.S. recession in 2020; may avoid true recession with slowdown in GDP growth to 1%
- Typical economic impact:
  - *Slowing job growth, layoffs*
  - *Wages and income*
  - *Consumer confidence*
  - *Housing market*
  - *Capital spending*
- Thus far, only housing market and business investment are showing incipient signs of slowdown.
- Stock market reaction is usually sharp and early.
  - *Recession fears spurred Q4 2018 market decline; snap back in 2019 a response to Fed policy shift, which ultimately signals fear of recession.*
- Bond market will benefit from falling rates, but:
  - *Sharp rise in government debt from 2018 tax cut; impact exacerbated by recession (hits tax receipts)*
  - *Ballooning share of BBB corporate debt: increases risk of downgrade and upheaval in the credit markets*

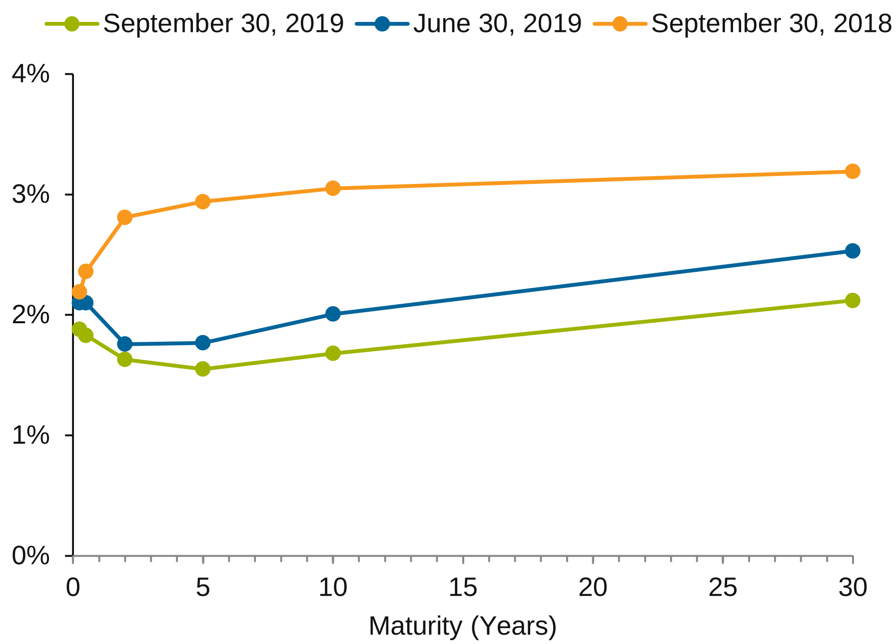
Treasury Yield Curve Inverts



Source: Bloomberg

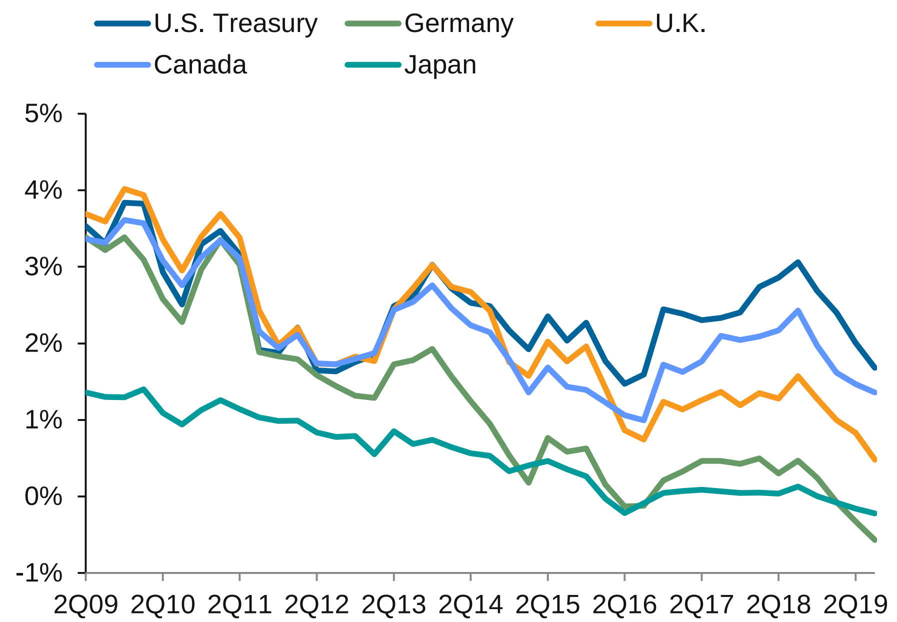
Yield Curve Changes

U.S. Treasury Yield Curves



Source: U.S. Department of the Treasury

10-Year Global Government Bond Yields

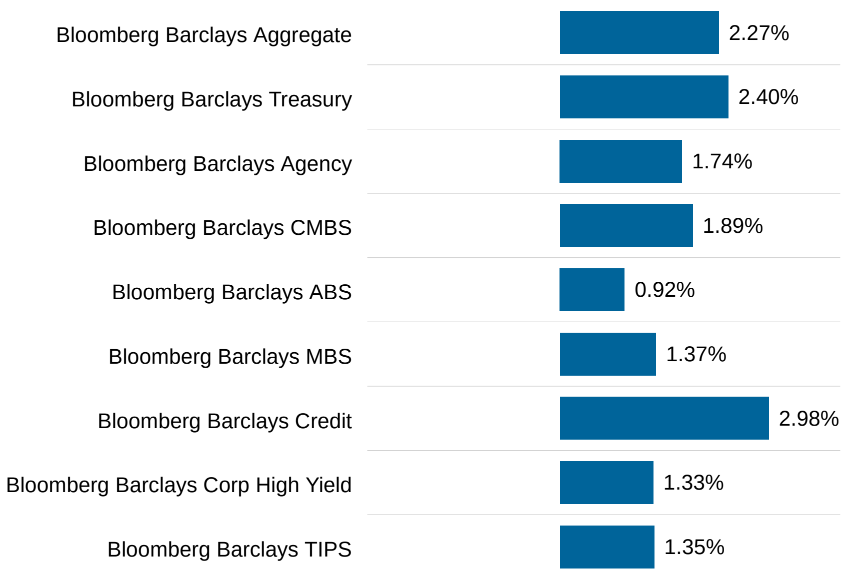


- The closely watched spread between the 2- and 10-year U.S. Treasury rates briefly inverted in August, before returning to a positive five bps spread.
- Yields have fallen by over a percent on the long end of the treasury curve over the past year.
- Despite declining yields in the U.S. over the past year, yields remain high compared to other developed nations.

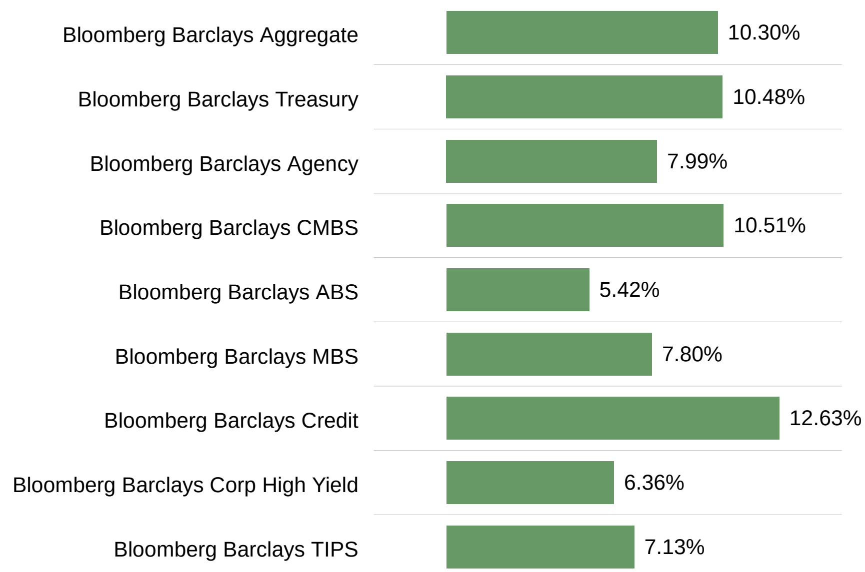
Total Rates of Return by Bond Sector

As of September 30, 2019

Trailing One-Quarter Returns



Trailing One-Year Returns

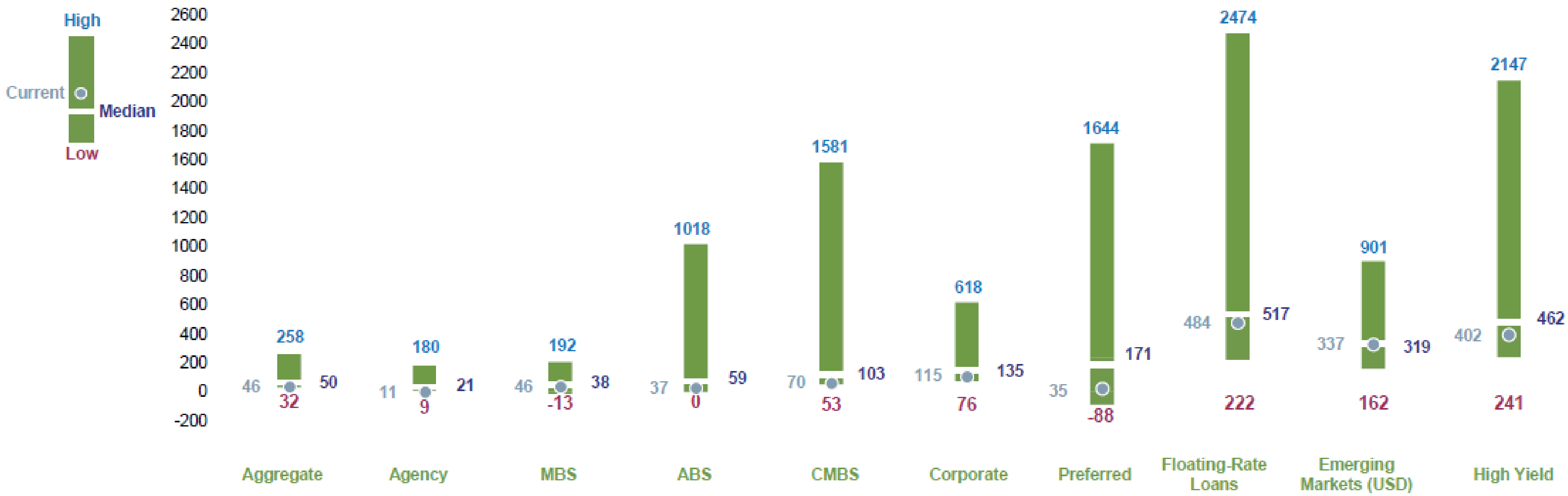


- Fixed income sector trends for the third quarter mirrored those of the trailing year.
- With concerns of slowing domestic and global growth, Treasuries produced over 2% in the third quarter and more than 10% over the trailing year.

Source: Bloomberg Barclays

Fixed Income Spread Analysis

September 30, 2019



	Aggregate	Agency	MBS	ABS	CMBS	Corporate	Preferred	Floating-Rate Loans	Emerging Markets (USD)	High Yield
Max Spread Date	12/3/2008	11/20/2008	12/3/2008	1/6/2009	11/21/2008	12/3/2008	3/9/2009	12/19/2008	10/24/2008	12/15/2008
Min Spread Date	2/23/2005	3/12/2013	7/27/2010	10/1/2009	12/8/2004	3/11/2005	12/6/2017	3/31/2006	6/1/2007	6/1/2007
Spread on 12/31/18	54	16	35	53	86	153	242	551	415	533
Spread on 12/31/17	36	14	25	36	62	93	-30	405	285	358
Spread on 12/31/16	43	21	15	59	75	123	211	465	342	421

- Fixed income spreads measure the yield of various securities relative to risk free Treasuries.
- Spreads are currently tight, versus their averages, for all sectors except Emerging Markets Debt. This implies that fixed income securities are relatively expensive compared to historic measures.

Source: Eaton Vance Monthly Market Monitor
FactSet as of 9/30/19. Spread history measure past 15 years.

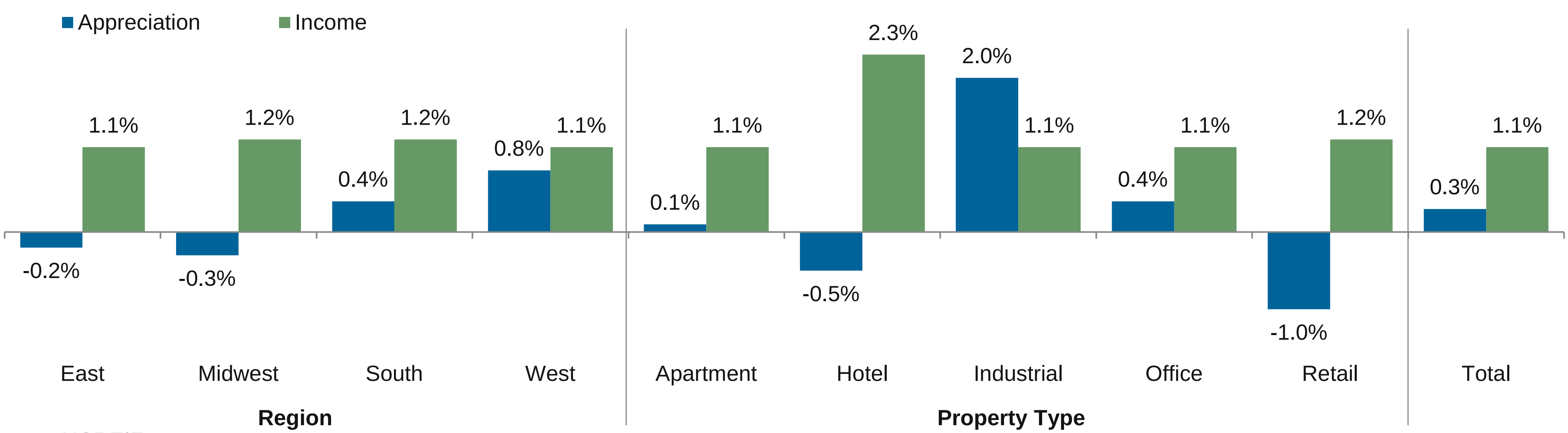
U.S. Real Estate

Returns continue to moderate

– U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
– Returns coming from net operating income (NOI) growth rather than further cap rate compression
– Industrial real estate keeps outperforming other property types.
– Retail continues to show signs of depreciation.
– Defensive posturing and disciplined asset acquisitions are key.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
NCREIF ODCE	1.1%	4.6%	6.3%	8.4%	9.3%
Appreciation	0.3%	1.4%	2.9%	4.7%	5.4%
Income	0.8%	3.2%	3.3%	3.5%	3.7%
NCREIF Property Index	1.4%	6.2%	6.8%	8.6%	9.3%
Appreciation	0.3%	1.7%	2.1%	3.7%	4.2%
Income	1.1%	4.5%	4.6%	4.8%	5.0%

NCREIF Property Index Returns by Region and Property Type



Source: NCREIF

U.S. Real Estate

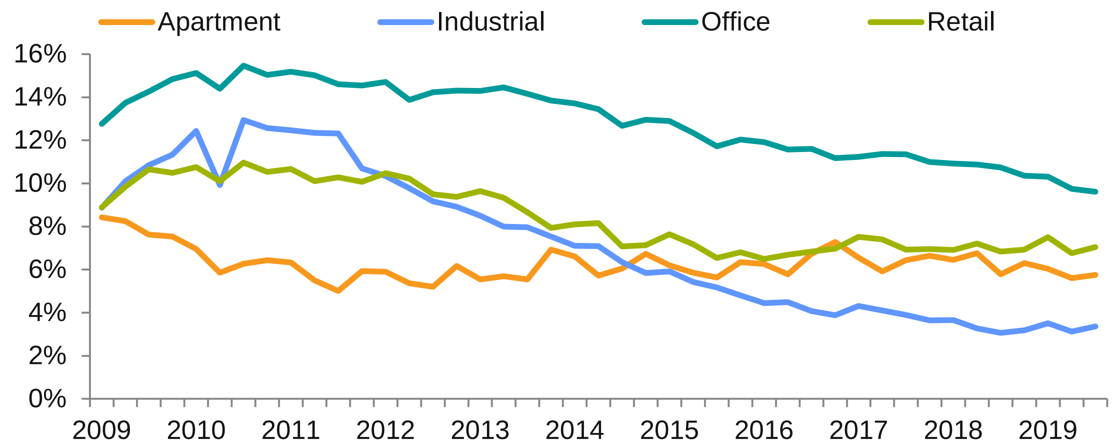
U.S. real estate fundamentals remain healthy

– Steady returns continued, driven by above inflation-level rent growth in many metros.

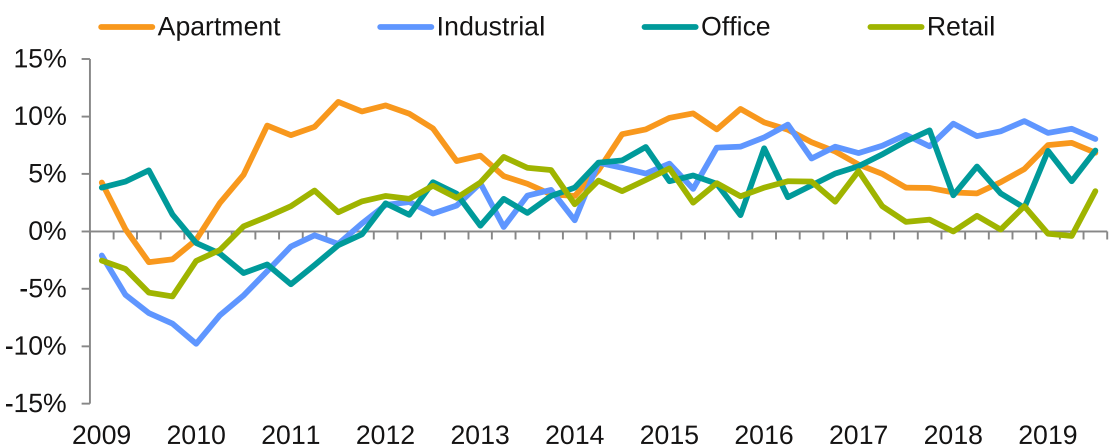
– Within NPI, the vacancy rate for U.S. office was 9.6% in 3Q19, the lowest in over 12 years.

– NOI has been growing annually, and is expected to be the primary return driver. Apartment and Industrial NOI growth fell slightly since 2Q19

Vacancy by Property Type

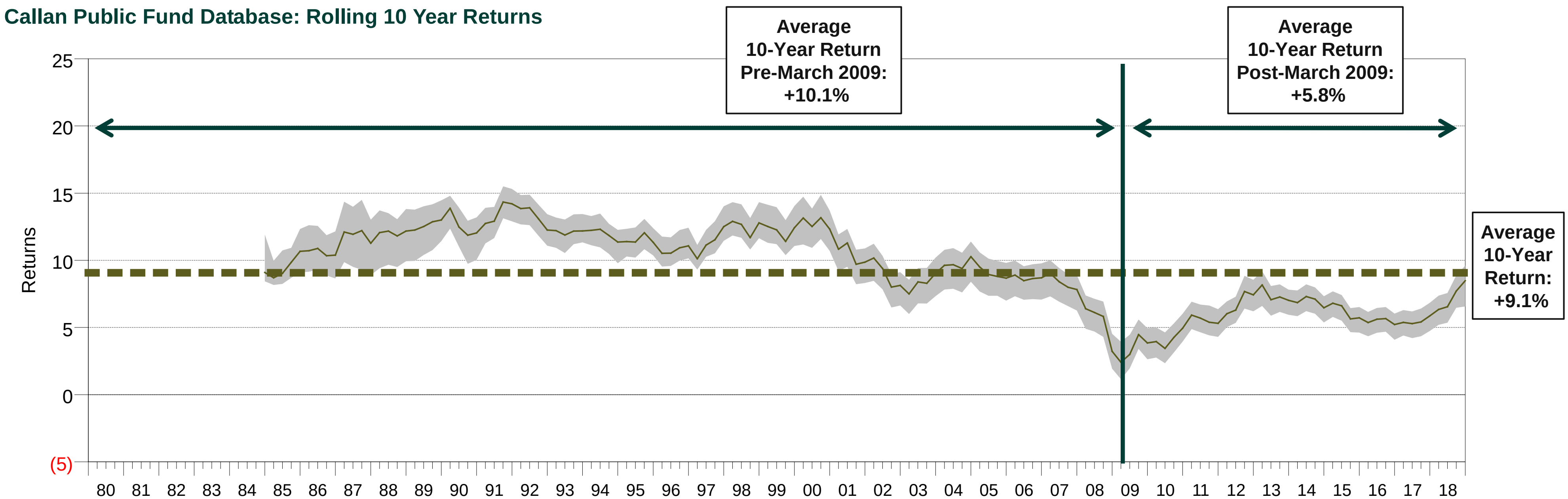


4-Quarter Rolling NOI Growth by Property Type

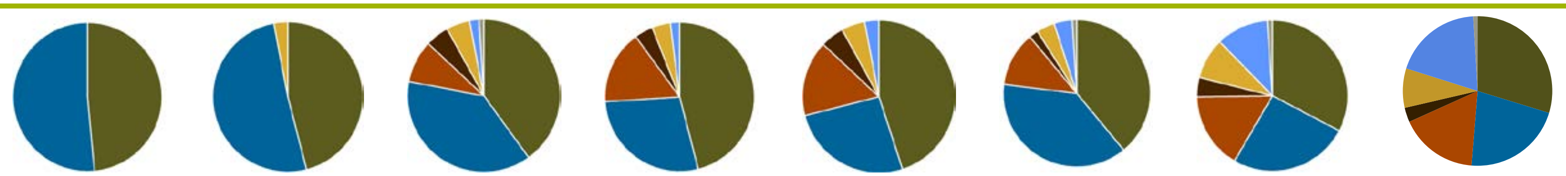


Source: NCREIF

Historical Public Fund Asset Allocation and Returns



10 Year Return	10.7%	12.0%	11.3%	12.3%	8.7%	5.0%	5.7%	8.5%



Asset Class	1985	1990	1995	2000	2005	2010	2015	2018
Domestic Equity	49%	46%	40%	46%	45%	39%	33%	30%
Domestic Fixed Income	52%	51%	38%	28%	26%	30%	26%	22%
Non-U.S. Equity			9%	16%	16%	15%	16%	17%
Non-U.S. Fixed Income			5%	4%	5%	4%	4%	3%
Real Estate		3%	5%	4%	5%	4%	9%	9%
Other Alternatives			2%	2%	3%	7%	11%	19%
Cash Equivalents			1%			1%	1%	1%

Source: Callan. Allocations are as of December 31 of the applicable year.

Asset Class Comparisons—Vintage Fee Analysis

Are all asset classes created equal when examining fees over time? Yes and No

Small Cap ($150 to $300 million mandates)

We observed earlier that the weighted average fee, average mandate and therefore revenue per client declined over time

Large Cap ($150 to $300 million mandates)

- Weighted average fee has declined from 35 bps to 32 bps
- Average mandate size has declined by $20 million
- Revenue per client decline of 15% from the first vintage inception (2000 to 2008)

Fixed Income ($50 to $100 million mandates)

- Weighted average fee has declined from 21 bps to 16 bps
- Average mandate size actually increased
- Revenue per client still declined 24%

Non-U.S. Equity has defied the trend ($50 to $100 million) mandates

- Weighted average fees increased
- Average mandate size increased
- Therefore average revenue per client increased
- ***Clients moving away from a home country bias***
- ***Clients allocating more to ACWI ex USA strategies at higher fees***

Inception Vintages	$ Weighted Avg. Fee	Avg. Size /Mandate	Number of Mandates	Avg. Fee /Mandate	Cumul. Change
2000–2008	56 bps	$81.375	16	$455,087	
2009–2013	59 bps	$94.636	22	$557,040	22%
2014–2018	**61 bps**	$94.677	31	$579,675	**27%**

* Average mandate size in $ millions

Source: Callan

Asset Class Fee Comparisons

Non-U.S. equity

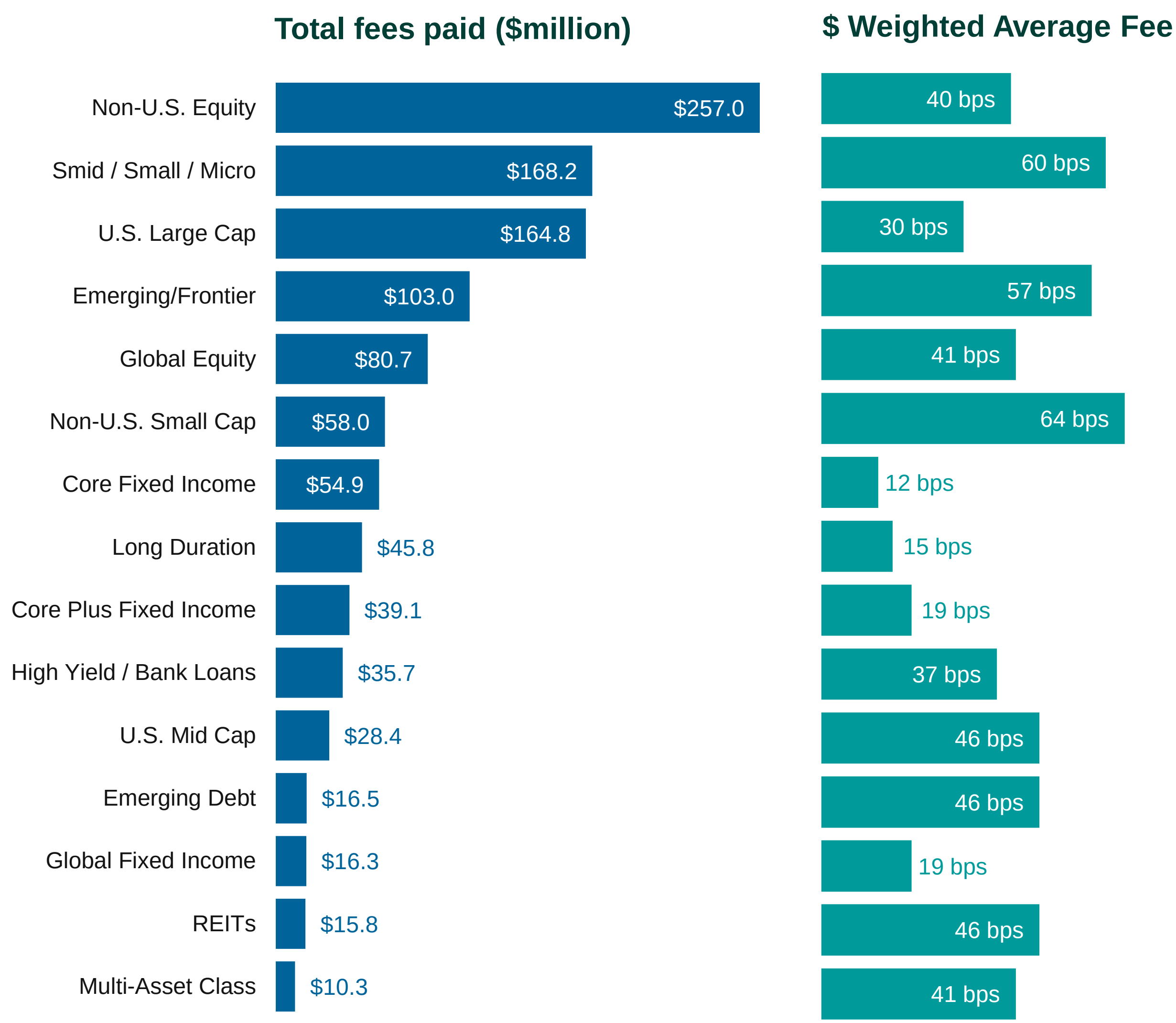
– Higher fees and AUM

U.S. large cap

– High total fees paid based on large AUM

Less efficient asset classes should command the most in fees (in bps)

– Smid / small / micro
– Emerging / frontier
– Non-U.S. small cap

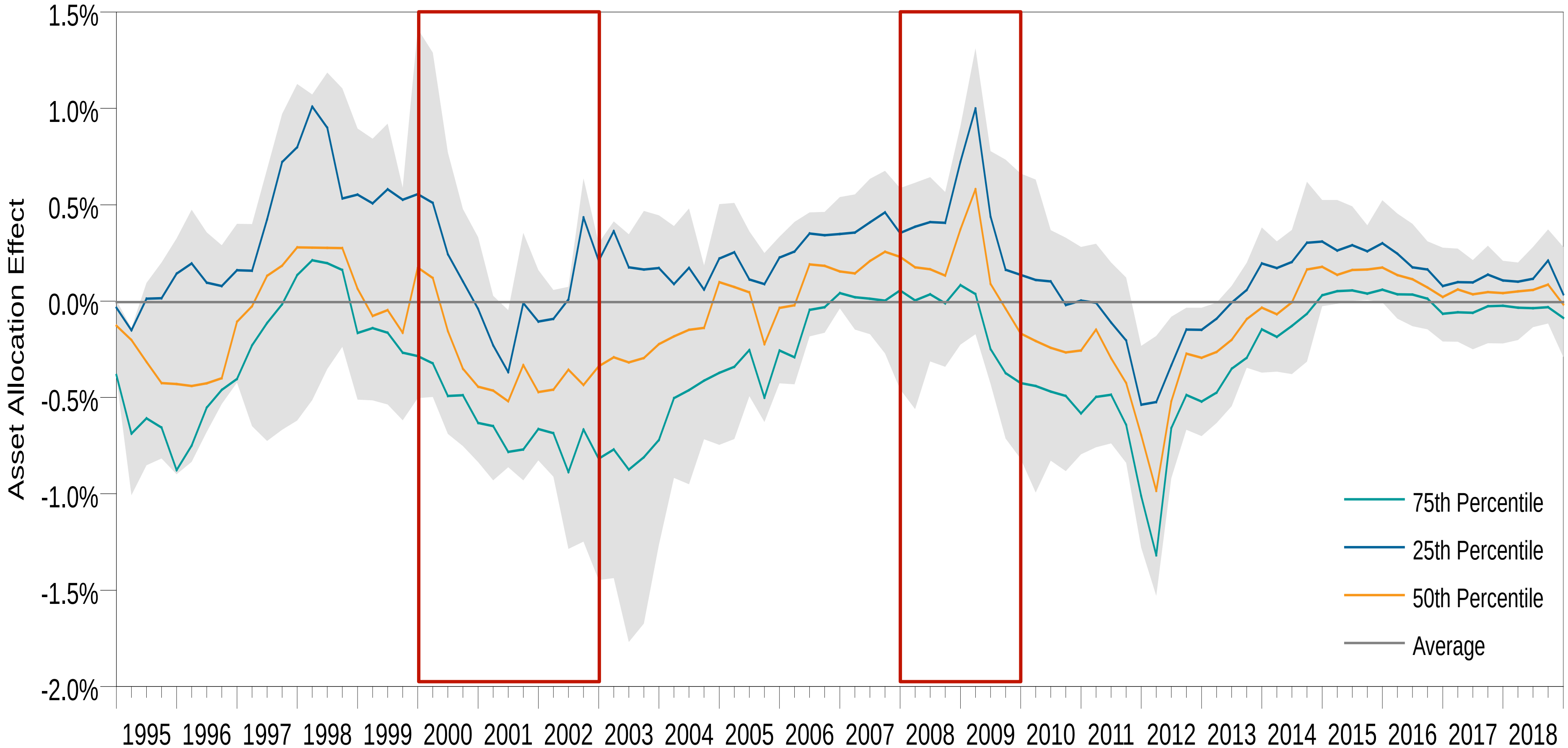


Source: Callan

Asset Allocation Effect on Returns

The impact of allocation variations versus strategic target weights over rolling three-year periods

During times of market stress (2000 – 2002 and 2008 – 2009), the performance impact relative to total fund benchmarks caused by asset allocation deviations was significant.



Source: Callan

Callan

NDSIB Total Performance Summary

NDSIB Consolidated Gross Performance Summary

As of September 30, 2019

	Last Quarter	Last Year	Last 5 Years
Consolidated Pension Trust	0.44%	3.68%	6.80%
Consolidated Pension Trust Target	*0.63%*	*4.18%*	*6.09%*
Relative Performance vs. Target	-0.19%	-0.50%	0.71%
PERS Total Fund	0.42%	3.65%	6.82%
NDSIB PERS Total Fund Target	*0.61%*	*4.21%*	*6.10%*
Relative Performance vs. Target	-0.19%	-0.56%	0.72%
TFFR Total Fund	0.44%	3.66%	6.79%
NDSIB TFFR Total Fund Target	*0.64%*	*4.13%*	*6.07%*
Relative Performance vs. Target	-0.20%	-0.47%	0.72%
WSI Total Fund	1.73%	7.46%	6.12%
NDSIB WSI Total Fund Target	*1.60%*	*7.54%*	*4.87%*
Relative Performance vs. Target	0.13%	-0.08%	1.25%
Legacy - Total Fund	1.05%	3.99%	6.54%
NDSIB Legacy - Total Fund Target	*0.97%*	*4.86%*	*5.69%*
Relative Performance vs. Target	0.08%	-0.87%	0.85%
Budget - Total Fund	0.94%	5.20%	2.18%
NDSIB Budget - Total Fund Target	*0.69%*	*4.59%*	*1.54%*
Relative Performance vs. Target	0.25%	0.61%	0.64%

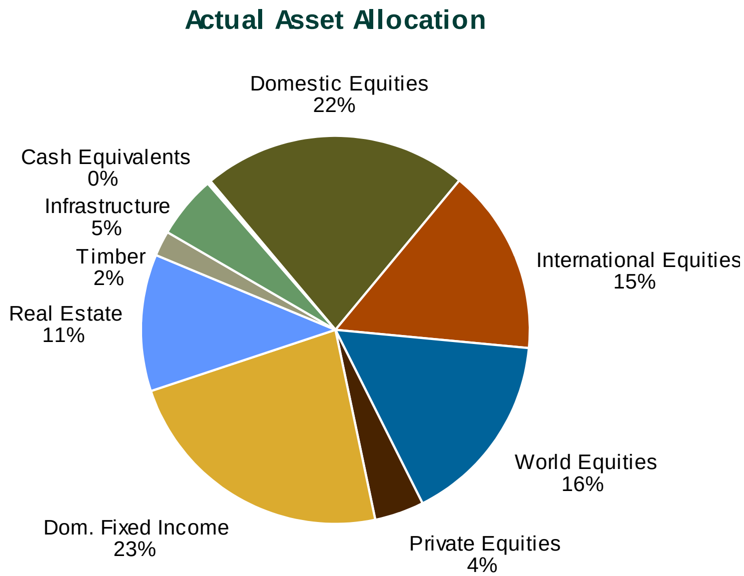
Callan

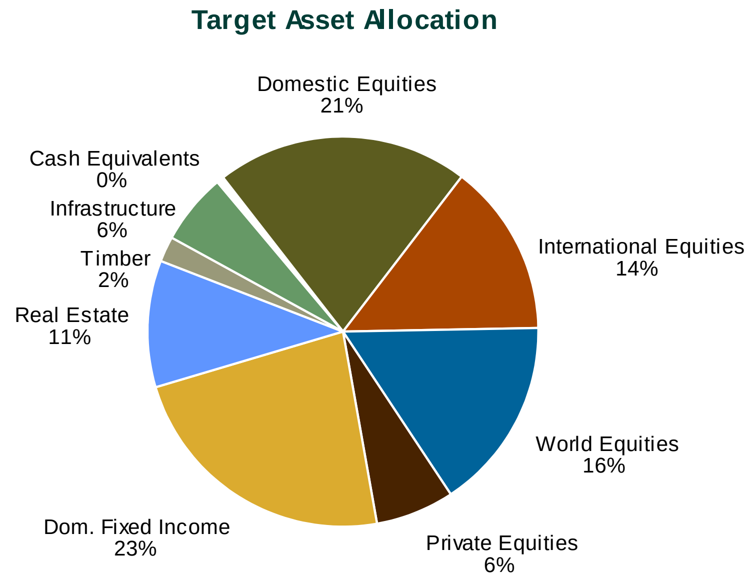
Consolidated Pension Trusts
Quarterly Review

- Public Employees Retirement System
- Teachers' Fund for Retirement

Consolidated Pension Trust Allocation

As of September 30, 2019

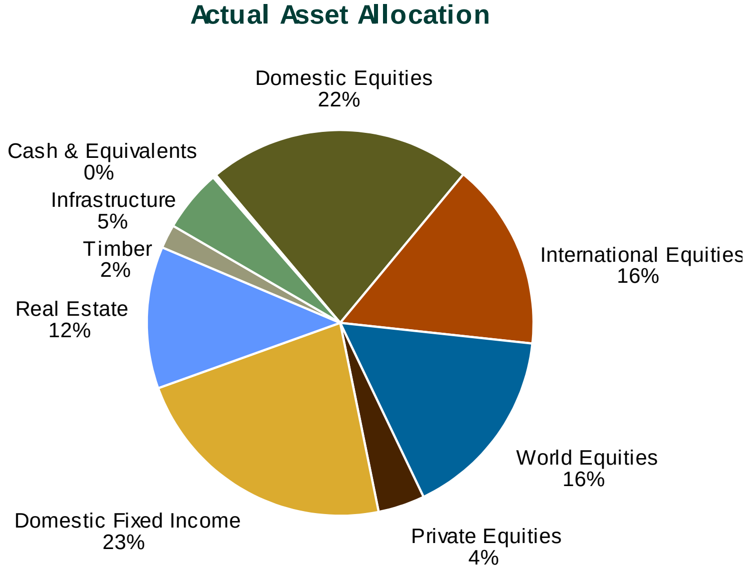


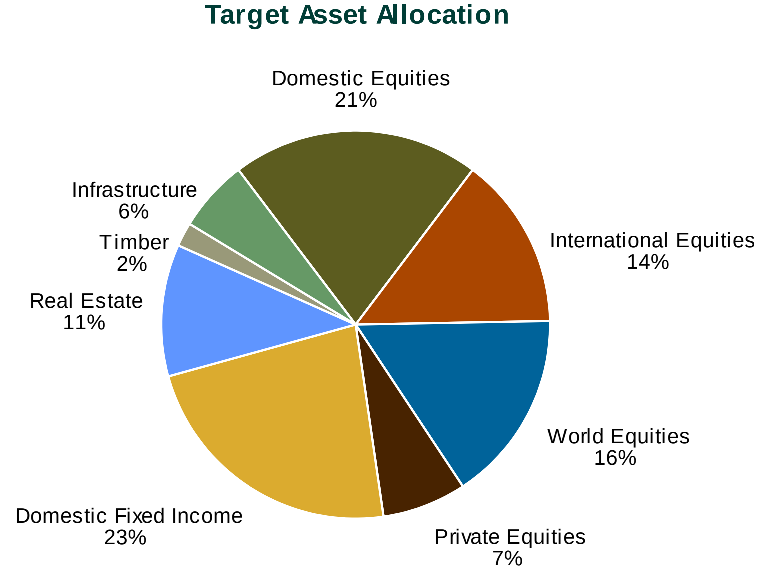


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	1,312,713	22.1%	20.9%	1.2%	70,835
International Equities	917,550	15.5%	14.3%	1.1%	67,074
World Equities	956,305	16.1%	16.0%	0.1%	7,298
Private Equities	244,296	4.1%	6.5%	(2.4%)	(139,996)
Dom. Fixed Income	1,376,231	23.2%	23.3%	(0.0%)	(2,931)
Real Estate	673,514	11.4%	10.5%	0.8%	47,944
Timber	123,911	2.1%	2.1%	0.0%	0
Infrastructure	307,707	5.2%	5.9%	(0.7%)	(43,029)
Cash Equivalents	19,066	0.3%	0.4%	(0.1%)	(7,195)
Total	5,931,294	100.0%	100.0%		

PERS Allocation

As of September 30, 2019

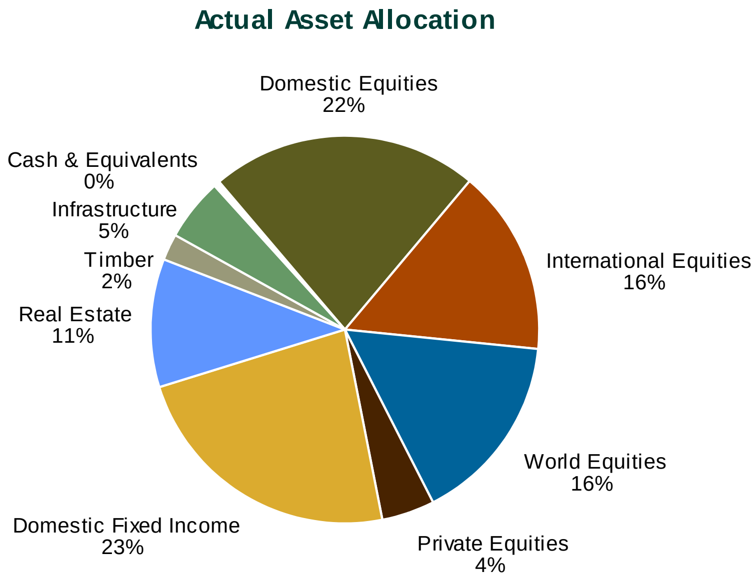


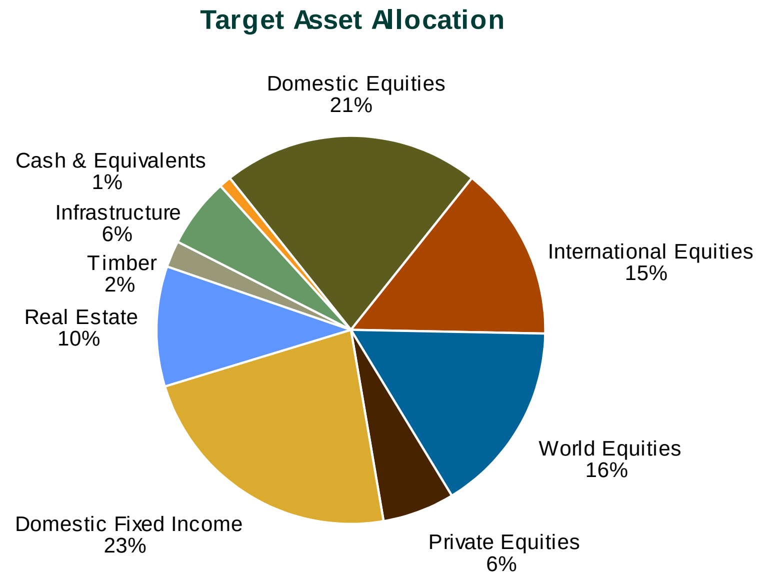


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	696,161	22.1%	20.6%	1.5%	47,138
International Equities	494,570	15.7%	14.4%	1.3%	40,884
World Equities	511,792	16.2%	16.0%	0.2%	7,696
Private Equities	122,560	3.9%	7.0%	(3.1%)	(97,982)
Domestic Fixed Income	716,349	22.7%	23.0%	(0.3%)	(8,289)
Real Estate	375,246	11.9%	11.0%	0.9%	28,680
Timber	62,661	2.0%	2.0%	0.0%	0
Infrastructure	162,329	5.2%	6.0%	(0.9%)	(27,059)
Cash & Equivalents	8,932	0.3%	0.0%	0.3%	8,932
Total	3,150,599	100.0%	100.0%		

TFFR Allocation

As of September 30, 2019



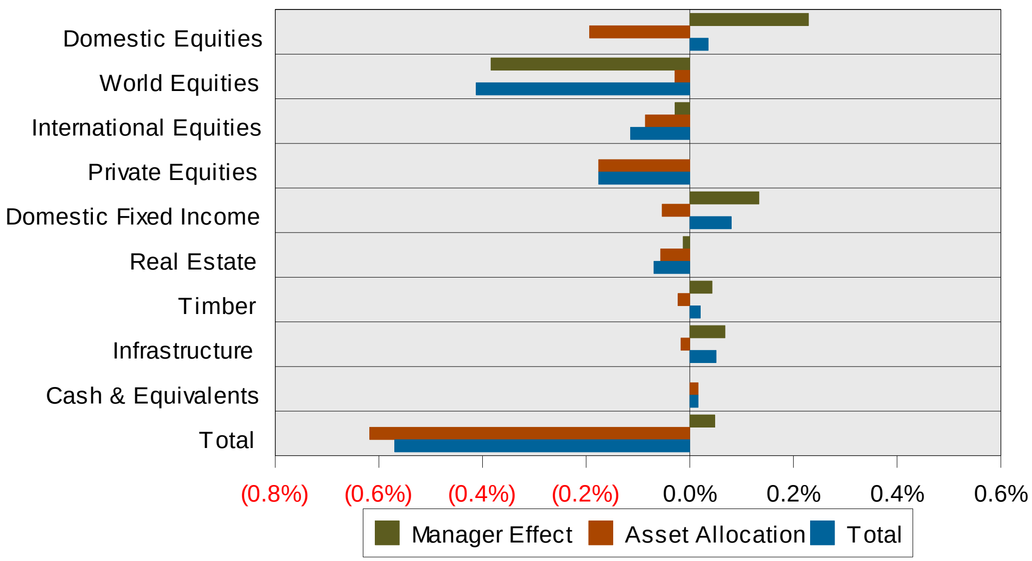


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	571,200	22.3%	21.4%	0.9%	23,598
International Equities	397,821	15.5%	14.6%	0.9%	24,223
World Equities	408,022	15.9%	16.0%	(0.1%)	(1,400)
Private Equities	112,496	4.4%	6.0%	(1.6%)	(41,038)
Domestic Fixed Income	596,100	23.3%	23.0%	0.3%	7,555
Real Estate	275,035	10.7%	10.0%	0.7%	19,146
Timber	55,933	2.2%	2.2%	0.0%	0
Infrastructure	133,654	5.2%	5.8%	(0.6%)	(15,124)
Cash & Equivalents	8,629	0.3%	1.0%	(0.7%)	(16,959)
Total	2,558,891	100.0%	100.0%		

PERS Performance and Attribution

As of September 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 09/30/2019

Return Type	Return (%)
Gross	3.65%
Net of fees	3.40%
Target	4.21%
Net added	-0.81%

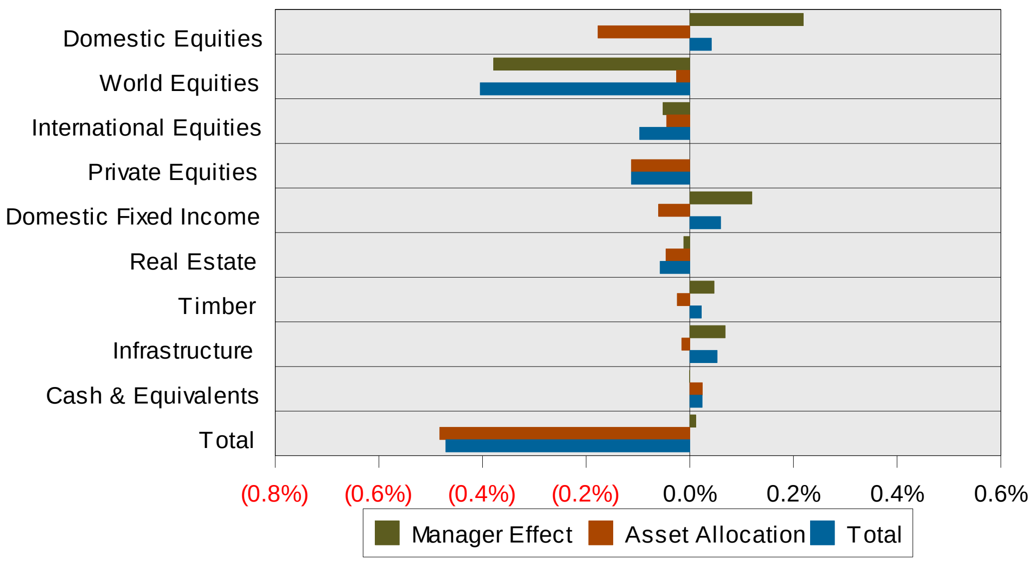
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.85%	0.81%	0.23%	(0.19%)	0.04%
World Equities	16%	16%	(0.42%)	1.83%	(0.38%)	(0.03%)	(0.41%)
International Equities	16%	14%	(1.43%)	(1.16%)	(0.03%)	(0.09%)	(0.11%)
Private Equities	3%	7%	7.74%	7.74%	0.00%	(0.18%)	(0.18%)
Domestic Fixed Income	23%	23%	9.68%	9.14%	0.13%	(0.05%)	0.08%
Real Estate	12%	11%	6.13%	6.24%	(0.01%)	(0.06%)	(0.07%)
Timber	2%	2%	4.10%	2.10%	0.04%	(0.02%)	0.02%
Infrastructure	5%	6%	4.86%	3.44%	0.07%	(0.02%)	0.05%
Cash & Equivalents	0%	0%	2.35%	2.35%	0.00%	0.02%	0.02%
Total			**3.65% =**	**4.21% +**	**0.05% +**	**(0.62%)**	**(0.57%)**

TFFR Performance and Attribution

As of September 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 09/30/2019

Return Type	Return (%)
Gross	3.66%
Net of fees	3.42%
Target	4.13%
Net added	-0.71%

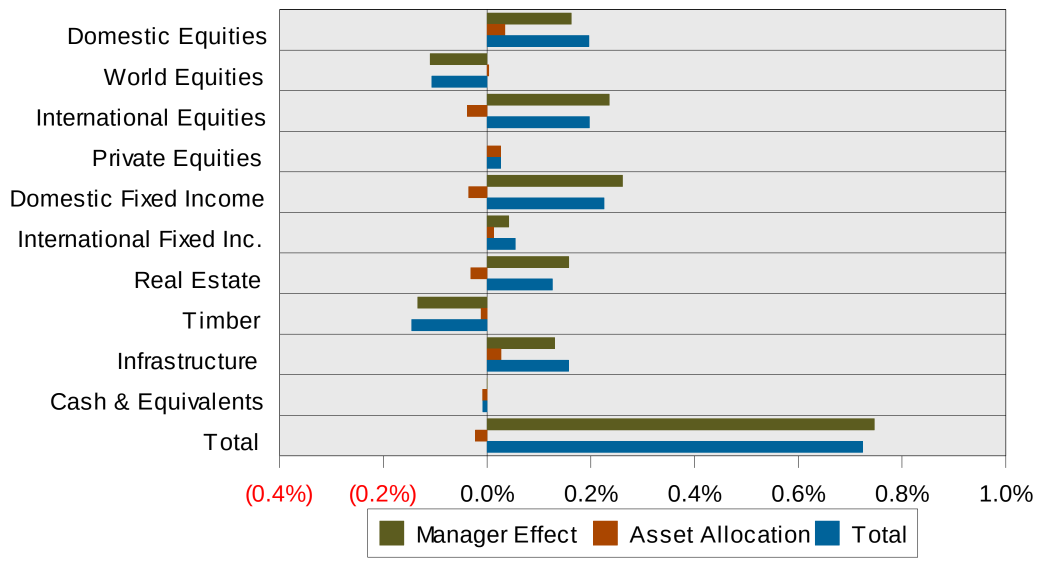
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	1.92%	0.92%	0.22%	(0.18%)	0.04%
World Equities	16%	16%	(0.41%)	1.83%	(0.38%)	(0.03%)	(0.40%)
International Equities	16%	15%	(1.56%)	(1.12%)	(0.05%)	(0.04%)	(0.10%)
Private Equities	4%	6%	7.73%	7.73%	0.00%	(0.11%)	(0.11%)
Domestic Fixed Income	23%	23%	9.62%	9.14%	0.12%	(0.06%)	0.06%
Real Estate	11%	10%	6.13%	6.24%	(0.01%)	(0.05%)	(0.06%)
Timber	2%	2%	4.10%	2.10%	0.05%	(0.02%)	0.02%
Infrastructure	5%	6%	4.86%	3.44%	0.07%	(0.02%)	0.05%
Cash & Equivalents	1%	1%	2.35%	2.39%	(0.00%)	0.02%	0.02%
Total			**3.66% =**	**4.13% +**	**0.01% +**	**(0.48%)**	**(0.47%)**

PERS Performance and Attribution

As of September 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 09/30/2019

Return Type	Return (%)
Gross	6.82%
Net of fees	6.54%
Target	6.10%
Net added	0.44%

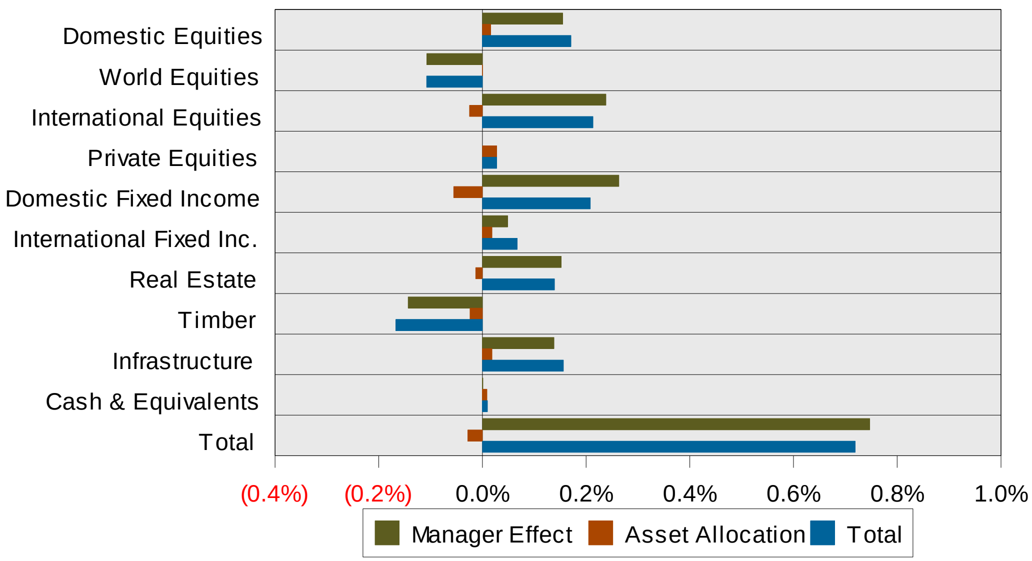
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.85%	10.11%	0.16%	0.03%	0.20%
World Equities	16%	16%	6.47%	7.18%	(0.11%)	0.00%	(0.11%)
International Equities	16%	14%	4.57%	3.10%	0.24%	(0.04%)	0.20%
Private Equities	3%	6%	1.82%	1.82%	0.00%	0.03%	0.03%
Domestic Fixed Income	20%	19%	5.31%	3.96%	0.26%	(0.04%)	0.23%
International Fixed Inc.	3%	3%	-	-	0.04%	0.01%	0.05%
Real Estate	11%	11%	10.11%	8.57%	0.16%	(0.03%)	0.13%
Timber	3%	3%	(0.07%)	4.36%	(0.13%)	(0.01%)	(0.15%)
Infrastructure	5%	5%	4.91%	1.98%	0.13%	0.03%	0.16%
Cash & Equivalents	1%	0%	1.08%	1.05%	0.00%	(0.01%)	(0.01%)
Total			**6.82% =**	**6.10% +**	**0.75% +**	**(0.02%)**	**0.72%**

TFFR Performance and Attribution

As of September 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 09/30/2019

Return Type	Return (%)
Gross	6.79%
Net of fees	6.51%
Target	6.07%
Net added	0.44%

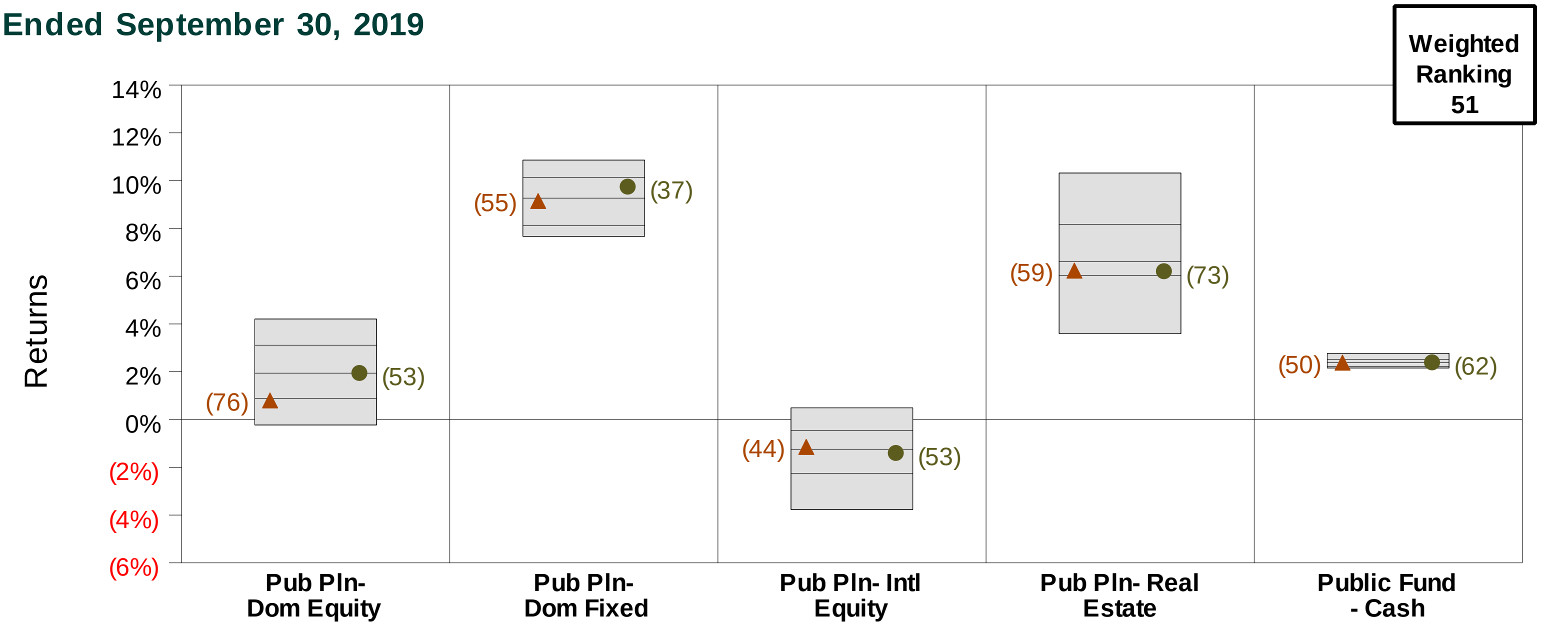
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.86%	10.13%	0.15%	0.02%	0.17%
World Equities	16%	16%	6.48%	7.18%	(0.11%)	(0.00%)	(0.11%)
International Equities	15%	15%	4.61%	3.13%	0.24%	(0.03%)	0.21%
Private Equities	4%	6%	1.82%	1.82%	0.00%	0.03%	0.03%
Domestic Fixed Income	19%	19%	5.22%	3.82%	0.26%	(0.06%)	0.21%
International Fixed Inc.	3%	4%	-	-	0.05%	0.02%	0.07%
Real Estate	10%	10%	10.11%	8.57%	0.15%	(0.01%)	0.14%
Timber	3%	3%	(0.07%)	4.36%	(0.14%)	(0.02%)	(0.17%)
Infrastructure	5%	5%	4.91%	1.98%	0.14%	0.02%	0.16%
Cash & Equivalents	1%	1%	1.08%	0.98%	0.00%	0.01%	0.01%
Total			**6.79% =**	**6.07% +**	**0.75% +**	**(0.03%)**	**0.72%**

Asset Class Composite Results

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

Total Asset Class Performance
One Year Ended September 30, 2019



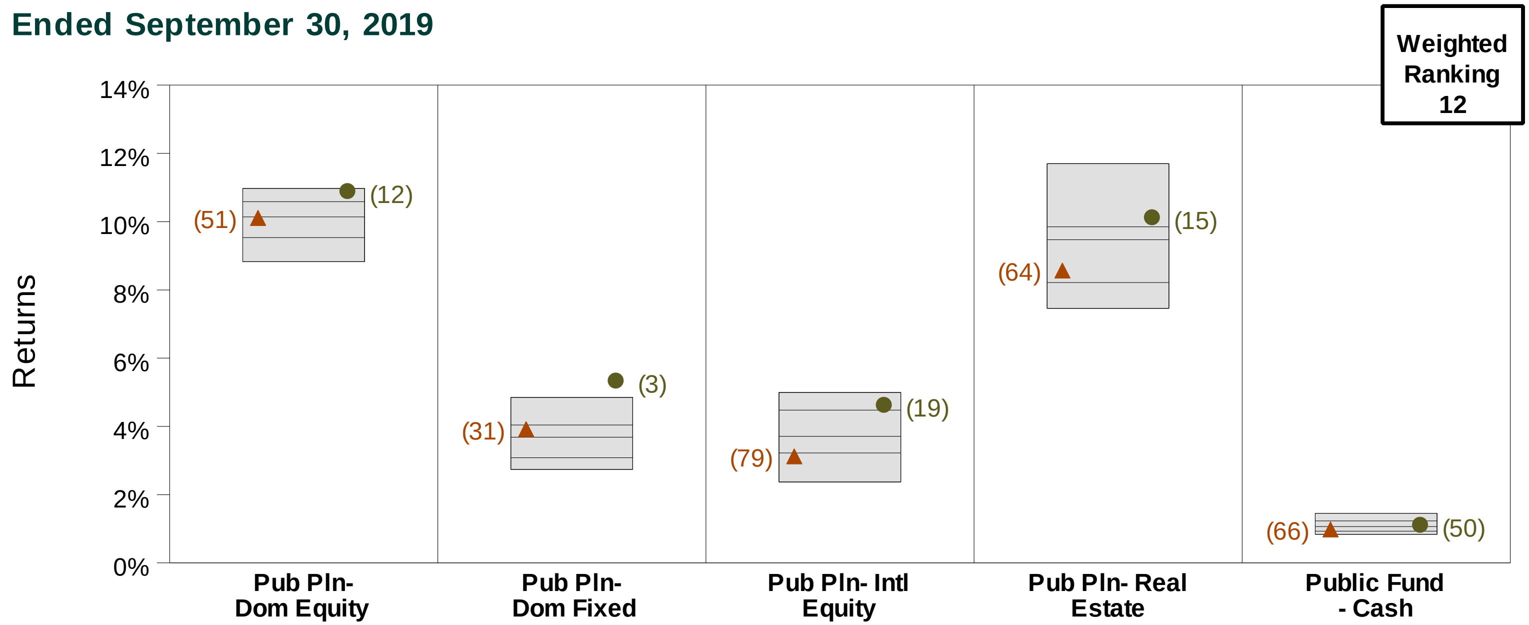
	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	4.21	10.86	0.49	10.32	2.78
25th Percentile	3.12	10.14	(0.46)	8.17	2.51
Median	1.94	9.27	(1.27)	6.61	2.38
75th Percentile	0.88	8.11	(2.25)	6.04	2.22
90th Percentile	(0.23)	7.67	(3.77)	3.60	2.16
Asset Class Composite ●	1.87	9.68	(1.47)	6.13	2.32
Composite Benchmark ▲	0.80	9.15	(1.14)	6.24	2.39

- International equity and real estate underperformed their respective benchmarks while domestic equity and domestic fixed Income outperformed over the trailing year.
- Domestic fixed Income was the only strategy to rank above median during the period.

Asset Class Composite Results

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

Total Asset Class Performance
Five Years Ended September 30, 2019



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	10.97	4.85	4.99	11.70	1.45
25th Percentile	10.58	4.04	4.47	9.85	1.23
Median	10.14	3.68	3.71	9.47	1.06
75th Percentile	9.53	3.08	3.22	8.21	0.93
90th Percentile	8.83	2.74	2.37	7.46	0.84
Asset Class Composite ●	10.84	5.29	4.58	10.08	1.06
Composite Benchmark ▲	10.11	3.92	3.12	8.57	0.98

- 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.

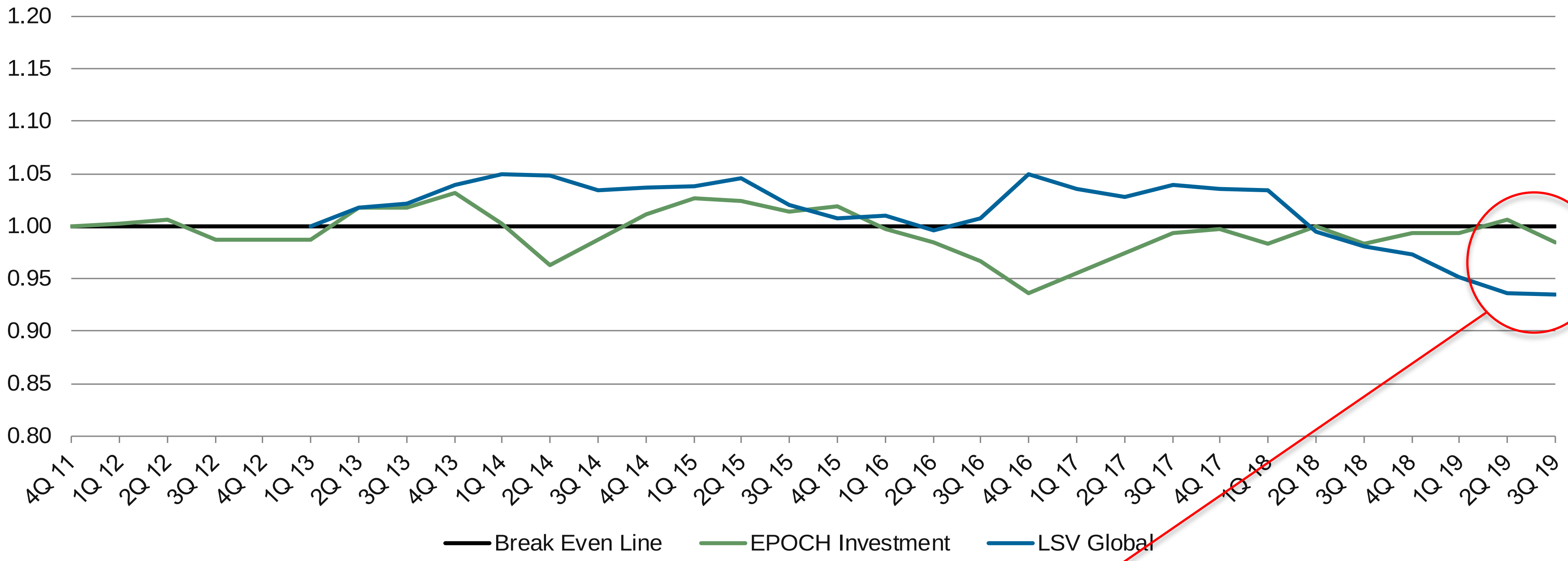
Callan

Consolidated Pension Trusts

Manager Relative Performance

Word Equities

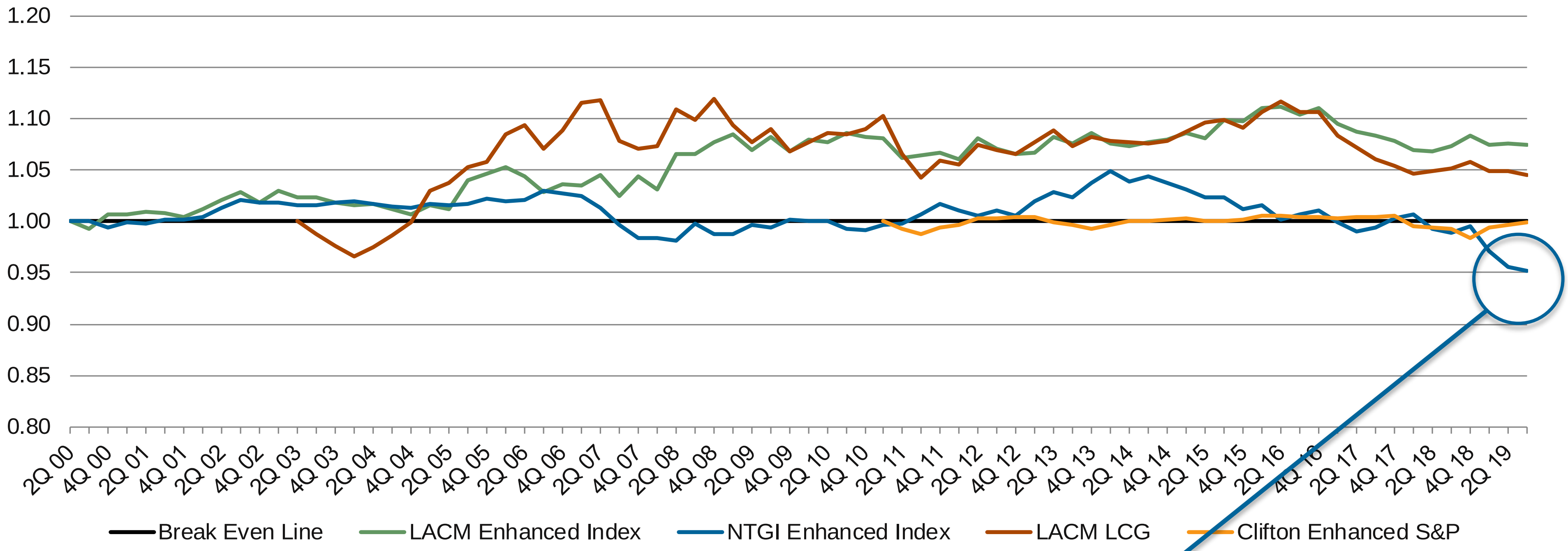
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
EPOCH Investment	Q1 2012	0.98	MSCI World
LSV Global	Q2 2013	0.94	MSCI ACWI Gross

U.S. Large Cap Equities

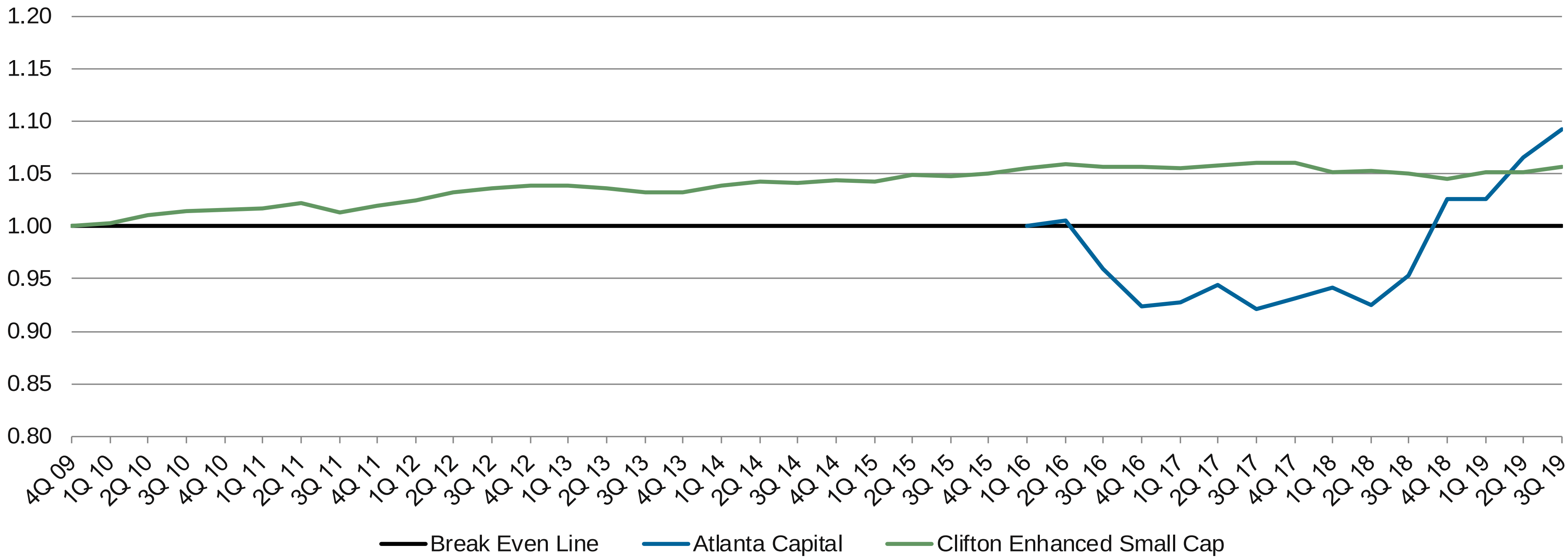
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
Clifton Enhanced S&P	Q2 2011	1.00	S&P 500
LACM LCG	Q3 2003	1.04	Russell 1000 Growth
LACM Enhanced Index	Q3 2000	1.07	Russell 1000
NTGI Enhanced Index	Q3 2000	0.95	S&P 500

U.S. Small Cap Equities

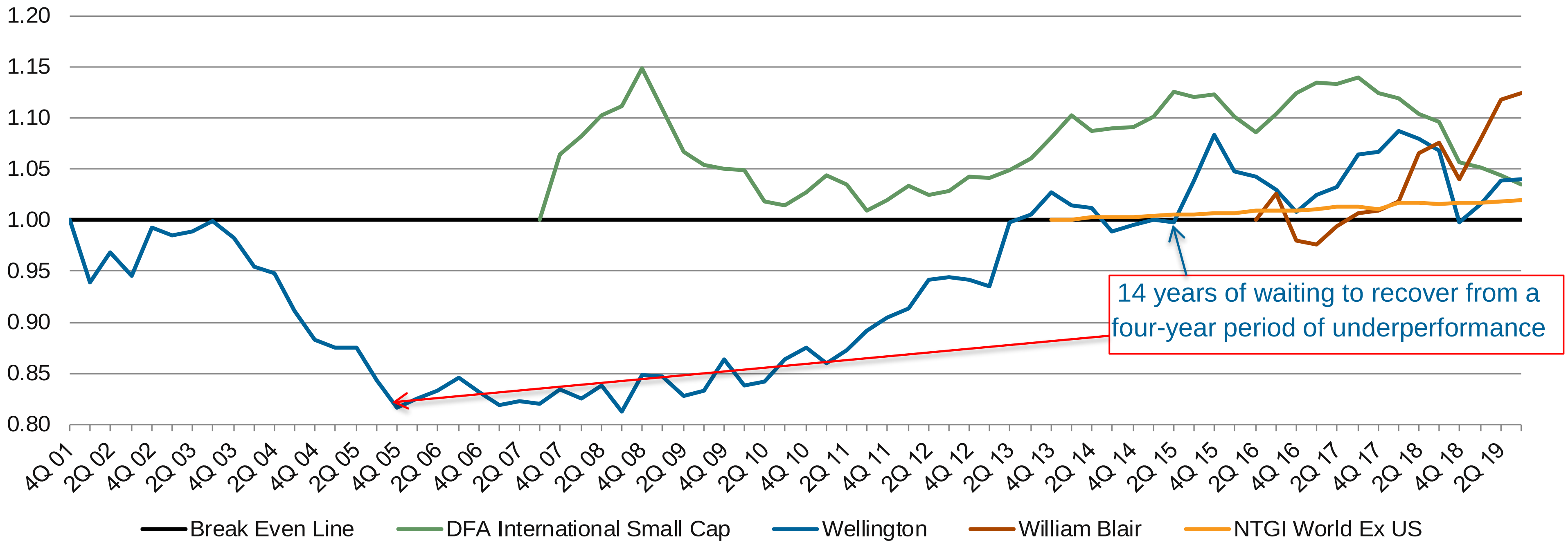
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
Atlanta Capital	Q2 2016	1.09	S&P 600 Small Cap
Clifton Enhanced Small Cap	Q1 2010	1.06	Russell 2000

Developed International Equities

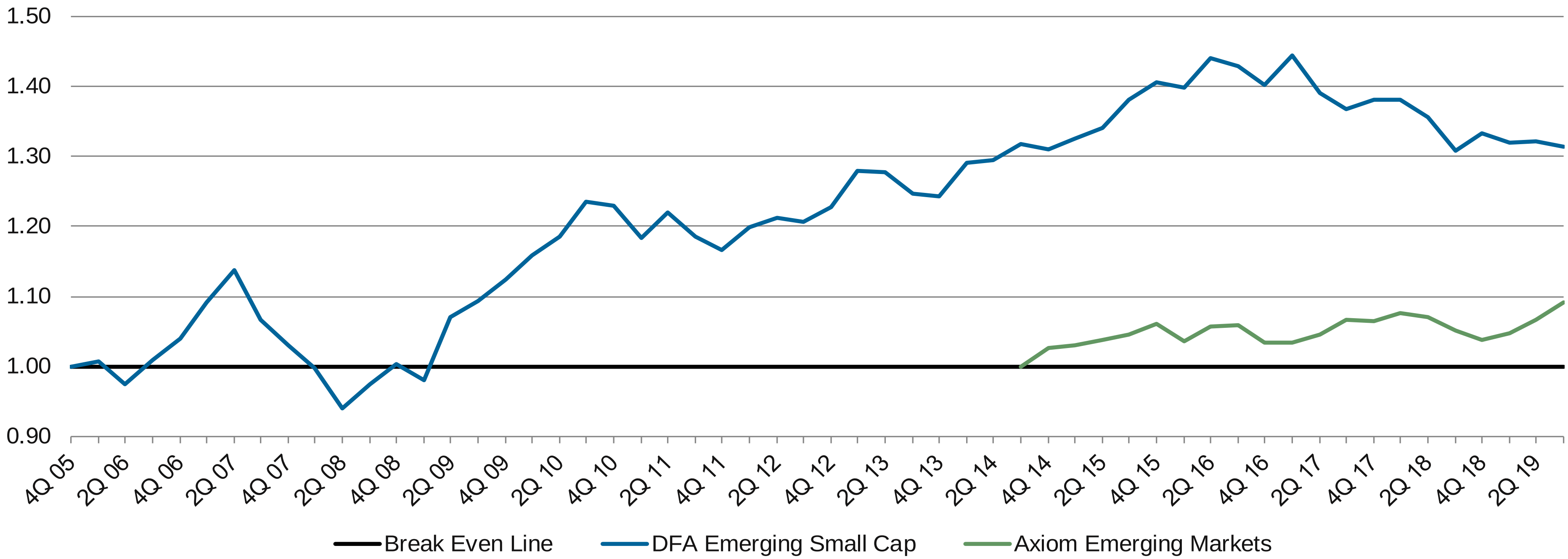
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
DFA International Small Cap	Q4 2007	1.04	MSCI World Ex US SC Value
NTGI World Ex US	Q1 2014	1.02	MSCI World Ex US
Wellington	Q1 2002	1.04	BMI, EPAC, <$2 B
William Blair	Q3 2016	1.12	MSCI ACWI Ex US IMI

Emerging Market Equities

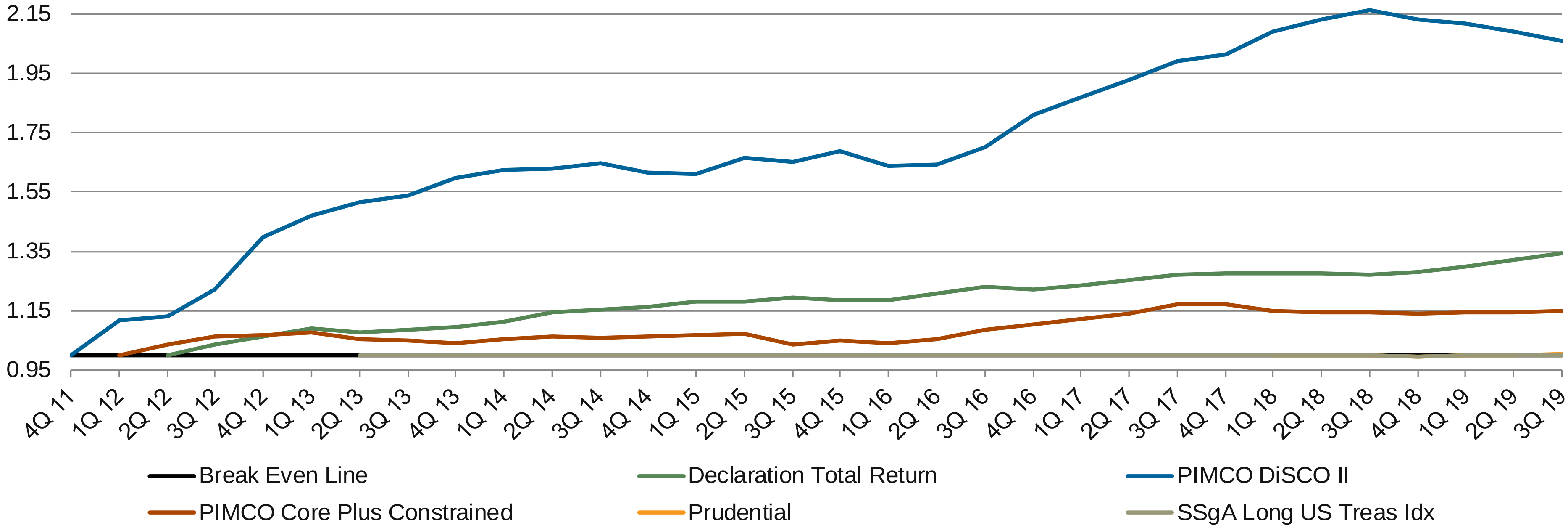
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
Axiom Emerging Markets	Q4 2014	1.09	MSCI Emerging Market
DFA Emerging Small Cap	Q1 2006	1.31	MSCI Emerging Market

Investment Grade Fixed Income

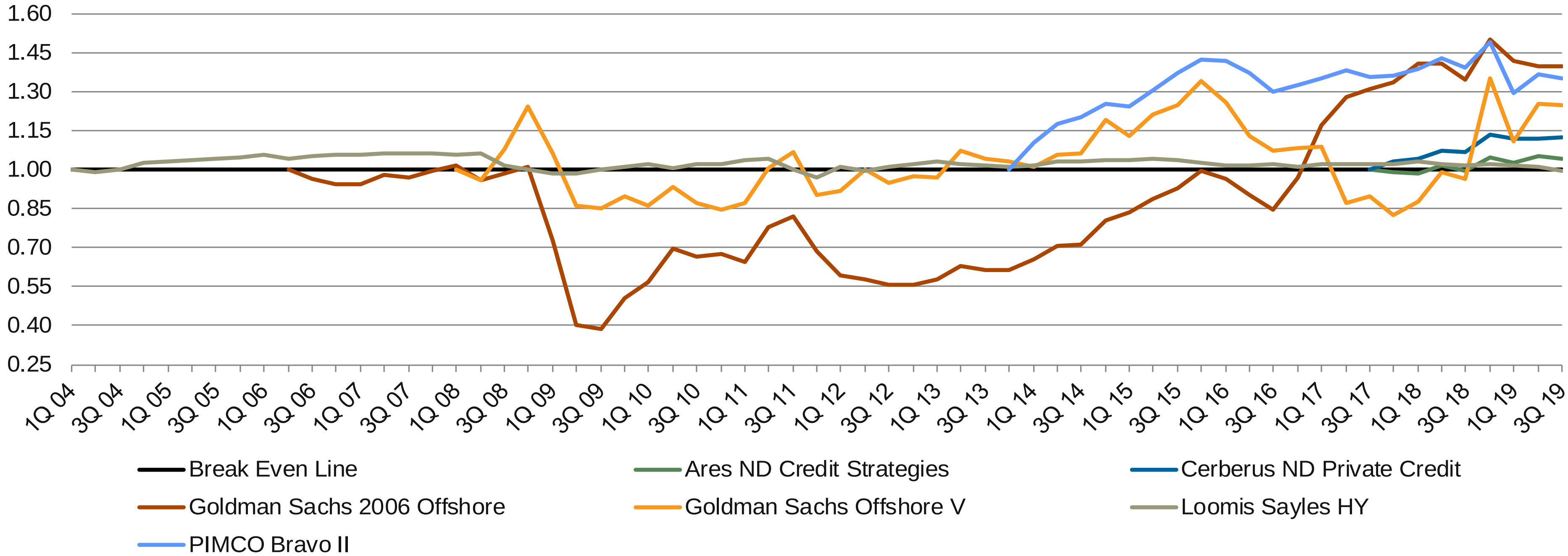
Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
Declaration Total Return	Q3 2012	1.34	3-Month LIBOR
PIMCO DiSCO II	Q1 2012	2.06	Bloomberg Aggregate
PIMCO Core Plus Constrained	Q2 2014	1.15	PIMCO Custom Benchmark
Prudential	Q2 2018	1.00	Bloomberg Aggregate
SSgA Long US Treas Idx	Q3 2013	1.00	Bloomberg Aggregate

The PIMCO Custom Benchmark reflects the returns of 3-month Libor through Feb. 28, 2014; The fund's performance through March 31, 2014; 3-month Libor through June 30, 2018; and the Blmbg Agg thereafter.

Cumulative Net Relative Return Since Inception, as of September 30, 2019



Fund Name	First Full Quarter of Returns	Cumulative Net Relative Return Since Inception	Benchmark
Ares ND Credit Strategies	Q4 2017	1.04	S&P:LSTA Leveraged Loan B
Cerberus ND Private Credit	Q4 2017	1.12	S&P:LSTA Leveraged Loan B
Goldman Sachs 2006 Offshore	Q3 2006	1.40	Bloomberg: HY Corp 2% Iss Cap
Goldman Sachs Offshore V	Q4 2007	1.25	Bloomberg: HY Corp 2% Iss Cap
Loomis Sayles HY	Q2 2004	1.00	Bloomberg: HY Corp 2% Iss Cap
PIMCO Bravo II	Q1 2014	1.35	Bloomberg: HY Corp 2% Iss Cap

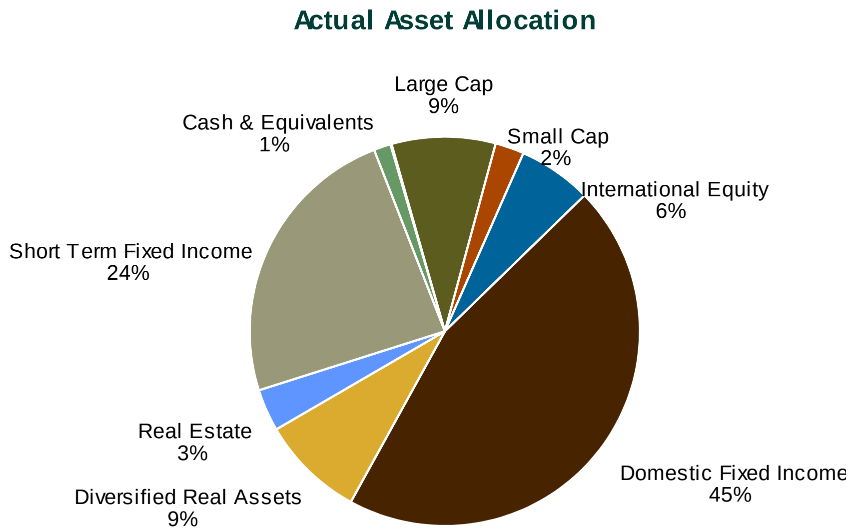
Callan

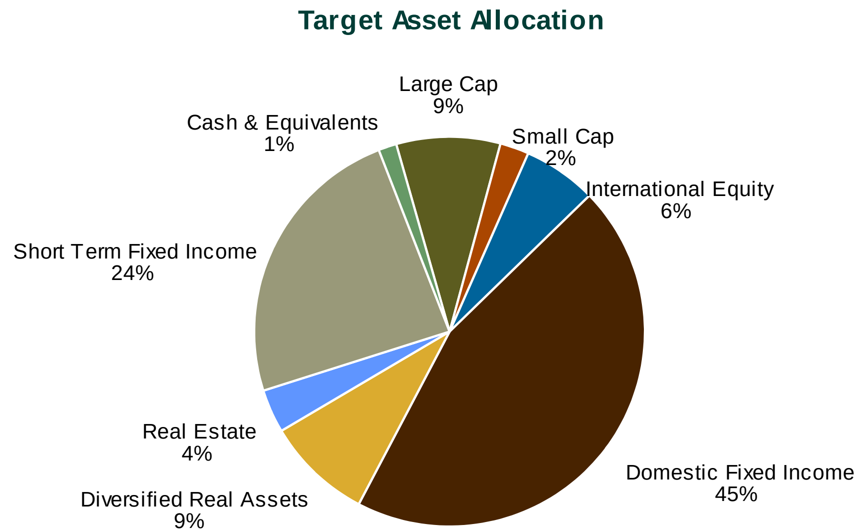
Consolidated Insurance Trust
Quarterly Review

- Workforce Safety and Insurance Legacy Fund
- Budget Stabilization Fund

Consolidated Insurance Trust Allocation

As of September 30, 2019

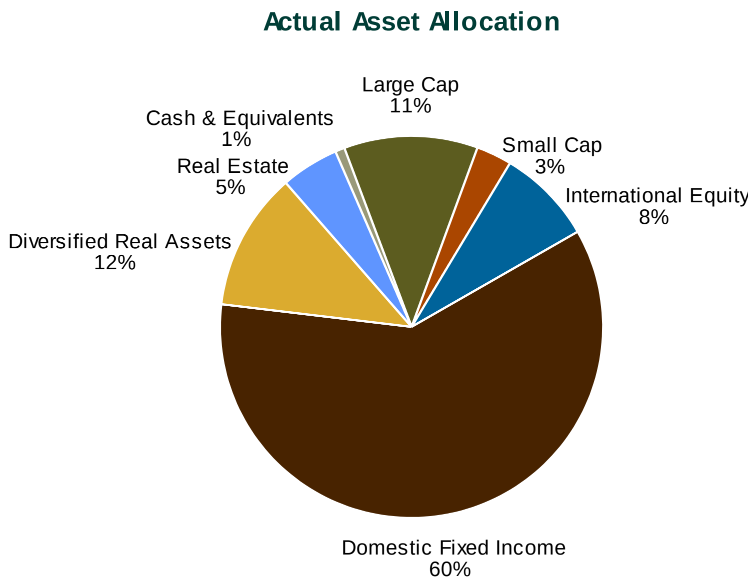


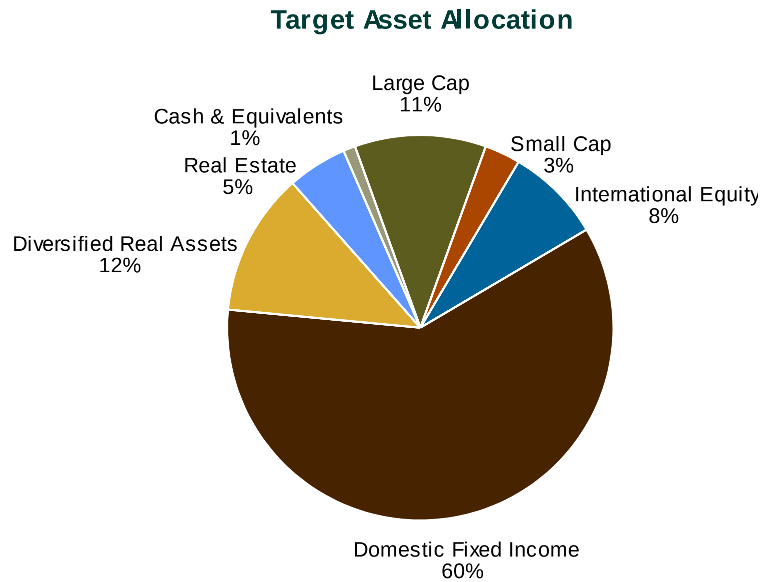


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	248,233	8.6%	8.6%	0.0%	435
Small Cap	69,891	2.4%	2.4%	(0.0%)	(592)
International Equity	176,771	6.1%	6.1%	0.0%	301
Domestic Fixed Income	1,303,555	45.3%	45.0%	0.3%	8,517
Diversified Real Assets	248,039	8.6%	8.8%	(0.2%)	(5,989)
Real Estate	100,308	3.5%	3.6%	(0.1%)	(3,797)
Short Term Fixed Income	691,957	24.0%	24.0%	0.1%	1,988
Cash & Equivalents	41,180	1.4%	1.5%	(0.0%)	(861)
Total	2,879,934	100.0%	100.0%		

WSI Allocation

As of September 30, 2019

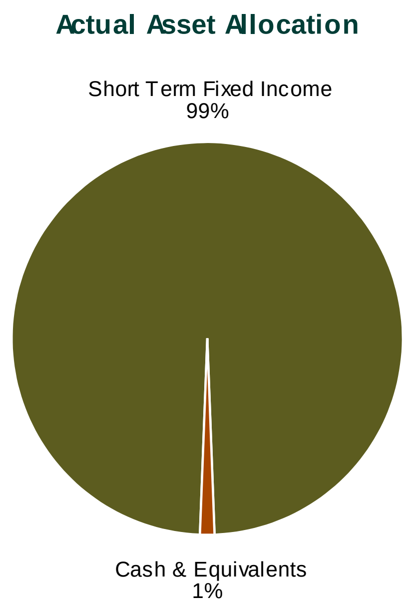


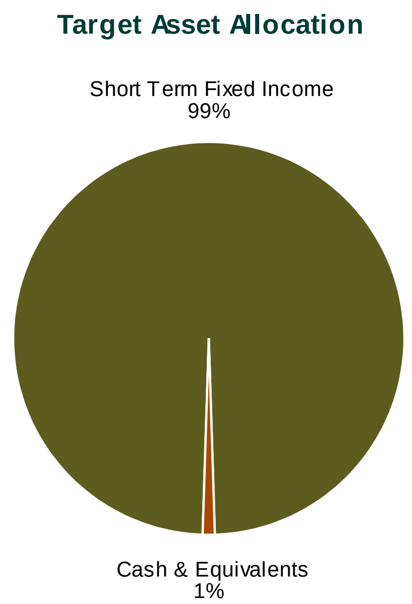


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	229,249	11.0%	11.0%	0.0%	374
Small Cap	61,749	3.0%	3.0%	(0.0%)	(672)
International Equity	166,796	8.0%	8.0%	0.0%	341
Domestic Fixed Income	1,257,013	60.4%	60.0%	0.4%	8,601
Diversified Real Assets	243,725	11.7%	12.0%	(0.3%)	(5,958)
Real Estate	100,237	4.8%	5.0%	(0.2%)	(3,798)
Cash & Equivalents	21,919	1.1%	1.0%	0.1%	1,112
Total	2,080,687	100.0%	100.0%		

Budget Stabilization Fund Allocation

As of September 30, 2019



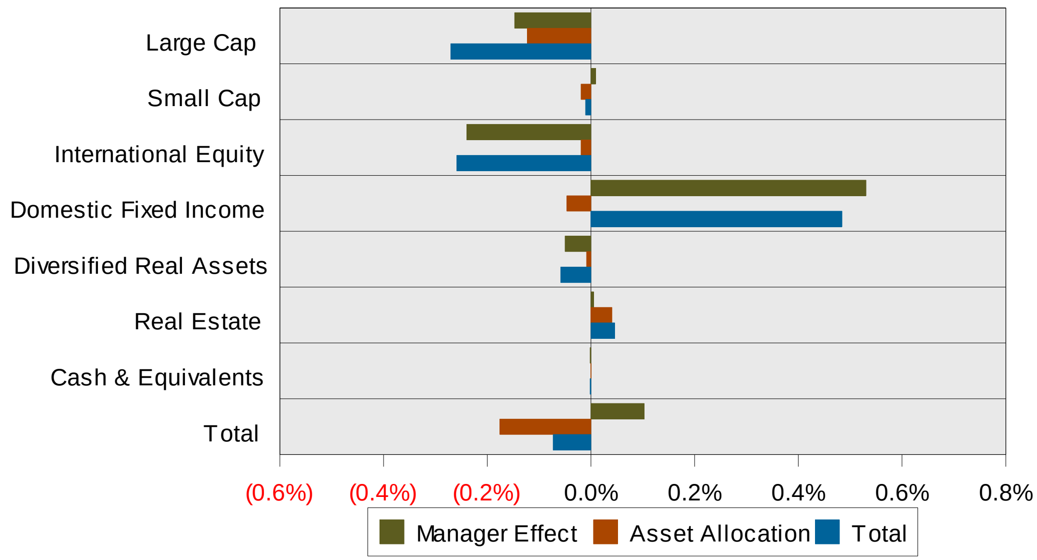


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Short Term Fixed Income	660,976	98.8%	99.0%	(0.2%)	(1,188)
Cash & Equivalents	8,147	1.2%	1.0%	0.2%	1,188
Total	669,122	100.0%	100.0%		

WSI Performance and Attribution

As of September 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 09/30/2019

Return Type	Return (%)
Gross	7.46%
Net of fees	7.28%
Target	7.54%
Net added	-0.26%

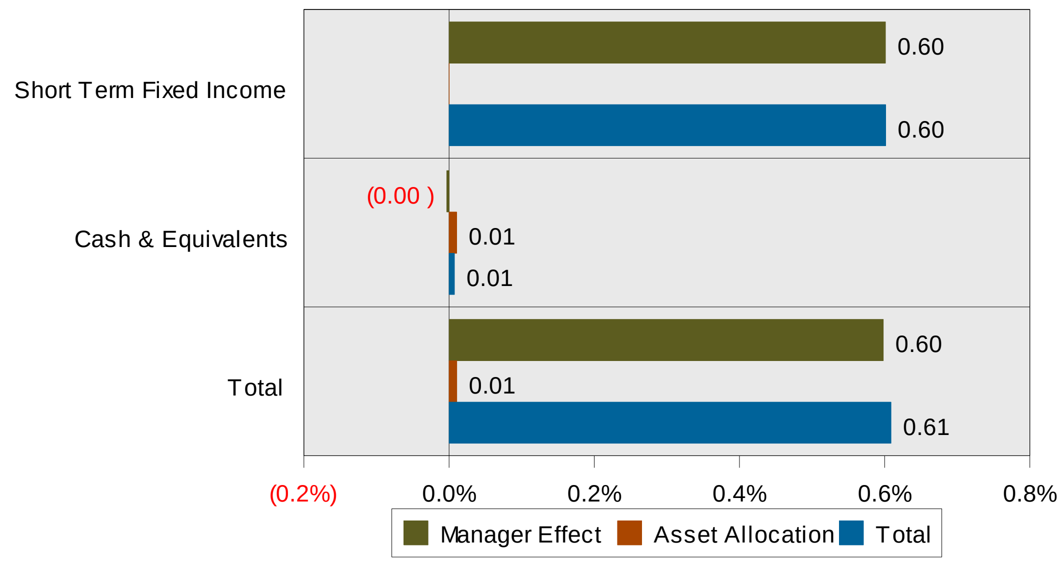
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	2.52%	3.87%	(0.15%)	(0.12%)	(0.27%)
Small Cap	3%	3%	(8.61%)	(8.89%)	0.01%	(0.02%)	(0.01%)
International Equity	8%	8%	(3.97%)	(0.95%)	(0.24%)	(0.02%)	(0.26%)
Domestic Fixed Income	60%	60%	11.20%	10.30%	0.53%	(0.05%)	0.48%
Diversified Real Assets	12%	12%	5.50%	5.72%	(0.05%)	(0.01%)	(0.06%)
Real Estate	5%	5%	5.74%	6.24%	0.01%	0.04%	0.05%
Cash & Equivalents	1%	1%	2.24%	2.39%	(0.00%)	(0.00%)	(0.00%)
Total			**7.46% =**	**7.54% +**	**0.10% +**	**(0.18%)**	**(0.07%)**

Budget Performance and Attribution

As of June 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 09/30/2019

Return Type	Return (%)
Gross	5.20%
Net of fees	5.08%
Target	4.59%
Net added	0.49%

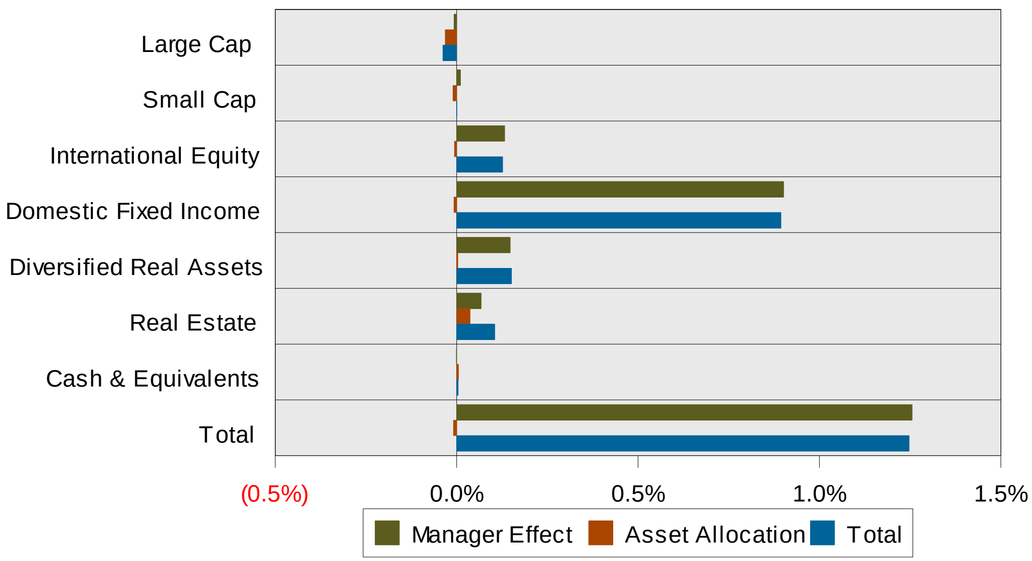
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	98%	98%	5.25%	4.64%	0.60%	0.00%	0.60%
Cash & Equivalents	2%	2%	2.24%	2.39%	(0.00%)	0.01%	0.01%
Total			**5.20% =**	**4.59% +**	**0.60% +**	**0.01%**	**0.61%**

WSI Performance and Attribution

As of September 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 09/30/2019

Return Type	Return (%)
Gross	6.12%
Net of fees	5.90%
Target	4.87%
Net added	1.03%

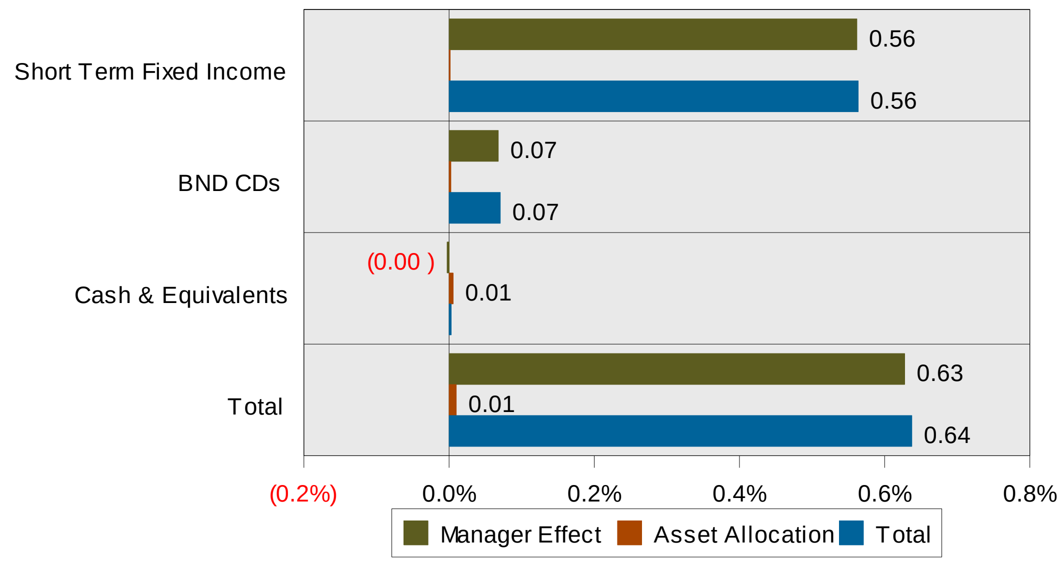
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	10.52%	10.62%	(0.01%)	(0.03%)	(0.04%)
Small Cap	4%	4%	8.46%	8.19%	0.01%	(0.01%)	0.00%
International Equity	9%	9%	4.53%	3.25%	0.13%	(0.01%)	0.13%
Domestic Fixed Income	54%	55%	5.06%	3.38%	0.90%	(0.01%)	0.89%
Diversified Real Assets	14%	14%	3.92%	2.87%	0.15%	0.00%	0.15%
Real Estate	7%	6%	9.47%	8.57%	0.07%	0.04%	0.11%
Cash & Equivalents	1%	1%	0.89%	0.98%	(0.00%)	0.01%	0.00%
Total			**6.12% =**	**4.87% +**	**1.26% +**	**(0.01%)**	**1.25%**

Budget Performance and Attribution

As of September 30, 2019

Five Year Annualized Relative Attribution Effects



Returns for 5 Year Ended 09/30/2019

Return Type	Return (%)
Gross	2.18%
Net of fees	2.02%
Target	1.54%
Net added	0.48%

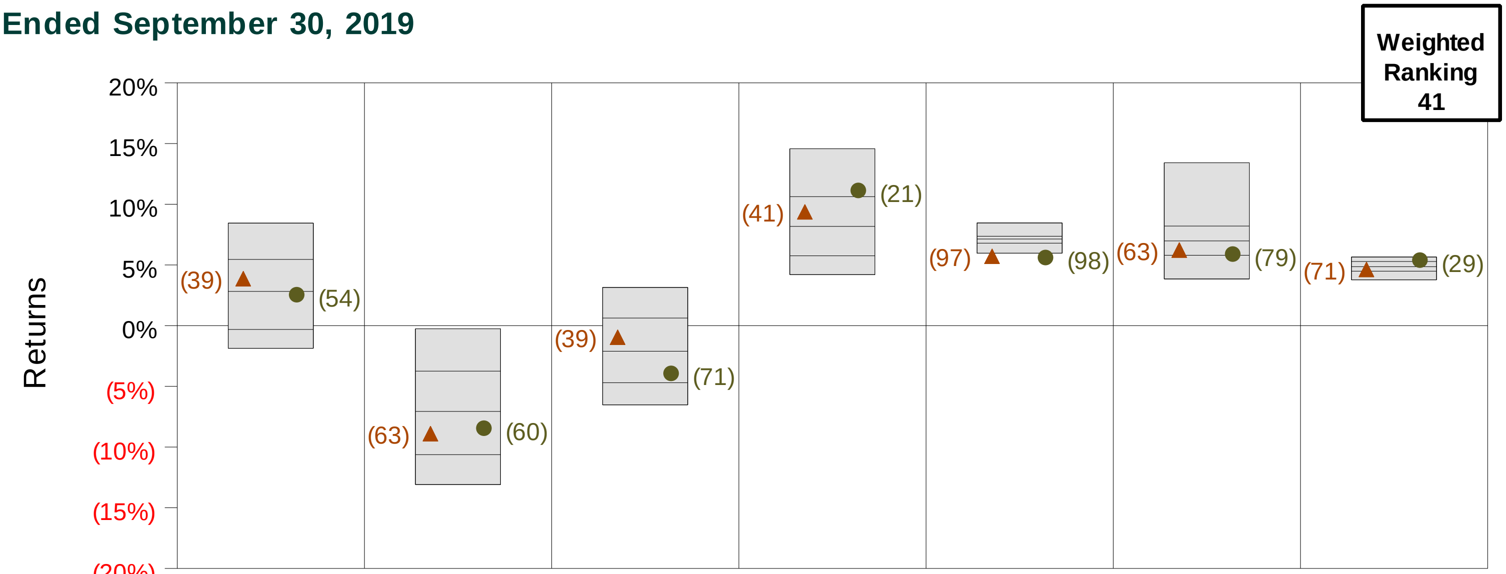
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return		Target Return		Manager Effect		Asset Allocation	Total Relative Return
Short Term Fixed Income	89%	89%	2.12%		1.47%		0.56%		0.00%	0.56%
BND CDs	8%	8%	-		-		0.07%		0.00%	0.07%
Cash & Equivalents	3%	3%	0.89%		0.98%		(0.00%)		0.01%	0.00%
Total			**2.18%**	**=**	**1.54%**	**+**	**0.63%**	**+**	**0.01%**	**0.64%**

Asset Class Composite Results

Consolidated Insurance Trust Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
One Year Ended September 30, 2019



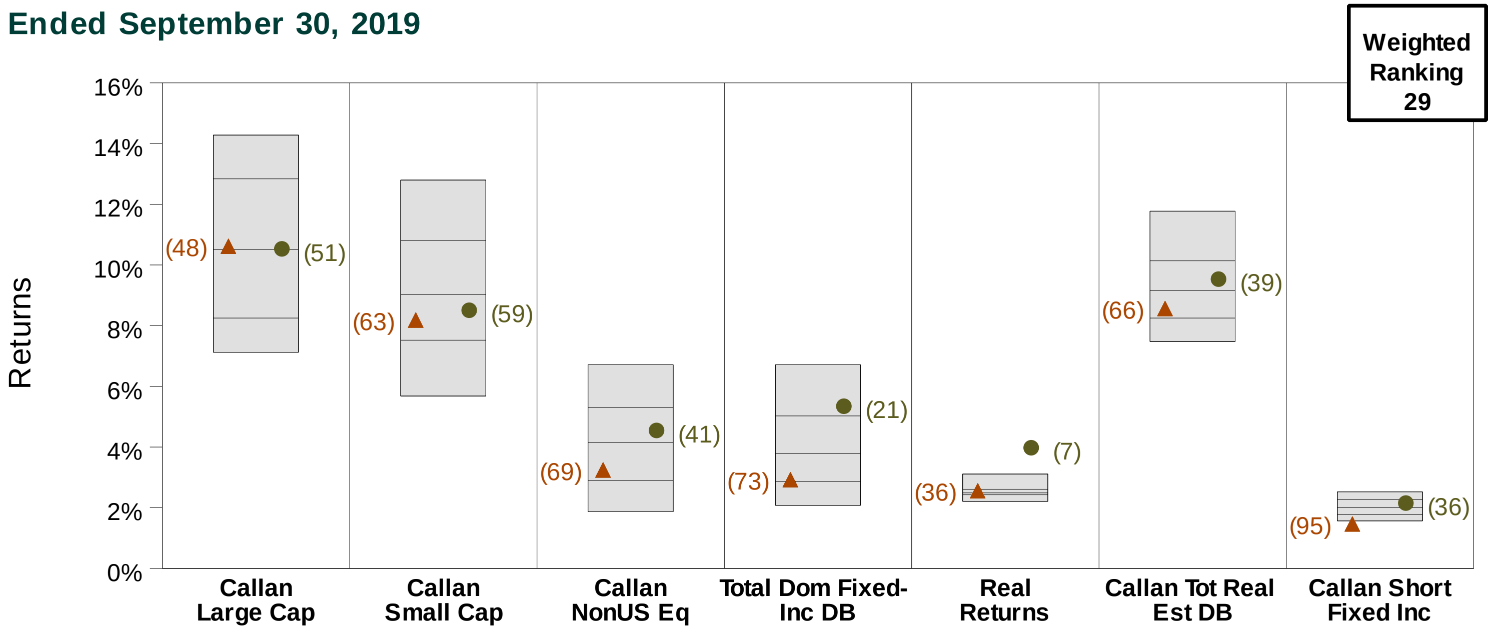
	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Short Fixed Inc
10th Percentile	8.46	(0.24)	3.16	14.57	8.46	13.43	5.67
25th Percentile	5.46	(3.74)	0.63	10.63	7.38	8.21	5.29
Median	2.83	(7.07)	(2.10)	8.18	7.15	6.99	4.87
75th Percentile	(0.31)	(10.61)	(4.70)	5.77	6.81	5.80	4.49
90th Percentile	(1.87)	(13.09)	(6.52)	4.21	5.97	3.85	3.78
Asset Class Composite ●	2.40	(8.60)	(4.07)	10.99	5.48	5.74	5.25
Composite Benchmark ▲	3.87	(8.89)	(0.95)	9.38	5.72	6.24	4.64

- Domestic and short-duration fixed income both ranked above median over the trailing year.
- Small cap equities, domestic fixed income, and short-duration fixed Income all outperformed their benchmarks over the trailing year.

Asset Class Composite Results

Consolidated Insurance Trust Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
Five Years Ended September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Short Fixed Inc
10th Percentile	14.28	12.80	6.72	6.72	3.12	11.77	2.53
25th Percentile	12.84	10.80	5.31	5.03	2.61	10.14	2.27
Median	10.51	9.02	4.15	3.79	2.49	9.15	2.00
75th Percentile	8.25	7.52	2.90	2.87	2.43	8.25	1.78
90th Percentile	7.12	5.68	1.87	2.08	2.21	7.48	1.57
Asset Class Composite ●	10.47	8.45	4.48	5.29	3.92	9.47	2.10
Composite Benchmark ▲	10.62	8.19	3.25	2.92	2.56	8.57	1.47

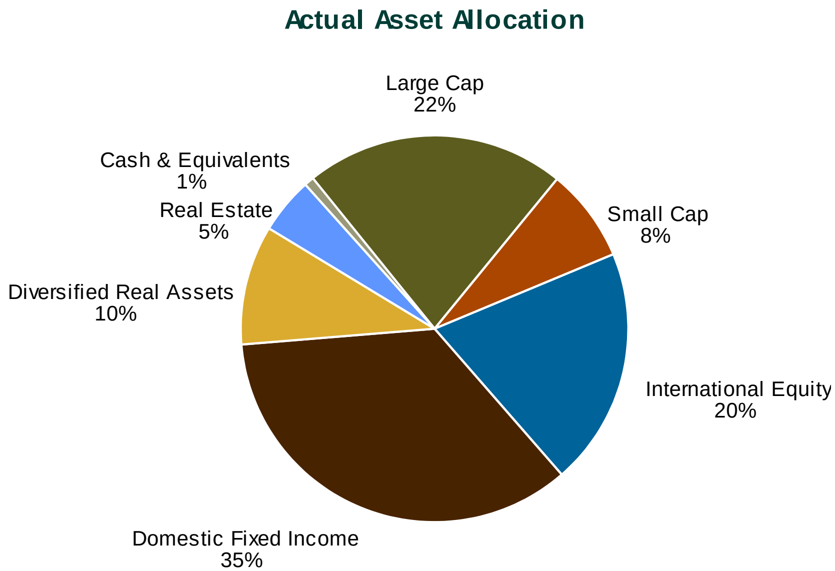
- All asset classes, with the exception of large and small cap equities, outperformed their respective benchmarks over the past 5 years. Similarly, these were the only two asset classes to perform below median.
- Real returns produced the highest ranking over the period, while large cap equities produced the largest absolute return.

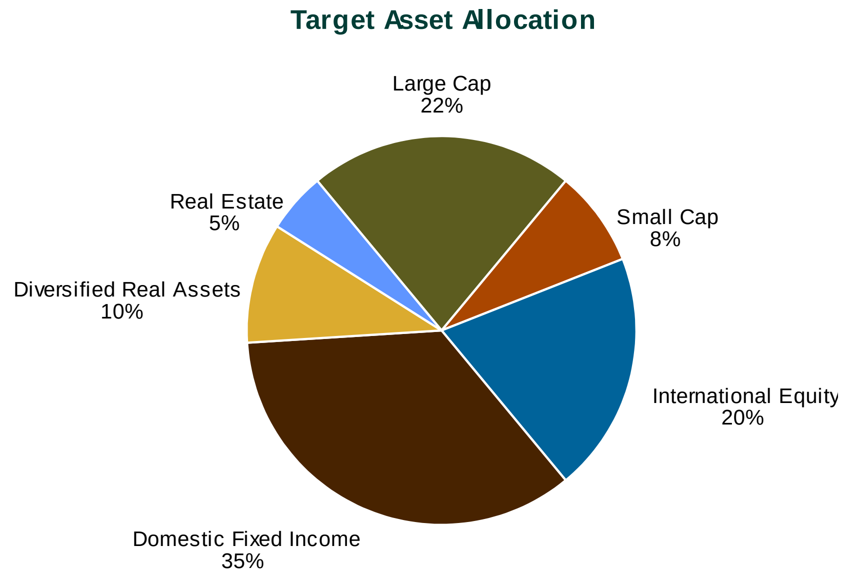
Callan

Legacy Fund Quarterly Review

Legacy Fund Allocation

As of September 30, 2019



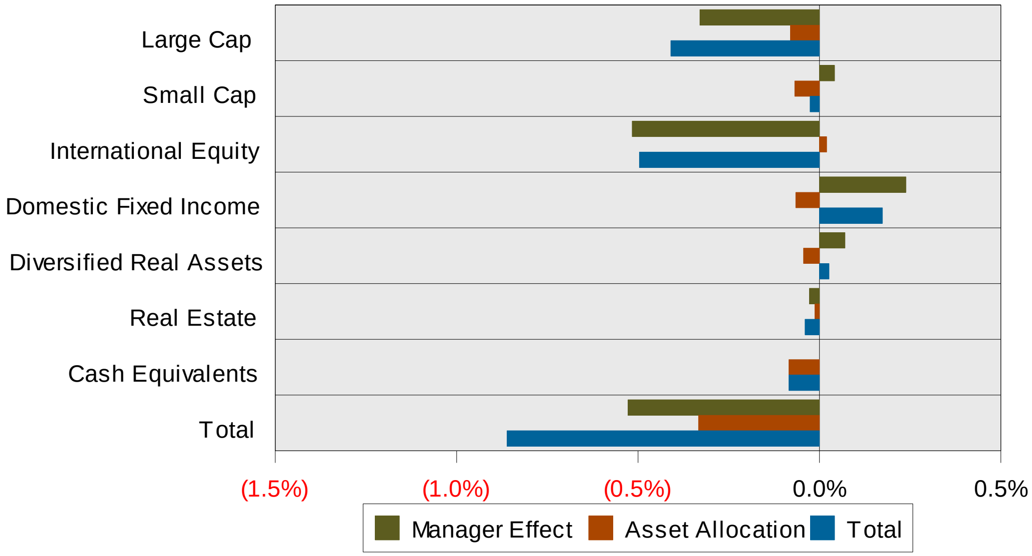


Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	1,386,526	21.8%	22.0%	(0.2%)	(13,747)
Small Cap	495,669	7.8%	8.0%	(0.2%)	(13,521)
International Equity	1,265,199	19.9%	20.0%	(0.1%)	(7,777)
Domestic Fixed Income	2,235,053	35.1%	35.0%	0.1%	7,345
Diversified Real Assets	636,074	10.0%	10.0%	(0.0%)	(414)
Real Estate	297,218	4.7%	5.0%	(0.3%)	(21,026)
Cash & Equivalents	49,141	0.8%	0.0%	0.8%	49,141
Total	6,364,880	100.0%	100.0%		

Legacy Performance and Attribution

As of September 30, 2019

One Year Relative Attribution Effects



Returns for 1 Year Ended 09/30/2019

Return Type	Return (%)
Gross	3.99%
Net of fees	3.79%
Target	4.86%
Net added	-1.07%

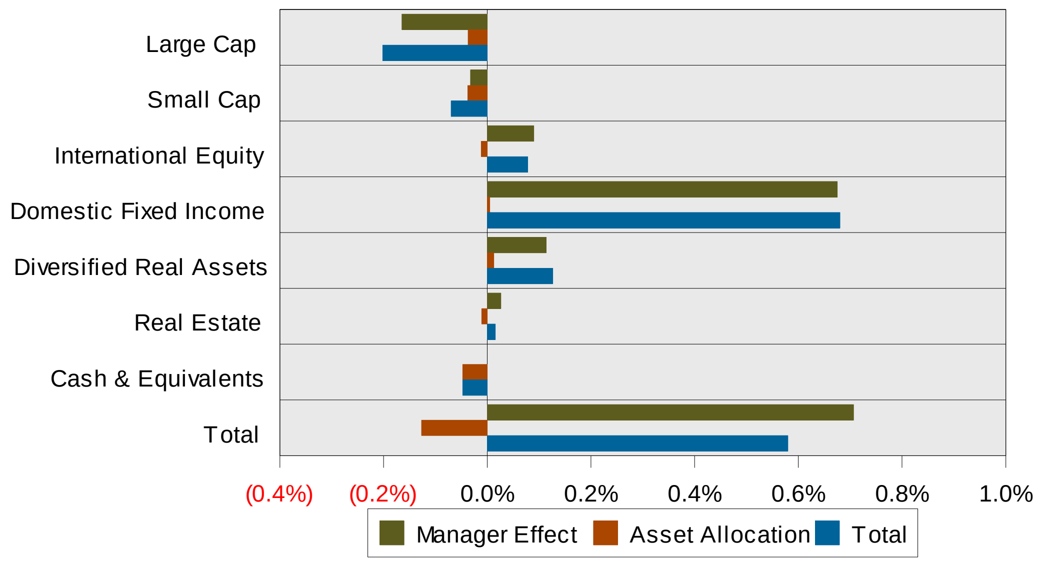
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	2.36%	3.87%	(0.33%)	(0.08%)	(0.41%)
Small Cap	8%	8%	(8.38%)	(8.89%)	0.04%	(0.07%)	(0.03%)
International Equity	19%	20%	(3.60%)	(0.95%)	(0.52%)	0.02%	(0.50%)
Domestic Fixed Income	35%	35%	11.13%	10.30%	0.24%	(0.07%)	0.17%
Diversified Real Assets	10%	10%	7.24%	6.47%	0.07%	(0.04%)	0.03%
Real Estate	5%	5%	5.57%	6.24%	(0.03%)	(0.01%)	(0.04%)
Cash Equivalents	1%	0%	2.23%	2.23%	0.00%	(0.08%)	(0.08%)
Total			**3.99% =**	**4.86% +**	**(0.53%) +**	**(0.33%)**	**(0.86%)**

Legacy Performance and Attribution

As of September 30, 2019

Three Year Annualized Relative Attribution Effects



Returns for 3 Year Ended 09/30/2019

Return Type	Return (%)
Gross	7.25%
Net of fees	7.04%
Target	6.67%
Net added	0.37%

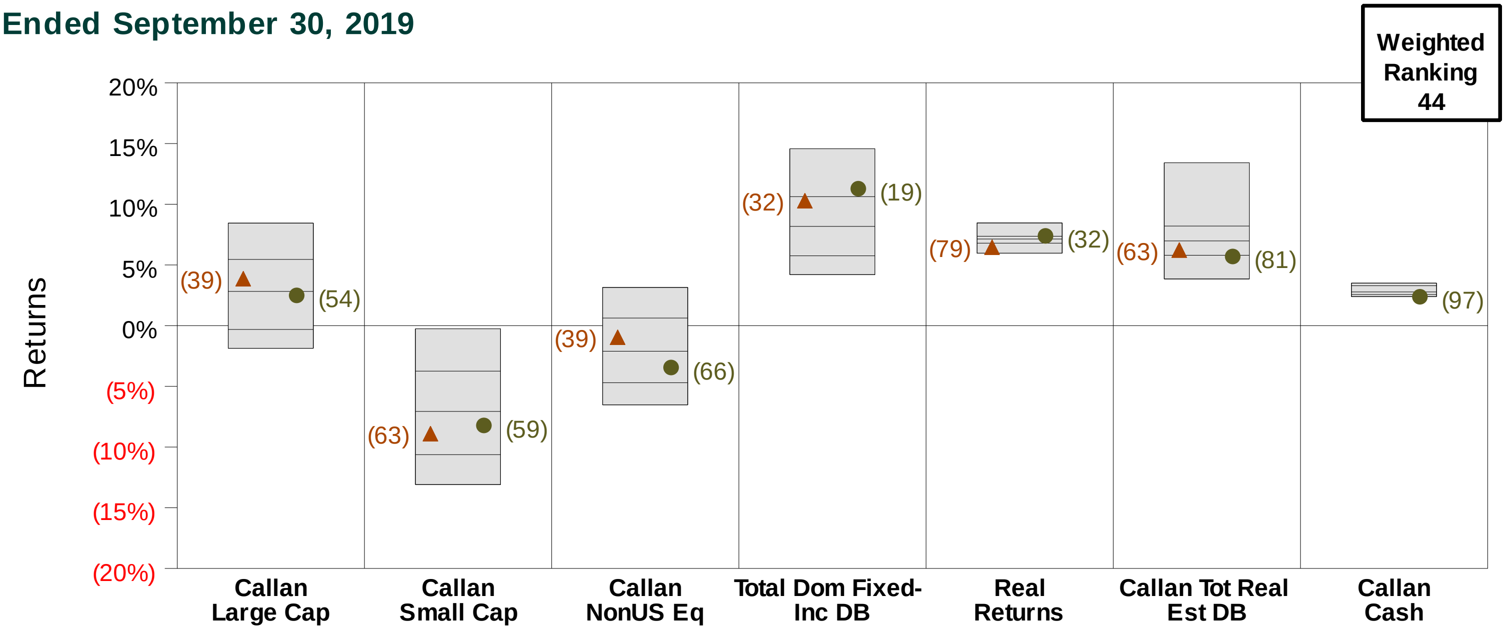
Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return		Target Return		Manager Effect		Asset Allocation	Total Relative Return
Large Cap	22%	22%	12.39%		13.19%		(0.16%)		(0.04%)	(0.20%)
Small Cap	8%	8%	7.85%		8.23%		(0.03%)		(0.04%)	(0.07%)
International Equity	20%	20%	6.82%		6.49%		0.09%		(0.01%)	0.08%
Domestic Fixed Income	34%	35%	4.88%		2.92%		0.68%		0.00%	0.68%
Diversified Real Assets	10%	10%	3.66%		2.49%		0.11%		0.01%	0.13%
Real Estate	5%	5%	7.10%		6.76%		0.03%		(0.01%)	0.02%
Cash & Equivalents	1%	0%	1.42%		1.42%		0.00%		(0.05%)	(0.05%)
Total			**7.25%**	**=**	**6.67%**	**+**	**0.71%**	**+**	**(0.13%)**	**0.58%**

Asset Class Composite Results

Legacy Fund Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
One Year Ended September 30, 2019



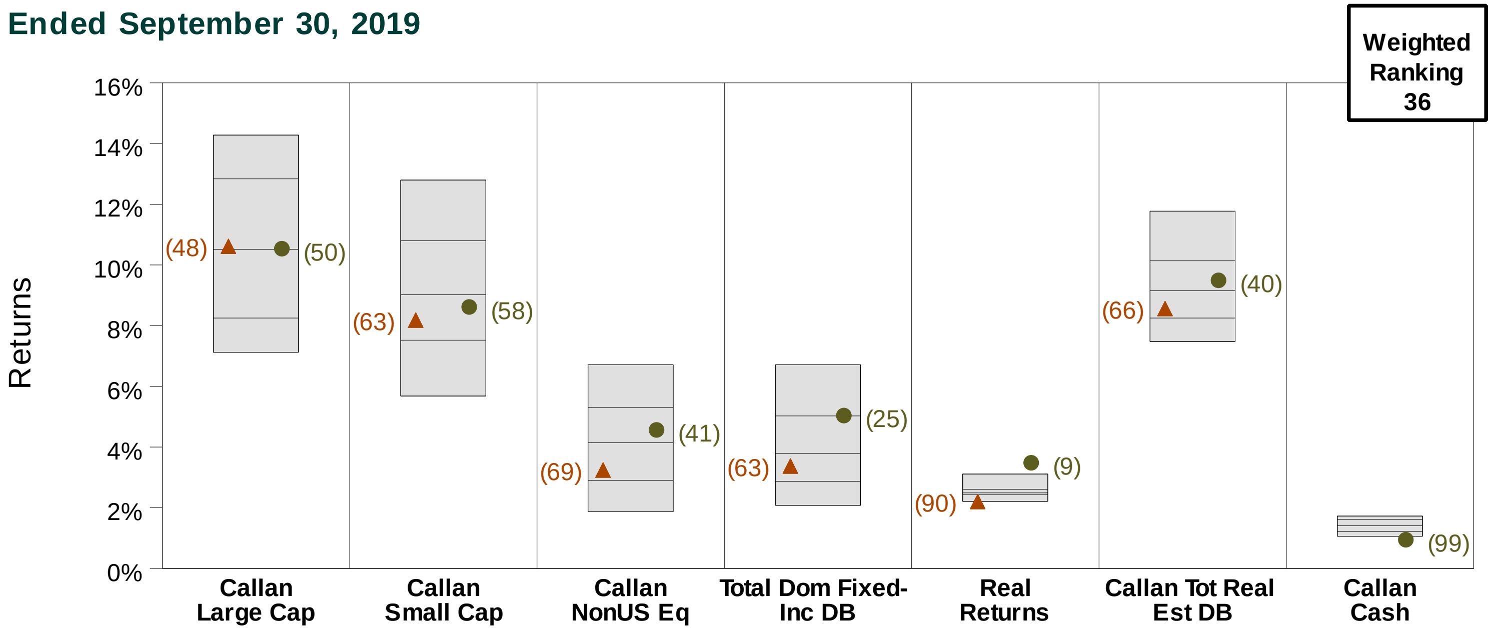
	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	8.46	(0.24)	3.16	14.57	8.46	13.43	3.51
25th Percentile	5.46	(3.74)	0.63	10.63	7.38	8.21	3.29
Median	2.83	(7.07)	(2.10)	8.18	7.15	6.99	2.79
75th Percentile	(0.31)	(10.61)	(4.70)	5.77	6.81	5.80	2.57
90th Percentile	(1.87)	(13.09)	(6.52)	4.21	5.97	3.85	2.40
Asset Class Composite ●	2.36	(8.38)	(3.60)	11.13	7.24	5.57	2.23
Composite Benchmark ▲	3.87	(8.89)	(0.95)	10.30	6.47	6.24	-

- Small cap equities, domestic fixed income, and real assets all outperformed their benchmarks over the trailing year.
- Domestic fixed income ranked in the top quartile, while real returns also ranked above median.

Asset Class Composite Results

Legacy Fund Asset Class Results vs. Callan Style Groups

Total Asset Class Performance
Five Years Ended September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	14.28	12.80	6.72	6.72	3.12	11.77	1.73
25th Percentile	12.84	10.80	5.31	5.03	2.61	10.14	1.62
Median	10.51	9.02	4.15	3.79	2.49	9.15	1.41
75th Percentile	8.25	7.52	2.90	2.87	2.43	8.25	1.22
90th Percentile	7.12	5.68	1.87	2.08	2.21	7.48	1.06
Asset Class Composite ●	10.48	8.55	4.50	4.98	3.42	9.43	0.89
Composite Benchmark ▲	10.62	8.19	3.25	3.38	2.21	8.57	-

- All asset composites, with the exception of small cap equity, performed at or above median over the trailing five years.
- All asset classes with the exception of large cap equities outperformed their respective benchmarks over the period.

Callan

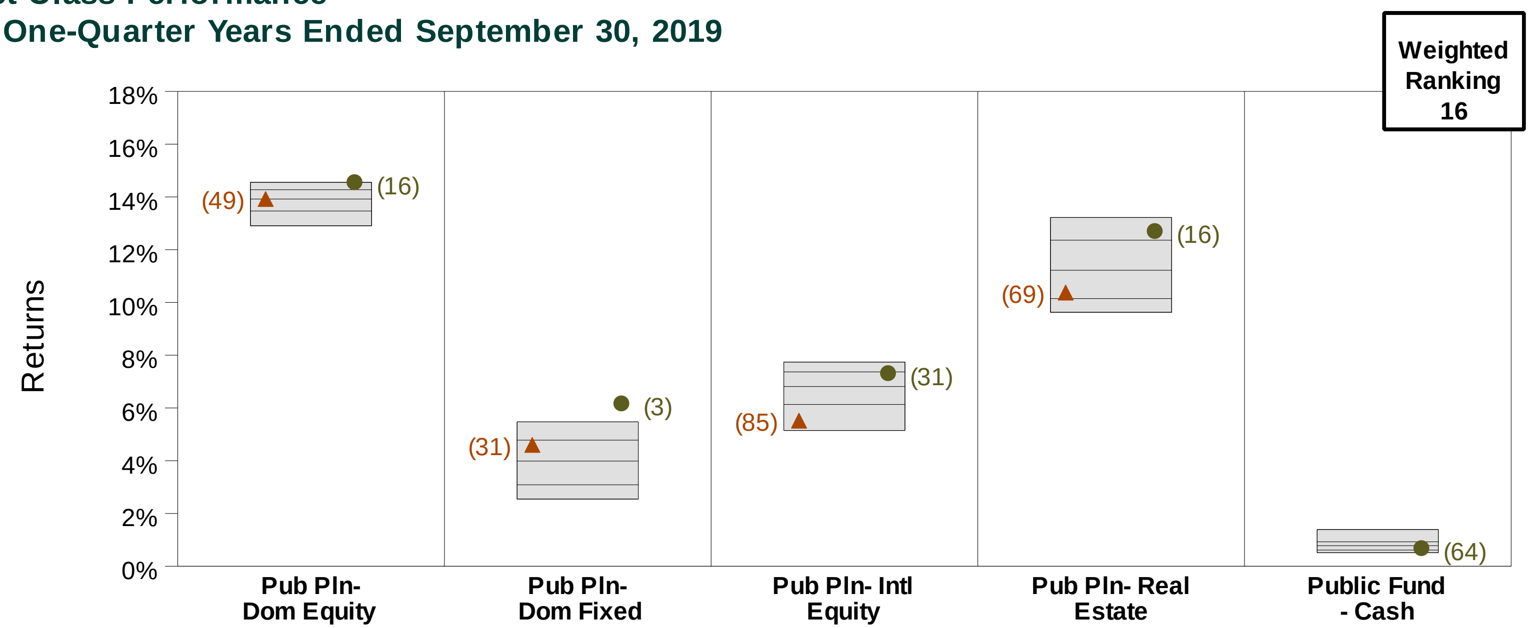
Appendix A

Consolidated Asset Class Rankings

Asset Class Composite Results

PERS' Asset Class Results vs. Other Public Pension Funds

Total Asset Class Performance
Nine and One-Quarter Years Ended September 30, 2019



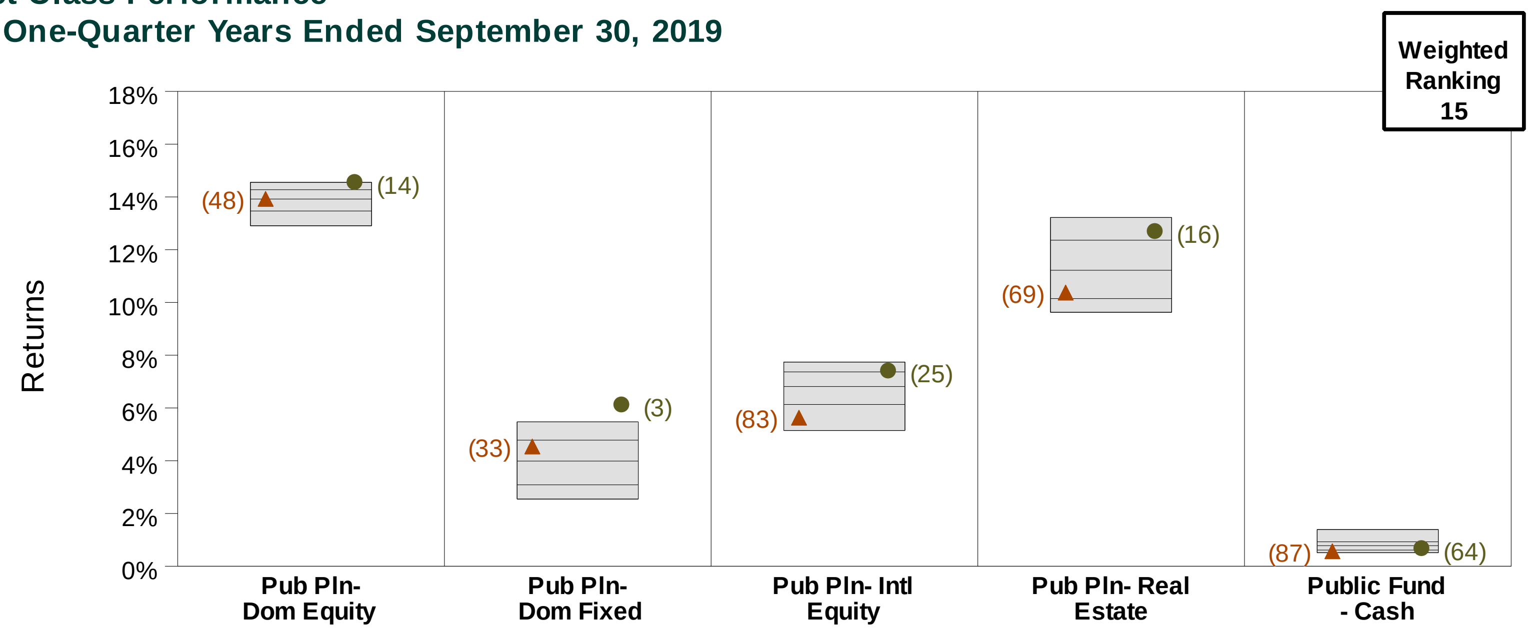
	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	14.56	5.48	7.74	13.22	1.39
25th Percentile	14.28	4.78	7.37	12.36	0.93
Median	13.92	3.99	6.82	11.22	0.78
75th Percentile	13.47	3.09	6.14	10.15	0.61
90th Percentile	12.91	2.55	5.15	9.63	0.52
Asset Class Composite ●	14.49	6.11	7.25	12.65	0.62
Composite Benchmark ▲	13.92	4.60	5.52	10.38	-

- All asset classes have outperformed their benchmarks and performed above the median of peer public funds over the last 9 years (excluding cash).
- 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 and One-Quarter Years Ended September 30, 2019



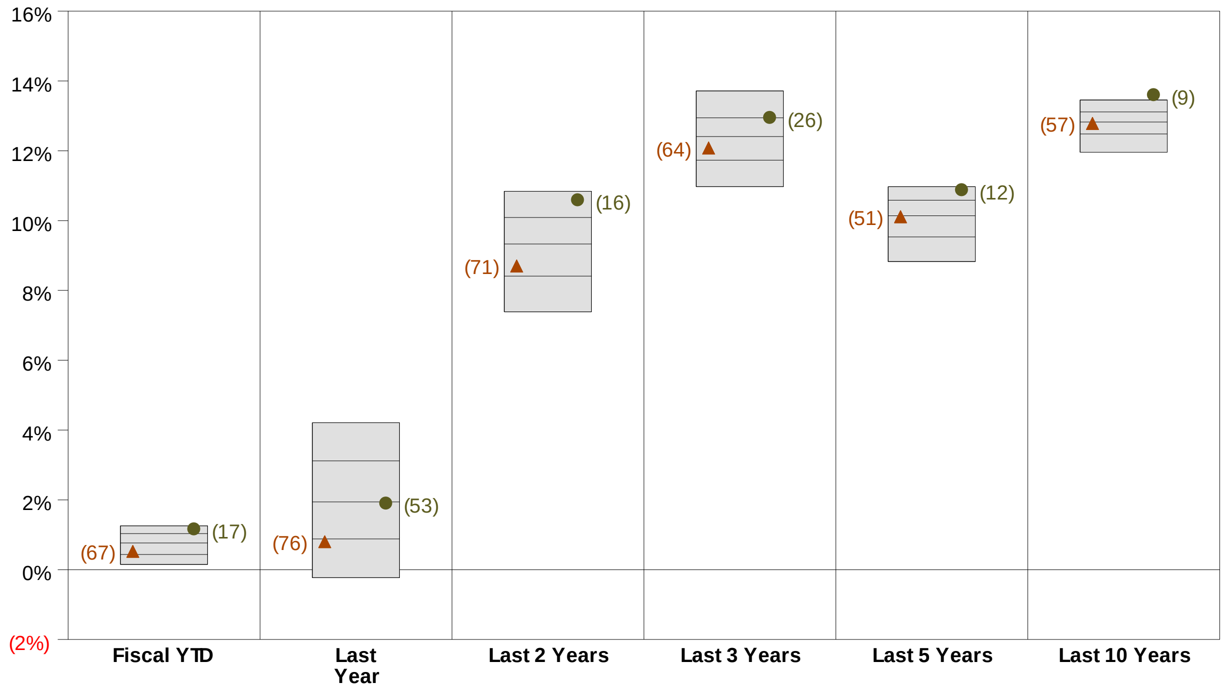
	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	14.56	5.48	7.74	13.22	1.39
25th Percentile	14.28	4.78	7.37	12.36	0.93
Median	13.92	3.99	6.82	11.22	0.78
75th Percentile	13.47	3.09	6.14	10.15	0.61
90th Percentile	12.91	2.55	5.15	9.63	0.52
Asset Class Composite ●	14.50	6.07	7.36	12.64	0.63
Composite Benchmark ▲	13.93	4.54	5.64	10.38	0.57

- 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 September 30, 2019

Performance vs Public Fund - Domestic Equity (Gross)



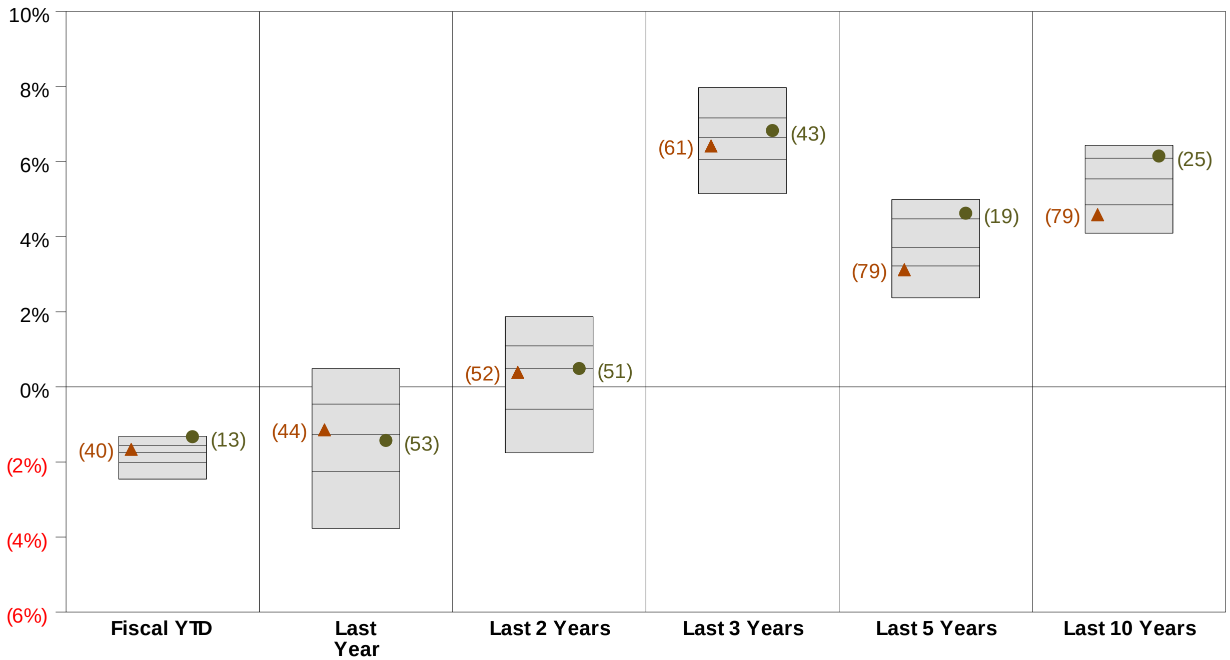
	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.26	4.21	10.84	13.72	10.97	13.45
25th Percentile	1.04	3.12	10.09	12.95	10.58	13.11
Median	0.77	1.94	9.33	12.41	10.14	12.82
75th Percentile	0.44	0.88	8.41	11.73	9.53	12.48
90th Percentile	0.15	(0.23)	7.39	10.97	8.83	11.96
Domestic Equities ●	1.13	1.87	10.56	12.92	10.84	13.57
Domestic Equity Target ▲	0.53	0.80	8.70	12.08	10.11	12.79

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

Consolidated Pension Trust: International Equity

As of September 30, 2019

Performance vs Public Fund - International Equity (Gross)



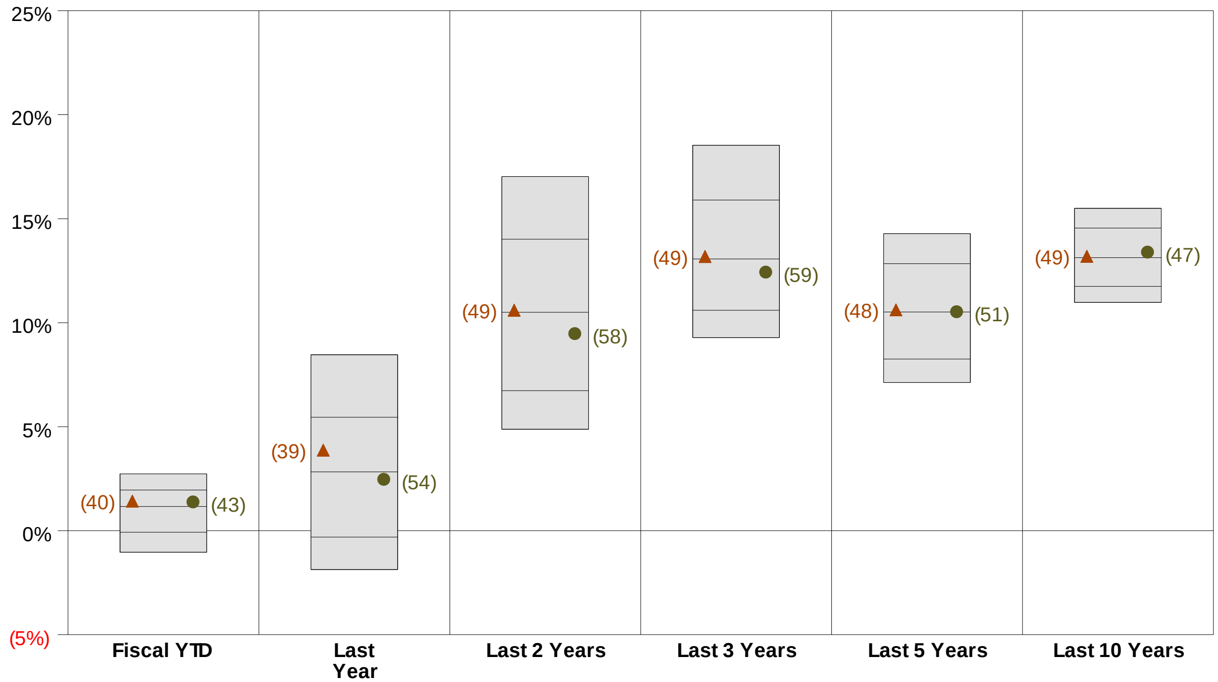
	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(1.32)	0.49	1.87	7.97	4.99	6.44
25th Percentile	(1.56)	(0.46)	1.09	7.16	4.47	6.09
Median	(1.74)	(1.27)	0.49	6.65	3.71	5.54
75th Percentile	(2.02)	(2.25)	(0.59)	6.06	3.22	4.85
90th Percentile	(2.46)	(3.77)	(1.75)	5.15	2.37	4.09
International Equities ●	(1.37)	(1.47)	0.45	6.79	4.58	6.11
International Equity Target ▲	(1.66)	(1.14)	0.39	6.42	3.12	4.59

- International equities have failed to keep pace with their U.S. equivalents in 2019. The third quarter only contributed further to the dispersion.
- The portfolio has performed above, or near the peer median over most trailing periods.

Consolidated Insurance Trust: Large Cap Equity

As of September 30, 2019

Performance vs Callan Large Capitalization (Gross)



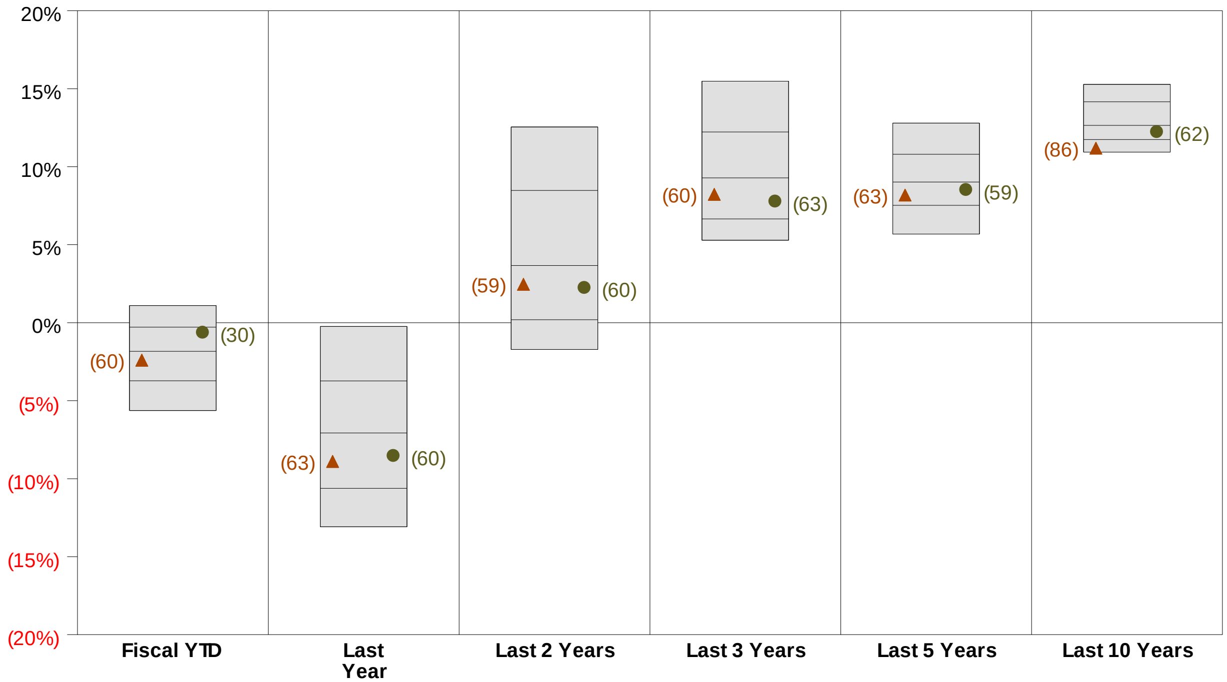
	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.73	8.46	17.02	18.53	14.28	15.50
25th Percentile	1.95	5.46	14.01	15.90	12.84	14.55
Median	1.16	2.83	10.50	13.07	10.51	13.13
75th Percentile	(0.08)	(0.31)	6.73	10.59	8.25	11.75
90th Percentile	(1.03)	(1.87)	4.88	9.28	7.12	10.97
Large Cap ●	1.32	2.40	9.40	12.36	10.47	13.33
Large Cap Equity Target ▲	1.42	3.87	10.60	13.19	10.62	13.19

- 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 during the previous quarter and over the trailing 10 years.

Consolidated Insurance Trust: Small Cap Equity

As of September 30, 2019

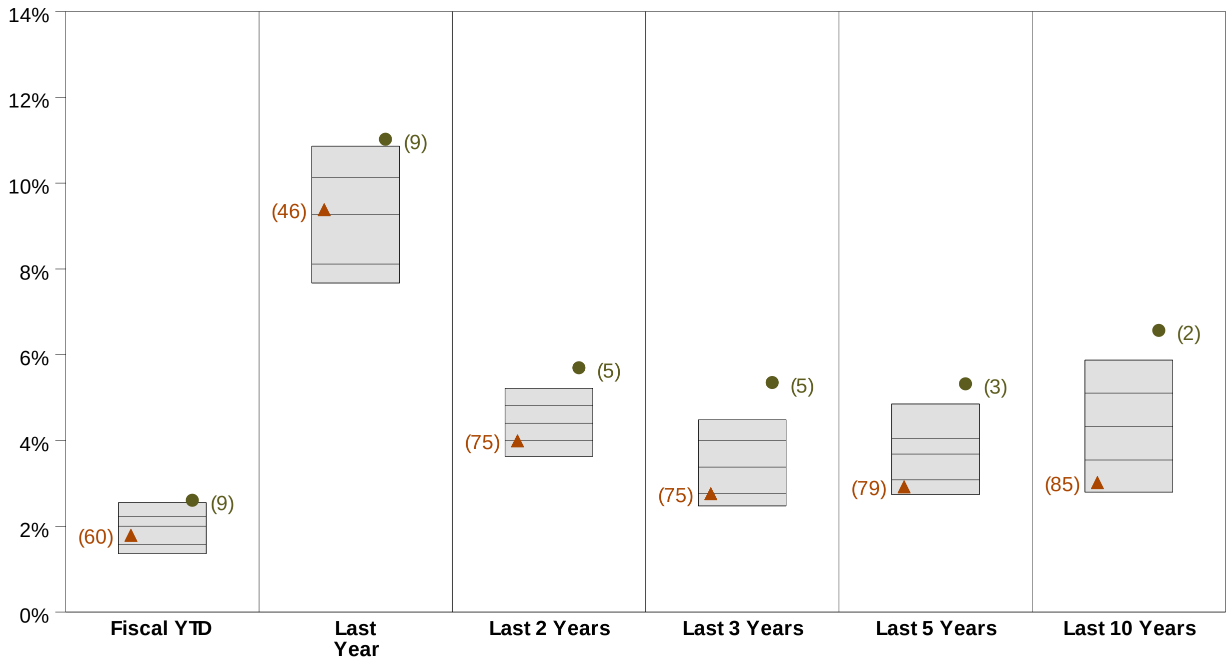
Performance vs Callan Small Capitalization (Gross)



	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	15.28
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	14.16
Median	(1.84)	(7.07)	3.67	9.29	9.02	12.65
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	11.75
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	10.93
Small Cap ●	(0.70)	(8.60)	2.17	7.71	8.45	12.18
Small Cap Equity Target ▲	(2.40)	(8.89)	2.47	8.23	8.19	11.19

- The small cap equity composite produced mixed performance relative to the benchmark over various rolling periods.
- The asset class underperformed the peer median over all measured periods one year and longer.

Performance vs Public Fund - Domestic Fixed (Gross)



	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.55	10.86	5.22	4.48	4.85	5.88
25th Percentile	2.23	10.14	4.81	4.00	4.04	5.10
Median	2.00	9.27	4.40	3.38	3.68	4.32
75th Percentile	1.58	8.11	4.00	2.77	3.08	3.54
90th Percentile	1.36	7.67	3.63	2.48	2.74	2.80
Domestic Fixed Income ●	2.57	10.99	5.66	5.31	5.29	6.53
Domestic Fixed Inc. Target ▲	1.79	9.38	4.00	2.76	2.92	3.02

- 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.

Callan Educational Opportunities

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.

2020 National Conference
Celebrating the 40th anniversary of the Callan Institute
January 27-29, 2020 – San Francisco

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

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.

Introduction to Investments
April 21-22, 2020
July 21-22, 2020

This program familiarizes institutional investor trustees and 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.

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

- White papers and surveys are available at https://www.callan.com/library/

Callan

September 30, 2019

North Dakota State Investment Board Pension Funds

Investment Measurement Service Quarterly Review

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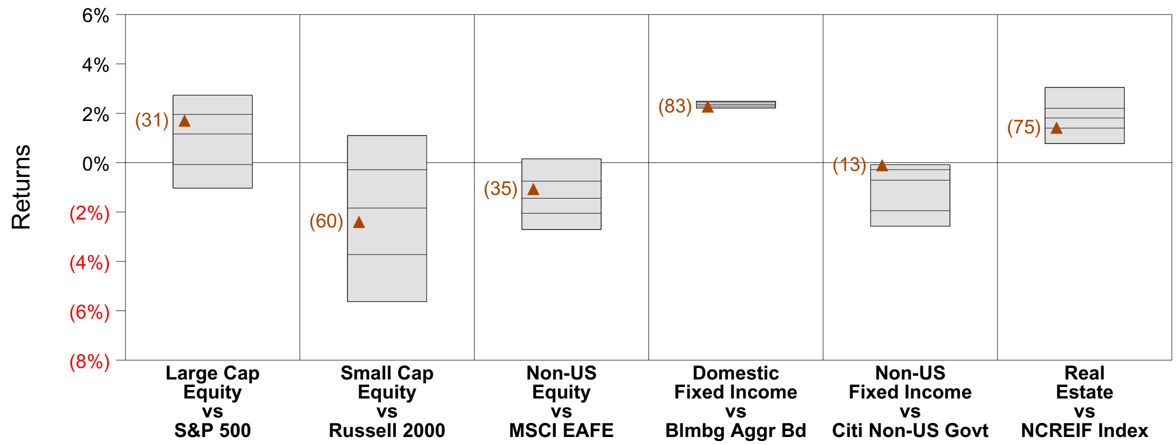
Market Overview
Active Management vs Index Returns

Market Overview

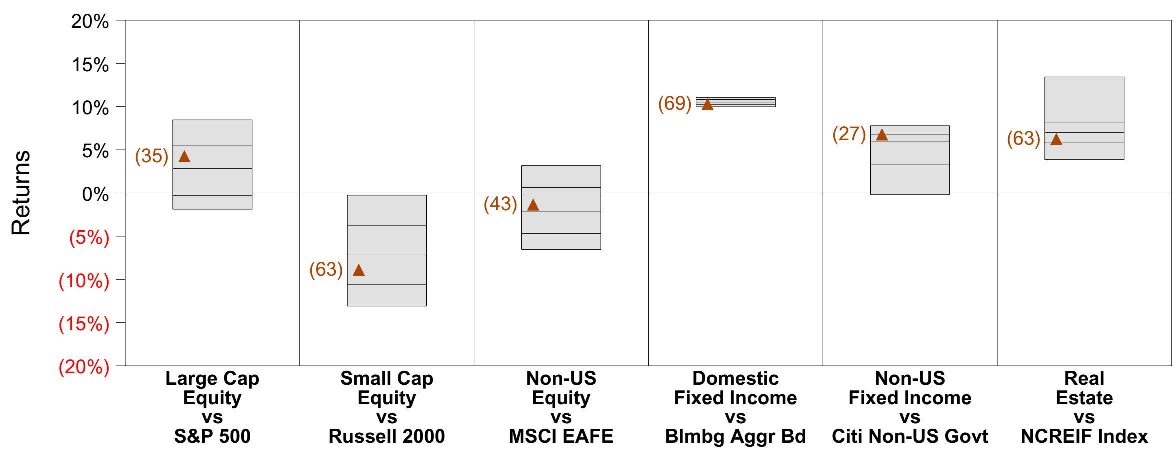
The charts below illustrate the range of returns across managers in Callan's Separate Account database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also 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 September 30, 2019



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	2.73	1.10	0.15	2.49	(0.08)	3.05
25th Percentile	1.95	(0.29)	(0.75)	2.45	(0.28)	2.20
Median	1.16	(1.84)	(1.44)	2.36	(0.71)	1.81
75th Percentile	(0.08)	(3.72)	(2.05)	2.29	(1.95)	1.40
90th Percentile	(1.03)	(5.63)	(2.71)	2.21	(2.57)	0.77
Index ▲	1.70	(2.40)	(1.07)	2.27	(0.11)	1.41

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



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	8.46	(0.24)	3.16	11.08	7.77	13.43
25th Percentile	5.46	(3.74)	0.63	10.82	6.80	8.21
Median	2.83	(7.07)	(2.10)	10.52	5.92	6.99
75th Percentile	(0.31)	(10.61)	(4.70)	10.26	3.34	5.80
90th Percentile	(1.87)	(13.09)	(6.52)	9.97	(0.14)	3.85
Index ▲	4.25	(8.89)	(1.34)	10.30	6.78	6.24

Callan Institute

Third Quarter 2019

Capital Market Review

The Four Most Dangerous Words

ECONOMY

2 PAGE

"This time, it's different" has been trotted out near the peak of most cycles as justification for why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Steady Returns Amid Equities Rebound

INSTITUTIONAL INVESTORS

4 PAGE

Corporate plans gained the most among plan types over the one-year period ending in the third quarter. Nonprofits trailed all fund types. Over the last 20 years, returns for investor types ranged from 6.2%-6.3%, outpacing the 6.1% return of a stocks-bonds benchmark.

U.S. Stocks Mixed; Global Markets Fall

EQUITY

6 PAGE

U.S. equity markets posted mixed results amid historic lows for 30-year Treasury yields and a historic factor rotation. Global equity markets turned negative after modest but positive results in the second quarter, buffeted by geopolitical turmoil.

After Two Rate Cuts, Yields Fall Globally

FIXED INCOME

8 PAGE

The Federal Open Market Committee cut short-term interest rates by 25 basis points twice in the third quarter. Yields fell in the U.S. and abroad given global growth headwinds. U.S. fixed income saw mostly positive returns; non-U.S. returns were mixed.

Real Estate Solid; Real Assets Down

REAL ESTATE/REAL ASSETS

10 PAGE

U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle. Global REITs gained 4.6% in the third quarter; U.S. REITs advanced 7.8%. Most real assets, with the notable exception of gold, finished the quarter lower.

A Bountiful but Smaller Harvest

PRIVATE EQUITY

12 PAGE

Most private equity activity measures were down in the third quarter. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and spooky geopolitical events dampened activity so far this year.

Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs

13 PAGE

Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat. Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.

Returns Moderate for Callan DC Index

DEFINED CONTRIBUTION

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The Callan DC Index™ rose 3.3% in the second quarter compared to 9.6% in the first quarter. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation. The Index's growth in balances returned to a normal level after a big gain in the first quarter.

Broad Market Quarterly Returns

U.S. Equity Russell 3000	Non-U.S. Equity MSCI ACWI ex USA	U.S. Fixed Income Bloomberg Barclays Agg	Non-U.S. Fixed Income Bloomberg Barclays Gbl ex US
1.2%	-1.8%	2.3%	-0.6%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Four Most Dangerous Words (This Time, It's Different…)

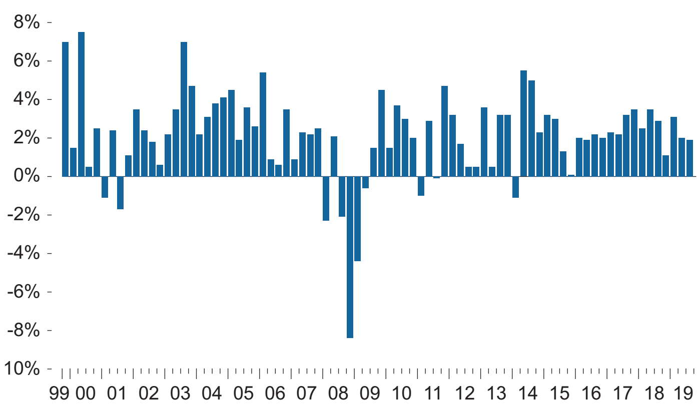
ECONOMY | Jay Kloepfer

Third quarter U.S. GDP growth surprised on the upside, coming in at 1.9% and extending what is now the longest economic expansion on record to 124 months. While 1.9% sounds modest compared to past cycles, it is positively robust compared to developed economies around the globe. The U.S. economy, and to an extent the entire global economy, has defied fears of an imminent collapse all year. While the current expansion may appear long in the tooth, elapsed time is not an economic variable. This expansion has been far weaker than each of the past 10, whether measured by cumulative GDP growth (at just under 25%, it's about half that of the 1990s), by job creation, or by investment. The overhang of the housing market collapse has weighed heavily on growth since 2009, and the measured pace of growth has in fact enabled the U.S. economy to maintain a slow burn.

Several long-held tenets of fundamental macroeconomics appear to be under serious re-consideration after the extraordinary 10-year period following the Global Financial Crisis: the cause (and the absence) of inflation; the execution of monetary policy; the role of central banks and in particular the pivot by the Federal Reserve at the start of 2019; and the business cycle. The new macroeconomic narrative says that first, the business cycle as we know it has been disrupted; second, the source and volatility of inflation has been altered going forward; third, central banks have added sustaining economic expansion to their official remit, therefore the quantitative easing (QE) genie is out of the bottle and we will not be stuffing it back in anytime soon. All of these changes to the macro world are interrelated, one sustaining the other, and are potentially pointing to a different path for the U.S. and global economy than would be expected, given past accepted relationships between inflation, monetary policy, and the business cycle.

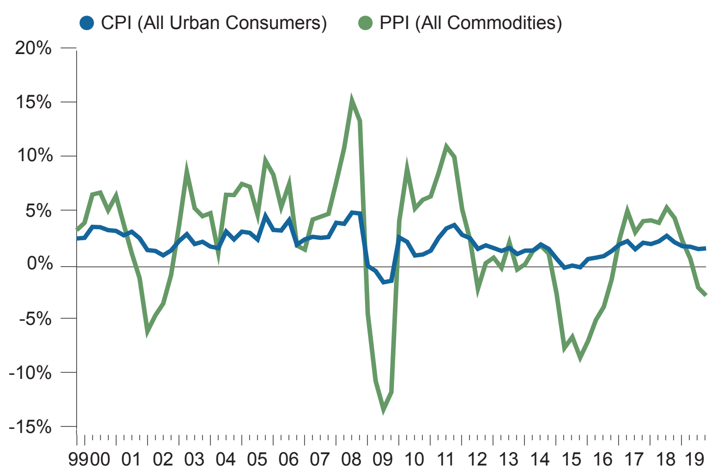
"This time, it's different" has been trotted out near the peak of most cycles to justify why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

In the words of many analysts, the Fed rate hike in December 2018 may have been the end of an era. The Fed's standard operating procedure until now has been to tighten preemptively before inflation takes off, and following the extraordinary period of zero interest rate policy, the Fed's goal had been to normalize rates while inflation was low. The Fed pivot in January to pause on rate hikes, and then to implement two cuts in the third quarter while the expansion continues, indicates that preemptive tightening and rate normalization are over, and we may not see them again. The macro world as we know it may have changed.

The headlines of impending doom that have dominated 2019 make the coming recession, if it ever materializes, the most anticipated slowdown ever. The economic result so far in 2019 is that the U.S. economy has shrugged off slowing global growth, a prolonged trade war with China, and geopolitical uncertainty in the euro zone due to Brexit—and continued to steam along. The job market remains strong, and the unemployment rate is at a generational low of 3.6%. U.S. economic growth is clearly moderating, but the expected plunge has yet to materialize, in part because of the lack of obvious imbalances, and in part because of the relatively insular nature of the U.S. economy. The trade war with China is top of the news, yet the cumulative impact on GDP growth since 2018 is less than 1%, as estimated by Capital Economics. The rest of the world has clearly slowed, and global GDP growth looks ready to fall to its weakest pace (near 2% next year) since 2012.

The source of inflation has shifted from the goods and commodities sectors to the service sector. Goods and commodities have shown substantial variability, with the attendant impact on the business cycle and on prices. The service sector shows much more subdued cyclicality, and as a result both the business cycle and inflation may become irrevocably less volatile, with the boom and bust of past cycles no longer the expectation. Headline inflation came in at a 1.7% annual rate in the third quarter, still well below the Fed's target of 2%, and producer price inflation in particular went negative during 2019, dragged down by commodity and goods prices. The persistence of low inflation in the face of continued expansion and a decade of accommodative monetary policy is one factor giving the Fed cover to cut rates while growth continues.

The Long-Term View

	2019	Periods ended Dec. 31, 2018			
Index	**3rd Qtr**	**Year**	**5 Yrs**	**10 Yrs**	**25 Yrs**
U.S. Equity					
Russell 3000	1.2	-5.2	7.9	13.2	9.0
S&P 500	1.7	-4.4	8.5	13.1	9.1
Russell 2000	-2.4	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	-1.1	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	-1.8	-14.2	0.7	6.6	--
MSCI Emerging Markets	-4.2	-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	2.3	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 Gl Agg ex US	-0.6	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.4	6.7	9.3	7.5	9.3
FTSE Nareit Equity	7.8	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	0.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.3	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.8	-11.2	-8.8	-3.8	2.0
Gold Spot Price	4.2	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.2	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of June 30, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17
Employment Cost–Total Compensation Growth	2.8%	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%
Nonfarm Business–Productivity Growth	-0.1%*	2.3%	3.5%	0.1%	1.2%	1.8%	0.9%	0.9%
GDP Growth	1.9%	2.0%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%
Manufacturing Capacity Utilization	75.5%	75.5%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%
Consumer Sentiment Index (1966=100)	93.8	98.4	94.5	98.2	98.1	98.3	98.9	98.4

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

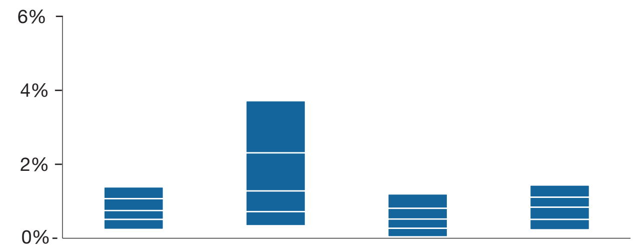
* Estimated figure provided by IHS Markit

Steady Returns Continue Amid Equities Rebound

INSTITUTIONAL INVESTORS

- A quarterly rebalanced 60% S&P 500/40% Bloomberg Barclays Aggregate portfolio returned 7.1% over the one year ended September 30, 2019. All broad institutional investor groups underperformed this benchmark.
- Both U.S. and non-U.S. equity markets continued their rebound in the third quarter after dropping during 2018. Non-U.S. equity underperformed relative to U.S. equity during 2018 and so far this year.
- Corporate plans gained the most among plan types over the one-year period, followed by public defined benefit (DB) plans. Nonprofits trailed all fund types. Over longer periods, Taft-Hartley plans have tended to perform best, but the range of returns for all institutional investor types tended to be in a narrow range; for instance, over the last 10 years, returns for all investor types ranged from 7.9%-8.4%.
- As the expansion continues, investors are discussing how long it can go on, and the fear of missing out is fading the longer the bull market runs. Investors are also addressing how the reversal in Fed policy changes the landscape, as it and other central banks take on the added role of sustaining the expansion. In addition, investors are examining what current yields portend for capital market assumptions.

Quarterly Returns, Callan Database Groups



	Public Database	Corporate Database	Nonprofit Database	Taft-Hartley Database
10th Percentile	1.39	3.72	1.20	1.44
25th Percentile	1.07	2.31	0.81	1.11
Median	0.75	1.28	0.52	0.84
75th Percentile	0.51	0.72	0.27	0.51
90th Percentile	0.24	0.34	0.04	0.23

Source: Callan

- Public DB plans are focused on returns from private markets, but face mounting pressure to control costs. One approach they have adopted is a barbelled pursuit of active management 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.

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

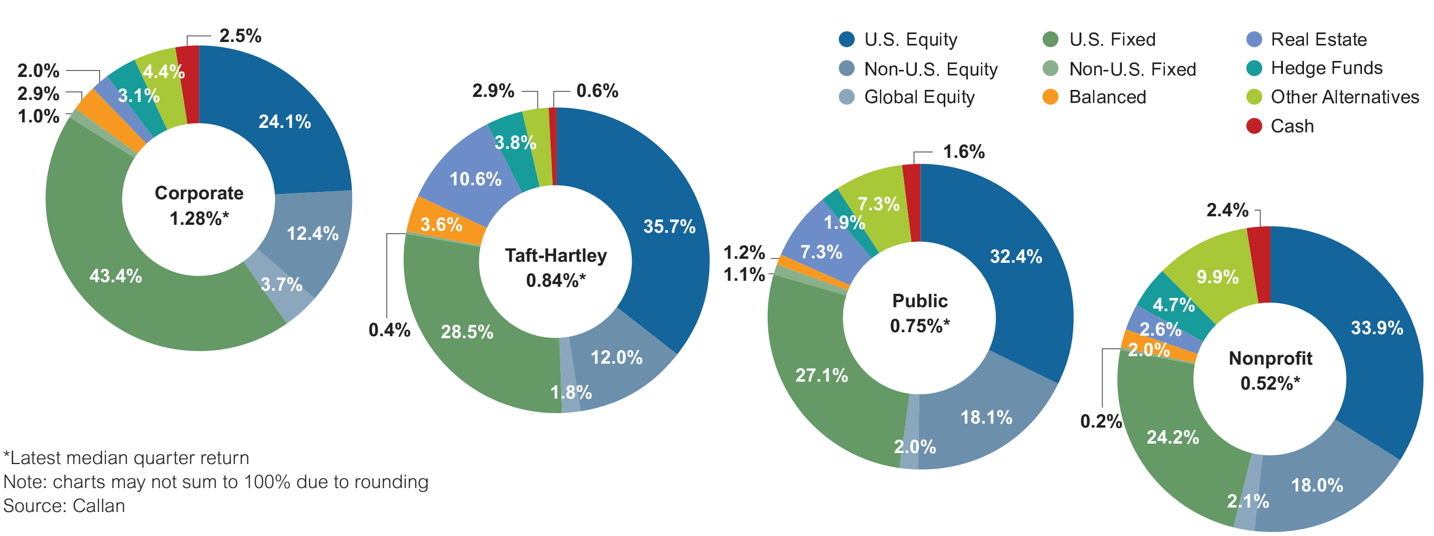
Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	**0.75**	**12.03**	**4.17**	**7.80**	**6.39**	**8.10**
Corporate Database	**1.28**	**14.11**	**6.39**	**7.78**	**6.51**	**8.17**
Nonprofit Database	**0.52**	**12.59**	**3.63**	**7.88**	**5.98**	**7.94**
Taft-Hartley Database	**0.84**	**11.92**	**3.88**	**8.03**	**6.91**	**8.40**
All Institutional Investors	**0.77**	**12.62**	**4.19**	**7.88**	**6.39**	**8.18**
Large (>$1 billion)	**0.88**	**11.86**	**4.57**	**8.11**	**6.63**	**8.43**
Medium ($100mm - $1bn)	**0.83**	**12.54**	**4.25**	**7.91**	**6.46**	**8.17**
Small (<$100 million)	**0.70**	**12.87**	**4.00**	**7.72**	**6.19**	**7.95**

*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.

- All investor types are considering lower equity exposures. They are also reevaluating the purpose and implementation of:
  - Real assets
  - Hedge funds and liquid alternatives
  - Fixed income
  - Equity
- For public DB plans, return enhancement is the most important issue. Alternative assets such as private equity and private real estate continue to draw interest from investors. Some plans appear to be rethinking their approach to passive investments and holding off increasing their allocation to them. Plans continue to express interest in reducing their allocations to U.S. equity.
- Corporate DB plans are most focused on risk control. Many are looking to decrease their equity allocation, with nearly the same number considering increases to fixed income. The percentage of corporate DB plans continuing to implement the process of de-risking has increased significantly over the last four years.
- For DC plans, fees remain top of mind. Retirement income options are also getting attention.
- Enhancing returns is the biggest concern for nonprofits, as they seek to meet spending needs and grow the corpus over time. Among all investor types, nonprofits historically have implemented or considered an outsourced chief investment officer (OCIO) at a higher rate than other types of institutional investors, and that trend continued this quarter.
- As part of their efforts to increase returns to meet plan targets, investors are evaluating how to implement private market allocations, and whether it is feasible to create a customized program implementation.
- For instance, public DB plans are expressing interest in multi-asset class (MAC) strategies. However, that interest is not widely shared. Corporate DB plans and nonprofits do not seem to be interested in increasing their exposure to MACs, and in fact corporate DB plans are increasingly expressing a desire to reduce their MAC allocations. Nonprofits showed a similar shift in sentiment.
- Private real estate and private equity have been staples of many investors' portfolios, and they continue to express interest in increasing their allocations to these asset classes. Investors, most notably nonprofits, are also beginning to indicate growing interest in increasing allocations to private credit.
- Fund liquidity may be a concern that prevents some investors from adding to illiquid investments.
- Despite the interest in alternatives, some plans are terminating their hedge fund exposures.

Average Asset Allocation, Callan Database Groups



*Latest median quarter return
Note: charts may not sum to 100% due to rounding
Source: Callan

Equity

U.S. Equities

U.S. equities posted mixed results amid a market that saw 30-year Treasury yields hit historic lows and the most meaningful, albeit short-lived, factor rotation among stocks since the Global Financial Crisis (GFC). Large cap (+1.4%) and mid cap stocks (+0.5%) posted modest gains for the quarter while small caps declined (Russell 2000: -2.4%). Ongoing U.S.-China trade tension, earnings and interest rate uncertainty, and the global political landscape continued to drive investor uncertainty.

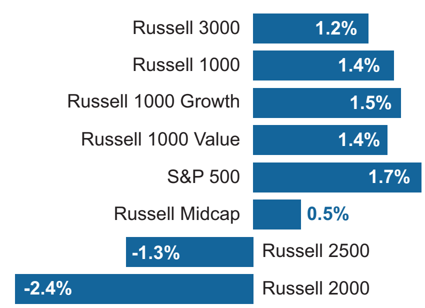
Large Cap ► *S&P 500: +1.7% | Russell 1000: +1.4%*

- Top sectors were in defensive areas including Utilities (+9.3%), Real Estate (+7.7%), and Consumer Staples (+6.1%) in response to investors' continued flight to quality.
- Energy, hurt by falling oil prices, fell 6.3%; Health Care lagged (-2.2%) amid discussions around price transparency and pricing reform by U.S. presidential candidates.
- Cyclical sector exposure has been volatile given uncertainty around the trade deal (and continued sideways movement of markets) along with slowed global growth.
- Up to September, momentum stocks (which have shifted to include many of the market's least volatile stocks) outperformed as investors shunned the cheapest quintile of value (and more volatile) stocks. This trend sharply reversed in early September as the 10-year Treasury yield rose from 1.46% to 1.73% and momentum stocks fell precipitously while value stocks traded up over the course of two days. The magnitude of the reversal gave a boost to value stocks across market capitalizations for the quarter.

Growth vs. Value ► *Russell 1000 Value: +1.4%, Russell 1000 Growth: +1.5% | Russell 2000 Value: -0.6%, Russell 2000 Growth: -4.2%)*

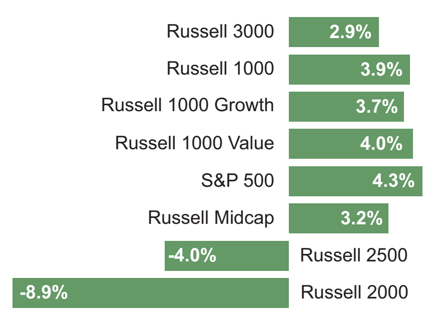
- While value continues to trail growth year-to-date, it gained ground during September's factor reversal, finishing the quarter essentially in line with growth within large caps.

U.S. Equity: Quarterly Returns



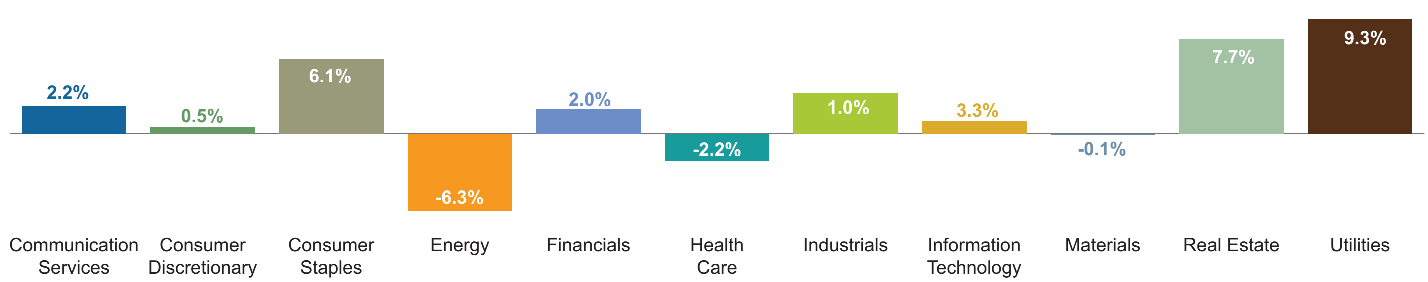
Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Quarterly Performance of Industry Sectors



Source: Standard & Poor's

- Within small cap, value benefited as investors favored the cheapest 20% of small caps while the most expensive quintile within the Russell 2000 declined double digits.

Non-U.S./Global Equities

Global equity markets turned negative in the third quarter. After more modest positive results in the second quarter, fears over continued trade war impacts, a no-deal Brexit, and a potential global slowdown impacted investor behavior. Given this backdrop, more defensive areas of the market outperformed.

Developed ► *MSCI EAFE: -1.1% | MSCI World ex USA: -0.9% | MSCI ACWI ex USA: -1.8% | MSCI Hong Kong: -11.9% | MSCI Japan: +3.1%*

- Boris Johnson's attempted suspension of Parliament and no-deal Brexit proclamations weighed on U.K. stocks (-2.5%).
- Germany (-4.0%) experienced recession fears; industrial production dropped 1.5% in June from the prior month, while the estimate was -0.5%.
- Hong Kong protests proved to be a headwind as its market fell 11.9% over the three-month period.
- Japan (+3.1%) was one of the few bright spots within developed markets as low short-term interest rates remain unchanged and a resolution to the Japan/South Korea trade war looked more promising.
- Cyclical sectors trailed as investors were positioned defensively; Energy (-6.5%) had the worst performance.
- For the quarter, factor performance reflected cautious investor behavior as quality and low volatility did well. However, the month of September saw a brief recovery in value across all markets as trade talks improved and central banks eased.

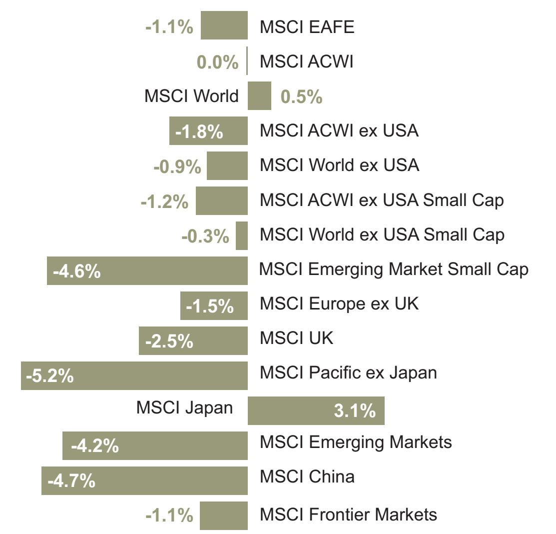
Emerging Markets ► *MSCI Emerging Markets Index: -4.2%*

- Emerging markets fared worst among global markets; uncertainty weighed heavily on these volatile countries.
- Though most emerging market countries fell during the quarter, Turkey (+11.7%) had strong results as its central bank cut rates two times in less than two months.
- Factor performance in emerging markets favored quality and price momentum as investors moved toward safe assets.

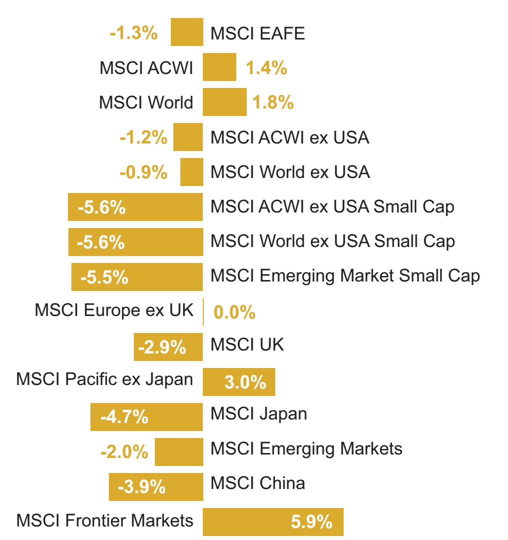
Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: -0.3% | MSCI EM Small Cap: -4.6%*

- Small cap marginally outperformed large cap, both in developed and all country ex-U.S. markets; despite overall defensive posturing, idiosyncratic businesses pushed past global market issues.
- Japan (+4.0%) helped drive developed returns as small cap companies also benefited from low rates and resolved trade tensions; Hong Kong (-7.6%) detracted as local businesses were hurt by the protests.

Non-U.S. Equity: Quarterly Returns (U.S. Dollar)



Non-U.S. Equity: One-Year Returns (U.S. Dollar)



Source: MSCI

Fixed Income

The Federal Open Market Committee (FOMC) cut short-term interest rates by 25 basis points twice in the third quarter amid an economic backdrop that has been supported by strong consumer spending and a solid labor market, but challenged by weakening manufacturing data and business investment. The Fed chair stated that the FOMC would act as "appropriate to sustain the expansion," and the European Central Bank and other central banks around the world also moved in the direction of easing monetary policy. Yields fell in the U.S. and abroad given global growth headwinds fueled by mounting trade tensions as well as geopolitical uncertainty.

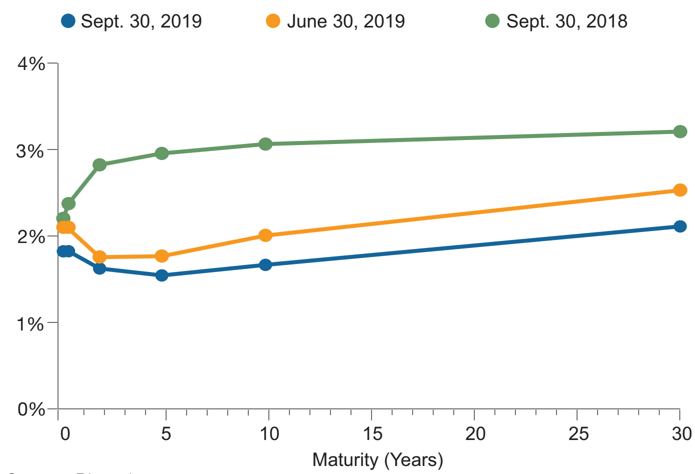
Core Fixed Income ► *Bloomberg Barclays US Agg: +2.3%*

- Treasuries returned 2.4% as rates fell across the yield curve.
- While the widely monitored 2- and 10-year key rates remained positive, the spread between the 3-month and 10-year key rates remained inverted.
- Long Treasuries soared (+7.9%) as 30-year yields fell roughly 40 bps.
- Nominal Treasuries outperformed TIPS as inflation expectations continued to fall; 10-year breakeven spreads were 1.53% as of quarter-end, down from 1.69% as of June 30. The 10-year real yield dipped briefly into negative territory in early September.

Investment-Grade Corporates ► *Bloomberg Barclays Corporate (Inv. Grade): +3.1%*

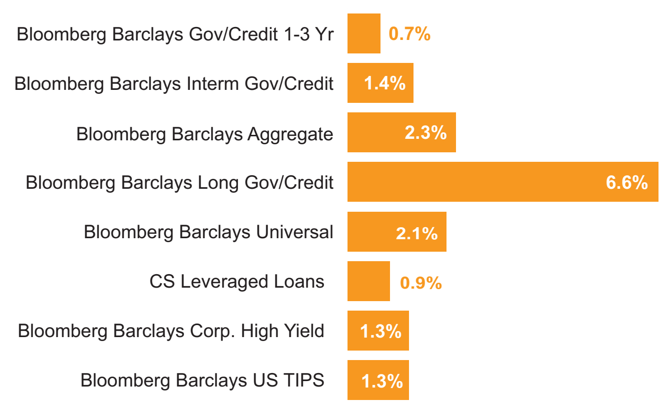
- Investment grade corporate credit spreads were range-bound, but their yield advantage was enough to generate positive excess returns versus like-duration Treasuries.
- Issuance in the corporate bond market was $320 billion in the quarter, $50 billion higher than a year ago; demand remained solid. BBB-rated corporates (+3.1%) modestly outperformed A-rated or higher corporates (+3.0%).

U.S. Treasury Yield Curves



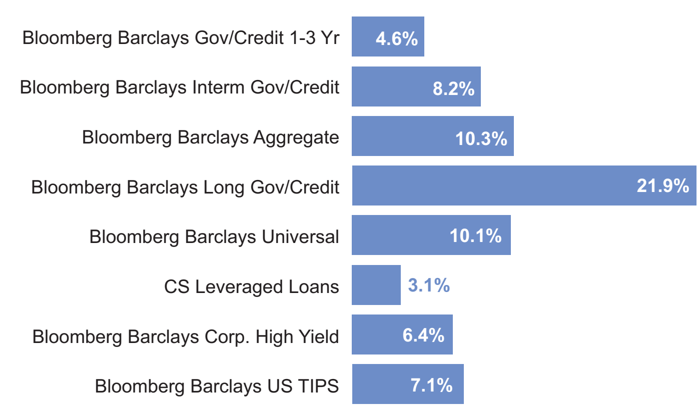
Source: Bloomberg

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

High Yield ► *Bloomberg Barclays Corporate HY: +1.3%*

- BB-rated corporates (+2.0%) outperformed CCC-rated corporates (-1.8%). BB- and B-rated spreads narrowed slightly, but the rally in rates helped drive outperformance as a result of higher quality bonds' greater sensitivity to interest rate movements.
- CCC-rated bond spreads widened significantly, representing some concern about deteriorating quality at the lower-end of the spectrum.

Leveraged Loans ► *CS Leveraged Loans: +0.9%*

- Bank loans, which have floating rate coupons, underperformed high yield bonds as rates rallied and investors worried about deteriorating credit quality.
- CLO issuance continued to exceed expectations, providing positive technical support to the leveraged loan market.

Non-U.S. Fixed Income

Global Fixed Income ► *Bloomberg Barclays Global Aggregate (unhedged): +0.7% | (hedged): +2.6%*

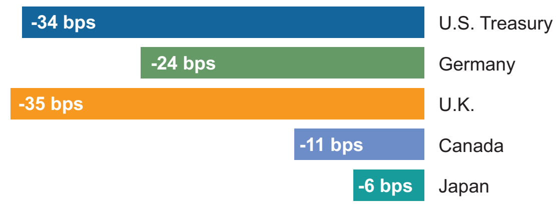
- Developed market sovereign bond yields rallied, pushing European sovereigns further into negative territory as the ECB reduced its deposit rate and announced a new bond purchasing stimulus program.
- Negative yielding debt totals nearly $17 trillion, a record high.
- The U.S. dollar was up 3.4% versus a basket of trade partner currencies and up 4.3% versus the beleaguered euro.

Emerging Market Debt ($US) ► *JPM EMBI Global Diversified: +1.5%* | (Local currency) ► *JPM GBI-EM Global Diversified: -0.8%*

- Broadly, emerging market currencies depreciated versus the U.S. dollar, hampering local currency returns.
- Within the dollar-denominated benchmark, Argentina (-42%) and Venezuela (-51%) were among the few to post negative returns. Conversely, returns in the local debt benchmark were more mixed with Turkey (+19%) and Argentina (-60%) being outliers.

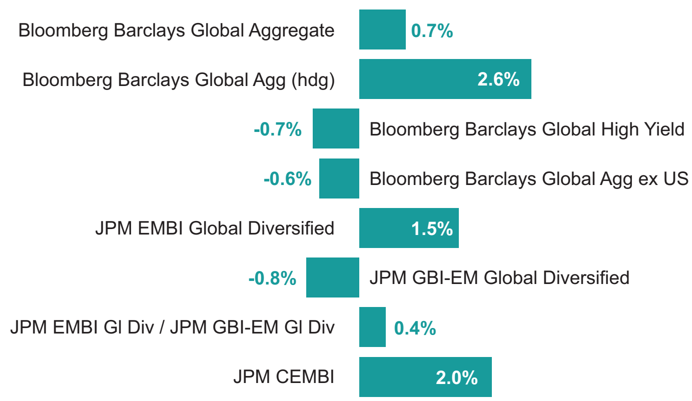
Change in 10-Year Global Government Bond Yields

2Q19 to 3Q19



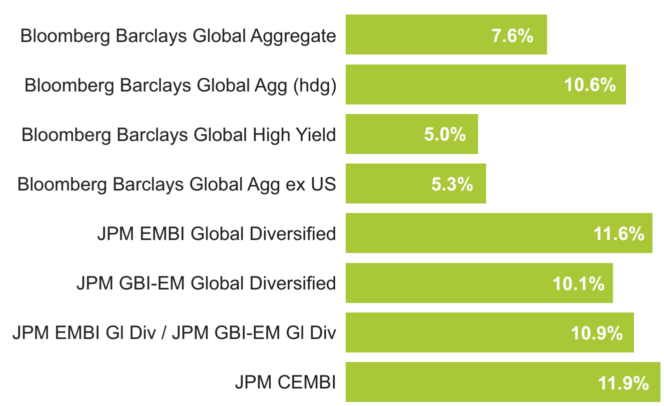
Source: Bloomberg Barclays

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 Stays Solid; Real Assets Mostly Down

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

U.S. Real Estate

Real Estate Returns Continue to Moderate

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- Returns are coming from net operating income (NOI) growth rather than further cap rate compression.
- Industrial continues to outperform other property types.
- Retail showing signs of depreciation

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metros.
- Within the NCREIF Property Index, the vacancy rate for U.S. Office was 9.6% in the quarter, the lowest in over 12 years.
- Net operating income (NOI) has been growing annually and is expected to be the primary return driver. Apartment and Industrial NOI growth fell slightly from the second quarter.

Pricing Remains Expensive in the U.S.

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

REITs Outperformed Global Equities

- U.S. REITs advanced 7.8% in the quarter, outpacing the S&P 500 Index, which rose 1.7%.
- Global REITs gained 4.6% compared to -0.2% for the MSCI ACWI IMI.
- Both U.S. and non-U.S. REITs are trading at net asset value.

Non-U.S. Real Estate

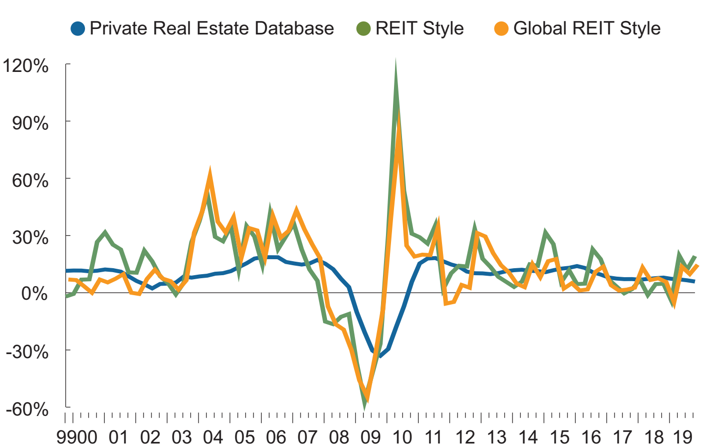
Asia Is Increasingly Important

- U.S.-China trade talks, unrest in Hong Kong, and other areas of political uncertainty have impacted real estate markets in the region. Managers continue to find attractive opportunities in some sectors of the market such as restructuring opportunities, necessity-based retail, and logistics.
- The number of open-end core funds focused on the Asia-Pacific market has increased in 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.
- During 2019, India had its first successful IPO for a REIT.

Europe Buffeted by Political Uncertainty

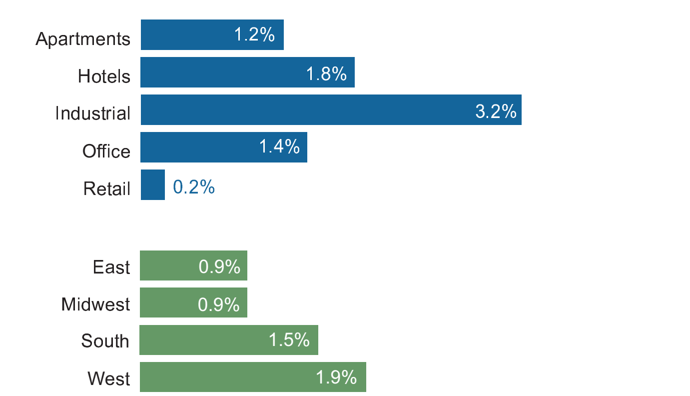
- Political uncertainty continues to weigh on overall economic growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given strong demand and the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Yields between prime and secondary real estate remain wide, providing opportunities for investors targeting transitional assets, as markets across Europe have less modern stock compared to 10 years ago.

Rolling One-Year Returns



Source: Callan

Sector Quarterly Returns by Property Type and Region



Source: NCREIF

Infrastructure Fundraising Momentum Continues

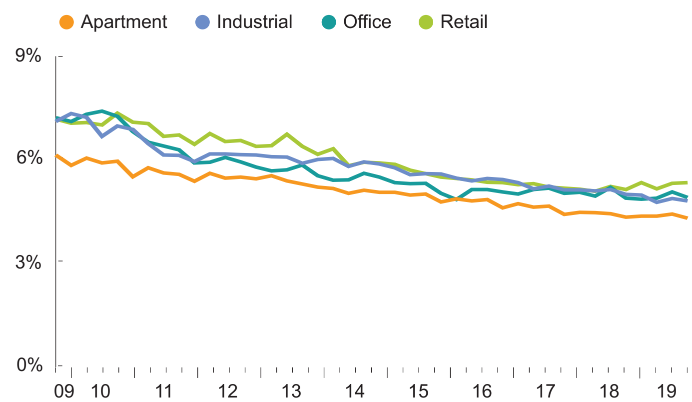
– Open end funds are raising significant capital, and the universe of investible funds keeps increasing.
– The closed end fund market continues to expand, with additional offerings in infrastructure debt, emerging markets, and sector-specific areas (e.g., communications and renewables).

Real Assets

Challenging Quarter as Oil Prices Slide

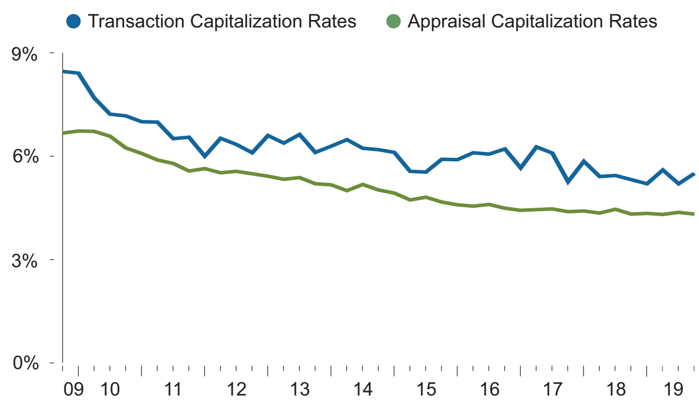
– While the MLP category generally benefits from declining rate environments, volatile and falling oil prices weighed more heavily on the space in the quarter (Alerian MLP Index: -5.0%; +11.0% YTD).
– Oil prices slid from $58.47 to $54.07 (WTI) during the quarter, and the energy-heavy Goldman Sachs Commodity Index was off 4.2%, while Gold (S&P Gold spot price: +4.3%; +15.0% YTD) benefited from its safe haven status.
– Looking across the rest of the commodity complex, Agriculture Commodities finished in negative territory (Bloomberg Commodity Agriculture Subindex: -6.2%), weighed down by coffee, corn, and cotton in particular, while nickel (+35.5%) almost single-handedly lifted the Industrial Metals Subindex (+2.4%) into positive territory for the quarter.

NCREIF Capitalization Rates by Property Type



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

NCREIF Transaction and Appraisal Capitalization Rates



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

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

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	**1.5**	**4.5**	**5.9**	**7.1**	**9.0**	**9.9**	**6.8**
NFI-ODCE (value wt net)	1.1	3.1	4.6	6.3	8.4	9.8	6.9
NCREIF Property	1.4	4.8	6.2	6.8	8.6	9.8	8.6
NCREIF Farmland	1.0	2.4	5.3	6.1	7.9	11.0	14.2
NCREIF Timberland	0.2	1.3	2.1	3.1	4.4	4.0	7.0
Public Real Estate							
Global Real Estate Style	**4.6**	**22.3**	**14.7**	**7.4**	**8.3**	**10.2**	**8.3**
FTSE EPRA Nareit Developed	4.6	19.8	13.0	5.6	6.8	8.6	--
Global ex-U.S. Real Estate Style	**2.8**	**17.9**	**11.7**	**7.9**	**7.8**	**8.1**	**7.8**
FTSE EPRA Nareit Dev ex US	1.5	14.6	8.9	5.9	5.0	6.5	--
U.S. REIT Style	**7.7**	**28.5**	**19.2**	**8.4**	**10.7**	**13.6**	**9.7**
EPRA Nareit Equity REITs	7.8	27.0	18.4	7.4	10.3	13.0	9.0

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

A Bountiful but Smaller Harvest

PRIVATE EQUITY | Gary Robertson

Private equity activity measures were down in the third quarter, except for upticks in dollar volume for fundraising and buyout exits. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and challenging geopolitical events dampened activity so far this year.

Private equity partnerships holding final closes totaled $188 billion, with 201 new partnerships formed, according to PitchBook. The dollar volume rose 27% from the prior quarter, but the number of funds holding final closes fell 7%. So far this year, 2019 is running 7% behind 2018. No strategy is dominating the market compared to historical commitment ranges, as investors focus on diversification.

New buyout transactions declined, according to PitchBook. Funds closed 1,491 company investments with $110 billion in disclosed deal value, representing a 14% decline in count and a 16% dip in dollar value from the second quarter.

According to PitchBook, new investments in venture capital companies totaled 4,664 rounds of financing with $57 billion of announced value. The number of investments was down 13% from the prior quarter, and announced value fell 15%. The median pre-money valuations of Series A through D rounds continued to increase, with only Seed Stage remaining flat.

Funds Closed January 1 to September 30, 2019

Strategy	No. of Funds	Amt ($mm)	Share
Venture Capital	263	46,702	10%
Growth Equity	50	61,789	13%
Buyouts	158	241,920	51%
Mezzanine Debt	39	60,308	13%
Distressed	8	12,203	3%
Energy	10	14,767	3%
Secondary and Other	39	27,970	6%
Fund-of-funds	20	7,358	2%
Totals	**587**	**473,017**	**100%**

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

There were 404 private M&A exits of private equity-backed companies (excluding venture capital), PitchBook reports, with disclosed values totaling $122 billion. Private sale count was down 6% from the prior quarter but announced dollar volume rose 12%. The year-to-date exit count declined 35%. There were 16 private-equity backed IPOs in the third quarter raising $6 billion, a steep decline from 42 totaling $16 billion previously.

Venture-backed M&A exits totaled 320 transactions with disclosed value of $12 billion. The number of sales fell 12% and announced dollar volume plunged 52%. The year-to-date exit count declined 13%. There were 47 VC-backed IPOs in the third quarter with a combined float of $9 billion. For comparison, the second quarter had 59 IPOs and total issuance of $22 billion. Peloton was the largest third quarter IPO, raising $1.2 billion.

Private Equity Performance Database (%) (Pooled Horizon IRRs through June 30, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	6.25	18.96	15.93	14.95	15.01	11.80	13.06
Growth Equity	4.70	15.37	17.71	13.26	14.77	13.59	13.53
All Buyouts	4.12	10.72	16.06	11.85	15.27	13.72	12.07
Mezzanine	2.37	8.05	11.64	10.28	11.05	10.63	8.73
Credit Opportunities	1.09	3.20	9.37	5.68	13.39	9.61	10.13
Control Distressed	1.95	4.27	10.47	7.62	12.16	10.63	10.58
All Private Equity	**4.34**	**12.31**	**15.52**	**11.98**	**14.79**	**12.88**	**12.13**
S&P 500	4.30	10.42	14.19	10.71	14.70	8.75	5.90

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.

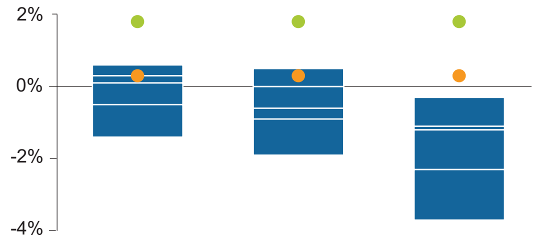
Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs | Jim McKee

Alpha trades flat as markets soften during the quarter

- Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat.
- *Managed Futures* (+3.5%) and *Global Macro* (+2.1%) were lead performers for the second quarter in a row, benefiting from continuing rate and currency trends.
- *Equity Market Neutral* (-1.7%) slipped hard, particularly given September's sudden factor rotation to value while momentum reversed.
- *Long/Short Equity* (+0.1%) was unchanged without much equity beta support; the equity factor reversal in September also hurt.
- *Distressed* (-3.5%) sank as spreads among weaker credits widened amid a flight-to-quality.
- Hedge fund portfolios with exposure to macro trading fared better while those with emerging market exposure, particularly Argentina, suffered more.

Hedge Fund-of-Funds Style Group Returns



	Absolute Return	Core Diversified	Long/Short Equity
10th Percentile	0.6	0.5	-0.3
25th Percentile	0.3	0.0	-1.1
Median	0.1	-0.6	-1.2
75th Percentile	-0.5	-0.9	-2.3
90th Percentile	-1.4	-1.9	-3.7
CS Hedge Fund ●	0.3	0.3	0.3
90-Day T-Bill +5% ●	1.8	1.8	1.8

Sources: Callan, Credit Suisse, and Federal Reserve

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

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	**-0.63**	**0.46**	**3.76**	**2.35**	**4.22**	**4.24**
Callan Absolute Return FOF Style	**0.07**	**0.80**	**3.60**	**2.32**	**4.16**	**3.95**
Callan Core Diversified FOF Style	**-0.62**	**0.23**	**3.37**	**2.02**	**3.99**	**4.12**
Callan Long/Short Equity FOF Style	**-1.19**	**0.02**	**4.57**	**3.40**	**4.67**	**5.37**
Credit Suisse Hedge Fund	0.26	2.13	3.83	2.30	4.32	4.97
CS Convertible Arbitrage	-0.41	1.29	2.55	2.28	4.36	3.78
CS Distressed	-3.46	-3.09	3.06	0.79	4.65	5.22
CS Emerging Markets	-4.11	1.81	3.29	3.02	4.28	5.99
CS Equity Market Neutral	-1.74	-4.37	0.27	0.16	1.14	-0.57
CS Event-Driven Multi	-0.80	0.18	3.49	0.16	3.37	5.05
CS Fixed Income Arb	0.28	2.38	4.39	3.23	5.66	3.84
CS Global Macro	2.12	7.66	5.35	3.11	4.89	6.43
CS Long/Short Equity	0.10	-0.36	4.85	3.38	4.88	5.74
CS Managed Futures	3.53	7.81	0.59	2.07	1.57	3.58
CS Multi-Strategy	0.68	1.94	4.23	4.18	6.23	5.95
CS Risk Arbitrage	0.23	1.98	3.18	2.64	2.68	3.81
HFRI Asset Wtd Composite	0.30	2.65	4.39	2.93	4.49	--
90-Day T-Bill + 5%	1.77	7.39	6.54	5.98	5.54	6.39

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

Amid choppy markets, MACs struggle for gains

- Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.
- The **HFR Risk Parity Index** targeting 10% volatility was positive (+1.9%), reflecting the modest lift of stocks and bonds.
- **Eurekahedge Multi-Factor Risk Premia Index** fell 5.1%, indicating broad headwinds for those seeking diversifying returns outside long-only markets.
- Within risk premia, *equity momentum* was a key detractor in light of September's factor reversal; *rates momentum* was an offsetting contributor given the trend of falling yields.
- *Long-Biased* trailed due to exposure to risk-on assets.
- *Absolute Return* benefited from exposure to higher-quality assets.

Volatility simmers slightly below average

- Markets are further discounting growth with lower expected rates, long and short.
- If global manufacturing data softens further, thereby overwhelming expectations of central banks easing, hedge funds are positioned reasonably well for an equity downturn.
- However, any economic rebound with tepid inflation will cause most hedge funds to lag.

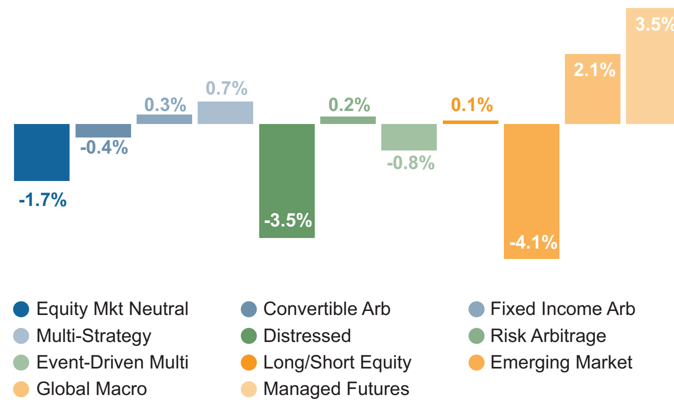
Falling yield curve shrinks the playing field, however level it may be

- Lower long rates factored into stocks and bonds leave less room for traditional assets to run, giving hedged strategies more opportunity to shine.
- However, as short rates also settle to lower levels, dwindling cash returns and short interest rebates take some wind out of hedge fund sails.

Industry outflows shade constructive mood

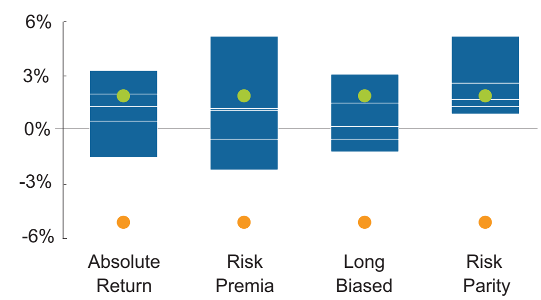
- The third quarter was the sixth consecutive quarter of industry asset outflows, which runs counter to the industry's positive view of an improving opportunity set ahead with increasing volatility tied to growing economic uncertainty.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



	Absolute Return	Risk Premia	Long Biased	Risk Parity
10th Percentile	3.3	5.2	3.1	5.2
25th Percentile	2.0	1.2	1.5	2.6
Median	1.3	1.1	0.2	1.7
75th Percentile	0.5	-0.5	-0.5	1.3
90th Percentile	-1.5	-2.2	-1.2	0.9
Eurekahedge MFRP (5%v) ●	-5.1	-5.1	-5.1	-5.1
60% S&P 500/ 40% BB Barclays Agg ●	1.9	1.9	1.9	1.9

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

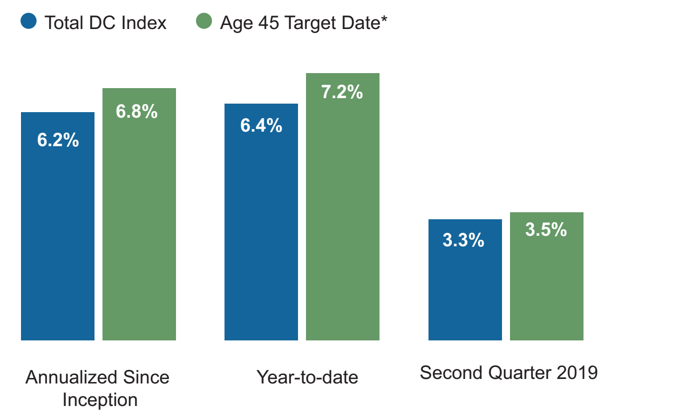
Performance Slows but Remains Solid

DEFINED CONTRIBUTION | Patrick Wisdom

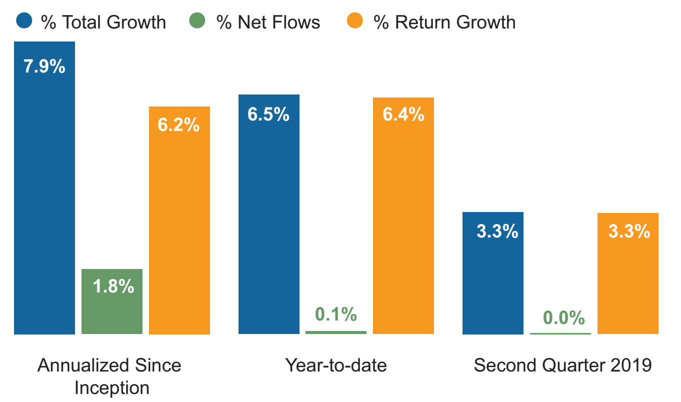
– The Callan DC Index™ gained 3.3% in the second quarter, compared to the first quarter's jump of 9.6%. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation.
– The Index's growth in balances in the second quarter (3.3%) returned to a normal level after a robust gain in the first quarter (9.8%). Net flows were also positive but very small (0.03%).
– Target date funds (TDFs) yet again saw the largest inflows for the quarter. Both large-cap and small/mid-cap U.S. equity experienced large outflows. U.S. fixed income had relatively large inflows, while stable value options had relatively large outflows.
– Second quarter turnover (i.e., net transfer activity levels within DC plans) increased to 0.54% from the previous quarter's measure of 0.48%. Turnover has risen for three consecutive quarters but still sits below the historical average (0.60%).
– The overall allocation to equity increased to 70.0% from 69.5% in the previous quarter. The current allocation exceeds the Index's historical average by 2.2 percentage points.
– The percentage of assets allocated to U.S. large-cap equity rose. Gains as a result of strong performance outweighed outflows from the asset class. The current allocation to U.S. large-cap equity (25.2%) is now at its second highest level over the past decade.
– On the other hand, the percentage allocated to stable value decreased, while the allocation to TDFs remained steady.
– Stable value's prevalence within DC plans rose for the seventh consecutive quarter and is now at 77%. Additionally, more plans are now offering emerging market equity, global equity, and high yield fixed income as investment options.

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 (Second Quarter 2019)
(Top Two and Bottom Two Asset Gatherers)

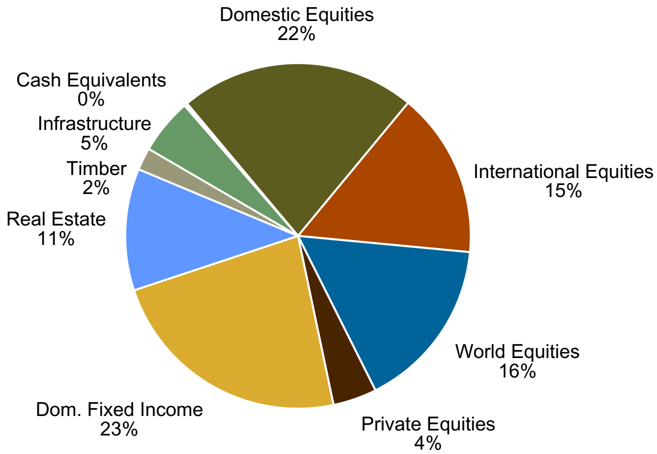
Asset Class	Flows as % of Total Net Flows
Target Date Funds	62.56%
U.S. Fixed Income	26.82%
U.S. Smid Cap	-20.40%
U.S. Large Cap	-45.95%
Total Turnover**	**0.54%**

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.

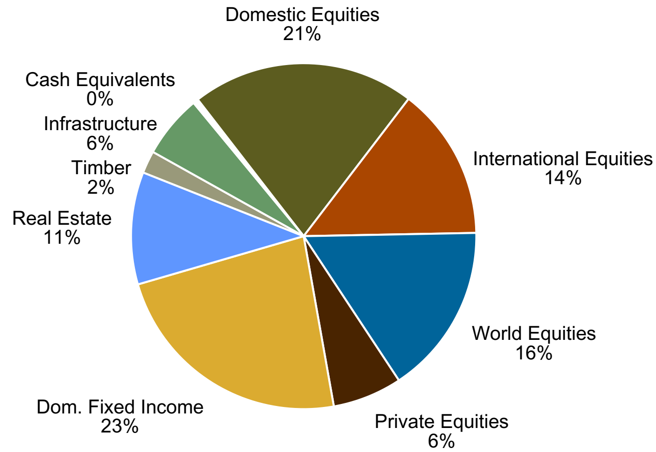
Actual vs Target Asset Allocation
As of September 30, 2019

The top left chart shows the Fund's asset allocation as of September 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.

Actual Asset Allocation

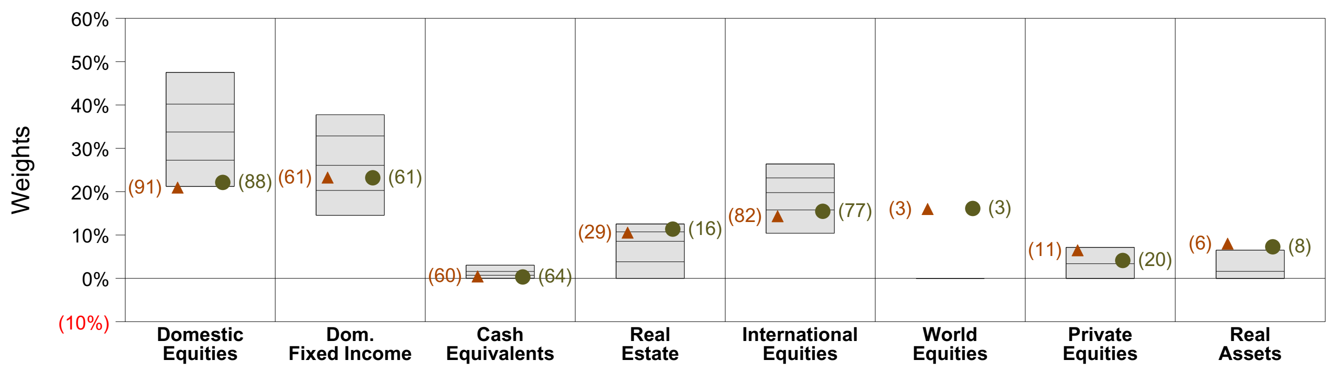


Target Asset Allocation



Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	1,312,713	22.1%	20.9%	1.2%	70,835
International Equities	917,550	15.5%	14.3%	1.1%	67,074
World Equities	956,305	16.1%	16.0%	0.1%	7,298
Private Equities	244,296	4.1%	6.5%	(2.4%)	(139,996)
Dom. Fixed Income	1,376,231	23.2%	23.3%	(0.0%)	(2,931)
Real Estate	673,514	11.4%	10.5%	0.8%	47,944
Timber	123,911	2.1%	2.1%	0.0%	0
Infrastructure	307,707	5.2%	5.9%	(0.7%)	(43,029)
Cash Equivalents	19,066	0.3%	0.4%	(0.1%)	(7,195)
Total	5,931,294	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database



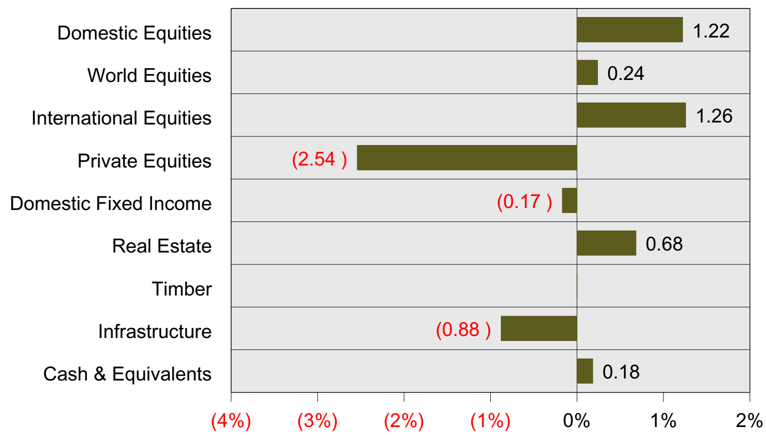
	Domestic Equities	Dom. Fixed Income	Cash Equivalents	Real Estate	International Equities	World Equities	Private Equities	Real Assets
10th Percentile	47.52	37.75	3.04	12.55	26.39	0.00	7.15	6.50
25th Percentile	40.21	32.86	1.59	10.73	23.17	0.00	3.38	1.61
Median	33.77	26.07	0.72	8.55	19.77	0.00	0.00	0.00
75th Percentile	27.26	20.29	0.04	3.82	15.78	0.00	0.00	0.00
90th Percentile	21.22	14.54	0.00	0.00	10.41	0.00	0.00	0.00
Fund ●	22.13	23.20	0.32	11.36	15.47	16.12	4.12	7.28
Target ▲	20.94	23.25	0.44	10.55	14.34	16.00	6.48	8.00
% Group Invested	97.06%	97.06%	80.15%	79.41%	93.38%	9.56%	33.82%	27.21%

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

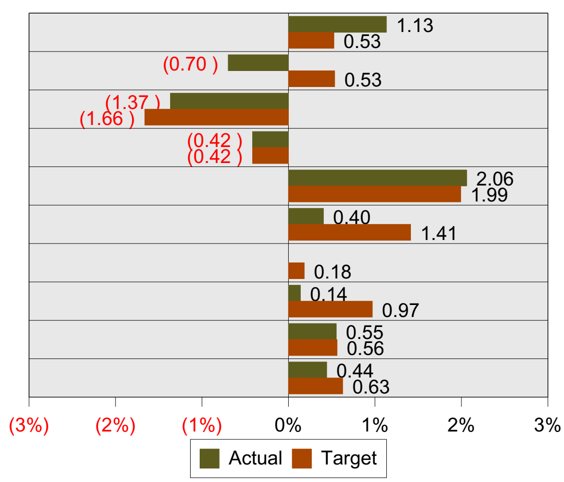
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

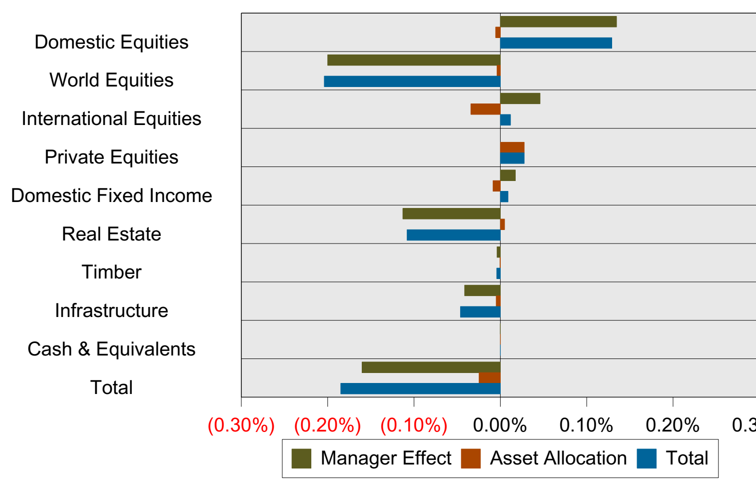
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

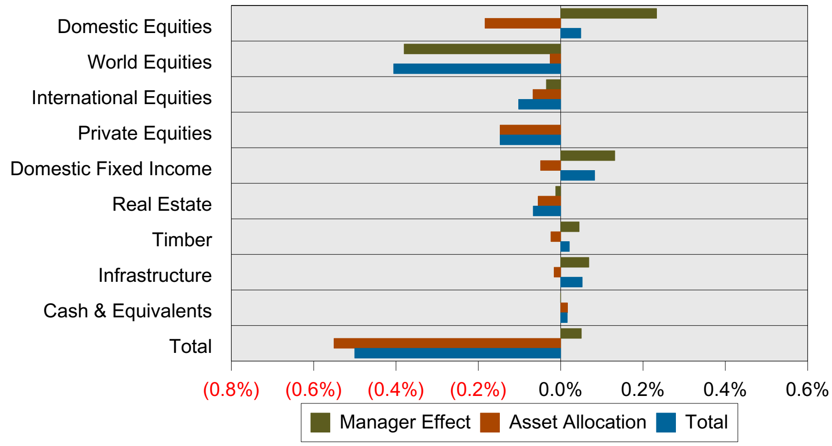
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.13%	0.53%	0.13%	(0.01%)	0.13%
World Equities	16%	16%	(0.70%)	0.53%	(0.20%)	(0.00%)	(0.20%)
International Equities	16%	14%	(1.37%)	(1.66%)	0.05%	(0.03%)	0.01%
Private Equities	4%	6%	(0.42%)	(0.42%)	0.00%	0.03%	0.03%
Domestic Fixed Income	23%	23%	2.06%	1.99%	0.02%	(0.01%)	0.01%
Real Estate	11%	11%	0.40%	1.41%	(0.11%)	0.00%	(0.11%)
Timber	2%	2%	0.00%	0.18%	(0.00%)	(0.00%)	(0.00%)
Infrastructure	5%	6%	0.14%	0.97%	(0.04%)	(0.00%)	(0.05%)
Cash & Equivalents	1%	0%	0.55%	0.56%	(0.00%)	0.00%	0.00%
Total			**0.44% =**	**0.63% +**	**(0.16%) +**	**(0.02%)**	**(0.18%)**

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

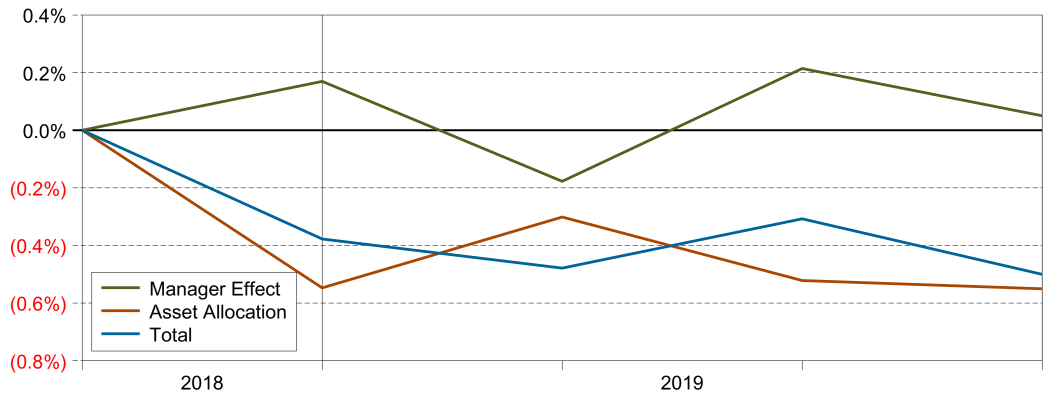
Cumulative Total Fund Relative Attribution - September 30, 2019

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

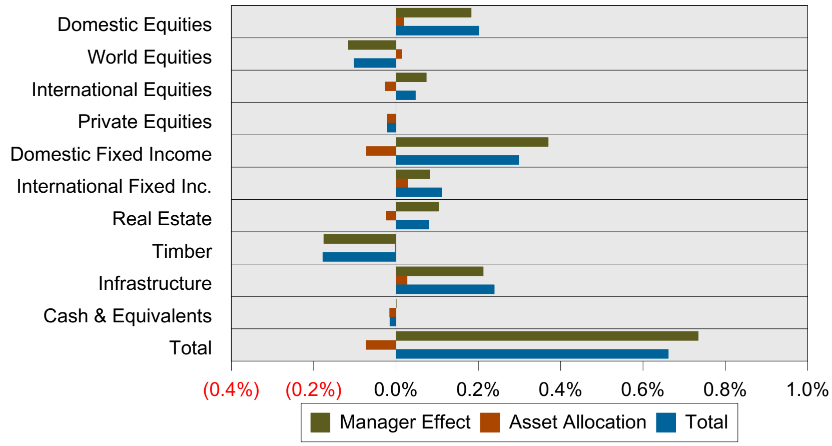
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.87%	0.80%	0.23%	(0.18%)	0.05%
World Equities	16%	16%	(0.41%)	1.83%	(0.38%)	(0.03%)	(0.41%)
International Equities	15%	14%	(1.47%)	(1.14%)	(0.03%)	(0.07%)	(0.10%)
Private Equities	4%	6%	7.73%	7.73%	0.00%	(0.15%)	(0.15%)
Domestic Fixed Income	23%	23%	9.68%	9.15%	0.13%	(0.05%)	0.08%
Real Estate	11%	11%	6.13%	6.24%	(0.01%)	(0.05%)	(0.07%)
Timber	2%	2%	4.10%	2.10%	0.04%	(0.02%)	0.02%
Infrastructure	5%	6%	4.86%	3.44%	0.07%	(0.02%)	0.05%
Cash & Equivalents	1%	0%	2.32%	2.39%	(0.00%)	0.02%	0.02%
Total			**3.68% =**	**4.18% +**	**0.05% +**	**(0.55%)**	**(0.50%)**

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

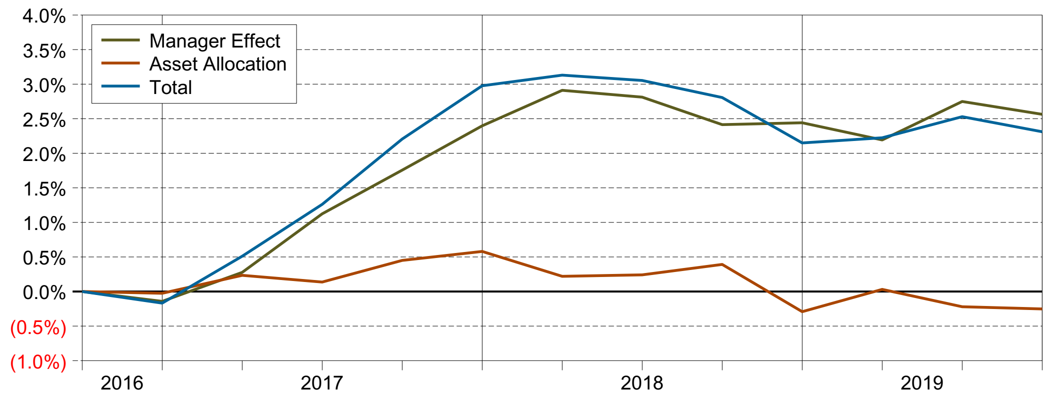
Cumulative Total Fund Relative Attribution - September 30, 2019

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

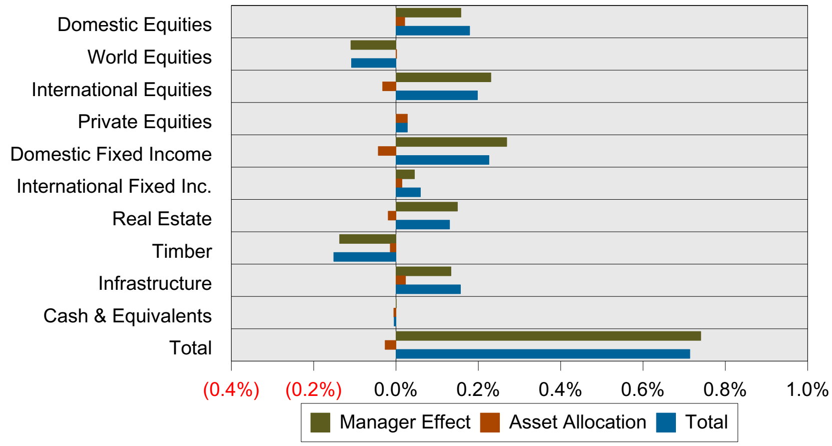
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	12.92%	12.08%	0.18%	0.02%	0.20%
World Equities	17%	16%	9.42%	10.21%	(0.12%)	0.01%	(0.10%)
International Equities	16%	14%	6.79%	6.42%	0.07%	(0.03%)	0.05%
Private Equities	3%	6%	7.54%	7.54%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	21%	21%	5.59%	3.73%	0.37%	(0.07%)	0.30%
International Fixed Inc.	2%	2%	-	-	0.08%	0.03%	0.11%
Real Estate	11%	11%	7.75%	6.76%	0.10%	(0.02%)	0.08%
Timber	2%	2%	(2.78%)	3.12%	(0.18%)	(0.00%)	(0.18%)
Infrastructure	5%	6%	7.82%	3.13%	0.21%	0.03%	0.24%
Cash & Equivalents	1%	0%	1.62%	1.54%	0.00%	(0.02%)	(0.01%)
Total			**8.26% =**	**7.60% +**	**0.73% +**	**(0.07%)**	**0.66%**

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

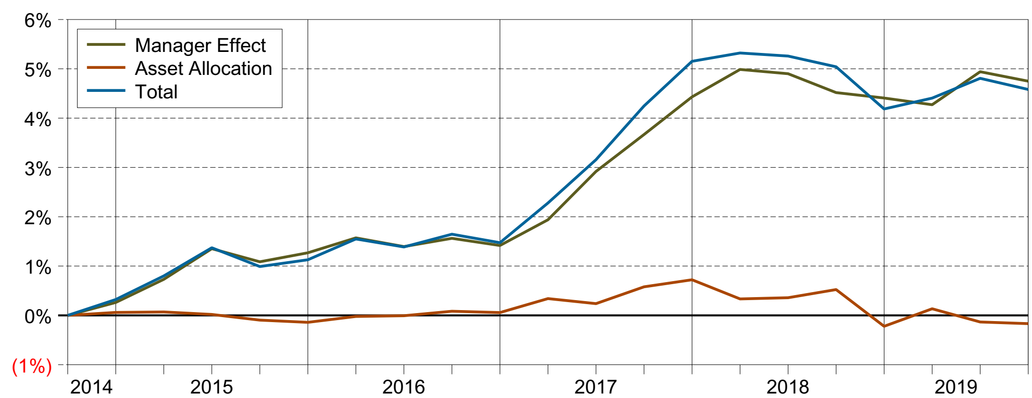
Cumulative Total Fund Relative Attribution - September 30, 2019

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

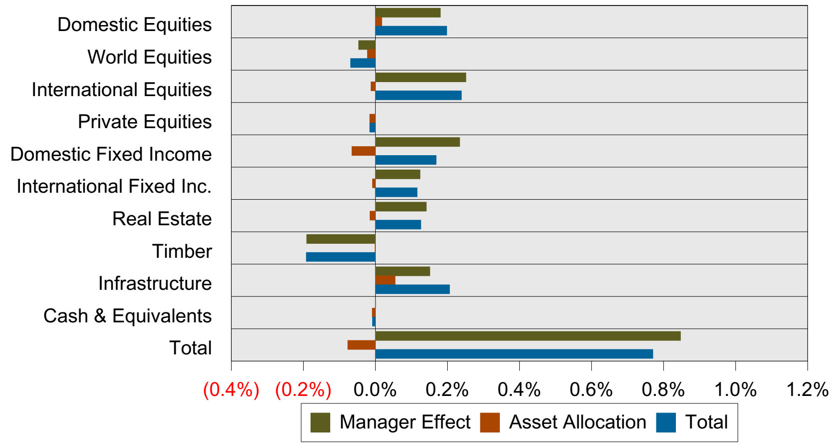
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.84%	10.11%	0.16%	0.02%	0.18%
World Equities	16%	16%	6.47%	7.18%	(0.11%)	0.00%	(0.11%)
International Equities	15%	14%	4.58%	3.12%	0.23%	(0.03%)	0.20%
Private Equities	4%	6%	1.81%	1.81%	0.00%	0.03%	0.03%
Domestic Fixed Income	20%	20%	5.29%	3.92%	0.27%	(0.04%)	0.23%
International Fixed Inc.	3%	3%	-	-	0.04%	0.01%	0.06%
Real Estate	11%	10%	10.08%	8.57%	0.15%	(0.02%)	0.13%
Timber	3%	3%	(0.07%)	4.36%	(0.14%)	(0.01%)	(0.15%)
Infrastructure	5%	5%	4.91%	1.98%	0.13%	0.02%	0.16%
Cash & Equivalents	1%	1%	1.06%	0.98%	0.00%	(0.01%)	(0.00%)
Total			**6.80% =**	**6.09% +**	**0.74% +**	**(0.03%)**	**0.71%**

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

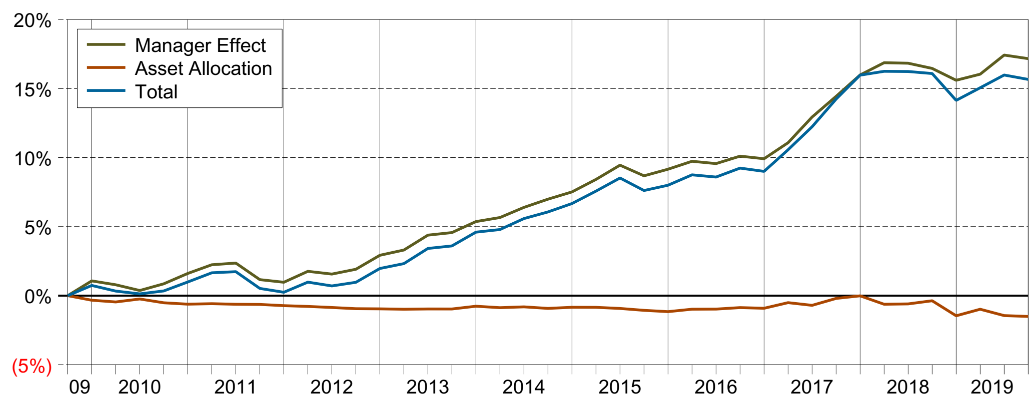
Cumulative Total Fund Relative Attribution - September 30, 2019

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

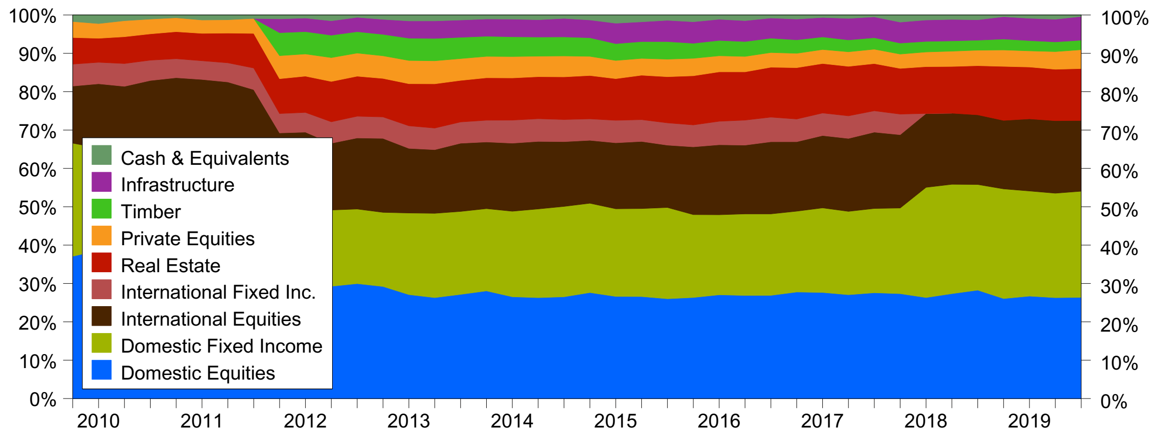
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	27%	26%	13.57%	12.79%	0.18%	0.02%	0.20%
World Equities	11%	11%	-	-	(0.05%)	(0.02%)	(0.07%)
International Equities	16%	16%	6.11%	4.59%	0.25%	(0.01%)	0.24%
Private Equities	4%	5%	5.68%	5.68%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	21%	20%	6.21%	4.87%	0.23%	(0.07%)	0.17%
International Fixed Inc.	4%	4%	-	-	0.12%	(0.01%)	0.12%
Real Estate	9%	9%	11.30%	9.77%	0.14%	(0.02%)	0.13%
Timber	3%	3%	-	-	(0.19%)	(0.00%)	(0.19%)
Infrastructure	3%	4%	-	-	0.15%	0.05%	0.21%
Cash & Equivalents	1%	1%	0.60%	0.54%	0.00%	(0.01%)	(0.01%)
Total			**8.59% =**	**7.82% +**	**0.85% +**	**(0.08%)**	**0.77%**

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

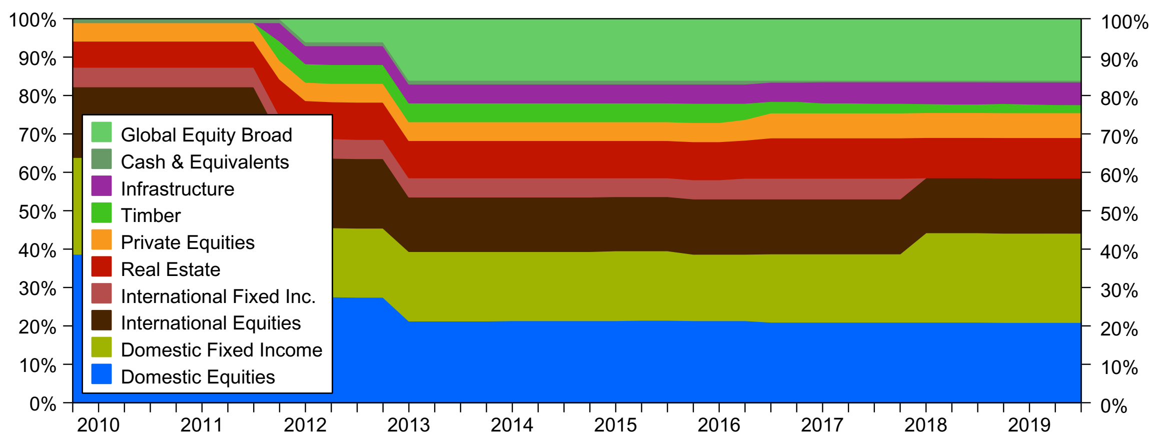
Actual vs Target Historical Asset Allocation

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.

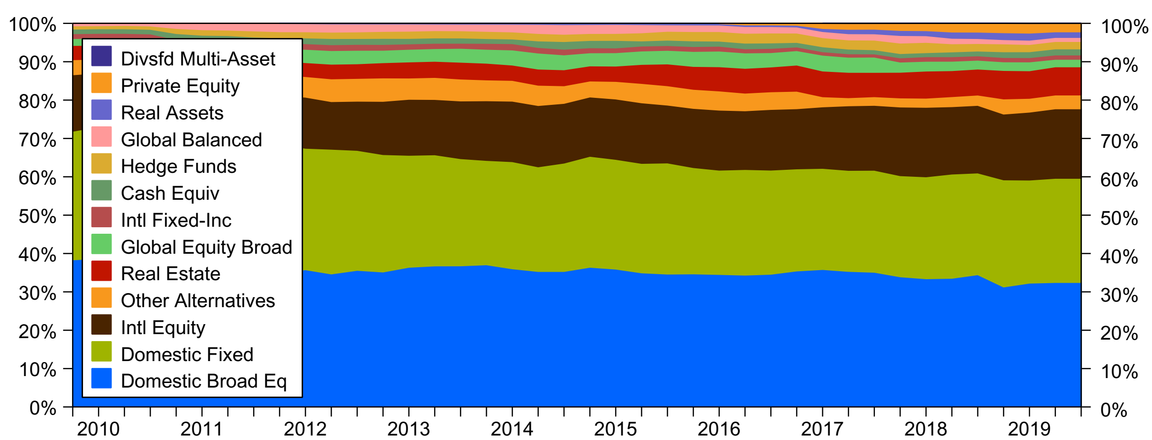
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

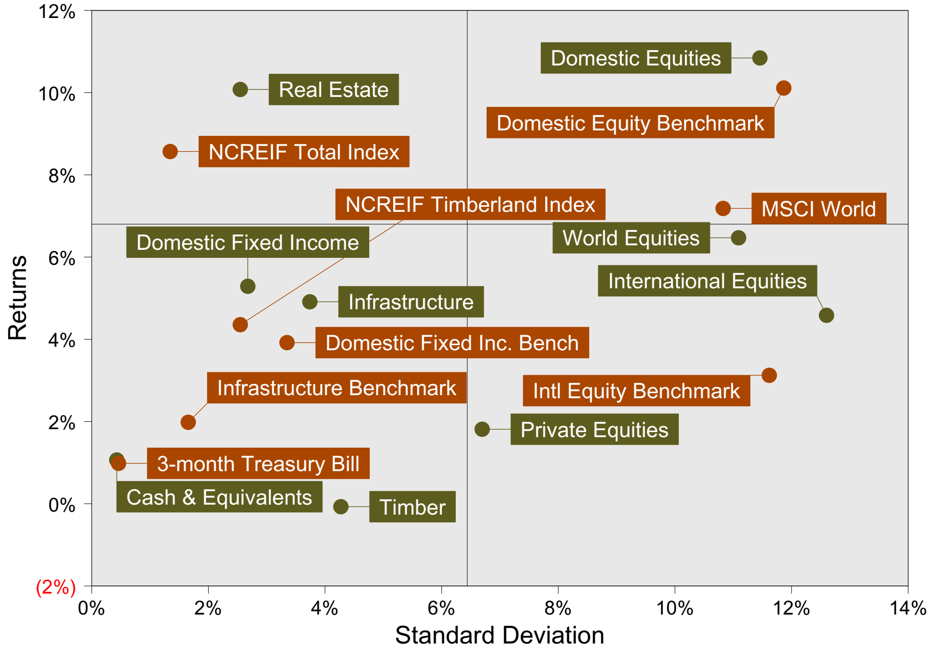


* Current Quarter Target = 16.3% Blmbg Aggregate, 16.1% Russell 1000 Index, 16.0% MSCI World, 11.2% MSCI World ex US, 10.5% NCREIF Total Index, 7.0% Blmbg:HY Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

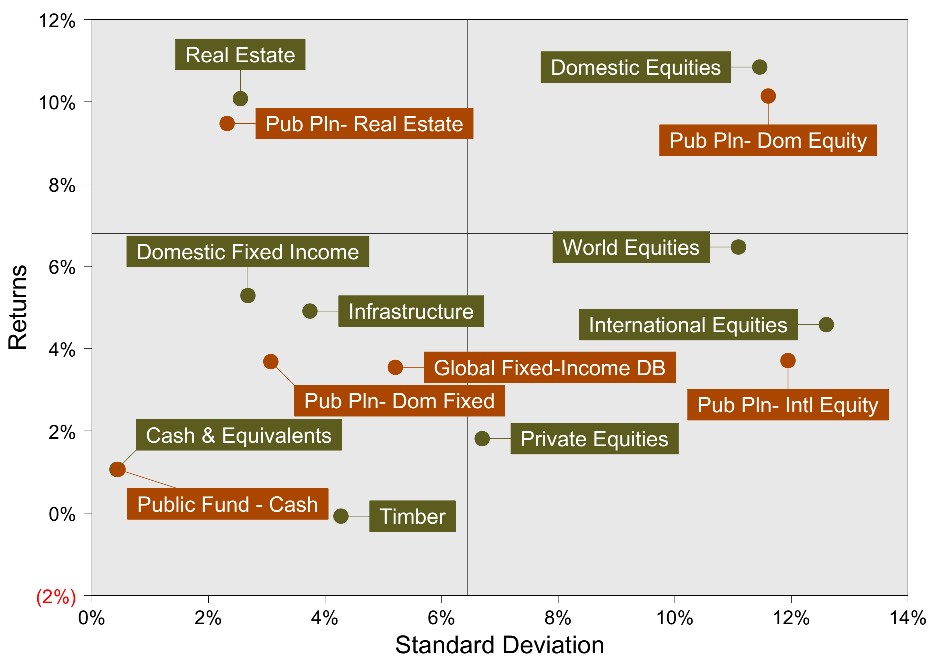
Asset Class Risk and Return

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



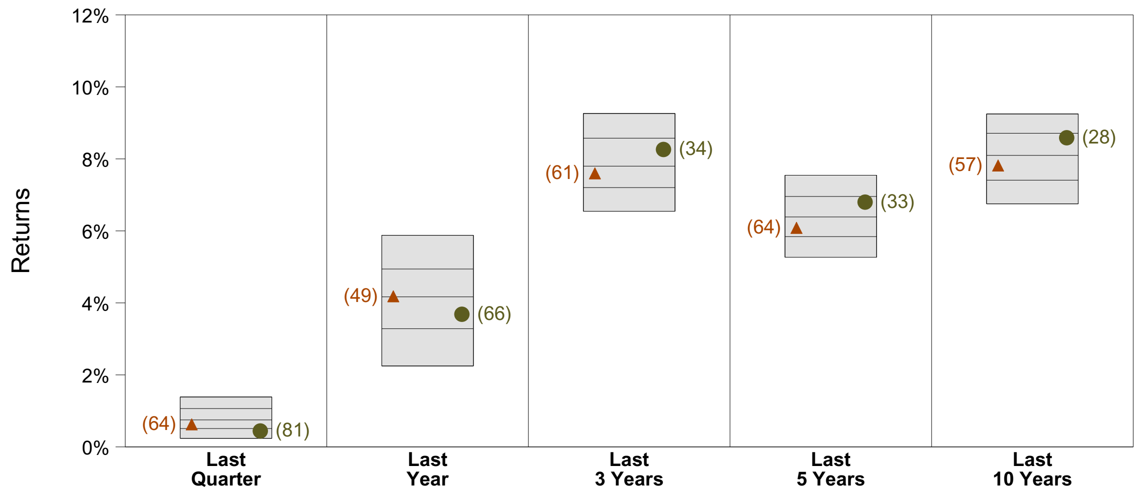
Five Year Annualized Risk vs Return
Asset Classes vs Asset Class Median



Total Fund Ranking

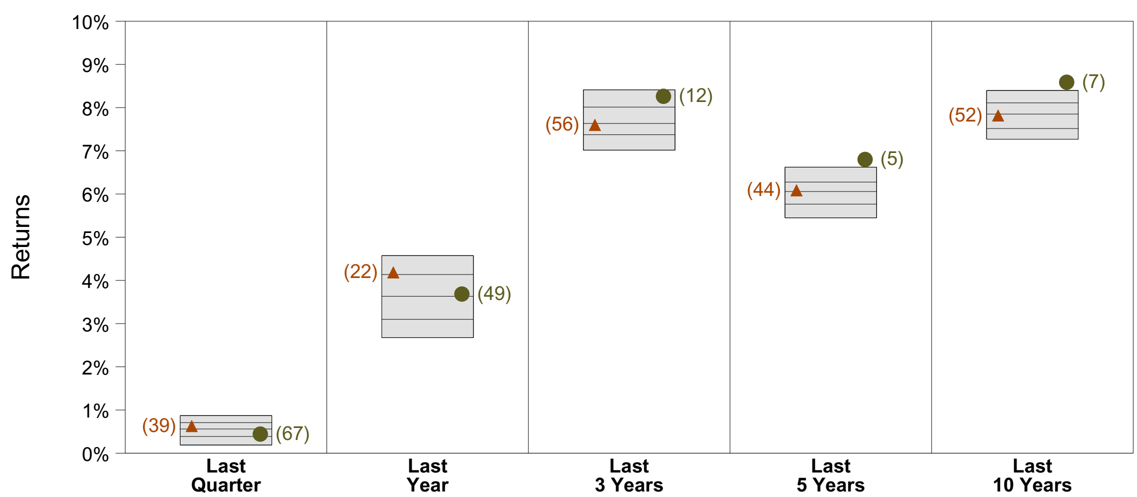
The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended September 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical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

Callan Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.39	5.88	9.26	7.55	9.25
25th Percentile	1.07	4.94	8.58	6.96	8.71
Median	0.75	4.17	7.80	6.39	8.10
75th Percentile	0.51	3.28	7.20	5.84	7.41
90th Percentile	0.24	2.25	6.55	5.27	6.75
Total Fund ●	0.44	3.68	8.26	6.80	8.59
Policy Target ▲	0.63	4.18	7.60	6.09	7.82

Asset Allocation Adjusted Ranking



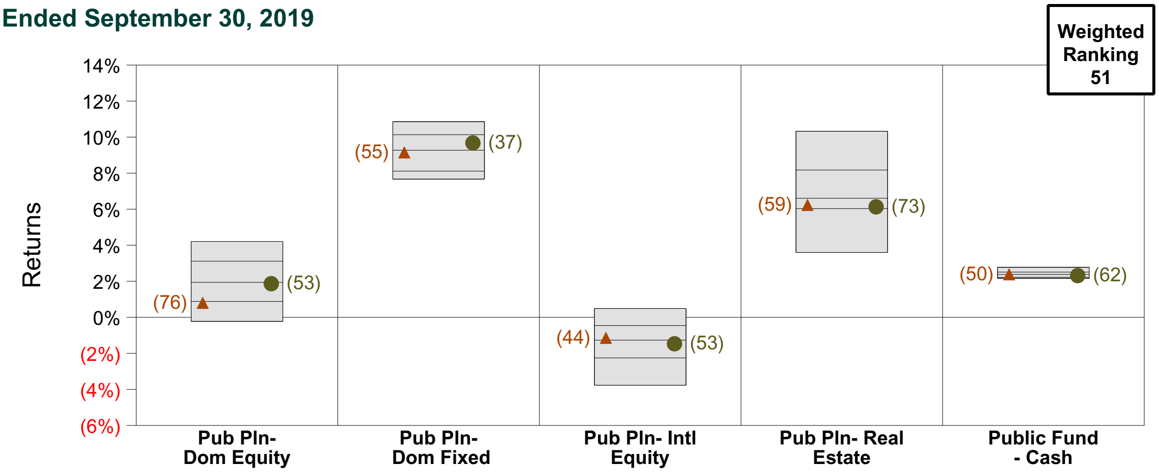
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.87	4.57	8.41	6.62	8.40
25th Percentile	0.71	4.14	8.01	6.28	8.11
Median	0.56	3.63	7.63	6.06	7.85
75th Percentile	0.39	3.10	7.37	5.77	7.52
90th Percentile	0.19	2.67	7.02	5.45	7.27
Total Fund ●	0.44	3.68	8.26	6.80	8.59
Policy Target ▲	0.63	4.18	7.60	6.09	7.82

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons lagged 3 months, 2.1% NCREIF Timberland Index and 0.4% 3-month Treasury Bill.

Asset Class Rankings

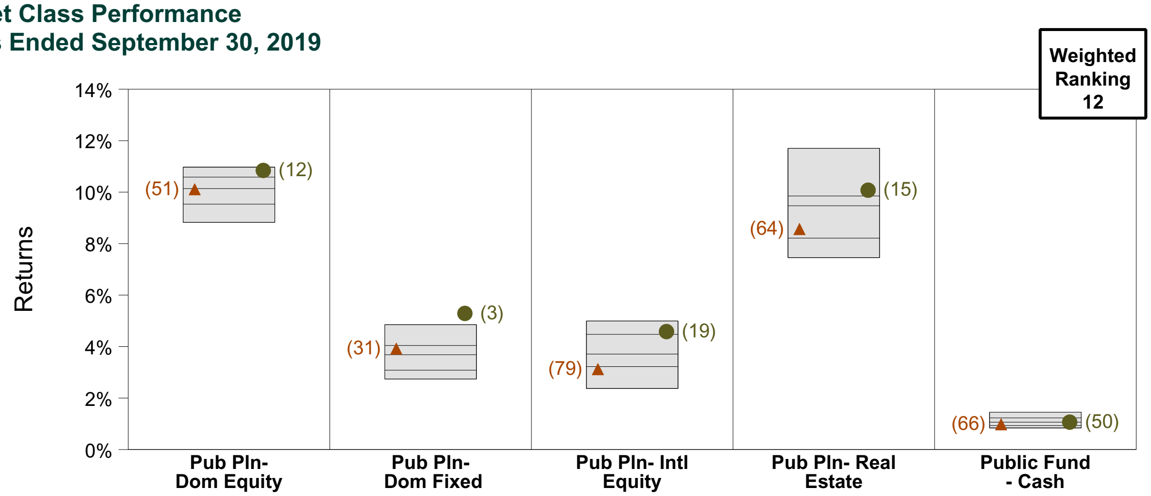
The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used 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 September 30, 2019



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	4.21	10.86	0.49	10.32	2.78
25th Percentile	3.12	10.14	(0.46)	8.17	2.51
Median	1.94	9.27	(1.27)	6.61	2.38
75th Percentile	0.88	8.11	(2.25)	6.04	2.22
90th Percentile	(0.23)	7.67	(3.77)	3.60	2.16
Asset Class Composite ●	1.87	9.68	(1.47)	6.13	2.32
Composite Benchmark ▲	0.80	9.15	(1.14)	6.24	2.39

Total Asset Class Performance
Five Years Ended September 30, 2019



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	10.97	4.85	4.99	11.70	1.45
25th Percentile	10.58	4.04	4.47	9.85	1.23
Median	10.14	3.68	3.71	9.47	1.06
75th Percentile	9.53	3.08	3.22	8.21	0.93
90th Percentile	8.83	2.74	2.37	7.46	0.84
Asset Class Composite ●	10.84	5.29	4.58	10.08	1.06
Composite Benchmark ▲	10.11	3.92	3.12	8.57	0.98

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	**$3,430,863,938**	**57.84%**	**$(15,834,100)**	**$(5,692,110)**	**$3,452,390,148**	**58.04%**
Public Equities	**$3,186,568,147**	**53.72%**	**$(31,738,338)**	**$(4,719,341)**	**$3,223,025,826**	**54.18%**
World Equities	**$956,304,972**	**16.12%**	**$(10,840,789)**	**$(6,801,401)**	**$973,947,162**	**16.37%**
EPOCH Investment Partners	439,770,320	7.41%	(707,008)	(6,520,625)	446,997,953	7.51%
LSV Asset Management	516,534,653	8.71%	(10,133,781)	(280,776)	526,949,210	8.86%
Domestic Equities	**$1,312,713,120**	**22.13%**	**$(10,528,593)**	**$14,933,343**	**$1,308,308,370**	**21.99%**
Large Cap	**$1,002,176,335**	**16.90%**	**$(10,256,440)**	**$13,959,783**	**$998,472,991**	**16.79%**
L.A. Capital	396,064,981	6.68%	(199,765)	4,424,145	391,840,602	6.59%
LACM Enhanced Index	203,881,710	3.44%	(10,056,674)	2,928,226	211,010,158	3.55%
Northern Trust AM Enh S&P 500	201,833,044	3.40%	0	2,540,396	199,292,648	3.35%
Parametric Clifton Enh S&P 500	200,396,601	3.38%	0	4,067,017	196,329,584	3.30%
Small Cap	**$310,536,785**	**5.24%**	**$(272,153)**	**$973,560**	**$309,835,379**	**5.21%**
Atlanta Capital	160,204,382	2.70%	(272,153)	4,041,127	156,435,409	2.63%
Parametric Clifton Enh Small Cap	150,332,403	2.53%	0	(3,067,567)	153,399,970	2.58%
International Equities	**$917,550,055**	**15.47%**	**$(10,368,956)**	**$(12,851,284)**	**$940,770,294**	**15.82%**
Developed	**$705,739,939**	**11.90%**	**$(10,368,956)**	**$(6,634,825)**	**$722,743,719**	**12.15%**
DFA Int'l Small Cap	74,956,617	1.26%	0	(417,285)	75,373,902	1.27%
Northern Trust AM World Ex US	351,057,870	5.92%	(26,051)	(2,837,764)	353,921,685	5.95%
Wellington Management Co.	72,215,506	1.22%	(155,953)	(1,055,999)	73,427,457	1.23%
William Blair	207,509,946	3.50%	(10,186,952)	(2,323,778)	220,020,675	3.70%
Emerging Markets	**$211,810,116**	**3.57%**	**$0**	**$(6,216,459)**	**$218,026,575**	**3.67%**
Axiom	155,064,686	2.61%	0	(3,389,680)	158,454,366	2.66%
DFA	56,745,430	0.96%	0	(2,826,779)	59,572,209	1.00%

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Private Equities	**$244,295,791**	**4.12%**	**$15,904,237**	**$(972,768)**	**$229,364,322**	**3.86%**
Adams Street Direct Co-Invest Fd	722,281	0.01%	0	0	722,281	0.01%
Adams Street Direct Fund 2010	833,011	0.01%	(11,382)	0	844,393	0.01%
Adams Street 1998 Partnership	13,433	0.00%	0	(85)	13,518	0.00%
Adams Street 1999 Partnership	118,795	0.00%	0	(671)	119,466	0.00%
Adams Street 2000 Partnership	333,258	0.01%	0	(19,133)	352,391	0.01%
Adams Street 2001 Partnership	560,299	0.01%	0	0	560,299	0.01%
Adams Street 2002 Partnership	137,582	0.00%	0	(907)	138,489	0.00%
Adams Street 2003 Partnership	156,206	0.00%	0	(6,876)	163,082	0.00%
Adams Street 2010 Partnership	6,549,596	0.11%	(283,007)	13	6,832,590	0.11%
Adams Street 2008 Fund	6,917,900	0.12%	0	0	6,917,900	0.12%
Adams Street 1999 Non-US	72,272	0.00%	0	225	72,047	0.00%
Adams Street 2000 Non-US	330,228	0.01%	0	(27,483)	357,711	0.01%
Adams Street 2001 Non-US	93,721	0.00%	0	(270)	93,991	0.00%
Adams Street 2002 Non-US	90,657	0.00%	0	669	89,988	0.00%
Adams Street 2003 Non-US	177,059	0.00%	0	(462)	177,521	0.00%
Adams Street 2004 Non-US	180,194	0.00%	(36,987)	(4,656)	221,837	0.00%
Adams Street 2010 Non-US	2,696,206	0.05%	(242,727)	0	2,938,933	0.05%
Adams Street 2010 Non-US Emg	1,788,458	0.03%	(52,699)	0	1,841,157	0.03%
Adams Street 2015 Global Fd	22,621,557	0.38%	0	0	22,621,557	0.38%
Adams Street 2016 Global Fd	16,672,523	0.28%	0	0	16,672,523	0.28%
Adams Street 2017 Global Fd	25,468,402	0.43%	0	0	25,468,402	0.43%
Adams Street 2018 Global Fd	8,249,197	0.14%	0	0	8,249,197	0.14%
Adams Street BVCF IV Fund	3,341,716	0.06%	(41,310)	0	3,383,026	0.06%
BlackRock	77,502,301	1.31%	16,495,342	(838,306)	61,845,265	1.04%
Capital International V	820,513	0.01%	0	0	820,513	0.01%
Capital International VI	29,876,478	0.50%	60,089	(42,609)	29,858,998	0.50%
CorsAir III	13,714,187	0.23%	16,918	(30,723)	13,727,992	0.23%
EIG Energy Fund XIV	4,525,473	0.08%	0	(12,728)	4,538,201	0.08%
Hearthstone Advisors MS II	1	0.00%	0	0	1	0.00%
Hearthstone Advisors MS III	109,309	0.00%	0	0	109,309	0.00%
Lewis & Clark, LP	1,138,318	0.02%	0	0	1,138,318	0.02%
Lewis & Clark II	4,469,887	0.08%	0	0	4,469,887	0.08%
Matlin Patterson II	1,179,076	0.02%	0	(10,446)	1,189,522	0.02%
Matlin Patterson III	11,447,954	0.19%	0	21,680	11,426,274	0.19%
Quantum Energy Partners	1,387,743	0.02%	0	0	1,387,743	0.02%

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Fixed Income	**$1,376,231,452**	**23.20%**	**$(6,861,553)**	**$28,251,473**	**$1,354,841,531**	**22.78%**
Domestic Fixed Income	**$1,376,231,452**	**23.20%**	**$(6,861,553)**	**$28,251,473**	**$1,354,841,531**	**22.78%**
Investment Grade	**$958,197,233**	**16.15%**	**$(13,274,151)**	**$27,615,555**	**$943,855,829**	**15.87%**
Declaration Total Return	115,504,849	1.95%	(63,857)	2,240,234	113,328,472	1.91%
PIMCO DiSCO II	94,719,129	1.60%	0	766,057	93,953,072	1.58%
PIMCO Core Plus Constrained	328,605,667	5.54%	2,899,460	8,075,928	317,630,279	5.34%
Prudential Core	326,627,291	5.51%	901,954	8,074,893	317,650,444	5.34%
SSgA Long US Treas Index	92,740,297	1.56%	(17,011,708)	8,458,442	101,293,562	1.70%
Below Investment Grade	**$418,034,218**	**7.05%**	**$6,412,598**	**$635,919**	**$410,985,702**	**6.91%**
Ares ND Credit Strategies Fd	100,704,649	1.70%	18,000,000	0	82,704,649	1.39%
Cerberus ND Private Credit Fd	104,720,811	1.77%	12,000,000	1,331,522	91,389,289	1.54%
Goldman Sachs 2006 Offshore	93,542	0.00%	0	1,146	92,396	0.00%
Goldman Sachs Offshore V	326,663	0.01%	(80,359)	3,476	403,546	0.01%
Loomis Sayles	186,801,406	3.15%	(20,259,702)	(700,225)	207,761,333	3.49%
PIMCO Bravo II Fund	25,387,147	0.43%	(3,247,342)	(0)	28,634,489	0.48%
Global Real Assets	**$1,105,132,135**	**18.63%**	**$15,457,794**	**$3,123,255**	**$1,086,551,086**	**18.27%**
Real Estate	**$673,513,599**	**11.36%**	**$4,052,743**	**$2,694,302**	**$666,766,554**	**11.21%**
Invesco Core Real Estate	323,502,503	5.45%	0	(188)	323,502,690	5.44%
Invesco Fund II	0	0.00%	(171,307)	(5,567)	176,874	0.00%
Invesco Fund III	4,873,713	0.08%	(7,069,460)	0	11,943,173	0.20%
Invesco Asia RE Feeder	207,387	0.00%	0	0	207,387	0.00%
Invesco Asia RE Fund III	23,125,424	0.39%	12,633,252	(31,102)	10,523,273	0.18%
Invesco Value Added Fd IV	43,211,581	0.73%	(1,337,013)	0	44,548,594	0.75%
Invesco Value Added Fd V	17,260,715	0.29%	0	0	17,260,715	0.29%
JP Morgan	255,912,907	4.31%	0	3,124,224	252,788,684	4.25%
JP Morgan Greater European Opp Fd	5,419,369	0.09%	(2,728)	(393,066)	5,815,163	0.10%
Other Real Assets	**$431,618,536**	**7.28%**	**$11,405,051**	**$428,953**	**$419,784,532**	**7.06%**
Infrastructure	**$307,707,239**	**5.19%**	**$13,265,051**	**$428,953**	**$294,013,235**	**4.94%**
ISQ Global Infrastructure II	22,810,771	0.38%	5,290,480	(332,934)	17,853,225	0.30%
The Rohatyn Group	18,836,528	0.32%	260,003	376,673	18,199,852	0.31%
JP Morgan IIF	184,588,905	3.11%	(4,525,461)	754,243	188,360,123	3.17%
Grosvenor Cust. Infrastructure	25,382,297	0.43%	(731,260)	(18,028)	26,131,586	0.44%
Grosvenor Cust. Infrastructure II	17,790,920	0.30%	(239,909)	(67,157)	18,097,986	0.30%
Macquarie Infras. Partners IV	38,297,817	0.65%	13,211,198	(283,844)	25,370,463	0.43%
Timber	**$123,911,297**	**2.09%**	**$(1,860,000)**	**$0**	**$125,771,297**	**2.11%**
TIR Teredo	31,374,048	0.53%	(1,100,000)	0	32,474,048	0.55%
TIR Springbank	92,537,249	1.56%	(760,000)	0	93,297,249	1.57%
Cash	**$19,066,032**	**0.32%**	**$(35,902,779)**	**$222,985**	**$54,745,826**	**0.92%**
Northern Trust Cash Account	8,581,590	0.14%	(35,902,779)	166,485	44,317,884	0.75%
Bank of ND	10,484,442	0.18%	0	56,500	10,427,942	0.18%
Securities Lending Income	**$0**	**0.00%**	**$(113,789)**	**$113,789**	**-**	**-**
Total Fund	**$5,931,293,556**	**100.0%**	**$(43,254,427)**	**$26,019,392**	**$5,948,528,591**	**100.0%**

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Equities					
Gross	(0.17%)	0.57%	9.96%	7.36%	-
Net	(0.22%)	0.37%	9.73%	7.11%	-
Weighted Benchmark	(0.11%)	1.55%	9.78%	6.85%	-
Public Equities					
Gross	(0.15%)	0.19%	-	-	-
Net	(0.20%)	(0.02%)	-	-	-
Weighted Benchmark	(0.08%)	0.62%	-	-	-
World Equities					
Gross	(0.70%)	(0.41%)	9.42%	6.47%	-
Net	(0.78%)	(0.75%)	9.04%	6.01%	-
MSCI World	0.53%	1.83%	10.21%	7.18%	9.01%
EPOCH Investment - Gross(1)	(1.46%)	2.51%	11.54%	7.81%	-
EPOCH Investment - Net	(1.62%)	1.87%	10.85%	7.13%	-
MSCI World	0.53%	1.83%	10.21%	7.18%	9.01%
LSV Asset Management - Gross(2)	(0.01%)	(2.62%)	7.72%	5.41%	-
LSV Asset Management - Net	(0.04%)	(2.72%)	7.58%	5.11%	-
Benchmark(4)	(0.18%)	1.67%	10.20%	7.17%	-
Domestic Equities					
Gross	1.13%	1.87%	12.92%	10.84%	13.57%
Net	1.09%	1.70%	12.73%	10.66%	13.31%
Weighted Benchmark	0.53%	0.80%	12.08%	10.11%	12.79%
Large Cap					
Gross	1.39%	3.13%	13.32%	11.29%	13.74%
Net	1.36%	3.02%	13.20%	11.15%	13.56%
Large Cap Benchmark(3)	1.42%	3.87%	13.19%	10.62%	13.19%
L.A. Capital - Gross	1.13%	3.24%	14.90%	12.96%	14.69%
L.A. Capital - Net	1.08%	3.02%	14.66%	12.73%	14.45%
Russell 1000 Growth Index	1.49%	3.71%	16.89%	13.39%	14.94%
LACM Enhanced Index - Goss	1.35%	4.04%	12.30%	10.68%	13.30%
LACM Enhanced Index - Net	1.32%	3.92%	12.18%	10.56%	13.14%
Russell 1000 Index	1.42%	3.87%	13.19%	10.62%	13.23%
Northern Tr AM Enh S&P500 - Gross	1.27%	0.30%	11.29%	8.85%	12.92%
Northern Tr AM Enh S&P500 - Net	1.27%	0.30%	11.29%	8.80%	12.74%
S&P 500 Index	1.70%	4.25%	13.39%	10.84%	13.24%
Parametric Clifton Enh S&P500 - Gross	2.07%	5.02%	13.25%	10.87%	-
Parametric Clifton Enh S&P500 - Net	2.07%	5.02%	13.24%	10.82%	-
S&P 500 Index	1.70%	4.25%	13.39%	10.84%	13.24%
Small Cap					
Gross	0.31%	(1.96%)	11.69%	9.39%	12.77%
Net	0.23%	(2.30%)	11.29%	9.04%	12.29%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.19%
Atlanta Capital - Gross	2.58%	4.69%	14.98%	-	-
Atlanta Capital - Net	2.41%	3.98%	14.18%	-	-
S&P 600 Small Cap Index	(0.20%)	(9.34%)	9.33%	9.89%	13.02%
Parametric Clifton Enh SmCap - Gross	(2.00%)	(8.41%)	8.24%	8.69%	-
Parametric Clifton Enh SmCap - Net	(2.00%)	(8.41%)	8.20%	8.49%	-
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.19%

(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.
(4) MSCI ACWI Gross through 6/30/2019 and MSCI ACWI IMI thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
International Equities					
Gross	(1.37%)	(1.47%)	6.79%	4.58%	6.11%
Net	(1.41%)	(1.63%)	6.61%	4.40%	5.81%
Weighted Benchmark	(1.66%)	(1.14%)	6.42%	3.12%	4.59%
Developed					
Gross	(0.91%)	(2.22%)	6.99%	4.75%	5.97%
Net	(0.96%)	(2.43%)	6.76%	4.51%	5.66%
Benchmark(1)	(0.93%)	(0.95%)	6.49%	3.25%	4.77%
DFA Int'l Small Cap Value - Net	(0.55%)	(11.17%)	2.61%	2.75%	5.77%
World ex US SC Value	0.25%	(5.89%)	4.83%	3.82%	5.96%
Northern Tr AM World ex US - Gross	(0.80%)	(0.51%)	6.89%	3.44%	-
Northern Tr AM World ex US - Net	(0.81%)	(0.54%)	6.86%	3.41%	-
MSCI World ex US	(0.93%)	(0.95%)	6.49%	3.06%	4.78%
Wellington Management - Gross	(1.44%)	(12.67%)	4.30%	6.13%	9.37%
Wellington Management - Net	(1.65%)	(13.43%)	3.42%	5.24%	8.44%
BMI, EPAC, <$2 B	(1.85%)	(11.18%)	3.05%	4.17%	6.05%
William Blair - Gross	(1.08%)	2.87%	9.76%	-	-
William Blair - Net	(1.17%)	2.51%	9.37%	-	-
MSCI ACWI ex US IMI	(1.72%)	(1.84%)	6.10%	3.05%	4.66%
Emerging Markets					
Gross	(2.85%)	0.82%	6.01%	3.63%	5.24%
Net	(2.85%)	0.82%	6.01%	3.63%	4.94%
Emerging Mkts - Net	(4.25%)	(2.01%)	5.98%	2.33%	3.37%
Axiom - Net	(2.14%)	1.61%	7.04%	4.13%	-
Emerging Mkts - Net	(4.25%)	(2.01%)	5.98%	2.33%	3.37%
DFA - Net	(4.75%)	(1.51%)	3.09%	2.29%	5.29%
Emerging Mkts - Net	(4.25%)	(2.01%)	5.98%	2.33%	3.37%

(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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Private Equities*					
Net	(0.42%)	7.73%	7.54%	1.81%	5.63%
Adams Street Direct Co-Invest Fd	0.00%	(18.11%)	(18.03%)	(6.16%)	4.41%
Adams Street Direct Fund 2010	0.00%	7.28%	15.51%	11.59%	-
Adams Street 1998 Partnership	(0.63%)	2.99%	2.63%	2.08%	2.17%
Adams Street 1999 Partnership	(0.56%)	(6.21%)	(0.98%)	(2.38%)	2.82%
Adams Street 2000 Partnership	(5.43%)	3.42%	6.61%	1.96%	5.75%
Adams Street 2001 Partnership	0.00%	0.14%	5.93%	1.36%	6.92%
Adams Street 2002 Partnership	(0.65%)	(11.49%)	2.71%	0.22%	7.74%
Adams Street 2003 Partnership	(4.22%)	(4.60%)	8.81%	7.35%	9.89%
Adams Street 2010 Partnership	0.00%	15.24%	16.98%	15.01%	-
Adams Street 2008 Fund	0.00%	17.39%	16.68%	13.83%	11.00%
Adams Street 1999 Non-US	0.31%	1.08%	4.69%	0.95%	8.05%
Adams Street 2000 Non-US	(7.68%)	(2.01%)	6.44%	2.15%	4.09%
Adams Street 2001 Non-US	(0.29%)	16.46%	5.75%	9.19%	9.88%
Adams Street 2002 Non-US	0.74%	(2.69%)	(0.32%)	2.95%	6.50%
Adams Street 2003 Non-US	(0.26%)	(12.76%)	3.13%	4.65%	11.49%
Adams Street 2004 Non-US	(2.52%)	1.20%	5.97%	1.23%	6.91%
Adams Street 2010 Non-US	0.00%	12.20%	20.23%	13.20%	-
Adams Street 2010 Non-US Emg	0.00%	7.48%	14.05%	13.79%	-
Adams Street 2015 Global Fd	0.00%	14.41%	28.01%	-	-
Adams Street 2016 Global Fd	0.00%	10.66%	-	-	-
Adams Street 2017 Global Fd	0.00%	7.43%	-	-	-
Adams Street 2018 Global Fd	0.00%	-	-	-	-
Adams Street BVCF IV Fund	0.00%	0.95%	1.80%	1.02%	31.94%
BlackRock	(1.26%)	8.97%	-	-	-
Capital International V	0.00%	(35.80%)	(45.08%)	(36.10%)	(16.47%)
Capital International VI	(0.14%)	8.11%	8.08%	0.04%	-
CorsAir III	(0.22%)	82.53%	8.57%	9.40%	4.07%
EIG Energy Fund XIV	(0.28%)	(23.64%)	0.67%	(24.16%)	(10.20%)
Lewis & Clark, LP	0.00%	(33.88%)	10.80%	(14.73%)	(4.87%)
Lewis & Clark II	0.00%	12.12%	7.83%	1.81%	(3.57%)
Matlin Patterson II	(0.88%)	(3.49%)	(10.16%)	(1.43%)	(24.10%)
Matlin Patterson III	0.19%	1.81%	5.56%	1.63%	13.72%
Quantum Energy Partners	0.00%	(51.42%)	(27.73%)	(25.82%)	(4.04%)

* 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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Fixed Income					
Gross	2.06%	9.68%	5.55%	5.02%	-
Net	2.03%	9.51%	5.35%	4.79%	-
Weighted Benchmark	1.99%	9.15%	3.82%	3.77%	-
Domestic Fixed Income					
Gross	2.06%	9.68%	5.59%	5.29%	6.21%
Net	2.03%	9.51%	5.41%	5.09%	6.00%
Weighted Benchmark	1.99%	9.15%	3.73%	3.92%	4.87%
Investment Grade					
Gross	2.92%	11.30%	5.01%	4.93%	5.04%
Net	2.89%	11.19%	4.89%	4.80%	4.87%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
Declaration Total Return - Net	1.98%	8.15%	4.86%	4.46%	-
Libor-3 Month	0.55%	2.56%	1.90%	1.31%	0.82%
PIMCO Core Plus Cons. - Gross(1)	2.54%	10.76%	6.26%	4.55%	-
PIMCO Core Plus Cons. - Net	2.51%	10.62%	6.02%	4.27%	-
Blended Benchmark(2)	2.27%	10.30%	4.20%	2.68%	-
PIMCO DiSCO II - Net	0.82%	4.99%	9.71%	8.10%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
Prudential Core - Gross	2.54%	10.90%	-	-	-
Prudential Core - Net	2.51%	10.71%	-	-	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
SSgA Long US Treas Idx - Gross	7.93%	24.81%	4.07%	6.76%	-
SSgA Long US Treas Idx - Net	7.92%	24.78%	4.04%	6.73%	-
Blmbg Long Treas	7.92%	24.79%	4.07%	6.77%	6.87%
Below Investment Grade					
Gross	0.16%	6.06%	7.07%	6.15%	9.50%
Net	0.10%	5.79%	6.74%	5.78%	9.18%
Blmbg HY Corp 2% Issue	1.33%	6.35%	6.07%	5.38%	7.92%
Ares ND Credit Strategies Fd - Net	0.00%	8.03%	-	-	-
Cerberus ND Private Credit Fd - Net	1.35%	8.49%	-	-	-
S&P/LSTA Leveraged Loan B	0.98%	3.22%	4.68%	4.14%	5.59%
Goldman Sachs 2006 Offshore - Net	1.24%	10.43%	25.29%	20.54%	22.66%
Goldman Sachs Offshore V - Net	0.83%	37.22%	11.57%	8.83%	12.13%
PIMCO Bravo II Fund - Net	0.00%	3.10%	7.41%	7.91%	-
Blmbg HY Corp 2% Issue	1.33%	6.35%	6.07%	5.38%	7.92%
Loomis Sayles - Gross	(0.26%)	4.89%	5.72%	5.17%	8.28%
Loomis Sayles - Net	(0.39%)	4.36%	5.19%	4.64%	7.88%
Blmbg HY Corp 2% Issue	1.33%	6.35%	6.07%	5.38%	7.92%

(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; Blmbg Aggregate thereafter.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

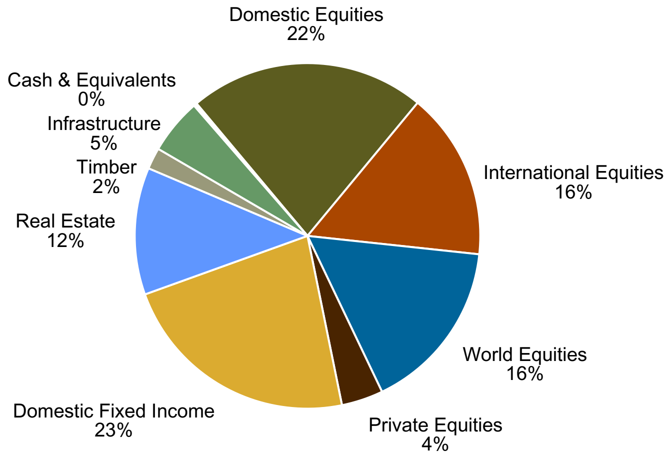
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Real Assets					
Gross	0.29%	5.59%	6.14%	7.07%	-
Net	0.24%	5.12%	5.71%	6.62%	-
Weighted Benchmark	1.13%	4.86%	5.21%	6.01%	-
Real Estate					
Gross	0.40%	6.13%	7.75%	10.08%	11.30%
Net	0.31%	5.57%	7.24%	9.52%	10.59%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.77%
Invesco Core Real Estate - Gross	(0.00%)	7.05%	7.35%	9.44%	10.76%
Invesco Core Real Estate - Net	(0.00%)	6.69%	7.02%	9.09%	10.33%
Invesco Fund III - Net	0.00%	(17.71%)	(2.70%)	4.55%	-
Invesco Asia RE Feeder - Net	0.00%	(14.36%)	102.40%	83.54%	35.29%
Invesco Asia RE Fund III - Net	(0.19%)	16.82%	37.35%	-	-
Invesco Value Added Fd IV - Net	0.00%	12.51%	10.72%	-	-
Invesco Value Added Fd V - Net	0.00%	-	-	-	-
JP Morgan - Gross	1.24%	5.20%	7.39%	9.63%	11.54%
JP Morgan - Net	1.00%	4.21%	6.43%	8.54%	10.50%
JPM Greater European Opp Fd - Net	(6.76%)	2.79%	(18.54%)	(2.77%)	*******%)
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.77%
Other Real Assets					
Gross	0.10%	4.69%	-	-	-
Net	0.11%	4.37%	-	-	-
Weighted Benchmark	0.76%	3.08%	-	-	-
Infrastructure					
Gross	0.14%	4.86%	7.82%	4.91%	-
Net	0.16%	4.40%	7.33%	4.39%	-
ISQ Global Infrastructure II - Net	(1.45%)	(4.75%)	-	-	-
The Rohatyn Group - Net	2.04%	(8.59%)	2.22%	(1.34%)	1.55%
JP Morgan IIF - Gross	0.40%	6.21%	8.55%	5.14%	5.84%
JP Morgan IIF - Net	0.43%	5.52%	7.85%	4.37%	4.82%
Grosvenor Cust. Infrastructure - Net	(0.07%)	3.56%	6.55%	6.64%	-
Grosvenor Cust. Infrastructure II - Net	(0.38%)	15.94%	9.27%	-	-
Benchmark(1)	0.97%	3.44%	3.13%	1.98%	2.03%
Macquarie Infras. Partners IV - Net	(1.05%)	-	-	-	-
Benchmark(2)	0.97%	-	-	-	-
Timber					
Net	0.00%	4.10%	(2.78%)	(0.07%)	-
TIR Teredo - Net	0.00%	7.55%	(1.35%)	3.92%	4.62%
TIR Springbank - Net	0.00%	2.99%	(3.22%)	(1.77%)	(3.58%)
NCREIF Timberland Index	0.18%	2.10%	3.12%	4.36%	3.97%
Cash & Cash Equivalents - Net	**0.55%**	**2.32%**	**1.62%**	**1.06%**	**0.60%**
Cash Account - Net	0.56%	2.30%	1.62%	1.06%	0.58%
Bank of ND - Net	0.54%	2.31%	1.58%	-	-
3-month Treasury Bill	0.56%	2.39%	1.54%	0.98%	0.54%
Total Fund					
Gross	0.44%	3.68%	8.26%	6.80%	8.59%
Net	0.40%	3.44%	8.01%	6.52%	8.23%
Target*	0.63%	4.18%	7.60%	6.09%	7.82%

* Current Quarter Target = 16.3% 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 Corp 2% Iss Cap, 6.5% NDSIB PEN - Private Equity, 4.9% Russell 2000 Index, 3.1% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% 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.

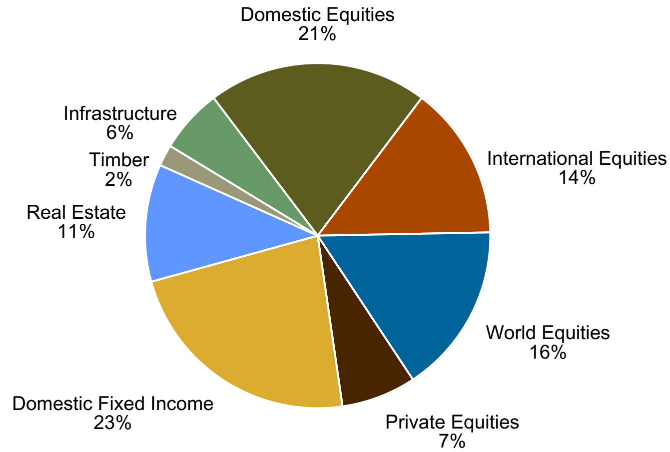
Actual vs Target Asset Allocation
As of September 30, 2019

The top left chart shows the Fund's asset allocation as of September 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.

Actual Asset Allocation

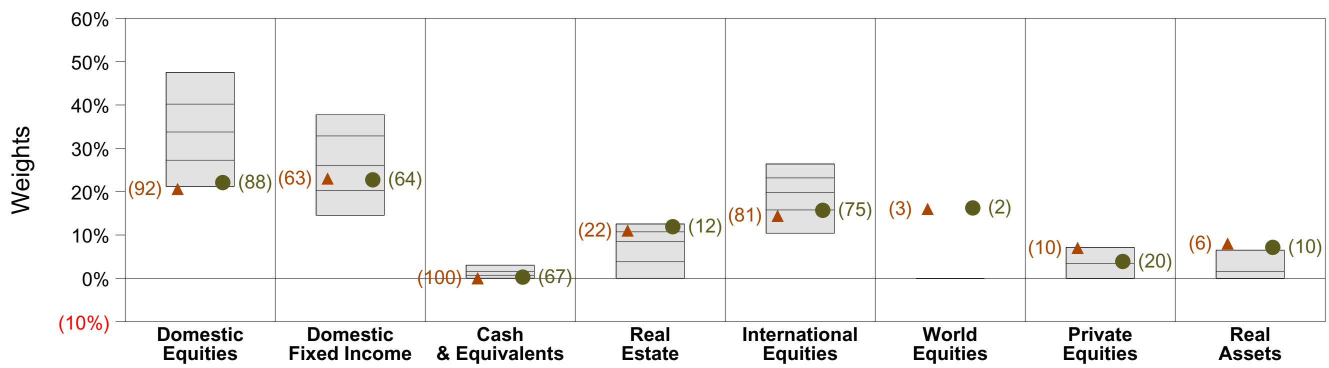


Target Asset Allocation



Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	696,161	22.1%	20.6%	1.5%	47,138
International Equities	494,570	15.7%	14.4%	1.3%	40,884
World Equities	511,792	16.2%	16.0%	0.2%	7,696
Private Equities	122,560	3.9%	7.0%	(3.1%)	(97,982)
Domestic Fixed Income	716,349	22.7%	23.0%	(0.3%)	(8,289)
Real Estate	375,246	11.9%	11.0%	0.9%	28,680
Timber	62,661	2.0%	2.0%	0.0%	0
Infrastructure	162,329	5.2%	6.0%	(0.9%)	(27,059)
Cash & Equivalents	8,932	0.3%	0.0%	0.3%	8,932
Total	3,150,599	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database



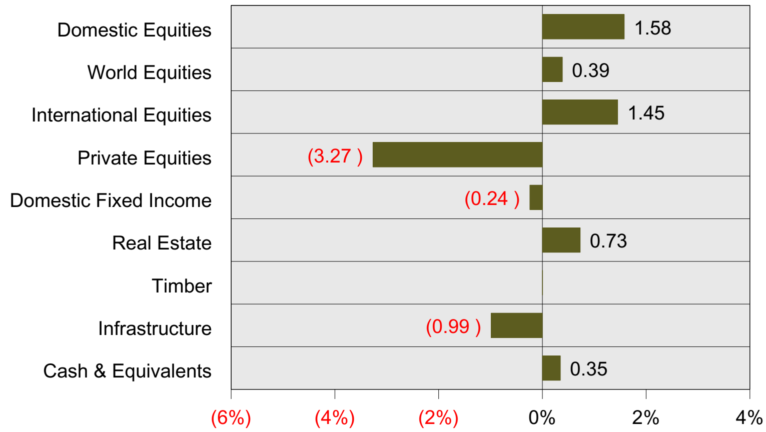
	Domestic Equities	Domestic Fixed Income	Cash & Equivalents	Real Estate	International Equities	World Equities	Private Equities	Real Assets
10th Percentile	47.52	37.75	3.04	12.55	26.39	0.00	7.15	6.50
25th Percentile	40.21	32.86	1.59	10.73	23.17	0.00	3.38	1.61
Median	33.77	26.07	0.72	8.55	19.77	0.00	0.00	0.00
75th Percentile	27.26	20.29	0.04	3.82	15.78	0.00	0.00	0.00
90th Percentile	21.22	14.54	0.00	0.00	10.41	0.00	0.00	0.00
Fund ●	22.10	22.74	0.28	11.91	15.70	16.24	3.89	7.14
Target ▲	20.60	23.00	0.00	11.00	14.40	16.00	7.00	8.00
% Group Invested	97.06%	97.06%	80.15%	79.41%	93.38%	9.56%	33.82%	27.21%

* 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 Corp 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.

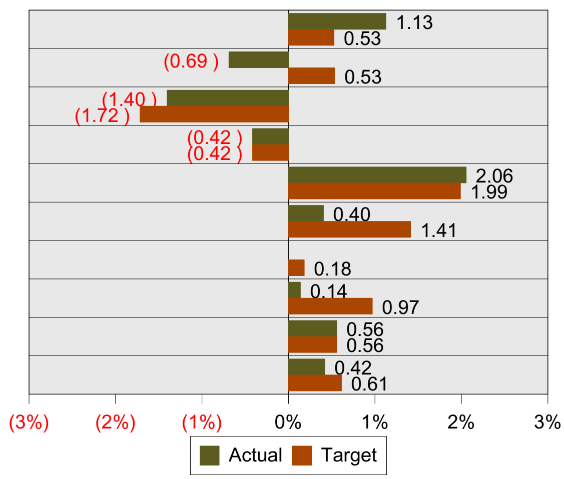
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

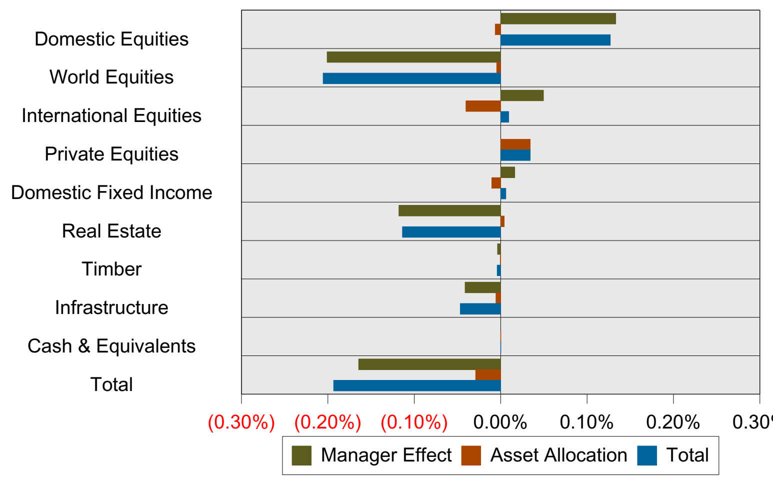
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

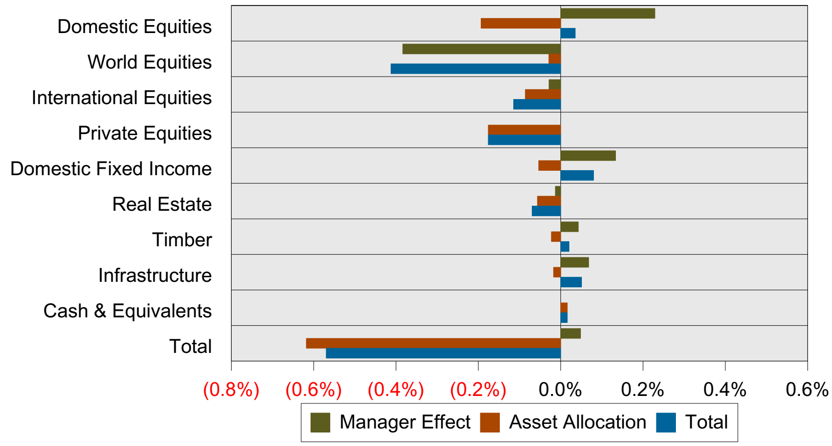
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.13%	0.53%	0.13%	(0.01%)	0.13%
World Equities	16%	16%	(0.69%)	0.53%	(0.20%)	(0.00%)	(0.21%)
International Equities	16%	14%	(1.40%)	(1.72%)	0.05%	(0.04%)	0.01%
Private Equities	4%	7%	(0.42%)	(0.42%)	0.00%	0.03%	0.03%
Domestic Fixed Income	23%	23%	2.06%	1.99%	0.02%	(0.01%)	0.01%
Real Estate	12%	11%	0.40%	1.41%	(0.12%)	0.00%	(0.11%)
Timber	2%	2%	0.00%	0.18%	(0.00%)	(0.00%)	(0.00%)
Infrastructure	5%	6%	0.14%	0.97%	(0.04%)	(0.01%)	(0.05%)
Cash & Equivalents	0%	0%	0.56%	0.56%	0.00%	0.00%	0.00%
Total			**0.42% =**	**0.61% +**	**(0.16%) +**	**(0.03%)**	**(0.19%)**

* 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 Corp 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.

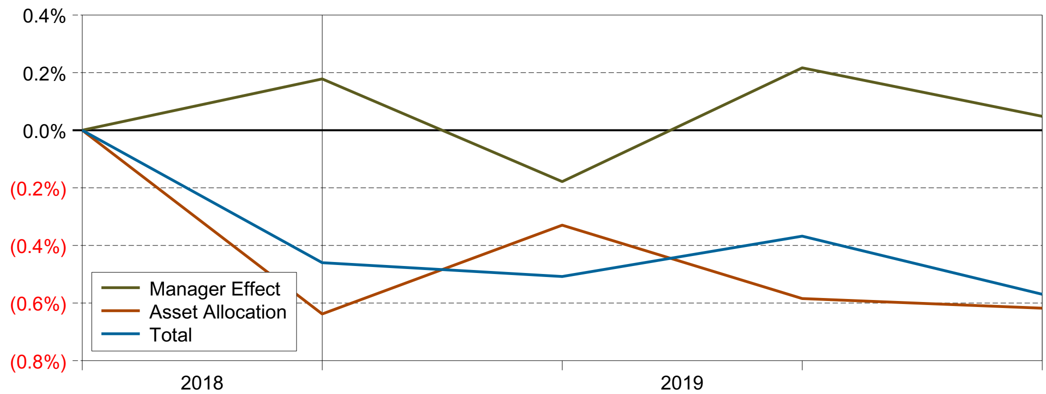
Cumulative Total Fund Relative Attribution - September 30, 2019

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

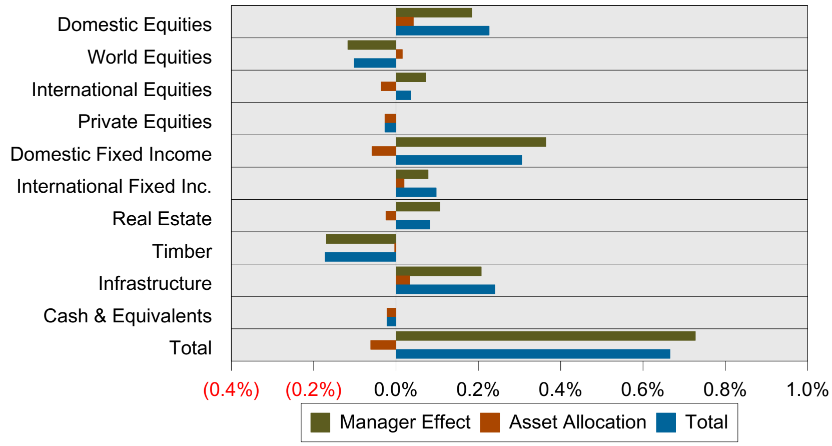
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.85%	0.81%	0.23%	(0.19%)	0.04%
World Equities	16%	16%	(0.42%)	1.83%	(0.38%)	(0.03%)	(0.41%)
International Equities	16%	14%	(1.43%)	(1.16%)	(0.03%)	(0.09%)	(0.11%)
Private Equities	3%	7%	7.74%	7.74%	0.00%	(0.18%)	(0.18%)
Domestic Fixed Income	23%	23%	9.68%	9.14%	0.13%	(0.05%)	0.08%
Real Estate	12%	11%	6.13%	6.24%	(0.01%)	(0.06%)	(0.07%)
Timber	2%	2%	4.10%	2.10%	0.04%	(0.02%)	0.02%
Infrastructure	5%	6%	4.86%	3.44%	0.07%	(0.02%)	0.05%
Cash & Equivalents	0%	0%	2.35%	2.35%	0.00%	0.02%	0.02%
Total			**3.65% =**	**4.21% +**	**0.05% +**	**(0.62%)**	**(0.57%)**

* 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 Corp 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.

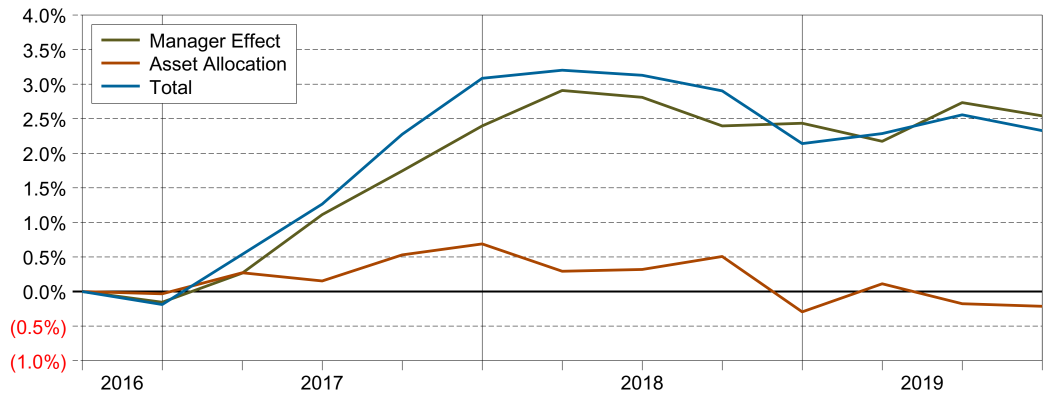
Cumulative Total Fund Relative Attribution - September 30, 2019

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

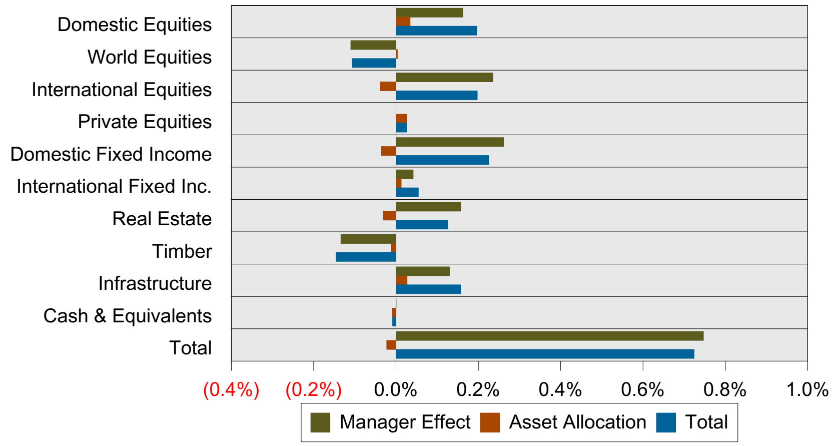
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	12.92%	12.08%	0.18%	0.04%	0.23%
World Equities	17%	16%	9.42%	10.21%	(0.12%)	0.02%	(0.10%)
International Equities	16%	14%	6.77%	6.41%	0.07%	(0.04%)	0.04%
Private Equities	3%	7%	7.55%	7.55%	0.00%	(0.03%)	(0.03%)
Domestic Fixed Income	21%	21%	5.64%	3.80%	0.36%	(0.06%)	0.31%
International Fixed Inc.	2%	2%	-	-	0.08%	0.02%	0.10%
Real Estate	11%	11%	7.75%	6.76%	0.11%	(0.02%)	0.08%
Timber	2%	2%	(2.78%)	3.12%	(0.17%)	(0.00%)	(0.17%)
Infrastructure	5%	6%	7.82%	3.13%	0.21%	0.03%	0.24%
Cash & Equivalents	1%	0%	1.65%	1.65%	0.00%	(0.02%)	(0.02%)
Total			**8.29% =**	**7.63% +**	**0.73% +**	**(0.06%)**	**0.67%**

* 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 Corp 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.

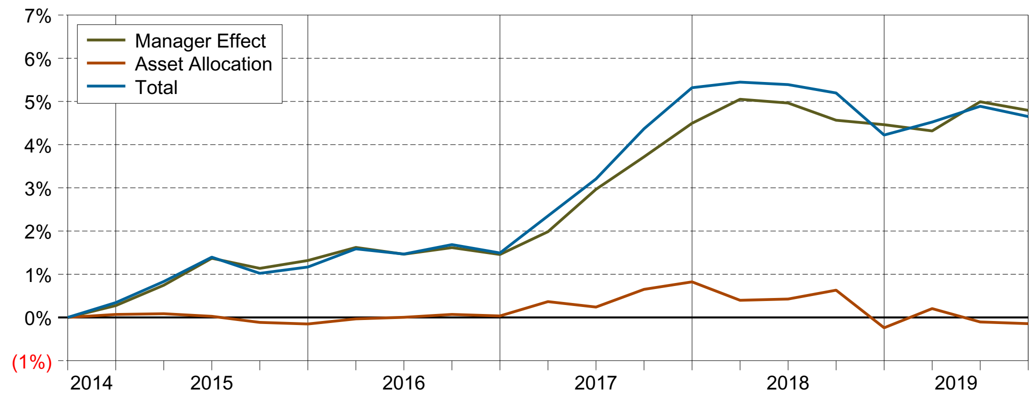
Cumulative Total Fund Relative Attribution - September 30, 2019

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

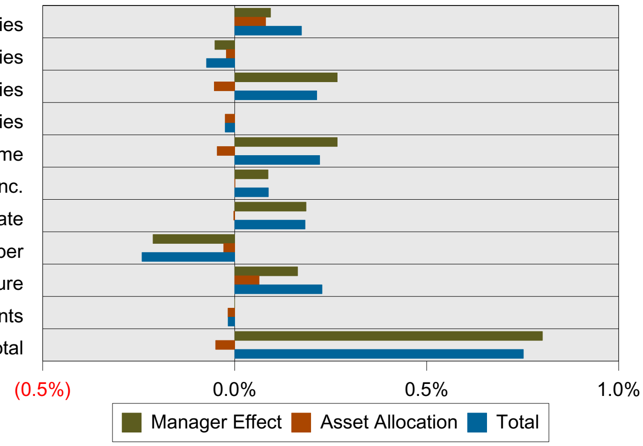
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.85%	10.11%	0.16%	0.03%	0.20%
World Equities	16%	16%	6.47%	7.18%	(0.11%)	0.00%	(0.11%)
International Equities	16%	14%	4.57%	3.10%	0.24%	(0.04%)	0.20%
Private Equities	3%	6%	1.82%	1.82%	0.00%	0.03%	0.03%
Domestic Fixed Income	20%	19%	5.31%	3.96%	0.26%	(0.04%)	0.23%
International Fixed Inc.	3%	3%	-	-	0.04%	0.01%	0.05%
Real Estate	11%	11%	10.11%	8.57%	0.16%	(0.03%)	0.13%
Timber	3%	3%	(0.07%)	4.36%	(0.13%)	(0.01%)	(0.15%)
Infrastructure	5%	5%	4.91%	1.98%	0.13%	0.03%	0.16%
Cash & Equivalents	1%	0%	1.08%	1.05%	0.00%	(0.01%)	(0.01%)
Total			**6.82% =**	**6.10% +**	**0.75% +**	**(0.02%)**	**0.72%**

* 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 Corp 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.

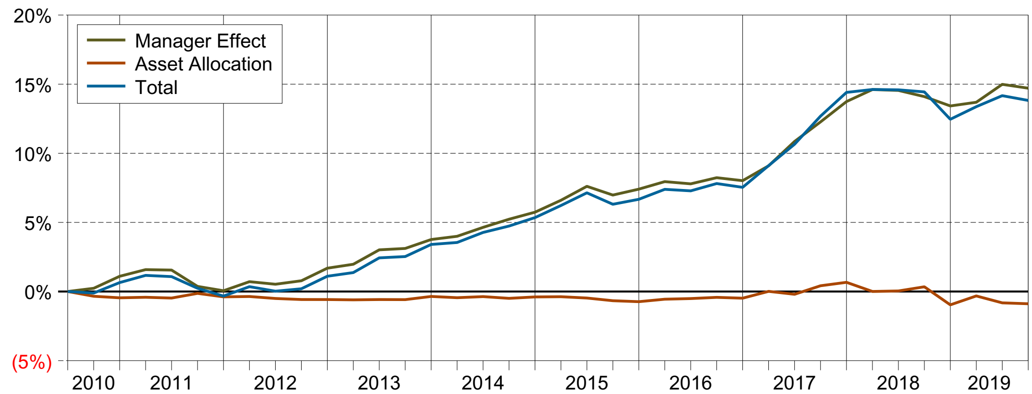
Cumulative Total Fund Relative Attribution - September 30, 2019

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 and One-Quarter Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Nine and One-Quarter Year Annualized Relative Attribution Effects

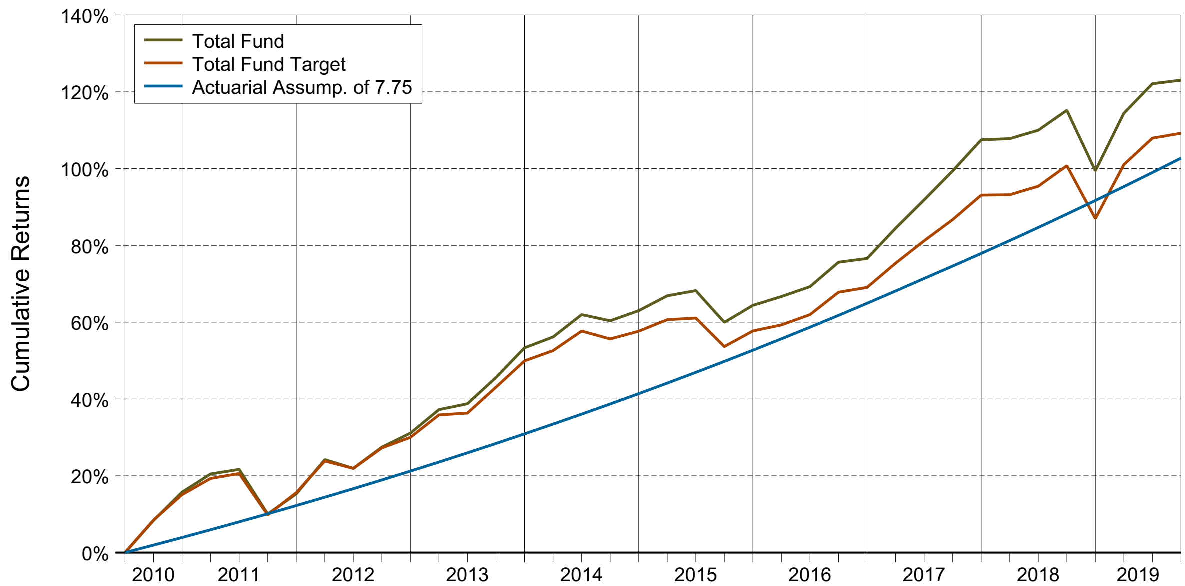
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	14.49%	13.92%	0.09%	0.08%	0.17%
World Equities	12%	12%	-	-	(0.05%)	(0.02%)	(0.07%)
International Equities	16%	15%	7.25%	5.52%	0.27%	(0.05%)	0.21%
Private Equities	4%	6%	4.40%	4.40%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	20%	20%	6.11%	4.60%	0.27%	(0.05%)	0.22%
International Fixed Inc.	4%	4%	-	-	0.09%	0.00%	0.09%
Real Estate	10%	10%	12.65%	10.38%	0.19%	(0.00%)	0.18%
Timber	3%	3%	-	-	(0.21%)	(0.03%)	(0.24%)
Infrastructure	4%	5%	-	-	0.16%	0.06%	0.23%
Cash & Equivalents	1%	1%	0.62%	0.61%	0.00%	(0.02%)	(0.02%)
Total			**9.06% =**	**8.31% +**	**0.80% +**	**(0.05%)**	**0.75%**

* 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 Corp 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.

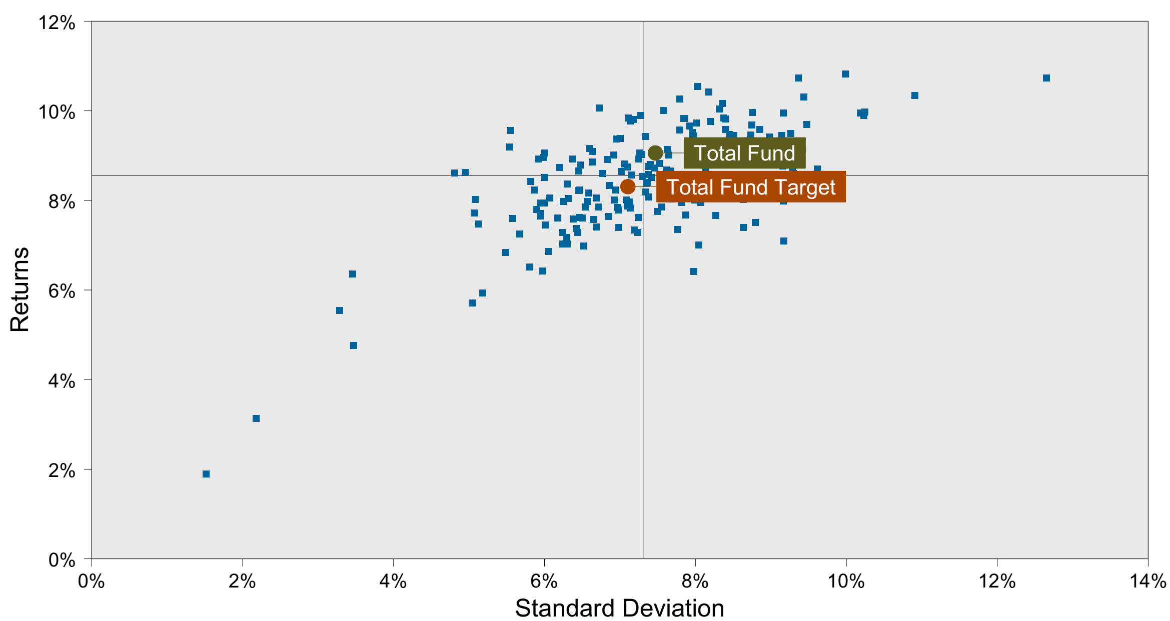
Cumulative Performance Relative to Target

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 and One-Quarter Year Annualized Risk vs Return



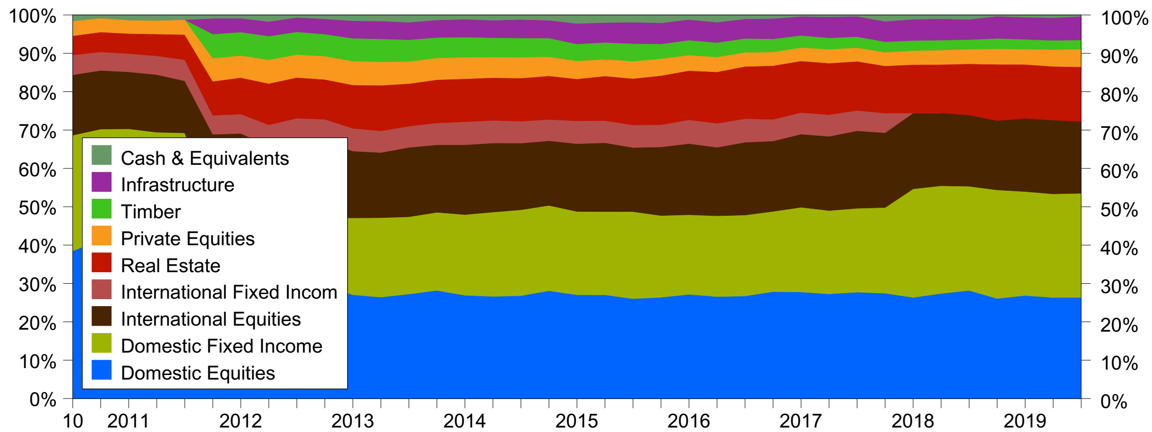
Squares represent membership of the Callan Public Fund Sponsor Database

* 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 Corp 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.

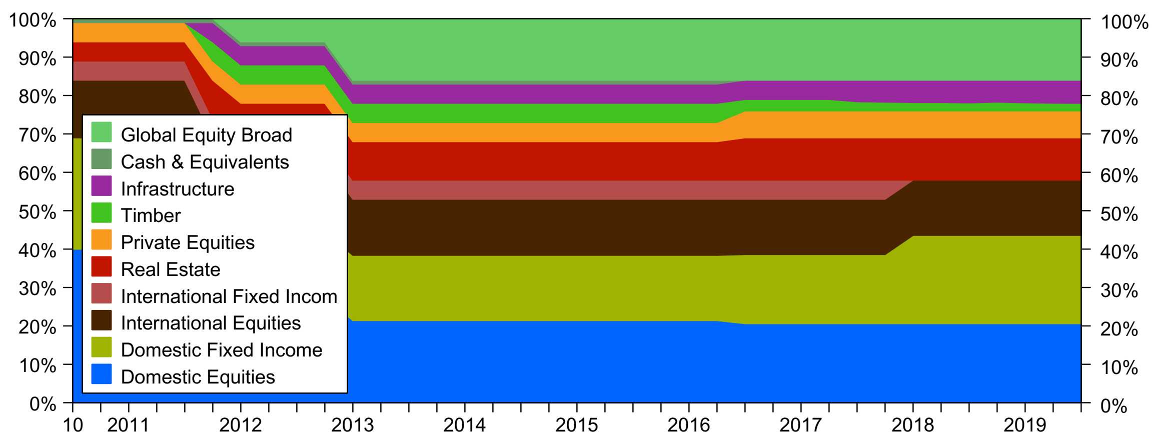
Actual vs Target Historical Asset Allocation

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.

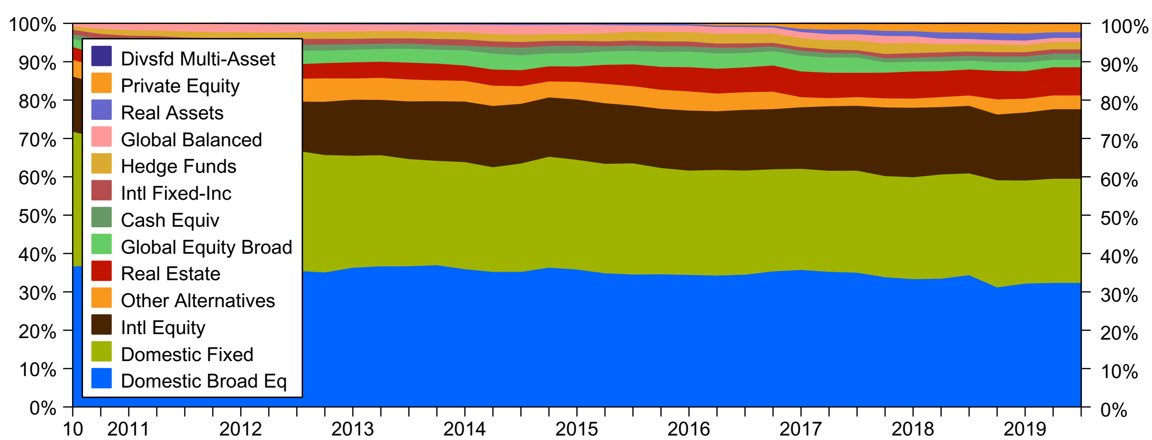
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

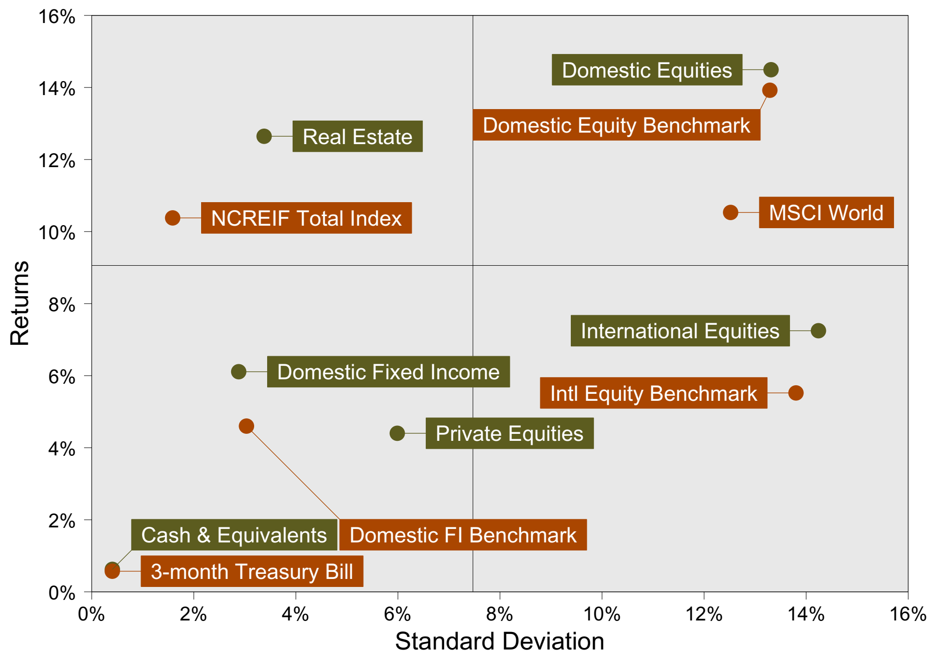


* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg:HY Corp 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons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

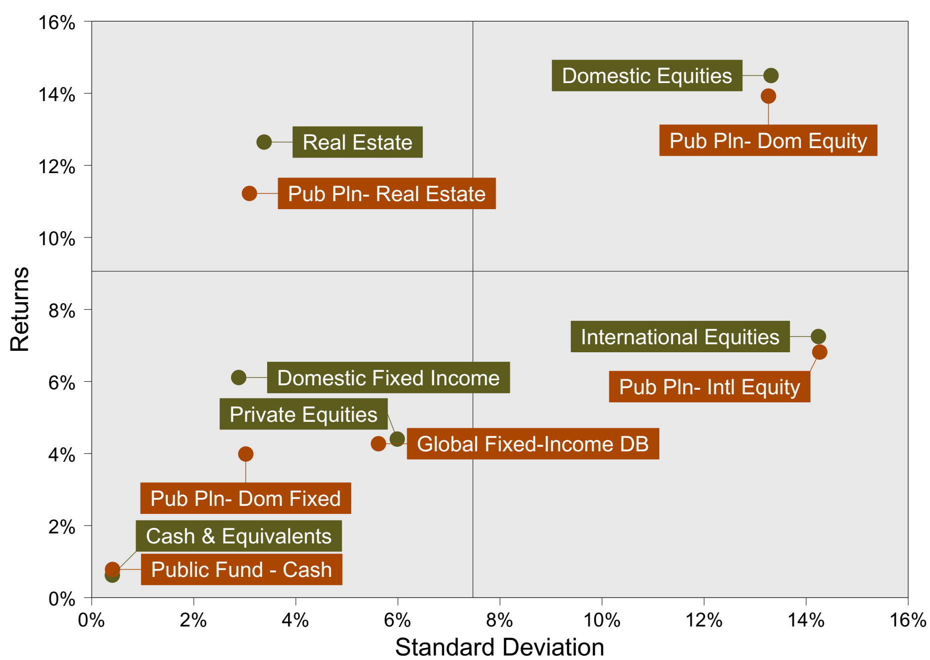
Asset Class Risk and Return

The charts below show the nine and one-quarter 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 and One-Quarter Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices



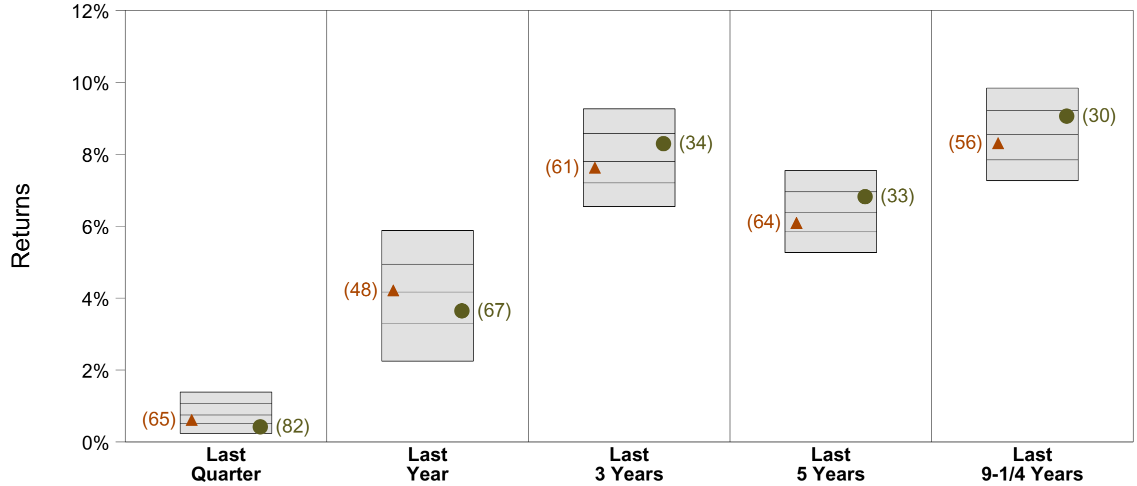
Nine and One-Quarter Year Annualized Risk vs Return
Asset Classes vs Asset Class Median



Total Fund Ranking

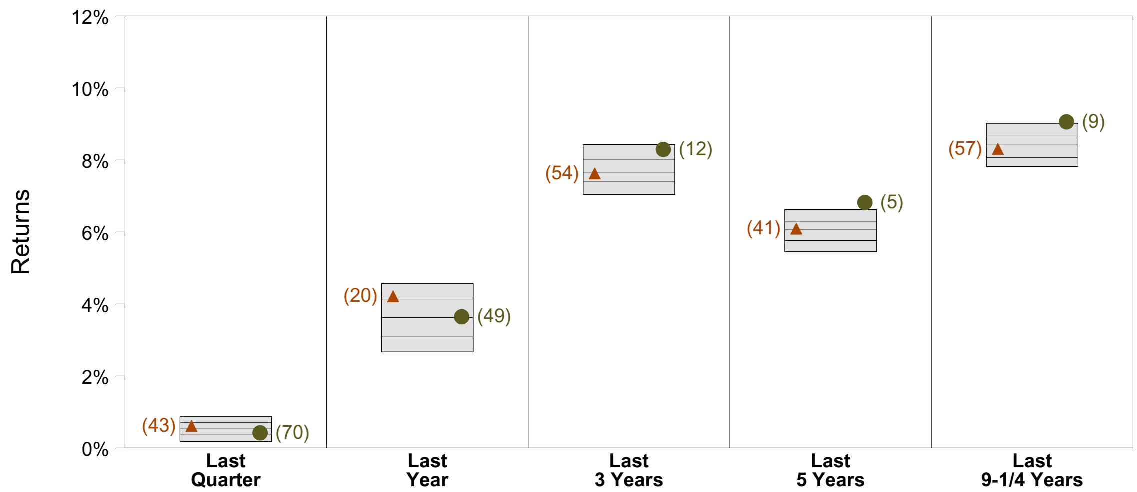
The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended September 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical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

Callan Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
10th Percentile	1.39	5.88	9.26	7.55	9.84
25th Percentile	1.07	4.94	8.58	6.96	9.22
Median	0.75	4.17	7.80	6.39	8.55
75th Percentile	0.51	3.28	7.20	5.84	7.84
90th Percentile	0.24	2.25	6.55	5.27	7.27
Total Fund ●	0.42	3.65	8.29	6.82	9.06
Policy Target ▲	0.61	4.21	7.63	6.10	8.31

Asset Allocation Adjusted Ranking



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
10th Percentile	0.87	4.57	8.43	6.62	9.02
25th Percentile	0.70	4.14	8.02	6.28	8.67
Median	0.55	3.62	7.66	6.06	8.42
75th Percentile	0.38	3.09	7.39	5.76	8.07
90th Percentile	0.18	2.67	7.04	5.45	7.82
Total Fund ●	0.42	3.65	8.29	6.82	9.06
Policy Target ▲	0.61	4.21	7.63	6.10	8.31

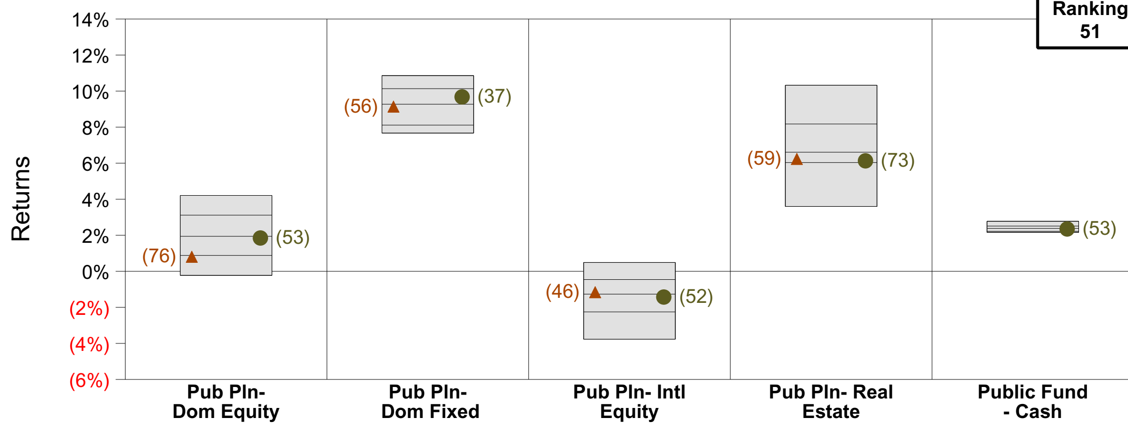
* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg:HY Corp 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons 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 September 30, 2019

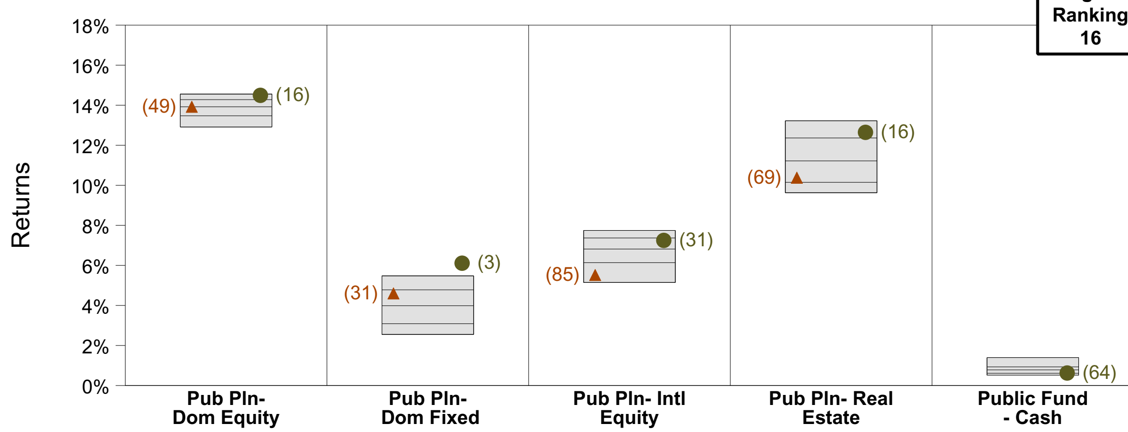
Weighted Ranking 51



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	4.21	10.86	0.49	10.32	2.78
25th Percentile	3.12	10.14	(0.46)	8.17	2.51
Median	1.94	9.27	(1.27)	6.61	2.38
75th Percentile	0.88	8.11	(2.25)	6.04	2.22
90th Percentile	(0.23)	7.67	(3.77)	3.60	2.16
Asset Class Composite ●	1.85	9.68	(1.43)	6.13	2.35
Composite Benchmark ▲	0.81	9.14	(1.16)	6.24	-

Total Asset Class Performance
Nine and One-Quarter Years Ended September 30, 2019

Weighted Ranking 16



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	14.56	5.48	7.74	13.22	1.39
25th Percentile	14.28	4.78	7.37	12.36	0.93
Median	13.92	3.99	6.82	11.22	0.78
75th Percentile	13.47	3.09	6.14	10.15	0.61
90th Percentile	12.91	2.55	5.15	9.63	0.52
Asset Class Composite ●	14.49	6.11	7.25	12.65	0.62
Composite Benchmark ▲	13.92	4.60	5.52	10.38	-

* 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 Corp 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	**$1,825,082,399**	**57.93%**	**$(8,046,039)**	**$(3,351,447)**	**$1,836,479,886**	**58.25%**
Public Equities	**$1,702,522,871**	**54.04%**	**$(16,024,956)**	**$(2,863,424)**	**$1,721,411,251**	**54.60%**
World Equities	**$511,791,590**	**16.24%**	**$(5,749,922)**	**$(3,636,346)**	**$521,177,858**	**16.53%**
Domestic Equities	**$696,161,045**	**22.10%**	**$(5,281,870)**	**$7,902,325**	**$693,540,590**	**22.00%**
Large Cap	528,776,109	16.78%	(5,135,175)	7,377,559	526,533,725	16.70%
Small Cap	167,384,936	5.31%	(146,695)	524,766	167,006,865	5.30%
International Equities	**$494,570,236**	**15.70%**	**$(4,993,164)**	**$(7,129,403)**	**$506,692,803**	**16.07%**
Developed	369,922,476	11.74%	(4,993,164)	(3,471,090)	378,386,730	12.00%
Emerging Markets	124,647,760	3.96%	0	(3,658,313)	128,306,073	4.07%
Private Equities	**$122,559,528**	**3.89%**	**$7,978,917**	**$(488,023)**	**$115,068,635**	**3.65%**
Global Fixed Income	**$716,349,153**	**22.74%**	**$(9,116,881)**	**$14,707,860**	**$710,758,174**	**22.54%**
Domestic Fixed Income	**$716,349,153**	**22.74%**	**$(9,116,881)**	**$14,707,860**	**$710,758,174**	**22.54%**
Investment Grade	495,089,519	15.71%	(12,347,390)	14,328,467	493,108,442	15.64%
Below Investment Grade	221,259,633	7.02%	3,230,509	379,393	217,649,732	6.90%
Global Real Assets	**$600,235,496**	**19.05%**	**$11,456,647**	**$1,721,598**	**$587,057,251**	**18.62%**
Real Estate	**$375,245,744**	**11.91%**	**$5,399,339**	**$1,495,307**	**$368,351,098**	**11.68%**
Other Real Assets	**$224,989,753**	**7.14%**	**$6,057,308**	**$226,292**	**$218,706,153**	**6.94%**
Infrastructure	162,328,982	5.15%	6,997,892	226,292	155,104,798	4.92%
Timber	62,660,770	1.99%	(940,584)	0	63,601,355	2.02%
Cash	**$8,932,331**	**0.28%**	**$(9,757,699)**	**$55,254**	**$18,634,776**	**0.59%**
Securities Lending Income	**$0**	**0.00%**	**$(60,089)**	**$60,089**	**-**	**-**
Total Fund	**$3,150,599,379**	**100.0%**	**$(15,524,062)**	**$13,193,354**	**$3,152,930,087**	**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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Global Equities					
Gross	(0.18%)	0.55%	9.95%	7.36%	-
Net	(0.23%)	0.35%	9.72%	7.11%	-
Weighted Benchmark	(0.12%)	1.69%	9.86%	6.83%	-
Public Equities					
Gross	(0.17%)	0.19%	-	-	-
Net	(0.22%)	(0.02%)	-	-	-
Weighted Benchmark	(0.11%)	0.61%	-	-	-
World Equities					
Gross	(0.69%)	(0.42%)	9.42%	6.47%	-
Net	(0.77%)	(0.75%)	9.04%	6.01%	-
MSCI World	0.53%	1.83%	10.21%	7.18%	10.53%
Domestic Equities					
Gross	1.13%	1.85%	12.92%	10.85%	14.49%
Net	1.09%	1.68%	12.73%	10.67%	14.26%
Weighted Benchmark	0.53%	0.81%	12.08%	10.11%	13.92%
Large Cap					
Gross	1.39%	3.14%	13.33%	11.29%	14.90%
Net	1.36%	3.03%	13.21%	11.15%	14.68%
Benchmark(1)	1.42%	3.87%	13.19%	10.62%	14.46%
Small Cap Equity					
Gross	0.31%	(1.97%)	11.68%	9.38%	13.11%
Net	0.23%	(2.32%)	11.28%	9.04%	12.79%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.93%
International Equities					
Gross	(1.40%)	(1.43%)	6.77%	4.57%	7.25%
Net	(1.44%)	(1.58%)	6.60%	4.40%	6.97%
Weighted Benchmark	(1.72%)	(1.16%)	6.41%	3.10%	5.52%
Developed					
Gross	(0.90%)	(2.25%)	6.98%	4.75%	7.77%
Net	(0.96%)	(2.45%)	6.75%	4.52%	7.47%
Benchmark(2)	(0.93%)	(0.95%)	6.49%	3.25%	6.06%
Emerging Markets					
Gross	(2.85%)	0.87%	6.03%	3.64%	5.21%
Net	(2.85%)	0.87%	6.03%	3.64%	4.99%
Benchmark(3)	(4.25%)	(2.01%)	5.98%	2.33%	3.48%
Private Equities					
Net	(0.42%)	7.74%	7.55%	1.81%	4.34%

(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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Global Fixed Income					
Gross	2.06%	9.68%	5.60%	5.03%	-
Net	2.02%	9.51%	5.40%	4.80%	-
Weighted Benchmark	1.99%	9.14%	3.82%	3.74%	-
Domestic Fixed Income					
Gross	2.06%	9.68%	5.64%	5.31%	6.11%
Net	2.02%	9.51%	5.46%	5.12%	5.88%
Weighted Benchmark	1.99%	9.14%	3.80%	3.96%	4.60%
Inv. Grade Fixed Income					
Gross	2.92%	11.30%	5.01%	4.93%	5.25%
Net	2.90%	11.19%	4.90%	4.81%	5.10%
Blmbg Aggregate Index	2.27%	10.30%	2.92%	3.38%	3.45%
Below Inv. Grade Fixed Income					
Gross	0.17%	6.03%	7.08%	6.14%	8.35%
Net	0.11%	5.76%	6.76%	5.78%	7.95%
Blmbg HY Corp 2% Issue	1.33%	6.35%	6.07%	5.38%	7.38%
Global Real Assets					
Gross	0.29%	5.61%	6.22%	7.17%	-
Net	0.24%	5.14%	5.79%	6.71%	-
Weighted Benchmark	1.15%	4.90%	5.24%	6.03%	-
Real Estate					
Gross	0.40%	6.13%	7.75%	10.11%	12.65%
Net	0.31%	5.57%	7.24%	9.56%	12.09%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	10.38%
Other Real Assets					
Gross	0.10%	4.69%	-	-	-
Net	0.11%	4.37%	-	-	-
Weighted Benchmark	0.77%	3.09%	-	-	-
Infrastructure					
Gross	0.14%	4.86%	7.82%	4.91%	-
Net	0.16%	4.39%	7.33%	4.39%	-
Benchmark(1)	0.97%	3.44%	3.13%	1.98%	-
Timber					
Net	0.00%	4.10%	(2.78%)	(0.07%)	-
NCREIF Timberland Index	0.18%	2.10%	3.12%	4.36%	4.74%
Cash & Equivalents - Net	**0.56%**	**2.35%**	**1.65%**	**1.08%**	**0.62%**
3-month Treasury Bill	0.56%	2.39%	1.54%	0.98%	0.57%
Total Fund					
Gross	0.42%	3.65%	8.29%	6.82%	9.06%
Net	0.37%	3.40%	8.04%	6.54%	8.74%
Target*	0.61%	4.21%	7.63%	6.10%	8.31%

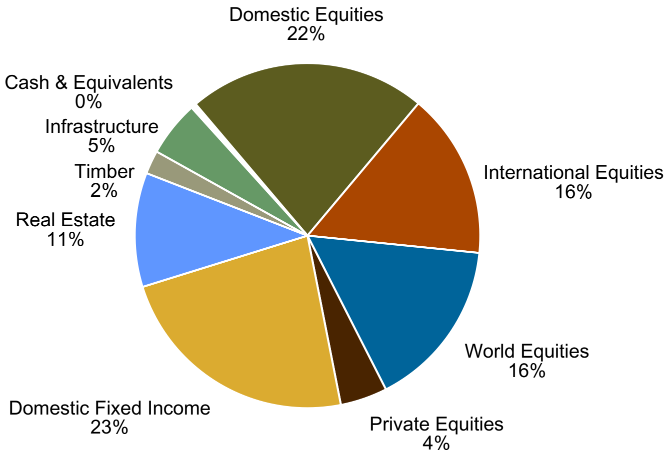
* Current Quarter Target = 16.0% Blmbg Aggregate, 16.0% MSCI World, 15.8% Russell 1000 Index, 11.0% MSCI World ex US, 11.0% NCREIF Total Index, 7.0% Blmbg:HY Corp 2% Iss Cap, 7.0% NDSIB PERS - Private Equity, 4.8% Russell 2000 Index, 3.4% MSCI EM, 3.0% NCREIF NFI-ODCE Eq Wt Net, 3.0% CPI All Urban Cons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

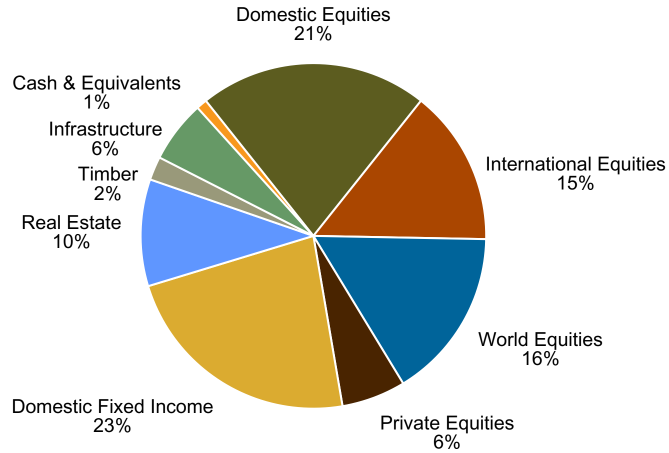
Actual vs Target Asset Allocation
As of September 30, 2019

The top left chart shows the Fund's asset allocation as of September 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.

Actual Asset Allocation

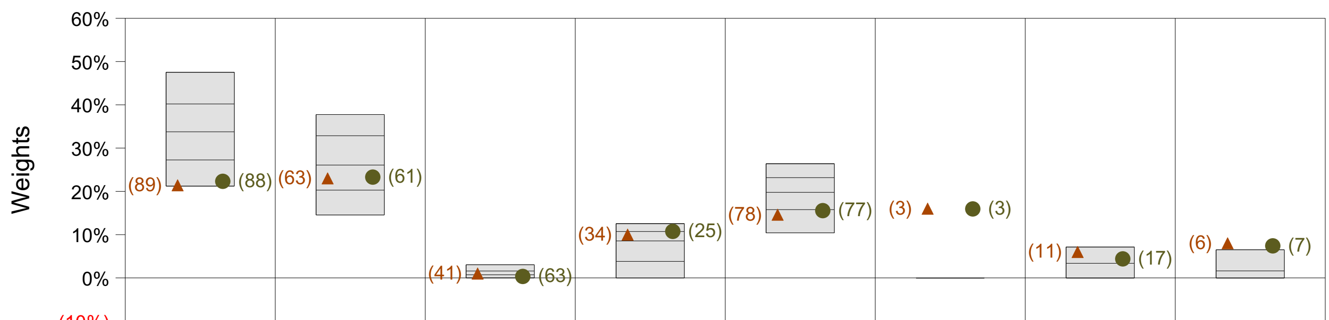


Target Asset Allocation



Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equities	571,200	22.3%	21.4%	0.9%	23,598
International Equities	397,821	15.5%	14.6%	0.9%	24,223
World Equities	408,022	15.9%	16.0%	(0.1%)	(1,400)
Private Equities	112,496	4.4%	6.0%	(1.6%)	(41,038)
Domestic Fixed Income	596,100	23.3%	23.0%	0.3%	7,555
Real Estate	275,035	10.7%	10.0%	0.7%	19,146
Timber	55,933	2.2%	2.2%	0.0%	0
Infrastructure	133,654	5.2%	5.8%	(0.6%)	(15,124)
Cash & Equivalents	8,629	0.3%	1.0%	(0.7%)	(16,959)
Total	2,558,891	100.0%	100.0%		

Asset Class Weights vs Callan Public Fund Sponsor Database



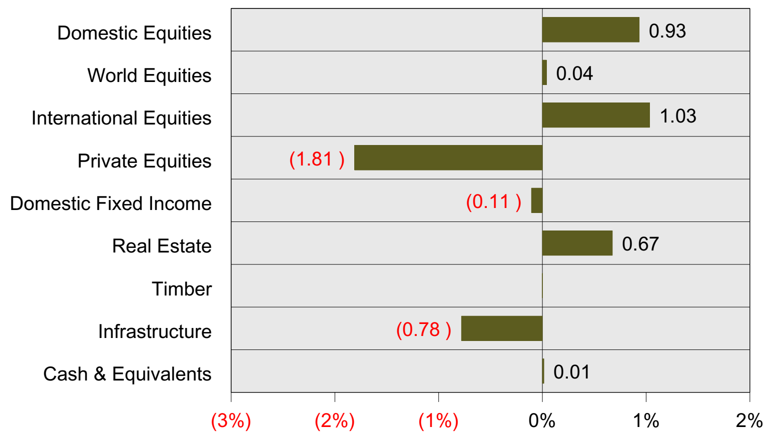
	Domestic Equities	Domestic Fixed Income	Cash & Equivalents	Real Estate	International Equities	World Equities	Private Equities	Real Assets
10th Percentile	47.52	37.75	3.04	12.55	26.39	0.00	7.15	6.50
25th Percentile	40.21	32.86	1.59	10.73	23.17	0.00	3.38	1.61
Median	33.77	26.07	0.72	8.55	19.77	0.00	0.00	0.00
75th Percentile	27.26	20.29	0.04	3.82	15.78	0.00	0.00	0.00
90th Percentile	21.22	14.54	0.00	0.00	10.41	0.00	0.00	0.00
Fund ●	22.32	23.30	0.34	10.75	15.55	15.95	4.40	7.41
Target ▲	21.40	23.00	1.00	10.00	14.60	16.00	6.00	8.00
% Group Invested	97.06%	97.06%	80.15%	79.41%	93.38%	9.56%	33.82%	27.21%

* 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 Corp 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.

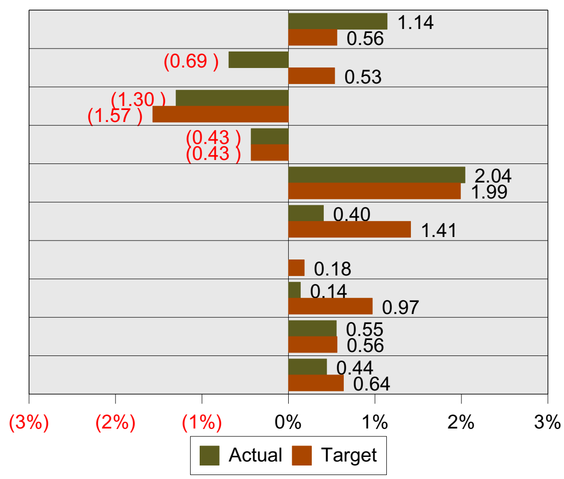
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

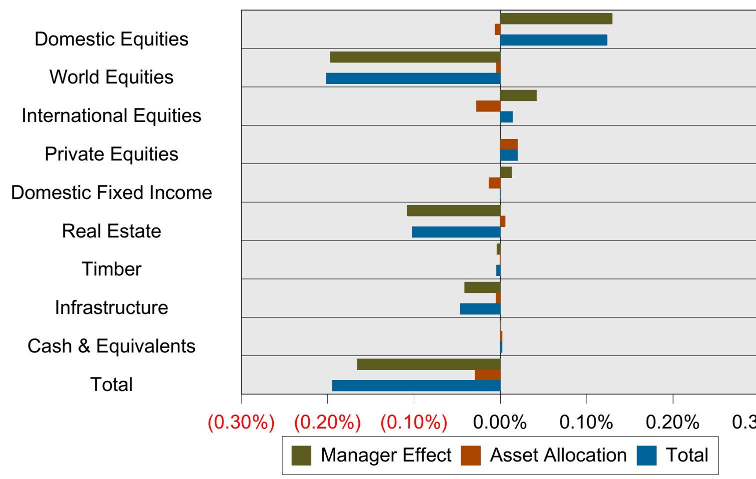
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

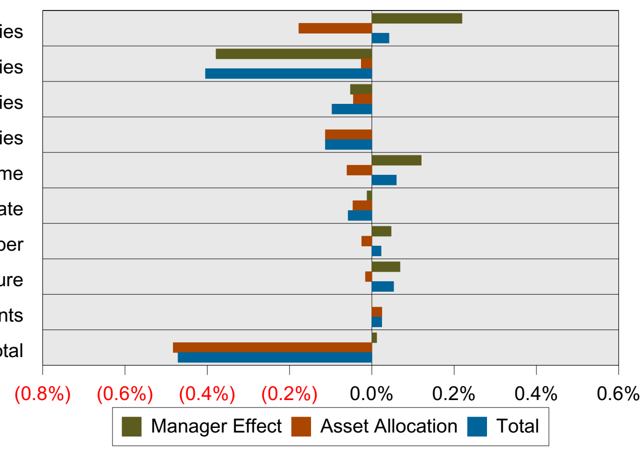
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	22%	21%	1.14%	0.56%	0.13%	(0.01%)	0.12%
World Equities	16%	16%	(0.69%)	0.53%	(0.20%)	(0.00%)	(0.20%)
International Equities	16%	15%	(1.30%)	(1.57%)	0.04%	(0.03%)	0.01%
Private Equities	4%	6%	(0.43%)	(0.43%)	0.00%	0.02%	0.02%
Domestic Fixed Income	23%	23%	2.04%	1.99%	0.01%	(0.01%)	(0.00%)
Real Estate	11%	10%	0.40%	1.41%	(0.11%)	0.01%	(0.10%)
Timber	2%	2%	0.00%	0.18%	(0.00%)	(0.00%)	(0.00%)
Infrastructure	5%	6%	0.14%	0.97%	(0.04%)	(0.01%)	(0.05%)
Cash & Equivalents	1%	1%	0.55%	0.56%	(0.00%)	0.00%	0.00%
Total			**0.44% =**	**0.64% +**	**(0.17%) +**	**(0.03%)**	**(0.19%)**

* 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 Corp 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.

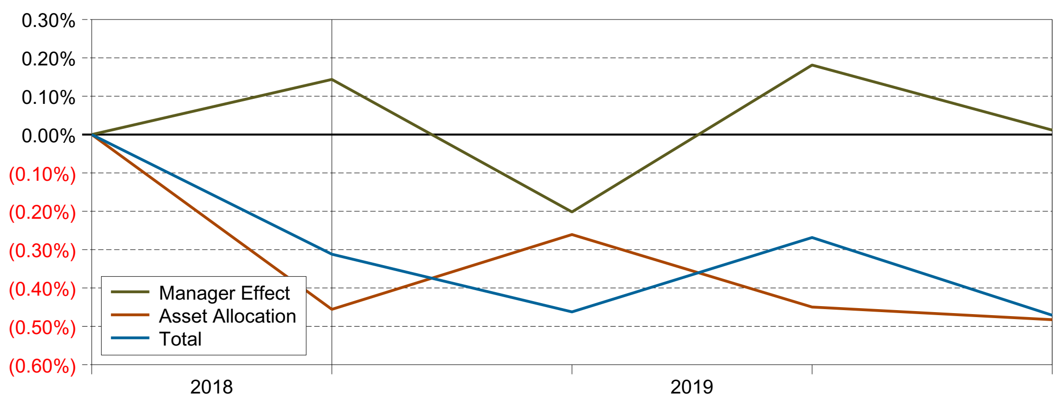
Cumulative Total Fund Relative Attribution - September 30, 2019

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

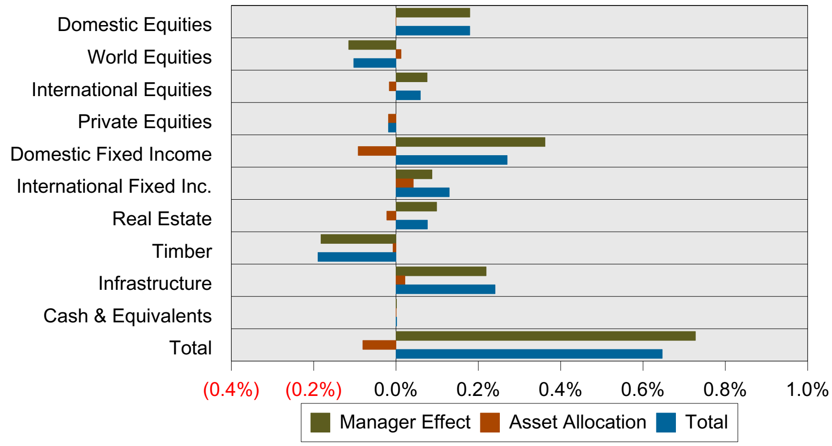
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	1.92%	0.92%	0.22%	(0.18%)	0.04%
World Equities	16%	16%	(0.41%)	1.83%	(0.38%)	(0.03%)	(0.40%)
International Equities	16%	15%	(1.56%)	(1.12%)	(0.05%)	(0.04%)	(0.10%)
Private Equities	4%	6%	7.73%	7.73%	0.00%	(0.11%)	(0.11%)
Domestic Fixed Income	23%	23%	9.62%	9.14%	0.12%	(0.06%)	0.06%
Real Estate	11%	10%	6.13%	6.24%	(0.01%)	(0.05%)	(0.06%)
Timber	2%	2%	4.10%	2.10%	0.05%	(0.02%)	0.02%
Infrastructure	5%	6%	4.86%	3.44%	0.07%	(0.02%)	0.05%
Cash & Equivalents	1%	1%	2.35%	2.39%	(0.00%)	0.02%	0.02%
Total			**3.66% =**	**4.13% +**	**0.01% +**	**(0.48%)**	**(0.47%)**

* 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 Corp 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.

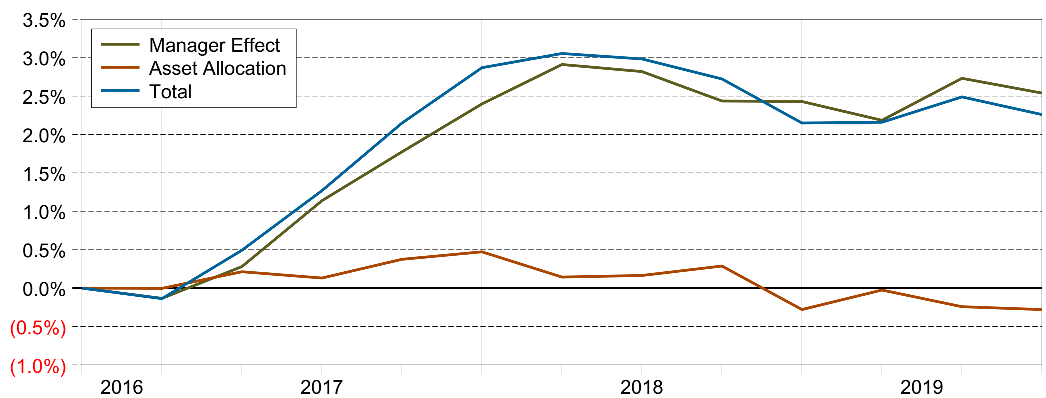
Cumulative Total Fund Relative Attribution - September 30, 2019

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

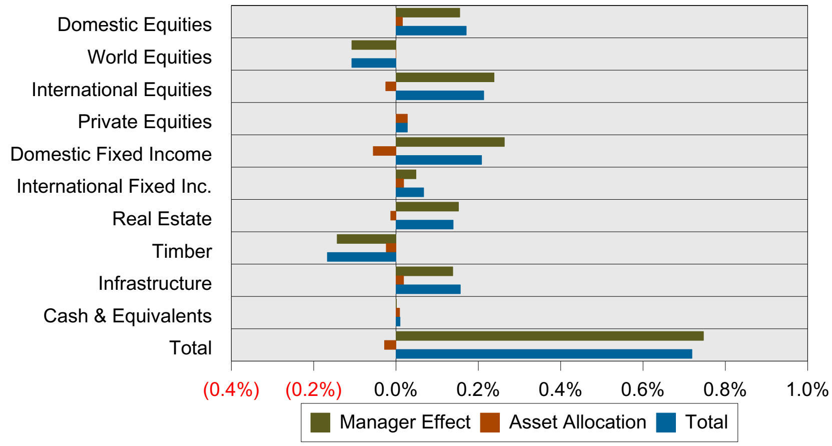
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	12.94%	12.12%	0.18%	(0.00%)	0.18%
World Equities	17%	16%	9.42%	10.21%	(0.11%)	0.01%	(0.10%)
International Equities	16%	15%	6.80%	6.43%	0.08%	(0.02%)	0.06%
Private Equities	3%	6%	7.54%	7.54%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	21%	20%	5.52%	3.65%	0.36%	(0.09%)	0.27%
International Fixed Inc.	2%	3%	-	-	0.09%	0.04%	0.13%
Real Estate	10%	10%	7.75%	6.76%	0.10%	(0.02%)	0.08%
Timber	3%	3%	(2.78%)	3.12%	(0.18%)	(0.01%)	(0.19%)
Infrastructure	5%	5%	7.82%	3.13%	0.22%	0.02%	0.24%
Cash & Equivalents	1%	1%	1.65%	1.54%	0.00%	0.00%	0.00%
Total			**8.24% =**	**7.59% +**	**0.73% +**	**(0.08%)**	**0.65%**

* 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 Corp 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.

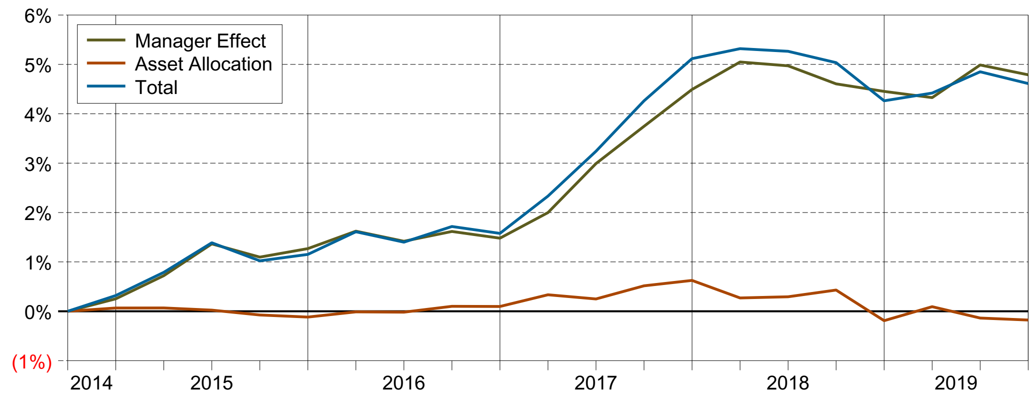
Cumulative Total Fund Relative Attribution - September 30, 2019

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

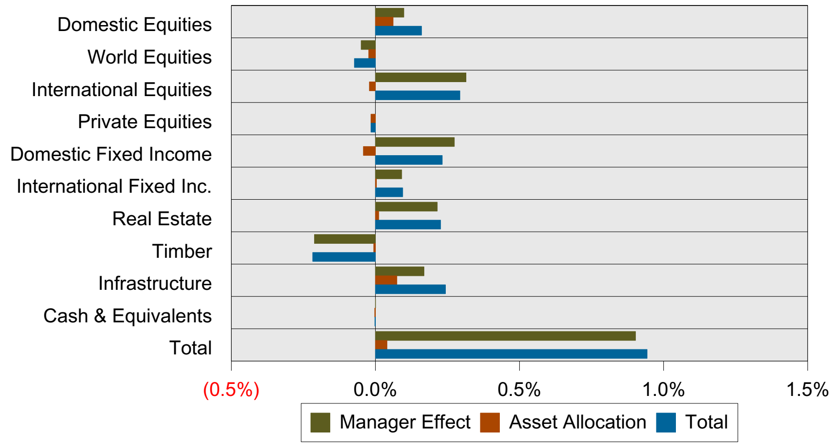
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	23%	21%	10.86%	10.13%	0.15%	0.02%	0.17%
World Equities	16%	16%	6.48%	7.18%	(0.11%)	(0.00%)	(0.11%)
International Equities	15%	15%	4.61%	3.13%	0.24%	(0.03%)	0.21%
Private Equities	4%	6%	1.82%	1.82%	0.00%	0.03%	0.03%
Domestic Fixed Income	19%	19%	5.22%	3.82%	0.26%	(0.06%)	0.21%
International Fixed Inc.	3%	4%	-	-	0.05%	0.02%	0.07%
Real Estate	10%	10%	10.11%	8.57%	0.15%	(0.01%)	0.14%
Timber	3%	3%	(0.07%)	4.36%	(0.14%)	(0.02%)	(0.17%)
Infrastructure	5%	5%	4.91%	1.98%	0.14%	0.02%	0.16%
Cash & Equivalents	1%	1%	1.08%	0.98%	0.00%	0.01%	0.01%
Total			**6.79% =**	**6.07% +**	**0.75% +**	**(0.03%)**	**0.72%**

* 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 Corp 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.

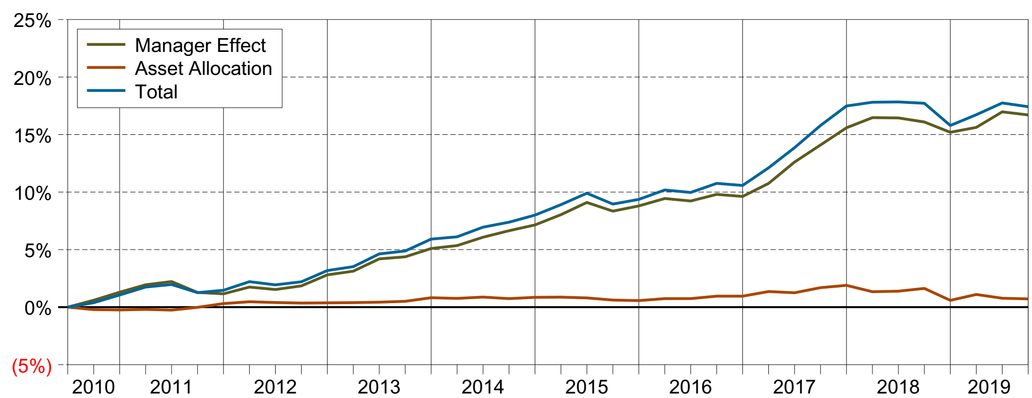
Cumulative Total Fund Relative Attribution - September 30, 2019

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 and One-Quarter Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Nine and One-Quarter Year Annualized Relative Attribution Effects

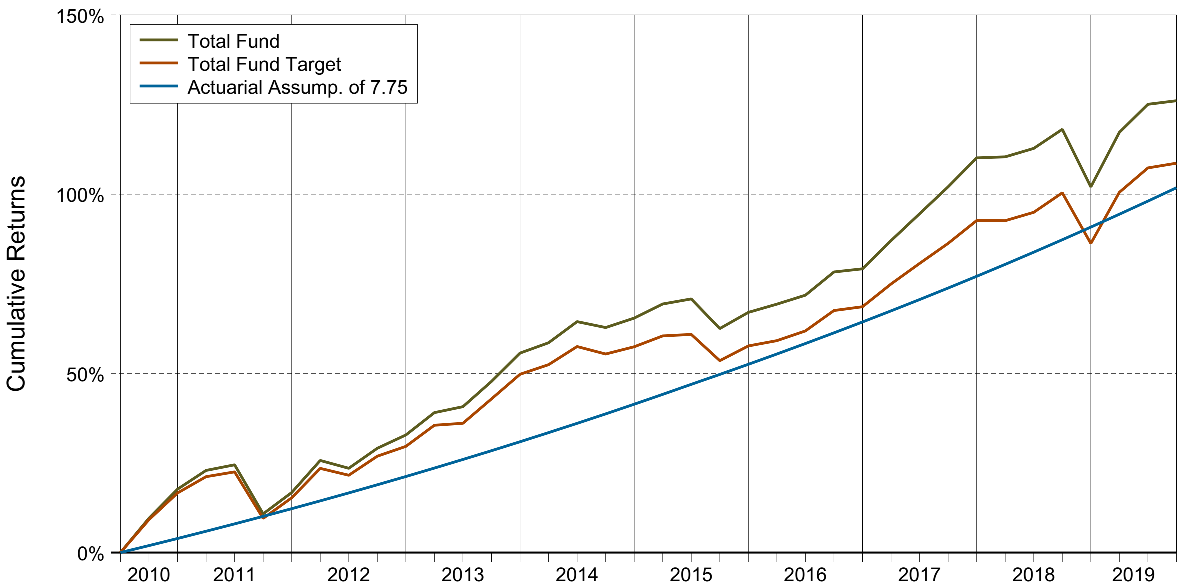
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	26%	25%	14.50%	13.93%	0.10%	0.06%	0.16%
World Equities	12%	12%	-	-	(0.05%)	(0.02%)	(0.07%)
International Equities	17%	16%	7.36%	5.64%	0.31%	(0.02%)	0.29%
Private Equities	4%	5%	4.42%	4.42%	0.00%	(0.02%)	(0.02%)
Domestic Fixed Income	19%	18%	6.07%	4.54%	0.27%	(0.04%)	0.23%
International Fixed Inc.	4%	4%	-	-	0.09%	0.00%	0.09%
Real Estate	10%	10%	12.64%	10.38%	0.21%	0.01%	0.23%
Timber	3%	3%	-	-	(0.21%)	(0.01%)	(0.22%)
Infrastructure	4%	4%	-	-	0.17%	0.07%	0.24%
Cash & Equivalents	1%	1%	0.63%	0.57%	0.00%	(0.00%)	(0.00%)
Total			**9.22% =**	**8.28% +**	**0.90% +**	**0.04%**	**0.94%**

* 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 Corp 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.

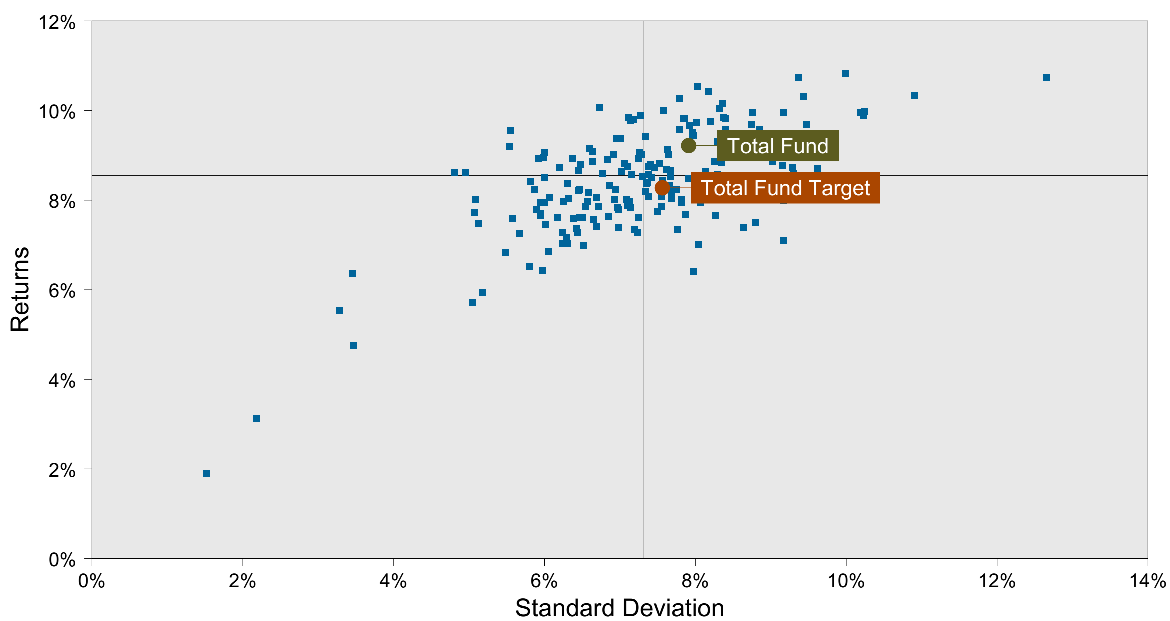
Cumulative Performance Relative to Target

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 and One-Quarter Year Annualized Risk vs Return



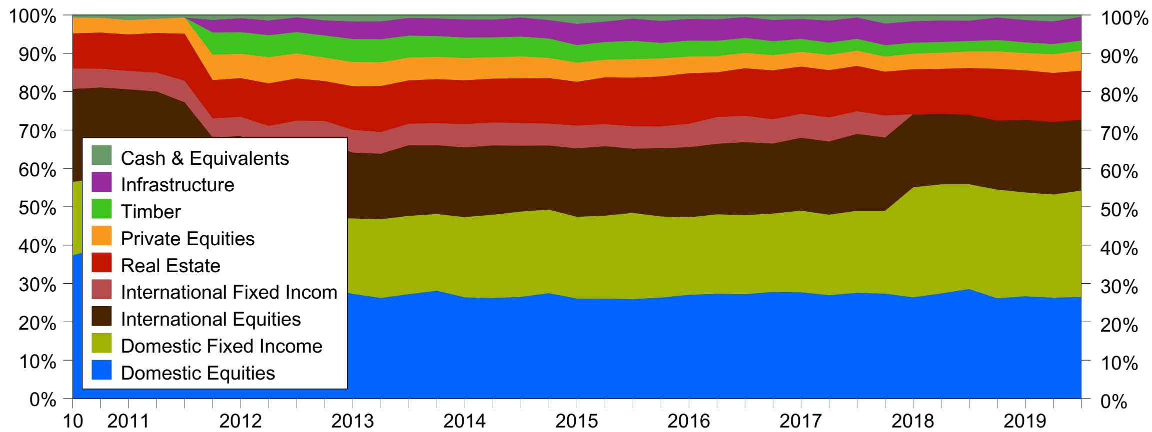
Squares represent membership of the Callan Public Fund Sponsor Database

* 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 Corp 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.

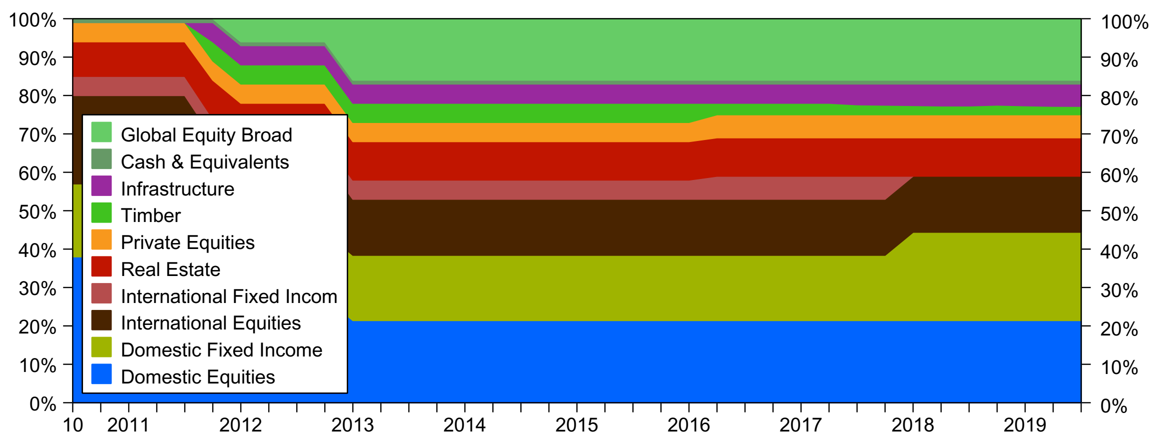
Actual vs Target Historical Asset Allocation

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.

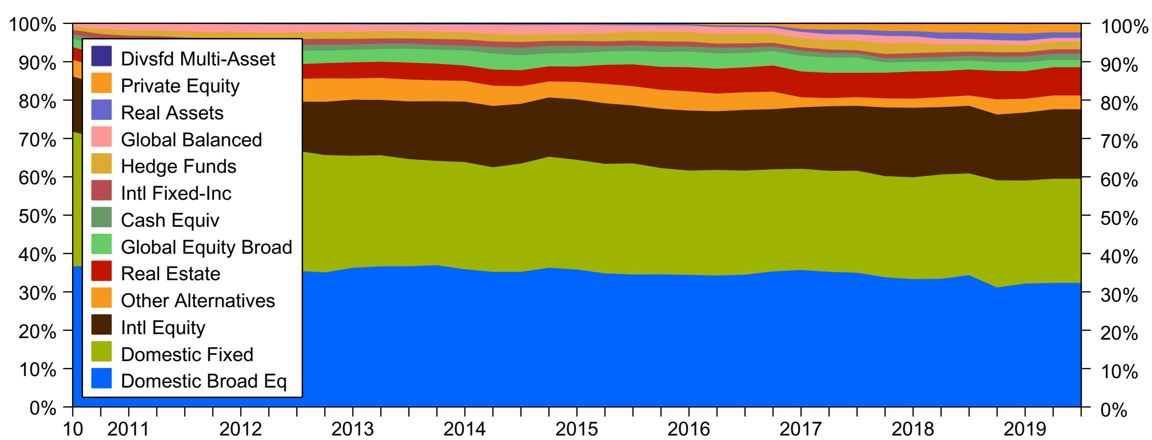
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation

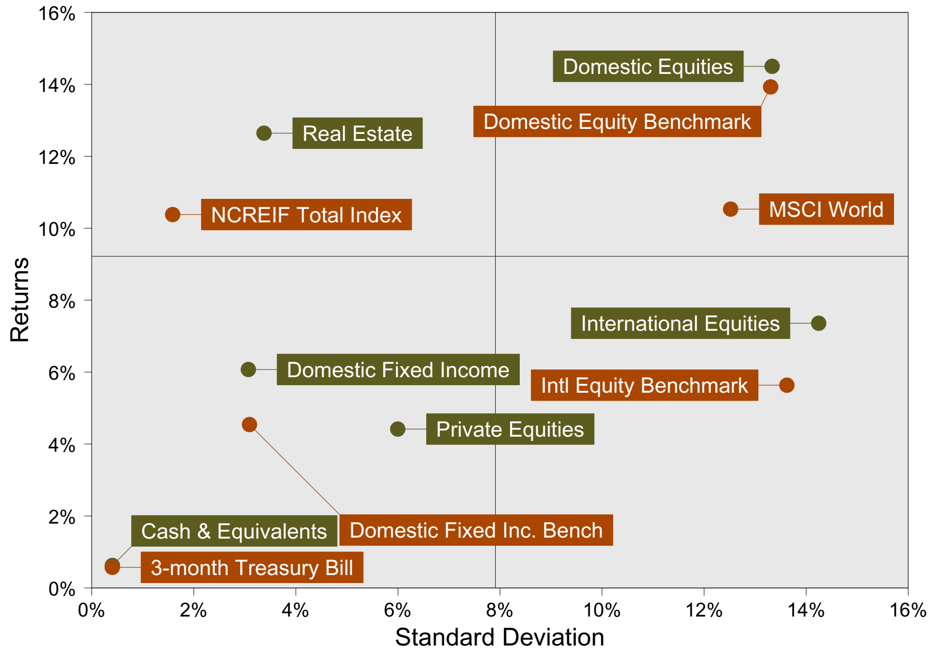


* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% Blmbg Aggregate, 16.0% MSCI World, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 7.0% Blmbg:HY Corp 2% Iss Cap, 6.0% NDSIB TFFR - Private Equity, 4.8% Russell 2000 Index, 2.9% NCREIF NFI-ODCE Eq Wt Net, 2.9% CPI All Urban Cons lagged 3 months,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

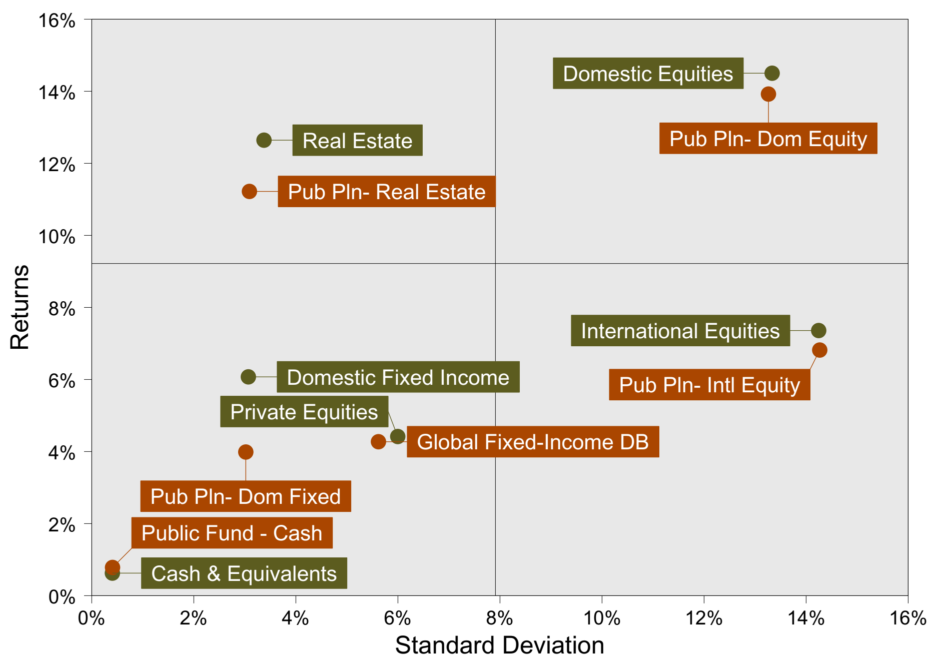
Asset Class Risk and Return

The charts below show the nine and one-quarter 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 and One-Quarter Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices



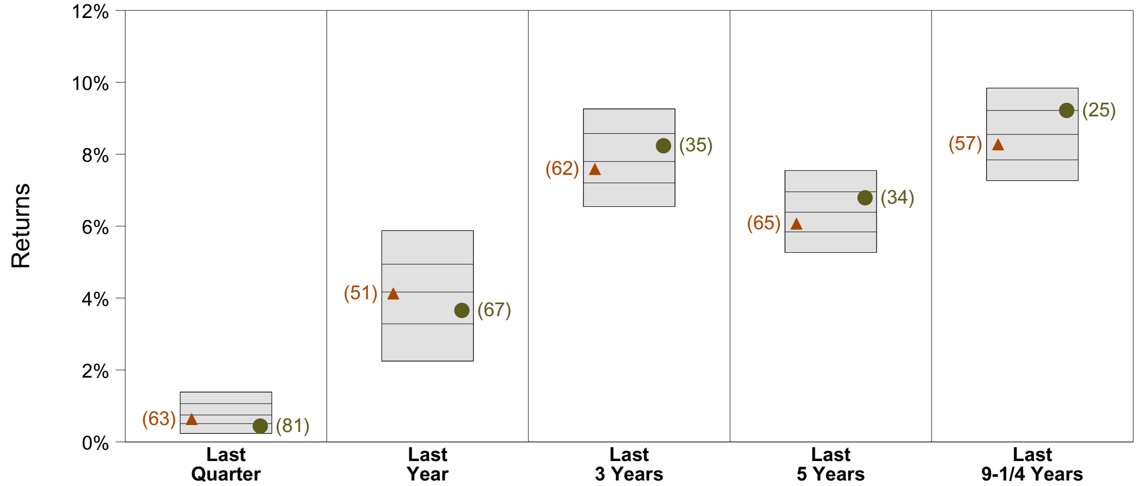
Nine and One-Quarter Year Annualized Risk vs Return
Asset Classes vs Asset Class Median



Total Fund Ranking

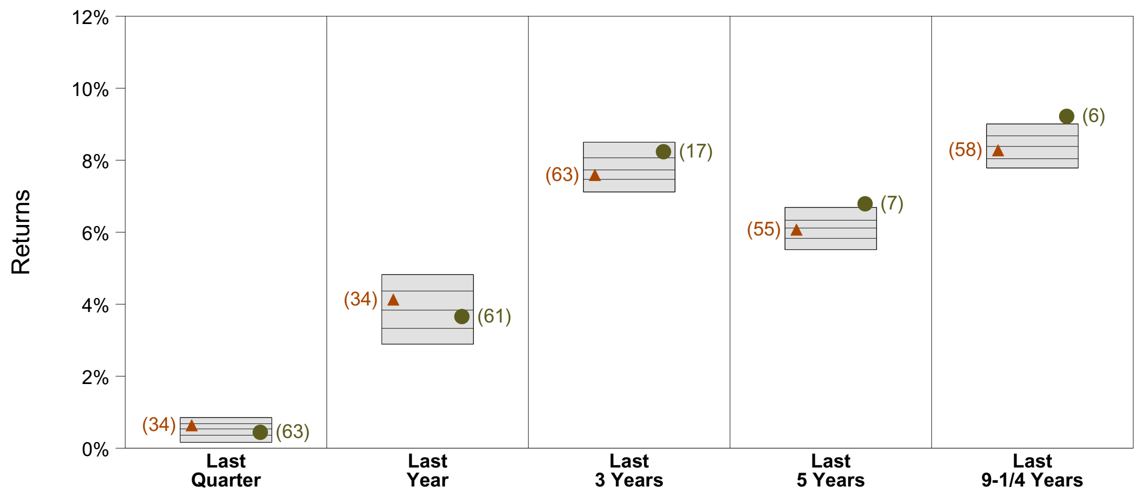
The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended September 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical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

Callan Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
10th Percentile	1.39	5.88	9.26	7.55	9.84
25th Percentile	1.07	4.94	8.58	6.96	9.22
Median	0.75	4.17	7.80	6.39	8.55
75th Percentile	0.51	3.28	7.20	5.84	7.84
90th Percentile	0.24	2.25	6.55	5.27	7.27
Total Fund ●	0.44	3.66	8.24	6.79	9.22
Policy Target ▲	0.64	4.13	7.59	6.07	8.28

Asset Allocation Adjusted Ranking



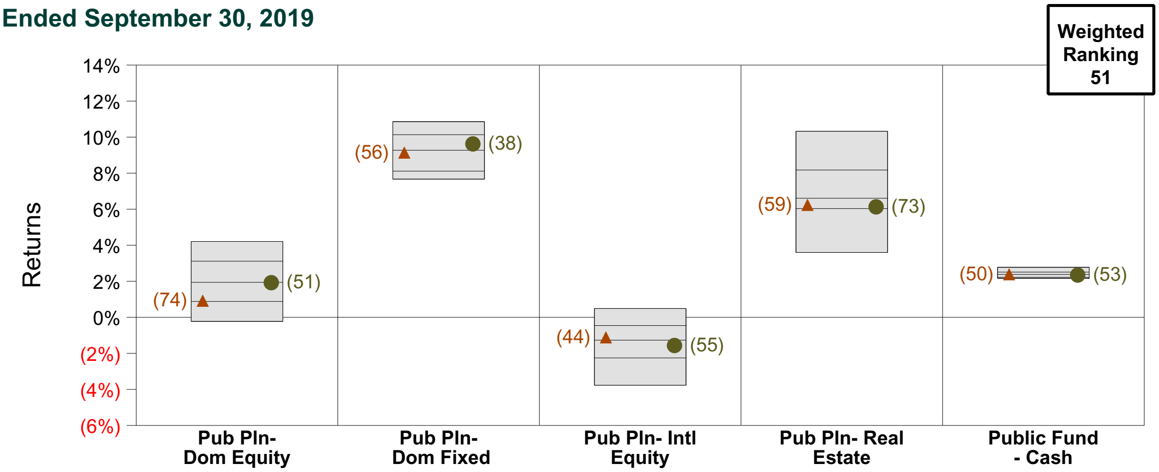
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
10th Percentile	0.85	4.82	8.50	6.69	9.01
25th Percentile	0.68	4.37	8.07	6.33	8.68
Median	0.54	3.84	7.73	6.12	8.38
75th Percentile	0.36	3.33	7.47	5.83	8.04
90th Percentile	0.16	2.89	7.12	5.51	7.78
Total Fund ●	0.44	3.66	8.24	6.79	9.22
Policy Target ▲	0.64	4.13	7.59	6.07	8.28

* 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 Corp 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

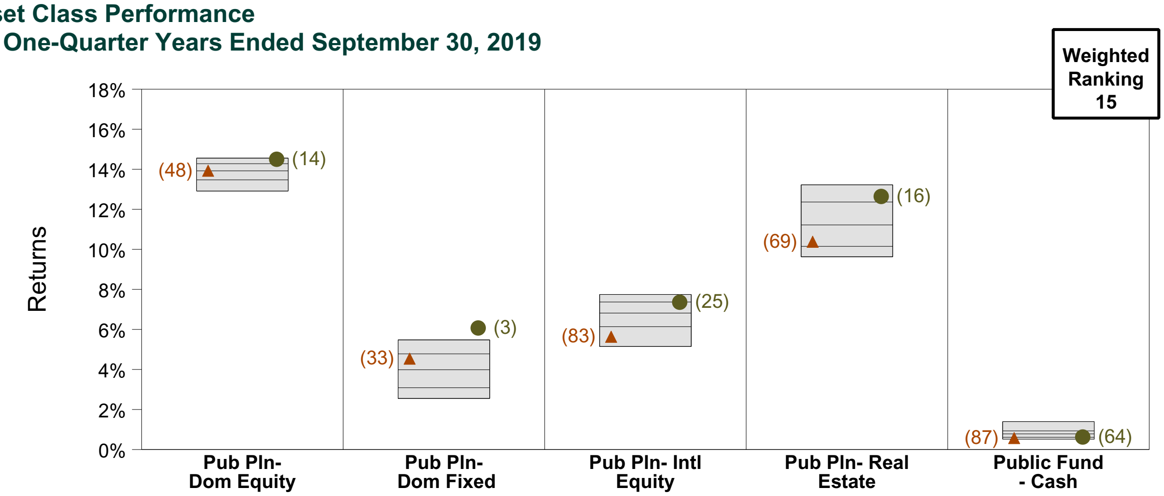
The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used 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 September 30, 2019



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	4.21	10.86	0.49	10.32	2.78
25th Percentile	3.12	10.14	(0.46)	8.17	2.51
Median	1.94	9.27	(1.27)	6.61	2.38
75th Percentile	0.88	8.11	(2.25)	6.04	2.22
90th Percentile	(0.23)	7.67	(3.77)	3.60	2.16
Asset Class Composite ●	1.92	9.62	(1.56)	6.13	2.35
Composite Benchmark ▲	0.92	9.14	(1.12)	6.24	2.39

Total Asset Class Performance
Nine and One-Quarter Years Ended September 30, 2019



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	14.56	5.48	7.74	13.22	1.39
25th Percentile	14.28	4.78	7.37	12.36	0.93
Median	13.92	3.99	6.82	11.22	0.78
75th Percentile	13.47	3.09	6.14	10.15	0.61
90th Percentile	12.91	2.55	5.15	9.63	0.52
Asset Class Composite ●	14.50	6.07	7.36	12.64	0.63
Composite Benchmark ▲	13.93	4.54	5.64	10.38	0.57

* 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 Corp 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equities	**$1,489,539,156**	**58.21%**	**$(6,756,264)**	**$(2,289,289)**	**$1,498,584,709**	**58.23%**
Public Equities	**$1,377,043,499**	**53.81%**	**$(14,097,119)**	**$(1,824,220)**	**$1,392,964,837**	**54.12%**
World Equities	**$408,022,150**	**15.95%**	**$(5,084,269)**	**$(2,983,318)**	**$416,089,737**	**16.17%**
Domestic Equities	**$571,200,359**	**22.32%**	**$(4,095,875)**	**$6,505,994**	**$568,790,240**	**22.10%**
Large Cap	443,369,621	17.33%	(4,148,908)	6,151,979	441,366,550	17.15%
Small Cap	127,830,738	5.00%	53,033	354,015	127,423,689	4.95%
International Equities	**$397,820,989**	**15.55%**	**$(4,916,975)**	**$(5,346,896)**	**$408,084,861**	**15.86%**
Developed	318,828,399	12.46%	(4,986,975)	(3,011,790)	326,827,165	12.70%
Emerging Markets	78,992,590	3.09%	70,000	(2,335,106)	81,257,696	3.16%
Private Equities	**$112,495,657**	**4.40%**	**$7,340,855**	**$(465,070)**	**$105,619,872**	**4.10%**
Global Fixed Income	**$596,100,294**	**23.30%**	**$3,840,290**	**$11,973,778**	**$580,286,226**	**22.55%**
Domestic Fixed Income	**$596,100,294**	**23.30%**	**$3,840,290**	**$11,973,778**	**$580,286,226**	**22.55%**
Investment Grade	414,609,468	16.20%	778,182	11,742,855	402,088,431	15.62%
Below Investment Grade	181,490,826	7.09%	3,062,109	230,923	178,197,795	6.92%
Global Real Assets	**$464,622,027**	**18.16%**	**$3,617,597**	**$1,290,310**	**$459,714,120**	**17.86%**
Real Estate	**$275,035,050**	**10.75%**	**$(1,816,488)**	**$1,104,717**	**$275,746,821**	**10.71%**
Other Real Assets	**$189,586,977**	**7.41%**	**$5,434,085**	**$185,593**	**$183,967,299**	**7.15%**
Infrastructure	133,654,178	5.22%	6,273,677	185,594	127,194,908	4.94%
Timber	55,932,798	2.19%	(839,593)	(0)	56,772,391	2.21%
Cash	**$8,629,467**	**0.34%**	**$(26,570,958)**	**$162,926**	**$35,037,499**	**1.36%**
Securities Lending Income	**$0**	**0.00%**	**$(49,388)**	**$49,388**	**-**	**-**
Total Fund	**$2,558,890,943**	**100.0%**	**$(25,918,723)**	**$11,187,112**	**$2,573,622,554**	**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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Global Equities					
Gross	(0.15%)	0.61%	9.99%	7.37%	-
Net	(0.20%)	0.40%	9.76%	7.12%	-
Weighted Benchmark	(0.08%)	1.52%	9.81%	6.80%	-
Public Equities					
Gross	(0.12%)	0.20%	-	-	-
Net	(0.18%)	(0.02%)	-	-	-
Weighted Benchmark	(0.04%)	0.66%	-	-	-
World Equities					
Gross	(0.69%)	(0.41%)	9.42%	6.48%	-
Net	(0.78%)	(0.75%)	9.04%	6.01%	-
MSCI World	0.53%	1.83%	10.21%	7.18%	10.53%
Domestic Equities					
Gross	1.14%	1.92%	12.94%	10.86%	14.50%
Net	1.10%	1.76%	12.76%	10.67%	14.27%
Weighted Benchmark	0.56%	0.92%	12.12%	10.13%	13.93%
Large Cap					
Gross	1.39%	3.14%	13.33%	11.28%	14.88%
Net	1.36%	3.03%	13.21%	11.15%	14.67%
Benchmark(1)	1.42%	3.87%	13.19%	10.62%	14.46%
Small Cap					
Gross	0.31%	(1.97%)	11.68%	9.38%	13.13%
Net	0.23%	(2.32%)	11.29%	9.04%	12.81%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.93%
International Equities					
Gross	(1.30%)	(1.56%)	6.80%	4.61%	7.36%
Net	(1.34%)	(1.74%)	6.62%	4.42%	7.08%
Weighted Benchmark	(1.57%)	(1.12%)	6.43%	3.13%	5.64%
Developed					
Gross	(0.90%)	(2.24%)	6.99%	4.76%	7.80%
Net	(0.96%)	(2.45%)	6.75%	4.52%	7.51%
Benchmark(2)	(0.93%)	(0.95%)	6.49%	3.25%	6.06%
Emerging Markets					
Gross	(2.85%)	0.86%	6.03%	3.64%	5.18%
Net	(2.85%)	0.86%	6.03%	3.64%	4.96%
Benchmark(3)	(4.25%)	(2.01%)	5.98%	2.33%	3.48%
Private Equities					
Net	(0.43%)	7.73%	7.54%	1.81%	4.36%

(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 6/3016; 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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Global Fixed Income					
Gross	2.04%	9.62%	5.50%	4.93%	-
Net	2.01%	9.46%	5.30%	4.71%	-
Weighted Benchmark	1.99%	9.14%	3.71%	3.65%	-
Domestic Fixed Income					
Gross	2.04%	9.62%	5.52%	5.22%	6.07%
Net	2.01%	9.46%	5.35%	5.02%	5.92%
Weighted Benchmark	1.99%	9.14%	3.65%	3.82%	4.54%
Inv. Grade Fixed Income					
Gross	2.92%	11.29%	5.00%	4.92%	5.25%
Net	2.90%	11.18%	4.89%	4.80%	5.10%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.45%
Below Inv. Grade Fixed Income					
Gross	0.13%	6.00%	7.07%	6.13%	8.34%
Net	0.06%	5.71%	6.74%	5.76%	7.94%
Blmbg HY Corp 2% Issue	1.33%	6.35%	6.07%	5.38%	7.38%
Global Real Assets					
Gross	0.28%	5.56%	6.06%	7.02%	-
Net	0.23%	5.10%	5.63%	6.57%	-
Weighted Benchmark	1.12%	4.82%	5.16%	5.99%	-
Real Estate					
Gross	0.40%	6.13%	7.75%	10.11%	12.64%
Net	0.31%	5.57%	7.24%	9.56%	12.09%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	10.38%
Other Real Assets					
Gross	0.10%	4.68%	-	-	-
Net	0.11%	4.37%	-	-	-
Weighted Benchmark	0.76%	3.05%	-	-	-
Infrastructure					
Gross	0.14%	4.86%	7.82%	4.91%	-
Net	0.16%	4.39%	7.33%	4.39%	-
Benchmark(1)	0.97%	3.44%	3.13%	1.98%	-
Timber					
Net	0.00%	4.10%	(2.78%)	(0.07%)	-
NCREIF Timberland Index	0.18%	2.10%	3.12%	4.36%	4.74%
Cash & Equivalents - Net	**0.55%**	**2.35%**	**1.65%**	**1.08%**	**0.63%**
3-month Treasury Bill	0.56%	2.39%	1.54%	0.98%	0.57%
Total Fund					
Gross	0.44%	3.66%	8.24%	6.79%	9.22%
Net	0.40%	3.42%	7.98%	6.51%	8.90%
Target*	0.64%	4.13%	7.59%	6.07%	8.28%

* 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 Corp 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 September 30, 2019

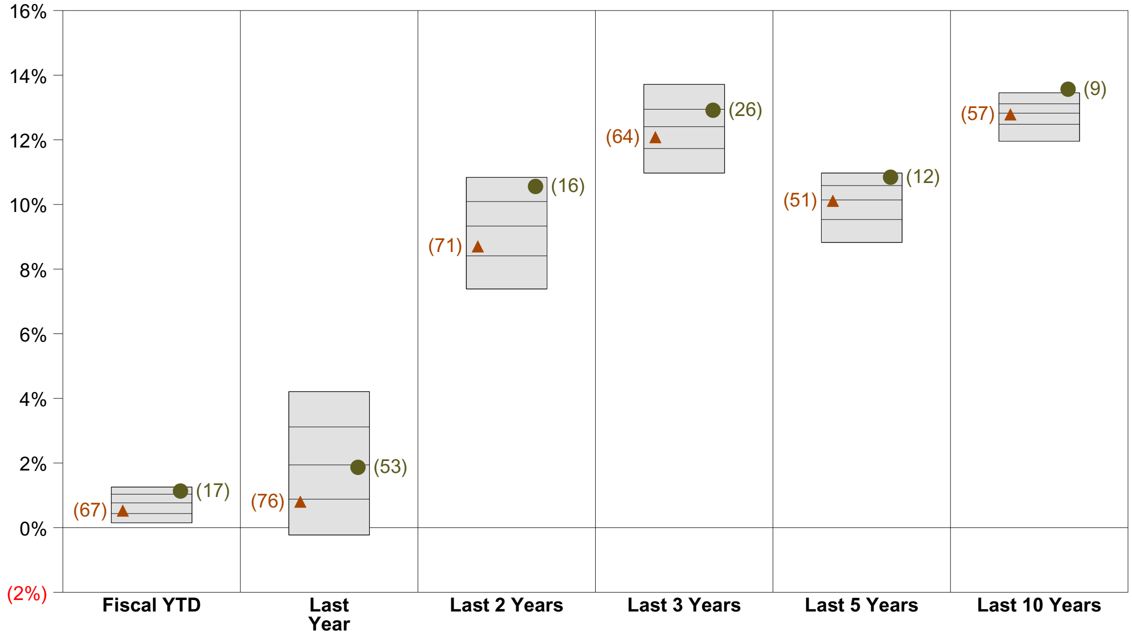
Quarterly Summary and Highlights

- Domestic Equities's portfolio posted a 1.13% return for the quarter placing it in the 17 percentile of the Public Fund - Domestic Equity group for the quarter and in the 53 percentile for the last year.
- Domestic Equities's portfolio outperformed the Domestic Equity Target by 0.61% for the quarter and outperformed the Domestic Equity Target for the year by 1.06%.

Quarterly Asset Growth

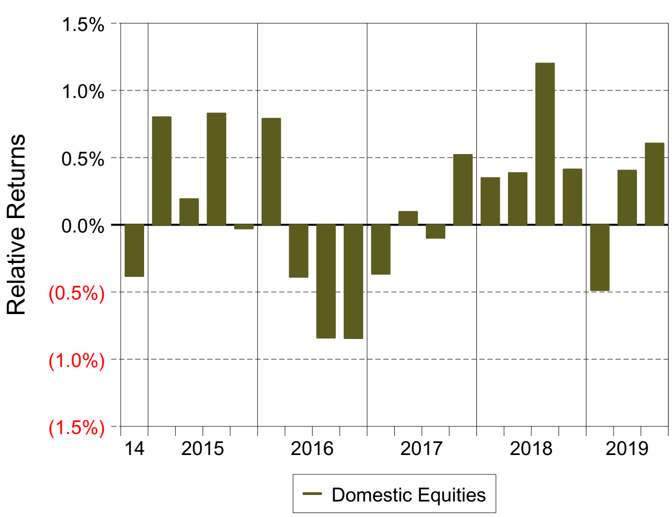
Beginning Market Value	$1,308,308,370
Net New Investment	$-10,528,593
Investment Gains/(Losses)	$14,933,343
Ending Market Value	$1,312,713,120

Performance vs Public Fund - Domestic Equity (Gross)

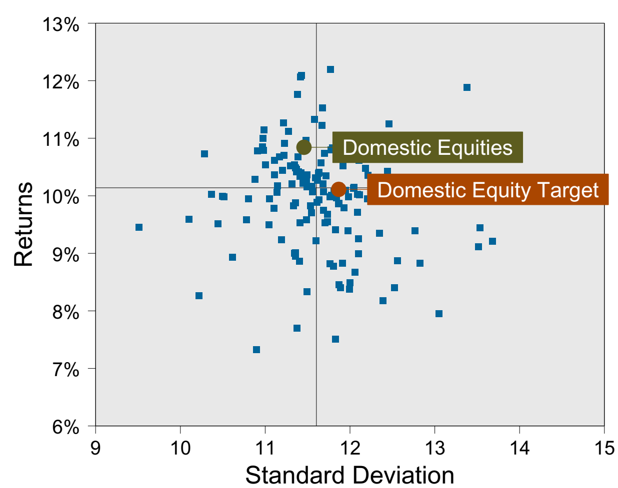


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.26	4.21	10.84	13.72	10.97	13.45
25th Percentile	1.04	3.12	10.09	12.95	10.58	13.11
Median	0.77	1.94	9.33	12.41	10.14	12.82
75th Percentile	0.44	0.88	8.41	11.73	9.53	12.48
90th Percentile	0.15	(0.23)	7.39	10.97	8.83	11.96
Domestic Equities ●	1.13	1.87	10.56	12.92	10.84	13.57
Domestic Equity Target ▲	0.53	0.80	8.70	12.08	10.11	12.79

Relative Return vs Domestic Equity Target



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



L.A. Capital
Period Ended September 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.

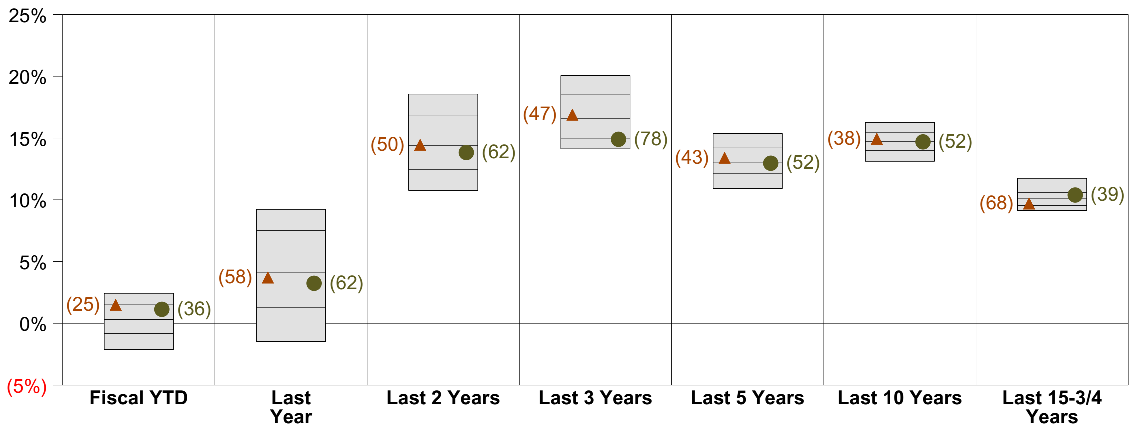
Quarterly Summary and Highlights

- L.A. Capital's portfolio posted a 1.13% return for the quarter placing it in the 36 percentile of the Callan Large Cap Growth group for the quarter and in the 62 percentile for the last year.
- L.A. Capital's portfolio underperformed the Russell 1000 Growth Index by 0.36% for the quarter and underperformed the Russell 1000 Growth Index for the year by 0.47%.

Quarterly Asset Growth

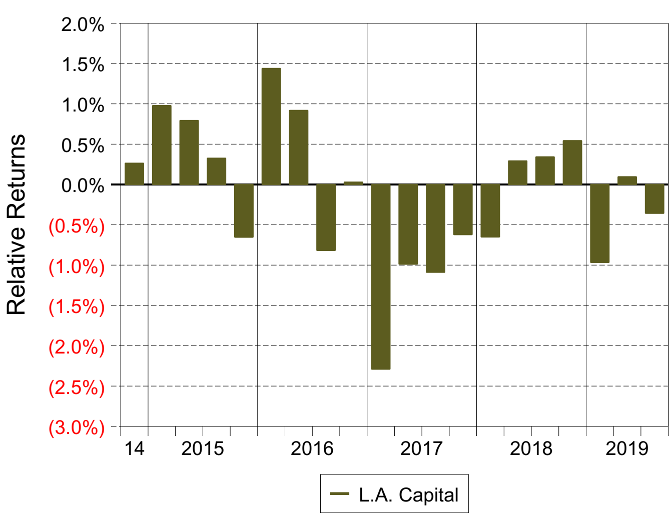
Beginning Market Value	$391,840,602
Net New Investment	$-199,765
Investment Gains/(Losses)	$4,424,145
Ending Market Value	$396,064,981

Performance vs Callan Large Cap Growth (Gross)

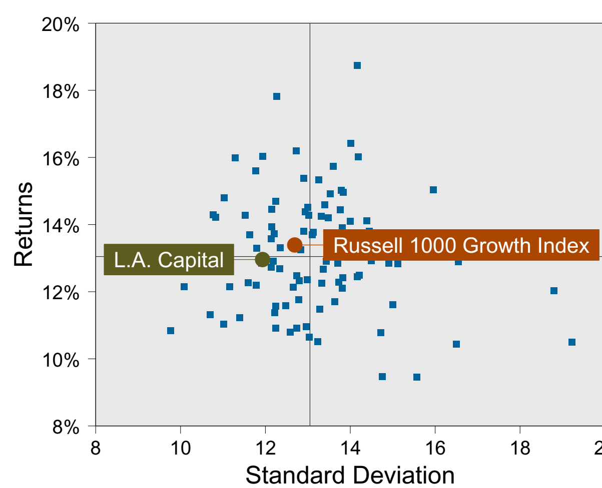


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 15-3/4 Years
10th Percentile	2.43	9.23	18.56	20.06	15.37	16.26	11.74
25th Percentile	1.50	7.52	16.86	18.49	14.27	15.46	10.58
Median	0.30	4.09	14.38	16.59	13.05	14.73	10.12
75th Percentile	(0.82)	1.29	12.46	14.99	12.14	13.99	9.54
90th Percentile	(2.13)	(1.47)	10.76	14.12	10.91	13.12	9.13
L.A. Capital ●	1.13	3.24	13.83	14.90	12.96	14.69	10.38
Russell 1000 Growth Index ▲	1.49	3.71	14.45	16.89	13.39	14.94	9.70

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 September 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.

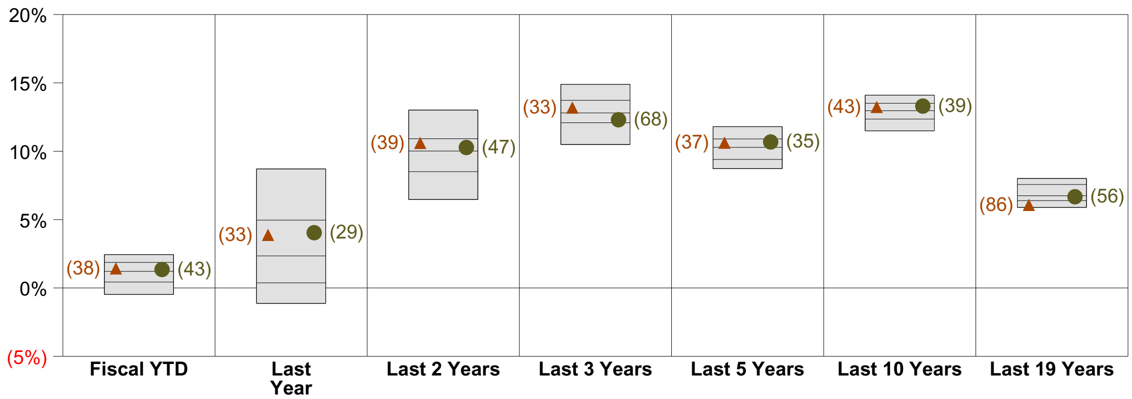
Quarterly Summary and Highlights

- LACM Enhanced Index's portfolio posted a 1.35% return for the quarter placing it in the 43 percentile of the Callan Large Cap Core group for the quarter and in the 29 percentile for the last year.
- LACM Enhanced Index's portfolio underperformed the Russell 1000 Index by 0.07% for the quarter and outperformed the Russell 1000 Index for the year by 0.17%.

Quarterly Asset Growth

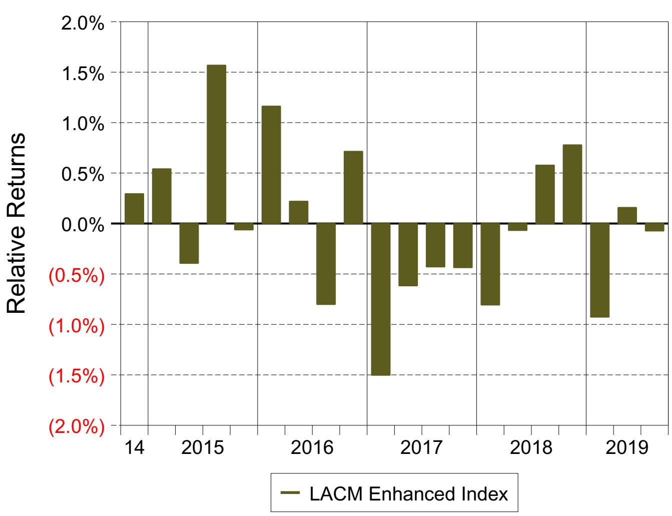
Beginning Market Value	$211,010,158
Net New Investment	$-10,056,674
Investment Gains/(Losses)	$2,928,226
Ending Market Value	$203,881,710

Performance vs Callan Large Cap Core (Gross)

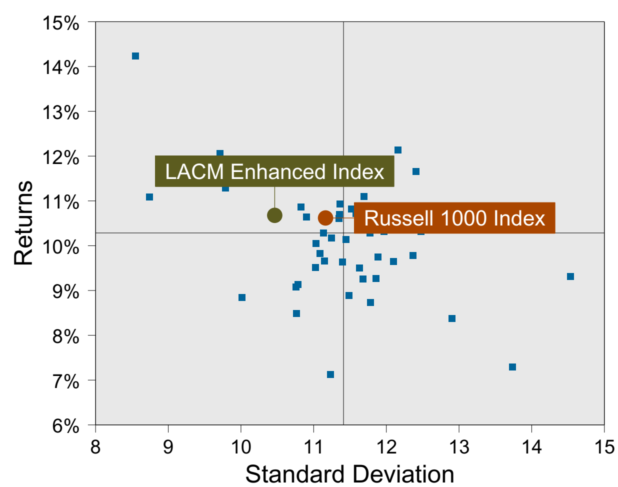


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 19 Years
10th Percentile	2.44	8.71	13.01	14.90	11.80	14.10	8.01
25th Percentile	1.87	4.96	10.91	13.73	10.90	13.51	7.57
Median	1.21	2.34	10.01	12.80	10.28	12.96	6.74
75th Percentile	0.43	0.37	8.51	12.08	9.40	12.35	6.39
90th Percentile	(0.47)	(1.13)	6.47	10.49	8.73	11.49	5.89
LACM Enhanced Index ●	1.35	4.04	10.27	12.30	10.68	13.30	6.67
Russell 1000 Index ▲	1.42	3.87	10.60	13.19	10.62	13.23	6.07

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 September 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.

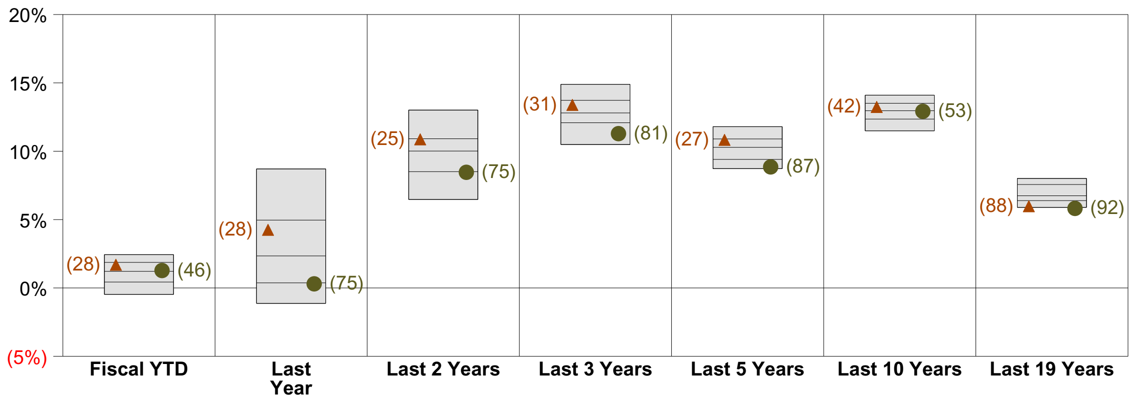
Quarterly Summary and Highlights

- Northern Trust AM Enh S&P500's portfolio posted a 1.27% return for the quarter placing it in the 46 percentile of the Callan Large Cap Core group for the quarter and in the 75 percentile for the last year.
- Northern Trust AM Enh S&P500's portfolio underperformed the S&P 500 Index by 0.42% for the quarter and underperformed the S&P 500 Index for the year by 3.95%.

Quarterly Asset Growth

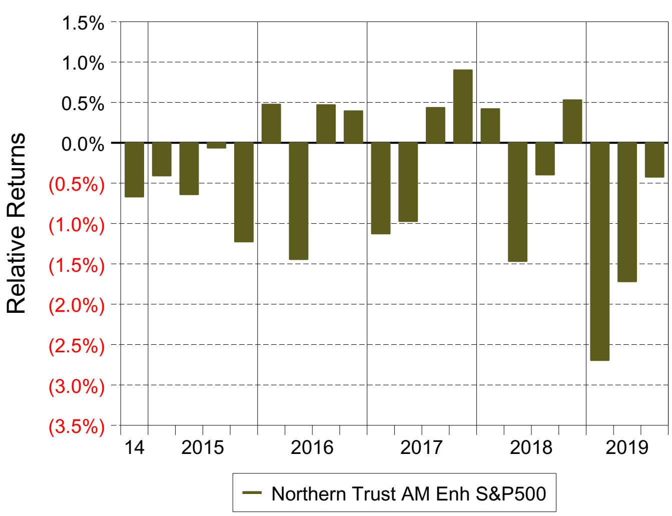
Beginning Market Value	$199,292,648
Net New Investment	$0
Investment Gains/(Losses)	$2,540,396
Ending Market Value	$201,833,044

Performance vs Callan Large Cap Core (Gross)

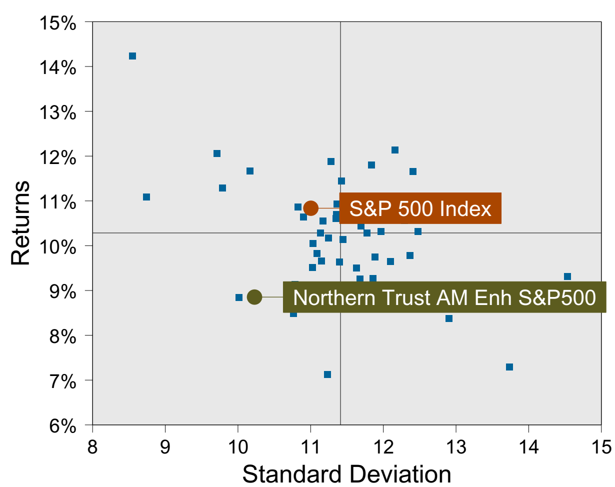


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 19 Years
10th Percentile	2.44	8.71	13.01	14.90	11.80	14.10	8.01
25th Percentile	1.87	4.96	10.91	13.73	10.90	13.51	7.57
Median	1.21	2.34	10.01	12.80	10.28	12.96	6.74
75th Percentile	0.43	0.37	8.51	12.08	9.40	12.35	6.39
90th Percentile	(0.47)	(1.13)	6.47	10.49	8.73	11.49	5.89
Northern Trust AM Enh S&P500 ●	1.27	0.30	8.46	11.29	8.85	12.92	5.82
S&P 500 Index ▲	1.70	4.25	10.87	13.39	10.84	13.24	5.98

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 September 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.

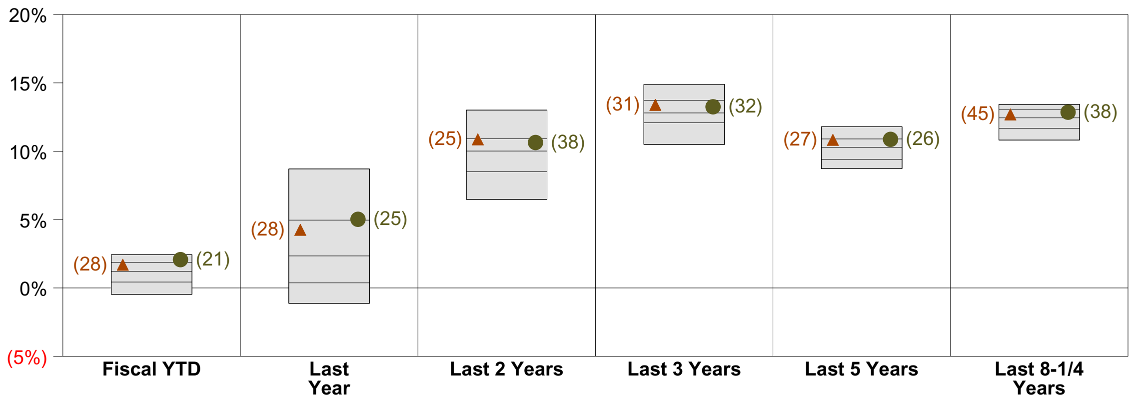
Quarterly Summary and Highlights

- Parametric Clifton Enh S&P's portfolio posted a 2.07% return for the quarter placing it in the 21 percentile of the Callan Large Cap Core group for the quarter and in the 25 percentile for the last year.
- Parametric Clifton Enh S&P's portfolio outperformed the S&P 500 Index by 0.37% for the quarter and outperformed the S&P 500 Index for the year by 0.77%.

Quarterly Asset Growth

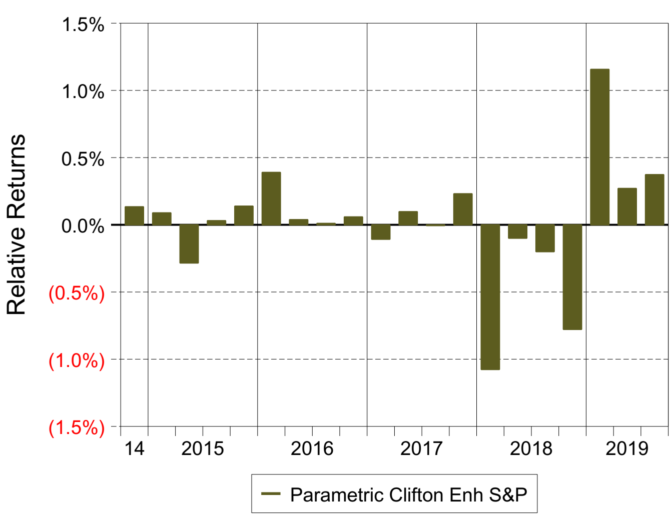
Beginning Market Value	$196,329,584
Net New Investment	$0
Investment Gains/(Losses)	$4,067,017
Ending Market Value	$200,396,601

Performance vs Callan Large Cap Core (Gross)

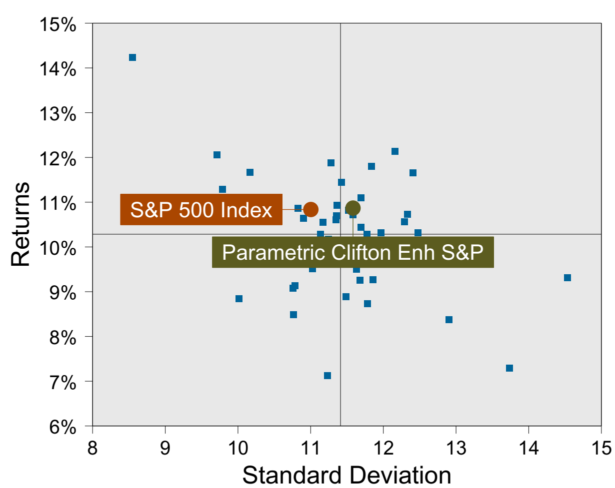


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 8-1/4 Years
10th Percentile	2.44	8.71	13.01	14.90	11.80	13.43
25th Percentile	1.87	4.96	10.91	13.73	10.90	13.03
Median	1.21	2.34	10.01	12.80	10.28	12.44
75th Percentile	0.43	0.37	8.51	12.08	9.40	11.68
90th Percentile	(0.47)	(1.13)	6.47	10.49	8.73	10.82
Parametric Clifton Enh S&P ●	2.07	5.02	10.64	13.25	10.87	12.85
S&P 500 Index ▲	1.70	4.25	10.87	13.39	10.84	12.69

Relative Return vs S&P 500 Index



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



Atlanta Capital
Period Ended September 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.

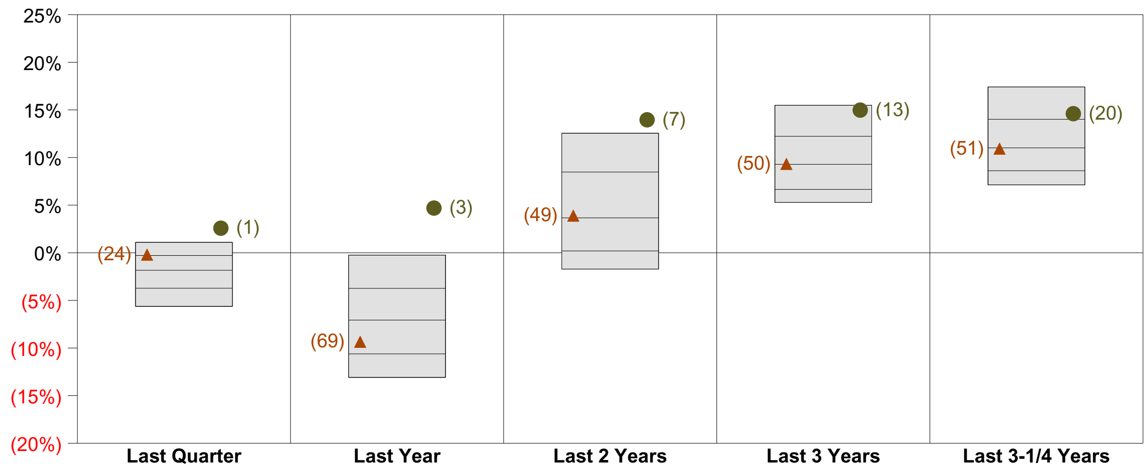
Quarterly Summary and Highlights

- Atlanta Capital's portfolio posted a 2.58% return for the quarter placing it in the 1 percentile of the Callan Small Capitalization group for the quarter and in the 3 percentile for the last year.
- Atlanta Capital's portfolio outperformed the S&P 600 Small Cap Index by 2.78% for the quarter and outperformed the S&P 600 Small Cap Index for the year by 14.04%.

Quarterly Asset Growth

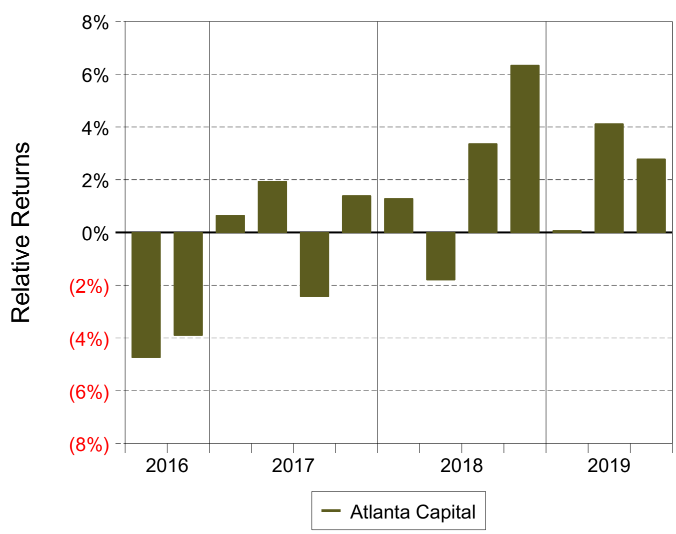
Beginning Market Value	$156,435,409
Net New Investment	$-272,153
Investment Gains/(Losses)	$4,041,127
Ending Market Value	$160,204,382

Performance vs Callan Small Capitalization (Gross)

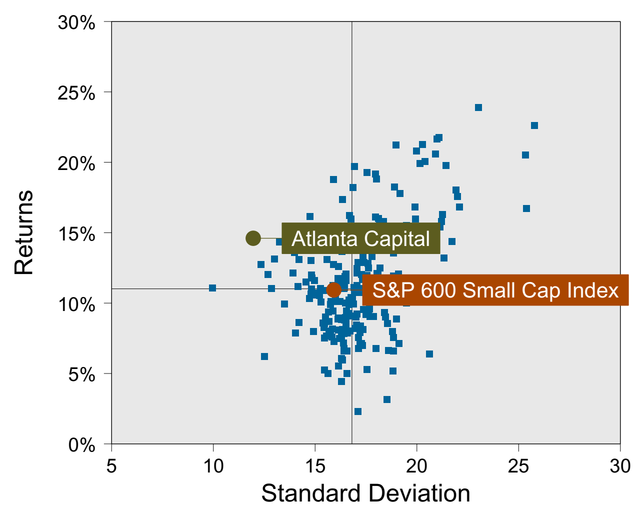


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 3-1/4 Years
10th Percentile	1.10	(0.24)	12.55	15.48	17.41
25th Percentile	(0.29)	(3.74)	8.47	12.23	14.01
Median	(1.84)	(7.07)	3.67	9.29	11.01
75th Percentile	(3.72)	(10.61)	0.19	6.65	8.62
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	7.13
Atlanta Capital ●	2.58	4.69	13.96	14.98	14.60
S&P 600 Small Cap Index ▲	(0.20)	(9.34)	3.90	9.33	10.93

Relative Return vs S&P 600 Small Cap Index



Callan Small Capitalization (Gross)
Annualized Three and One-Quarter Year Risk vs Return



Parametric Clifton Enh SmCap
Period Ended September 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.

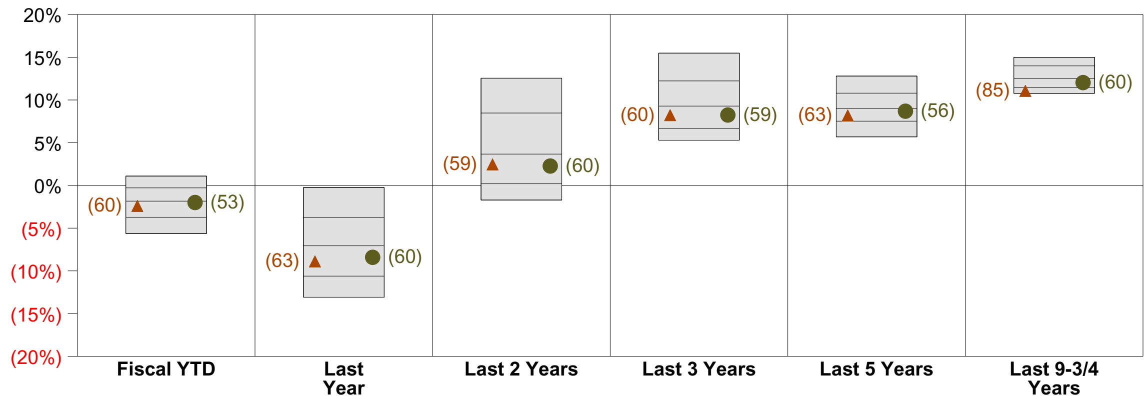
Quarterly Summary and Highlights

- Parametric Clifton Enh SmCap's portfolio posted a (2.00)% return for the quarter placing it in the 53 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 0.40% for the quarter and outperformed the Russell 2000 Index for the year by 0.47%.

Quarterly Asset Growth

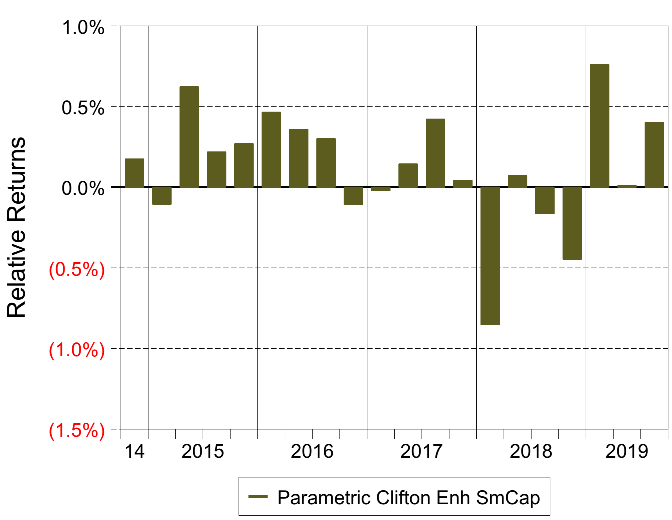
Beginning Market Value	$153,399,970
Net New Investment	$0
Investment Gains/(Losses)	$-3,067,567
Ending Market Value	$150,332,403

Performance vs Callan Small Capitalization (Gross)

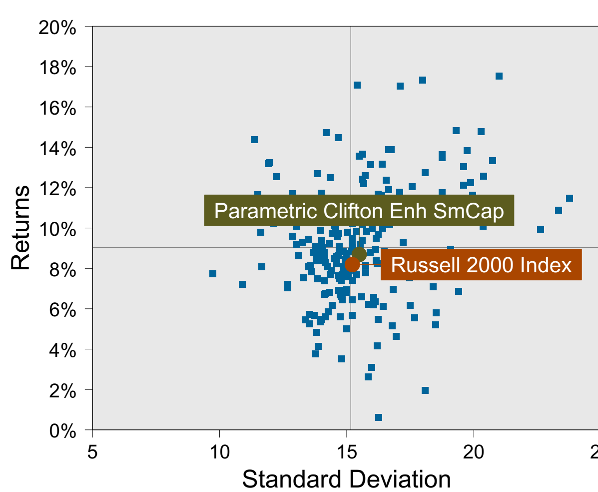


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 9-3/4 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	14.99
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	13.99
Median	(1.84)	(7.07)	3.67	9.29	9.02	12.53
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	11.45
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	10.77
Parametric Clifton Enh SmCap ●	(2.00)	(8.41)	2.27	8.24	8.69	12.03
Russell 2000 Index ▲	(2.40)	(8.89)	2.47	8.23	8.19	11.06

Relative Return vs Russell 2000 Index



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



International Equities
Period Ended September 30, 2019

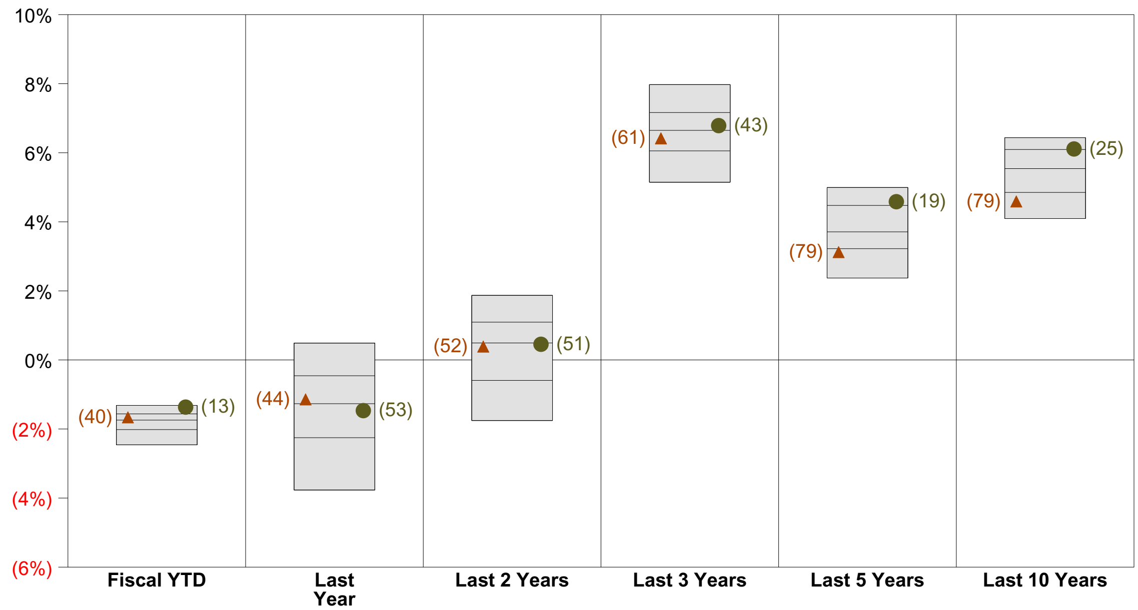
Quarterly Summary and Highlights

- International Equities's portfolio posted a (1.37)% return for the quarter placing it in the 13 percentile of the Public Fund - International Equity group for the quarter and in the 53 percentile for the last year.
- International Equities's portfolio outperformed the International Equity Target by 0.30% for the quarter and underperformed the International Equity Target for the year by 0.33%.

Quarterly Asset Growth

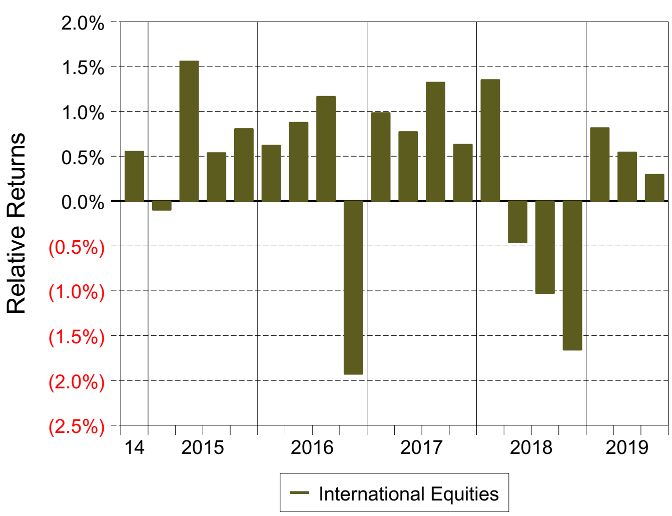
Beginning Market Value	$940,770,294
Net New Investment	$-10,368,956
Investment Gains/(Losses)	$-12,851,284
Ending Market Value	$917,550,055

Performance vs Public Fund - International Equity (Gross)

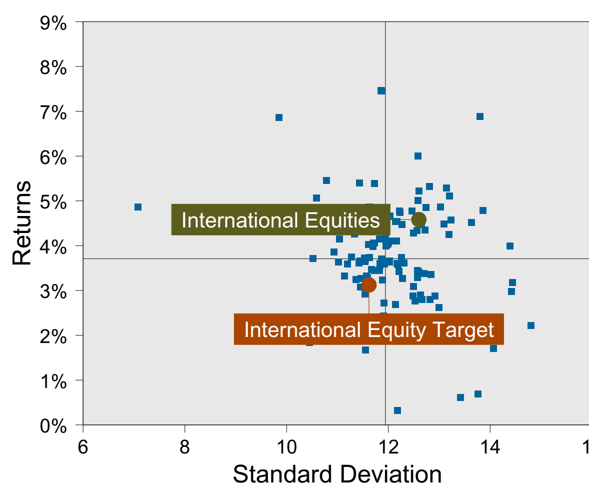


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(1.32)	0.49	1.87	7.97	4.99	6.44
25th Percentile	(1.56)	(0.46)	1.09	7.16	4.47	6.09
Median	(1.74)	(1.27)	0.49	6.65	3.71	5.54
75th Percentile	(2.02)	(2.25)	(0.59)	6.06	3.22	4.85
90th Percentile	(2.46)	(3.77)	(1.75)	5.15	2.37	4.09
International Equities ●	(1.37)	(1.47)	0.45	6.79	4.58	6.11
International Equity Target ▲	(1.66)	(1.14)	0.39	6.42	3.12	4.59

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 September 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.

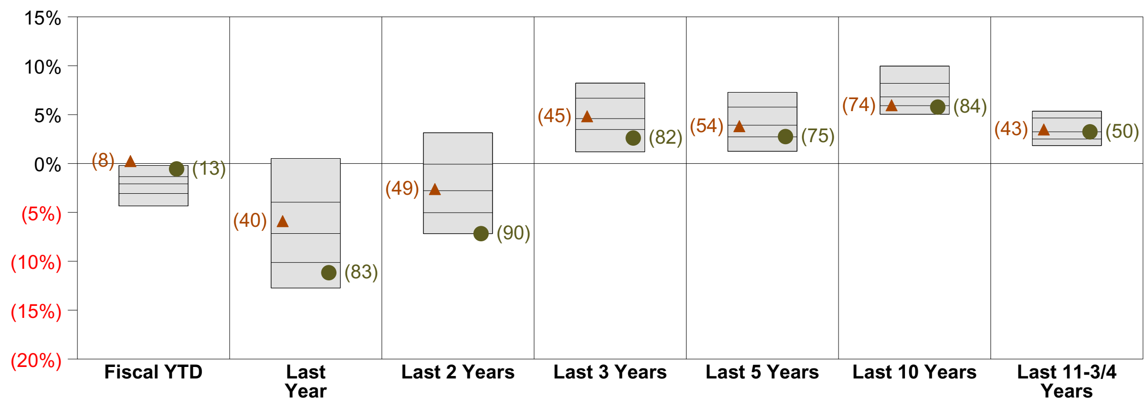
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a (0.55)% return for the quarter placing it in the 13 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 83 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.81% for the quarter and underperformed the World ex US SC Value for the year by 5.28%.

Quarterly Asset Growth

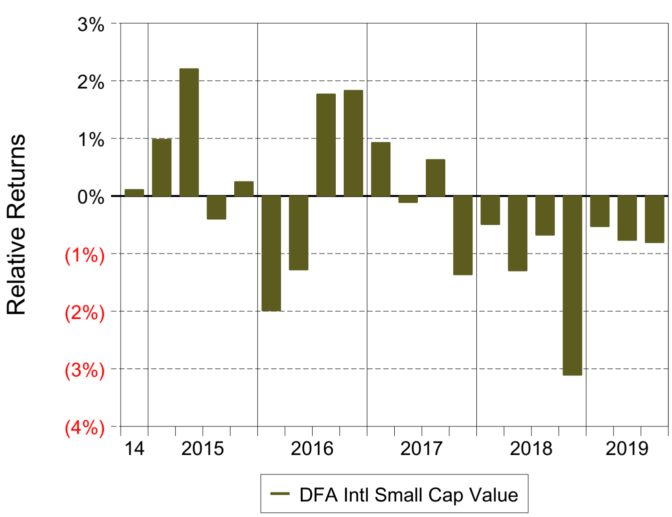
Beginning Market Value	$75,373,902
Net New Investment	$0
Investment Gains/(Losses)	$-417,285
Ending Market Value	$74,956,617

Performance vs Callan International Small Cap Mut Funds (Net)

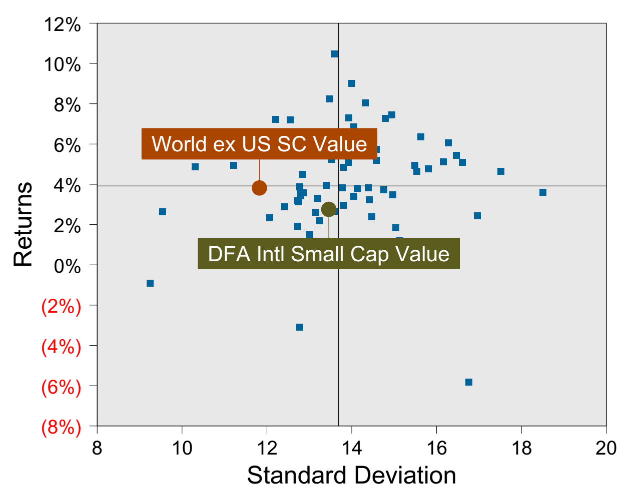


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 11-3/4 Years
10th Percentile	(0.20)	0.52	3.15	8.23	7.28	9.97	5.35
25th Percentile	(1.34)	(3.96)	(0.07)	6.68	5.77	8.20	4.65
Median	(2.08)	(7.16)	(2.78)	4.60	3.92	6.81	3.24
75th Percentile	(3.07)	(10.12)	(5.03)	3.48	2.73	5.92	2.51
90th Percentile	(4.34)	(12.74)	(7.17)	1.19	1.25	5.03	1.83
DFA Intl Small Cap Value ●	(0.55)	(11.17)	(7.17)	2.61	2.75	5.77	3.24
World ex US SC Value ▲	0.25	(5.89)	(2.61)	4.83	3.82	5.96	3.49

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 September 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.

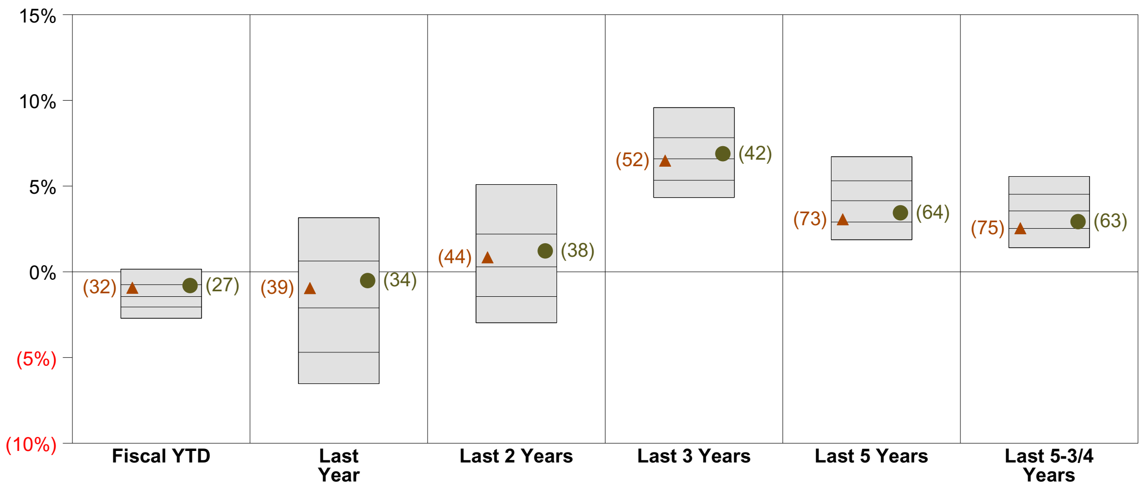
Quarterly Summary and Highlights

- Northern Tr AM Wrld ex US's portfolio posted a (0.80)% return for the quarter placing it in the 27 percentile of the Callan Non-US Equity group for the quarter and in the 34 percentile for the last year.
- Northern Tr AM Wrld ex US's portfolio outperformed the MSCI World ex US by 0.13% for the quarter and outperformed the MSCI World ex US for the year by 0.44%.

Quarterly Asset Growth

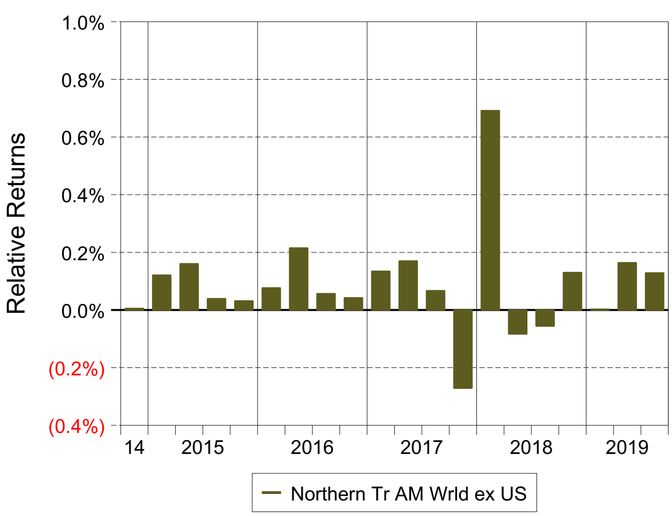
Beginning Market Value	$353,921,685
Net New Investment	$-26,051
Investment Gains/(Losses)	$-2,837,764
Ending Market Value	$351,057,870

Performance vs Callan Non-US Equity (Gross)

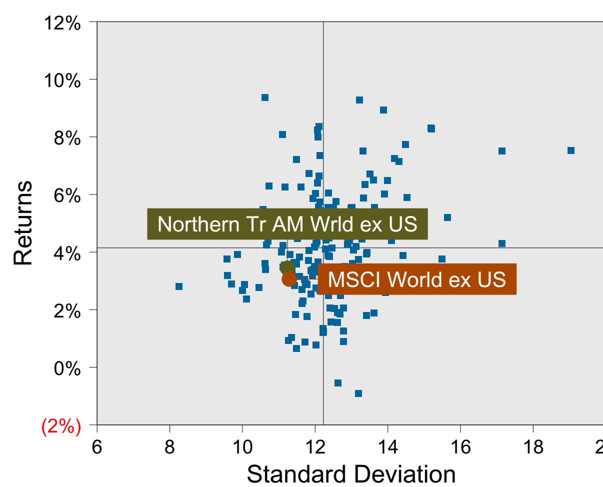


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	0.15	3.16	5.09	9.58	6.72	5.56
25th Percentile	(0.75)	0.63	2.20	7.82	5.31	4.52
Median	(1.44)	(2.10)	0.29	6.59	4.15	3.55
75th Percentile	(2.05)	(4.70)	(1.44)	5.34	2.90	2.53
90th Percentile	(2.71)	(6.52)	(2.97)	4.33	1.87	1.41
Northern Tr AM Wrld ex US ●	(0.80)	(0.51)	1.22	6.89	3.44	2.93
MSCI World ex US ▲	(0.93)	(0.95)	0.84	6.49	3.06	2.54

Relative Return vs MSCI World ex US



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



Wellington Management
Period Ended September 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.

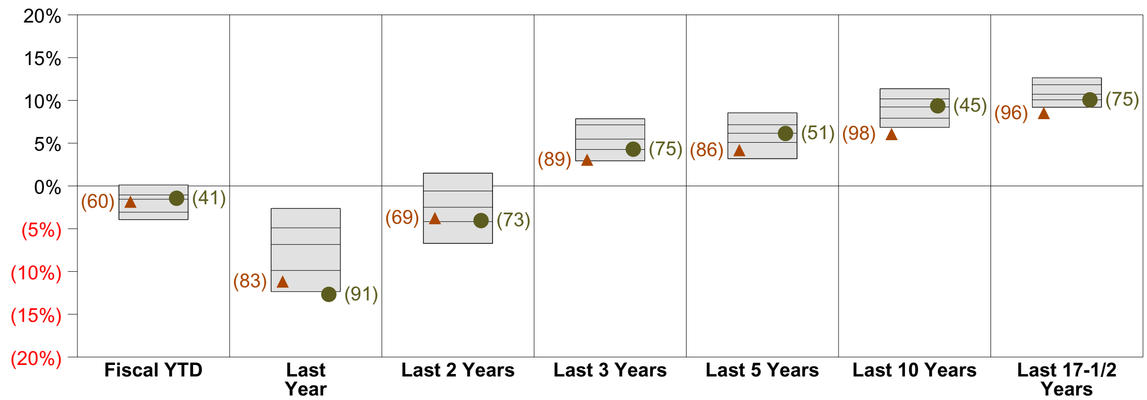
Quarterly Summary and Highlights

- Wellington Management's portfolio posted a (1.44)% return for the quarter placing it in the 41 percentile of the Callan International Small Cap group for the quarter and in the 91 percentile for the last year.
- Wellington Management's portfolio outperformed the S&P BMI EPAC <$2 B by 0.41% for the quarter and underperformed the S&P BMI EPAC <$2 B for the year by 1.49%.

Quarterly Asset Growth

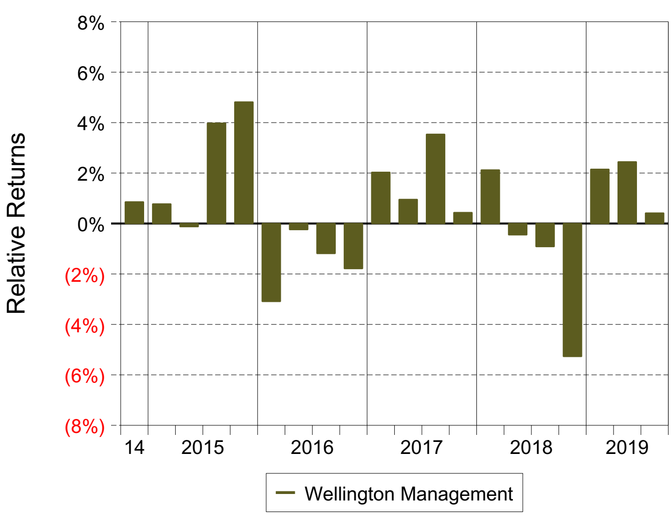
Beginning Market Value	$73,427,457
Net New Investment	$-155,953
Investment Gains/(Losses)	$-1,055,999
Ending Market Value	$72,215,506

Performance vs Callan International Small Cap (Gross)

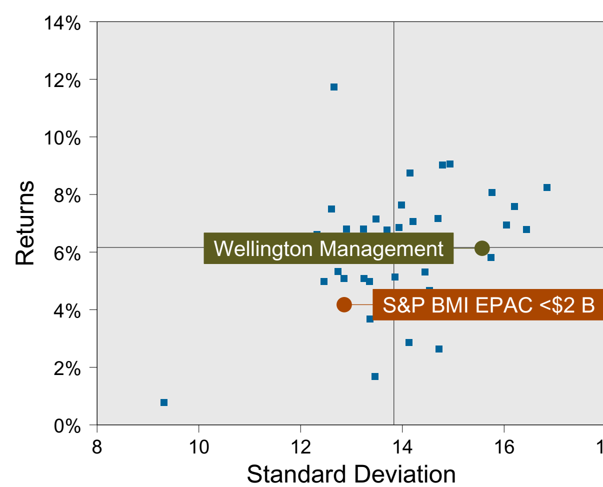


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 17-1/2 Years
10th Percentile	0.12	(2.63)	1.50	7.85	8.55	11.36	12.64
25th Percentile	(1.05)	(4.90)	(0.59)	7.14	7.16	10.18	11.83
Median	(1.55)	(6.84)	(2.49)	5.48	6.16	9.23	10.72
75th Percentile	(3.07)	(9.88)	(4.17)	4.26	5.09	7.92	10.07
90th Percentile	(3.93)	(12.35)	(6.71)	2.93	3.19	6.85	9.20
Wellington Management ●	(1.44)	(12.67)	(4.05)	4.30	6.13	9.37	10.07
S&P BMI EPAC <$2 B ▲	(1.85)	(11.18)	(3.77)	3.05	4.17	6.05	8.51

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



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



William Blair
Period Ended September 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.

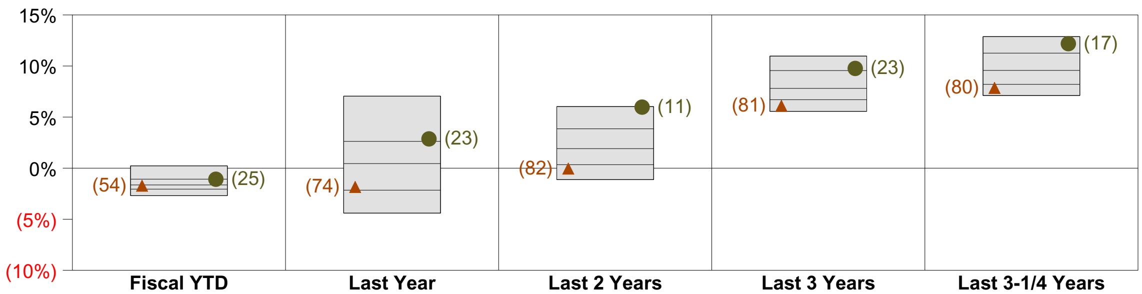
Quarterly Summary and Highlights

- William Blair's portfolio posted a (1.08)% return for the quarter placing it in the 25 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 23 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 0.63% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 4.71%.

Quarterly Asset Growth

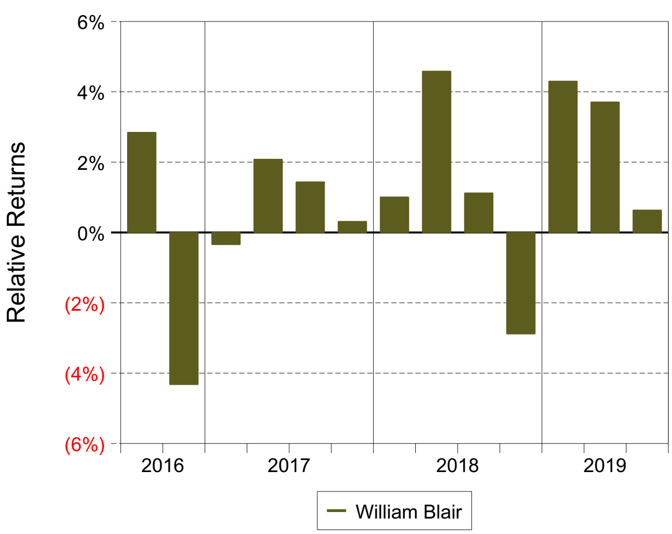
Beginning Market Value	$220,020,675
Net New Investment	$-10,186,952
Investment Gains/(Losses)	$-2,323,778
Ending Market Value	$207,509,946

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

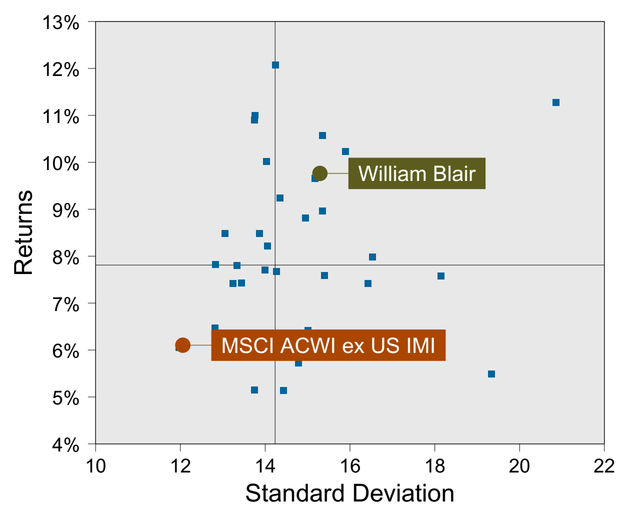


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 3-1/4 Years
10th Percentile	0.23	7.05	6.03	10.97	12.88
25th Percentile	(1.08)	2.62	3.85	9.55	11.26
Median	(1.64)	0.45	1.91	7.81	9.57
75th Percentile	(2.05)	(2.16)	0.34	6.70	8.21
90th Percentile	(2.69)	(4.40)	(1.12)	5.56	7.11
William Blair ●	(1.08)	2.87	5.97	9.76	12.19
MSCI ACWI ex US IMI ▲	(1.72)	(1.84)	(0.04)	6.10	7.86

Relative Return vs MSCI ACWI ex US IMI



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



Axiom Emerging Markets
Period Ended September 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.

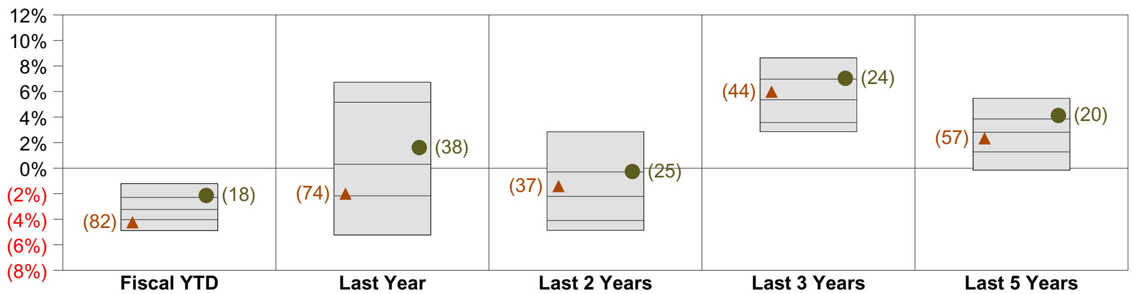
Quarterly Summary and Highlights

- Axiom Emerging Markets's portfolio posted a (2.14)% return for the quarter placing it in the 18 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 38 percentile for the last year.
- Axiom Emerging Markets's portfolio outperformed the MSCI EM by 2.11% for the quarter and outperformed the MSCI EM for the year by 3.62%.

Quarterly Asset Growth

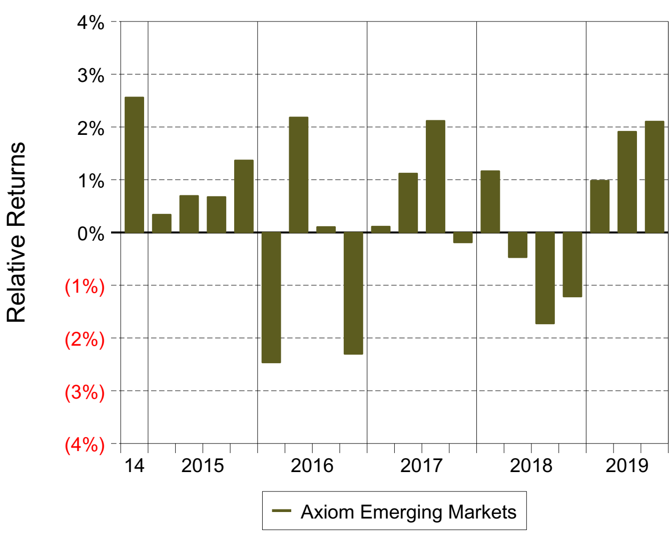
Beginning Market Value	$158,454,366
Net New Investment	$-0
Investment Gains/(Losses)	$-3,389,680
Ending Market Value	$155,064,686

Performance vs Callan Emerging Markets Equity Mut Funds (Net)

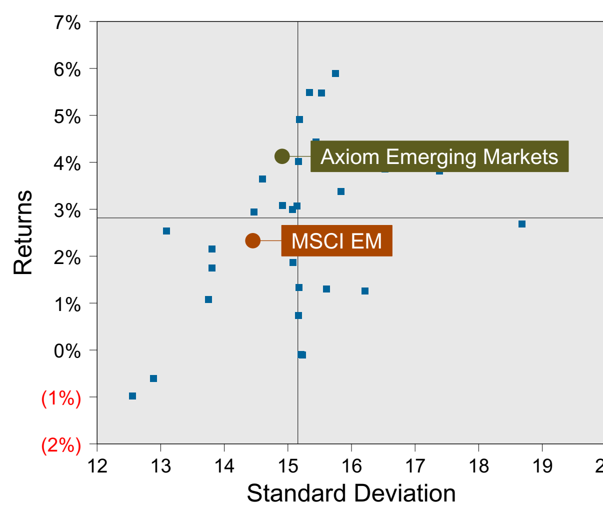


		Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years
10th Percentile		(1.21)	6.73	2.85	8.64	5.48
25th Percentile		(2.29)	5.16	(0.30)	6.97	3.85
Median		(3.23)	0.31	(2.21)	5.36	2.81
75th Percentile		(4.03)	(2.17)	(4.10)	3.57	1.27
90th Percentile		(4.89)	(5.24)	(4.87)	2.85	(0.15)
Axiom Emerging Markets	●	(2.14)	1.61	(0.26)	7.04	4.13
MSCI EM	▲	(4.25)	(2.01)	(1.41)	5.98	2.33

Relative Return vs MSCI EM



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



DFA Emerging Markets
Period Ended September 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.

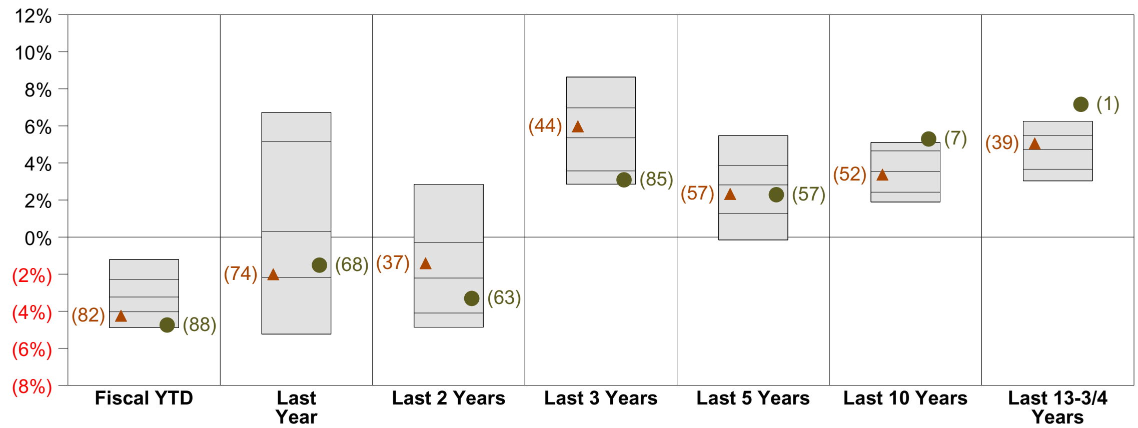
Quarterly Summary and Highlights

- DFA Emerging Markets's portfolio posted a (4.75)% return for the quarter placing it in the 88 percentile of the Callan Emerging Markets Equity Mut Funds group for the quarter and in the 68 percentile for the last year.
- DFA Emerging Markets's portfolio underperformed the MSCI EM by 0.50% for the quarter and outperformed the MSCI EM for the year by 0.49%.

Quarterly Asset Growth

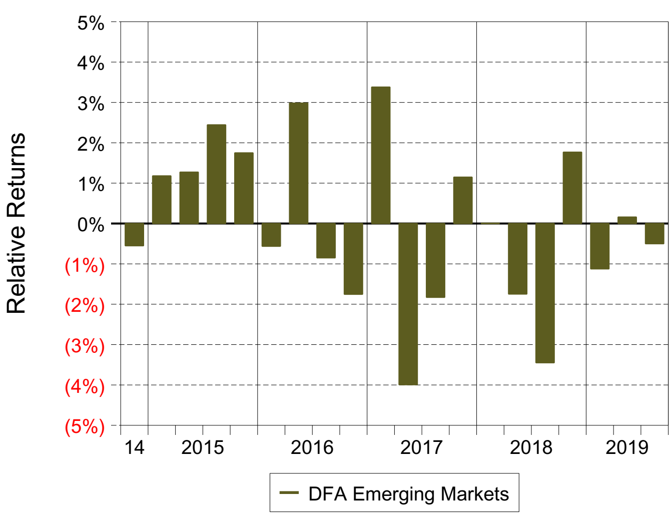
Beginning Market Value	$59,572,209
Net New Investment	$0
Investment Gains/(Losses)	$-2,826,779
Ending Market Value	$56,745,430

Performance vs Callan Emerging Markets Equity Mut Funds (Net)

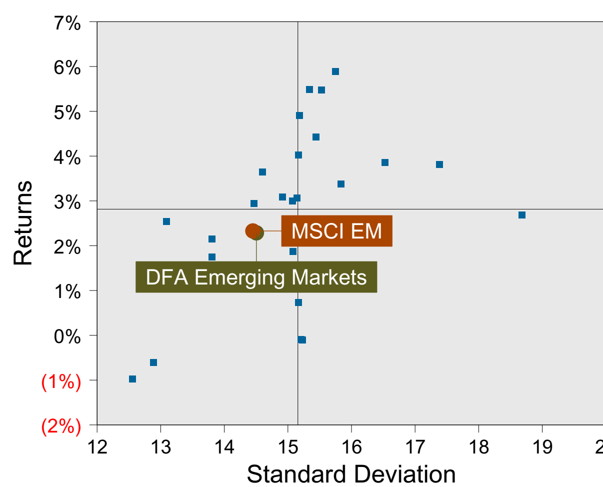


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 13-3/4 Years
10th Percentile	(1.21)	6.73	2.85	8.64	5.48	5.11	6.25
25th Percentile	(2.29)	5.16	(0.30)	6.97	3.85	4.65	5.48
Median	(3.23)	0.31	(2.21)	5.36	2.81	3.53	4.72
75th Percentile	(4.03)	(2.17)	(4.10)	3.57	1.27	2.42	3.66
90th Percentile	(4.89)	(5.24)	(4.87)	2.85	(0.15)	1.89	3.03
DFA Emerging Markets ●	(4.75)	(1.51)	(3.31)	3.09	2.29	5.29	7.16
MSCI EM ▲	(4.25)	(2.01)	(1.41)	5.98	2.33	3.37	5.05

Relative Return vs MSCI EM



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



EPOCH Investment
Period Ended September 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.

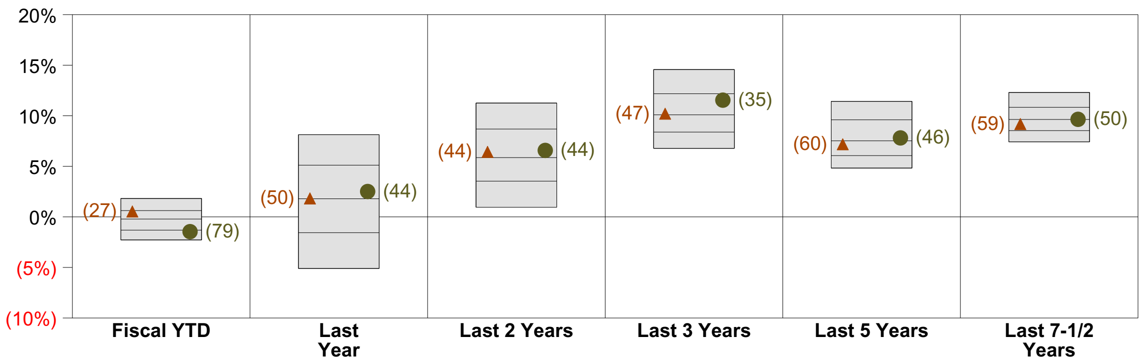
Quarterly Summary and Highlights

- EPOCH Investment's portfolio posted a (1.46)% return for the quarter placing it in the 79 percentile of the Callan Global Equity group for the quarter and in the 44 percentile for the last year.
- EPOCH Investment's portfolio underperformed the MSCI World by 2.00% for the quarter and outperformed the MSCI World for the year by 0.68%.

Quarterly Asset Growth

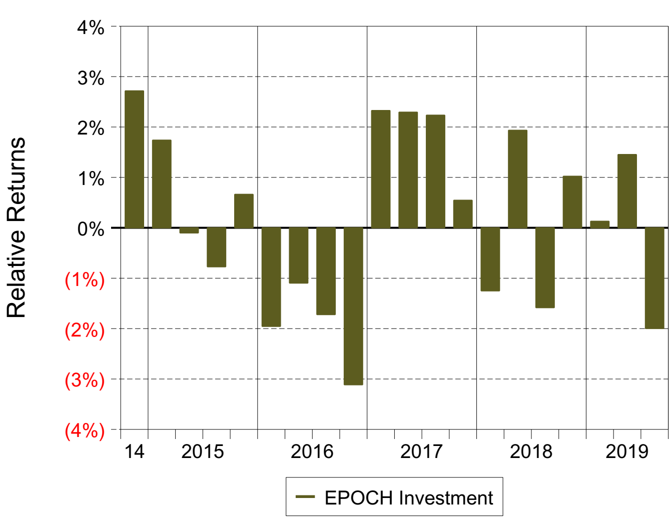
Beginning Market Value	$446,997,953
Net New Investment	$-707,008
Investment Gains/(Losses)	$-6,520,625
Ending Market Value	$439,770,320

Performance vs Callan Global Equity (Gross)

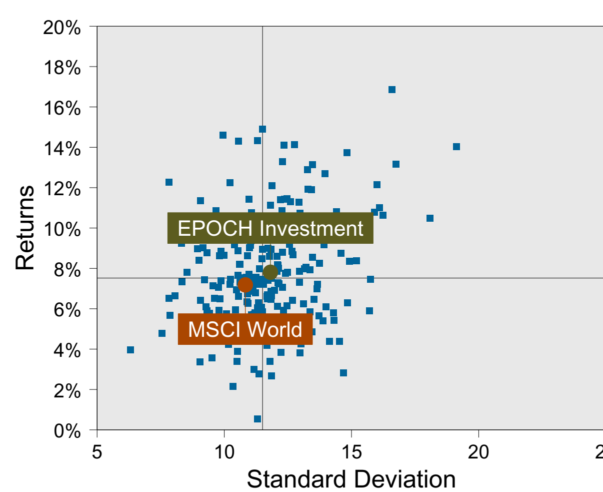


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7-1/2 Years
10th Percentile	1.82	8.13	11.26	14.57	11.43	12.30
25th Percentile	0.62	5.11	8.69	12.18	9.60	10.84
Median	(0.21)	1.79	5.86	10.09	7.52	9.63
75th Percentile	(1.31)	(1.56)	3.53	8.39	6.06	8.53
90th Percentile	(2.28)	(5.10)	0.95	6.78	4.83	7.42
EPOCH Investment ●	(1.46)	2.51	6.57	11.54	7.81	9.65
MSCI World ▲	0.53	1.83	6.43	10.21	7.18	9.18

Relative Return vs MSCI World



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



LSV Asset Management
Period Ended September 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. **The Benchmark is comprised of MSCI ACWI through June 30, 2019; MSCI ACWI IMI Index thereafter.**

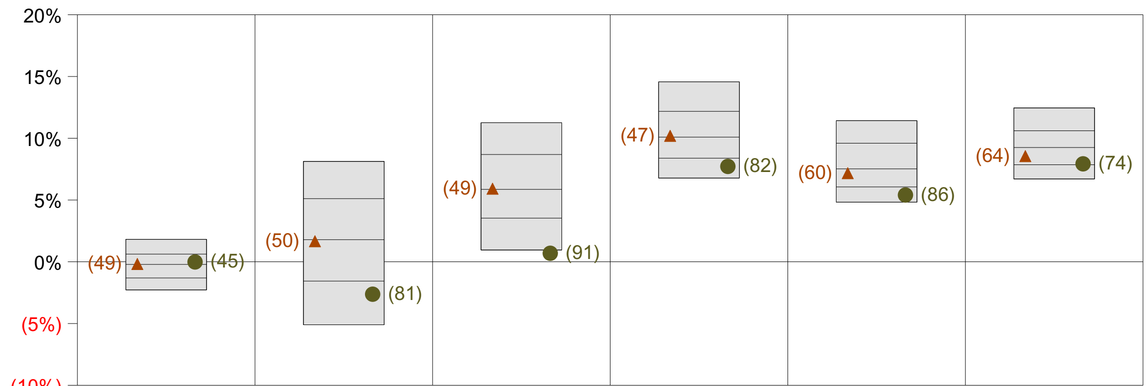
Quarterly Summary and Highlights

- LSV Asset Management's portfolio posted a (0.01)% return for the quarter placing it in the 45 percentile of the Callan Global Equity group for the quarter and in the 81 percentile for the last year.
- LSV Asset Management's portfolio outperformed the Benchmark by 0.16% for the quarter and underperformed the Benchmark for the year by 4.29%.

Quarterly Asset Growth

Beginning Market Value	$526,949,210
Net New Investment	$-10,133,781
Investment Gains/(Losses)	$-280,776
Ending Market Value	$516,534,653

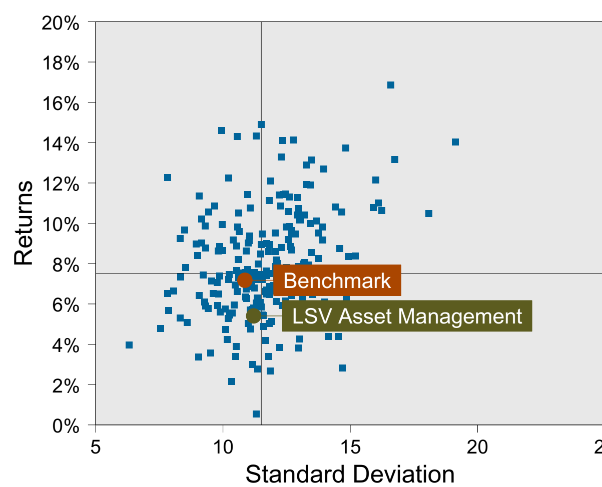
Performance vs Callan Global Equity (Gross)



	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/2 Years
10th Percentile	1.82	8.13	11.26	14.57	11.43	12.46
25th Percentile	0.62	5.11	8.69	12.18	9.60	10.61
Median	(0.21)	1.79	5.86	10.09	7.52	9.25
75th Percentile	(1.31)	(1.56)	3.53	8.39	6.06	7.86
90th Percentile	(2.28)	(5.10)	0.95	6.78	4.83	6.71
LSV Asset Management ●	(0.01)	(2.62)	0.69	7.72	5.41	7.93
Benchmark ▲	(0.18)	1.67	5.92	10.20	7.17	8.56

Relative Return vs Benchmark

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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 18-3/4 Years
Private Equity	**(0.42%)**	**7.73%**	**7.54%**	**1.81%**	**2.79%**
Adams Street Direct Co-Invest Fd	0.00%	(18.11%)	(18.03%)	(6.16%)	-
Adams Street Direct Fd 2010	0.00%	7.28%	15.51%	11.59%	-
Adams Street 1998 Partnership	(0.63%)	2.99%	2.63%	2.08%	1.88%
Adams Street 1999 Partnership	(0.56%)	(6.21%)	(0.98%)	(2.38%)	2.06%
Adams Street 2000 Partnership	(5.43%)	3.42%	6.61%	1.96%	3.70%
Adams Street 2001 Partnership	0.00%	0.14%	5.93%	1.36%	3.72%
Adams Street 2002 Partnership	(0.65%)	(11.49%)	2.71%	0.22%	-
Adams Street 2003 Partnership	(4.22%)	(4.60%)	8.81%	7.35%	-
Adams Street 2010 Partnership	0.00%	15.24%	16.98%	15.01%	-
Adams Street 2008 Fund	0.00%	17.39%	16.68%	13.83%	-
Adams Street 1999 Non-US	0.31%	1.08%	4.69%	0.95%	5.66%
Adams Street 2000 Non-US	(7.68%)	(2.01%)	6.44%	2.15%	3.30%
Adams Street 2001 Non-US	(0.29%)	16.46%	5.75%	9.19%	-
Adams Street 2002 Non-US	0.74%	(2.69%)	(0.32%)	2.95%	-
Adams Street 2003 Non-US	(0.26%)	(12.76%)	3.13%	4.65%	-
Adams Street 2004 Non-US	(2.52%)	1.20%	5.97%	1.23%	-
Adams Street 2010 Non-US	0.00%	12.20%	20.23%	13.20%	-
Adams Street 2010 NonUS Emg	0.00%	7.48%	14.05%	13.79%	-
Adams Street 2015 Global Fd	0.00%	14.41%	28.01%	-	-
Adams Street 2016 Global Fd	0.00%	10.66%	-	-	-
Adams Street 2017 Global Fd	0.00%	7.43%	-	-	-
Adams Street 2018 Global Fd	0.00%	-	-	-	-
Adams Street BVCF IV Fund	0.00%	0.95%	1.80%	1.02%	15.47%
BlackRock	(1.26%)	8.97%	-	-	-
Capital International V	0.00%	(35.80%)	(45.08%)	(36.10%)	-
Capital International VI	(0.14%)	8.11%	8.08%	0.04%	-
CorsAir III	(0.22%)	82.53%	8.57%	9.40%	-
EIG Energy Fund XIV	(0.28%)	(23.64%)	0.67%	(24.16%)	-
Lewis & Clark	0.00%	(33.88%)	10.80%	(14.73%)	-
Lewis & Clark II	0.00%	12.12%	7.83%	1.81%	-
Matlin Patterson II	(0.88%)	(3.49%)	(10.16%)	(1.43%)	-
Matlin Patterson III	0.19%	1.81%	5.56%	1.63%	-
Quantum Energy Partners	0.00%	(51.42%)	(27.73%)	(25.82%)	-
Russell 1000 Index	1.42%	3.87%	13.19%	10.62%	6.70%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	7.75%

Domestic Fixed Income
Period Ended September 30, 2019

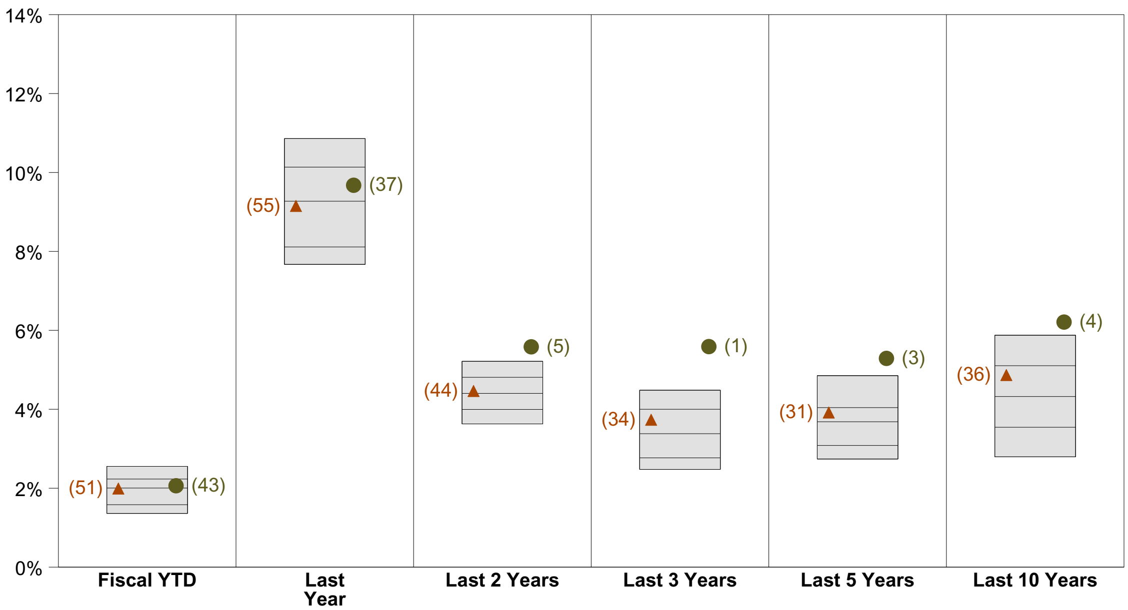
Quarterly Summary and Highlights

- Domestic Fixed Income’s portfolio posted a 2.06% return for the quarter placing it in the 43 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 37 percentile for the last year.
- Domestic Fixed Income’s portfolio outperformed the Domestic Fixed Income Target by 0.07% for the quarter and outperformed the Domestic Fixed Income Target for the year by 0.52%.

Quarterly Asset Growth

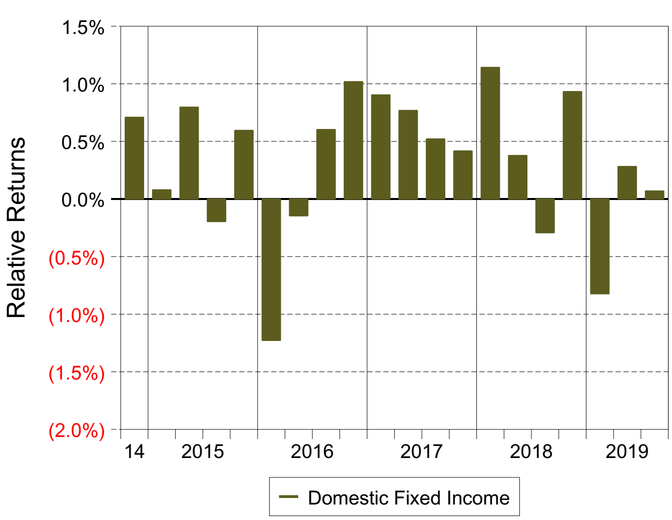
Beginning Market Value	$1,354,841,531
Net New Investment	$-6,861,553
Investment Gains/(Losses)	$28,251,473
Ending Market Value	$1,376,231,452

Performance vs Public Fund - Domestic Fixed (Gross)

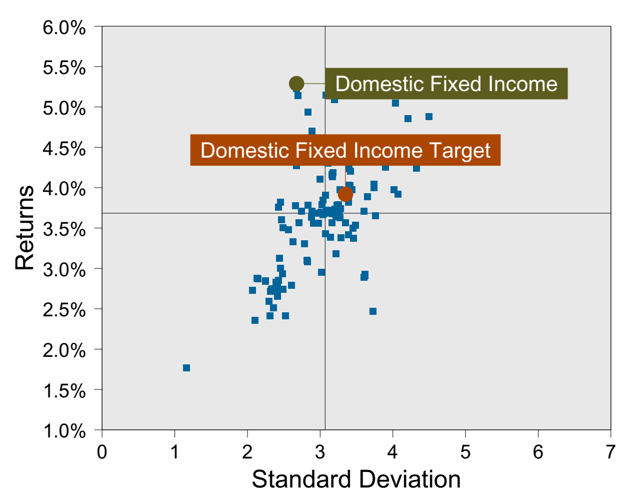


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.55	10.86	5.22	4.48	4.85	5.88
25th Percentile	2.23	10.14	4.81	4.00	4.04	5.10
Median	2.00	9.27	4.40	3.38	3.68	4.32
75th Percentile	1.58	8.11	4.00	2.77	3.08	3.54
90th Percentile	1.36	7.67	3.63	2.48	2.74	2.80
Domestic Fixed Income ●	2.06	9.68	5.58	5.59	5.29	6.21
Domestic Fixed Income Target ▲	1.99	9.15	4.46	3.73	3.92	4.87

Relative Returns vs Domestic Fixed Income Target



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



Declaration Total Return
Period Ended September 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.

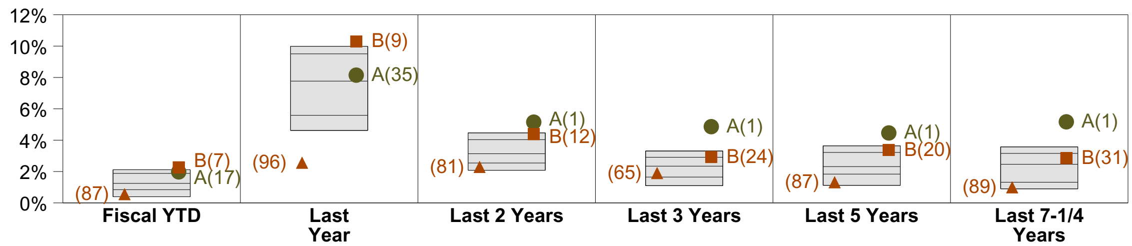
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 1.98% return for the quarter placing it in the 17 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 35 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.42% for the quarter and outperformed the LIBOR - 3 Month for the year by 5.59%.

Quarterly Asset Growth

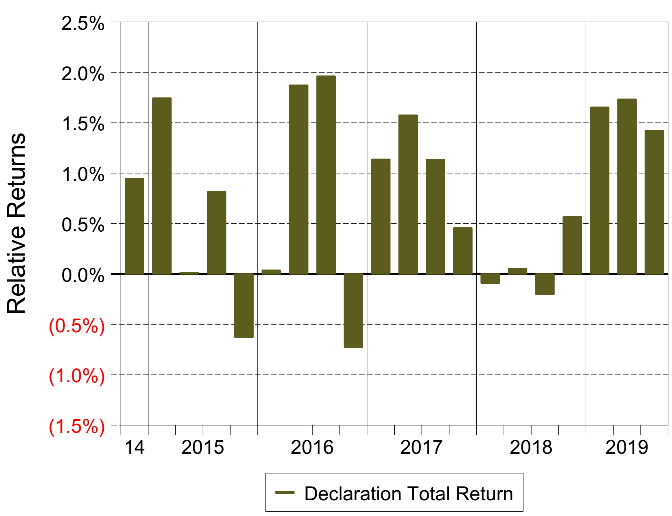
Beginning Market Value	$113,328,472
Net New Investment	$-63,857
Investment Gains/(Losses)	$2,240,234
Ending Market Value	$115,504,849

Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)

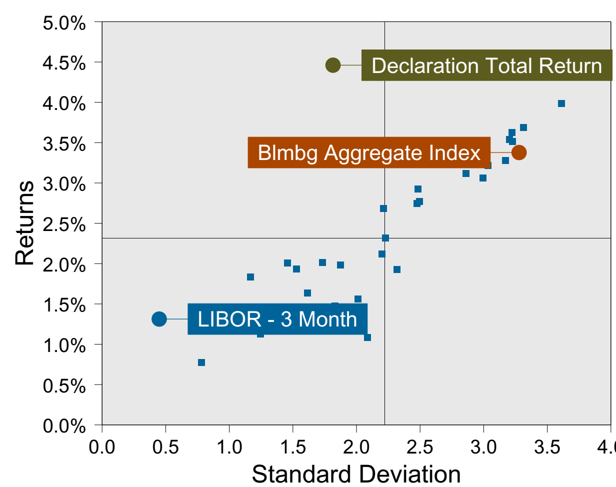


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7-1/4 Years
10th Percentile	2.12	9.99	4.47	3.31	3.64	3.57
25th Percentile	1.88	9.51	4.03	2.91	3.22	3.16
Median	1.24	7.77	3.14	2.34	2.32	2.46
75th Percentile	0.84	5.58	2.54	1.65	1.84	1.32
90th Percentile	0.39	4.62	2.08	1.10	1.12	0.90
Declaration Total Return ● A	1.98	8.15	5.15	4.86	4.46	5.17
Blmbg Aggregate Index ■ B	2.27	10.30	4.38	2.92	3.38	2.85
LIBOR - 3 Month ▲	0.55	2.56	2.29	1.90	1.31	0.99

Relative Return vs LIBOR - 3 Month



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



PIMCO DiSCO II
Period Ended September 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.

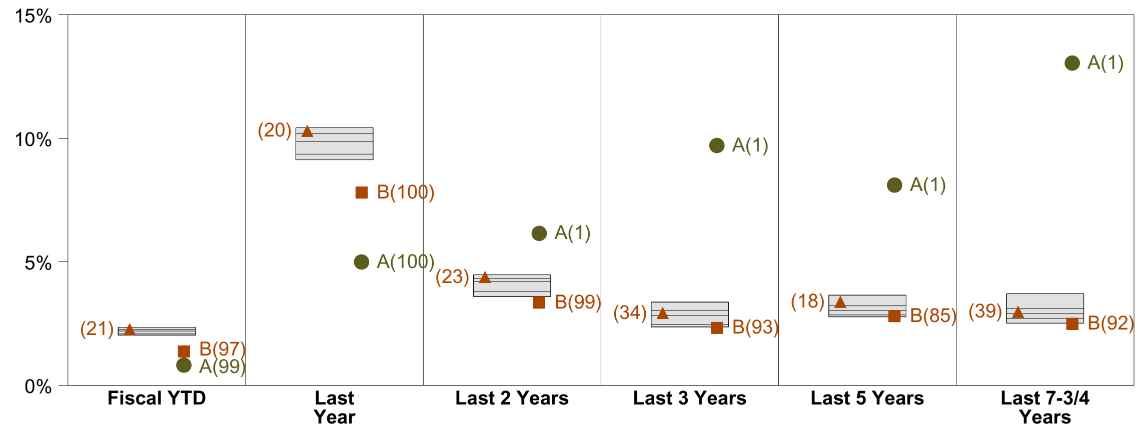
Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 0.82% 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 1.45% for the quarter and underperformed the Blmbg Aggregate for the year by 5.30%.

Quarterly Asset Growth

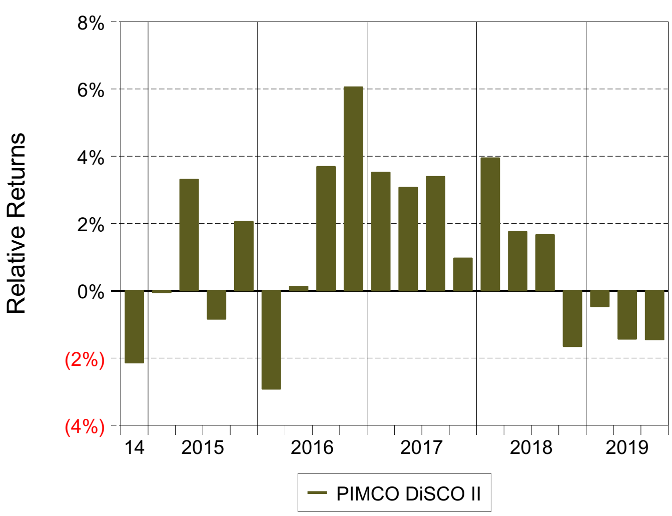
Beginning Market Value	$93,953,072
Net New Investment	$0
Investment Gains/(Losses)	$766,057
Ending Market Value	$94,719,129

Performance vs Callan Core Bond Mutual Funds (Net)

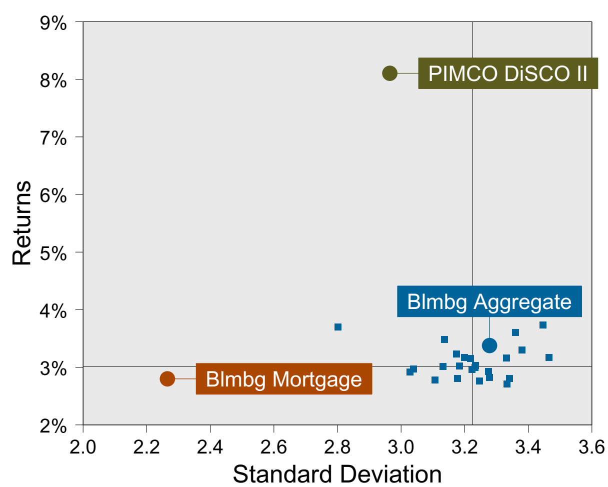


		Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7-3/4 Years
10th Percentile		2.35	10.43	4.47	3.37	3.65	3.71
25th Percentile		2.26	10.19	4.33	3.02	3.22	3.10
Median		2.20	9.87	4.21	2.82	3.02	2.89
75th Percentile		2.08	9.36	3.80	2.46	2.85	2.70
90th Percentile		2.03	9.13	3.59	2.36	2.77	2.52
PIMCO DiSCO II	● A	0.82	4.99	6.15	9.71	8.10	13.04
Blmbg Mortgage	■ B	1.37	7.80	3.35	2.32	2.80	2.49
Blmbg Aggregate	▲	2.27	10.30	4.38	2.92	3.38	2.97

Relative Return vs Blmbg Aggregate



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



PIMCO Core Plus Constrained
Period Ended September 30, 2019

Investment Philosophy

PIMCO's investment process utilizes both "top-down" and "bottom-up" strategies. Top-down strategies focus on duration, yield curve postioning, volatility, and sector rotation. These stretegies are deployed from a macro view of the portfolio driven by their secular outlook of the forces likely to influence the economy and financial markets over the next three to five years and their cyclical views of two- to four-quarter trends. Implementation in portfolios is effected by selecting securities that achieve the designated objectives. Bottom-up strategies drive their security selection process and facilitate the indentification and analysis of undervalued securities.**The product changed from Commingled Fund to Separate Account in March 2014. *Libor-3 month through February 28, 2017; Fund's performance through March 31, 2014; Libor-3 month through June 30, 2018; Bloomberg Aggregate thereafter.**

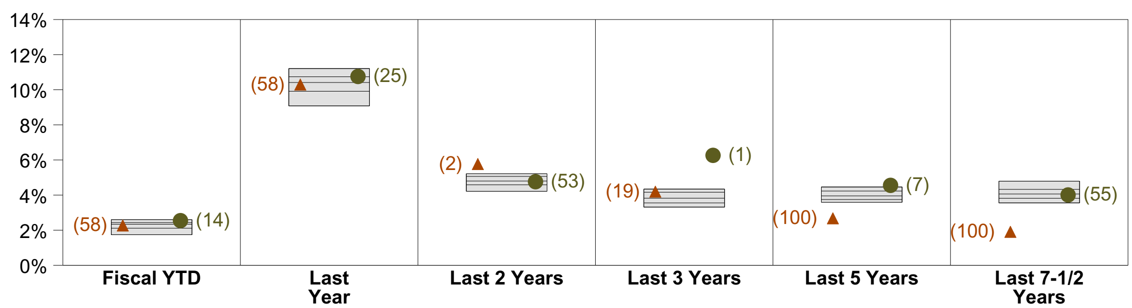
Quarterly Summary and Highlights

- PIMCO Core Plus Constrained's portfolio posted a 2.54% return for the quarter placing it in the 14 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 25 percentile for the last year.
- PIMCO Core Plus Constrained's portfolio outperformed the Blended Benchmark* by 0.28% for the quarter and outperformed the Blended Benchmark* for the year by 0.46%.

Quarterly Asset Growth

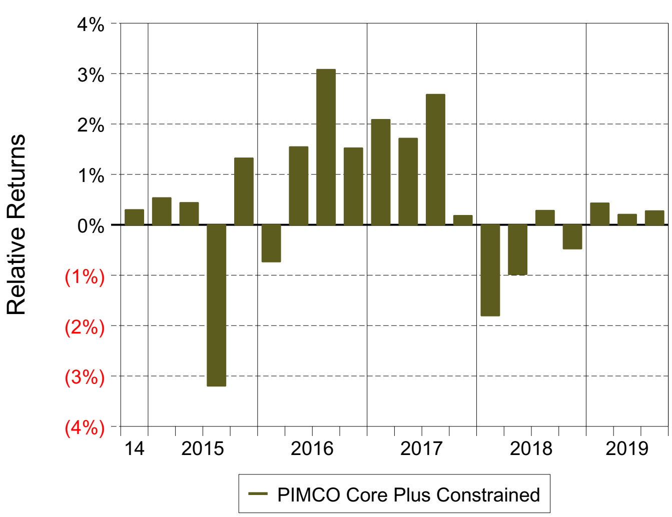
Beginning Market Value	$317,630,279
Net New Investment	$2,899,460
Investment Gains/(Losses)	$8,075,928
Ending Market Value	$328,605,667

Performance vs Callan Core Plus Fixed Income (Gross)

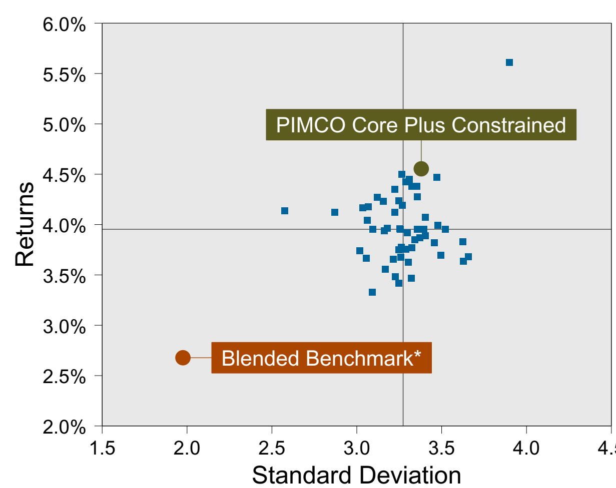


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7-1/2 Years
10th Percentile	2.60	11.21	5.22	4.34	4.46	4.79
25th Percentile	2.43	10.74	5.06	4.16	4.23	4.33
Median	2.34	10.41	4.80	3.82	3.95	4.06
75th Percentile	2.11	9.91	4.58	3.55	3.75	3.82
90th Percentile	1.74	9.08	4.22	3.31	3.59	3.56
PIMCO Core Plus Constrained ●	2.54	10.76	4.76	6.26	4.55	4.01
Blended Benchmark* ▲	2.27	10.30	5.77	4.20	2.68	1.91

Relative Return vs Blended Benchmark*



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



Prudential Core
Period Ended September 30, 2019

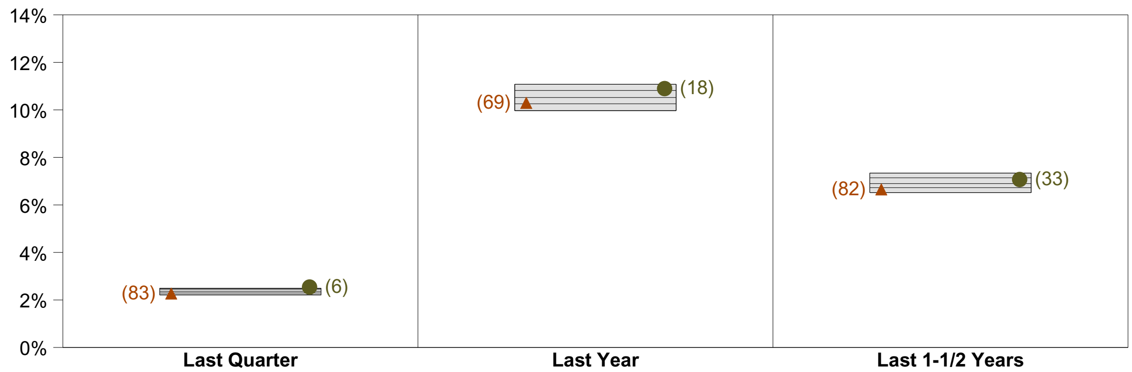
Investment Philosophy
The PGIM Fixed Income Core Fixed Income strategy seeks to provide +60 bps over the Bloomberg Barclays Aggregate Index over a market cycle. The strategy tends to generate its excess return from fairly equal increments of both sector allocation and subsector/security allocation. Duration 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 2.54% return for the quarter placing it in the 6 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 18 percentile for the last year.
- Prudential Core's portfolio outperformed the Blmbg Aggregate by 0.27% for the quarter and outperformed the Blmbg Aggregate for the year by 0.60%.

Quarterly Asset Growth

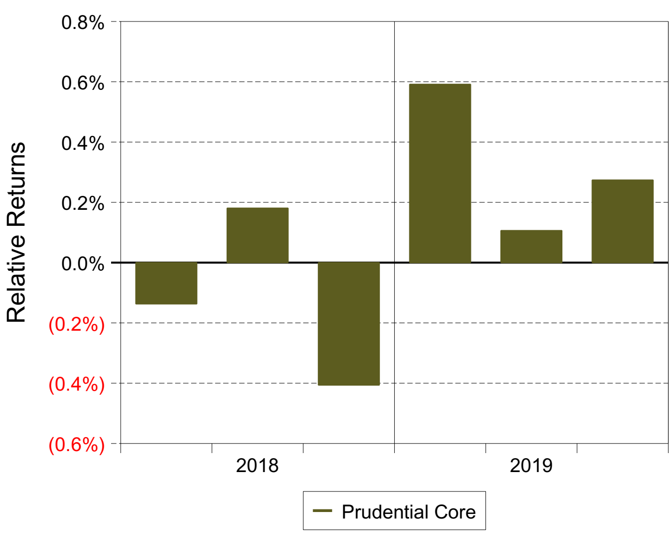
Beginning Market Value	$317,650,444
Net New Investment	$901,954
Investment Gains/(Losses)	$8,074,893
Ending Market Value	$326,627,291

Performance vs Callan Core Bond Fixed Income (Gross)

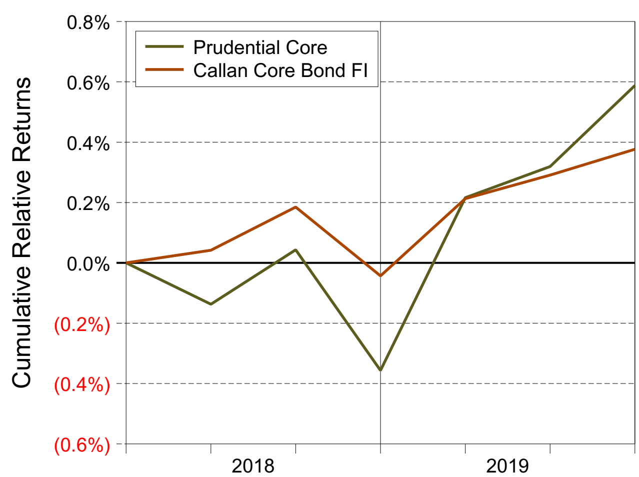


	Last Quarter	Last Year	Last 1-1/2 Years
10th Percentile	2.49	11.08	7.34
25th Percentile	2.45	10.82	7.14
Median	2.36	10.52	6.90
75th Percentile	2.29	10.26	6.73
90th Percentile	2.21	9.97	6.52
Prudential Core ●	2.54	10.90	7.07
Blmbg Aggregate ▲	2.27	10.30	6.65

Relative Return vs Blmbg Aggregate



Cumulative Returns vs Blmbg Aggregate



SSgA Long US Treas Index
Period Ended September 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.

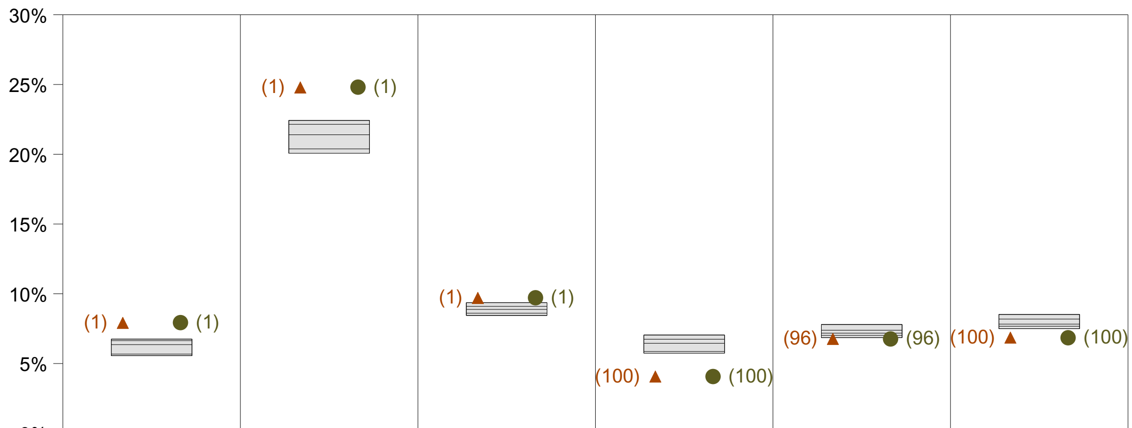
Quarterly Summary and Highlights

- SSgA Long US Treas Index's portfolio posted a 7.93% return for the quarter placing it in the 1 percentile of the Callan Extended Maturity Fixed Income group for the quarter and in the 1 percentile for the last year.
- SSgA Long US Treas Index's portfolio outperformed the Blmbg:Long Treasury by 0.02% for the quarter and outperformed the Blmbg:Long Treasury for the year by 0.02%.

Quarterly Asset Growth

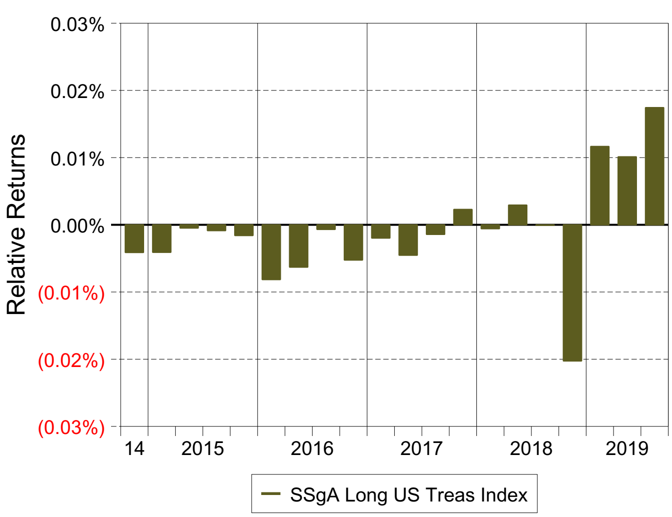
Beginning Market Value	$101,293,562
Net New Investment	$-17,011,708
Investment Gains/(Losses)	$8,458,442
Ending Market Value	$92,740,297

Performance vs Callan Extended Maturity Fixed Income (Gross)

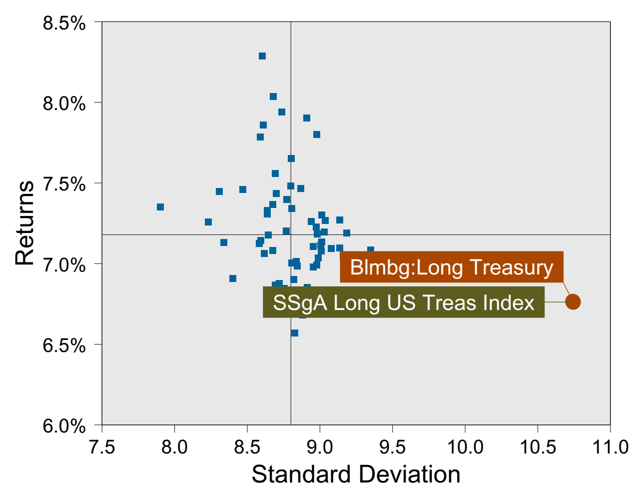


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/4 Years
10th Percentile	6.75	22.43	9.36	7.05	7.80	8.52
25th Percentile	6.64	22.15	9.10	6.74	7.39	8.19
Median	6.35	21.40	8.88	6.45	7.18	7.83
75th Percentile	5.68	20.38	8.61	5.86	7.02	7.67
90th Percentile	5.56	20.07	8.45	5.74	6.85	7.50
SSgA Long US Treas Index ●	7.93	24.81	9.71	4.07	6.76	6.85
Blmbg:Long Treasury ▲	7.92	24.79	9.70	4.07	6.77	6.86

Relative Return vs Blmbg:Long Treasury



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



Ares ND Credit Strategies Fd
Period Ended September 30, 2019

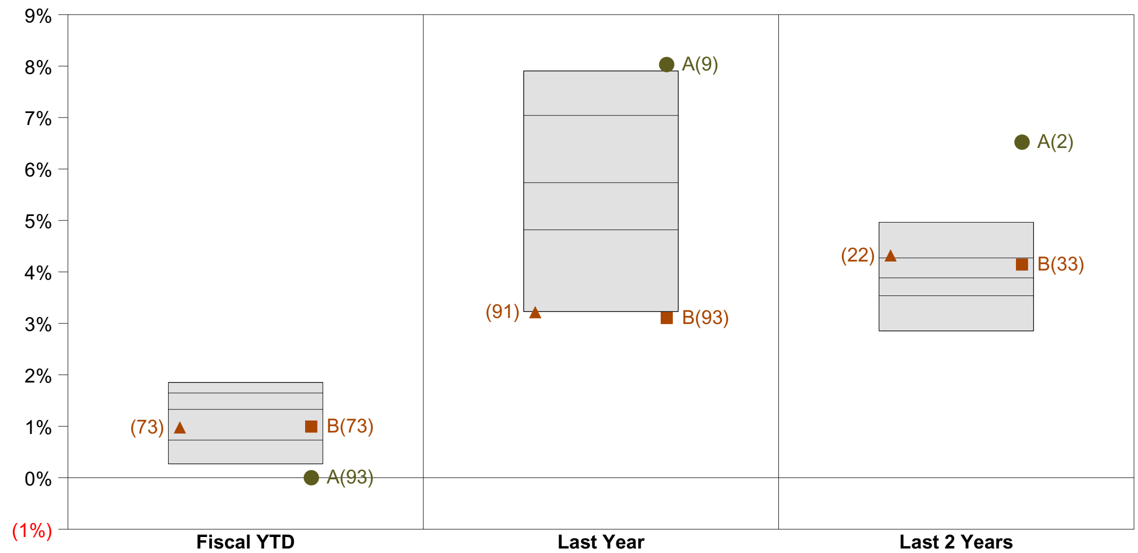
Quarterly Summary and Highlights

- Ares ND Credit Strategies Fd's portfolio posted a 0.00% return for the quarter placing it in the 93 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 9 percentile for the last year.
- Ares ND Credit Strategies Fd's portfolio underperformed the S&P/LSTA Leveraged Loan B Index by 0.98% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 4.81%.

Quarterly Asset Growth

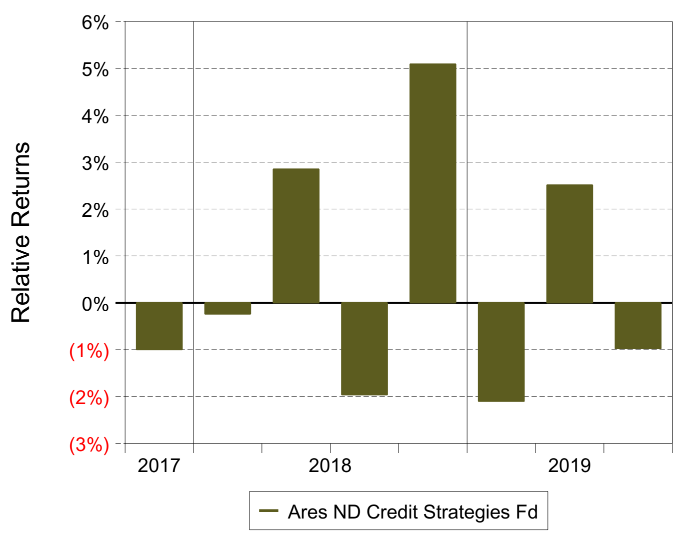
Beginning Market Value	$82,704,649
Net New Investment	$18,000,000
Investment Gains/(Losses)	$0
Ending Market Value	$100,704,649

Performance vs Callan High Yield Mutual Funds (Net)

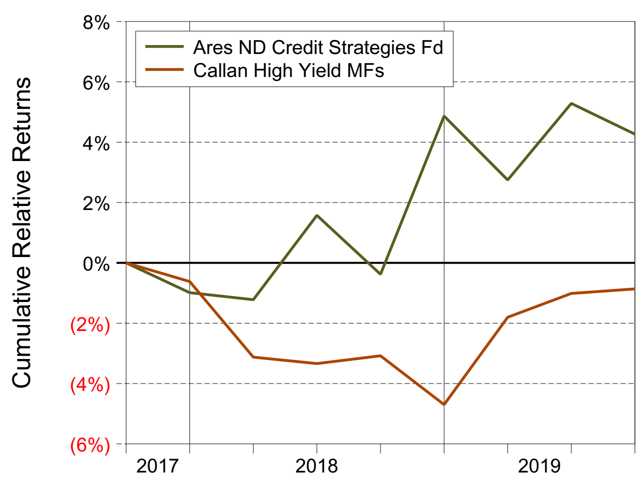


		Fiscal YTD	Last Year	Last 2 Years
10th Percentile		1.85	7.91	4.96
25th Percentile		1.65	7.04	4.27
Median		1.33	5.73	3.88
75th Percentile		0.73	4.82	3.54
90th Percentile		0.27	3.23	2.85
Ares ND Credit Strategies Fd	● A	0.00	8.03	6.52
S&P/LSTA Leveraged Loan	■ B	0.99	3.10	4.14
S&P/LSTA Leveraged Loan B Index	▲	0.98	3.22	4.32

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 September 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.

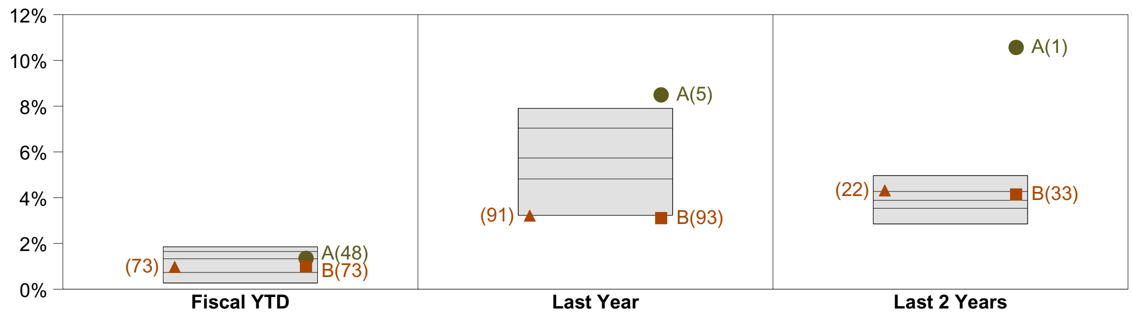
Quarterly Summary and Highlights

- Cerberus ND Private Credit Fd’s portfolio posted a 1.35% return for the quarter placing it in the 48 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 5 percentile for the last year.
- Cerberus ND Private Credit Fd’s portfolio outperformed the S&P/LSTA Leveraged Loan B Index by 0.37% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 5.28%.

Quarterly Asset Growth

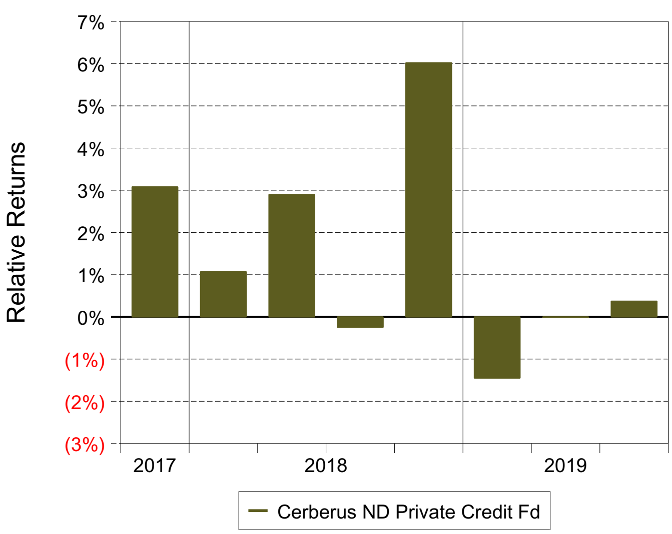
Beginning Market Value	$91,389,289
Net New Investment	$12,000,000
Investment Gains/(Losses)	$1,331,522
Ending Market Value	$104,720,811

Performance vs Callan High Yield Mutual Funds (Net)

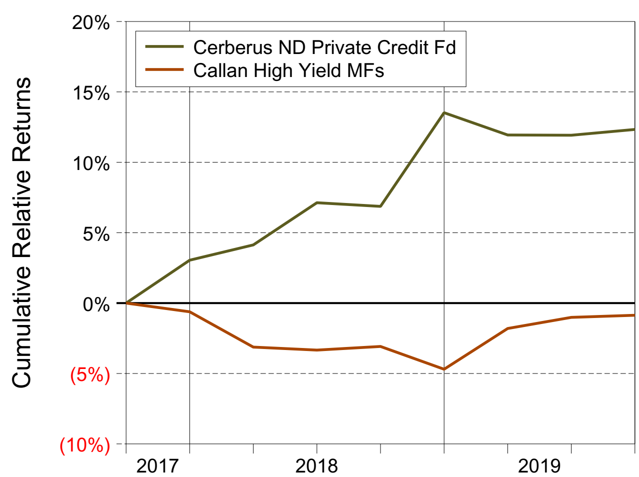


	Fiscal YTD	Last Year	Last 2 Years
10th Percentile	1.85	7.91	4.96
25th Percentile	1.65	7.04	4.27
Median	1.33	5.73	3.88
75th Percentile	0.73	4.82	3.54
90th Percentile	0.27	3.23	2.85
Cerberus ND Private Credit Fd ● A	1.35	8.49	10.57
S&P/LSTA Leveraged Loan ■ B	0.99	3.10	4.14
S&P/LSTA Leveraged Loan B Index ▲	0.98	3.22	4.32

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 September 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.

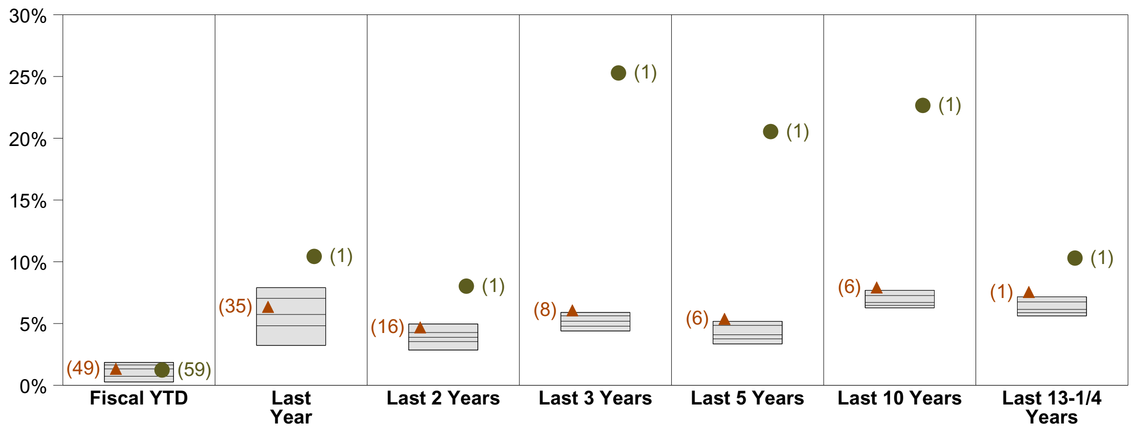
Quarterly Summary and Highlights

- Goldman Sachs's portfolio posted a 1.24% return for the quarter placing it in the 59 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 1 percentile for the last year.
- Goldman Sachs's portfolio underperformed the Blmbg:HY Corp 2% Iss Cap by 0.09% for the quarter and outperformed the Blmbg:HY Corp 2% Iss Cap for the year by 4.08%.

Quarterly Asset Growth

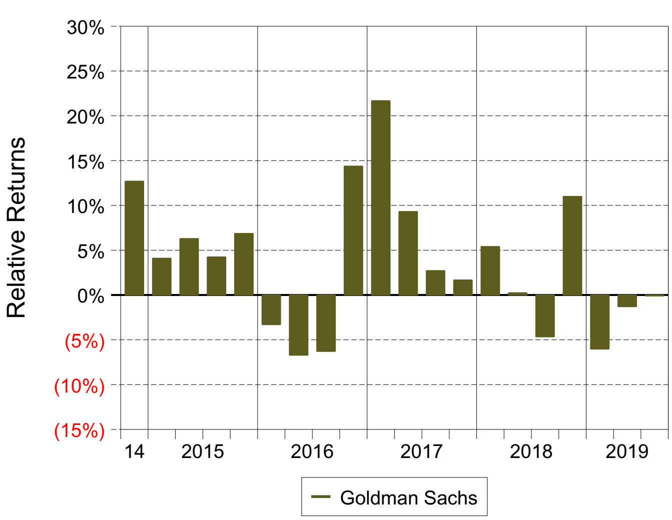
Beginning Market Value	$92,396
Net New Investment	$0
Investment Gains/(Losses)	$1,146
Ending Market Value	$93,542

Performance vs Callan High Yield Mutual Funds (Net)

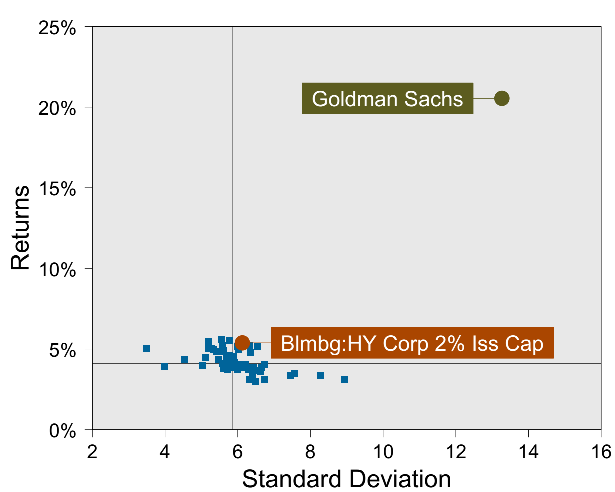


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 13-1/4 Years
10th Percentile	1.85	7.91	4.96	5.90	5.18	7.69	7.17
25th Percentile	1.65	7.04	4.27	5.62	4.85	7.27	6.75
Median	1.33	5.73	3.88	5.19	4.09	6.71	6.15
75th Percentile	0.73	4.82	3.54	4.79	3.76	6.47	5.88
90th Percentile	0.27	3.23	2.85	4.40	3.35	6.27	5.62
Goldman Sachs ●	1.24	10.43	8.03	25.29	20.54	22.66	10.30
Blmbg:HY Corp 2% Iss Cap ▲	1.33	6.35	4.69	6.07	5.38	7.92	7.55

Relative Return vs Blmbg:HY Corp 2% Iss Cap



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



Goldman Sachs Offshore Fund V
Period Ended September 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.

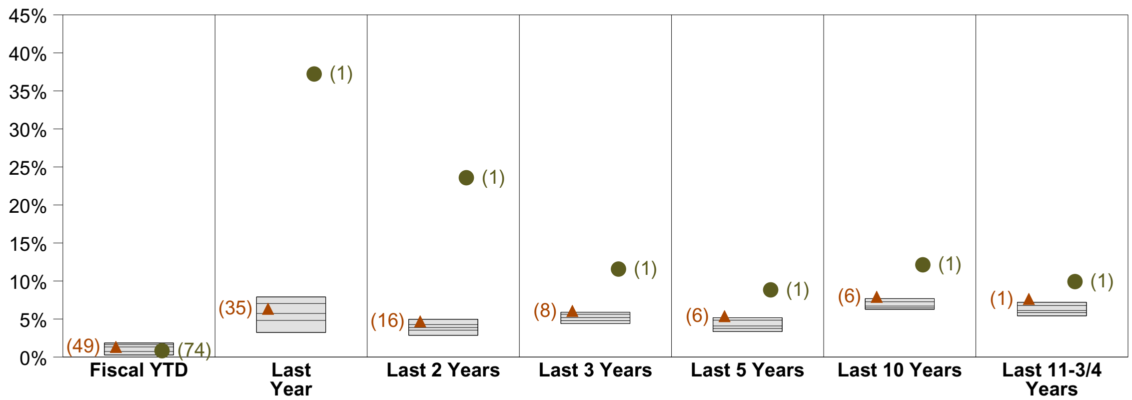
Quarterly Summary and Highlights

- Goldman Sachs Offshore V's portfolio posted a 0.83% return for the quarter placing it in the 74 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 underperformed the Blmbg:HY Corp 2% Iss Cap by 0.50% for the quarter and outperformed the Blmbg:HY Corp 2% Iss Cap for the year by 30.87%.

Quarterly Asset Growth

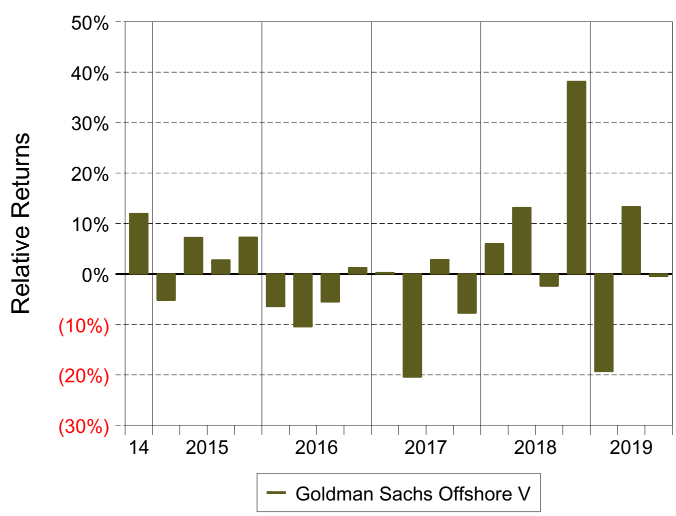
Beginning Market Value	$403,546
Net New Investment	$-80,359
Investment Gains/(Losses)	$3,476
Ending Market Value	$326,663

Performance vs Callan High Yield Mutual Funds (Net)

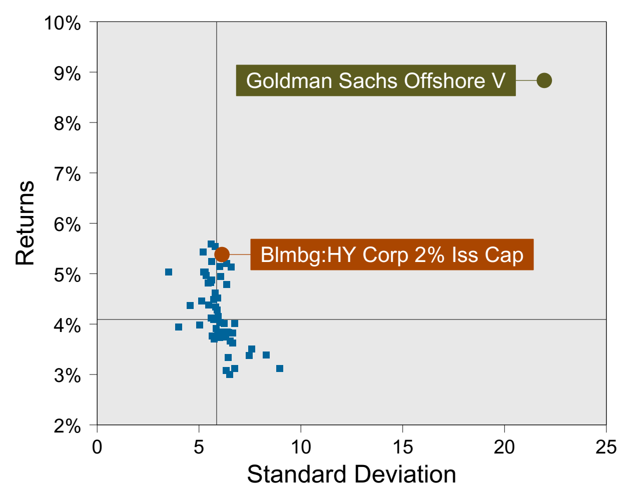


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 11-3/4 Years
10th Percentile	1.85	7.91	4.96	5.90	5.18	7.69	7.21
25th Percentile	1.65	7.04	4.27	5.62	4.85	7.27	6.77
Median	1.33	5.73	3.88	5.19	4.09	6.71	6.12
75th Percentile	0.73	4.82	3.54	4.79	3.76	6.47	5.84
90th Percentile	0.27	3.23	2.85	4.40	3.35	6.27	5.41
Goldman Sachs Offshore V ●	0.83	37.22	23.58	11.57	8.83	12.13	9.92
Blmbg:HY Corp 2% Iss Cap ▲	1.33	6.35	4.69	6.07	5.38	7.92	7.64

Relative Return vs Blmbg:HY Corp 2% Iss Cap



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



Loomis Sayles
Period Ended September 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.

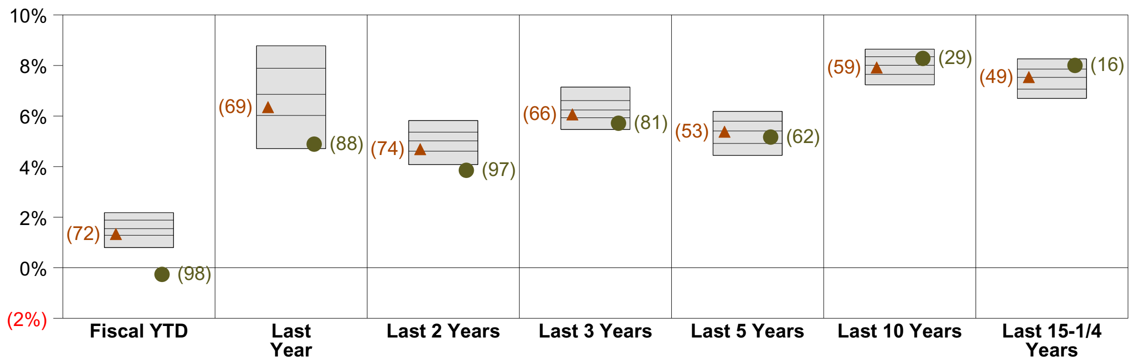
Quarterly Summary and Highlights

- Loomis Sayles's portfolio posted a (0.26)% return for the quarter placing it in the 98 percentile of the Callan High Yield Fixed Income group for the quarter and in the 88 percentile for the last year.
- Loomis Sayles's portfolio underperformed the Blmbg:HY Corp 2% Iss Cap by 1.60% for the quarter and underperformed the Blmbg:HY Corp 2% Iss Cap for the year by 1.46%.

Quarterly Asset Growth

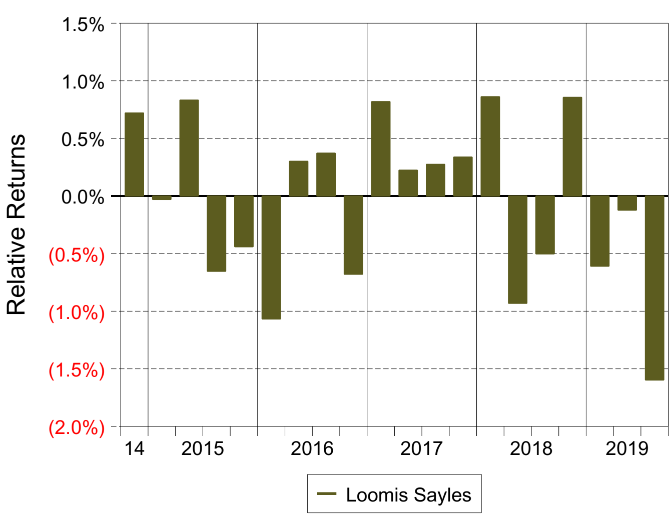
Beginning Market Value	$207,761,333
Net New Investment	$-20,259,702
Investment Gains/(Losses)	$-700,225
Ending Market Value	$186,801,406

Performance vs Callan High Yield Fixed Income (Gross)

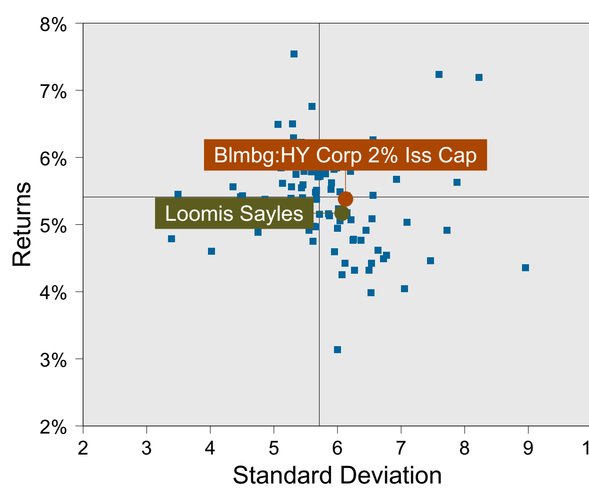


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 15-1/4 Years
10th Percentile	2.18	8.78	5.82	7.15	6.19	8.65	8.26
25th Percentile	1.88	7.89	5.36	6.61	5.80	8.35	7.86
Median	1.55	6.86	5.02	6.24	5.41	8.01	7.53
75th Percentile	1.28	6.02	4.61	5.93	4.92	7.65	7.07
90th Percentile	0.80	4.71	4.08	5.47	4.45	7.24	6.70
Loomis Sayles ●	(0.26)	4.89	3.85	5.72	5.17	8.28	8.00
Blmbg:HY Corp 2% Iss Cap ▲	1.33	6.35	4.69	6.07	5.38	7.92	7.54

Relative Return vs Blmbg:HY Corp 2% Iss Cap



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



PIMCO Bravo II Fund
Period Ended September 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 0.00% return for the quarter placing it in the 93 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 93 percentile for the last year.
- PIMCO Bravo II Fund's portfolio underperformed the Blmbg:HY Corp 2% Iss Cap by 1.33% for the quarter and underperformed the Blmbg:HY Corp 2% Iss Cap for the year by 3.26%.

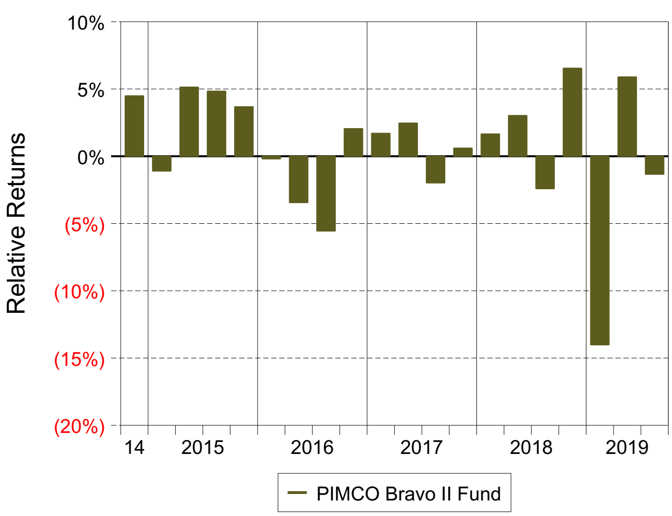
Quarterly Asset Growth

Beginning Market Value	$28,634,489
Net New Investment	$-3,247,342
Investment Gains/(Losses)	$-0
Ending Market Value	$25,387,147

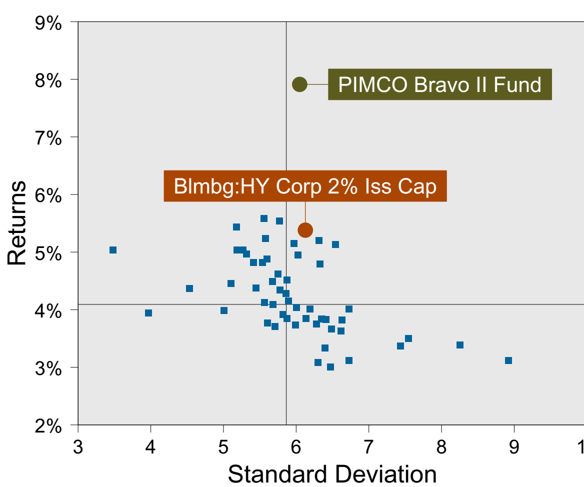
Performance vs Callan High Yield Mutual Funds (Net)

	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	1.85	7.91	4.96	5.90	5.18	5.20
25th Percentile	1.65	7.04	4.27	5.62	4.85	4.77
Median	1.33	5.73	3.88	5.19	4.09	4.13
75th Percentile	0.73	4.82	3.54	4.79	3.76	3.73
90th Percentile	0.27	3.23	2.85	4.40	3.35	3.44
PIMCO Bravo II Fund ●	0.00	3.10	4.54	7.41	7.91	10.94
Blmbg:HY Corp 2% Iss Cap ▲	1.33	6.35	4.69	6.07	5.38	5.29

Relative Return vs Blmbg:HY Corp 2% Iss Cap



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



Real Estate
Period Ended September 30, 2019

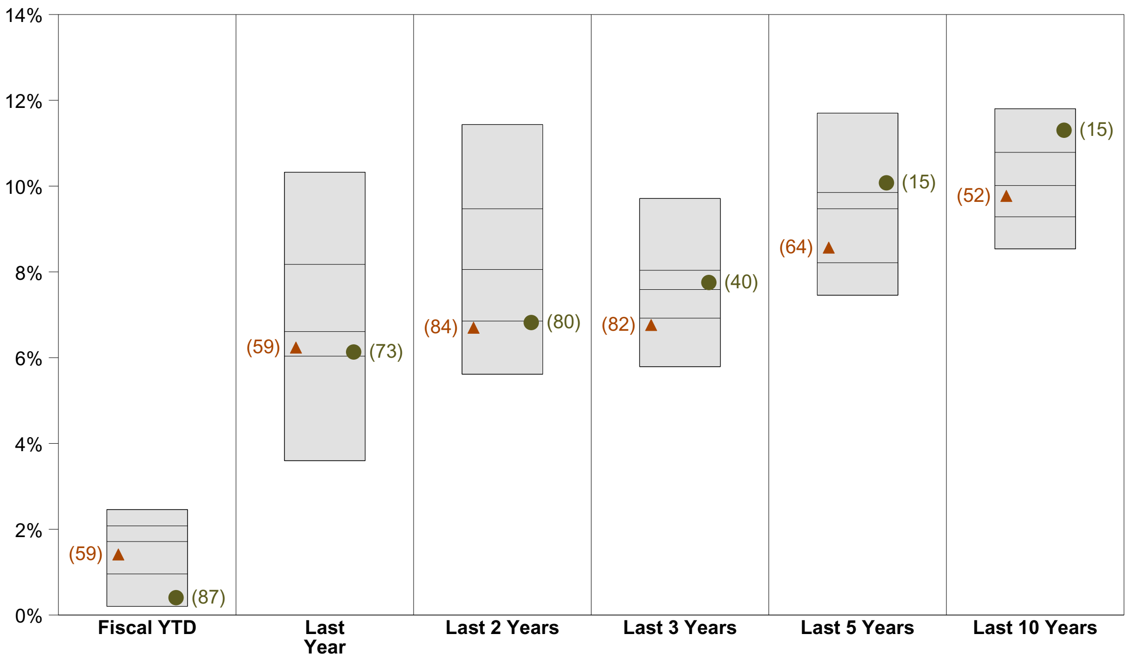
Quarterly Summary and Highlights

- Real Estate's portfolio posted a 0.40% return for the quarter placing it in the 87 percentile of the Public Fund - Real Estate group for the quarter and in the 73 percentile for the last year.
- Real Estate's portfolio underperformed the NCREIF Total Index by 1.01% for the quarter and underperformed the NCREIF Total Index for the year by 0.10%.

Quarterly Asset Growth

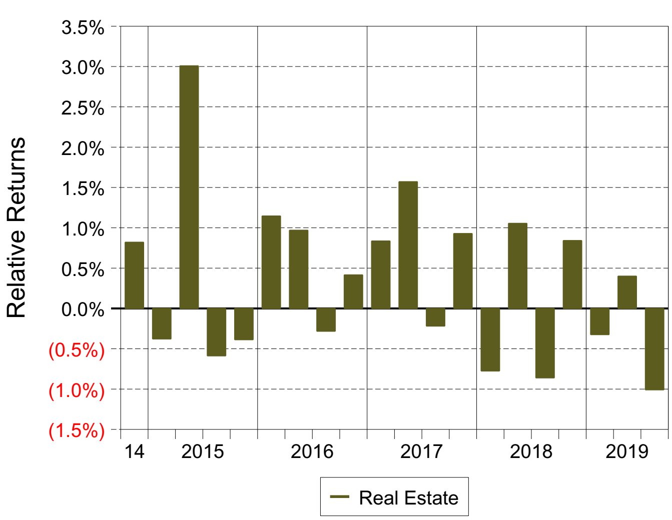
Beginning Market Value	$666,766,554
Net New Investment	$4,052,743
Investment Gains/(Losses)	$2,694,302
Ending Market Value	$673,513,599

Performance vs Public Fund - Real Estate (Gross)

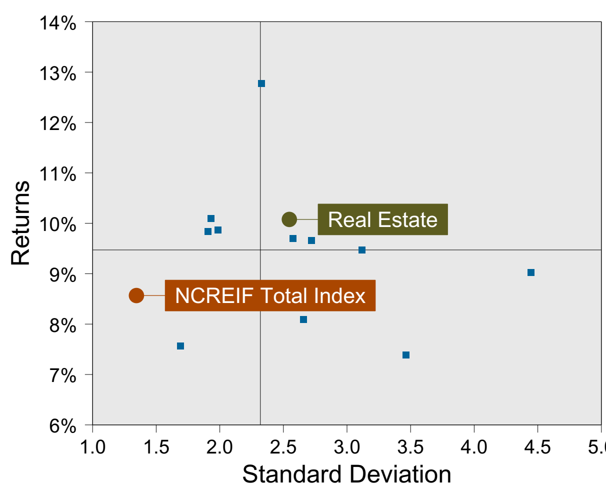


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.46	10.32	11.43	9.71	11.70	11.80
25th Percentile	2.08	8.17	9.47	8.04	9.85	10.79
Median	1.71	6.61	8.06	7.59	9.47	10.01
75th Percentile	0.96	6.04	6.85	6.92	8.21	9.28
90th Percentile	0.20	3.60	5.61	5.79	7.46	8.54
Real Estate ●	0.40	6.13	6.82	7.75	10.08	11.30
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.77

Relative Return vs NCREIF Total Index



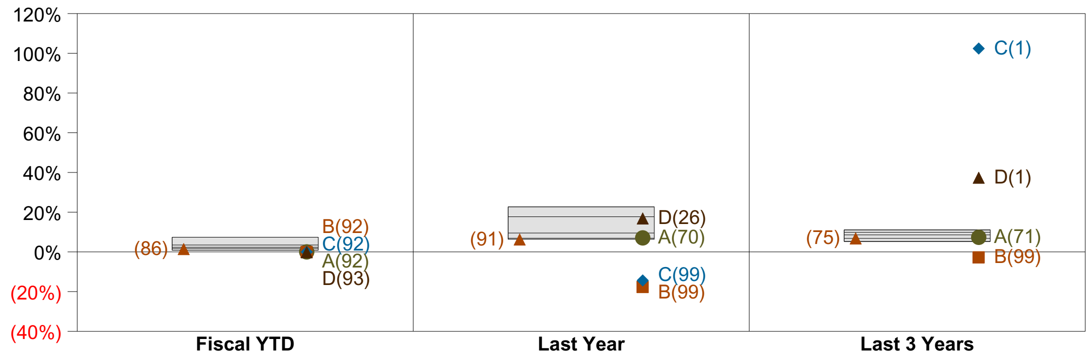
Public Fund - Real Estate (Gross)
Annualized Five Year Risk vs Return



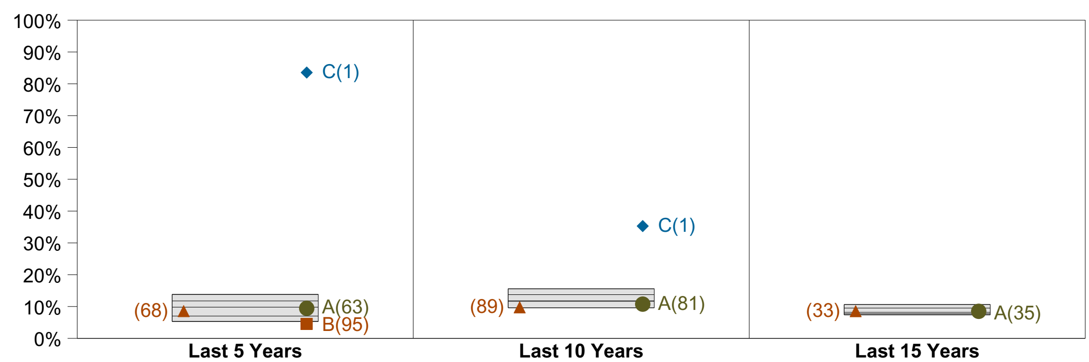
North Dakota State Investment Board Pension Funds
Performance vs Callan Total Domestic Real Estate DB
Periods Ended September 30, 2019

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.



		Fiscal YTD	Last Year	Last 3 Years
10th Percentile		7.38	22.69	11.10
25th Percentile		3.47	17.70	9.84
Median		2.34	9.51	8.57
75th Percentile		1.66	6.88	6.81
90th Percentile		0.81	6.37	5.25
Invesco Core Real Estate	● A	(0.00)	7.05	7.35
Invesco Fund III	■ B	0.00	(17.71)	(2.70)
Invesco Asia RE Feeder	◆ C	0.00	(14.36)	102.40
Invesco Asia RE Fund III	▲ D	(0.19)	16.82	37.35
NCREIF Total Index	▲	1.41	6.24	6.76

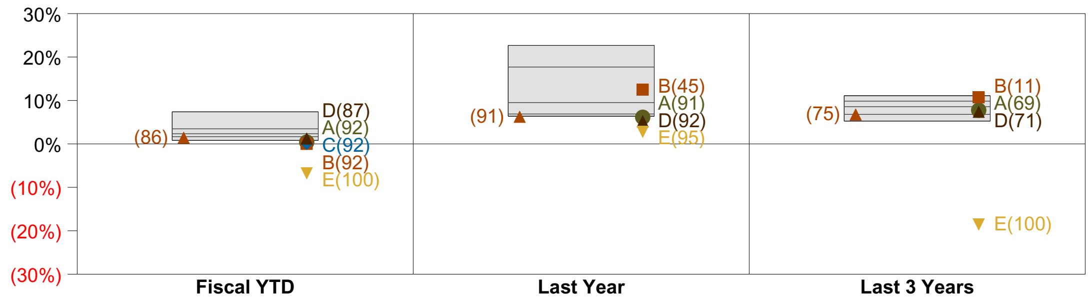


		Last 5 Years	Last 10 Years	Last 15 Years
10th Percentile		13.82	15.59	10.63
25th Percentile		11.77	13.74	9.52
Median		9.81	11.78	8.18
75th Percentile		7.02	11.64	7.74
90th Percentile		5.31	9.61	7.41
Invesco Core Real Estate	● A	9.44	10.76	8.50
Invesco Fund III	■ B	4.55	-	-
Invesco Asia RE Feeder	◆ C	83.54	35.29	-
Invesco Asia RE Fund III	▲ D	-	-	-
NCREIF Total Index	▲	8.57	9.77	8.55

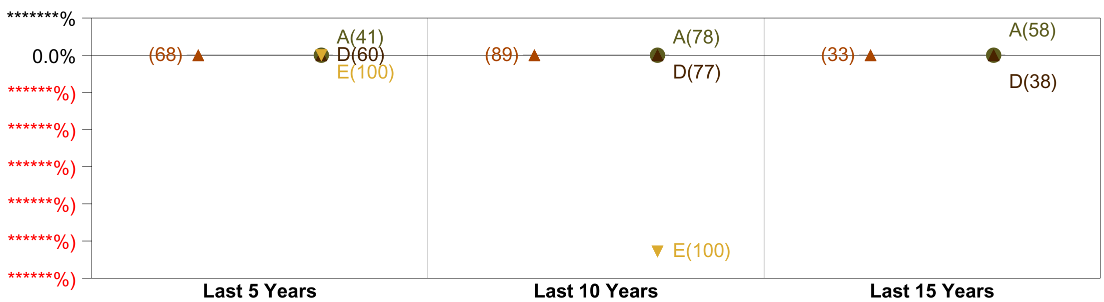
North Dakota State Investment Board Pension Funds
Performance vs Callan Total Domestic Real Estate DB
Periods Ended September 30, 2019

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.



		Fiscal YTD	Last Year	Last 3 Years
10th Percentile		7.38	22.69	11.10
25th Percentile		3.47	17.70	9.84
Median		2.34	9.51	8.57
75th Percentile		1.66	6.88	6.81
90th Percentile		0.81	6.37	5.25
Total Real Estate	● A	0.40	6.13	7.75
Invesco Value Added Fd IV	■ B	0.00	12.51	10.72
Invesco Value Added Fd V	◆ C	0.00	-	-
JP Morgan Investment	▲ D	1.24	5.20	7.39
JPM GreaterEur Opp Prop Fd	▼ E	(6.76)	2.79	(18.54)
NCREIF Total Index	▲	1.41	6.24	6.76



		Last 5 Years	Last 10 Years	Last 15 Years
10th Percentile		13.82	15.59	10.63
25th Percentile		11.77	13.74	9.52
Median		9.81	11.78	8.18
75th Percentile		7.02	11.64	7.74
90th Percentile		5.31	9.61	7.41
Total Real Estate	● A	10.08	11.30	8.06
Invesco Value Added Fd IV	■ B	-	-	-
Invesco Value Added Fd V	◆ C	-	-	-
JP Morgan Investment	▲ D	9.63	11.54	8.43
JPM GreaterEur Opp Prop Fd	▼ E	(2.77)	(527963904	-
NCREIF Total Index	▲	8.57	9.77	8.55

TIR Teredo
Period Ended September 30, 2019

Investment Philosophy

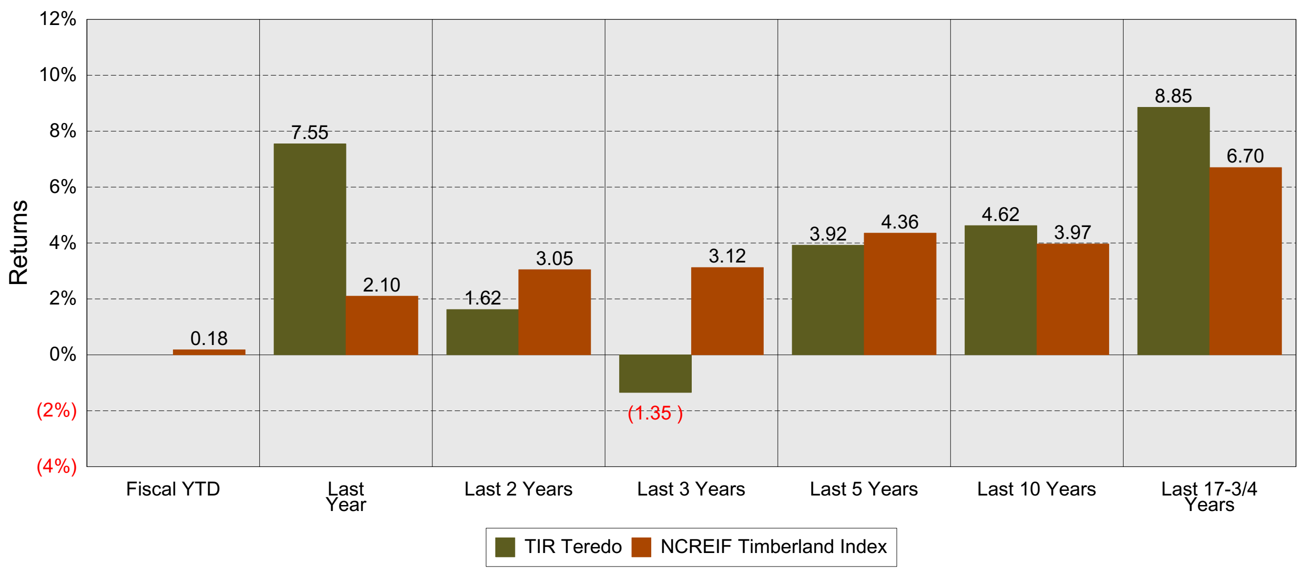
Teredo Timber LLC - The investment objective of Teredo is to provide competitive investment returns from increasing saw timber production through the 20 year term of the partnership. TIR's management strategy is to maximize saw timber volume by applying intensive forest management techniques which accelerate 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

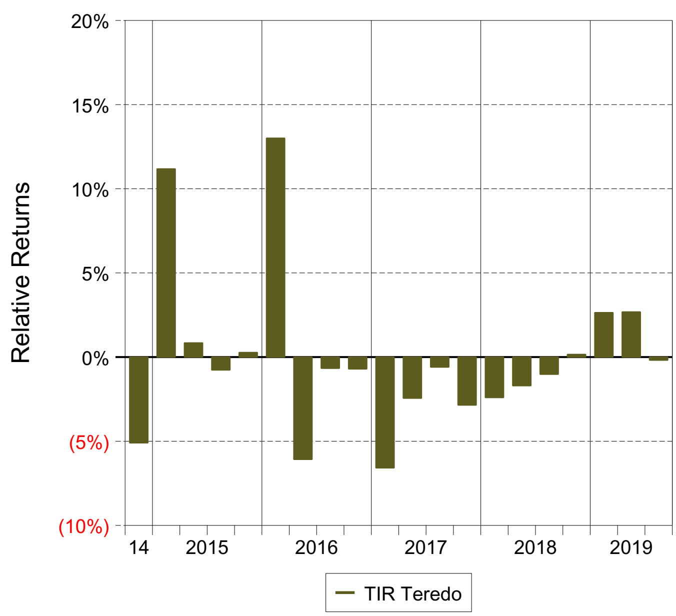
- TIR Teredo's portfolio underperformed the NCREIF Timberland Index by 0.18% for the quarter and outperformed the NCREIF Timberland Index for the year by 5.45%.

Quarterly Asset Growth

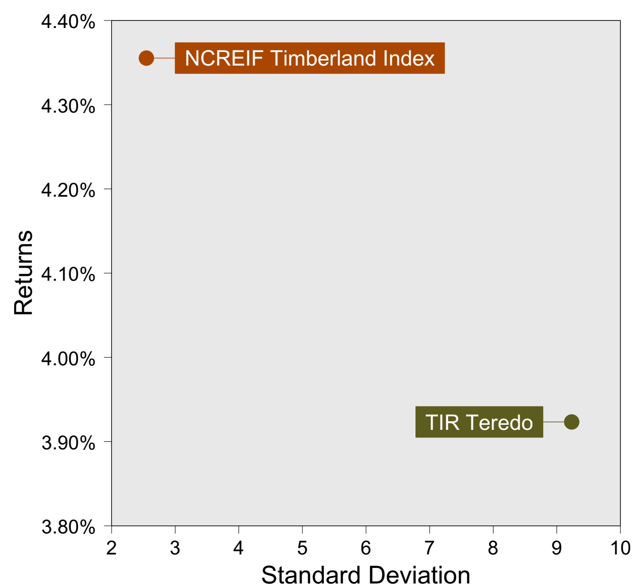
Beginning Market Value	$32,474,048
Net New Investment	$-1,100,000
Investment Gains/(Losses)	$0
Ending Market Value	$31,374,048



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



TIR Springbank
Period Ended September 30, 2019

Investment Philosophy

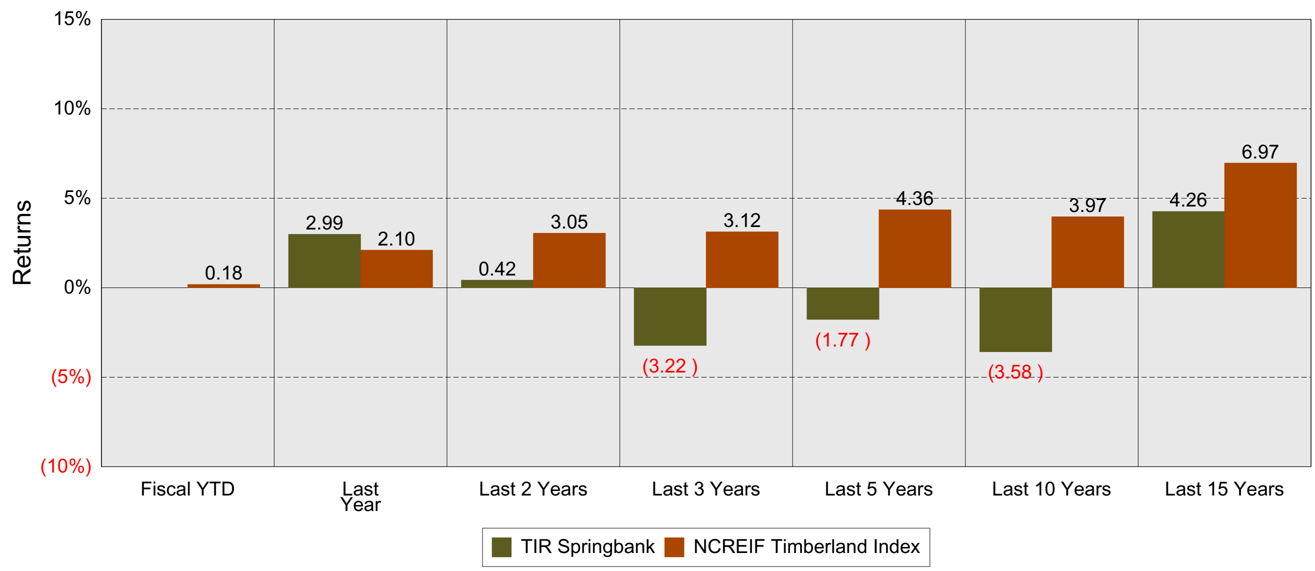
Springbank LLC - The investment objective of Springbank is to maximize long-term investment potential by means of the formation of a dedicated land management group, intensive timber management to increase timber production, the coordination of timber harvesting with land management activities and direct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

Quarterly Summary and Highlights

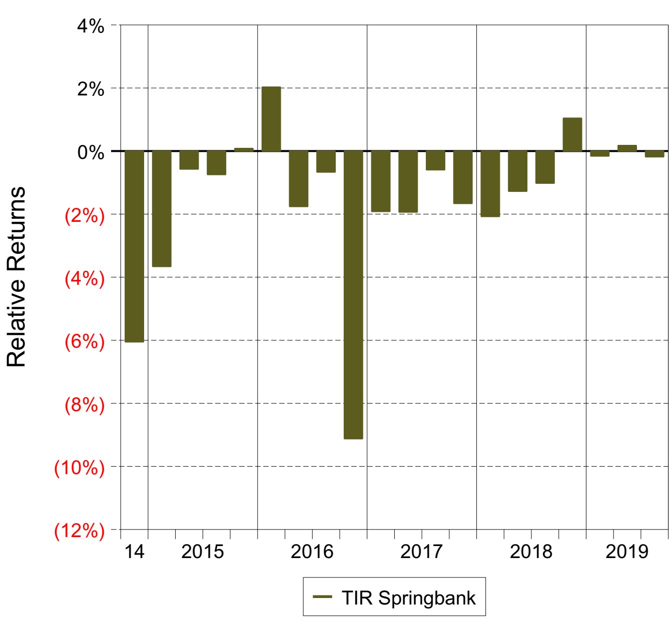
- TIR Springbank's portfolio underperformed the NCREIF Timberland Index by 0.18% for the quarter and outperformed the NCREIF Timberland Index for the year by 0.89%.

Quarterly Asset Growth

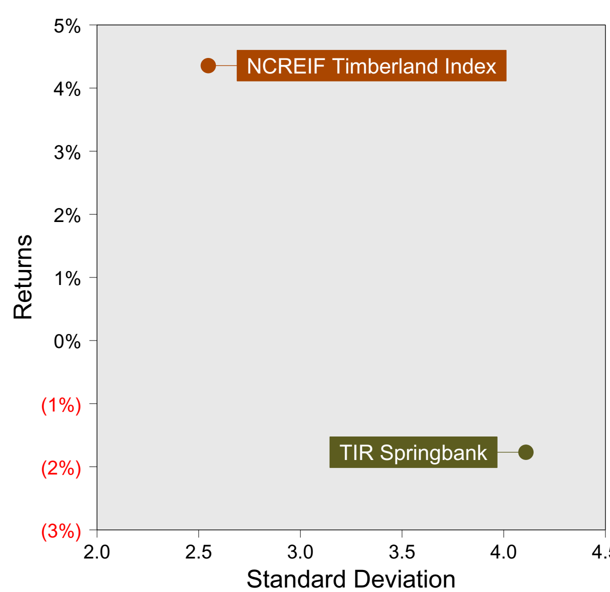
Beginning Market Value	$93,297,249
Net New Investment	$-760,000
Investment Gains/(Losses)	$0
Ending Market Value	$92,537,249



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



ISQ Global Infrastructure II
Period Ended September 30, 2019

Investment Philosophy

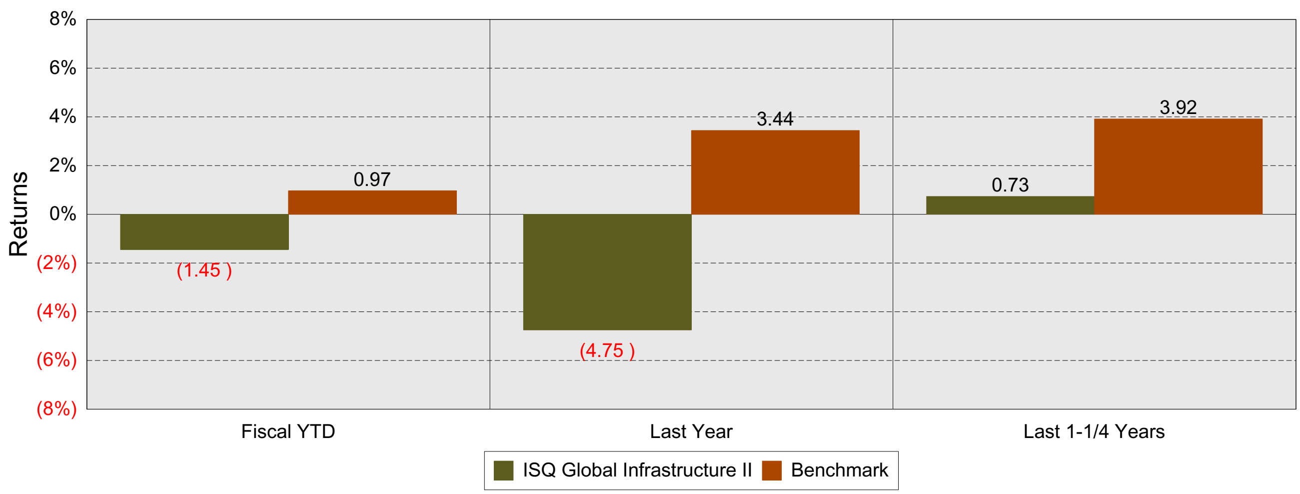
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia 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

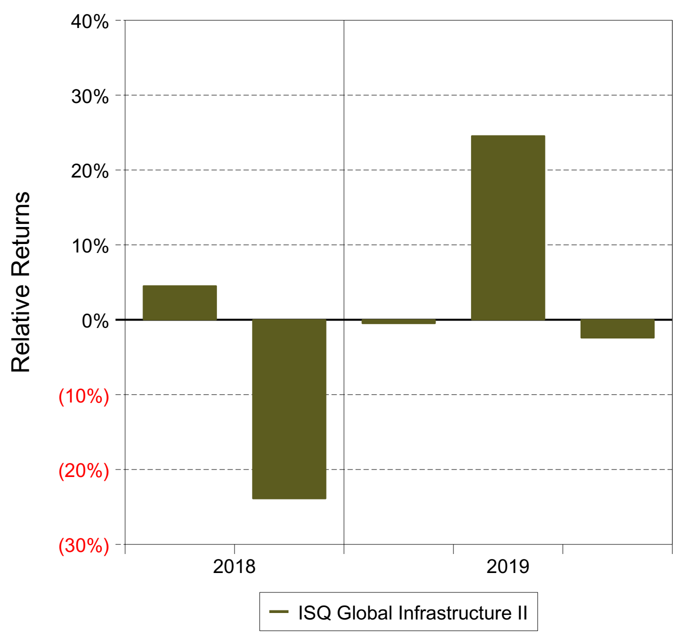
- ISQ Global Infrastructure II's portfolio underperformed the Benchmark by 2.42% for the quarter and underperformed the Benchmark for the year by 8.19%.

Quarterly Asset Growth

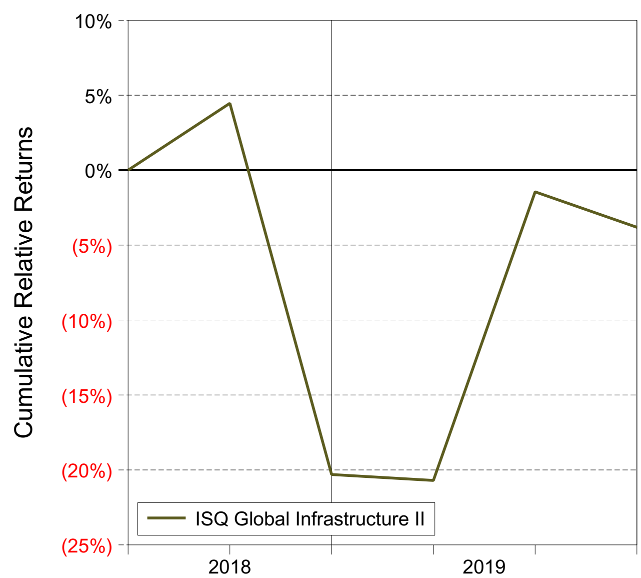
Beginning Market Value	$17,853,225
Net New Investment	$5,290,480
Investment Gains/(Losses)	$-332,934
Ending Market Value	$22,810,771



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



The Rohatyn Group
Period Ended September 30, 2019

Investment Philosophy

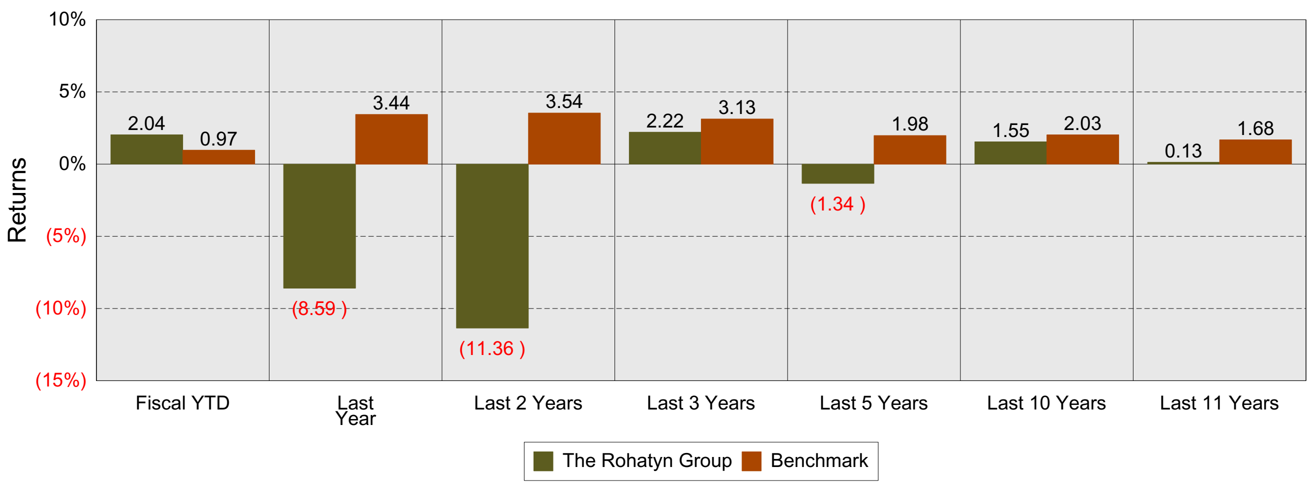
The Rohatyn Group's Asian Infrastructure & Related Resources Opportunity (AIRRO) Fund seeks to invest in infrastructure and related resources opportunities across the greater Asia Pacific region. The Fund seeks to invest in a broad range of assets, including: core infrastructure, power both from conventional 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

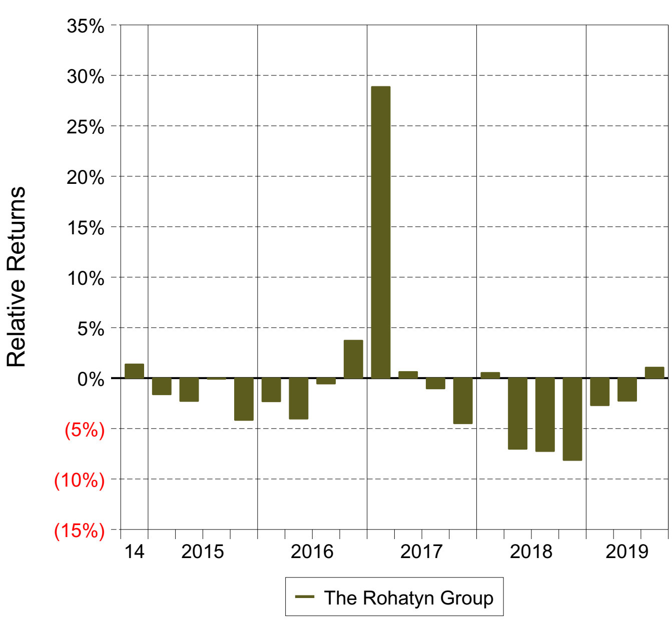
- The Rohatyn Group's portfolio outperformed the Benchmark by 1.07% for the quarter and underperformed the Benchmark for the year by 12.03%.

Quarterly Asset Growth

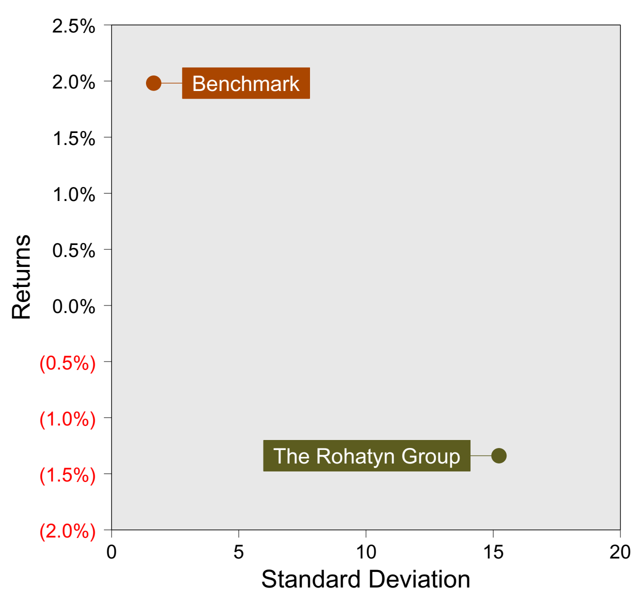
Beginning Market Value	$18,199,852
Net New Investment	$260,003
Investment Gains/(Losses)	$376,673
Ending Market Value	$18,836,528



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



JPM Infrastructure Fund
Period Ended September 30, 2019

Investment Philosophy

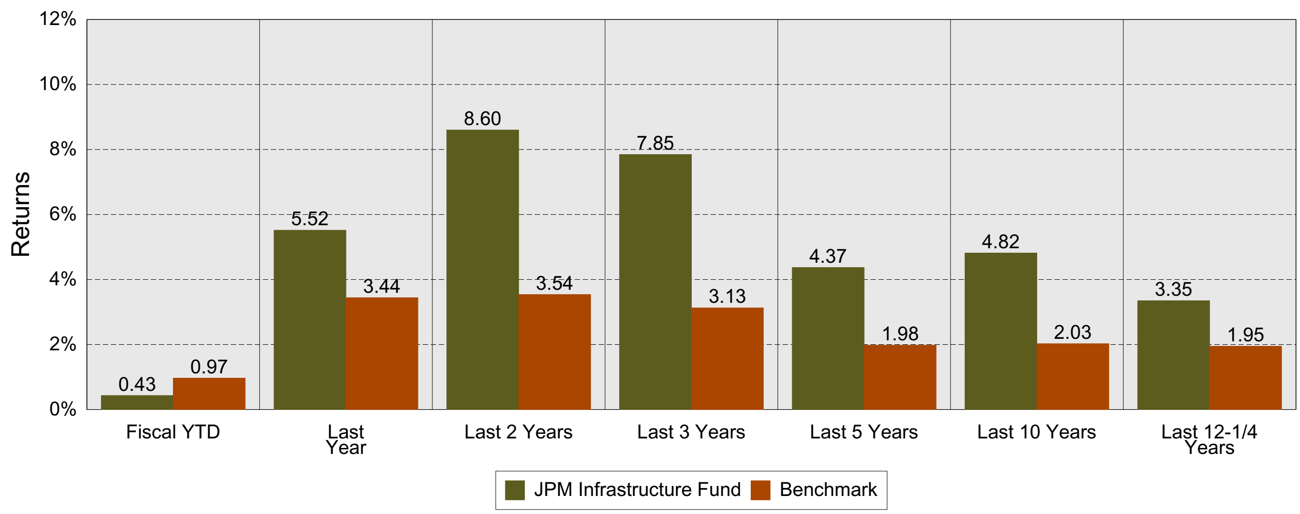
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas 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

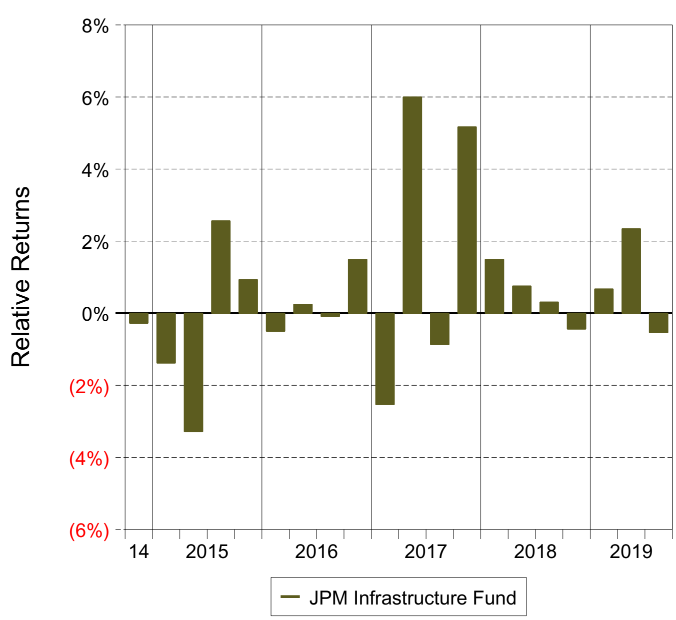
- JPM Infrastructure Fund's portfolio underperformed the Benchmark by 0.54% for the quarter and outperformed the Benchmark for the year by 2.08%.

Quarterly Asset Growth

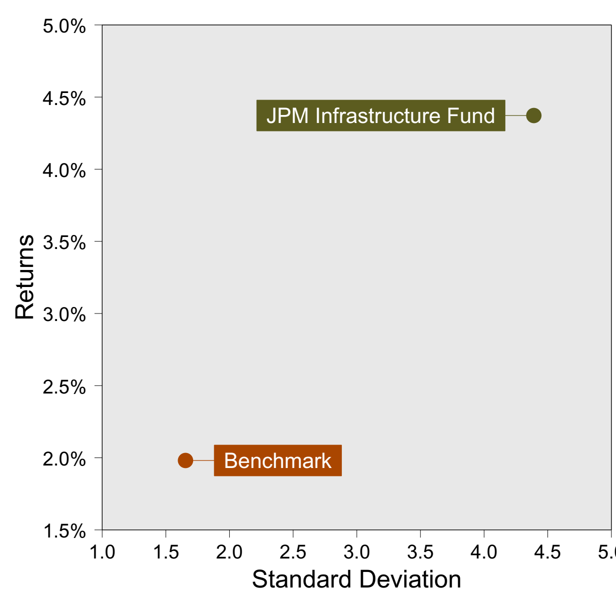
Beginning Market Value	$188,360,123
Net New Investment	$-4,586,578
Investment Gains/(Losses)	$815,361
Ending Market Value	$184,588,905



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Grosvenor Cust. Infrastructure
Period Ended September 30, 2019

Investment Philosophy

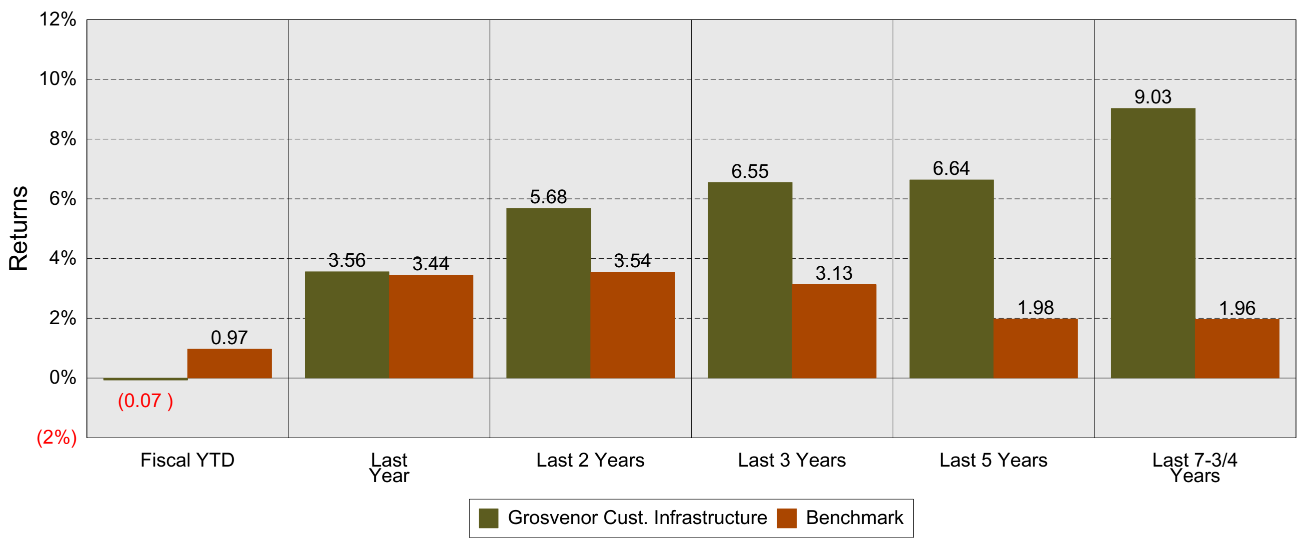
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified 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

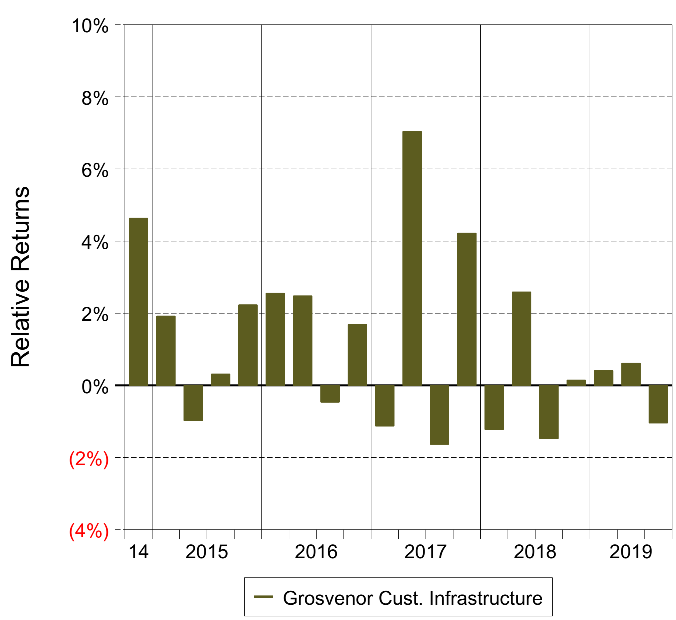
- Grosvenor Cust. Infrastructure's portfolio underperformed the Benchmark by 1.04% for the quarter and outperformed the Benchmark for the year by 0.12%.

Quarterly Asset Growth

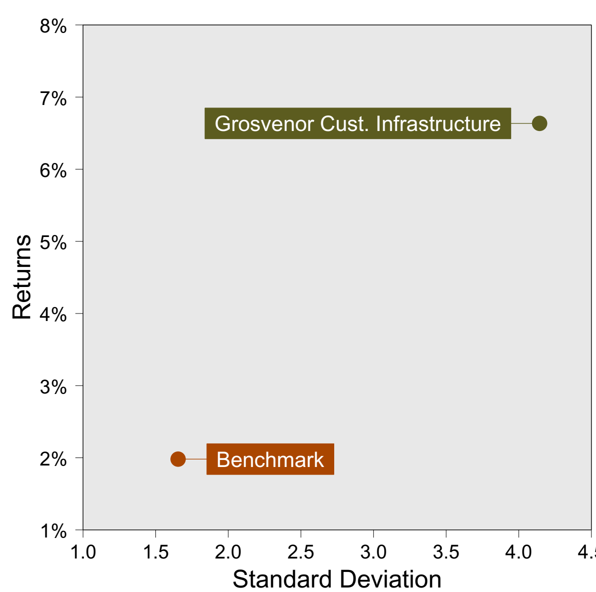
Beginning Market Value	$26,131,586
Net New Investment	$-731,260
Investment Gains/(Losses)	$-18,028
Ending Market Value	$25,382,297



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



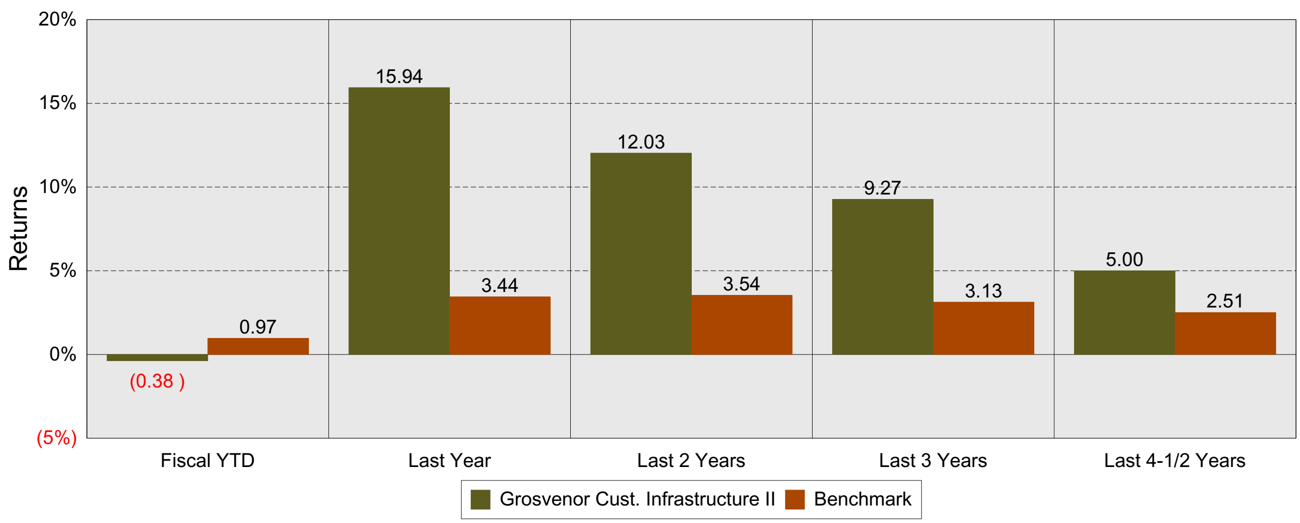
Grosvenor Cust. Infrastructure II
Period Ended September 30, 2019

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.**

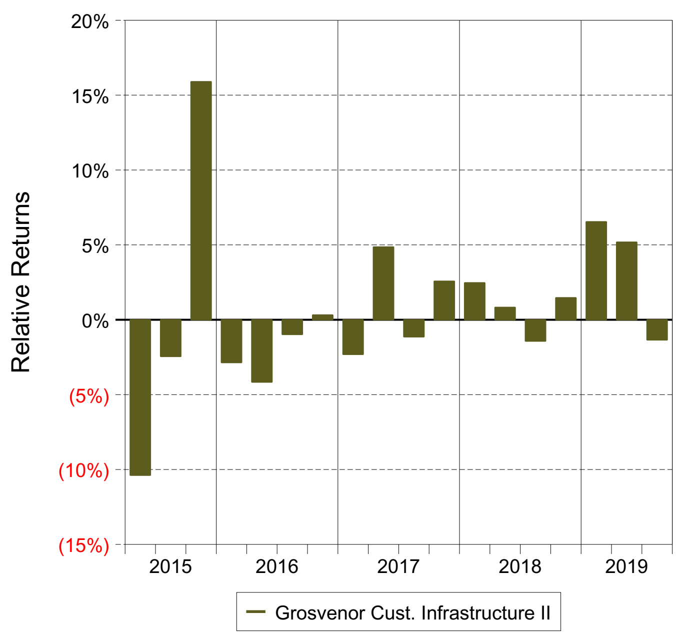
Quarterly Summary and Highlights
- Grosvenor Cust. Infrastructure II's portfolio underperformed the Benchmark by 1.35% for the quarter and outperformed the Benchmark for the year by 12.50%.

Quarterly Asset Growth

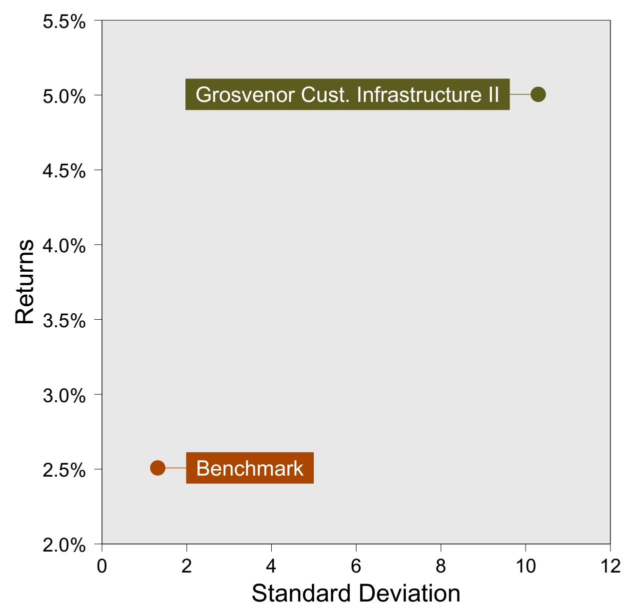
Beginning Market Value	$18,097,986
Net New Investment	$-239,909
Investment Gains/(Losses)	$-67,157
Ending Market Value	$17,790,920



Relative Return vs Benchmark



Annualized Four and One-Half Year Risk vs Return



Macquarie Infras. Partners IV
Period Ended September 30, 2019

Investment Philosophy

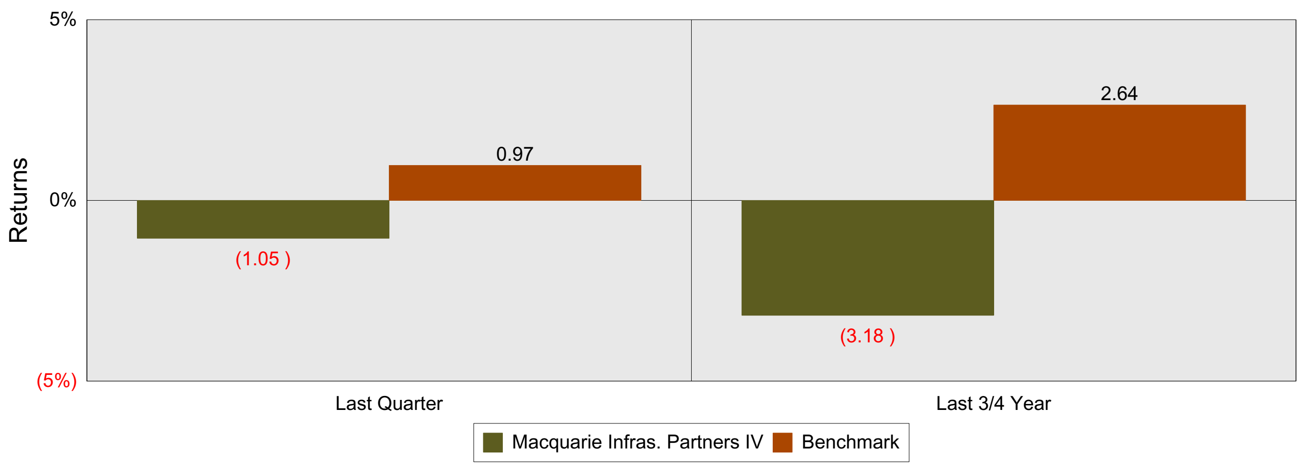
Macquarie's principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team's sector expertise and operating experience 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

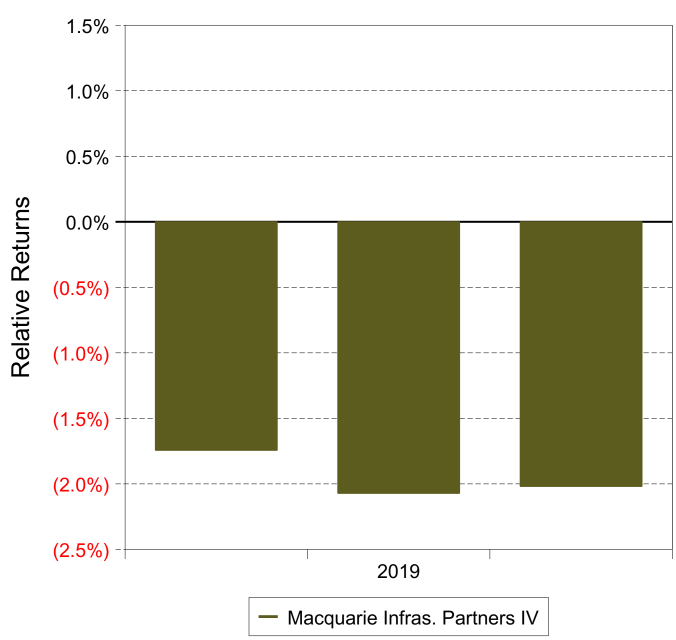
- Macquarie Infras. Partners IV's portfolio underperformed the Benchmark by 2.02% for the quarter and underperformed the Benchmark for the three-quarter year by 5.82%.

Quarterly Asset Growth

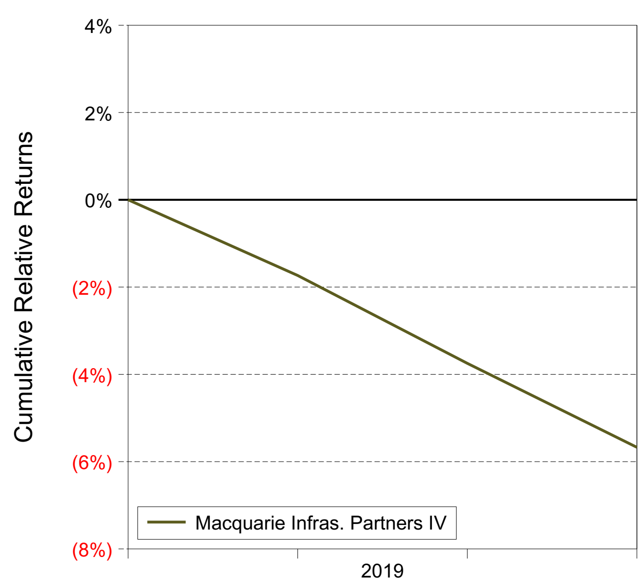
Beginning Market Value	$25,370,463
Net New Investment	$13,211,198
Investment Gains/(Losses)	$-283,844
Ending Market Value	$38,297,817



Relative Return vs Benchmark



Cumulative Returns vs Benchmark

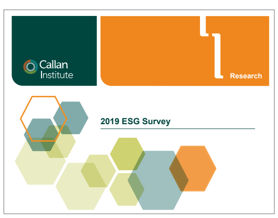


Research and Educational Programs

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

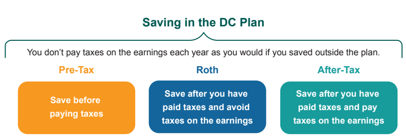
DTS Offers Some Key Advantages for Evaluating Fixed Income Portfolios | This paper describes duration times spread (DTS), which measures systematic credit-spread risk exposure. DTS estimates the return of any bond, by percentage, if its spread were to change from the current level, all else equal. DTS offers several advantages for monitoring risk in credit portfolios over other methods.



2019 ESG Survey | Callan's seventh annual survey assessing the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market.

Callan's DC Index in Detail | A video about the Callan DC Index™: why we started it, what it measures, and how it can benefit defined contribution plan sponsors.

DC Plan Hacks: Tips for an Efficient Design | Defined contribution plan sponsors should regularly evaluate their plans to make sure they serve the organization's benefits philosophy. When evaluating changes, the sponsor should consider its demographics, cost of benefits, vendor capabilities, impact on nondiscrimination testing, communication capabilities, and legal requirements.



2019 June Workshop Summary: In the Age of Illiquidity | For many nonprofits and defined benefit plans, the shift to higher-returning but less liquid asset classes has myriad implications. This summary discusses how consultants, institutional investors, and investment managers can work together to identify solutions tailored to each plan.

The Keys to Unlocking Private Equity Portfolio Assessment Private equity performance evaluation has some unique considerations, so return calculations and benchmarking methodologies differ from public securities. Closed-end private equity vehicles are assessed using ratio analyses and internal rate of return (IRR) measures. Using performance metrics, private equity portfolios can be evaluated at the partnership level, at the vintage year level, and then at the total portfolio level.

Survivorship Bias and the Walking Dead | Survivorship bias, the predisposition to evaluate a data set by focusing on the "survivors" rather than also examining the record of non-survivors, is important to understand for hedge fund peer groups, which tend to have a relatively large number of constituents that disappear. Using a proprietary approach, Callan is able to adjust peer group comparisons for survivorship bias. This better-informed perspective enables a more honest assessment in considering performance relative to other opportunities.

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 institutional investors, 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.

2020 National Conference
Celebrating the 40th anniversary of the Callan Institute
January 27-29, 2020 – San Francisco

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

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.

Introduction to Investments
April 21-22, 2020
July 21-22, 2020
This program familiarizes institutional investor trustees and 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.

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

Quarterly List as of September 30, 2019

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 an 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 Inc.
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
Aurelius Capital Management
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 LLC
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Corbin Capital Partners, L.P.
Cooke & Bieler, L.P.
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 Advisors, LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.

Manager Name
Heitman LLC
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 North America, Inc.
Ivy Investments
J.P. Morgan
Janus
Jarislowsky Fraser Global Investment Management
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
LMCG Investments, LLC
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 Investment Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
Mellon
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

Manager Name
Osterweis Capital Management, LLC
P/E Investments
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, LLC.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Polen Capital Management
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.
South Texas Money Management, Ltd.
State Street Global Advisors
Strategic Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
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

Callan

September 30, 2019

North Dakota State Investment Board Insurance Trust

Investment Measurement Service Quarterly Review

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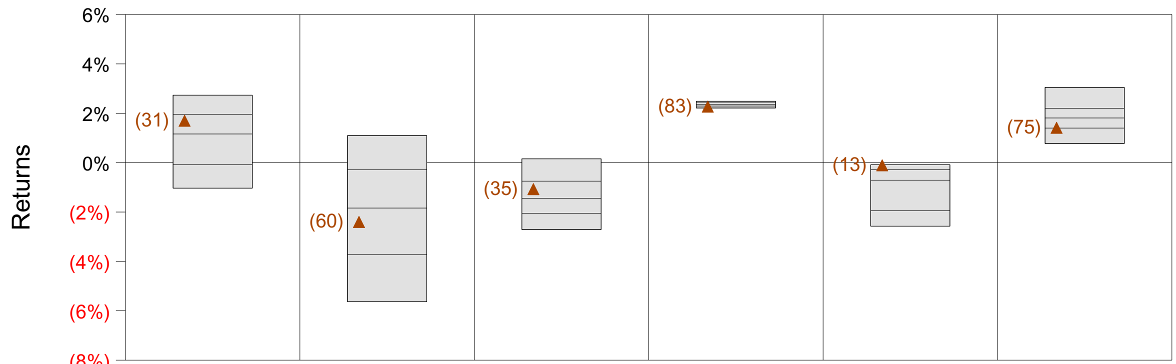
Market Overview

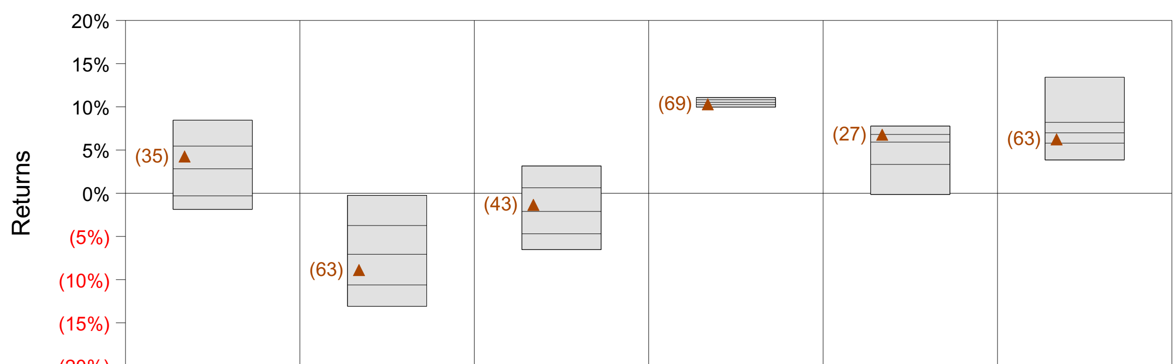
The charts below illustrate the range of returns across managers in Callan's Separate Account database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also 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 September 30, 2019



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	2.73	1.10	0.15	2.49	(0.08)	3.05
25th Percentile	1.95	(0.29)	(0.75)	2.45	(0.28)	2.20
Median	1.16	(1.84)	(1.44)	2.36	(0.71)	1.81
75th Percentile	(0.08)	(3.72)	(2.05)	2.29	(1.95)	1.40
90th Percentile	(1.03)	(5.63)	(2.71)	2.21	(2.57)	0.77
Index ▲	1.70	(2.40)	(1.07)	2.27	(0.11)	1.41

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



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	8.46	(0.24)	3.16	11.08	7.77	13.43
25th Percentile	5.46	(3.74)	0.63	10.82	6.80	8.21
Median	2.83	(7.07)	(2.10)	10.52	5.92	6.99
75th Percentile	(0.31)	(10.61)	(4.70)	10.26	3.34	5.80
90th Percentile	(1.87)	(13.09)	(6.52)	9.97	(0.14)	3.85
Index ▲	4.25	(8.89)	(1.34)	10.30	6.78	6.24

Callan Institute

Third Quarter 2019

Capital Market Review

The Four Most Dangerous Words

ECONOMY

2 PAGE

"This time, it's different" has been trotted out near the peak of most cycles as justification for why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Steady Returns Amid Equities Rebound

INSTITUTIONAL INVESTORS

4 PAGE

Corporate plans gained the most among plan types over the one-year period ending in the third quarter. Nonprofits trailed all fund types. Over the last 20 years, returns for investor types ranged from 6.2%-6.3%, outpacing the 6.1% return of a stocks-bonds benchmark.

U.S. Stocks Mixed; Global Markets Fall

EQUITY

6 PAGE

U.S. equity markets posted mixed results amid historic lows for 30-year Treasury yields and a historic factor rotation. Global equity markets turned negative after modest but positive results in the second quarter, buffeted by geopolitical turmoil.

After Two Rate Cuts, Yields Fall Globally

FIXED INCOME

8 PAGE

The Federal Open Market Committee cut short-term interest rates by 25 basis points twice in the third quarter. Yields fell in the U.S. and abroad given global growth headwinds. U.S. fixed income saw mostly positive returns; non-U.S. returns were mixed.

Real Estate Solid; Real Assets Down

REAL ESTATE/REAL ASSETS

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U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle. Global REITs gained 4.6% in the third quarter; U.S. REITs advanced 7.8%. Most real assets, with the notable exception of gold, finished the quarter lower.

A Bountiful but Smaller Harvest

PRIVATE EQUITY

12 PAGE

Most private equity activity measures were down in the third quarter. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and spooky geopolitical events dampened activity so far this year.

Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs

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Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat. Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.

Returns Moderate for Callan DC Index

DEFINED CONTRIBUTION

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The Callan DC Index™ rose 3.3% in the second quarter compared to 9.6% in the first quarter. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation. The Index's growth in balances returned to a normal level after a big gain in the first quarter.

Broad Market Quarterly Returns

U.S. Equity Russell 3000	Non-U.S. Equity MSCI ACWI ex USA	U.S. Fixed Income Bloomberg Barclays Agg	Non-U.S. Fixed Income Bloomberg Barclays Gbl ex US
1.2%	-1.8%	2.3%	-0.6%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Four Most Dangerous Words (This Time, It's Different…)

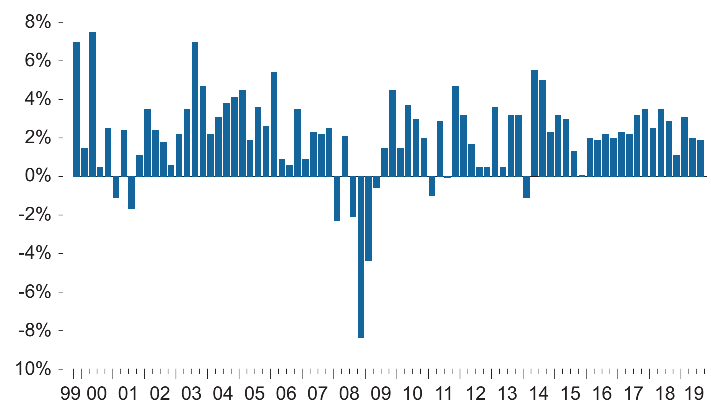
ECONOMY | Jay Kloepfer

Third quarter U.S. GDP growth surprised on the upside, coming in at 1.9% and extending what is now the longest economic expansion on record to 124 months. While 1.9% sounds modest compared to past cycles, it is positively robust compared to developed economies around the globe. The U.S. economy, and to an extent the entire global economy, has defied fears of an imminent collapse all year. While the current expansion may appear long in the tooth, elapsed time is not an economic variable. This expansion has been far weaker than each of the past 10, whether measured by cumulative GDP growth (at just under 25%, it's about half that of the 1990s), by job creation, or by investment. The overhang of the housing market collapse has weighed heavily on growth since 2009, and the measured pace of growth has in fact enabled the U.S. economy to maintain a slow burn.

Several long-held tenets of fundamental macroeconomics appear to be under serious re-consideration after the extraordinary 10-year period following the Global Financial Crisis: the cause (and the absence) of inflation; the execution of monetary policy; the role of central banks and in particular the pivot by the Federal Reserve at the start of 2019; and the business cycle. The new macroeconomic narrative says that first, the business cycle as we know it has been disrupted; second, the source and volatility of inflation has been altered going forward; third, central banks have added sustaining economic expansion to their official remit, therefore the quantitative easing (QE) genie is out of the bottle and we will not be stuffing it back in anytime soon. All of these changes to the macro world are interrelated, one sustaining the other, and are potentially pointing to a different path for the U.S. and global economy than would be expected, given past accepted relationships between inflation, monetary policy, and the business cycle.

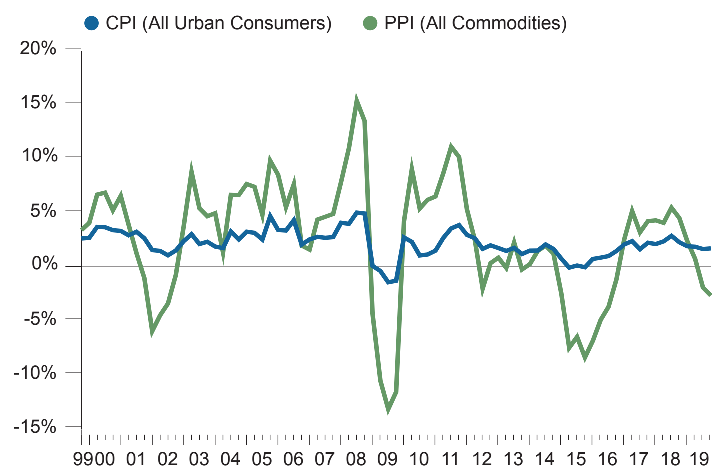
"This time, it's different" has been trotted out near the peak of most cycles to justify why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

In the words of many analysts, the Fed rate hike in December 2018 may have been the end of an era. The Fed's standard operating procedure until now has been to tighten preemptively before inflation takes off, and following the extraordinary period of zero interest rate policy, the Fed's goal had been to normalize rates while inflation was low. The Fed pivot in January to pause on rate hikes, and then to implement two cuts in the third quarter while the expansion continues, indicates that preemptive tightening and rate normalization are over, and we may not see them again. The macro world as we know it may have changed.

The headlines of impending doom that have dominated 2019 make the coming recession, if it ever materializes, the most anticipated slowdown ever. The economic result so far in 2019 is that the U.S. economy has shrugged off slowing global growth, a prolonged trade war with China, and geopolitical uncertainty in the euro zone due to Brexit—and continued to steam along. The job market remains strong, and the unemployment rate is at a generational low of 3.6%. U.S. economic growth is clearly moderating, but the expected plunge has yet to materialize, in part because of the lack of obvious imbalances, and in part because of the relatively insular nature of the U.S. economy. The trade war with China is top of the news, yet the cumulative impact on GDP growth since 2018 is less than 1%, as estimated by Capital Economics. The rest of the world has clearly slowed, and global GDP growth looks ready to fall to its weakest pace (near 2% next year) since 2012.

The source of inflation has shifted from the goods and commodities sectors to the service sector. Goods and commodities have shown substantial variability, with the attendant impact on the business cycle and on prices. The service sector shows much more subdued cyclicality, and as a result both the business cycle and inflation may become irrevocably less volatile, with the boom and bust of past cycles no longer the expectation. Headline inflation came in at a 1.7% annual rate in the third quarter, still well below the Fed's target of 2%, and producer price inflation in particular went negative during 2019, dragged down by commodity and goods prices. The persistence of low inflation in the face of continued expansion and a decade of accommodative monetary policy is one factor giving the Fed cover to cut rates while growth continues.

The Long-Term View

	2019	Periods ended Dec. 31, 2018			
Index	**3rd Qtr**	**Year**	**5 Yrs**	**10 Yrs**	**25 Yrs**
U.S. Equity					
Russell 3000	1.2	-5.2	7.9	13.2	9.0
S&P 500	1.7	-4.4	8.5	13.1	9.1
Russell 2000	-2.4	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	-1.1	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	-1.8	-14.2	0.7	6.6	--
MSCI Emerging Markets	-4.2	-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	2.3	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 Gl Agg ex US	-0.6	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.4	6.7	9.3	7.5	9.3
FTSE Nareit Equity	7.8	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	0.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.3	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.8	-11.2	-8.8	-3.8	2.0
Gold Spot Price	4.2	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.2	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of June 30, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17
Employment Cost–Total Compensation Growth	2.8%	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%
Nonfarm Business–Productivity Growth	-0.1%*	2.3%	3.5%	0.1%	1.2%	1.8%	0.9%	0.9%
GDP Growth	1.9%	2.0%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%
Manufacturing Capacity Utilization	75.5%	75.5%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%
Consumer Sentiment Index (1966=100)	93.8	98.4	94.5	98.2	98.1	98.3	98.9	98.4

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

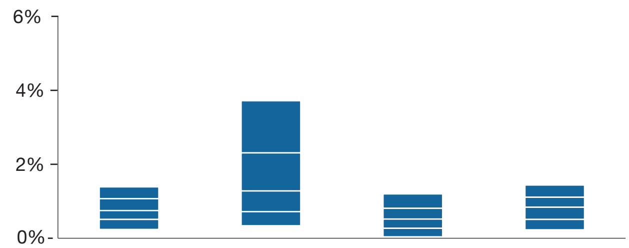
* Estimated figure provided by IHS Markit

Steady Returns Continue Amid Equities Rebound

INSTITUTIONAL INVESTORS

- A quarterly rebalanced 60% S&P 500/40% Bloomberg Barclays Aggregate portfolio returned 7.1% over the one year ended September 30, 2019. All broad institutional investor groups underperformed this benchmark.
- Both U.S. and non-U.S. equity markets continued their rebound in the third quarter after dropping during 2018. Non-U.S. equity underperformed relative to U.S. equity during 2018 and so far this year.
- Corporate plans gained the most among plan types over the one-year period, followed by public defined benefit (DB) plans. Nonprofits trailed all fund types. Over longer periods, Taft-Hartley plans have tended to perform best, but the range of returns for all institutional investor types tended to be in a narrow range; for instance, over the last 10 years, returns for all investor types ranged from 7.9%-8.4%.
- As the expansion continues, investors are discussing how long it can go on, and the fear of missing out is fading the longer the bull market runs. Investors are also addressing how the reversal in Fed policy changes the landscape, as it and other central banks take on the added role of sustaining the expansion. In addition, investors are examining what current yields portend for capital market assumptions.

Quarterly Returns, Callan Database Groups



	Public Database	Corporate Database	Nonprofit Database	Taft-Hartley Database
10th Percentile	1.39	3.72	1.20	1.44
25th Percentile	1.07	2.31	0.81	1.11
Median	0.75	1.28	0.52	0.84
75th Percentile	0.51	0.72	0.27	0.51
90th Percentile	0.24	0.34	0.04	0.23

Source: Callan

- Public DB plans are focused on returns from private markets, but face mounting pressure to control costs. One approach they have adopted is a barbelled pursuit of active management 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.

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

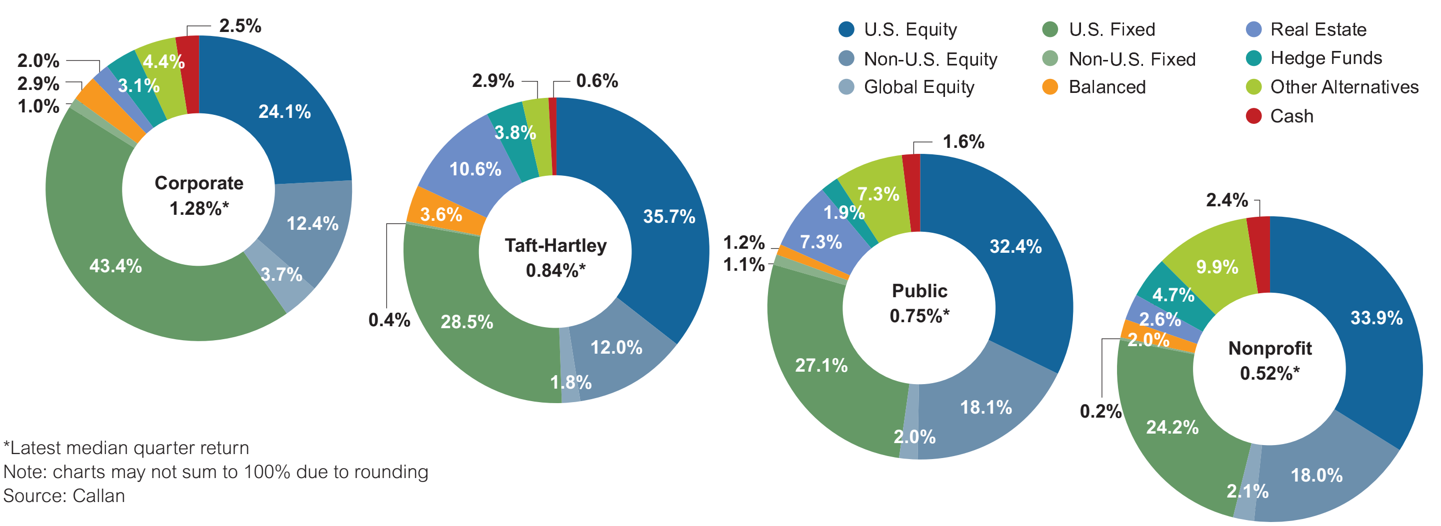
Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	**0.75**	**12.03**	**4.17**	**7.80**	**6.39**	**8.10**
Corporate Database	**1.28**	**14.11**	**6.39**	**7.78**	**6.51**	**8.17**
Nonprofit Database	**0.52**	**12.59**	**3.63**	**7.88**	**5.98**	**7.94**
Taft-Hartley Database	**0.84**	**11.92**	**3.88**	**8.03**	**6.91**	**8.40**
All Institutional Investors	**0.77**	**12.62**	**4.19**	**7.88**	**6.39**	**8.18**
Large (>$1 billion)	**0.88**	**11.86**	**4.57**	**8.11**	**6.63**	**8.43**
Medium ($100mm - $1bn)	**0.83**	**12.54**	**4.25**	**7.91**	**6.46**	**8.17**
Small (<$100 million)	**0.70**	**12.87**	**4.00**	**7.72**	**6.19**	**7.95**

*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.

- All investor types are considering lower equity exposures. They are also reevaluating the purpose and implementation of:
  - Real assets
  - Hedge funds and liquid alternatives
  - Fixed income
  - Equity
- For public DB plans, return enhancement is the most important issue. Alternative assets such as private equity and private real estate continue to draw interest from investors. Some plans appear to be rethinking their approach to passive investments and holding off increasing their allocation to them. Plans continue to express interest in reducing their allocations to U.S. equity.
- Corporate DB plans are most focused on risk control. Many are looking to decrease their equity allocation, with nearly the same number considering increases to fixed income. The percentage of corporate DB plans continuing to implement the process of de-risking has increased significantly over the last four years.
- For DC plans, fees remain top of mind. Retirement income options are also getting attention.
- Enhancing returns is the biggest concern for nonprofits, as they seek to meet spending needs and grow the corpus over time. Among all investor types, nonprofits historically have implemented or considered an outsourced chief investment officer (OCIO) at a higher rate than other types of institutional investors, and that trend continued this quarter.
- As part of their efforts to increase returns to meet plan targets, investors are evaluating how to implement private market allocations, and whether it is feasible to create a customized program implementation.
- For instance, public DB plans are expressing interest in multi-asset class (MAC) strategies. However, that interest is not widely shared. Corporate DB plans and nonprofits do not seem to be interested in increasing their exposure to MACs, and in fact corporate DB plans are increasingly expressing a desire to reduce their MAC allocations. Nonprofits showed a similar shift in sentiment.
- Private real estate and private equity have been staples of many investors' portfolios, and they continue to express interest in increasing their allocations to these asset classes. Investors, most notably nonprofits, are also beginning to indicate growing interest in increasing allocations to private credit.
- Fund liquidity may be a concern that prevents some investors from adding to illiquid investments.
- Despite the interest in alternatives, some plans are terminating their hedge fund exposures.

Average Asset Allocation, Callan Database Groups



*Latest median quarter return
Note: charts may not sum to 100% due to rounding
Source: Callan

Equity

U.S. Equities

U.S. equities posted mixed results amid a market that saw 30-year Treasury yields hit historic lows and the most meaningful, albeit short-lived, factor rotation among stocks since the Global Financial Crisis (GFC). Large cap (+1.4%) and mid cap stocks (+0.5%) posted modest gains for the quarter while small caps declined (Russell 2000: -2.4%). Ongoing U.S.-China trade tension, earnings and interest rate uncertainty, and the global political landscape continued to drive investor uncertainty.

Large Cap ► *S&P 500: +1.7% | Russell 1000: +1.4%*

– Top sectors were in defensive areas including Utilities (+9.3%), Real Estate (+7.7%), and Consumer Staples (+6.1%) in response to investors' continued flight to quality.

– Energy, hurt by falling oil prices, fell 6.3%; Health Care lagged (-2.2%) amid discussions around price transparency and pricing reform by U.S. presidential candidates.

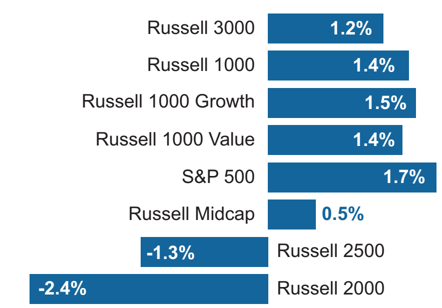
– Cyclical sector exposure has been volatile given uncertainty around the trade deal (and continued sideways movement of markets) along with slowed global growth.

– Up to September, momentum stocks (which have shifted to include many of the market's least volatile stocks) outperformed as investors shunned the cheapest quintile of value (and more volatile) stocks. This trend sharply reversed in early September as the 10-year Treasury yield rose from 1.46% to 1.73% and momentum stocks fell precipitously while value stocks traded up over the course of two days. The magnitude of the reversal gave a boost to value stocks across market capitalizations for the quarter.

Growth vs. Value ► *Russell 1000 Value: +1.4%, Russell 1000 Growth: +1.5% | Russell 2000 Value: -0.6%, Russell 2000 Growth: -4.2%)*

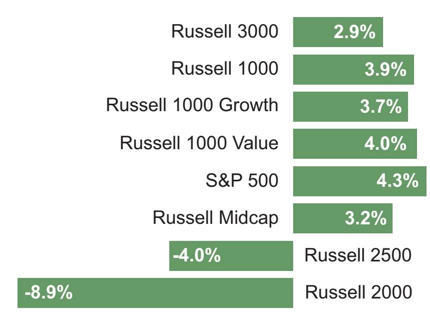
– While value continues to trail growth year-to-date, it gained ground during September's factor reversal, finishing the quarter essentially in line with growth within large caps.

U.S. Equity: Quarterly Returns



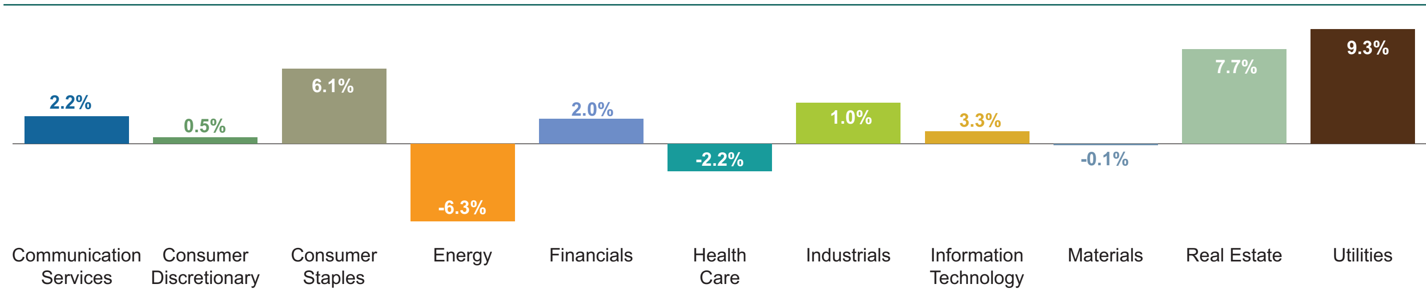
Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Quarterly Performance of Industry Sectors



Source: Standard & Poor's

– Within small cap, value benefited as investors favored the cheapest 20% of small caps while the most expensive quintile within the Russell 2000 declined double digits.

Non-U.S./Global Equities

Global equity markets turned negative in the third quarter. After more modest positive results in the second quarter, fears over continued trade war impacts, a no-deal Brexit, and a potential global slowdown impacted investor behavior. Given this backdrop, more defensive areas of the market outperformed.

Developed ► *MSCI EAFE: -1.1% | MSCI World ex USA: -0.9% | MSCI ACWI ex USA: -1.8% | MSCI Hong Kong: -11.9% | MSCI Japan: +3.1%*

– Boris Johnson's attempted suspension of Parliament and no-deal Brexit proclamations weighed on U.K. stocks (-2.5%).

– Germany (-4.0%) experienced recession fears; industrial production dropped 1.5% in June from the prior month, while the estimate was -0.5%.

– Hong Kong protests proved to be a headwind as its market fell 11.9% over the three-month period.

– Japan (+3.1%) was one of the few bright spots within developed markets as low short-term interest rates remain unchanged and a resolution to the Japan/South Korea trade war looked more promising.

– Cyclical sectors trailed as investors were positioned defensively; Energy (-6.5%) had the worst performance.

– For the quarter, factor performance reflected cautious investor behavior as quality and low volatility did well. However, the month of September saw a brief recovery in value across all markets as trade talks improved and central banks eased.

Emerging Markets ► *MSCI Emerging Markets Index: -4.2%*

– Emerging markets fared worst among global markets; uncertainty weighed heavily on these volatile countries.

– Though most emerging market countries fell during the quarter, Turkey (+11.7%) had strong results as its central bank cut rates two times in less than two months.

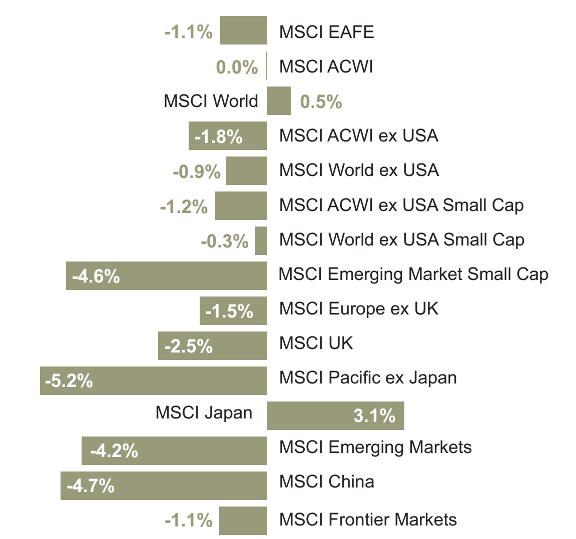
– Factor performance in emerging markets favored quality and price momentum as investors moved toward safe assets.

Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: -0.3% | MSCI EM Small Cap: -4.6%*

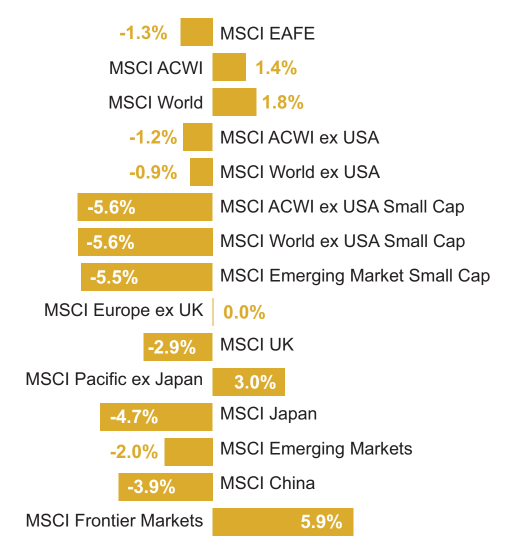
– Small cap marginally outperformed large cap, both in developed and all country ex-U.S. markets; despite overall defensive posturing, idiosyncratic businesses pushed past global market issues.

– Japan (+4.0%) helped drive developed returns as small cap companies also benefited from low rates and resolved trade tensions; Hong Kong (-7.6%) detracted as local businesses were hurt by the protests.

Non-U.S. Equity: Quarterly Returns (U.S. Dollar)



Non-U.S. Equity: One-Year Returns (U.S. Dollar)



Source: MSCI

Fixed Income

The Federal Open Market Committee (FOMC) cut short-term interest rates by 25 basis points twice in the third quarter amid an economic backdrop that has been supported by strong consumer spending and a solid labor market, but challenged by weakening manufacturing data and business investment. The Fed chair stated that the FOMC would act as "appropriate to sustain the expansion," and the European Central Bank and other central banks around the world also moved in the direction of easing monetary policy. Yields fell in the U.S. and abroad given global growth headwinds fueled by mounting trade tensions as well as geopolitical uncertainty.

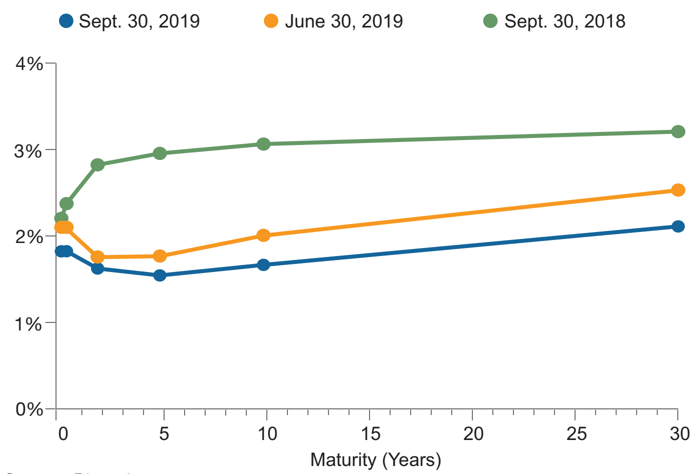
Core Fixed Income ▶ *Bloomberg Barclays US Agg: +2.3%*

- Treasuries returned 2.4% as rates fell across the yield curve.
- While the widely monitored 2- and 10-year key rates remained positive, the spread between the 3-month and 10-year key rates remained inverted.
- Long Treasuries soared (+7.9%) as 30-year yields fell roughly 40 bps.
- Nominal Treasuries outperformed TIPS as inflation expectations continued to fall; 10-year breakeven spreads were 1.53% as of quarter-end, down from 1.69% as of June 30. The 10-year real yield dipped briefly into negative territory in early September.

Investment-Grade Corporates ▶ *Bloomberg Barclays Corporate (Inv. Grade): +3.1%*

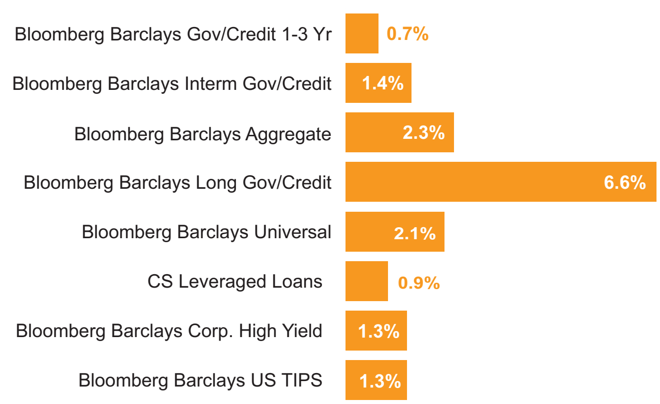
- Investment grade corporate credit spreads were range-bound, but their yield advantage was enough to generate positive excess returns versus like-duration Treasuries.
- Issuance in the corporate bond market was $320 billion in the quarter, $50 billion higher than a year ago; demand remained solid. BBB-rated corporates (+3.1%) modestly outperformed A-rated or higher corporates (+3.0%).

U.S. Treasury Yield Curves



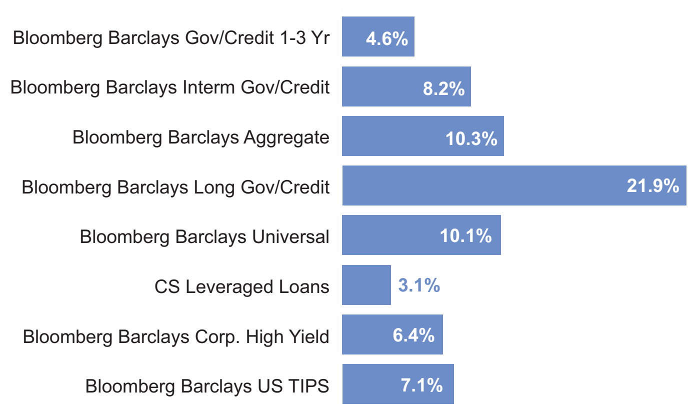
Source: Bloomberg

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

High Yield ▶ *Bloomberg Barclays Corporate HY: +1.3%*

- BB-rated corporates (+2.0%) outperformed CCC-rated corporates (-1.8%). BB- and B-rated spreads narrowed slightly, but the rally in rates helped drive outperformance as a result of higher quality bonds' greater sensitivity to interest rate movements.
- CCC-rated bond spreads widened significantly, representing some concern about deteriorating quality at the lower-end of the spectrum.

Leveraged Loans ▶ *CS Leveraged Loans: +0.9%*

- Bank loans, which have floating rate coupons, underperformed high yield bonds as rates rallied and investors worried about deteriorating credit quality.
- CLO issuance continued to exceed expectations, providing positive technical support to the leveraged loan market.

Non-U.S. Fixed Income

Global Fixed Income ▶ *Bloomberg Barclays Global Aggregate (unhedged): +0.7% | (hedged): +2.6%*

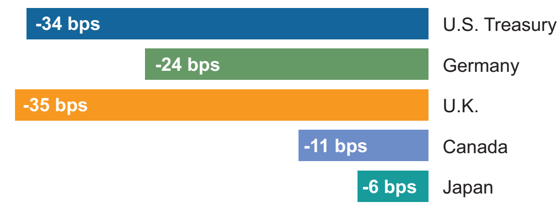
- Developed market sovereign bond yields rallied, pushing European sovereigns further into negative territory as the ECB reduced its deposit rate and announced a new bond purchasing stimulus program.
- Negative yielding debt totals nearly $17 trillion, a record high.
- The U.S. dollar was up 3.4% versus a basket of trade partner currencies and up 4.3% versus the beleaguered euro.

Emerging Market Debt ($US) ▶ *JPM EMBI Global Diversified: +1.5%* | (Local currency) ▶ *JPM GBI-EM Global Diversified: -0.8%*

- Broadly, emerging market currencies depreciated versus the U.S. dollar, hampering local currency returns.
- Within the dollar-denominated benchmark, Argentina (-42%) and Venezuela (-51%) were among the few to post negative returns. Conversely, returns in the local debt benchmark were more mixed with Turkey (+19%) and Argentina (-60%) being outliers.

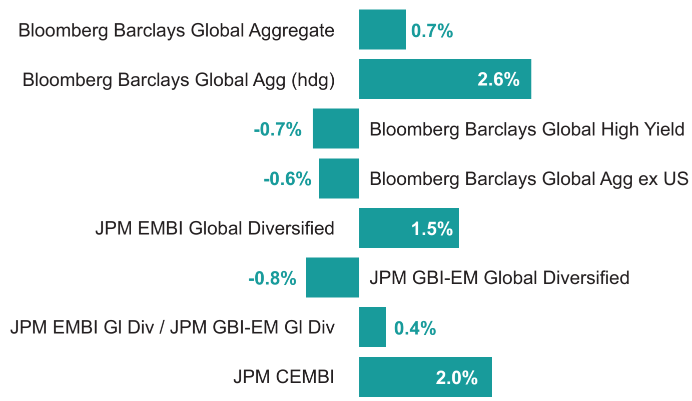
Change in 10-Year Global Government Bond Yields

2Q19 to 3Q19



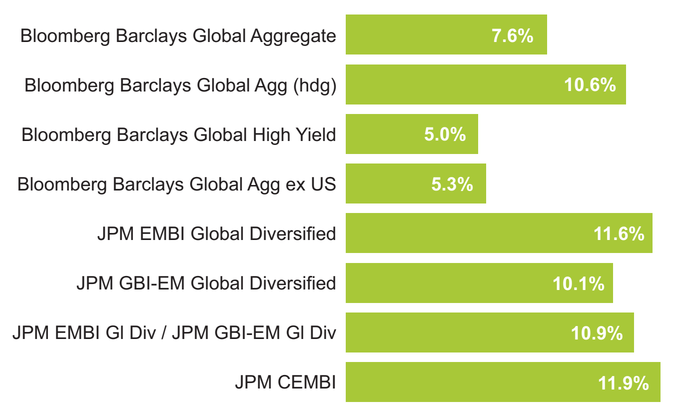
Source: Bloomberg Barclays

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 Stays Solid; Real Assets Mostly Down

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

U.S. Real Estate

Real Estate Returns Continue to Moderate

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- Returns are coming from net operating income (NOI) growth rather than further cap rate compression.
- Industrial continues to outperform other property types.
- Retail showing signs of depreciation

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metros.
- Within the NCREIF Property Index, the vacancy rate for U.S. Office was 9.6% in the quarter, the lowest in over 12 years.
- Net operating income (NOI) has been growing annually and is expected to be the primary return driver. Apartment and Industrial NOI growth fell slightly from the second quarter.

Pricing Remains Expensive in the U.S.

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

REITs Outperformed Global Equities

- U.S. REITs advanced 7.8% in the quarter, outpacing the S&P 500 Index, which rose 1.7%.
- Global REITs gained 4.6% compared to -0.2% for the MSCI ACWI IMI.
- Both U.S. and non-U.S. REITs are trading at net asset value.

Non-U.S. Real Estate

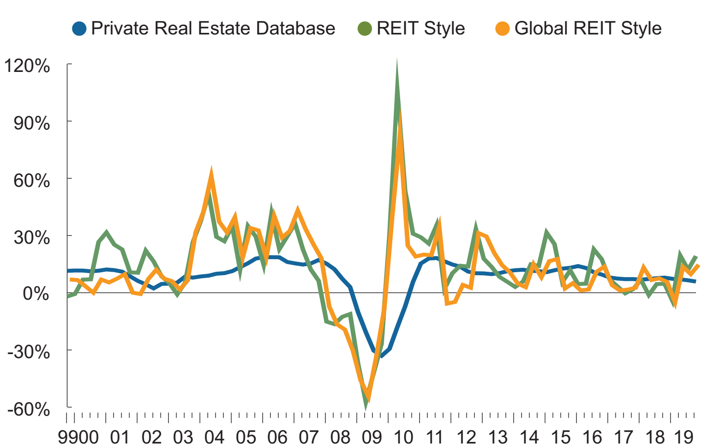
Asia Is Increasingly Important

- U.S.-China trade talks, unrest in Hong Kong, and other areas of political uncertainty have impacted real estate markets in the region. Managers continue to find attractive opportunities in some sectors of the market such as restructuring opportunities, necessity-based retail, and logistics.
- The number of open-end core funds focused on the Asia-Pacific market has increased in 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.
- During 2019, India had its first successful IPO for a REIT.

Europe Buffeted by Political Uncertainty

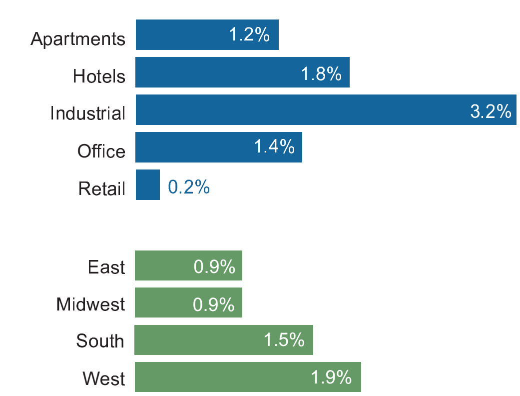
- Political uncertainty continues to weigh on overall economic growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given strong demand and the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Yields between prime and secondary real estate remain wide, providing opportunities for investors targeting transitional assets, as markets across Europe have less modern stock compared to 10 years ago.

Rolling One-Year Returns



Source: Callan

Sector Quarterly Returns by Property Type and Region



Source: NCREIF

Infrastructure Fundraising Momentum Continues

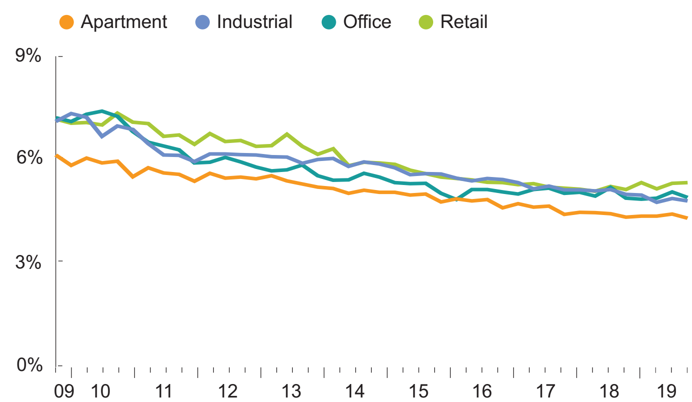
– Open end funds are raising significant capital, and the universe of investible funds keeps increasing.
– The closed end fund market continues to expand, with additional offerings in infrastructure debt, emerging markets, and sector-specific areas (e.g., communications and renewables).

Real Assets

Challenging Quarter as Oil Prices Slide

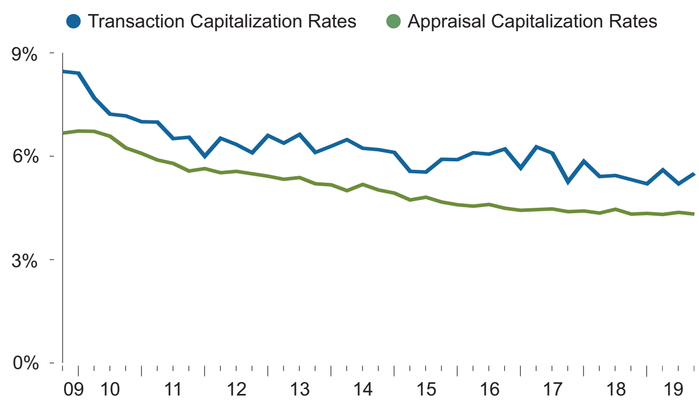
– While the MLP category generally benefits from declining rate environments, volatile and falling oil prices weighed more heavily on the space in the quarter (Alerian MLP Index: -5.0%; +11.0% YTD).
– Oil prices slid from $58.47 to $54.07 (WTI) during the quarter, and the energy-heavy Goldman Sachs Commodity Index was off 4.2%, while Gold (S&P Gold spot price: +4.3%; +15.0% YTD) benefited from its safe haven status.
– Looking across the rest of the commodity complex, Agriculture Commodities finished in negative territory (Bloomberg Commodity Agriculture Subindex: -6.2%), weighed down by coffee, corn, and cotton in particular, while nickel (+35.5%) almost single-handedly lifted the Industrial Metals Subindex (+2.4%) into positive territory for the quarter.

NCREIF Capitalization Rates by Property Type



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

NCREIF Transaction and Appraisal Capitalization Rates



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

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

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	**1.5**	**4.5**	**5.9**	**7.1**	**9.0**	**9.9**	**6.8**
NFI-ODCE (value wt net)	1.1	3.1	4.6	6.3	8.4	9.8	6.9
NCREIF Property	1.4	4.8	6.2	6.8	8.6	9.8	8.6
NCREIF Farmland	1.0	2.4	5.3	6.1	7.9	11.0	14.2
NCREIF Timberland	0.2	1.3	2.1	3.1	4.4	4.0	7.0
Public Real Estate							
Global Real Estate Style	**4.6**	**22.3**	**14.7**	**7.4**	**8.3**	**10.2**	**8.3**
FTSE EPRA Nareit Developed	4.6	19.8	13.0	5.6	6.8	8.6	--
Global ex-U.S. Real Estate Style	**2.8**	**17.9**	**11.7**	**7.9**	**7.8**	**8.1**	**7.8**
FTSE EPRA Nareit Dev ex US	1.5	14.6	8.9	5.9	5.0	6.5	--
U.S. REIT Style	**7.7**	**28.5**	**19.2**	**8.4**	**10.7**	**13.6**	**9.7**
EPRA Nareit Equity REITs	7.8	27.0	18.4	7.4	10.3	13.0	9.0

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

A Bountiful but Smaller Harvest

PRIVATE EQUITY | Gary Robertson

Private equity activity measures were down in the third quarter, except for upticks in dollar volume for fundraising and buyout exits. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and challenging geopolitical events dampened activity so far this year.

Private equity partnerships holding final closes totaled $188 billion, with 201 new partnerships formed, according to PitchBook. The dollar volume rose 27% from the prior quarter, but the number of funds holding final closes fell 7%. So far this year, 2019 is running 7% behind 2018. No strategy is dominating the market compared to historical commitment ranges, as investors focus on diversification.

New buyout transactions declined, according to PitchBook. Funds closed 1,491 company investments with $110 billion in disclosed deal value, representing a 14% decline in count and a 16% dip in dollar value from the second quarter.

According to PitchBook, new investments in venture capital companies totaled 4,664 rounds of financing with $57 billion of announced value. The number of investments was down 13% from the prior quarter, and announced value fell 15%. The median pre-money valuations of Series A through D rounds continued to increase, with only Seed Stage remaining flat.

Funds Closed January 1 to September 30, 2019

Strategy	No. of Funds	Amt ($mm)	Share
Venture Capital	263	46,702	10%
Growth Equity	50	61,789	13%
Buyouts	158	241,920	51%
Mezzanine Debt	39	60,308	13%
Distressed	8	12,203	3%
Energy	10	14,767	3%
Secondary and Other	39	27,970	6%
Fund-of-funds	20	7,358	2%
Totals	**587**	**473,017**	**100%**

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

There were 404 private M&A exits of private equity-backed companies (excluding venture capital), PitchBook reports, with disclosed values totaling $122 billion. Private sale count was down 6% from the prior quarter but announced dollar volume rose 12%. The year-to-date exit count declined 35%. There were 16 private-equity backed IPOs in the third quarter raising $6 billion, a steep decline from 42 totaling $16 billion previously.

Venture-backed M&A exits totaled 320 transactions with disclosed value of $12 billion. The number of sales fell 12% and announced dollar volume plunged 52%. The year-to-date exit count declined 13%. There were 47 VC-backed IPOs in the third quarter with a combined float of $9 billion. For comparison, the second quarter had 59 IPOs and total issuance of $22 billion. Peloton was the largest third quarter IPO, raising $1.2 billion.

Private Equity Performance Database (%) (Pooled Horizon IRRs through June 30, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	6.25	18.96	15.93	14.95	15.01	11.80	13.06
Growth Equity	4.70	15.37	17.71	13.26	14.77	13.59	13.53
All Buyouts	4.12	10.72	16.06	11.85	15.27	13.72	12.07
Mezzanine	2.37	8.05	11.64	10.28	11.05	10.63	8.73
Credit Opportunities	1.09	3.20	9.37	5.68	13.39	9.61	10.13
Control Distressed	1.95	4.27	10.47	7.62	12.16	10.63	10.58
All Private Equity	**4.34**	**12.31**	**15.52**	**11.98**	**14.79**	**12.88**	**12.13**
S&P 500	4.30	10.42	14.19	10.71	14.70	8.75	5.90

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.

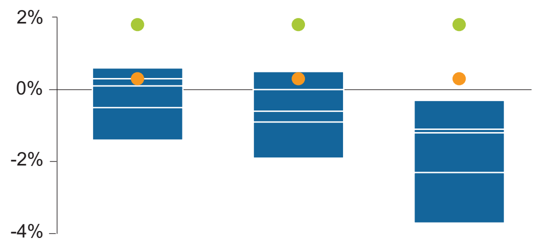
Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs | Jim McKee

Alpha trades flat as markets soften during the quarter

- Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat.
- *Managed Futures* (+3.5%) and *Global Macro* (+2.1%) were lead performers for the second quarter in a row, benefiting from continuing rate and currency trends.
- *Equity Market Neutral* (-1.7%) slipped hard, particularly given September's sudden factor rotation to value while momentum reversed.
- *Long/Short Equity* (+0.1%) was unchanged without much equity beta support; the equity factor reversal in September also hurt.
- *Distressed* (-3.5%) sank as spreads among weaker credits widened amid a flight-to-quality.
- Hedge fund portfolios with exposure to macro trading fared better while those with emerging market exposure, particularly Argentina, suffered more.

Hedge Fund-of-Funds Style Group Returns



	Absolute Return	Core Diversified	Long/Short Equity
10th Percentile	0.6	0.5	-0.3
25th Percentile	0.3	0.0	-1.1
Median	0.1	-0.6	-1.2
75th Percentile	-0.5	-0.9	-2.3
90th Percentile	-1.4	-1.9	-3.7
CS Hedge Fund ●	0.3	0.3	0.3
90-Day T-Bill +5% ●	1.8	1.8	1.8

Sources: Callan, Credit Suisse, and Federal Reserve

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

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	**-0.63**	**0.46**	**3.76**	**2.35**	**4.22**	**4.24**
Callan Absolute Return FOF Style	**0.07**	**0.80**	**3.60**	**2.32**	**4.16**	**3.95**
Callan Core Diversified FOF Style	**-0.62**	**0.23**	**3.37**	**2.02**	**3.99**	**4.12**
Callan Long/Short Equity FOF Style	**-1.19**	**0.02**	**4.57**	**3.40**	**4.67**	**5.37**
Credit Suisse Hedge Fund	0.26	2.13	3.83	2.30	4.32	4.97
CS Convertible Arbitrage	-0.41	1.29	2.55	2.28	4.36	3.78
CS Distressed	-3.46	-3.09	3.06	0.79	4.65	5.22
CS Emerging Markets	-4.11	1.81	3.29	3.02	4.28	5.99
CS Equity Market Neutral	-1.74	-4.37	0.27	0.16	1.14	-0.57
CS Event-Driven Multi	-0.80	0.18	3.49	0.16	3.37	5.05
CS Fixed Income Arb	0.28	2.38	4.39	3.23	5.66	3.84
CS Global Macro	2.12	7.66	5.35	3.11	4.89	6.43
CS Long/Short Equity	0.10	-0.36	4.85	3.38	4.88	5.74
CS Managed Futures	3.53	7.81	0.59	2.07	1.57	3.58
CS Multi-Strategy	0.68	1.94	4.23	4.18	6.23	5.95
CS Risk Arbitrage	0.23	1.98	3.18	2.64	2.68	3.81
HFRI Asset Wtd Composite	0.30	2.65	4.39	2.93	4.49	--
90-Day T-Bill + 5%	1.77	7.39	6.54	5.98	5.54	6.39

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

Amid choppy markets, MACs struggle for gains

- Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.
- The **HFR Risk Parity Index** targeting 10% volatility was positive (+1.9%), reflecting the modest lift of stocks and bonds.
- **Eurekahedge Multi-Factor Risk Premia Index** fell 5.1%, indicating broad headwinds for those seeking diversifying returns outside long-only markets.
- Within risk premia, *equity momentum* was a key detractor in light of September's factor reversal; *rates momentum* was an offsetting contributor given the trend of falling yields.
- *Long-Biased* trailed due to exposure to risk-on assets.
- *Absolute Return* benefited from exposure to higher-quality assets.

Volatility simmers slightly below average

- Markets are further discounting growth with lower expected rates, long and short.
- If global manufacturing data softens further, thereby overwhelming expectations of central banks easing, hedge funds are positioned reasonably well for an equity downturn.
- However, any economic rebound with tepid inflation will cause most hedge funds to lag.

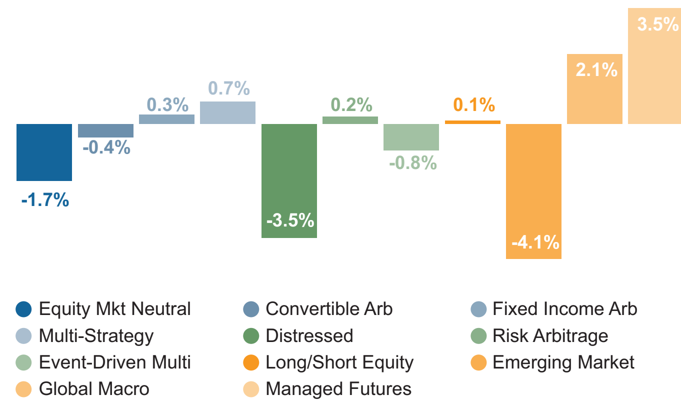
Falling yield curve shrinks the playing field, however level it may be

- Lower long rates factored into stocks and bonds leave less room for traditional assets to run, giving hedged strategies more opportunity to shine.
- However, as short rates also settle to lower levels, dwindling cash returns and short interest rebates take some wind out of hedge fund sails.

Industry outflows shade constructive mood

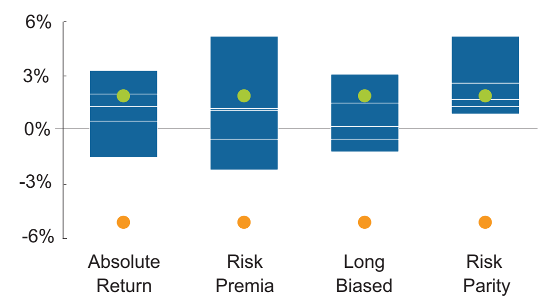
- The third quarter was the sixth consecutive quarter of industry asset outflows, which runs counter to the industry's positive view of an improving opportunity set ahead with increasing volatility tied to growing economic uncertainty.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



	Absolute Return	Risk Premia	Long Biased	Risk Parity
10th Percentile	3.3	5.2	3.1	5.2
25th Percentile	2.0	1.2	1.5	2.6
Median	1.3	1.1	0.2	1.7
75th Percentile	0.5	-0.5	-0.5	1.3
90th Percentile	-1.5	-2.2	-1.2	0.9
Eurekahedge MFRP (5%v) ●	-5.1	-5.1	-5.1	-5.1
60% S&P 500/ 40% BB Barclays Agg ●	1.9	1.9	1.9	1.9

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

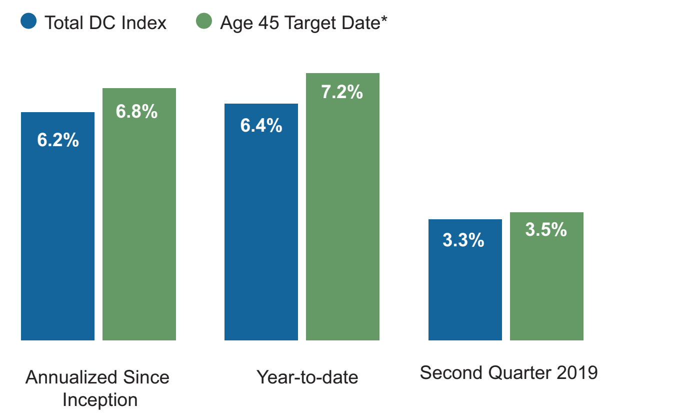
Performance Slows but Remains Solid

DEFINED CONTRIBUTION | Patrick Wisdom

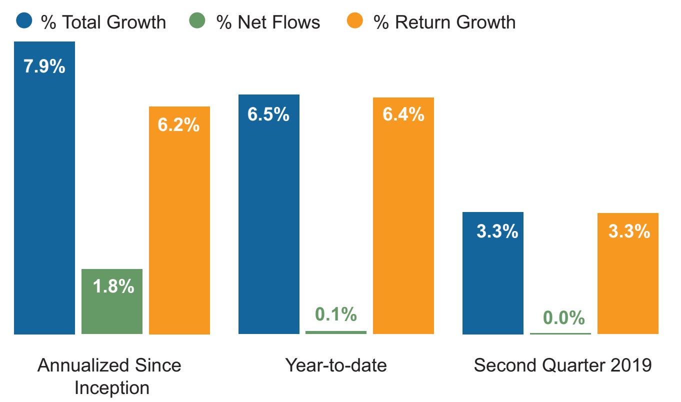
- The Callan DC Index™ gained 3.3% in the second quarter, compared to the first quarter's jump of 9.6%. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation.
- The Index's growth in balances in the second quarter (3.3%) returned to a normal level after a robust gain in the first quarter (9.8%). Net flows were also positive but very small (0.03%).
- Target date funds (TDFs) yet again saw the largest inflows for the quarter. Both large-cap and small/mid-cap U.S. equity experienced large outflows. U.S. fixed income had relatively large inflows, while stable value options had relatively large outflows.
- Second quarter turnover (i.e., net transfer activity levels within DC plans) increased to 0.54% from the previous quarter's measure of 0.48%. Turnover has risen for three consecutive quarters but still sits below the historical average (0.60%).
- The overall allocation to equity increased to 70.0% from 69.5% in the previous quarter. The current allocation exceeds the Index's historical average by 2.2 percentage points.
- The percentage of assets allocated to U.S. large-cap equity rose. Gains as a result of strong performance outweighed outflows from the asset class. The current allocation to U.S. large-cap equity (25.2%) is now at its second highest level over the past decade.
- On the other hand, the percentage allocated to stable value decreased, while the allocation to TDFs remained steady.
- Stable value's prevalence within DC plans rose for the seventh consecutive quarter and is now at 77%. Additionally, more plans are now offering emerging market equity, global equity, and high yield fixed income as investment options.

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 (Second Quarter 2019)
(Top Two and Bottom Two Asset Gatherers)

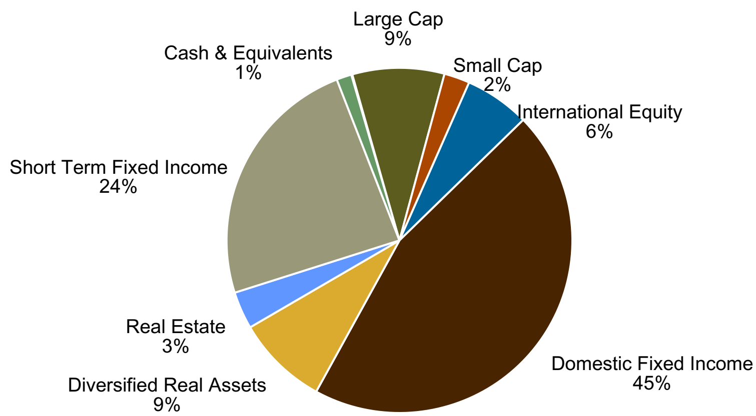
Asset Class	Flows as % of Total Net Flows
Target Date Funds	62.56%
U.S. Fixed Income	26.82%
U.S. Smid Cap	-20.40%
U.S. Large Cap	-45.95%
Total Turnover**	**0.54%**

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.

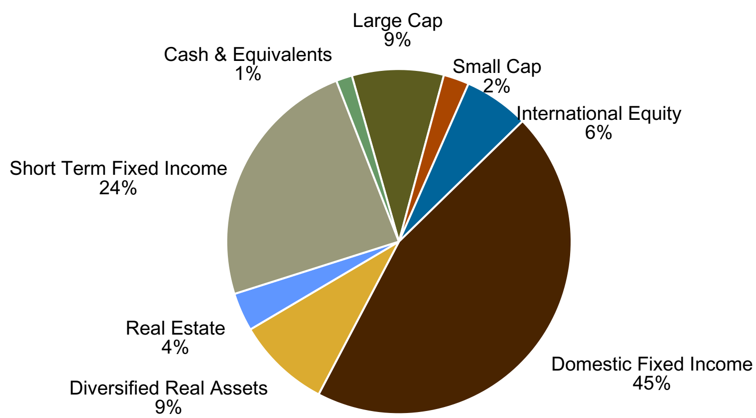
Actual vs Target Asset Allocation
As of September 30, 2019

The first chart below shows the Fund's asset allocation as of September 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



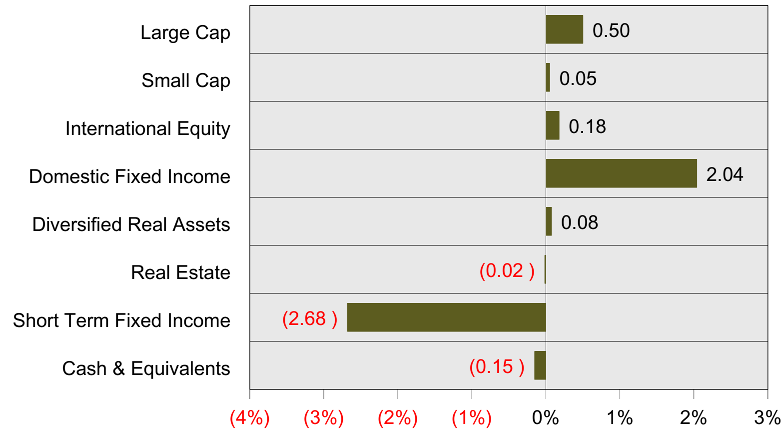
Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	248,233	8.6%	8.6%	0.0%	435
Small Cap	69,891	2.4%	2.4%	(0.0%)	(592)
International Equity	176,771	6.1%	6.1%	0.0%	301
Domestic Fixed Income	1,303,555	45.3%	45.0%	0.3%	8,517
Diversified Real Assets	248,039	8.6%	8.8%	(0.2%)	(5,989)
Real Estate	100,308	3.5%	3.6%	(0.1%)	(3,797)
Short Term Fixed Income	691,957	24.0%	24.0%	0.1%	1,988
Cash & Equivalents	41,180	1.4%	1.5%	(0.0%)	(861)
Total	2,879,934	100.0%	100.0%		

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

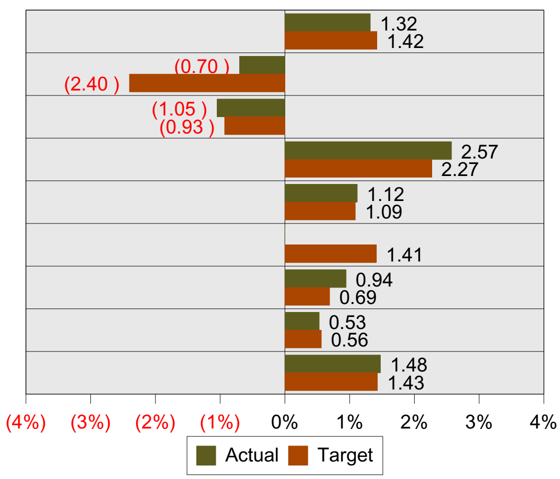
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

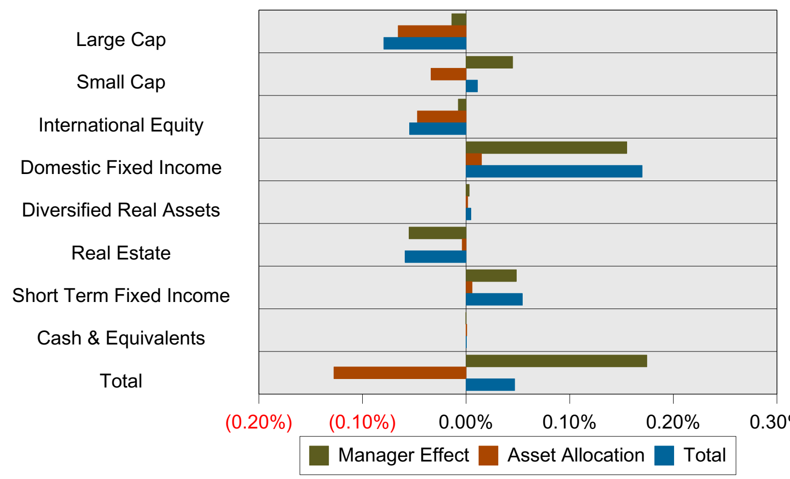
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

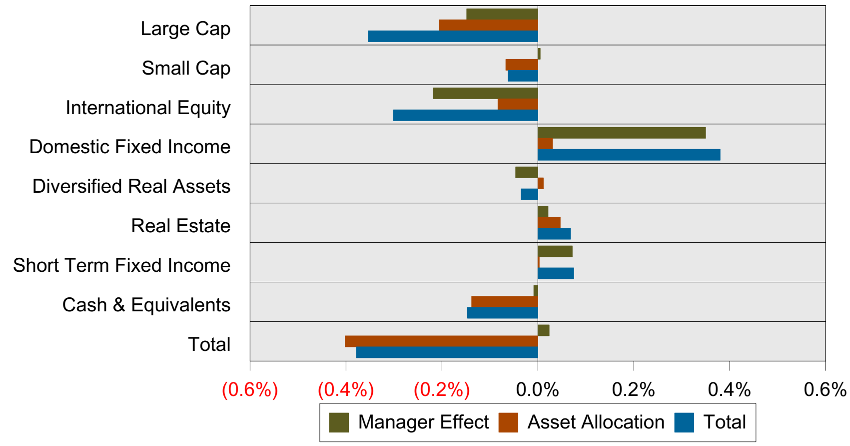
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	9%	1.32%	1.42%	(0.01%)	(0.07%)	(0.08%)
Small Cap	3%	3%	(0.70%)	(2.40%)	0.04%	(0.03%)	0.01%
International Equity	7%	7%	(1.05%)	(0.93%)	(0.01%)	(0.05%)	(0.05%)
Domestic Fixed Income	51%	48%	2.57%	2.27%	0.16%	0.01%	0.17%
Diversified Real Assets	10%	10%	1.12%	1.09%	0.00%	0.00%	0.00%
Real Estate	4%	4%	0.00%	1.41%	(0.06%)	(0.00%)	(0.06%)
Short Term Fixed Income	15%	18%	0.94%	0.69%	0.05%	0.01%	0.05%
Cash & Equivalents	1%	1%	0.53%	0.56%	(0.00%)	0.00%	0.00%
Total			**1.48% =**	**1.43% +**	**0.17% +**	**(0.13%)**	**0.05%**

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

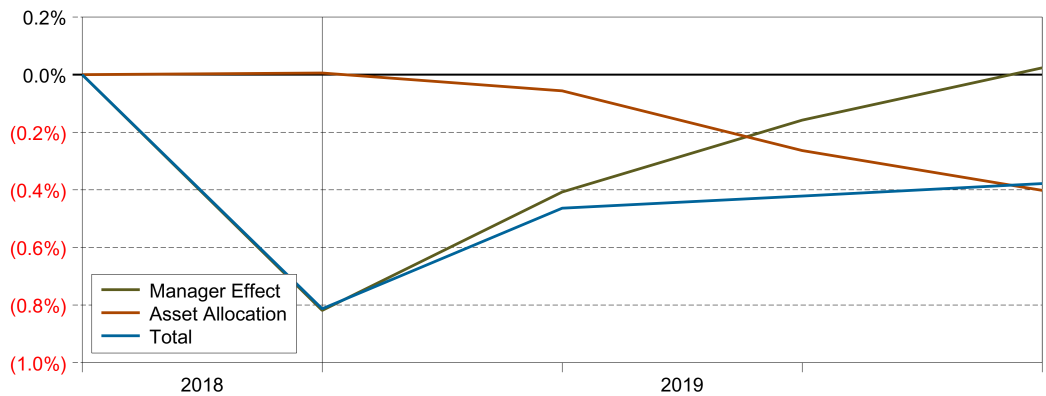
Cumulative Total Fund Relative Attribution - September 30, 2019

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

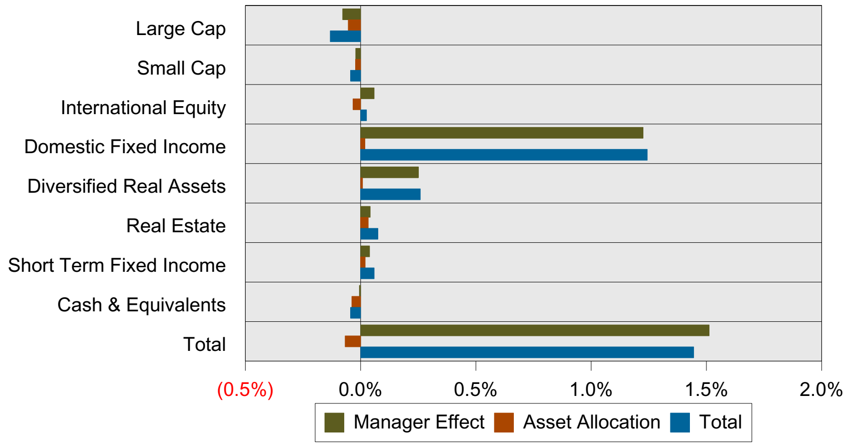
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	10%	2.40%	3.87%	(0.15%)	(0.21%)	(0.35%)
Small Cap	3%	3%	(8.60%)	(8.89%)	0.00%	(0.07%)	(0.06%)
International Equity	7%	7%	(4.07%)	(0.95%)	(0.22%)	(0.08%)	(0.30%)
Domestic Fixed Income	53%	53%	10.99%	10.30%	0.35%	0.03%	0.38%
Diversified Real Assets	10%	10%	5.48%	5.72%	(0.05%)	0.01%	(0.03%)
Real Estate	4%	4%	5.74%	6.24%	0.02%	0.05%	0.07%
Short Term Fixed Income	8%	9%	5.25%	4.64%	0.07%	0.00%	0.07%
Cash & Equivalents	4%	4%	2.23%	2.39%	(0.01%)	(0.14%)	(0.15%)
Total			**6.79% =**	**7.17% +**	**0.02% +**	**(0.40%)**	**(0.38%)**

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

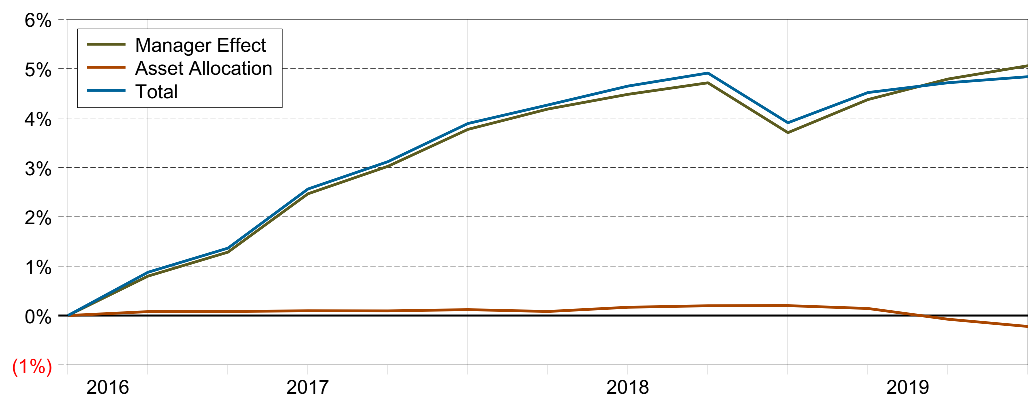
Cumulative Total Fund Relative Attribution - September 30, 2019

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

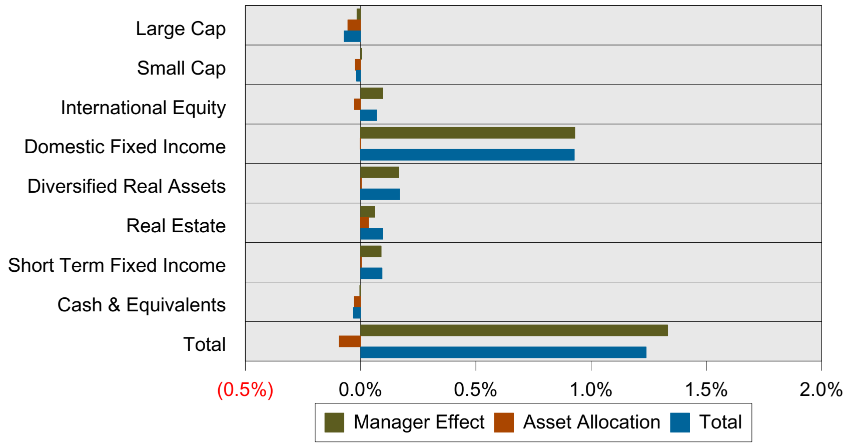
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	12.36%	13.19%	(0.08%)	(0.05%)	(0.13%)
Small Cap	3%	3%	7.71%	8.23%	(0.02%)	(0.02%)	(0.04%)
International Equity	8%	8%	6.81%	6.49%	0.06%	(0.03%)	0.03%
Domestic Fixed Income	51%	52%	5.31%	2.92%	1.23%	0.02%	1.24%
Diversified Real Assets	12%	12%	5.10%	3.04%	0.25%	0.01%	0.26%
Real Estate	6%	5%	7.16%	6.76%	0.04%	0.03%	0.08%
Short Term Fixed Income	6%	6%	2.18%	1.75%	0.04%	0.02%	0.06%
Cash & Equivalents	4%	4%	1.42%	1.54%	(0.01%)	(0.04%)	(0.04%)
Total			**6.36% =**	**4.92% +**	**1.51% +**	**(0.07%)**	**1.44%**

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

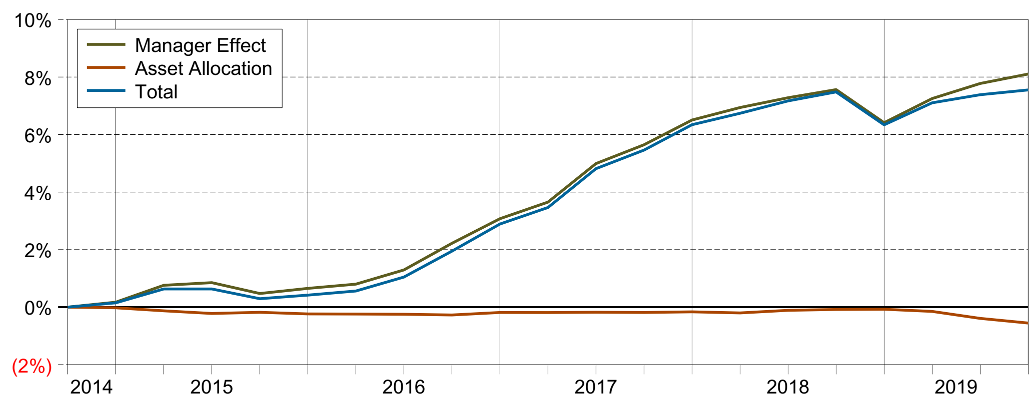
Cumulative Total Fund Relative Attribution - September 30, 2019

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

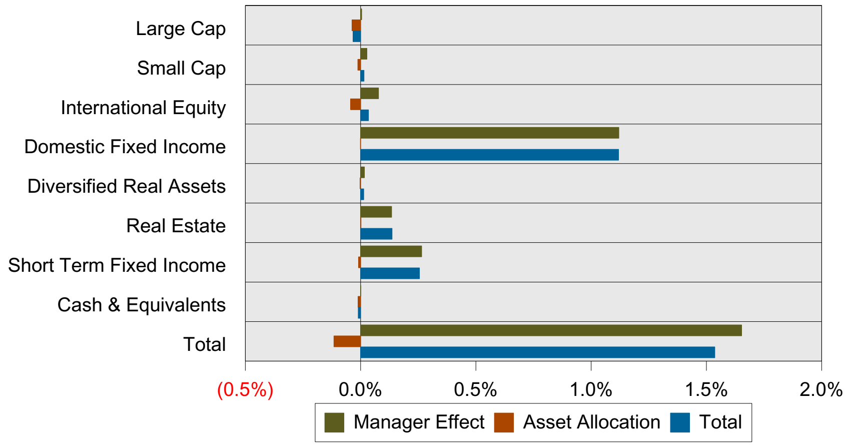
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	10.47%	10.62%	(0.02%)	(0.06%)	(0.07%)
Small Cap	3%	3%	8.45%	8.19%	0.01%	(0.02%)	(0.02%)
International Equity	8%	8%	4.48%	3.25%	0.10%	(0.03%)	0.07%
Domestic Fixed Income	47%	48%	5.29%	3.38%	0.93%	(0.00%)	0.93%
Diversified Real Assets	11%	11%	3.92%	2.56%	0.17%	0.00%	0.17%
Real Estate	5%	5%	9.47%	8.57%	0.06%	0.03%	0.10%
Short Term Fixed Income	11%	11%	2.10%	1.47%	0.09%	0.00%	0.09%
Cash & Equivalents	3%	3%	0.89%	0.98%	(0.00%)	(0.03%)	(0.03%)
Total			**5.69% =**	**4.45% +**	**1.33% +**	**(0.09%)**	**1.24%**

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

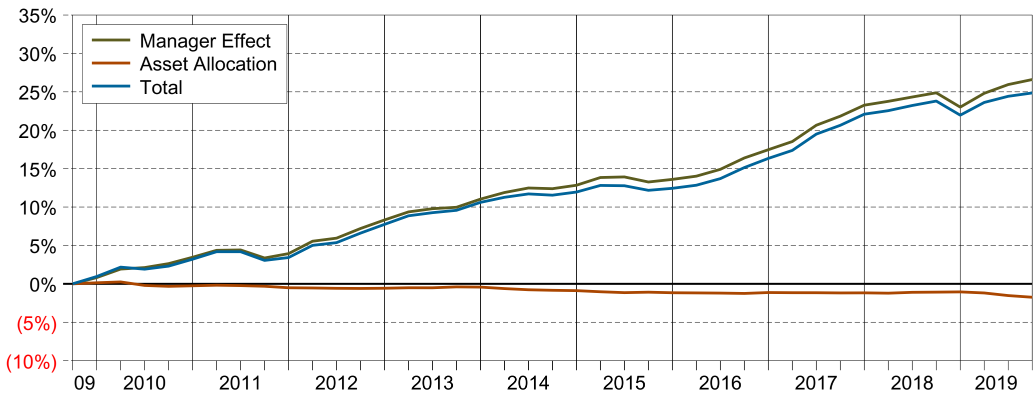
Cumulative Total Fund Relative Attribution - September 30, 2019

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

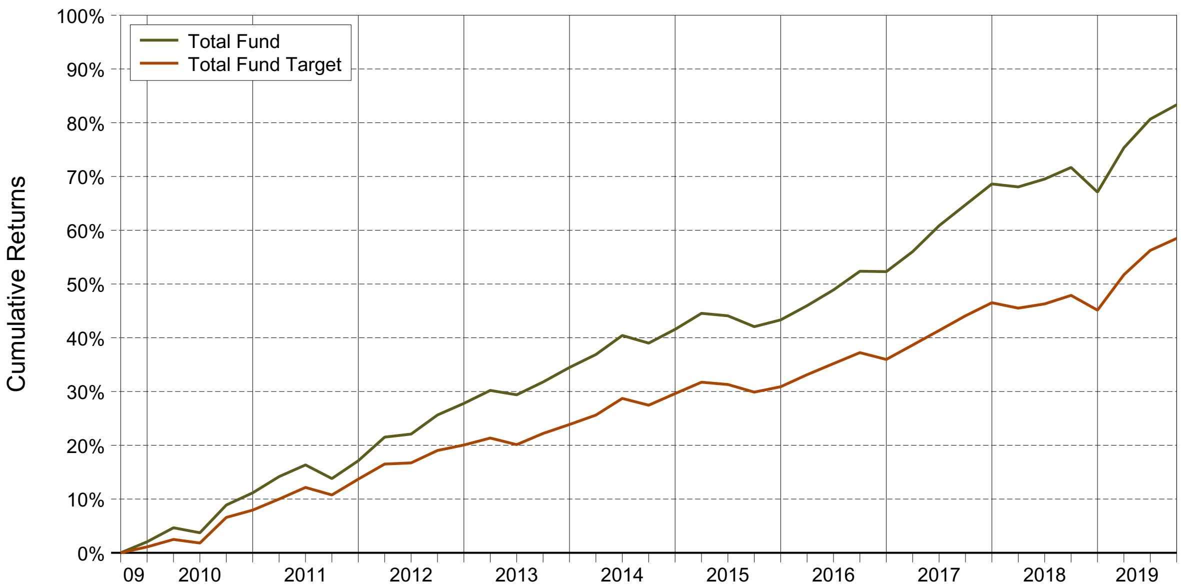
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	10%	10%	13.33%	13.19%	0.00%	(0.04%)	(0.03%)
Small Cap	3%	3%	12.18%	11.19%	0.03%	(0.01%)	0.01%
International Equity	7%	7%	6.07%	4.77%	0.08%	(0.04%)	0.03%
Domestic Fixed Income	42%	42%	6.53%	3.75%	1.12%	(0.00%)	1.12%
Diversified Real Assets	13%	13%	4.20%	3.70%	0.02%	(0.00%)	0.01%
Real Estate	5%	4%	11.95%	9.77%	0.13%	0.00%	0.14%
Short Term Fixed Income	17%	17%	2.40%	0.91%	0.26%	(0.01%)	0.26%
Cash & Equivalents	3%	3%	0.55%	0.54%	0.00%	(0.01%)	(0.01%)
Total			**6.25% =**	**4.71% +**	**1.65% +**	**(0.12%)**	**1.54%**

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

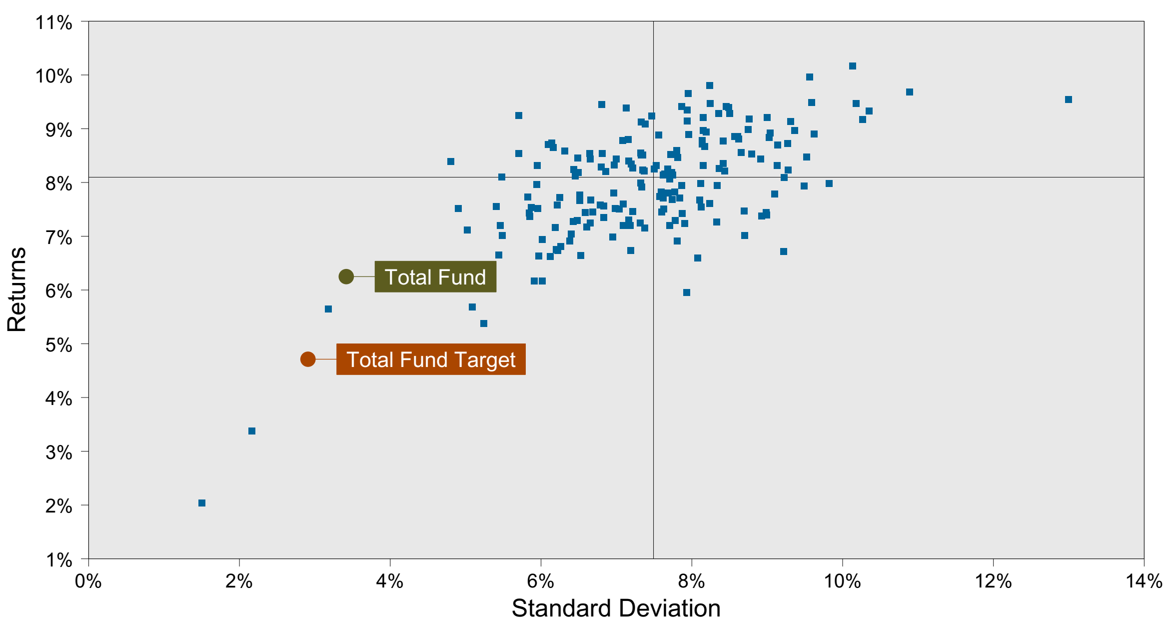
Cumulative Performance Relative to Target

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



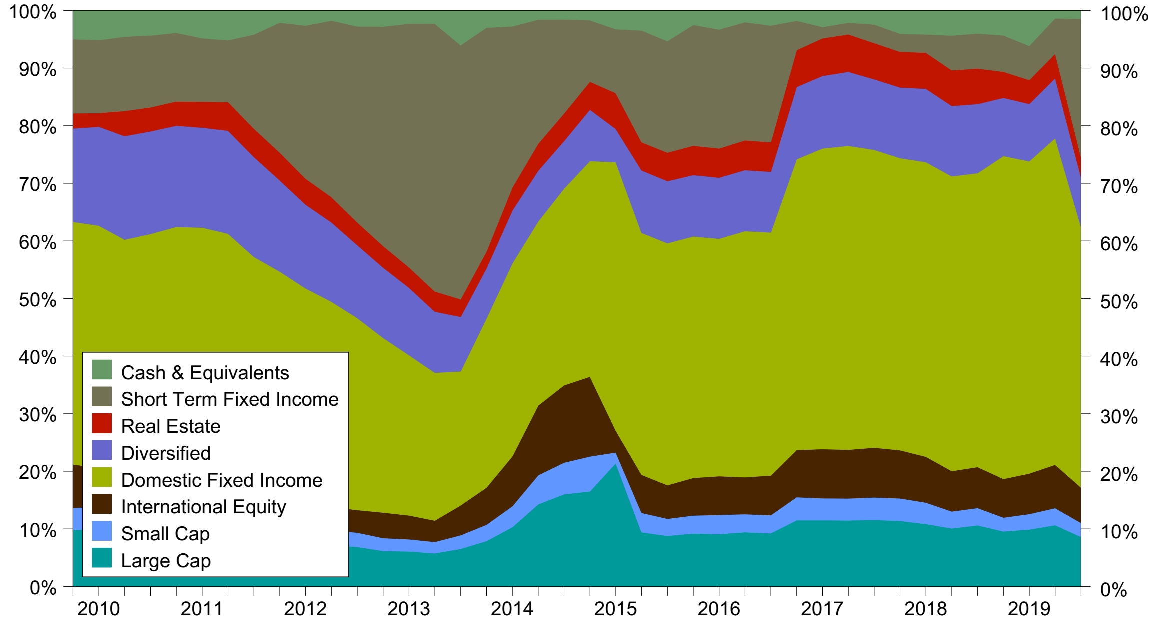
Squares represent membership of the Callan Public Fund Sponsor Database

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

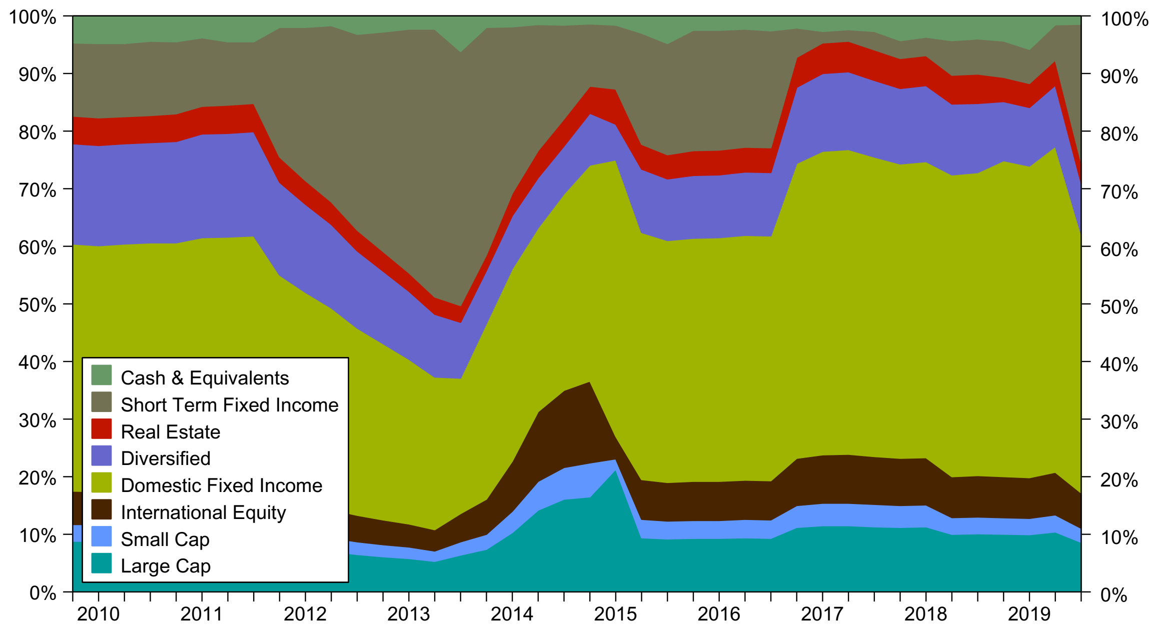
Actual vs Target Historical Asset Allocation

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

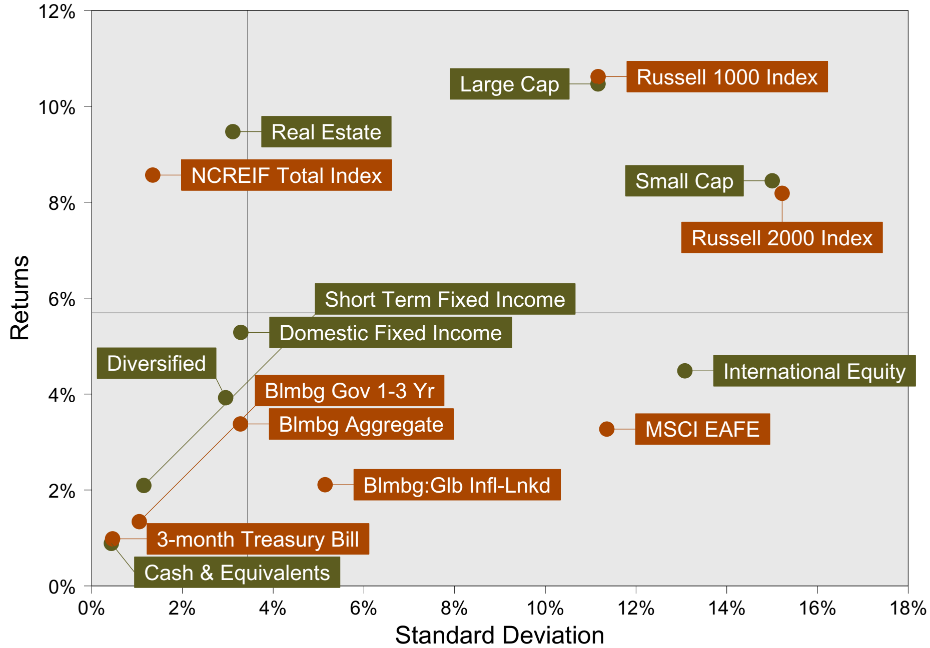


* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

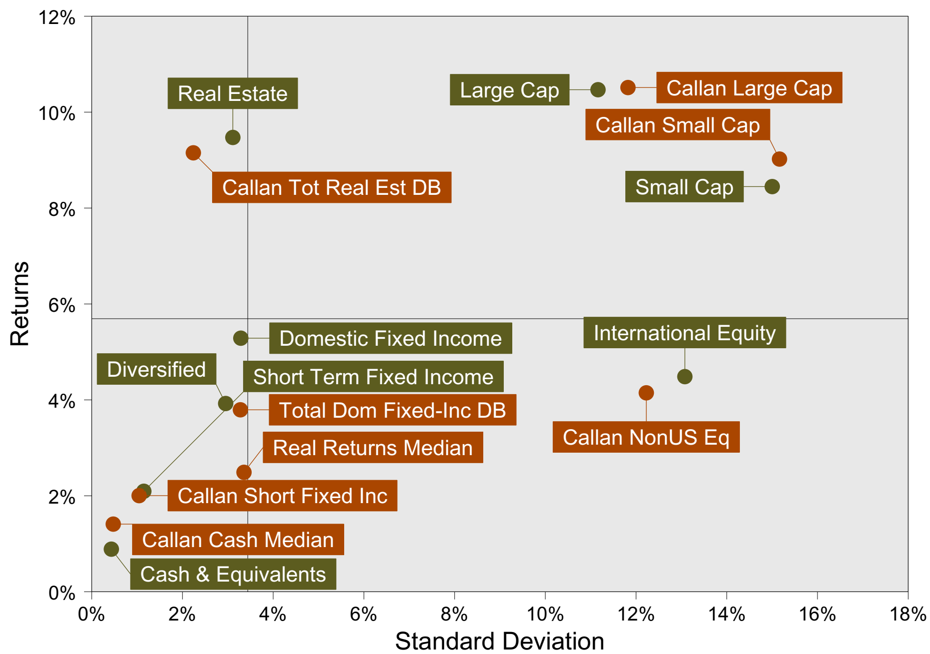
Asset Class Risk and Return

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



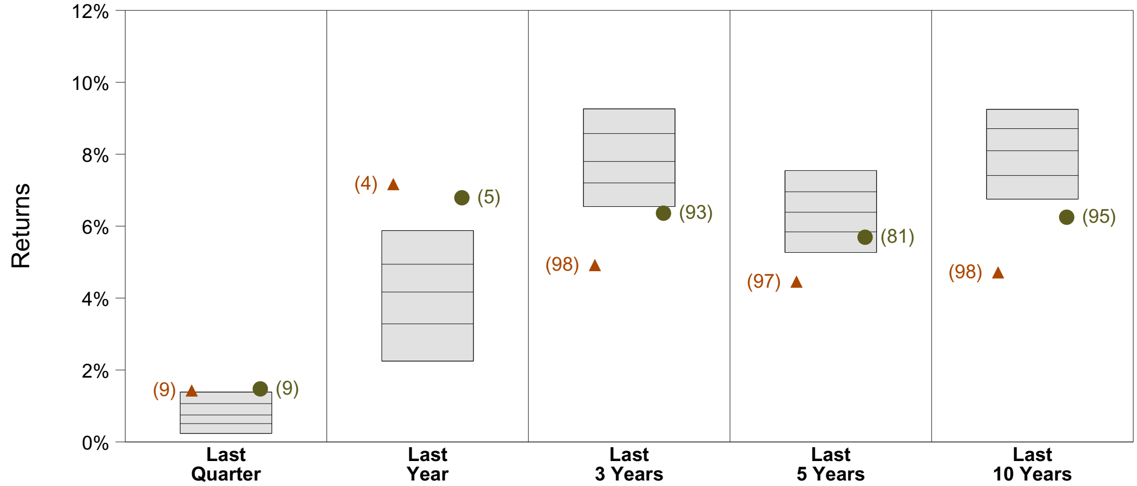
Five Year Annualized Risk vs Return
Asset Classes vs Asset Class Median



Total Fund Ranking

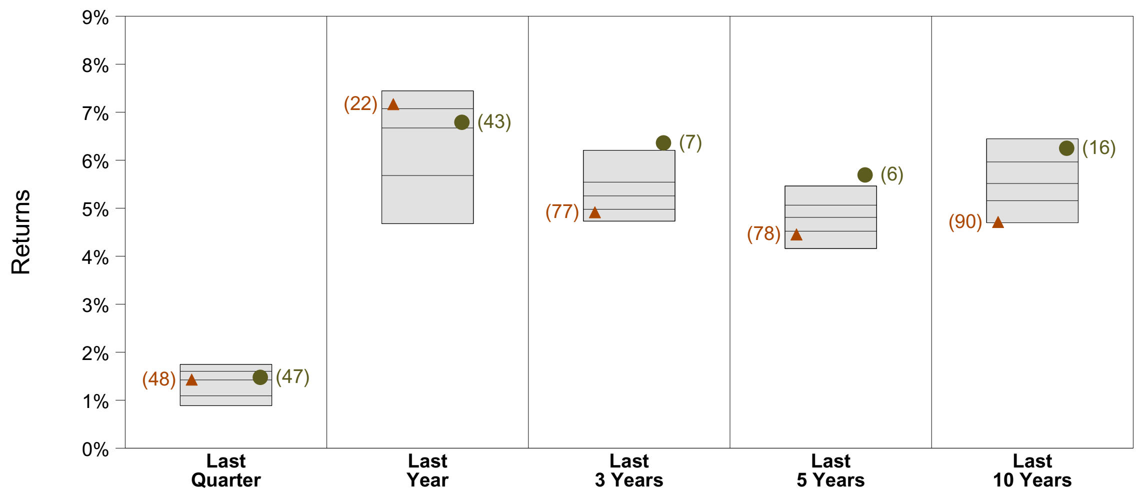
The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Sponsor Database for periods ended September 30, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical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

Callan Public Fund Sponsor Database



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.39	5.88	9.26	7.55	9.25
25th Percentile	1.07	4.94	8.58	6.96	8.71
Median	0.75	4.17	7.80	6.39	8.10
75th Percentile	0.51	3.28	7.20	5.84	7.41
90th Percentile	0.24	2.25	6.55	5.27	6.75
Total Fund ●	1.48	6.79	6.36	5.69	6.25
Policy Target ▲	1.43	7.17	4.92	4.45	4.71

Asset Allocation Adjusted Ranking



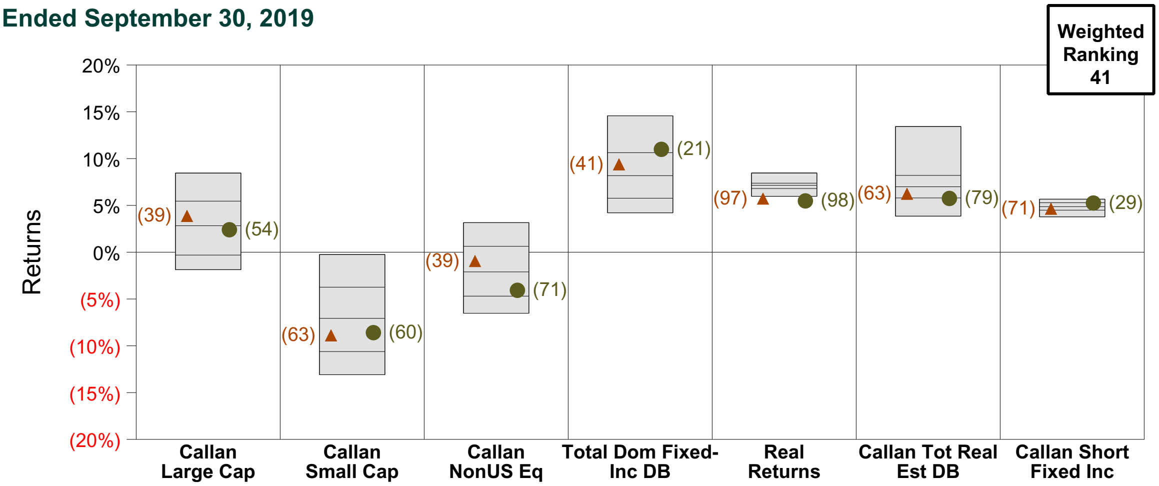
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.75	7.44	6.21	5.46	6.45
25th Percentile	1.60	7.07	5.54	5.06	5.96
Median	1.42	6.67	5.26	4.81	5.51
75th Percentile	1.09	5.68	4.98	4.52	5.16
90th Percentile	0.89	4.68	4.73	4.16	4.70
Total Fund ●	1.48	6.79	6.36	5.69	6.25
Policy Target ▲	1.43	7.17	4.92	4.45	4.71

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% Russell 2000 Index and 1.5% 3-month Treasury Bill.

Asset Class Rankings

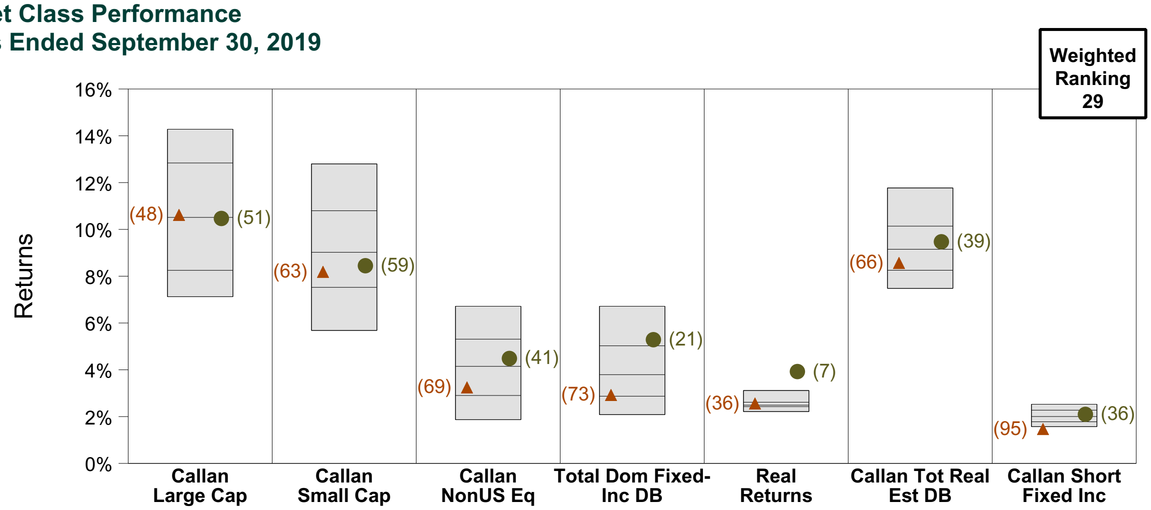
The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used 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 September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Short Fixed Inc
10th Percentile	8.46	(0.24)	3.16	14.57	8.46	13.43	5.67
25th Percentile	5.46	(3.74)	0.63	10.63	7.38	8.21	5.29
Median	2.83	(7.07)	(2.10)	8.18	7.15	6.99	4.87
75th Percentile	(0.31)	(10.61)	(4.70)	5.77	6.81	5.80	4.49
90th Percentile	(1.87)	(13.09)	(6.52)	4.21	5.97	3.85	3.78
Asset Class Composite ●	2.40	(8.60)	(4.07)	10.99	5.48	5.74	5.25
Composite Benchmark ▲	3.87	(8.89)	(0.95)	9.38	5.72	6.24	4.64

Total Asset Class Performance
Five Years Ended September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Short Fixed Inc
10th Percentile	14.28	12.80	6.72	6.72	3.12	11.77	2.53
25th Percentile	12.84	10.80	5.31	5.03	2.61	10.14	2.27
Median	10.51	9.02	4.15	3.79	2.49	9.15	2.00
75th Percentile	8.25	7.52	2.90	2.87	2.43	8.25	1.78
90th Percentile	7.12	5.68	1.87	2.08	2.21	7.48	1.57
Asset Class Composite ●	10.47	8.45	4.48	5.29	3.92	9.47	2.10
Composite Benchmark ▲	10.62	8.19	3.25	2.92	2.56	8.57	1.47

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equity	**$494,894,397**	**17.18%**	**$(8,254,289)**	**$1,007,076**	**$502,141,611**	**21.14%**
Domestic Equity	**$318,123,121**	**11.05%**	**$(8,122,731)**	**$2,879,821**	**$323,366,030**	**13.62%**
Large Cap	**$248,232,572**	**8.62%**	**$(8,102,941)**	**$3,372,696**	**$252,962,816**	**10.65%**
Parametric Clifton Large Cap	51,045,481	1.77%	(2,000,000)	1,064,428	51,981,053	2.19%
L.A. Capital Large Cap Growth	74,716,415	2.59%	(4,038,768)	957,708	77,797,475	3.28%
L.A. Capital Enhanced	50,896,871	1.77%	(2,013,553)	754,683	52,155,741	2.20%
LSV Large Cap Value	71,573,805	2.49%	(50,620)	595,878	71,028,548	2.99%
Small Cap	**$69,890,549**	**2.43%**	**$(19,789)**	**$(492,875)**	**$70,403,214**	**2.96%**
Parametric Clifton Small Cap	34,680,158	1.20%	0	(661,362)	35,341,520	1.49%
PIMCO RAE	35,210,391	1.22%	(19,789)	168,487	35,061,694	1.48%
International Equity	**$176,771,276**	**6.14%**	**$(131,558)**	**$(1,872,746)**	**$178,775,580**	**7.53%**
DFA Int'l Small Cap Value	17,721,878	0.62%	0	(98,658)	17,820,535	0.75%
LSV Intl Value	66,330,130	2.30%	(64,555)	(465,519)	66,860,204	2.82%
Vanguard Intl Explorer Fund	17,891,017	0.62%	0	(500,296)	18,391,313	0.77%
William Blair	74,828,251	2.60%	(67,003)	(808,273)	75,703,528	3.19%
Domestic Fixed Income	**$1,303,555,490**	**45.26%**	**$(76,576,203)**	**$33,139,134**	**$1,346,992,559**	**56.71%**
Declaration Total Return	93,713,279	3.25%	(51,810)	1,817,584	91,947,505	3.87%
PIMCO Core Plus Constrained	156,683,252	5.44%	(12,871)	3,448,688	153,247,435	6.45%
PIMCO DiSCO II	43,504,371	1.51%	(41,497,745)	537,971	84,464,145	3.56%
PIMCO Bravo II Fund	12,970,232	0.45%	(15,664,259)	2	28,634,489	1.21%
Prudential	341,456,389	11.86%	(168,669)	8,871,264	332,753,794	14.01%
SSgA US Govt Credit Bd Idx	185,407,544	6.44%	(18,140)	4,793,347	180,632,336	7.61%
Wells Capital	109,829,298	3.81%	(51,505)	3,474,561	106,406,242	4.48%
Western Asset Management	359,991,125	12.50%	(19,111,205)	10,195,717	368,906,614	15.53%
Global Real Assets	**$348,347,164**	**12.10%**	**$(2,342,044)**	**$2,759,213**	**$347,929,996**	**14.65%**
Real Estate	**$100,308,478**	**3.48%**	**$(867,984)**	**$108**	**$101,176,354**	**4.26%**
Invesco Core Real Estate	52,174,679	1.81%	(416,016)	(0)	52,590,695	2.21%
JP Morgan RE Inc & Growth	48,133,799	1.67%	(451,968)	109	48,585,659	2.05%
Diversified	**$248,038,686**	**8.61%**	**$(1,474,060)**	**$2,759,104**	**$246,753,642**	**10.39%**
Western Asset TIPS	137,843,258	4.79%	(39,823)	2,590,024	135,293,057	5.70%
JP Morgan Infrastructure	43,587,391	1.51%	(1,068,607)	178,101	44,477,897	1.87%
Eastern Timber Opportunities	53,916,906	1.87%	0	0	53,916,906	2.27%
Grosvenor Cust. Infrastructure	12,691,132	0.44%	(365,630)	(9,021)	13,065,783	0.55%
Short Term Fixed Income	**$691,956,708**	**24.03%**	**$543,701,822**	**$2,513,749**	**$145,741,136**	**6.14%**
Barings Active Short Duration	347,002,899	12.05%	345,850,000	1,152,899	-	-
JP Morgan Short Term Bonds	344,953,808	11.98%	197,851,822	1,360,850	145,741,136	6.14%
Cash	**$41,180,155**	**1.43%**	**$8,660,558**	**$291,201**	**$32,228,397**	**1.36%**
Northern Trust Cash Account	21,109,593	0.73%	16,160,558	171,583	4,777,452	0.20%
Bank of ND	20,070,562	0.70%	(7,500,000)	119,617	27,450,945	1.16%
Securities Lending Income	**$0**	**0.00%**	**$(40,342)**	**$40,342**	**-**	**-**
Total Fund	**$2,879,933,915**	**100.0%**	**$465,149,503**	**$39,750,713**	**$2,375,033,699**	**100.0%**

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Global Equity					
Gross	0.19%	(1.46%)	-	-	-
Net	0.14%	(1.66%)	-	-	-
Weighted Benchmark	0.04%	0.33%	-	-	-
Domestic Equity					
Gross	0.87%	(0.04%)	11.41%	10.08%	13.10%
Net	0.83%	(0.20%)	11.22%	9.85%	12.80%
Weighted Benchmark	0.57%	0.95%	-	-	-
Large Cap					
Gross	1.32%	2.40%	12.36%	10.47%	13.33%
Net	1.28%	2.23%	12.17%	10.26%	13.08%
Benchmark(1)	1.42%	3.87%	13.19%	10.62%	13.19%
Parametric Clifton Large Cap - Gross	2.08%	4.86%	13.29%	11.00%	13.73%
Parametric Clifton Large Cap - Net	2.08%	4.86%	13.29%	10.94%	13.51%
S&P 500 Index	1.70%	4.25%	13.39%	10.84%	13.24%
L.A. Capital - Gross	1.18%	3.22%	14.66%	12.77%	14.69%
L.A. Capital - Net	1.13%	3.01%	14.42%	12.54%	14.46%
Russell 1000 Growth Index	1.49%	3.71%	16.89%	13.39%	14.94%
L.A. Capital Enhanced - Gross	1.41%	4.21%	12.28%	10.76%	13.35%
L.A. Capital Enhanced - Net	1.39%	4.09%	12.15%	10.62%	13.18%
Russell 1000 Index	1.42%	3.87%	13.19%	10.62%	13.23%
LSV Asset Management - Gross	0.84%	(1.67%)	9.05%	7.36%	12.14%
LSV Asset Management - Net	0.77%	(1.95%)	8.73%	7.04%	11.80%
Russell 1000 Value Index	1.36%	4.00%	9.43%	7.79%	11.46%
Small Cap					
Gross	(0.70%)	(8.60%)	7.71%	8.45%	12.18%
Net	(0.73%)	(8.70%)	7.54%	8.16%	11.72%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.19%
Parametric Clifton Small Cap - Gross	(1.87%)	(8.51%)	8.27%	8.91%	12.34%
Parametric Clifton SmallCap - Net	(1.87%)	(8.51%)	8.19%	8.64%	11.83%
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	11.19%
PIMCO RAE - Gross	0.48%	(8.74%)	7.14%	7.82%	11.93%
PIMCO RAE - Net	0.42%	(8.95%)	6.88%	7.53%	11.54%
Russell 2000	(2.40%)	(8.89%)	8.23%	8.19%	11.19%
International Equity					
Gross	(1.05%)	(4.07%)	6.81%	4.48%	6.07%
Net	(1.12%)	(4.36%)	6.48%	4.16%	5.74%
Benchmark(2)	(0.93%)	(0.95%)	6.49%	3.25%	4.77%
DFA Intl Small Cap Value - Net	(0.55%)	(11.17%)	2.61%	2.75%	5.77%
World ex US SC Va	0.25%	(5.89%)	4.83%	3.82%	5.96%
LSV Asset Management - Gross	(0.70%)	(7.19%)	5.35%	3.10%	4.91%
LSV Asset Management - Net	(0.79%)	(7.53%)	4.95%	2.69%	4.52%
Benchmark(3)	(1.07%)	(1.34%)	6.48%	3.27%	4.79%
Vanguard Intl Explorer Fund - Net	(2.72%)	(11.61%)	3.78%	3.72%	6.36%
BMI, EPAC, <$2 B	(1.85%)	(11.18%)	3.05%	4.17%	6.05%
William Blair - Gross	(1.07%)	2.85%	9.73%	-	-
William Blair - Net	(1.16%)	2.47%	9.31%	-	-
MSCI ACWI ex US IMI	(1.72%)	(1.84%)	6.10%	3.05%	4.66%

(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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Fixed Income					
Gross	2.57%	10.99%	5.31%	5.29%	6.53%
Net	2.54%	10.86%	5.20%	5.16%	6.38%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
Declaration Total Return - Net	1.98%	8.15%	4.87%	4.45%	-
Libor-3 Month	0.55%	2.56%	1.90%	1.31%	0.82%
PIMCO Core Plus Cons. - Gross	2.25%	-	-	-	-
PIMCO Core Plus Cons. - Net	2.24%	-	-	-	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
PIMCO DiSCO II - Net	0.82%	4.99%	9.71%	8.10%	-
PIMCO Bravo II Fund - Net	0.00%	3.10%	7.41%	7.91%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
Prudential - Gross	2.67%	12.03%	4.66%	5.06%	5.96%
Prudential - Net	2.62%	11.80%	4.41%	4.80%	5.76%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
Wells Capital - Gross	3.27%	13.56%	5.93%	5.69%	6.90%
Wells Capital - Net	3.22%	13.38%	5.76%	5.51%	6.69%
Blmbg Credit Baa	3.26%	13.49%	5.12%	4.89%	5.99%
Western Asset - Gross	2.84%	11.81%	4.48%	4.86%	5.99%
Western Asset - Net	2.81%	11.68%	4.35%	4.72%	5.83%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.75%
SSgA US Govt Cr Bd Idx - Gross	2.65%	11.40%	3.19%	3.63%	-
SSgA US Govt Cr Bd Idx - Net	2.64%	11.38%	3.17%	3.60%	-
Blmbg Govt/Credit Bd	2.64%	11.32%	3.16%	3.61%	3.94%
Global Real Assets					
Gross	0.79%	5.69%	-	-	-
Net	0.79%	5.36%	-	-	-
Weighted Benchmark	1.18%	5.85%	-	-	-
Real Estate					
Gross	0.00%	5.74%	7.16%	9.47%	11.95%
Net	0.02%	5.15%	6.57%	8.80%	11.04%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.77%
Invesco Core Real Estate - Gross	0.00%	7.09%	7.36%	9.46%	-
Invesco Core Real Estate - Net	0.00%	6.69%	7.02%	9.09%	-
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.77%
JP Morgan - Gross	0.00%	4.21%	6.85%	9.40%	12.11%
JP Morgan - Net	0.04%	3.42%	6.05%	8.45%	10.99%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.77%

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

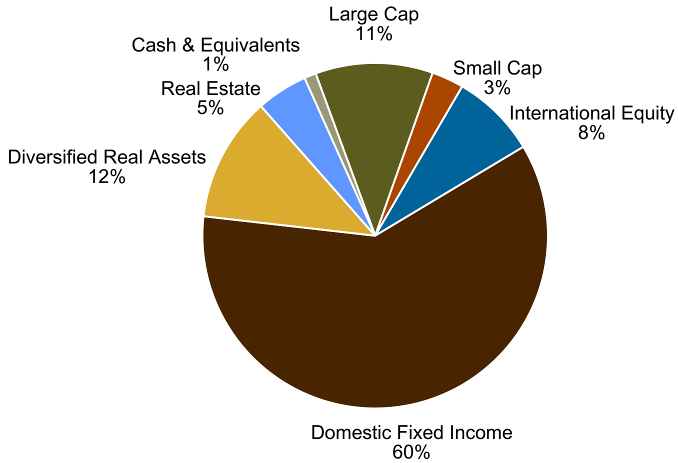
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Diversified					
Gross	1.12%	5.48%	5.10%	3.92%	4.20%
Net	1.11%	5.27%	4.85%	3.65%	3.87%
Weighted Benchmark	1.09%	5.72%	3.04%	2.56%	3.70%
Western Asset TIPS - Gross	1.91%	7.28%	1.95%	2.20%	2.94%
Western Asset TIPS - Net	1.88%	7.16%	1.82%	2.07%	2.74%
Benchmark(1)	1.48%	7.92%	2.37%	2.25%	3.41%
JP Morgan Infrastructure - Gross	0.40%	6.21%	8.54%	4.91%	5.72%
JP Morgan Infrastructure - Net	0.43%	5.56%	7.86%	4.12%	4.69%
Benchmark(2)	0.97%	3.44%	3.13%	1.98%	2.03%
Eastern Timber Opportunities - Net	0.00%	(0.44%)	5.48%	4.27%	4.13%
NCREIF Timberland Index	0.18%	2.10%	3.12%	4.36%	3.97%
Grosvenor Cust. Infrastructure - Net	(0.07%)	3.56%	6.55%	6.64%	-
Benchmark(2)	0.97%	3.44%	3.13%	1.98%	2.03%
Short Term Fixed Income					
Gross	0.94%	5.25%	2.18%	2.10%	2.40%
Net	0.93%	5.13%	1.99%	1.92%	2.28%
Benchmark(3)	0.69%	4.64%	1.75%	1.47%	0.91%
JP Morgan Short Term Bds - Gross	0.82%	5.12%	2.04%	1.81%	-
JP Morgan Short Term Bds - Net	0.80%	5.00%	1.87%	1.67%	-
Blmbg Gov/Credit 1-3 Y	0.69%	4.64%	1.82%	1.59%	1.52%
Cash & Equivalents - Net	**0.53%**	**2.23%**	**1.42%**	**0.89%**	**0.55%**
Cash Account- Net	0.51%	2.16%	1.32%	0.82%	0.52%
Bank of ND - Net	0.54%	2.31%	1.58%	-	-
90 Day Treasury Bills	0.56%	2.39%	1.54%	0.98%	0.54%
Total Fund					
Gross	1.48%	6.79%	6.36%	5.69%	6.25%
Net	1.47%	6.65%	6.18%	5.50%	6.03%
Target*	1.43%	7.17%	4.92%	4.45%	4.71%

* Current Quarter Target = 45.0% Blmbg Aggregate, 24.0% Blmbg Gov/Cred 1-3 Yr, 8.8% NDSIB INS DRA Weighted Benchmark, 8.6% Russell 1000 Index, 6.1% MSCI World ex US, 3.6% NCREIF Total Index, 2.4% 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.

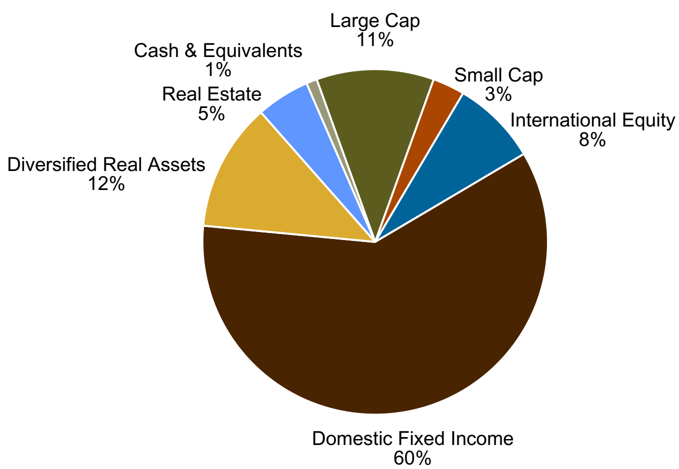
Actual vs Target Asset Allocation
As of September 30, 2019

The first chart below shows the Fund's asset allocation as of September 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



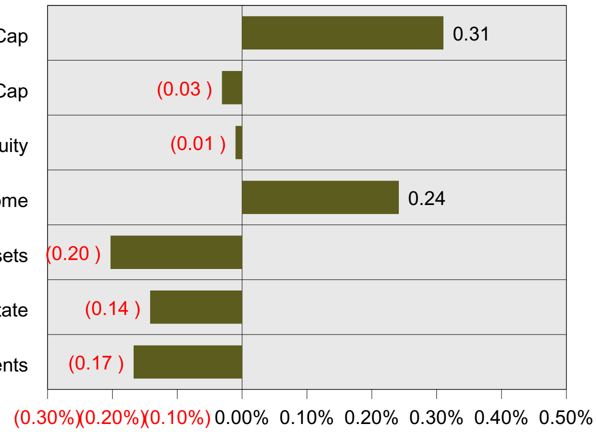
Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	229,249	11.0%	11.0%	0.0%	374
Small Cap	61,749	3.0%	3.0%	(0.0%)	(672)
International Equity	166,796	8.0%	8.0%	0.0%	341
Domestic Fixed Income	1,257,013	60.4%	60.0%	0.4%	8,601
Diversified Real Assets	243,725	11.7%	12.0%	(0.3%)	(5,958)
Real Estate	100,237	4.8%	5.0%	(0.2%)	(3,798)
Cash & Equivalents	21,919	1.1%	1.0%	0.1%	1,112
Total	2,080,687	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.

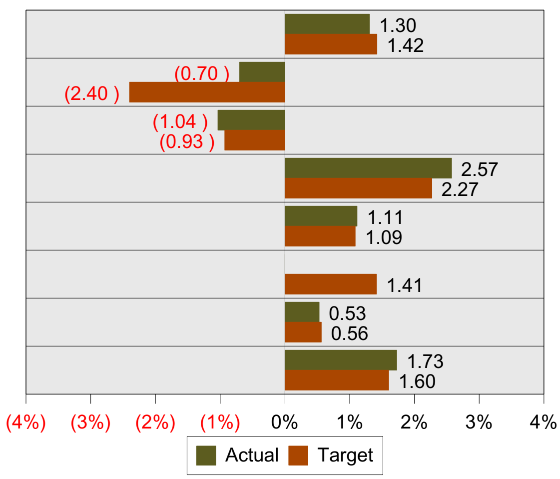
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

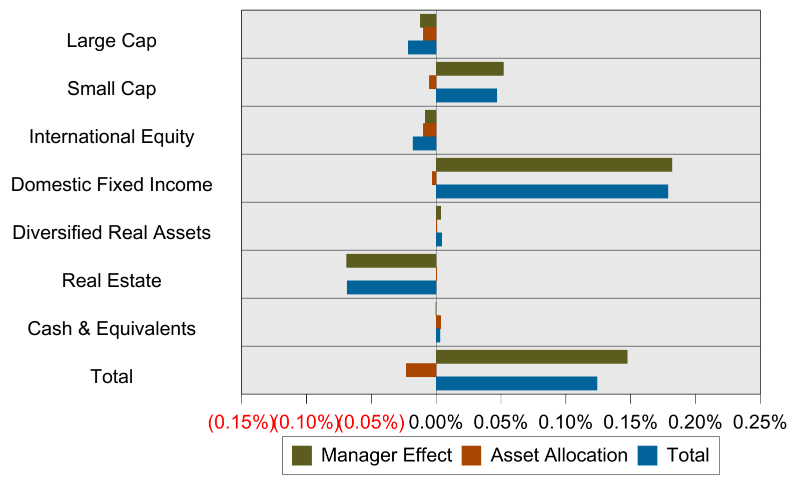
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

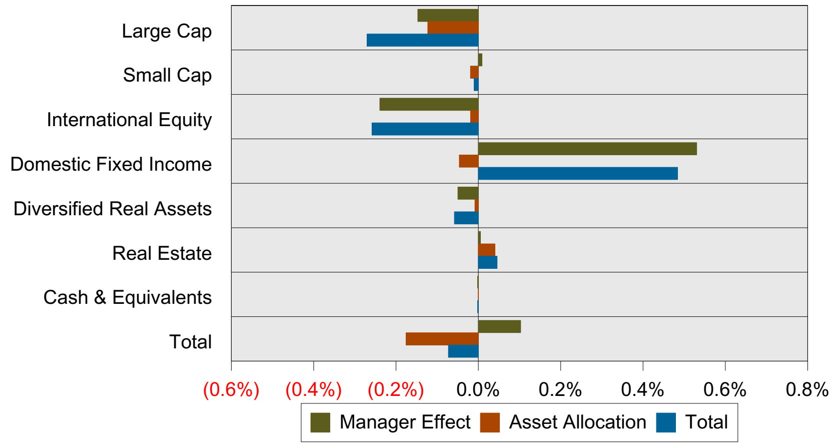
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	1.30%	1.42%	(0.01%)	(0.01%)	(0.02%)
Small Cap	3%	3%	(0.70%)	(2.40%)	0.05%	(0.01%)	0.05%
International Equity	8%	8%	(1.04%)	(0.93%)	(0.01%)	(0.01%)	(0.02%)
Domestic Fixed Income	60%	60%	2.57%	2.27%	0.18%	(0.00%)	0.18%
Diversified Real Assets	12%	12%	1.11%	1.09%	0.00%	0.00%	0.00%
Real Estate	5%	5%	0.00%	1.41%	(0.07%)	0.00%	(0.07%)
Cash & Equivalents	1%	1%	0.53%	0.56%	(0.00%)	0.00%	0.00%
Total			**1.73% =**	**1.60% +**	**0.15% +**	**(0.02%)**	**0.12%**

* 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.

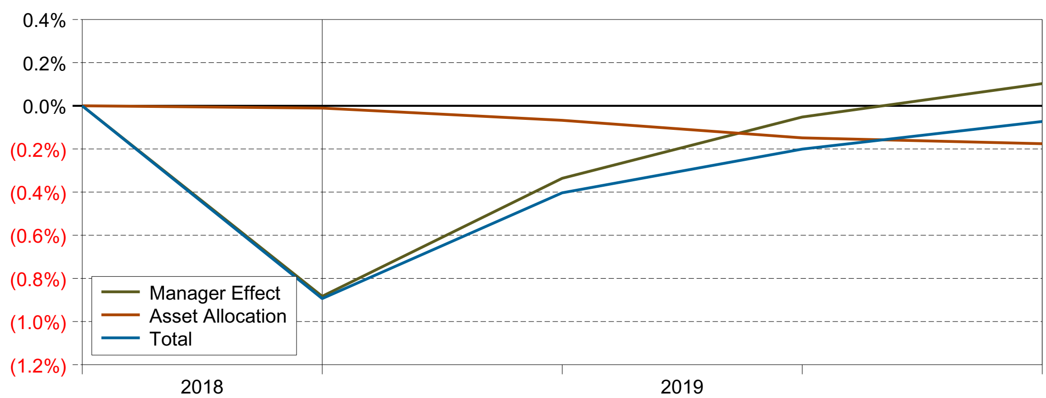
Cumulative Total Fund Relative Attribution - September 30, 2019

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

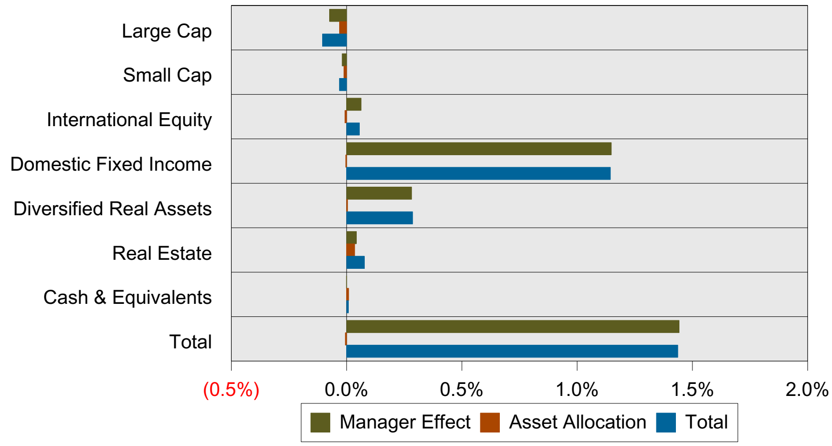
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	11%	11%	2.52%	3.87%	(0.15%)	(0.12%)	(0.27%)
Small Cap	3%	3%	(8.61%)	(8.89%)	0.01%	(0.02%)	(0.01%)
International Equity	8%	8%	(3.97%)	(0.95%)	(0.24%)	(0.02%)	(0.26%)
Domestic Fixed Income	60%	60%	11.20%	10.30%	0.53%	(0.05%)	0.48%
Diversified Real Assets	12%	12%	5.50%	5.72%	(0.05%)	(0.01%)	(0.06%)
Real Estate	5%	5%	5.74%	6.24%	0.01%	0.04%	0.05%
Cash & Equivalents	1%	1%	2.24%	2.39%	(0.00%)	(0.00%)	(0.00%)
Total			**7.46% =**	**7.54% +**	**0.10% +**	**(0.18%)**	**(0.07%)**

* 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.

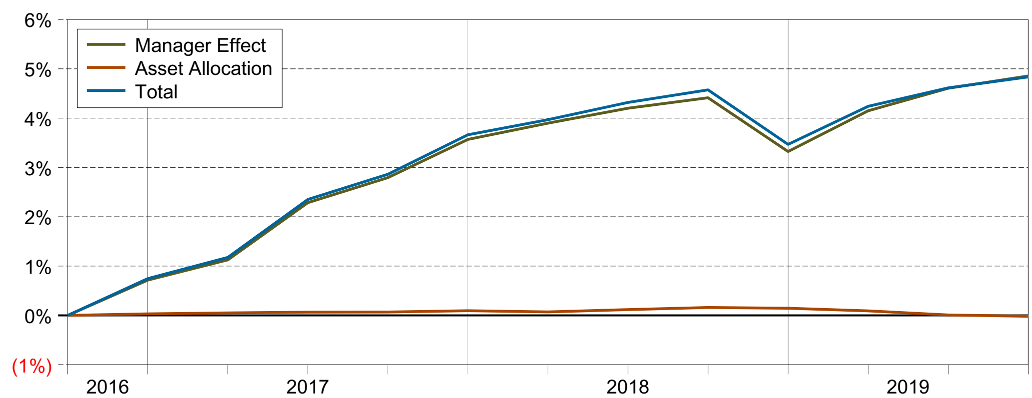
Cumulative Total Fund Relative Attribution - September 30, 2019

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

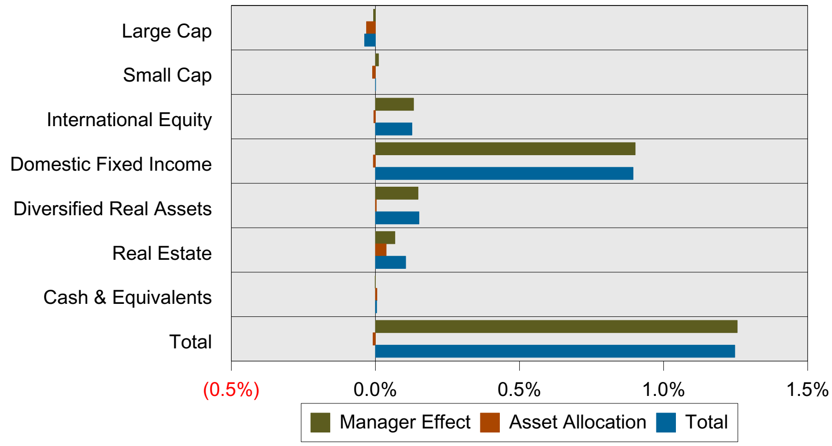
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	12.44%	13.19%	(0.07%)	(0.03%)	(0.10%)
Small Cap	4%	4%	7.70%	8.23%	(0.02%)	(0.01%)	(0.03%)
International Equity	9%	9%	6.86%	6.49%	0.06%	(0.01%)	0.06%
Domestic Fixed Income	55%	56%	5.02%	2.92%	1.15%	(0.00%)	1.14%
Diversified Real Assets	14%	14%	5.12%	3.10%	0.28%	0.00%	0.29%
Real Estate	7%	6%	7.16%	6.76%	0.04%	0.04%	0.08%
Cash & Equivalents	1%	1%	1.43%	1.54%	(0.00%)	0.01%	0.01%
Total			**6.63% =**	**5.20% +**	**1.44% +**	**(0.01%)**	**1.44%**

* 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.

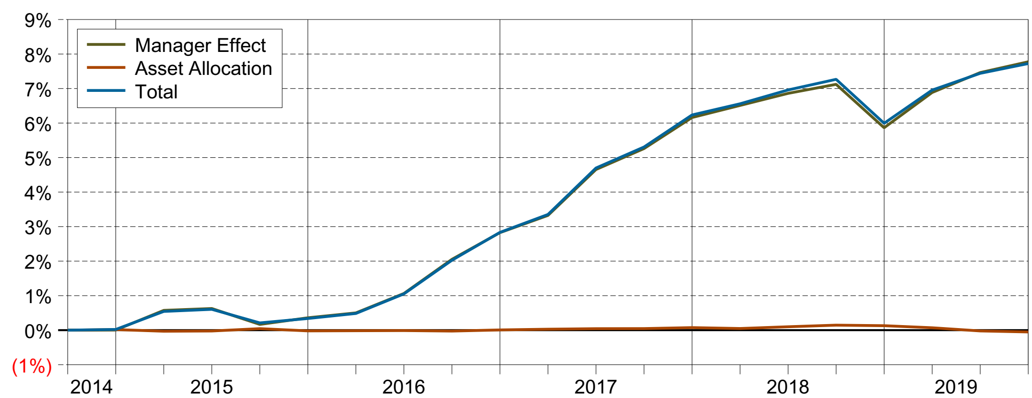
Cumulative Total Fund Relative Attribution - September 30, 2019

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

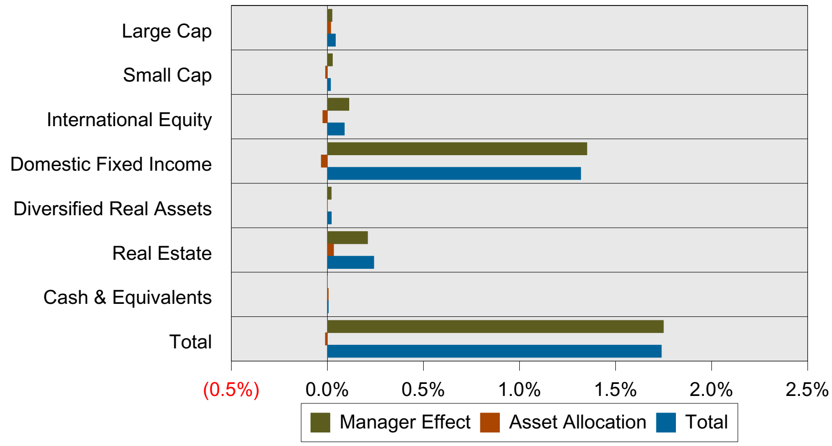
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	12%	12%	10.52%	10.62%	(0.01%)	(0.03%)	(0.04%)
Small Cap	4%	4%	8.46%	8.19%	0.01%	(0.01%)	0.00%
International Equity	9%	9%	4.53%	3.25%	0.13%	(0.01%)	0.13%
Domestic Fixed Income	54%	55%	5.06%	3.38%	0.90%	(0.01%)	0.89%
Diversified Real Assets	14%	14%	3.92%	2.87%	0.15%	0.00%	0.15%
Real Estate	7%	6%	9.47%	8.57%	0.07%	0.04%	0.11%
Cash & Equivalents	1%	1%	0.89%	0.98%	(0.00%)	0.01%	0.00%
Total			**6.12% =**	**4.87% +**	**1.26% +**	**(0.01%)**	**1.25%**

* 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.

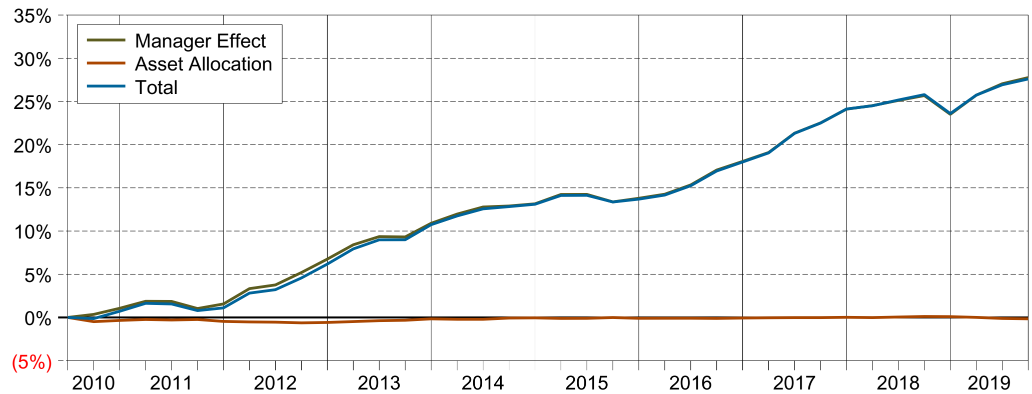
Cumulative Total Fund Relative Attribution - September 30, 2019

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 and One-Quarter Year Annualized Relative Attribution Effects



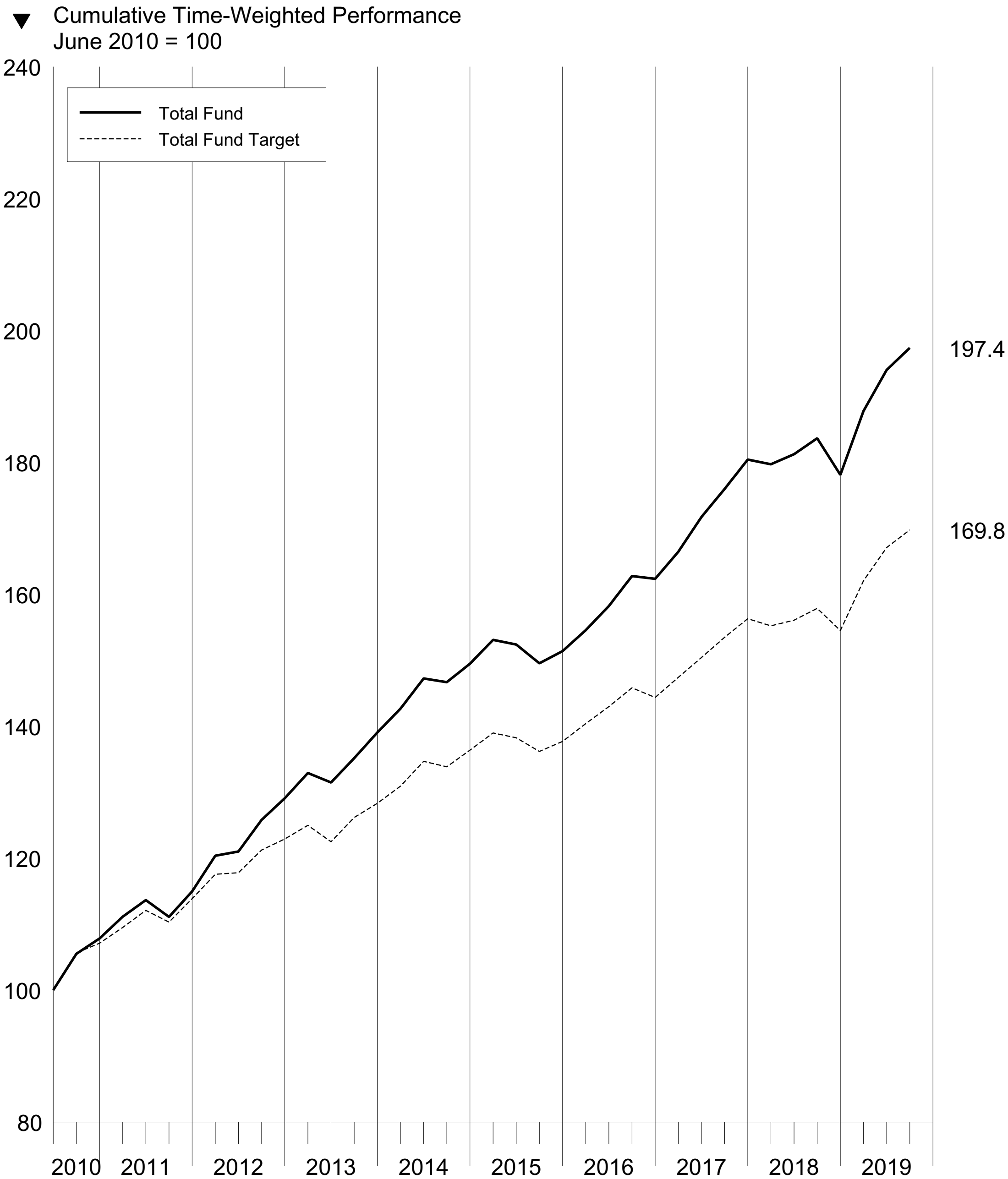
Cumulative Relative Attribution Effects



Nine and One-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	11%	11%	14.69%	14.46%	0.02%	0.02%	0.04%
Small Cap	4%	4%	12.72%	11.93%	0.03%	(0.01%)	0.02%
International Equity	8%	8%	7.35%	6.06%	0.11%	(0.02%)	0.09%
Domestic Fixed Income	53%	53%	6.01%	3.45%	1.35%	(0.03%)	1.32%
Diversified Real Assets	17%	18%	4.76%	4.47%	0.02%	0.00%	0.02%
Real Estate	6%	6%	13.79%	10.38%	0.21%	0.03%	0.24%
Cash & Equivalents	1%	1%	0.57%	0.57%	0.00%	0.00%	0.01%
Total			**7.63% =**	**5.89% +**	**1.75% +**	**(0.01%)**	**1.74%**

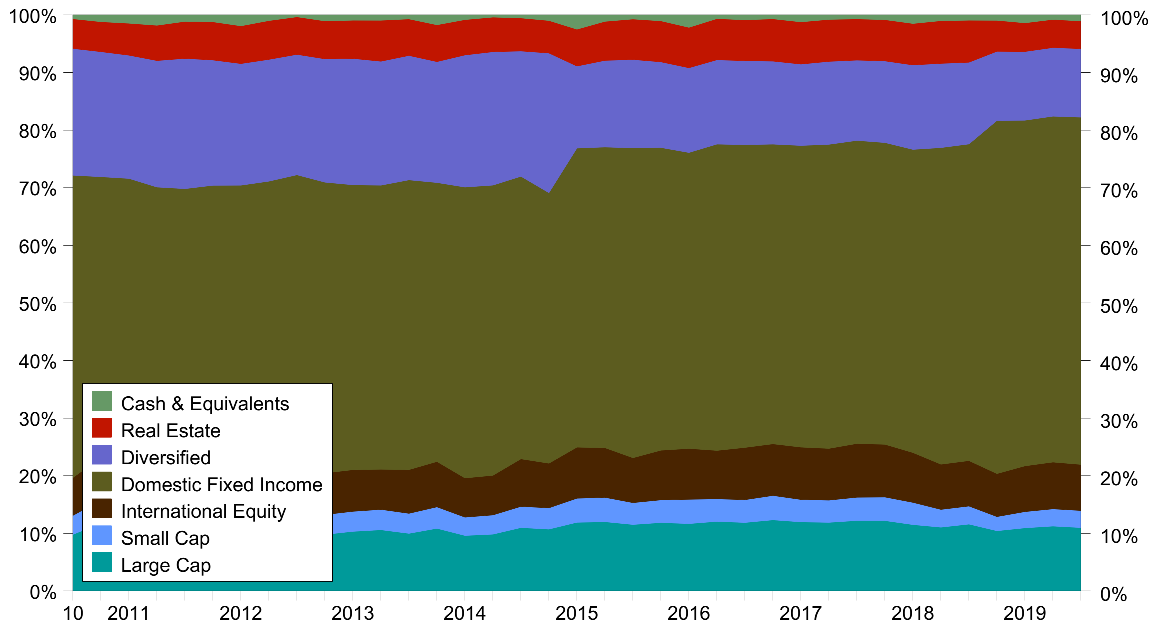
* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.


Cumulative Time-Weighted Performance
June 2010 = 100
Total Fund
Total Fund Target
240
220
200
180
160
140
120
100
80
197.4
169.8
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

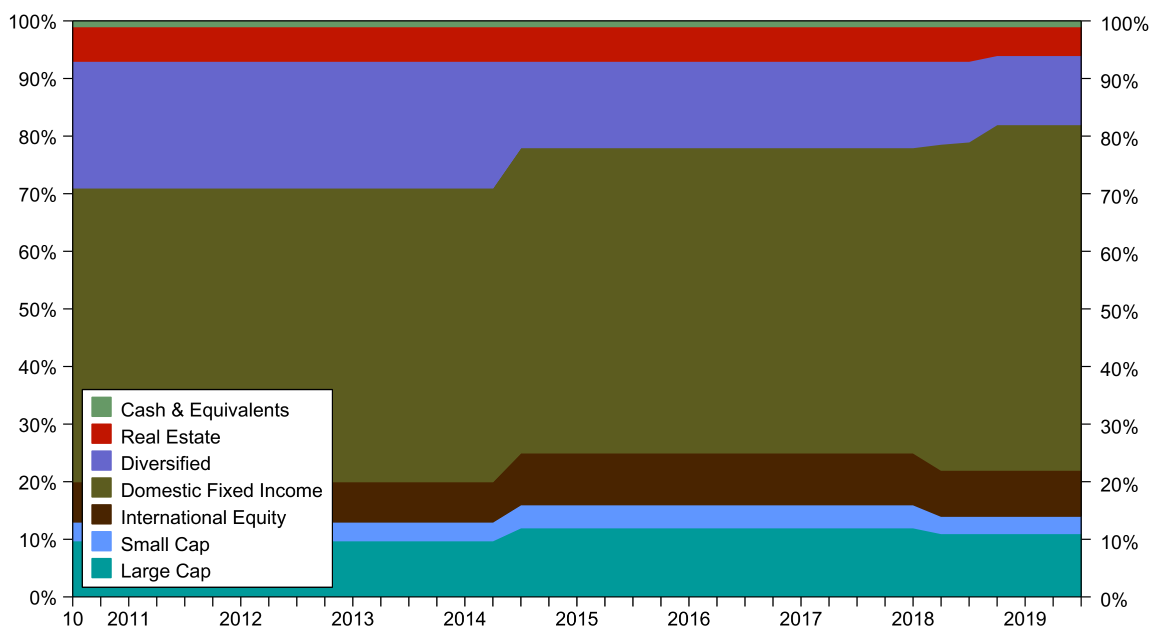
Actual vs Target Historical Asset Allocation

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

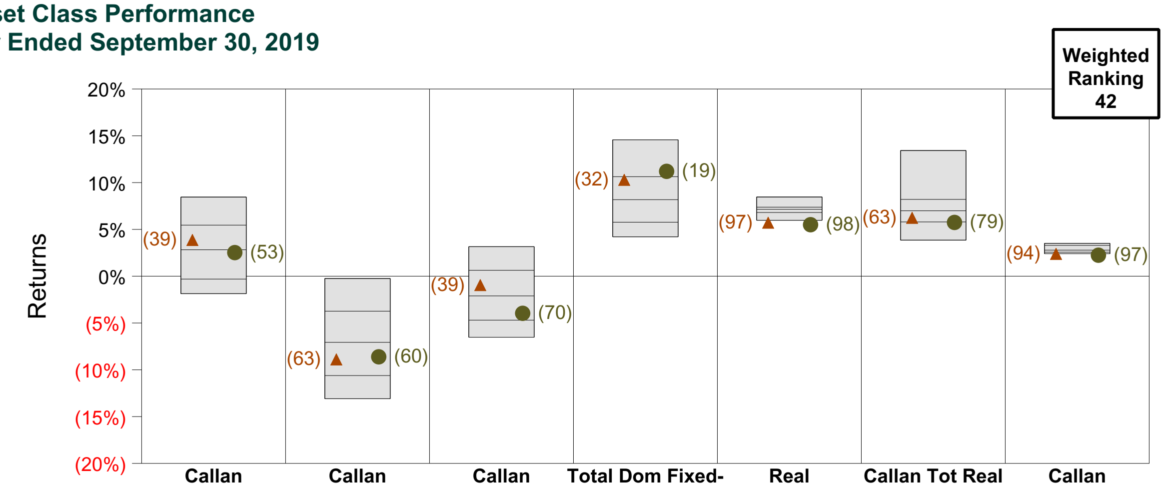


* Current Quarter Target = 60.0% Blmbg Aggregate, 12.0% NDSIB WSI DRA Weighted Benchmark, 11.0% Russell 1000 Index, 8.0% MSCI World ex US, 5.0% NCREIF Total Index, 3.0% Russell 2000 Index and 1.0% 3-month Treasury Bill.

Asset Class Rankings

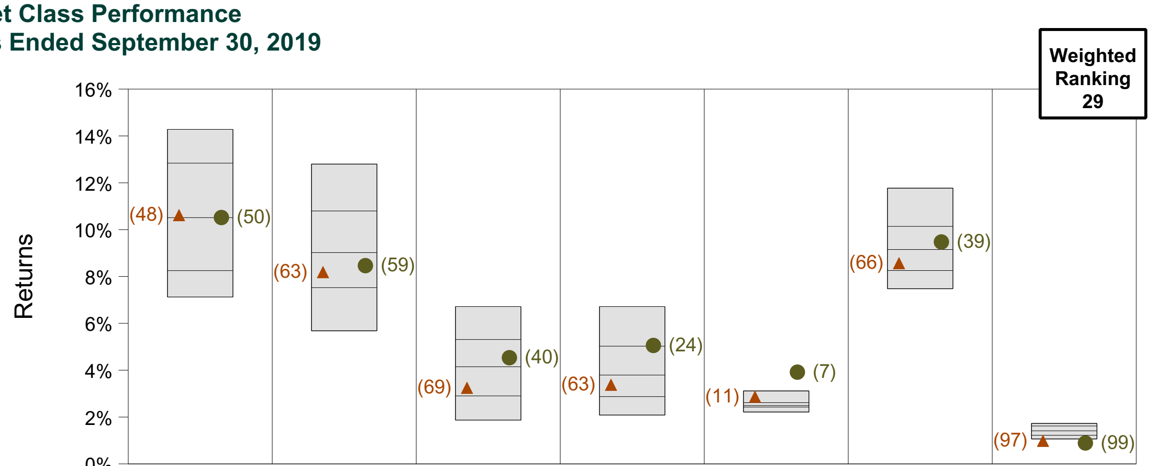
The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used 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 September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	8.46	(0.24)	3.16	14.57	8.46	13.43	3.51
25th Percentile	5.46	(3.74)	0.63	10.63	7.38	8.21	3.29
Median	2.83	(7.07)	(2.10)	8.18	7.15	6.99	2.79
75th Percentile	(0.31)	(10.61)	(4.70)	5.77	6.81	5.80	2.57
90th Percentile	(1.87)	(13.09)	(6.52)	4.21	5.97	3.85	2.40
Asset Class Composite ●	2.52	(8.61)	(3.97)	11.20	5.50	5.74	2.24
Composite Benchmark ▲	3.87	(8.89)	(0.95)	10.30	5.72	6.24	2.39

Total Asset Class Performance
Five Years Ended September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	14.28	12.80	6.72	6.72	3.12	11.77	1.73
25th Percentile	12.84	10.80	5.31	5.03	2.61	10.14	1.62
Median	10.51	9.02	4.15	3.79	2.49	9.15	1.41
75th Percentile	8.25	7.52	2.90	2.87	2.43	8.25	1.22
90th Percentile	7.12	5.68	1.87	2.08	2.21	7.48	1.06
Asset Class Composite ●	10.52	8.46	4.53	5.06	3.92	9.47	0.89
Composite Benchmark ▲	10.62	8.19	3.25	3.38	2.87	8.57	0.98

* 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Global Equity	**$457,793,994**	**22.00%**	**$(6,018,806)**	**$892,896**	**$462,919,904**	**22.41%**
Domestic Equity	**$290,997,788**	**13.99%**	**$(6,527,143)**	**$2,641,340**	**$294,883,591**	**14.28%**
Large Cap	229,249,181	11.02%	(6,763,024)	3,089,085	232,923,119	11.28%
Small Cap	61,748,607	2.97%	235,881	(447,746)	61,960,472	3.00%
International Equity	**$166,796,206**	**8.02%**	**$508,337**	**$(1,748,443)**	**$168,036,312**	**8.14%**
Domestic Fixed Income	**$1,257,013,022**	**60.41%**	**$(17,630,508)**	**$31,759,618**	**$1,242,883,912**	**60.18%**
Global Real Assets	**$343,961,313**	**16.53%**	**$(2,143,566)**	**$2,697,299**	**$343,407,580**	**16.63%**
Real Estate	100,236,802	4.82%	(868,776)	108	101,105,470	4.90%
Diversified	243,724,511	11.71%	(1,274,790)	2,697,191	242,302,110	11.73%
Cash	**$21,918,796**	**1.05%**	**$5,639,289**	**$90,502**	**$16,189,005**	**0.78%**
Securities Lending Income	**$0**	**0.00%**	**$(35,908)**	**$35,908**	**-**	**-**
Total Fund	**$2,080,687,125**	**100.0%**	**$(20,189,498)**	**$35,476,223**	**$2,065,400,400**	**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 September 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 September 30, 2019

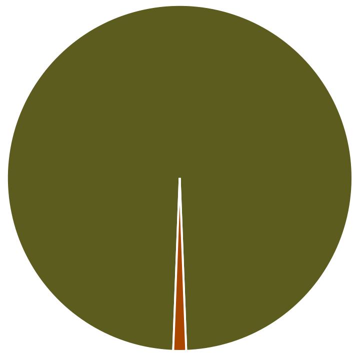
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Global Equity					
Gross	0.20%	(1.30%)	-	-	-
Net	0.15%	(1.51%)	-	-	-
Weighted Benchmark	0.05%	0.37%	-	-	-
Domestic Equity					
Gross	0.89%	0.14%	11.48%	10.16%	14.26%
Net	0.86%	(0.02%)	11.29%	9.94%	13.96%
Weighted Benchmark	0.60%	1.05%	-	-	-
Large Cap					
Gross	1.30%	2.52%	12.44%	10.52%	14.69%
Net	1.26%	2.35%	12.24%	10.31%	14.44%
Benchmark(1)	1.42%	3.87%	13.19%	10.62%	14.46%
Small Cap					
Gross	(0.70%)	(8.61%)	7.70%	8.46%	12.72%
Net	(0.73%)	(8.73%)	7.53%	8.18%	12.24%
Russell 2000	(2.40%)	(8.89%)	8.23%	8.19%	11.93%
International Equity					
Gross	(1.04%)	(3.97%)	6.86%	4.53%	7.35%
Net	(1.11%)	(4.26%)	6.53%	4.20%	6.98%
Benchmark(2)	(0.93%)	(0.95%)	6.49%	3.25%	6.06%
Domestic Fixed Income					
Gross	2.57%	11.20%	5.02%	5.06%	6.01%
Net	2.55%	11.07%	4.90%	4.93%	5.85%
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.45%
Global Real Assets					
Gross	0.79%	5.70%	-	-	-
Net	0.78%	5.36%	-	-	-
Weighted Benchmark	1.18%	5.84%	-	-	-
Real Estate					
Gross	0.00%	5.74%	7.16%	9.47%	13.79%
Net	0.02%	5.15%	6.57%	8.80%	12.91%
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	10.38%
Diversified					
Gross	1.11%	5.50%	5.12%	3.92%	4.76%
Net	1.10%	5.28%	4.87%	3.64%	4.43%
Weighted Benchmark	1.09%	5.72%	3.10%	2.87%	4.47%
Cash & Equivalents - Net	**0.53%**	**2.24%**	**1.43%**	**0.89%**	**0.57%**
90 Day Treasury Bills	0.56%	2.39%	1.54%	0.98%	0.57%
Total Fund					
Gross	1.73%	7.46%	6.63%	6.12%	7.63%
Net	1.70%	7.28%	6.44%	5.90%	7.36%
Target*	1.60%	7.54%	5.20%	4.87%	5.89%

* 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.

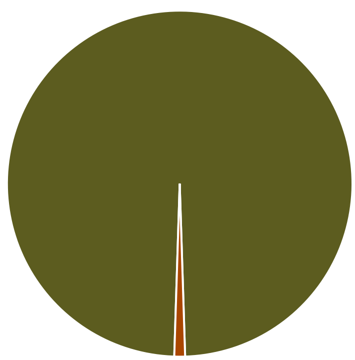
Actual vs Target Asset Allocation
As of September 30, 2019

The first chart below shows the Fund's asset allocation as of September 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

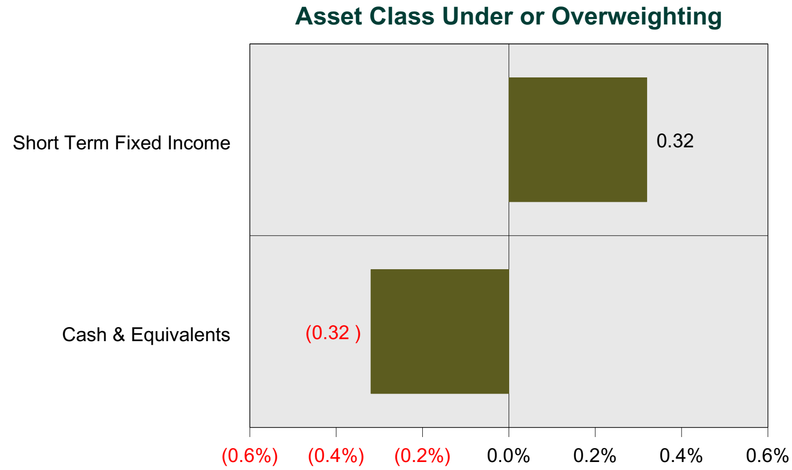


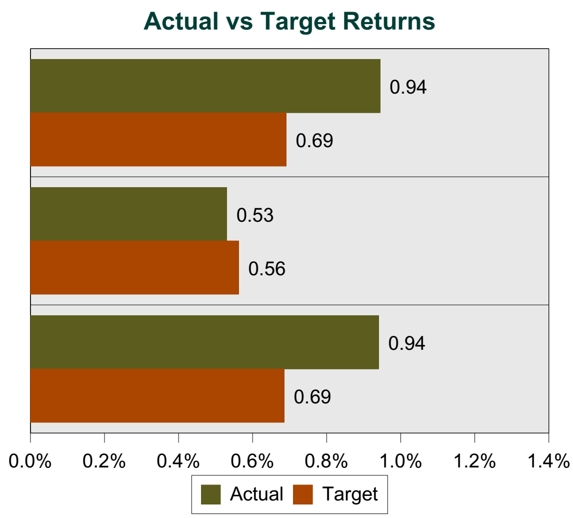
Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Short Term Fixed Income	660,976	98.8%	99.0%	(0.2%)	(1,188)
Cash & Equivalents	8,147	1.2%	1.0%	0.2%	1,188
Total	669,122	100.0%	100.0%		

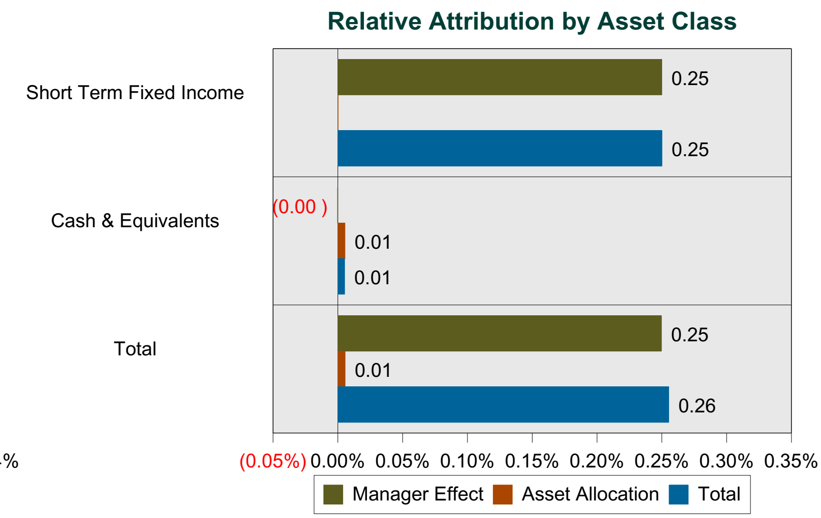
* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

Quarterly Total Fund Relative Attribution - September 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.







Relative Attribution Effects for Quarter ended September 30, 2019

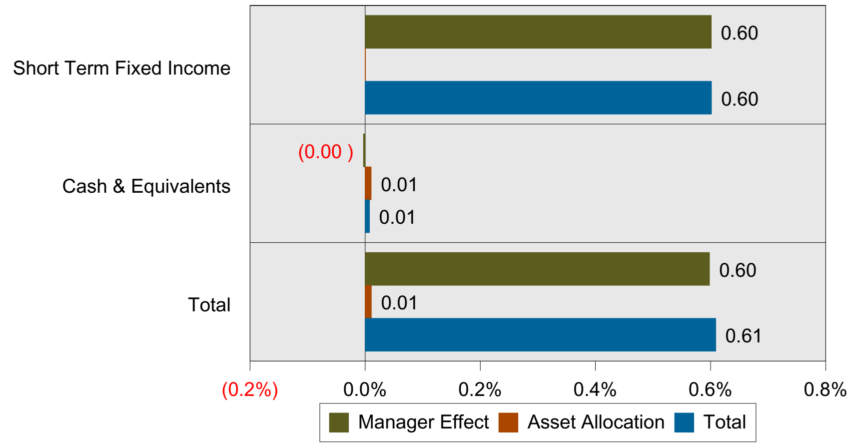
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	98%	98%	0.94%	0.69%	0.25%	0.00%	0.25%
Cash & Equivalents	2%	2%	0.53%	0.56%	(0.00%)	0.01%	0.01%
Total			**0.94% =**	**0.69% +**	**0.25% +**	**0.01%**	**0.26%**

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

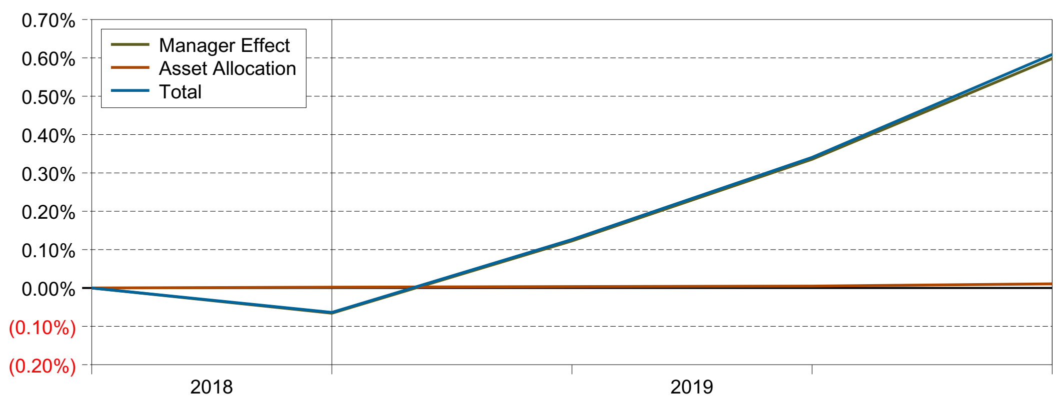
Cumulative Total Fund Relative Attribution - September 30, 2019

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

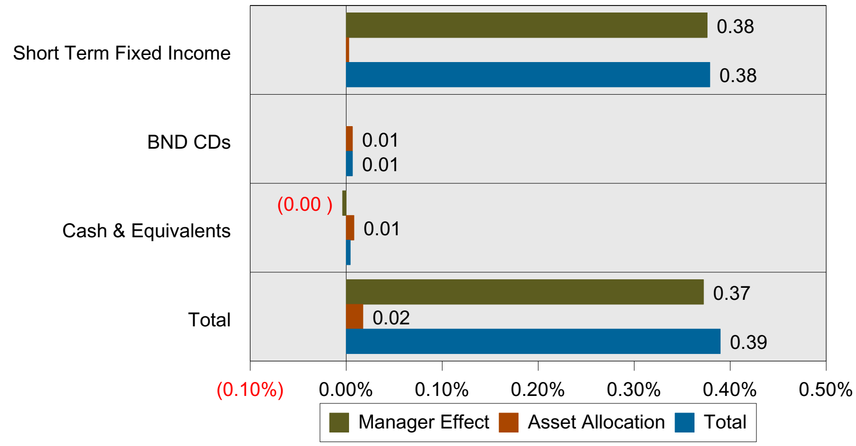
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	98%	98%	5.25%	4.64%	0.60%	0.00%	0.60%
Cash & Equivalents	2%	2%	2.24%	2.39%	(0.00%)	0.01%	0.01%
Total			**5.20% =**	**4.59% +**	**0.60% +**	**0.01%**	**0.61%**

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

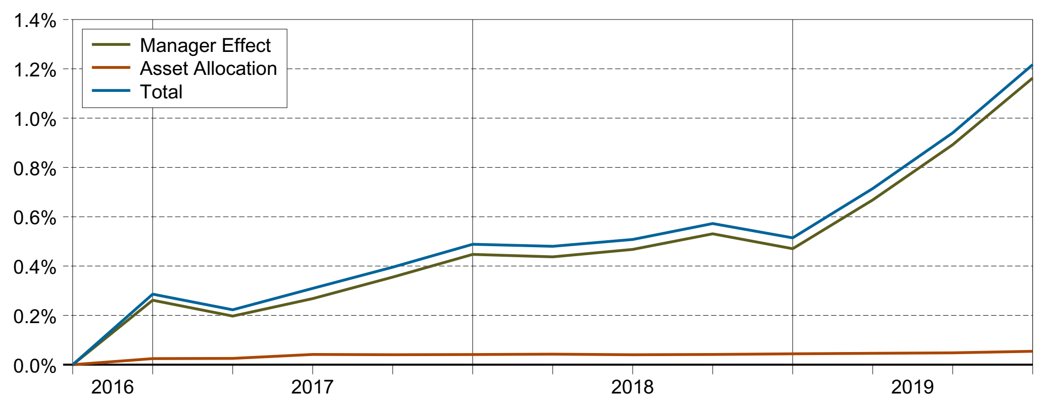
Cumulative Total Fund Relative Attribution - September 30, 2019

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

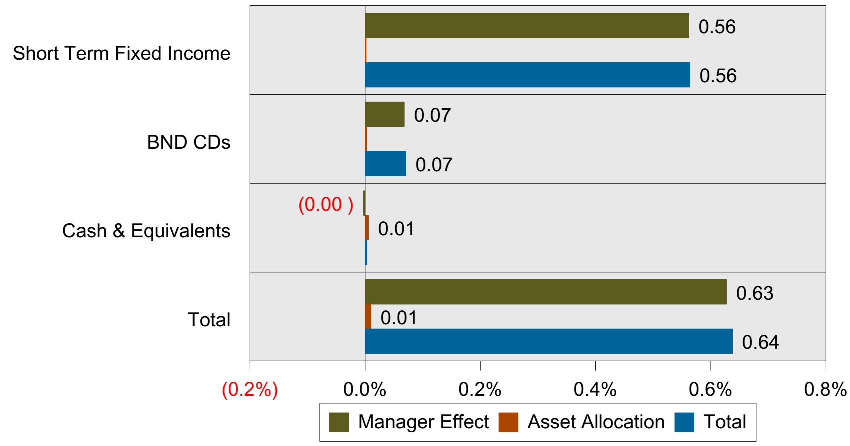
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Short Term Fixed Income	94%	94%	2.16%	1.75%	0.38%	0.00%	0.38%
BND CDs	3%	3%	-	-	0.00%	0.01%	0.01%
Cash & Equivalents	4%	4%	1.42%	1.54%	(0.00%)	0.01%	0.00%
Total			**2.22% =**	**1.83% +**	**0.37% +**	**0.02%**	**0.39%**

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

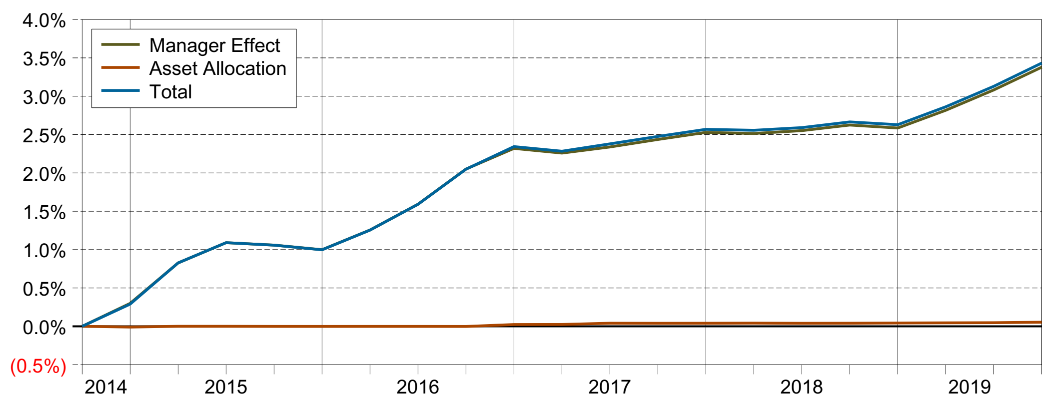
Cumulative Total Fund Relative Attribution - September 30, 2019

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
Short Term Fixed Income	89%	89%	2.12%	1.47%	0.56%	0.00%	0.56%
BND CDs	8%	8%	-	-	0.07%	0.00%	0.07%
Cash & Equivalents	3%	3%	0.89%	0.98%	(0.00%)	0.01%	0.00%

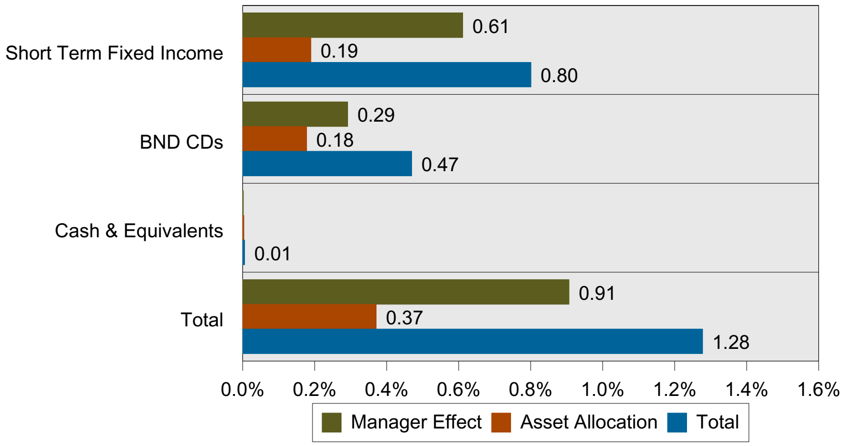
Total **2.18% = 1.54% + 0.63% + 0.01%** **0.64%**

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

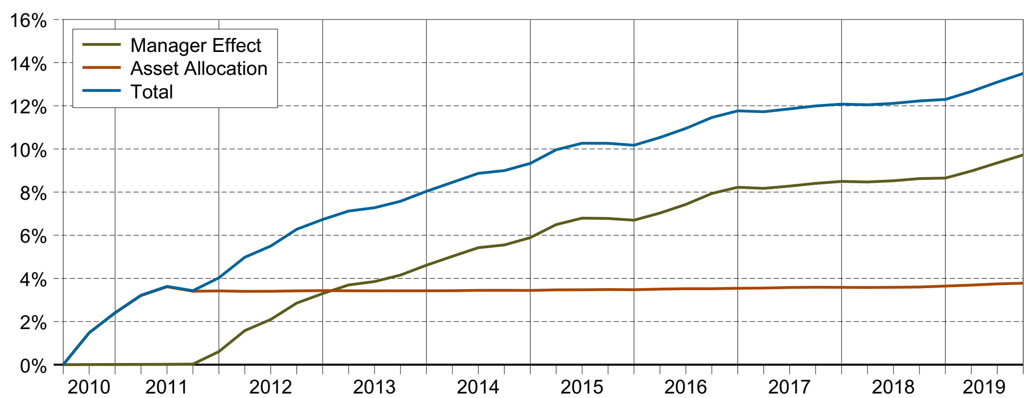
Cumulative Total Fund Relative Attribution - September 30, 2019

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 and One-Quarter Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects

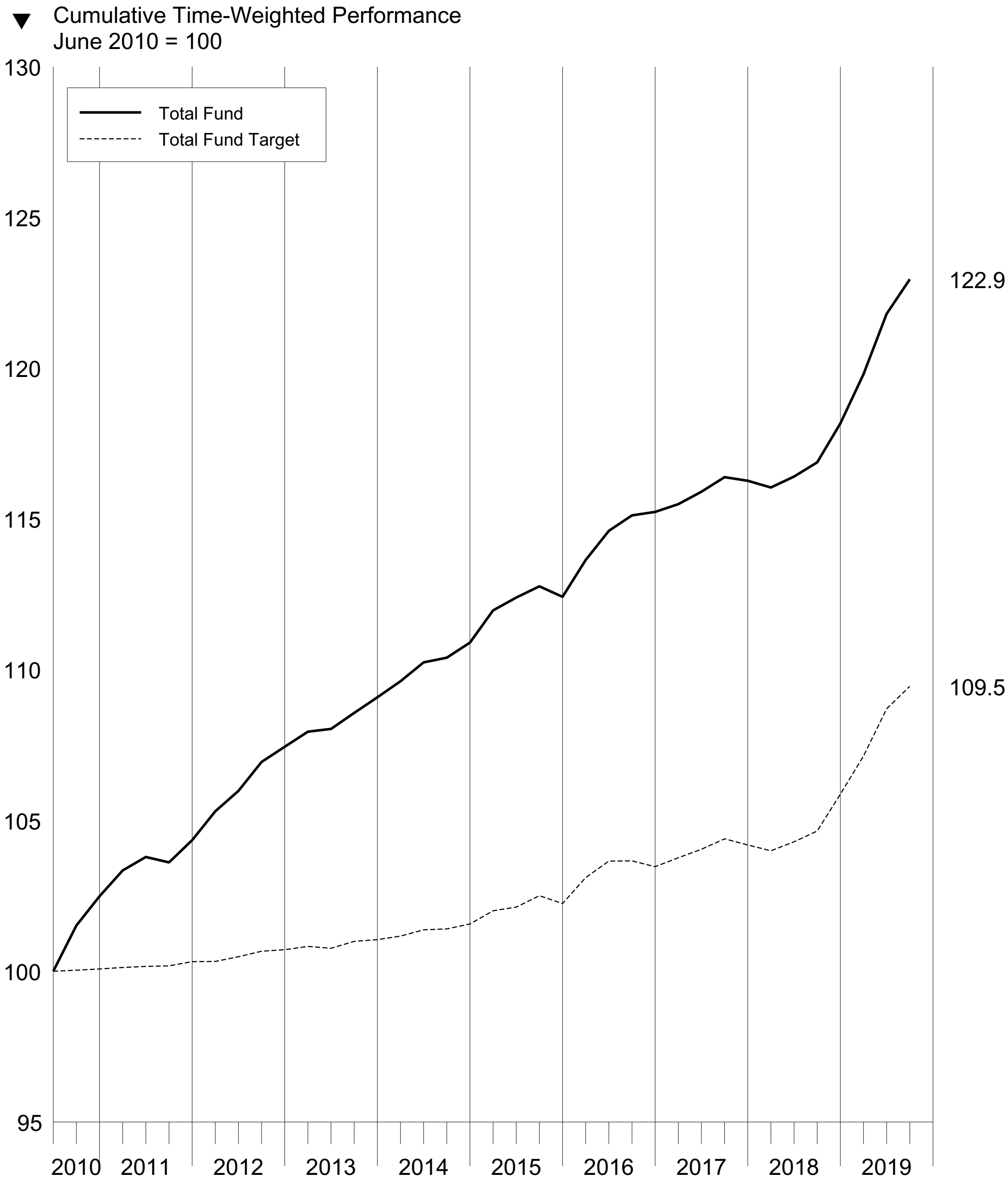


Nine and One-Quarter Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return		Target Return		Manager Effect		Asset Allocation	Total Relative Return
Short Term Fixed Income	80%	73%	2.06%		1.29%		0.61%		0.19%	0.80%
BND CDs	16%	12%	-		-		0.29%		0.18%	0.47%
Cash & Equivalents	4%	16%	0.57%		0.57%		0.00%		0.00%	0.01%
Total			**2.26%**	**=**	**0.98%**	**+**	**0.91%**	**+**	**0.37%**	**1.28%**

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 3-month Treasury Bill.

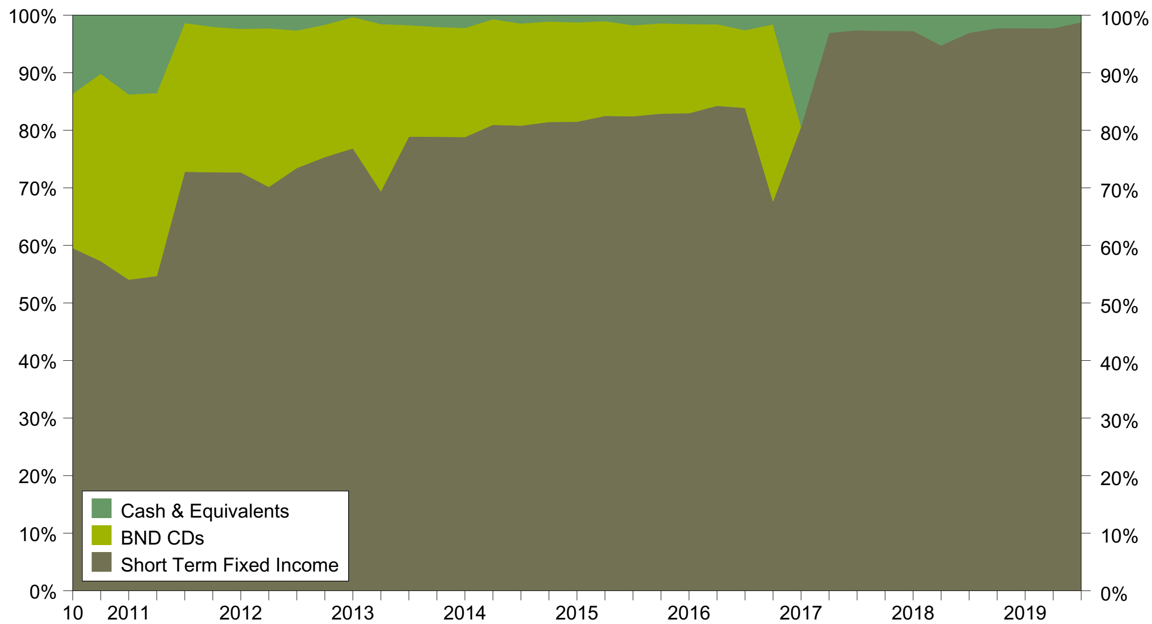
NDSIB - Budget Stabilization Fund
Cumulative Results



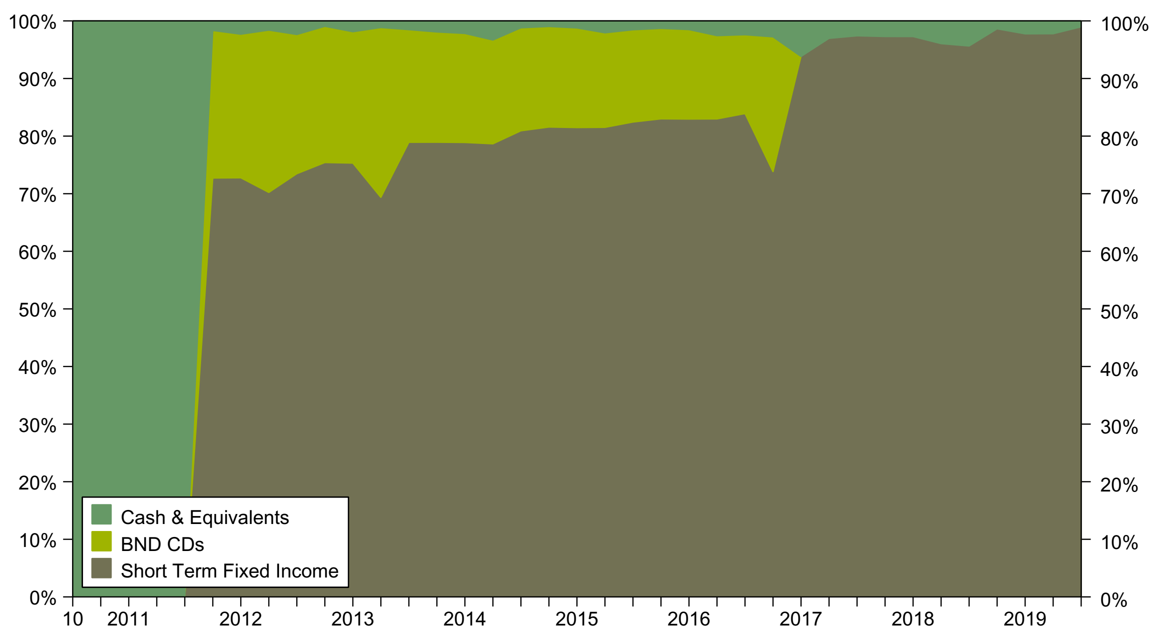
Actual vs Target Historical Asset Allocation

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 = 99.0% Blmbg Gov/Cred 1-3 Yr 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 September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Short Term Fixed Income	$660,975,799	98.78%	$542,582,508	$2,362,029	$116,031,262	97.75%
Cash & Equivalents	$8,146,699	1.22%	$5,384,243	$86,588	$2,675,869	2.25%
Securities Lending Income	$0	0.00%	$(1,975)	$1,975	-	-
Total Fund	$669,122,498	100.0%	$547,964,775	$2,450,592	$118,707,130	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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9-1/4 Years
Short Term Fixed Income					
Gross	0.94%	5.25%	2.16%	2.12%	2.06%
Net	0.93%	5.14%	1.95%	1.94%	1.91%
Blended Benchmark(1)	0.69%	4.64%	1.75%	1.47%	-
Cash & Equivalents - Net	**0.53%**	**2.24%**	**1.42%**	**0.89%**	**0.57%**
3-month Treasury Bill	0.56%	2.39%	1.54%	0.98%	0.57%
Total Fund					
Gross	0.94%	5.20%	2.22%	2.18%	2.26%
Net	0.93%	5.08%	2.03%	2.02%	2.14%
Target*	0.69%	4.59%	1.83%	1.54%	0.98%

* Current Quarter Target = 99.0% Blmbg Gov/Cred 1-3 Yr and 1.0% 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 September 30, 2019

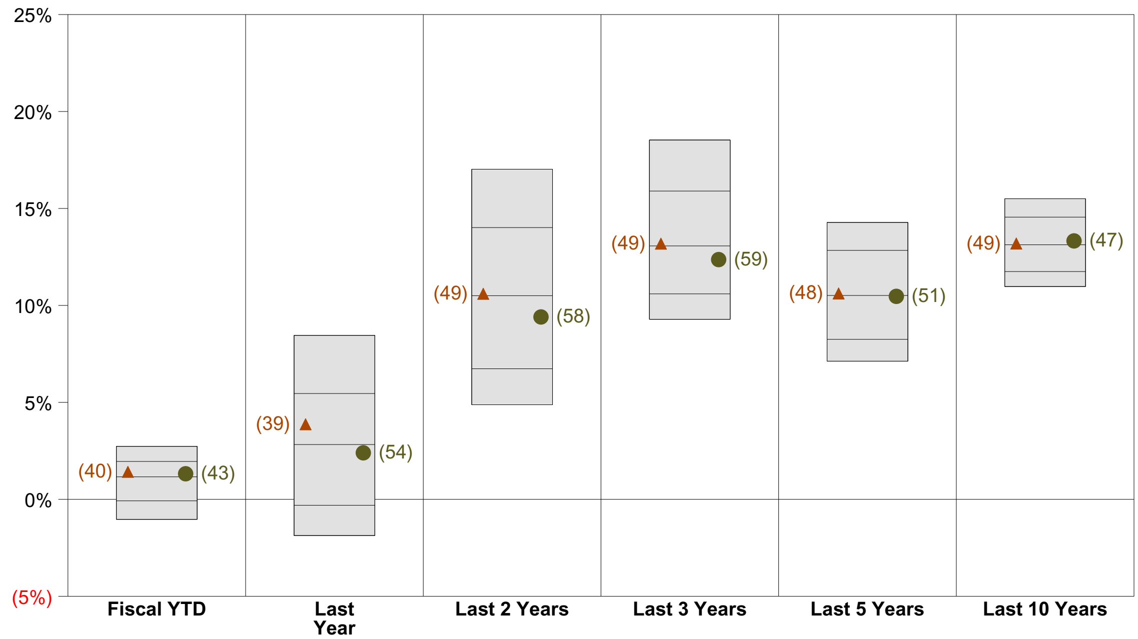
Quarterly Summary and Highlights

- Large Cap's portfolio posted a 1.32% return for the quarter placing it in the 43 percentile of the Callan Large Capitalization group for the quarter and in the 54 percentile for the last year.
- Large Cap's portfolio underperformed the Large Cap Equity Target by 0.10% for the quarter and underperformed the Large Cap Equity Target for the year by 1.48%.

Quarterly Asset Growth

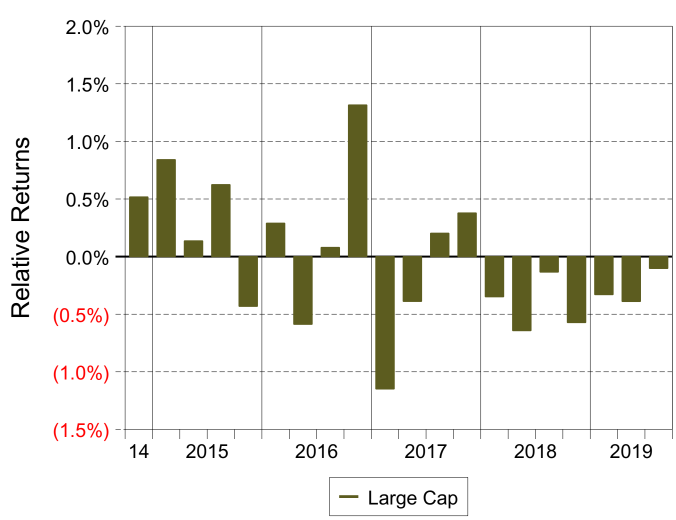
Beginning Market Value	$252,962,816
Net New Investment	$-8,102,941
Investment Gains/(Losses)	$3,372,696
Ending Market Value	$248,232,572

Performance vs Callan Large Capitalization (Gross)

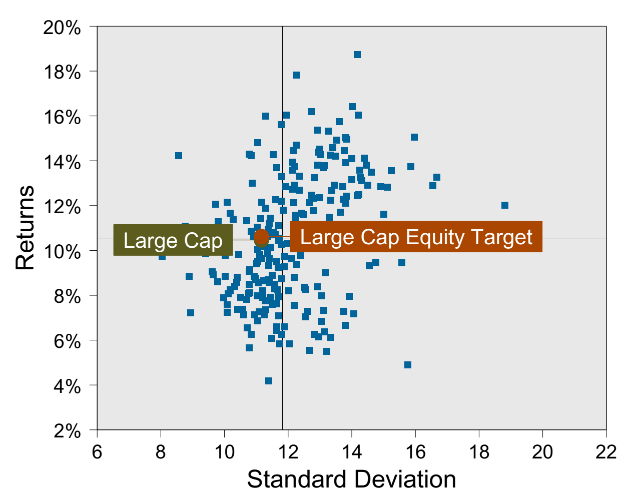


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.73	8.46	17.02	18.53	14.28	15.50
25th Percentile	1.95	5.46	14.01	15.90	12.84	14.55
Median	1.16	2.83	10.50	13.07	10.51	13.13
75th Percentile	(0.08)	(0.31)	6.73	10.59	8.25	11.75
90th Percentile	(1.03)	(1.87)	4.88	9.28	7.12	10.97
Large Cap ●	1.32	2.40	9.40	12.36	10.47	13.33
Large Cap Equity Target ▲	1.42	3.87	10.60	13.19	10.62	13.19

Relative Return vs Large Cap Equity Target



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



Parametric Clifton Large Cap
Period Ended September 30, 2019

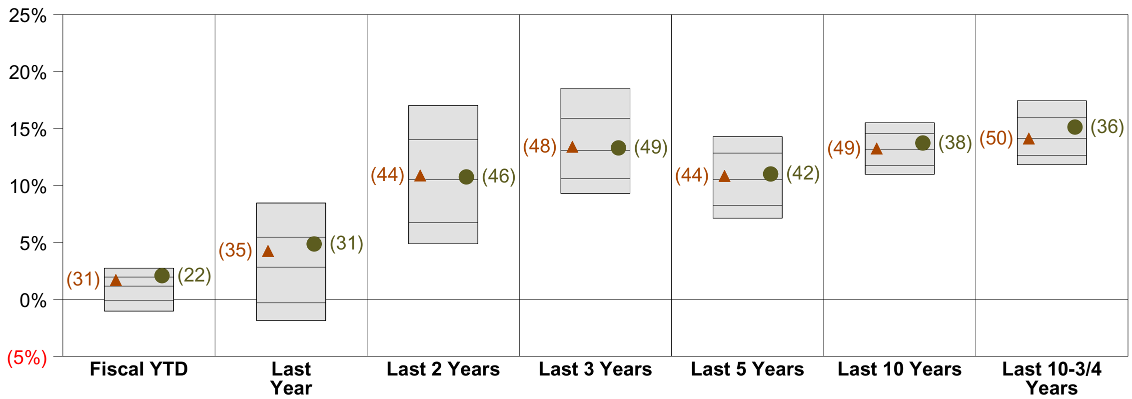
Investment Philosophy
Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed 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 2.08% return for the quarter placing it in the 22 percentile of the Callan Large Capitalization group for the quarter and in the 31 percentile for the last year.
- Parametric Clifton Large Cap's portfolio outperformed the S&P 500 Index by 0.38% for the quarter and outperformed the S&P 500 Index for the year by 0.61%.

Quarterly Asset Growth

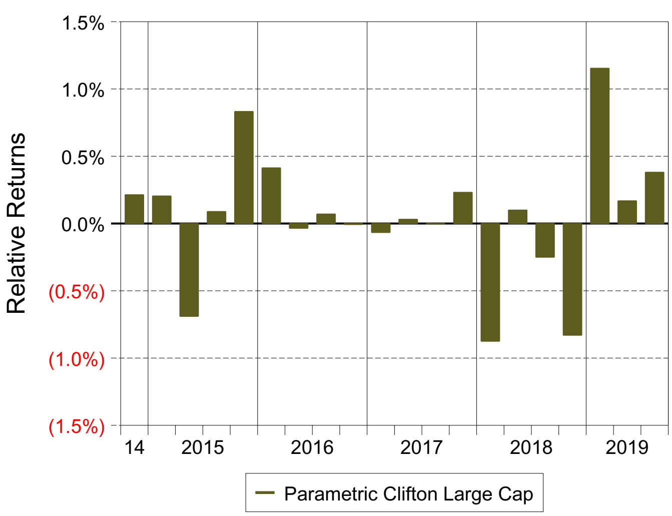
Beginning Market Value	$51,981,053
Net New Investment	$-2,000,000
Investment Gains/(Losses)	$1,064,428
Ending Market Value	$51,045,481

Performance vs Callan Large Capitalization (Gross)

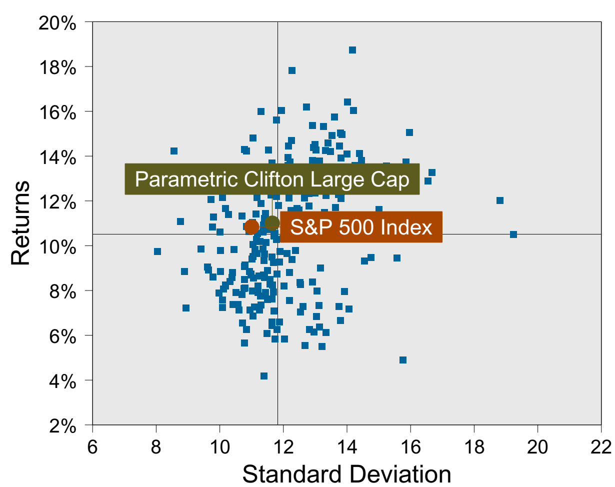


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 10-3/4 Years
10th Percentile	2.73	8.46	17.02	18.53	14.28	15.50	17.43
25th Percentile	1.95	5.46	14.01	15.90	12.84	14.55	15.99
Median	1.16	2.83	10.50	13.07	10.51	13.13	14.14
75th Percentile	(0.08)	(0.31)	6.73	10.59	8.25	11.75	12.64
90th Percentile	(1.03)	(1.87)	4.88	9.28	7.12	10.97	11.82
Parametric Clifton Large Cap ●	2.08	4.86	10.75	13.29	11.00	13.73	15.12
S&P 500 Index ▲	1.70	4.25	10.87	13.39	10.84	13.24	14.12

Relative Return vs S&P 500 Index



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



L.A. Capital
Period Ended September 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.

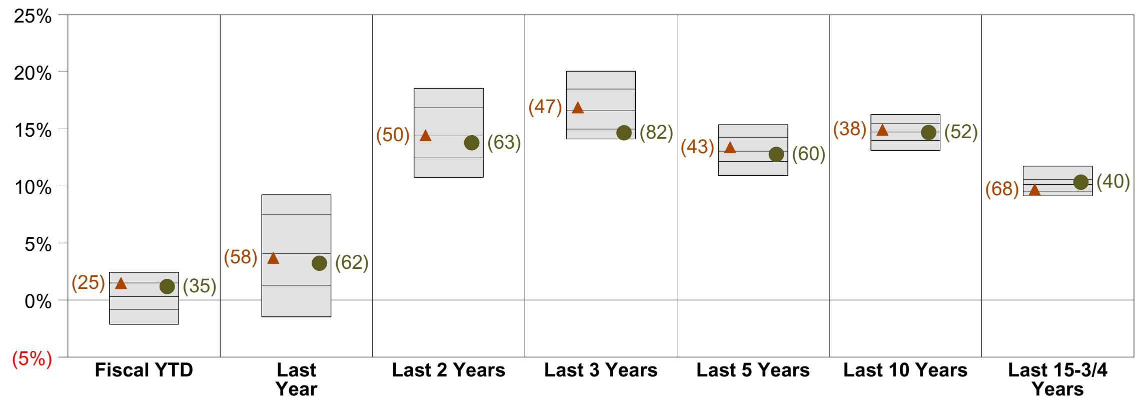
Quarterly Summary and Highlights

- L.A. Capital Large Cap Growth's portfolio posted a 1.18% return for the quarter placing it in the 35 percentile of the Callan Large Cap Growth group for the quarter and in the 62 percentile for the last year.
- L.A. Capital Large Cap Growth's portfolio underperformed the Russell 1000 Growth Index by 0.31% for the quarter and underperformed the Russell 1000 Growth Index for the year by 0.48%.

Quarterly Asset Growth

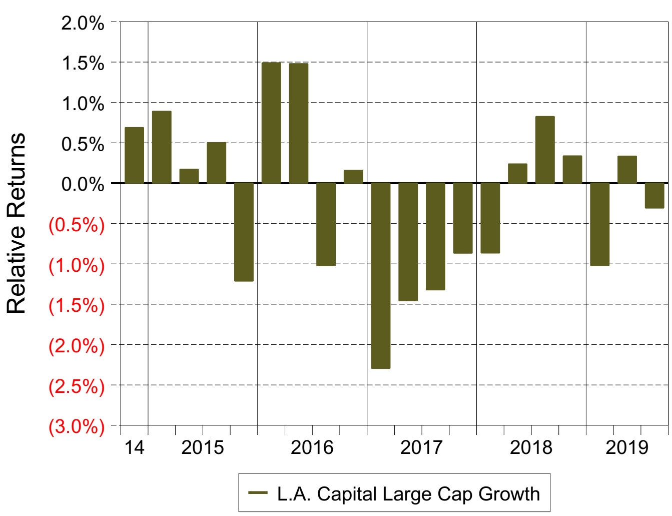
Beginning Market Value	$77,797,475
Net New Investment	$-4,038,768
Investment Gains/(Losses)	$957,708
Ending Market Value	$74,716,415

Performance vs Callan Large Cap Growth (Gross)

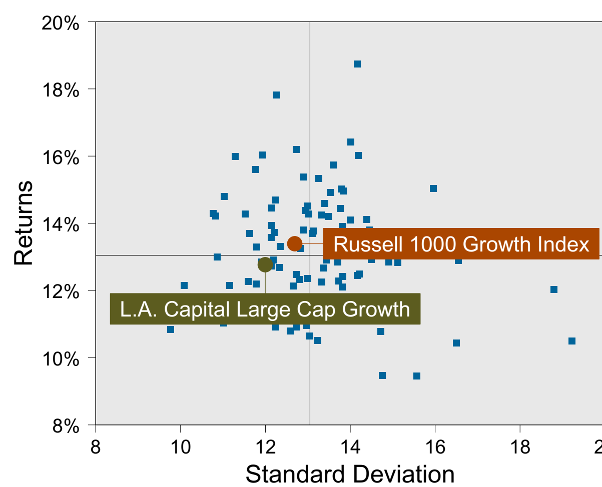


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 15-3/4 Years
10th Percentile	2.43	9.23	18.56	20.06	15.37	16.26	11.74
25th Percentile	1.50	7.52	16.86	18.49	14.27	15.46	10.58
Median	0.30	4.09	14.38	16.59	13.05	14.73	10.12
75th Percentile	(0.82)	1.29	12.46	14.99	12.14	13.99	9.54
90th Percentile	(2.13)	(1.47)	10.76	14.12	10.91	13.12	9.13
L.A. Capital Large Cap Growth ●	1.18	3.22	13.79	14.66	12.77	14.69	10.33
Russell 1000 Growth Index ▲	1.49	3.71	14.45	16.89	13.39	14.94	9.70

Relative Return vs Russell 1000 Growth Index



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



L.A. Capital Enhanced
Period Ended September 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.

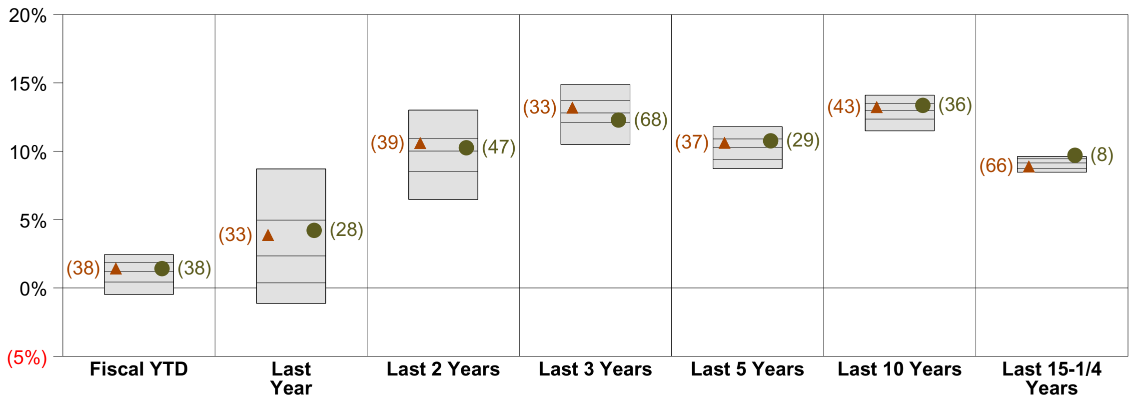
Quarterly Summary and Highlights

- L.A. Capital Enhanced's portfolio posted a 1.41% return for the quarter placing it in the 38 percentile of the Callan Large Cap Core group for the quarter and in the 28 percentile for the last year.
- L.A. Capital Enhanced's portfolio underperformed the Russell 1000 Index by 0.01% for the quarter and outperformed the Russell 1000 Index for the year by 0.34%.

Quarterly Asset Growth

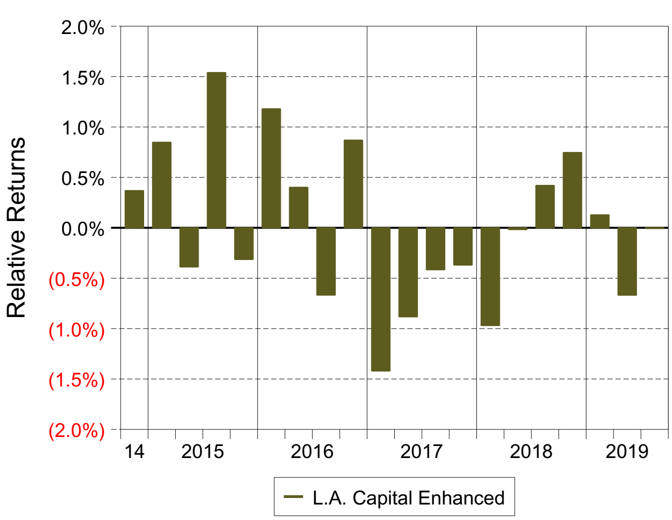
Beginning Market Value	$52,155,741
Net New Investment	$-2,013,553
Investment Gains/(Losses)	$754,683
Ending Market Value	$50,896,871

Performance vs Callan Large Cap Core (Gross)

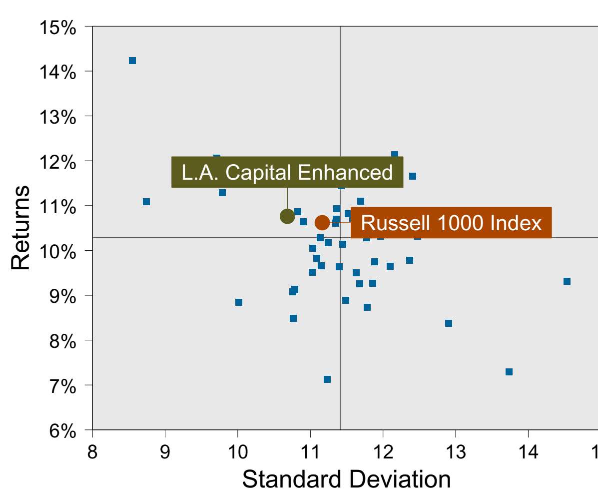


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 15-1/4 Years
10th Percentile	2.44	8.71	13.01	14.90	11.80	14.10	9.61
25th Percentile	1.87	4.96	10.91	13.73	10.90	13.51	9.45
Median	1.21	2.34	10.01	12.80	10.28	12.96	9.14
75th Percentile	0.43	0.37	8.51	12.08	9.40	12.35	8.74
90th Percentile	(0.47)	(1.13)	6.47	10.49	8.73	11.49	8.47
L.A. Capital Enhanced ●	1.41	4.21	10.25	12.28	10.76	13.35	9.71
Russell 1000 Index ▲	1.42	3.87	10.60	13.19	10.62	13.23	8.88

Relative Return vs Russell 1000 Index



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



LSV Asset Management
Period Ended September 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.

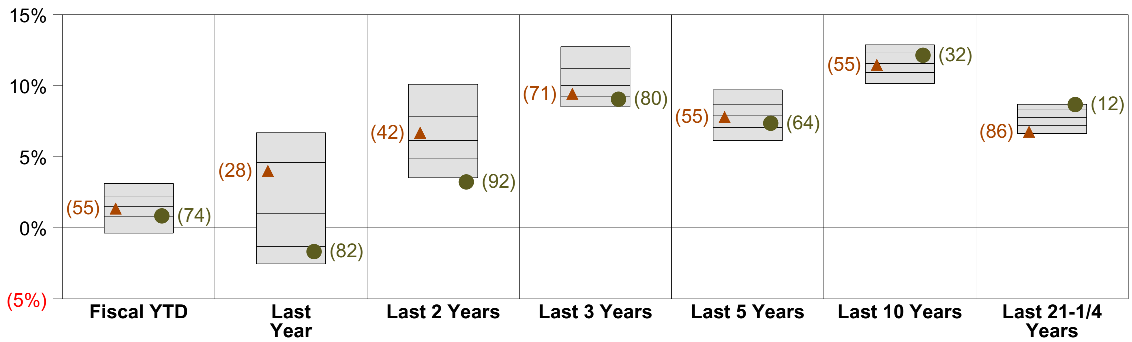
Quarterly Summary and Highlights

- LSV Large Cap Value's portfolio posted a 0.84% return for the quarter placing it in the 74 percentile of the Callan Large Cap Value group for the quarter and in the 82 percentile for the last year.
- LSV Large Cap Value's portfolio underperformed the Russell 1000 Value Index by 0.52% for the quarter and underperformed the Russell 1000 Value Index for the year by 5.67%.

Quarterly Asset Growth

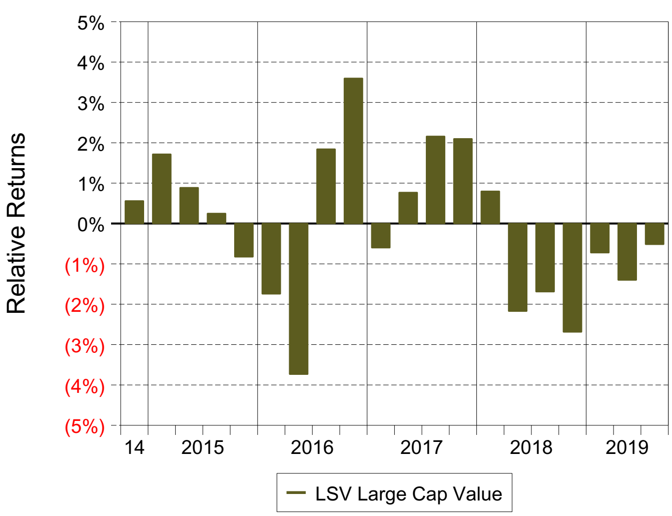
Beginning Market Value	$71,028,548
Net New Investment	$-50,620
Investment Gains/(Losses)	$595,878
Ending Market Value	$71,573,805

Performance vs Callan Large Cap Value (Gross)

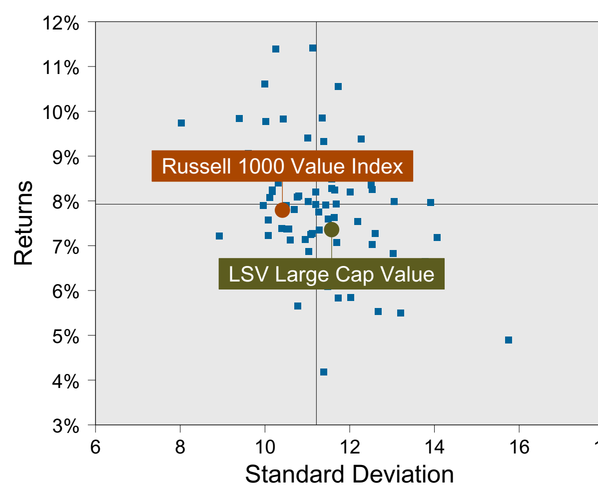


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 21-1/4 Years
10th Percentile	3.11	6.69	10.11	12.74	9.71	12.88	8.70
25th Percentile	2.23	4.60	7.85	11.22	8.66	12.31	8.36
Median	1.49	1.02	6.15	10.02	7.93	11.56	7.76
75th Percentile	0.78	(1.31)	4.85	9.26	7.06	10.93	7.19
90th Percentile	(0.37)	(2.54)	3.52	8.51	6.14	10.16	6.64
LSV Large Cap Value ●	0.84	(1.67)	3.23	9.05	7.36	12.14	8.68
Russell 1000 Value Index ▲	1.36	4.00	6.69	9.43	7.79	11.46	6.76

Relative Return vs Russell 1000 Value Index



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



Small Cap
Period Ended September 30, 2019

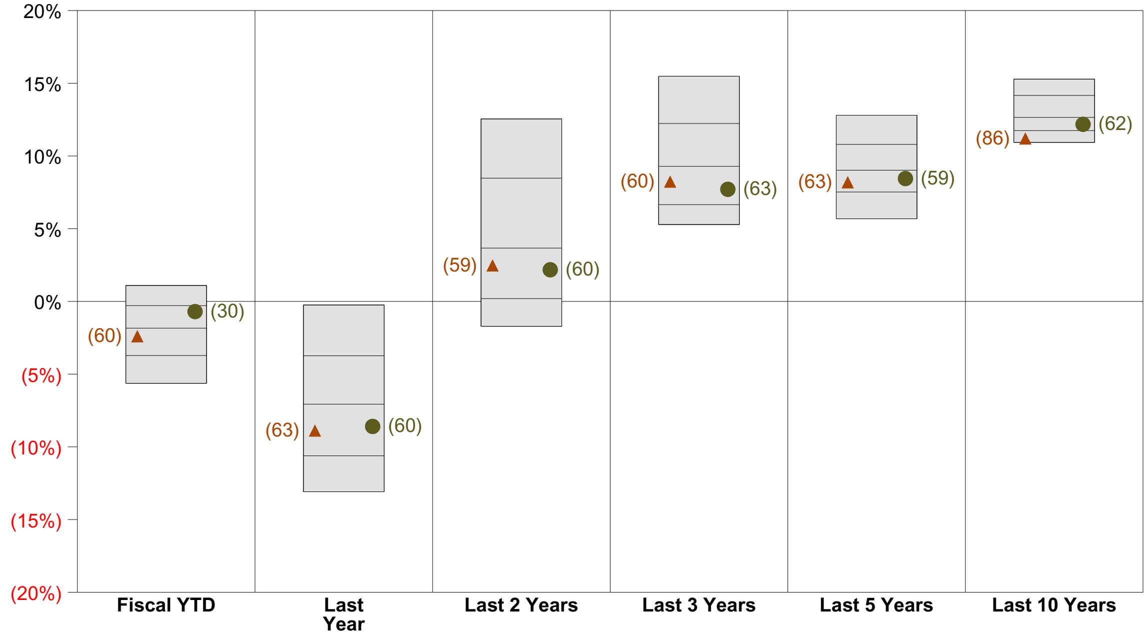
Quarterly Summary and Highlights

- Small Cap's portfolio posted a (0.70)% return for the quarter placing it in the 30 percentile of the Callan Small Capitalization group for the quarter and in the 60 percentile for the last year.
- Small Cap's portfolio outperformed the Small Cap Equity Target by 1.70% for the quarter and outperformed the Small Cap Equity Target for the year by 0.29%.

Quarterly Asset Growth

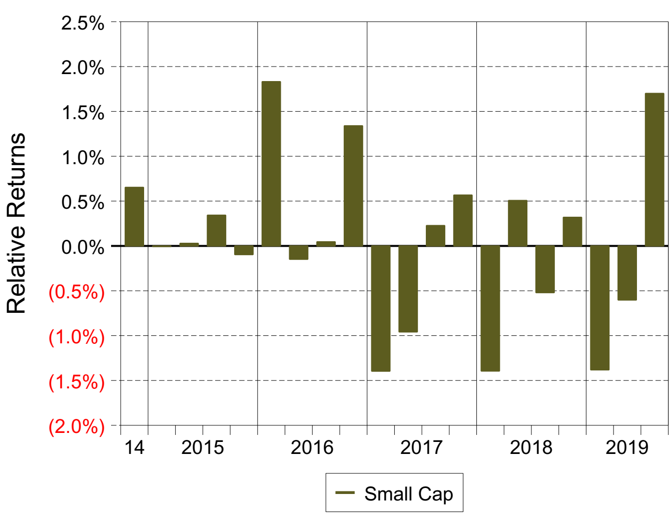
Beginning Market Value	$70,403,214
Net New Investment	$-19,789
Investment Gains/(Losses)	$-492,875
Ending Market Value	$69,890,549

Performance vs Callan Small Capitalization (Gross)

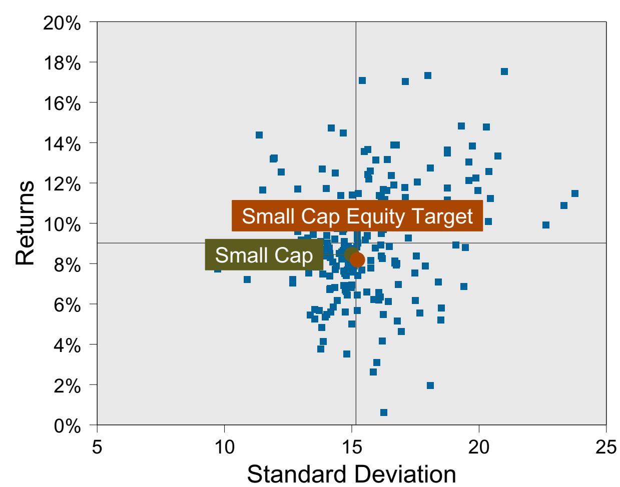


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	15.28
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	14.16
Median	(1.84)	(7.07)	3.67	9.29	9.02	12.65
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	11.75
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	10.93
Small Cap ●	(0.70)	(8.60)	2.17	7.71	8.45	12.18
Small Cap Equity Target ▲	(2.40)	(8.89)	2.47	8.23	8.19	11.19

Relative Return vs Small Cap Equity Target



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



Parametric Clifton SmallCap
Period Ended September 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.

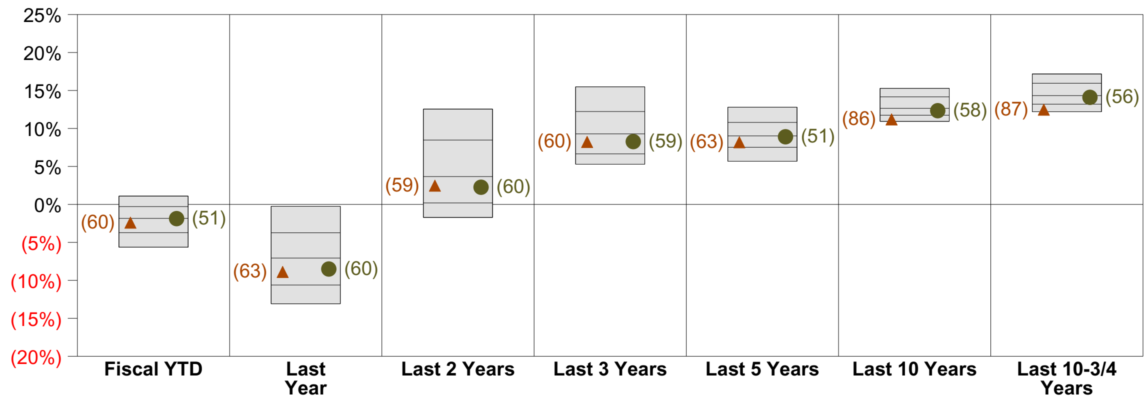
Quarterly Summary and Highlights

- Parametric Clifton SmallCap's portfolio posted a (1.87)% return for the quarter placing it in the 51 percentile of the Callan Small Capitalization group for the quarter and in the 60 percentile for the last year.
- Parametric Clifton SmallCap's portfolio outperformed the Russell 2000 Index by 0.53% for the quarter and outperformed the Russell 2000 Index for the year by 0.38%.

Quarterly Asset Growth

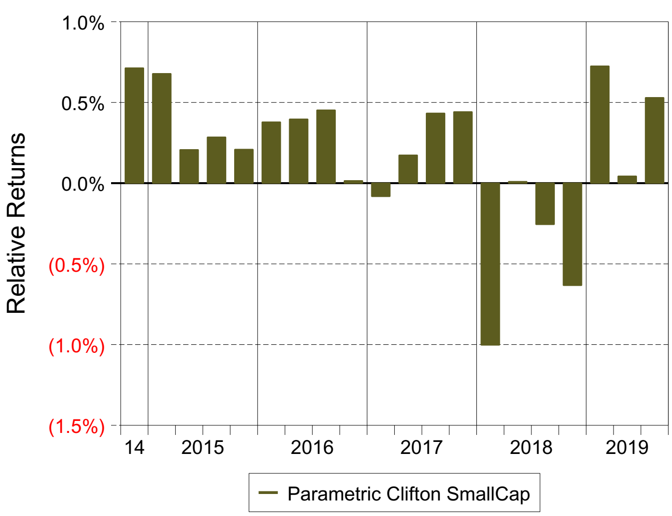
Beginning Market Value	$35,341,520
Net New Investment	$0
Investment Gains/(Losses)	$-661,362
Ending Market Value	$34,680,158

Performance vs Callan Small Capitalization (Gross)

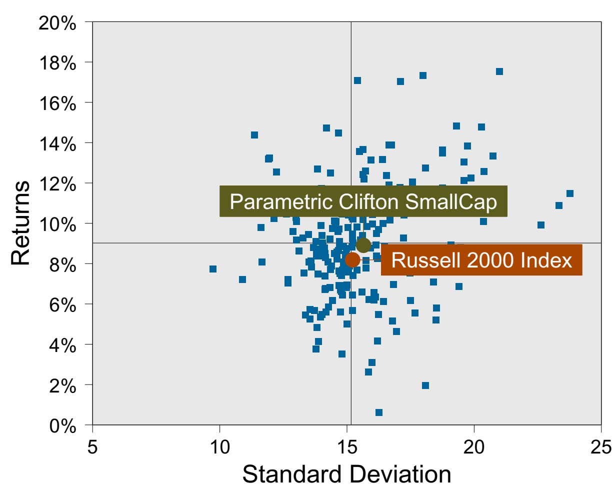


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 10-3/4 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	15.28	17.18
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	14.16	15.95
Median	(1.84)	(7.07)	3.67	9.29	9.02	12.65	14.33
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	11.75	13.20
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	10.93	12.20
Parametric Clifton SmallCap ●	(1.87)	(8.51)	2.26	8.27	8.91	12.34	14.10
Russell 2000 Index ▲	(2.40)	(8.89)	2.47	8.23	8.19	11.19	12.47

Relative Return vs Russell 2000 Index



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



PIMCO RAE
Period Ended September 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 0.48% return for the quarter placing it in the 16 percentile of the Callan Small Capitalization group for the quarter and in the 61 percentile for the last year.
- PIMCO RAE's portfolio outperformed the Russell 2000 Index by 2.88% for the quarter and outperformed the Russell 2000 Index for the year by 0.15%.

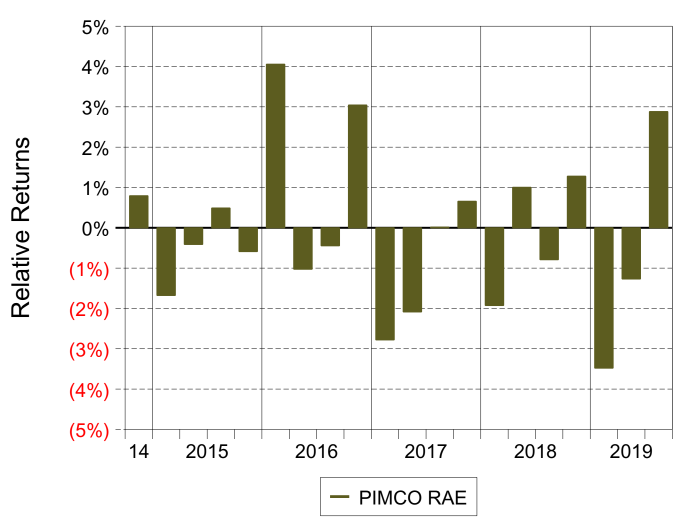
Quarterly Asset Growth

Beginning Market Value	$35,061,694
Net New Investment	$-19,789
Investment Gains/(Losses)	$168,487
Ending Market Value	$35,210,391

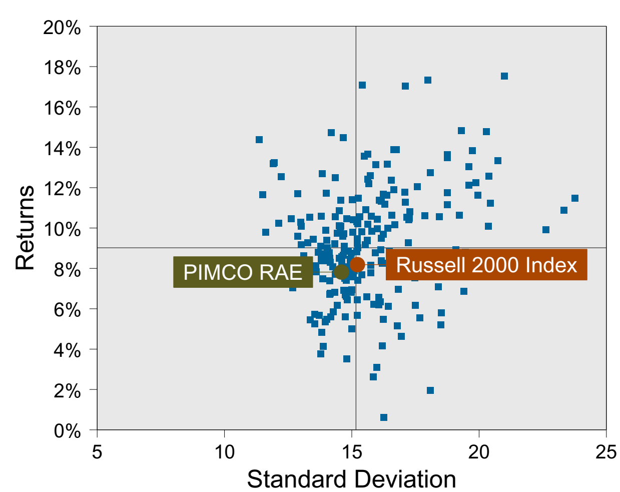
Performance vs Callan Small Capitalization (Gross)

	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 12 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	15.28	10.47
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	14.16	9.50
Median	(1.84)	(7.07)	3.67	9.29	9.02	12.65	8.34
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	11.75	7.32
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	10.93	6.57
PIMCO RAE ●	0.48	(8.74)	1.96	7.14	7.82	11.93	7.64
Russell 2000 Index ▲	(2.40)	(8.89)	2.47	8.23	8.19	11.19	6.93

Relative Return vs Russell 2000 Index



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



International Equity
Period Ended September 30, 2019

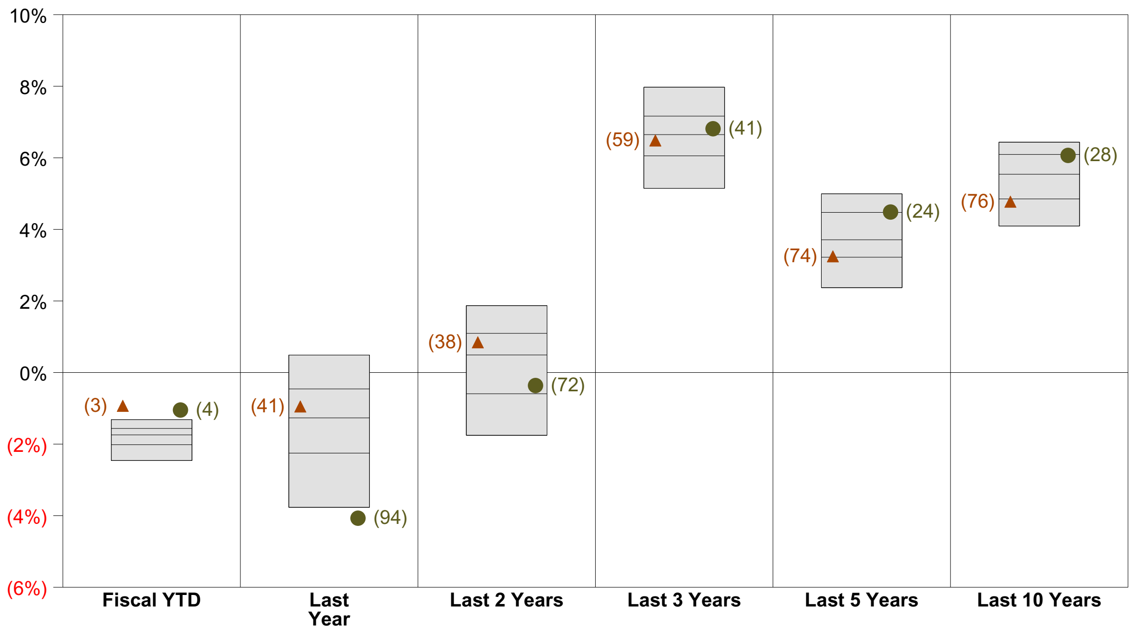
Quarterly Summary and Highlights

- International Equity's portfolio posted a (1.05)% return for the quarter placing it in the 4 percentile of the Public Fund - International Equity group for the quarter and in the 94 percentile for the last year.
- International Equity's portfolio underperformed the International Equity Target by 0.12% for the quarter and underperformed the International Equity Target for the year by 3.12%.

Quarterly Asset Growth

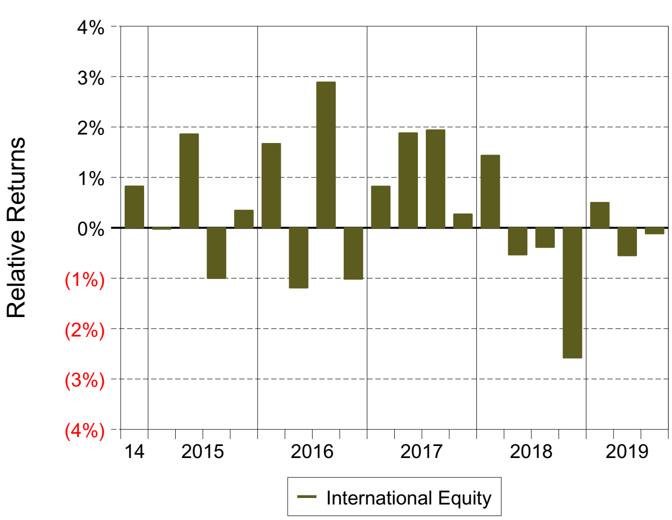
Beginning Market Value	$178,775,580
Net New Investment	$-131,558
Investment Gains/(Losses)	$-1,872,746
Ending Market Value	$176,771,276

Performance vs Public Fund - International Equity (Gross)

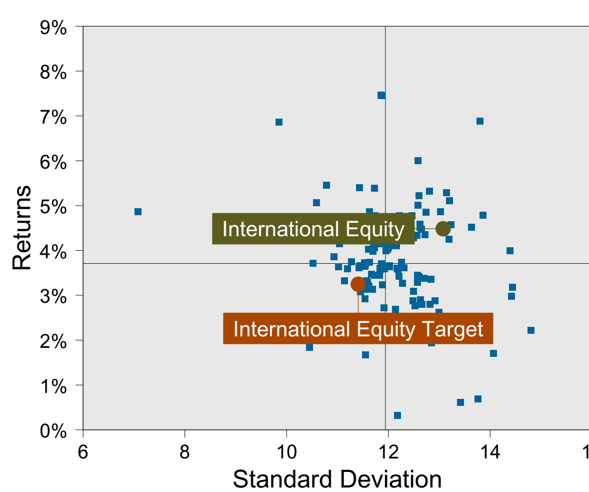


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(1.32)	0.49	1.87	7.97	4.99	6.44
25th Percentile	(1.56)	(0.46)	1.09	7.16	4.47	6.09
Median	(1.74)	(1.27)	0.49	6.65	3.71	5.54
75th Percentile	(2.02)	(2.25)	(0.59)	6.06	3.22	4.85
90th Percentile	(2.46)	(3.77)	(1.75)	5.15	2.37	4.09
International Equity ●	(1.05)	(4.07)	(0.36)	6.81	4.48	6.07
International Equity Target ▲	(0.93)	(0.95)	0.84	6.49	3.25	4.77

Relative Return vs International Equity Target



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



DFA Intl Small Cap Value
Period Ended September 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.

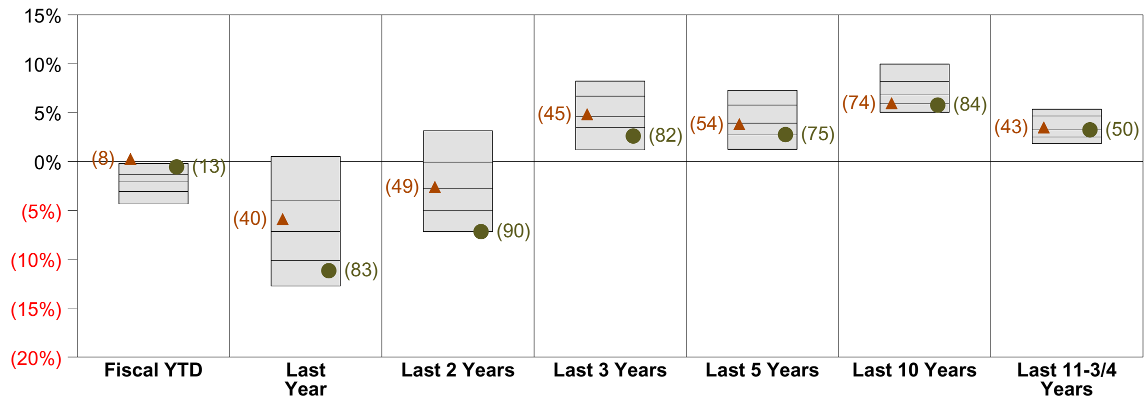
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a (0.55)% return for the quarter placing it in the 13 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 83 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.81% for the quarter and underperformed the World ex US SC Value for the year by 5.28%.

Quarterly Asset Growth

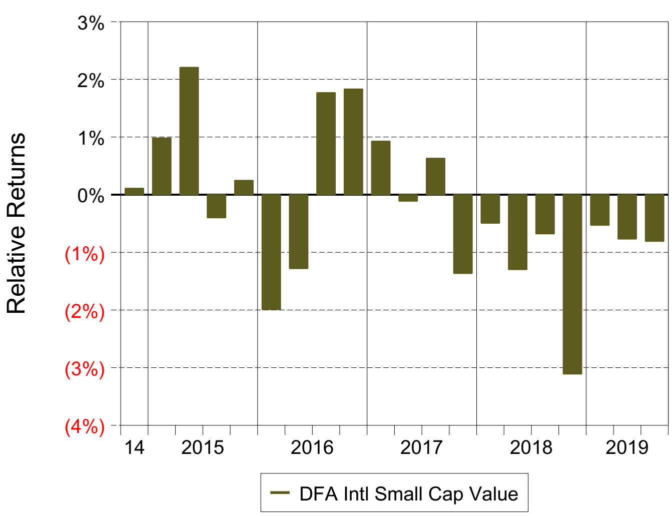
Beginning Market Value	$17,820,535
Net New Investment	$0
Investment Gains/(Losses)	$-98,658
Ending Market Value	$17,721,878

Performance vs Callan International Small Cap Mut Funds (Net)

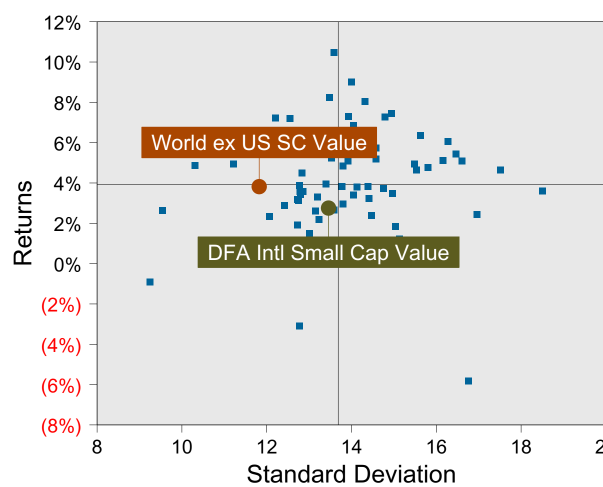


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 11-3/4 Years
10th Percentile	(0.20)	0.52	3.15	8.23	7.28	9.97	5.35
25th Percentile	(1.34)	(3.96)	(0.07)	6.68	5.77	8.20	4.65
Median	(2.08)	(7.16)	(2.78)	4.60	3.92	6.81	3.24
75th Percentile	(3.07)	(10.12)	(5.03)	3.48	2.73	5.92	2.51
90th Percentile	(4.34)	(12.74)	(7.17)	1.19	1.25	5.03	1.83
DFA Intl Small Cap Value ●	(0.55)	(11.17)	(7.17)	2.61	2.75	5.77	3.24
World ex US SC Value ▲	0.25	(5.89)	(2.61)	4.83	3.82	5.96	3.49

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 September 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.**

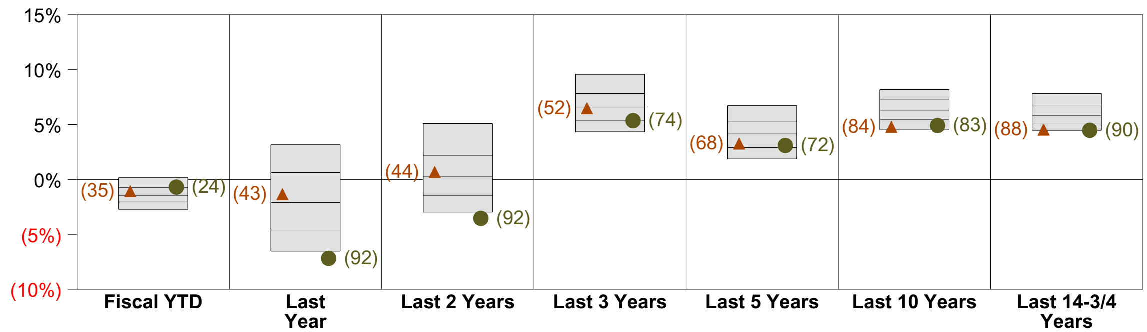
Quarterly Summary and Highlights

- LSV Intl Value's portfolio posted a (0.70)% return for the quarter placing it in the 24 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 outperformed the Benchmark by 0.38% for the quarter and underperformed the Benchmark for the year by 5.85%.

Quarterly Asset Growth

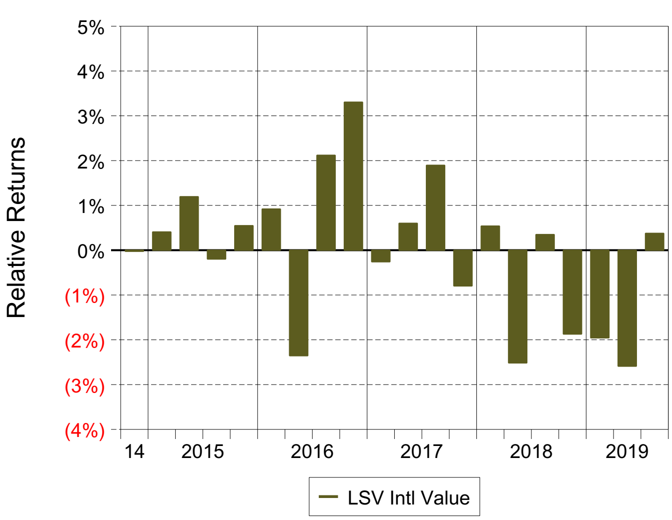
Beginning Market Value	$66,860,204
Net New Investment	$-64,555
Investment Gains/(Losses)	$-465,519
Ending Market Value	$66,330,130

Performance vs Callan Non-US Equity (Gross)

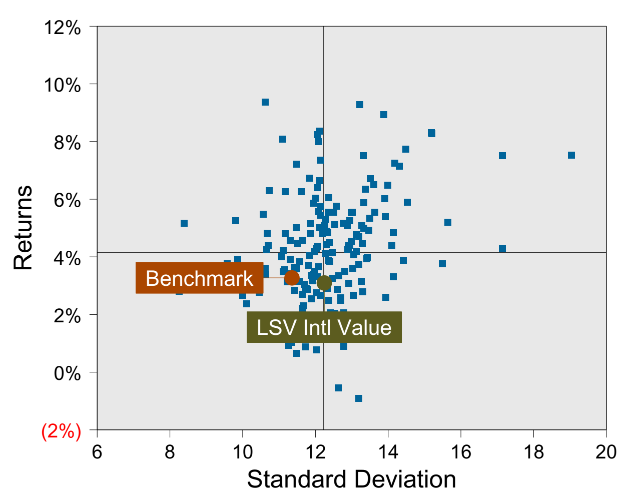


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 14-3/4 Years
10th Percentile	0.15	3.16	5.09	9.58	6.72	8.18	7.81
25th Percentile	(0.75)	0.63	2.20	7.82	5.31	7.31	6.69
Median	(1.44)	(2.10)	0.29	6.59	4.15	6.31	5.80
75th Percentile	(2.05)	(4.70)	(1.44)	5.34	2.90	5.44	5.05
90th Percentile	(2.71)	(6.52)	(2.97)	4.33	1.87	4.51	4.48
LSV Intl Value ●	(0.70)	(7.19)	(3.54)	5.35	3.10	4.91	4.48
Benchmark ▲	(1.07)	(1.34)	0.68	6.48	3.27	4.79	4.54

Relative Return vs Benchmark



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



Vanguard Intl Explorer Fund
Period Ended September 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.

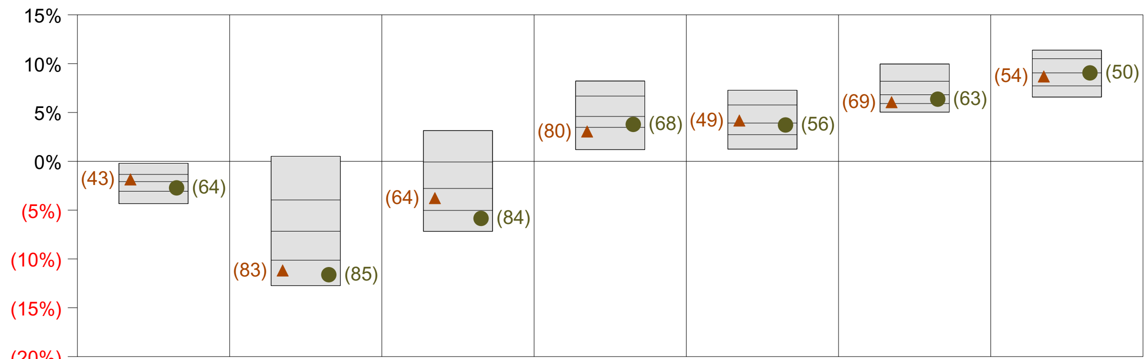
Quarterly Summary and Highlights

- Vanguard Intl Explorer Fund's portfolio posted a (2.72)% return for the quarter placing it in the 64 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 85 percentile for the last year.
- Vanguard Intl Explorer Fund's portfolio underperformed the S&P BMI EPAC <$2 B by 0.87% for the quarter and underperformed the S&P BMI EPAC <$2 B for the year by 0.43%.

Quarterly Asset Growth

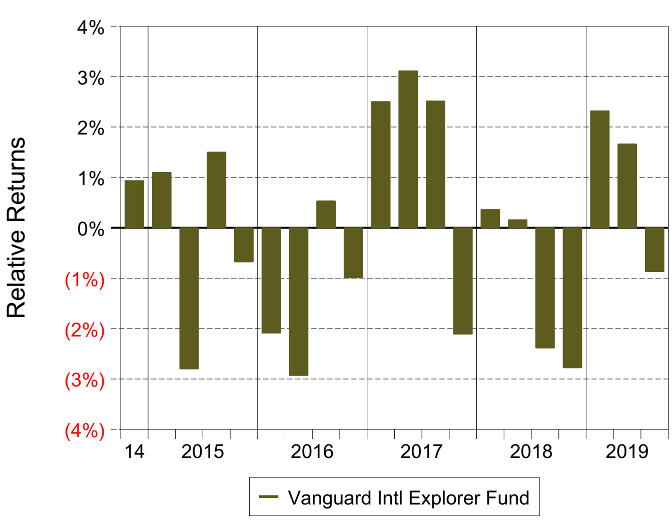
Beginning Market Value	$18,391,313
Net New Investment	$0
Investment Gains/(Losses)	$-500,296
Ending Market Value	$17,891,017

Performance vs Callan International Small Cap Mut Funds (Net)

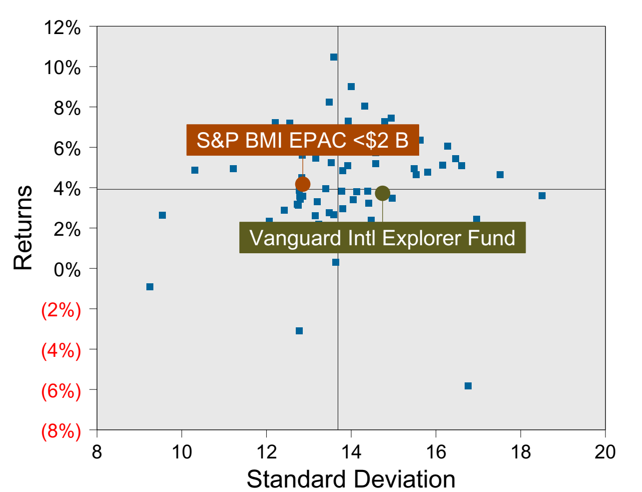


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 16-1/4 Years
10th Percentile	(0.20)	0.52	3.15	8.23	7.28	9.97	11.38
25th Percentile	(1.34)	(3.96)	(0.07)	6.68	5.77	8.20	10.51
Median	(2.08)	(7.16)	(2.78)	4.60	3.92	6.81	9.05
75th Percentile	(3.07)	(10.12)	(5.03)	3.48	2.73	5.92	7.72
90th Percentile	(4.34)	(12.74)	(7.17)	1.19	1.25	5.03	6.58
Vanguard Intl Explorer Fund ●	(2.72)	(11.61)	(5.85)	3.78	3.72	6.36	9.05
S&P BMI EPAC <$2 B ▲	(1.85)	(11.18)	(3.77)	3.05	4.17	6.05	8.69

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 September 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.

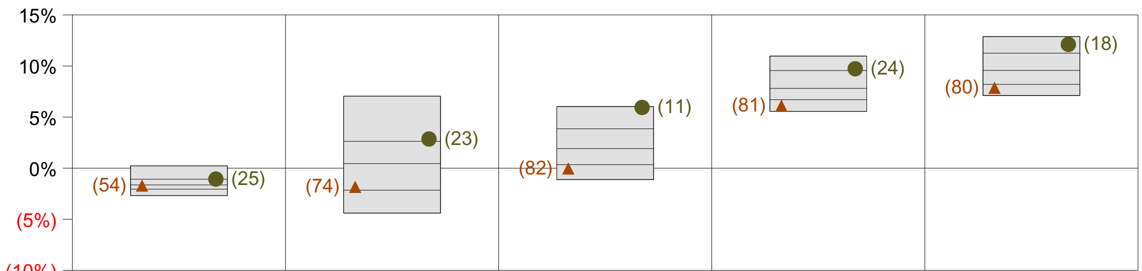
Quarterly Summary and Highlights

- William Blair's portfolio posted a (1.07)% return for the quarter placing it in the 25 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 23 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 0.65% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 4.69%.

Quarterly Asset Growth

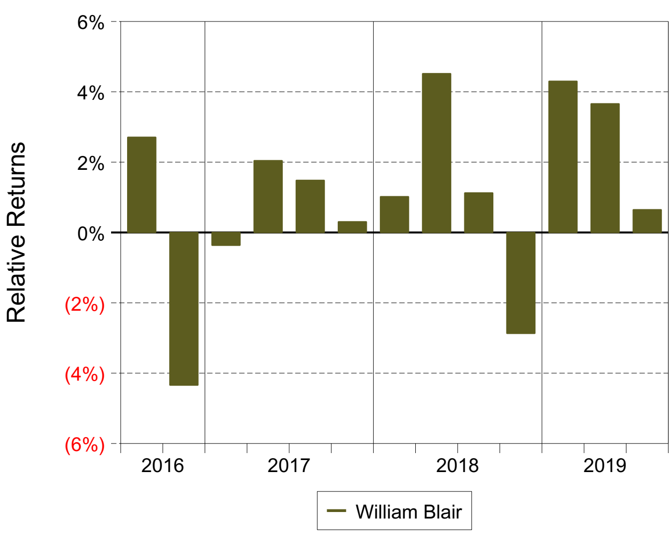
Beginning Market Value	$75,703,528
Net New Investment	$-67,003
Investment Gains/(Losses)	$-808,273
Ending Market Value	$74,828,251

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

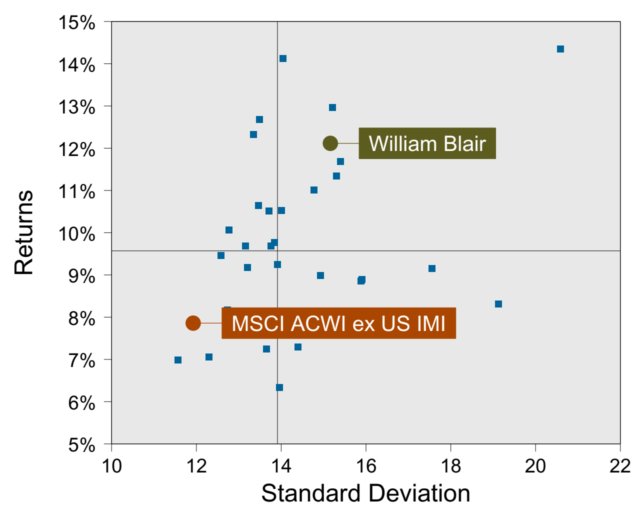


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 3-1/4 Years
10th Percentile	0.23	7.05	6.03	10.97	12.88
25th Percentile	(1.08)	2.62	3.85	9.55	11.26
Median	(1.64)	0.45	1.91	7.81	9.57
75th Percentile	(2.05)	(2.16)	0.34	6.70	8.21
90th Percentile	(2.69)	(4.40)	(1.12)	5.56	7.11
William Blair ●	(1.07)	2.85	5.94	9.73	12.12
MSCI ACWI ex US IMI ▲	(1.72)	(1.84)	(0.04)	6.10	7.86

Relative Return vs MSCI ACWI ex US IMI



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



Domestic Fixed Income
Period Ended September 30, 2019

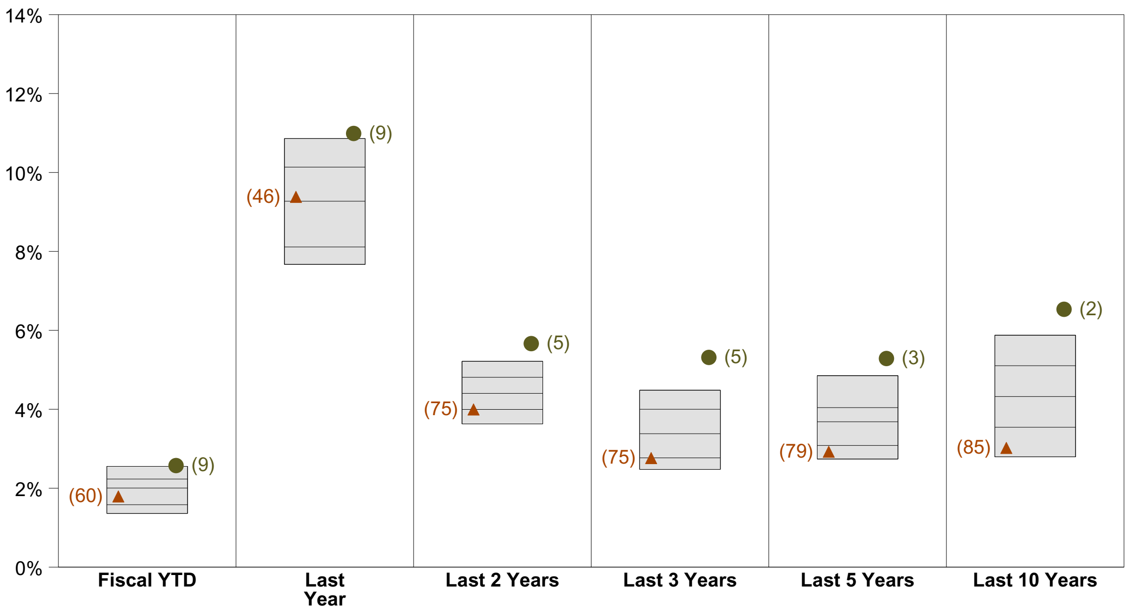
Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 2.57% return for the quarter placing it in the 9 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 9 percentile for the last year.
- Domestic Fixed Income's portfolio outperformed the Domestic Fixed Inc. Target by 0.78% for the quarter and outperformed the Domestic Fixed Inc. Target for the year by 1.61%.

Quarterly Asset Growth

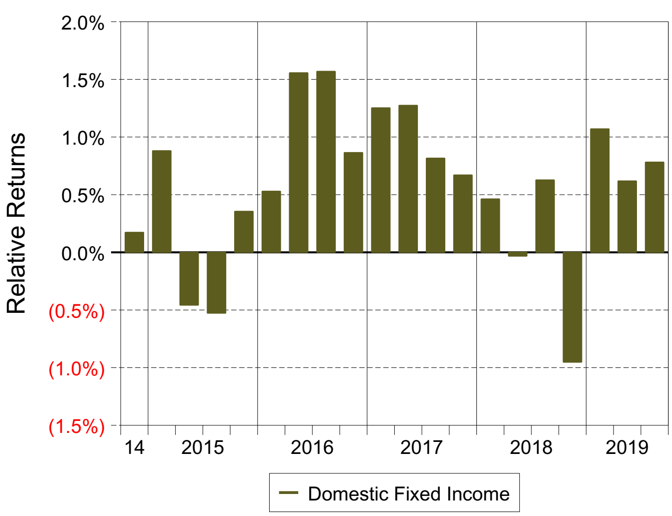
Beginning Market Value	$1,346,992,559
Net New Investment	$-76,576,203
Investment Gains/(Losses)	$33,139,134
Ending Market Value	$1,303,555,490

Performance vs Public Fund - Domestic Fixed (Gross)

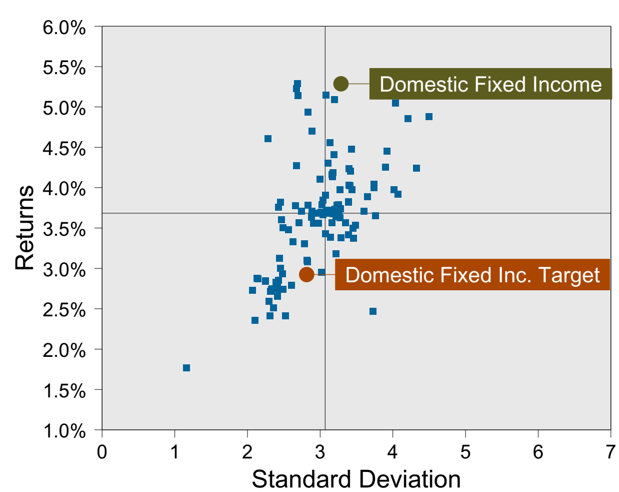


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.55	10.86	5.22	4.48	4.85	5.88
25th Percentile	2.23	10.14	4.81	4.00	4.04	5.10
Median	2.00	9.27	4.40	3.38	3.68	4.32
75th Percentile	1.58	8.11	4.00	2.77	3.08	3.54
90th Percentile	1.36	7.67	3.63	2.48	2.74	2.80
Domestic Fixed Income ●	2.57	10.99	5.66	5.31	5.29	6.53
Domestic Fixed Inc. Target ▲	1.79	9.38	4.00	2.76	2.92	3.02

Relative Return vs Domestic Fixed Inc. Target



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



Declaration Total Return
Period Ended September 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.

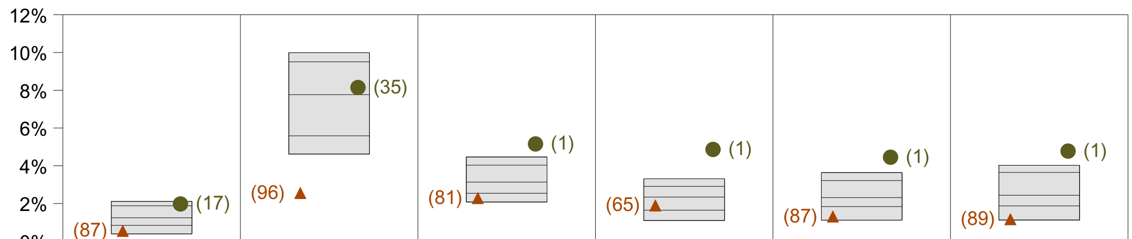
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 1.98% return for the quarter placing it in the 17 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 35 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.42% for the quarter and outperformed the LIBOR - 3 Month for the year by 5.59%.

Quarterly Asset Growth

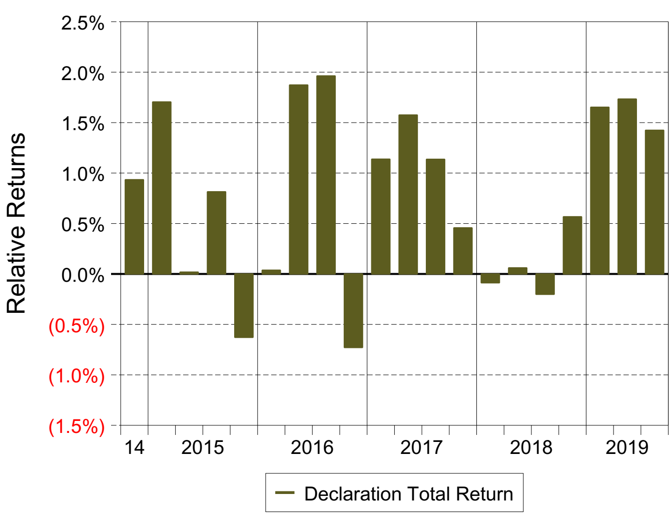
Beginning Market Value	$91,947,505
Net New Investment	$-51,810
Investment Gains/(Losses)	$1,817,584
Ending Market Value	$93,713,279

Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)

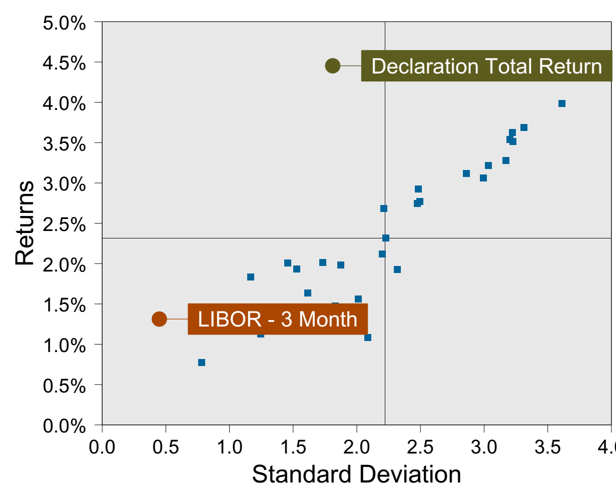


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.12	9.99	4.47	3.31	3.64	4.03
25th Percentile	1.88	9.51	4.03	2.91	3.22	3.65
Median	1.24	7.77	3.14	2.34	2.32	2.44
75th Percentile	0.84	5.58	2.54	1.65	1.84	1.87
90th Percentile	0.39	4.62	2.08	1.10	1.12	1.13
Declaration Total Return ●	1.98	8.15	5.16	4.87	4.45	4.78
LIBOR - 3 Month ▲	0.55	2.56	2.29	1.90	1.31	1.17

Relative Return vs LIBOR - 3 Month



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



PIMCO Core Plus Constrained
Period Ended September 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.

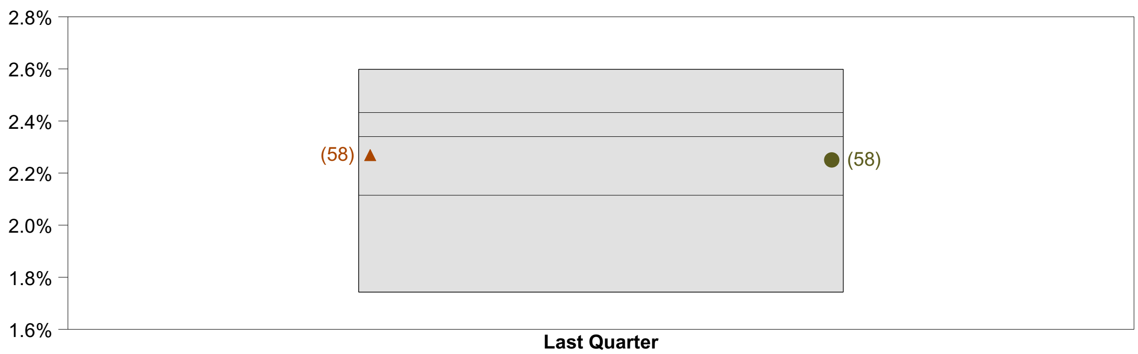
Quarterly Summary and Highlights

- PIMCO Core Plus Constrained's portfolio posted a 2.25% return for the quarter placing it in the 58 percentile of the Callan Core Plus Fixed Income group for the quarter.
- PIMCO Core Plus Constrained's portfolio underperformed the Blmbg Aggregate by 0.02% for the quarter.

Quarterly Asset Growth

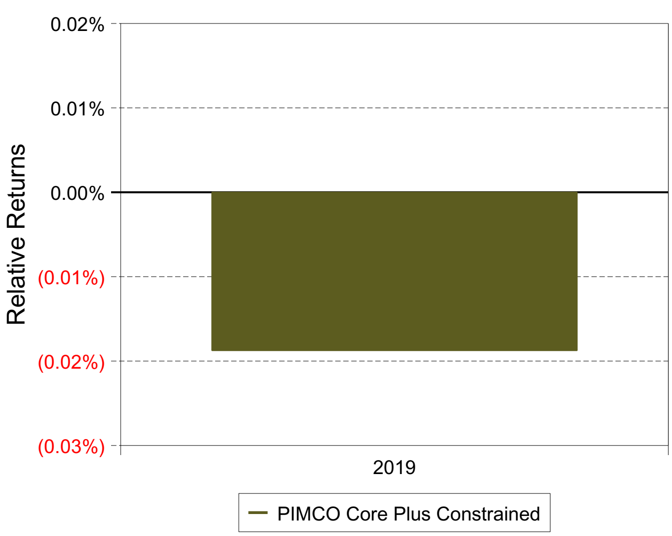
Beginning Market Value	$153,247,435
Net New Investment	$-12,871
Investment Gains/(Losses)	$3,448,688
Ending Market Value	$156,683,252

Performance vs Callan Core Plus Fixed Income (Gross)

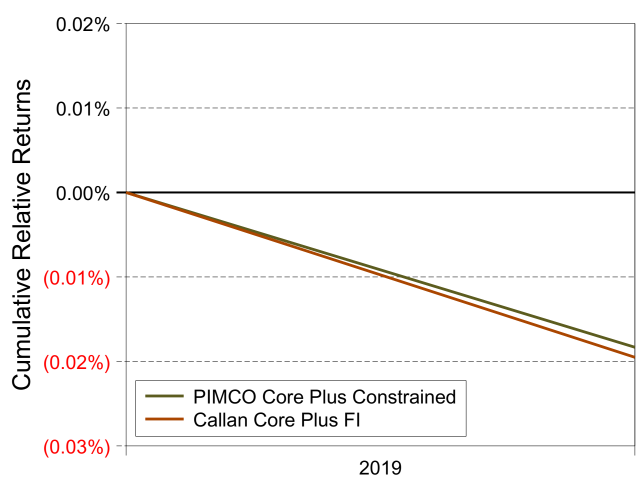


	Last Quarter
10th Percentile	2.60
25th Percentile	2.43
Median	2.34
75th Percentile	2.11
90th Percentile	1.74
PIMCO Core Plus Constrained ●	2.25
Blmbg Aggregate ▲	2.27

Relative Return vs Blmbg Aggregate



Cumulative Returns vs Blmbg Aggregate



PIMCO DiSCO II
Period Ended September 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.

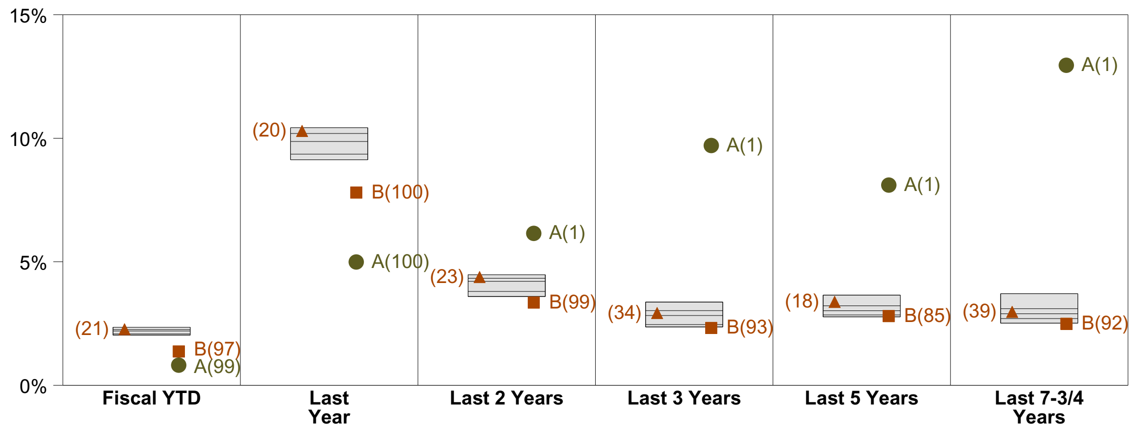
Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 0.82% 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 1.45% for the quarter and underperformed the Blmbg Aggregate for the year by 5.30%.

Quarterly Asset Growth

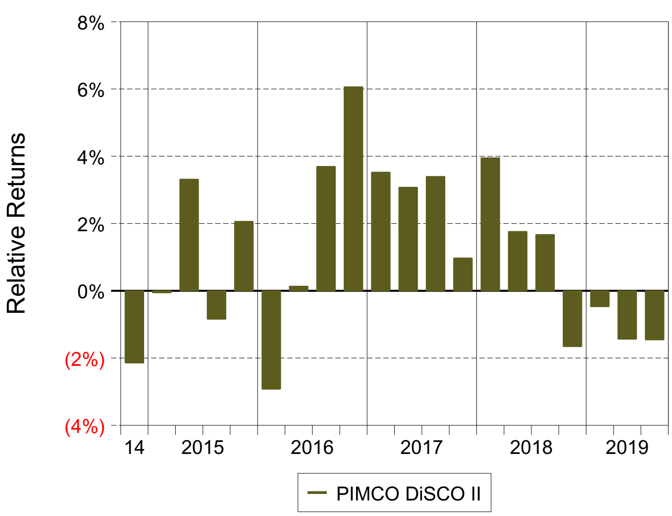
Beginning Market Value	$84,464,145
Net New Investment	$-41,497,745
Investment Gains/(Losses)	$537,971
Ending Market Value	$43,504,371

Performance vs Callan Core Bond Mutual Funds (Net)

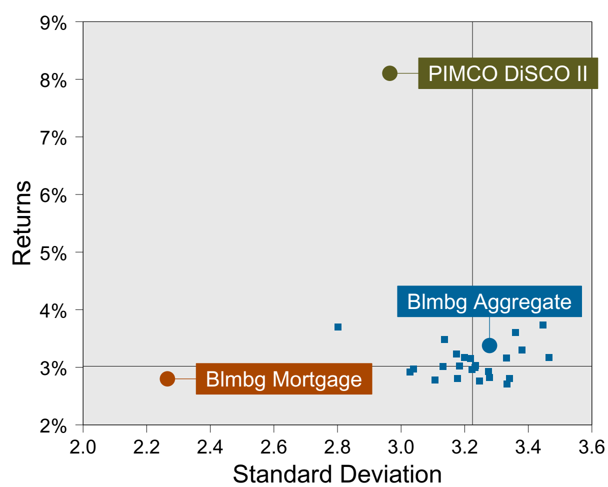


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7-3/4 Years
10th Percentile	2.35	10.43	4.47	3.37	3.65	3.71
25th Percentile	2.26	10.19	4.33	3.02	3.22	3.10
Median	2.20	9.87	4.21	2.82	3.02	2.89
75th Percentile	2.08	9.36	3.80	2.46	2.85	2.70
90th Percentile	2.03	9.13	3.59	2.36	2.77	2.52
PIMCO DiSCO II ● A	0.82	4.99	6.15	9.71	8.10	12.95
Blmbg Mortgage ■ B	1.37	7.80	3.35	2.32	2.80	2.49
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	2.97

Relative Return vs Blmbg Aggregate



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



PIMCO Bravo II Fund
Period Ended September 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.

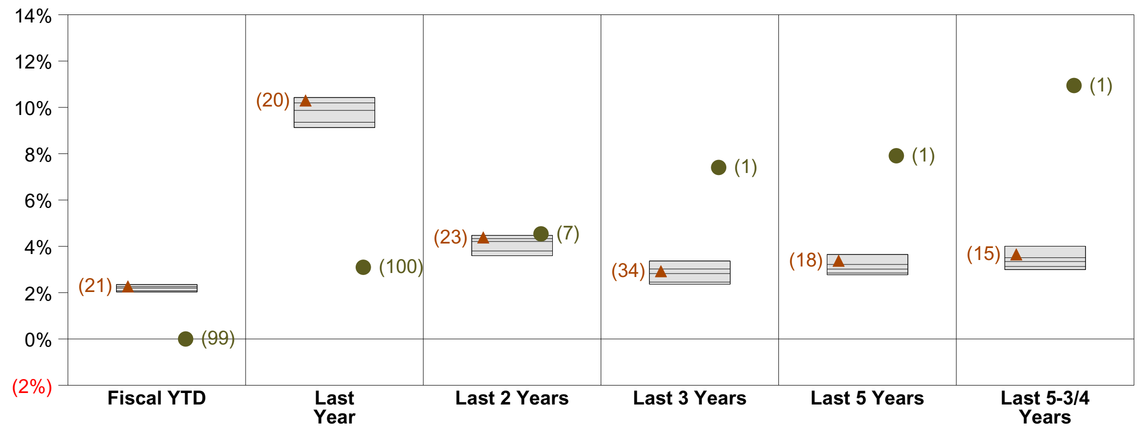
Quarterly Summary and Highlights

- PIMCO Bravo II Fund's portfolio posted a 0.00% 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 Bravo II Fund's portfolio underperformed the Blmbg Aggregate by 2.27% for the quarter and underperformed the Blmbg Aggregate for the year by 7.20%.

Quarterly Asset Growth

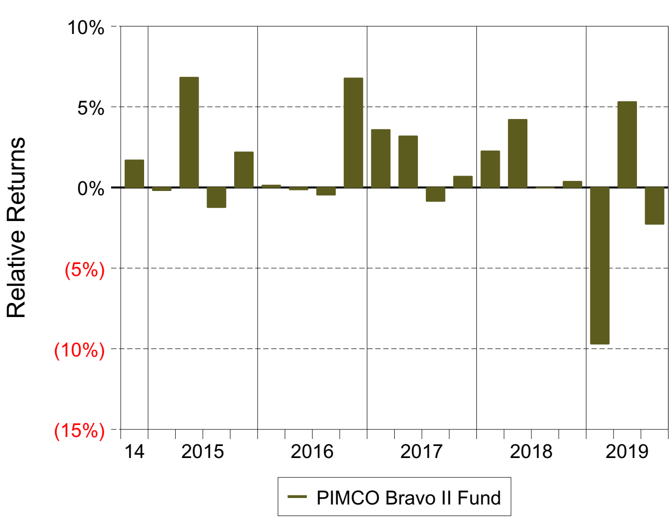
Beginning Market Value	$28,634,489
Net New Investment	$-15,664,259
Investment Gains/(Losses)	$2
Ending Market Value	$12,970,232

Performance vs Callan Core Bond Mutual Funds (Net)

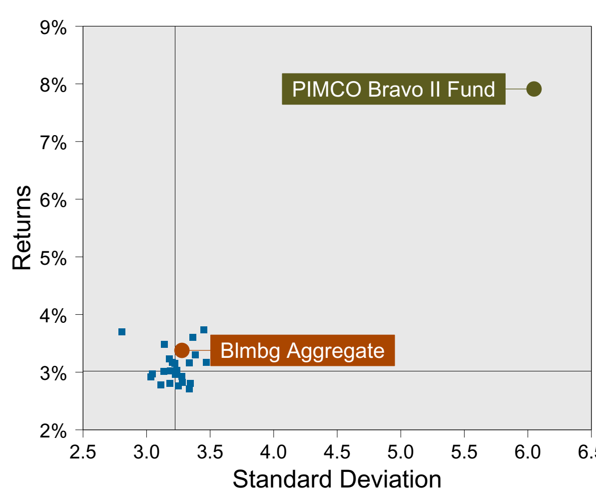


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.35	10.43	4.47	3.37	3.65	4.00
25th Percentile	2.26	10.19	4.33	3.02	3.22	3.51
Median	2.20	9.87	4.21	2.82	3.02	3.34
75th Percentile	2.08	9.36	3.80	2.46	2.85	3.13
90th Percentile	2.03	9.13	3.59	2.36	2.77	3.00
PIMCO Bravo II Fund ●	0.00	3.10	4.54	7.41	7.91	10.94
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.65

Relative Return vs Blmbg Aggregate



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



Prudential Core Plus
Period Ended September 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.

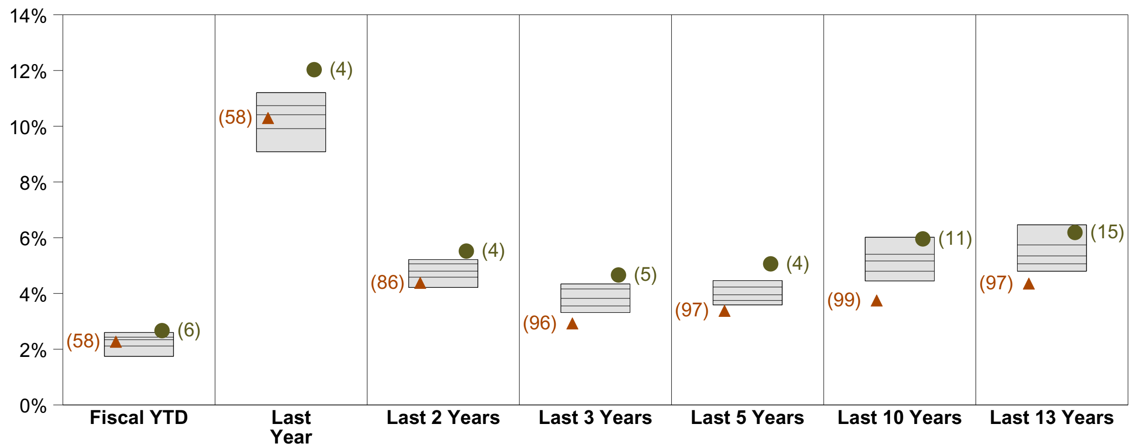
Quarterly Summary and Highlights

- Prudential Core Plus's portfolio posted a 2.67% return for the quarter placing it in the 6 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 4 percentile for the last year.
- Prudential Core Plus's portfolio outperformed the Blmbg Aggregate by 0.40% for the quarter and outperformed the Blmbg Aggregate for the year by 1.73%.

Quarterly Asset Growth

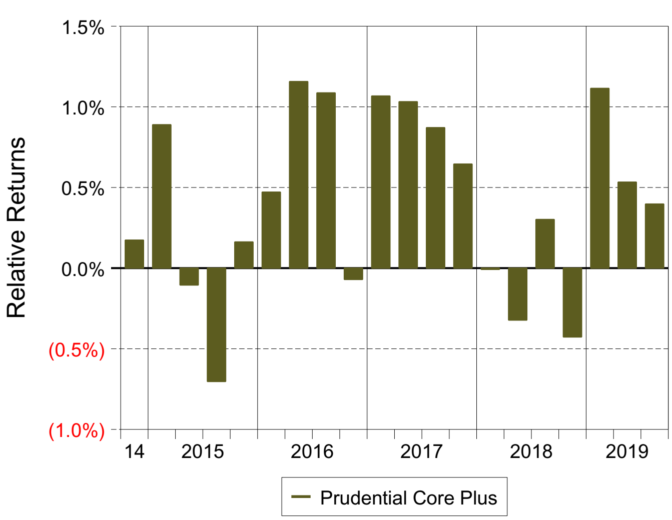
Beginning Market Value	$332,753,794
Net New Investment	$-168,669
Investment Gains/(Losses)	$8,871,264
Ending Market Value	$341,456,389

Performance vs Callan Core Plus Fixed Income (Gross)

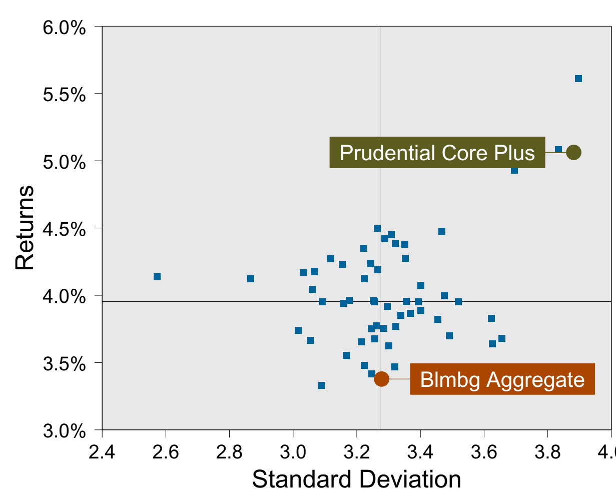


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 13 Years
10th Percentile	2.60	11.21	5.22	4.34	4.46	6.02	6.46
25th Percentile	2.43	10.74	5.06	4.16	4.23	5.41	5.74
Median	2.34	10.41	4.80	3.82	3.95	5.17	5.35
75th Percentile	2.11	9.91	4.58	3.55	3.75	4.80	5.06
90th Percentile	1.74	9.08	4.22	3.31	3.59	4.45	4.80
Prudential Core Plus ●	2.67	12.03	5.52	4.66	5.06	5.96	6.19
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.75	4.36

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 September 30, 2019

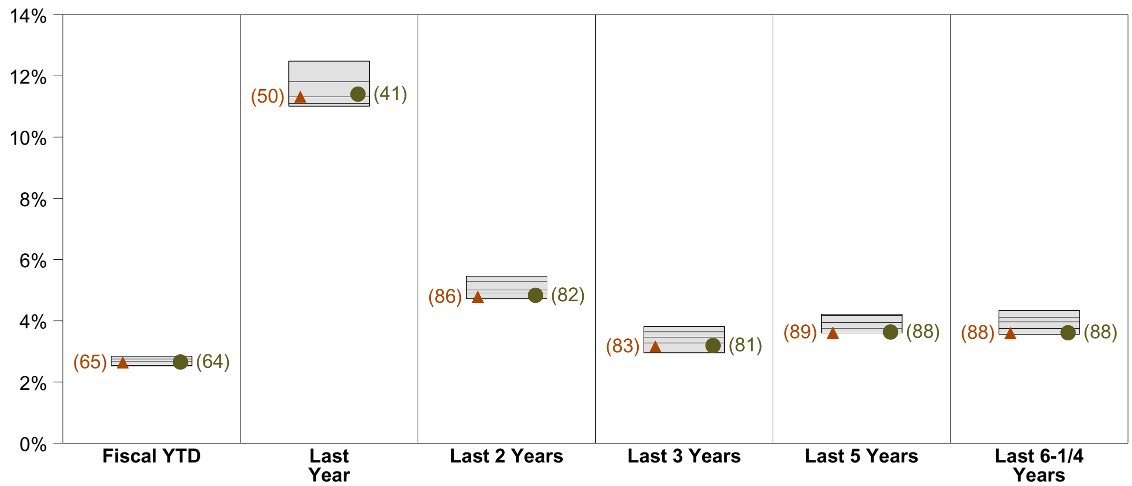
Investment Philosophy
The Fund seeks an investment return that approximates as closely as practicable, before expenses, the performance of the Barclays Capital U.S. Government/Credit Bond Index over the long term.

Quarterly Summary and Highlights
- SSgA US Govt Cr Bd Index's portfolio posted a 2.65% return for the quarter placing it in the 64 percentile of the Callan Government/Credit group for the quarter and in the 41 percentile for the last year.
- SSgA US Govt Cr Bd Index's portfolio outperformed the Blmbg Gov/Credit by 0.02% for the quarter and outperformed the Blmbg Gov/Credit for the year by 0.09%.

Quarterly Asset Growth

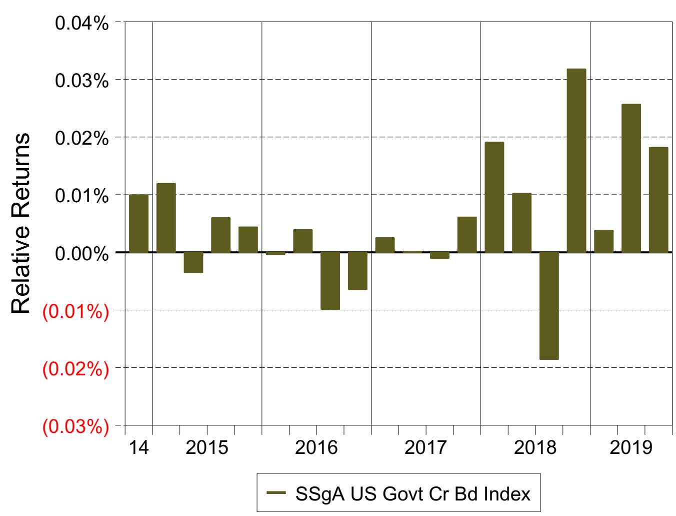
Beginning Market Value	$180,632,336
Net New Investment	$-18,140
Investment Gains/(Losses)	$4,793,347
Ending Market Value	$185,407,544

Performance vs Callan Government/Credit (Gross)

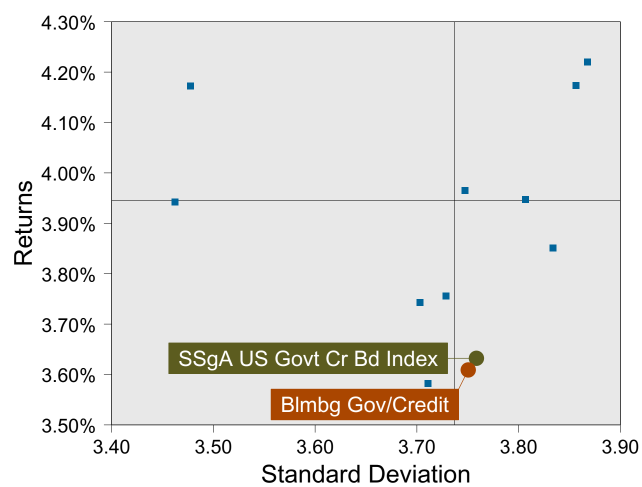


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/4 Years
10th Percentile	2.84	12.48	5.46	3.81	4.21	4.34
25th Percentile	2.75	11.81	5.29	3.64	4.17	4.11
Median	2.68	11.32	5.01	3.46	3.94	3.97
75th Percentile	2.55	11.10	4.91	3.28	3.75	3.74
90th Percentile	2.53	11.01	4.72	2.95	3.60	3.56
SSgA US Govt Cr Bd Index ●	2.65	11.40	4.83	3.19	3.63	3.61
Blmbg Gov/Credit ▲	2.64	11.32	4.78	3.16	3.61	3.60

Relative Return vs Blmbg Gov/Credit



Callan Government/Credit (Gross) Annualized Five Year Risk vs Return



Wells Capital
Period Ended September 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.

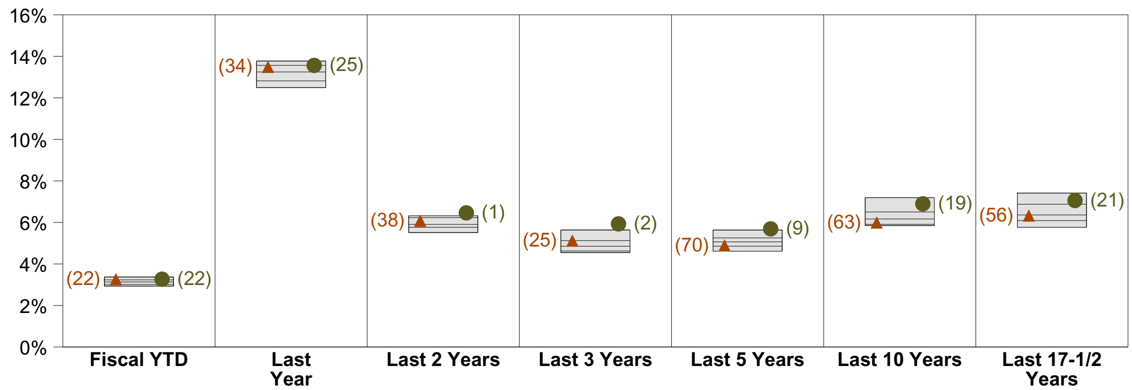
Quarterly Summary and Highlights

- Wells Capital's portfolio posted a 3.27% return for the quarter placing it in the 22 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 25 percentile for the last year.
- Wells Capital's portfolio outperformed the Blmbg Credit Baa by 0.01% for the quarter and outperformed the Blmbg Credit Baa for the year by 0.07%.

Quarterly Asset Growth

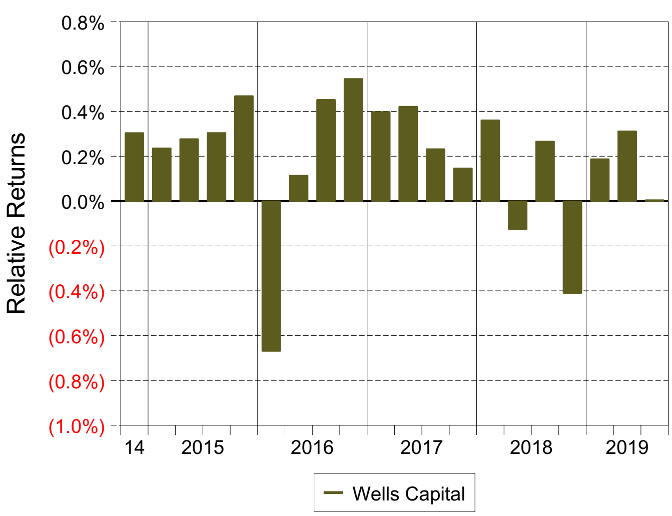
Beginning Market Value	$106,406,242
Net New Investment	$-51,505
Investment Gains/(Losses)	$3,474,561
Ending Market Value	$109,829,298

Performance vs Callan Investment Grade Credit Fixed Inc (Gross)

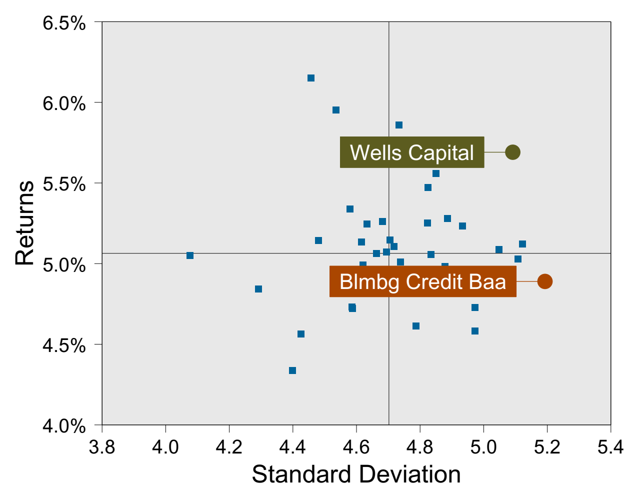


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 17-1/2 Years
10th Percentile	3.37	13.77	6.32	5.63	5.63	7.19	7.41
25th Percentile	3.23	13.57	6.23	5.12	5.25	6.50	6.88
Median	3.13	13.25	5.90	4.85	5.06	6.17	6.36
75th Percentile	3.01	12.82	5.77	4.63	4.86	5.91	6.09
90th Percentile	2.93	12.49	5.51	4.55	4.61	5.85	5.77
Wells Capital ●	3.27	13.56	6.46	5.93	5.69	6.90	7.06
Blmbg Credit Baa ▲	3.26	13.49	6.08	5.12	4.89	5.99	6.33

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 September 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.

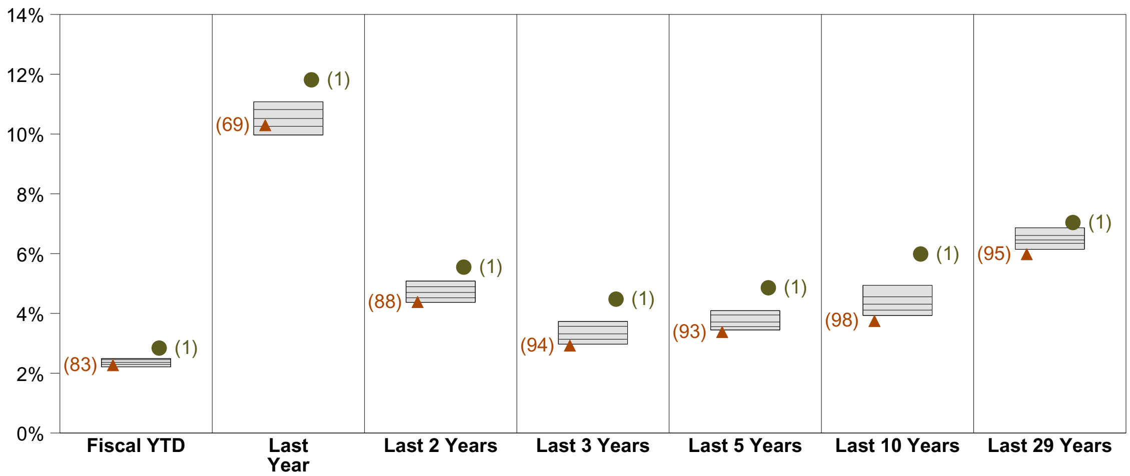
Quarterly Summary and Highlights

- Western Asset's portfolio posted a 2.84% return for the quarter placing it in the 1 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 0.57% for the quarter and outperformed the Blmbg Aggregate for the year by 1.52%.

Quarterly Asset Growth

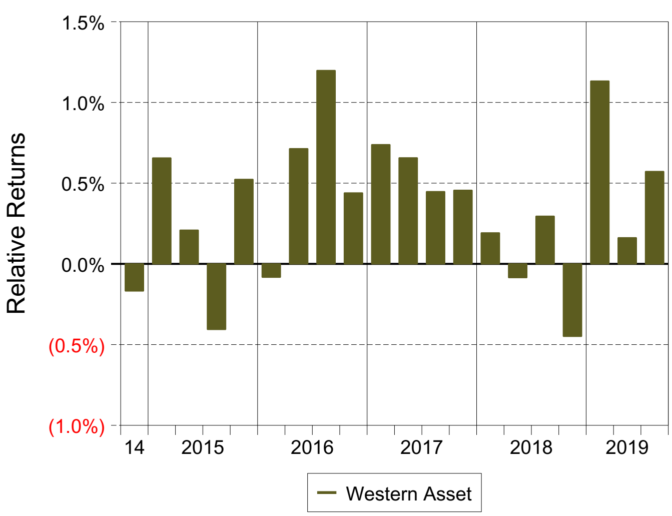
Beginning Market Value	$368,906,614
Net New Investment	$-19,111,205
Investment Gains/(Losses)	$10,195,717
Ending Market Value	$359,991,125

Performance vs Callan Core Bond Fixed Income (Gross)

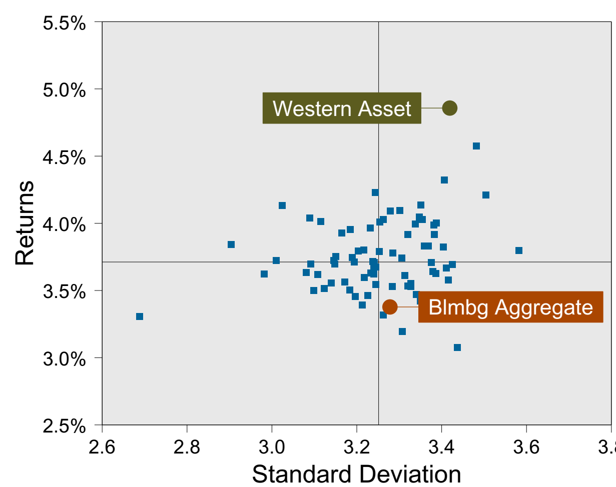


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 29 Years
10th Percentile	2.49	11.08	5.08	3.73	4.09	4.94	6.86
25th Percentile	2.45	10.82	4.89	3.57	3.95	4.56	6.61
Median	2.36	10.52	4.70	3.32	3.71	4.31	6.46
75th Percentile	2.29	10.26	4.52	3.14	3.56	4.11	6.34
90th Percentile	2.21	9.97	4.37	2.97	3.45	3.93	6.14
Western Asset ●	2.84	11.81	5.55	4.48	4.86	5.99	7.04
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.75	5.98

Relative Return vs Blmbg Aggregate



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



Real Estate
Period Ended September 30, 2019

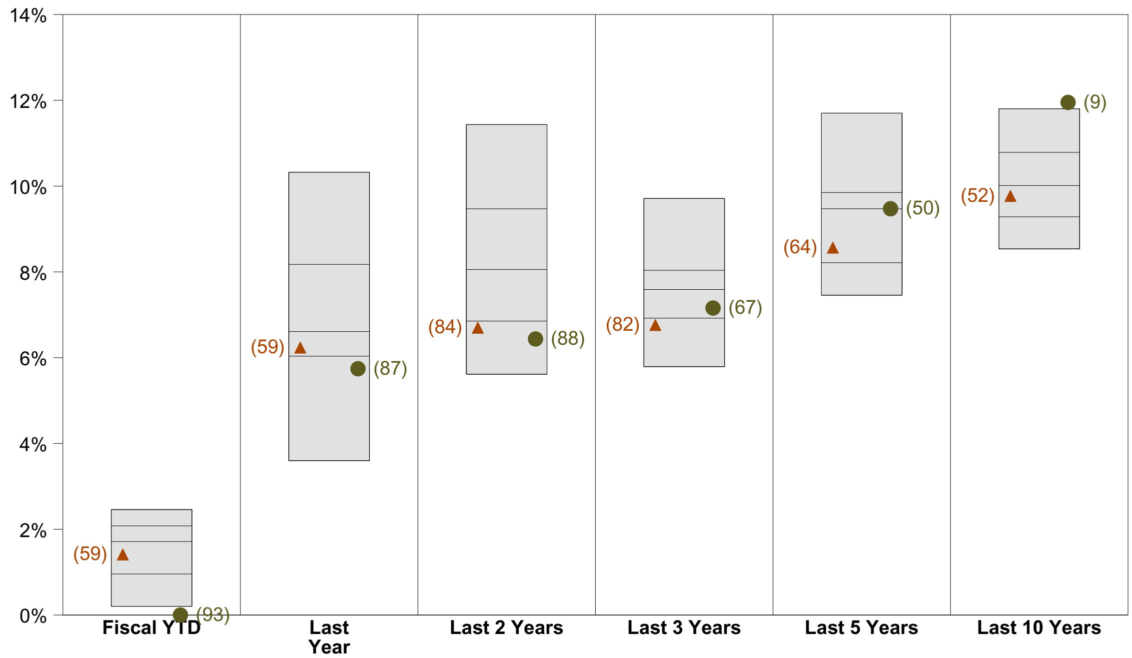
Quarterly Summary and Highlights

- Real Estate's portfolio posted a 0.00% return for the quarter placing it in the 93 percentile of the Public Fund - Real Estate group for the quarter and in the 87 percentile for the last year.
- Real Estate's portfolio underperformed the NCREIF Total Index by 1.41% for the quarter and underperformed the NCREIF Total Index for the year by 0.49%.

Quarterly Asset Growth

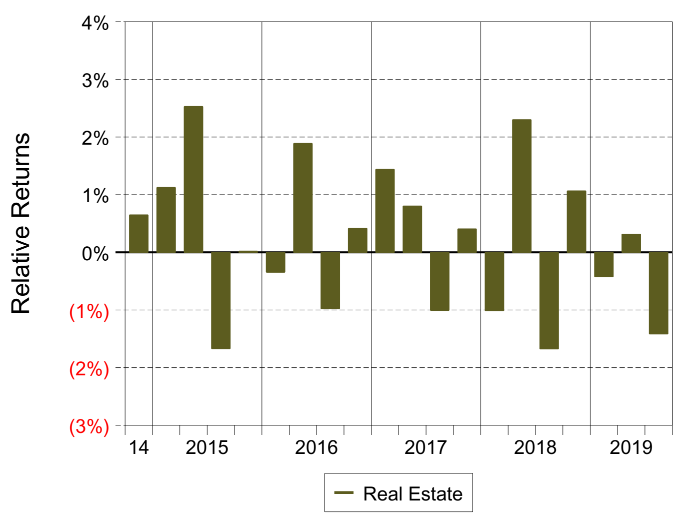
Beginning Market Value	$101,176,354
Net New Investment	$-867,984
Investment Gains/(Losses)	$108
Ending Market Value	$100,308,478

Performance vs Public Fund - Real Estate (Gross)

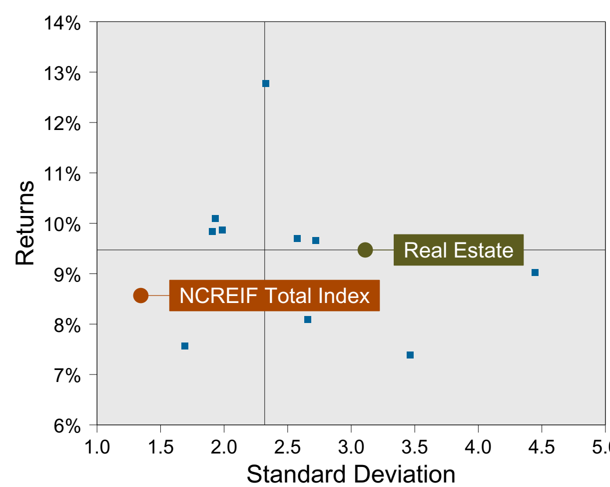


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.46	10.32	11.43	9.71	11.70	11.80
25th Percentile	2.08	8.17	9.47	8.04	9.85	10.79
Median	1.71	6.61	8.06	7.59	9.47	10.01
75th Percentile	0.96	6.04	6.85	6.92	8.21	9.28
90th Percentile	0.20	3.60	5.61	5.79	7.46	8.54
Real Estate ●	0.00	5.74	6.44	7.16	9.47	11.95
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.77

Relative Return vs NCREIF Total Index



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



Invesco Core Real Estate
Period Ended September 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.

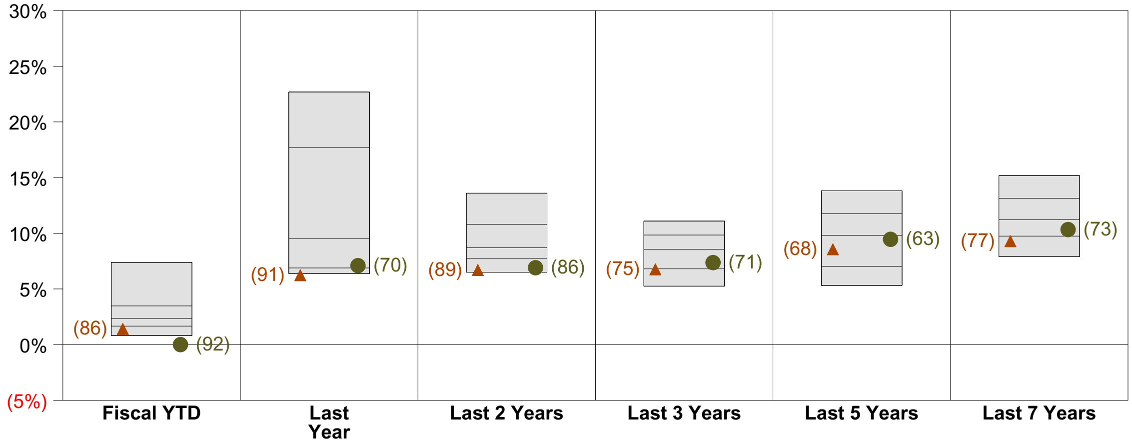
Quarterly Summary and Highlights

- Invesco Core Real Estate's portfolio posted a 0.00% return for the quarter placing it in the 92 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 70 percentile for the last year.
- Invesco Core Real Estate's portfolio underperformed the NCREIF Total Index by 1.41% for the quarter and outperformed the NCREIF Total Index for the year by 0.85%.

Quarterly Asset Growth

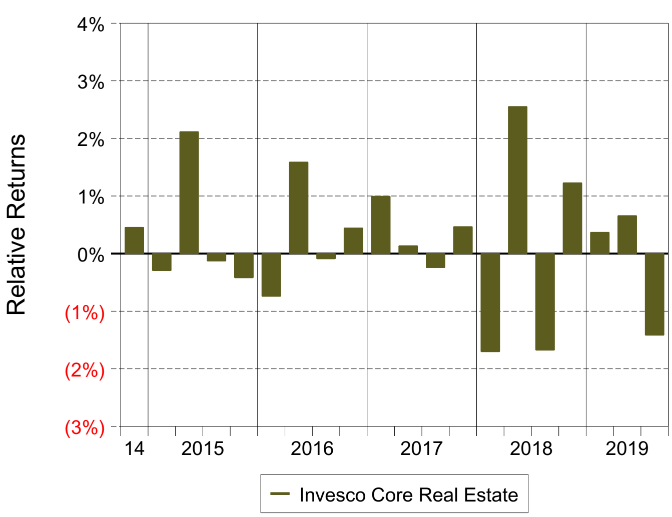
Beginning Market Value	$52,590,695
Net New Investment	$-416,016
Investment Gains/(Losses)	$-0
Ending Market Value	$52,174,679

Performance vs Callan Total Domestic Real Estate DB (Gross)

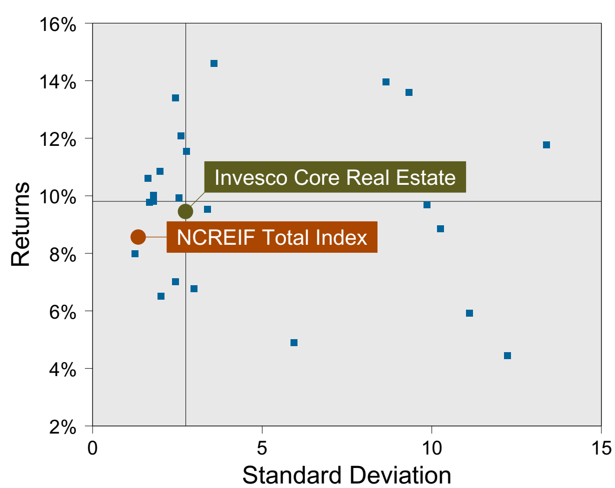


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	7.38	22.69	13.60	11.10	13.82	15.18
25th Percentile	3.47	17.70	10.79	9.84	11.77	13.14
Median	2.34	9.51	8.70	8.57	9.81	11.23
75th Percentile	1.66	6.88	7.76	6.81	7.02	9.74
90th Percentile	0.81	6.37	6.50	5.25	5.31	7.90
Invesco Core Real Estate ●	0.00	7.09	6.90	7.36	9.46	10.33
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.29

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 September 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.

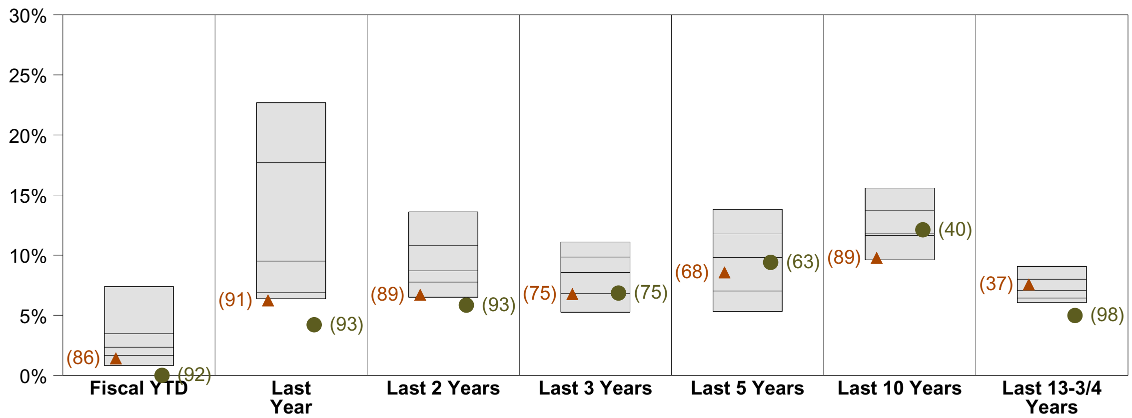
Quarterly Summary and Highlights

- JP Morgan Real Estate's portfolio posted a 0.00% return for the quarter placing it in the 92 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 93 percentile for the last year.
- JP Morgan Real Estate's portfolio underperformed the NCREIF Total Index by 1.41% for the quarter and underperformed the NCREIF Total Index for the year by 2.03%.

Quarterly Asset Growth

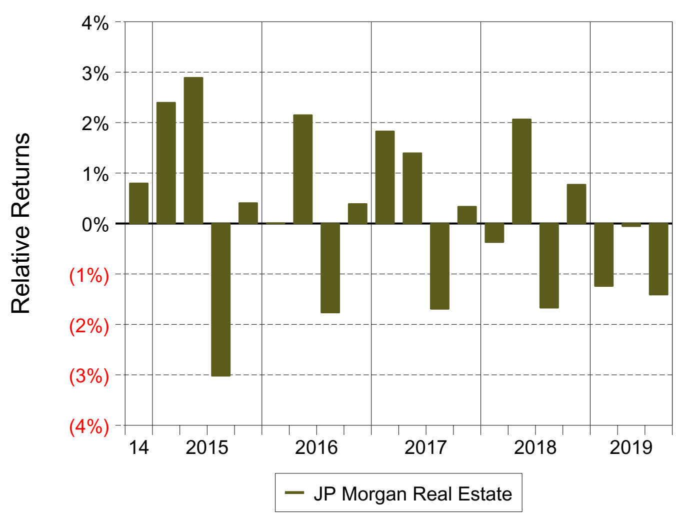
Beginning Market Value	$48,585,659
Net New Investment	$-451,968
Investment Gains/(Losses)	$109
Ending Market Value	$48,133,799

Performance vs Callan Total Domestic Real Estate DB (Gross)

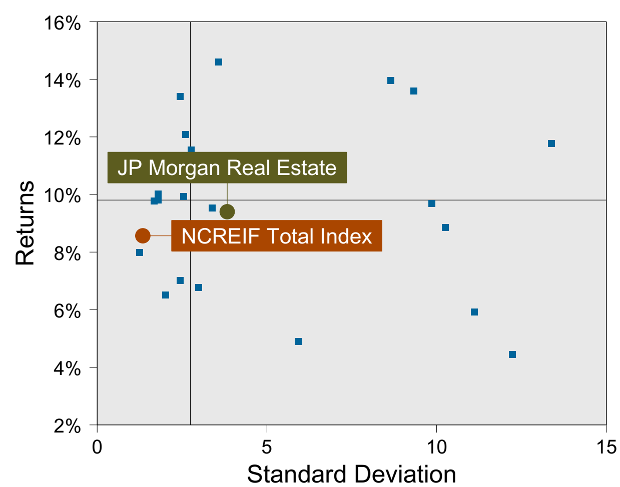


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years	Last 13-3/4 Years
10th Percentile	7.38	22.69	13.60	11.10	13.82	15.59	9.07
25th Percentile	3.47	17.70	10.79	9.84	11.77	13.74	7.99
Median	2.34	9.51	8.70	8.57	9.81	11.78	7.06
75th Percentile	1.66	6.88	7.76	6.81	7.02	11.64	6.43
90th Percentile	0.81	6.37	6.50	5.25	5.31	9.61	6.05
JP Morgan Real Estate ●	0.00	4.21	5.84	6.85	9.40	12.11	4.98
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.77	7.57

Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross)
Annualized Five Year Risk vs Return



Western Asset TIPS
Period Ended September 30, 2019

Investment Philosophy

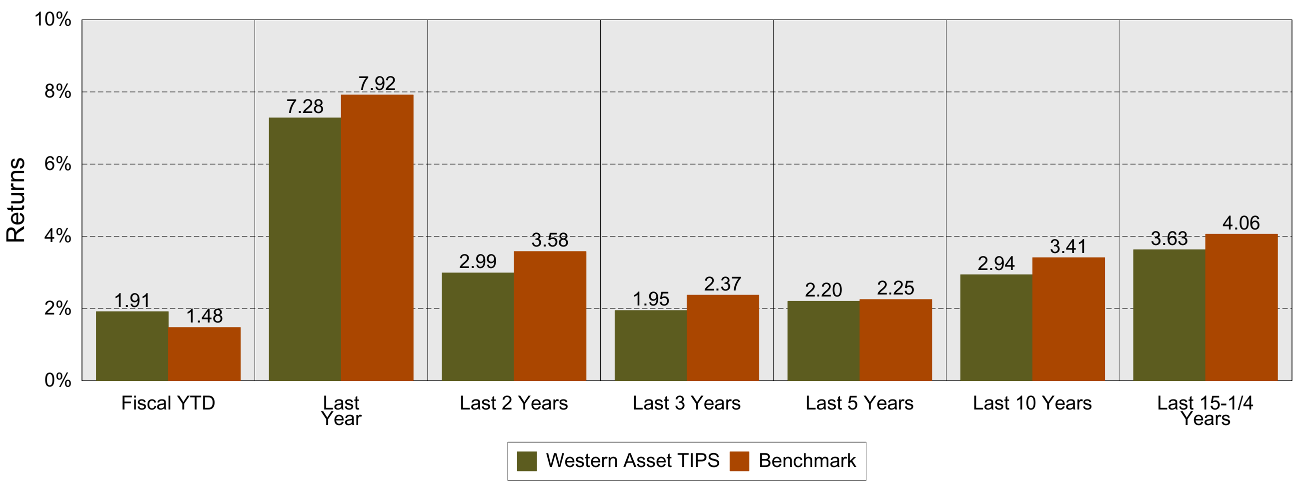
The Western Asset US TIPS Full Discretion strategy is an inflation-protected strategy that aims to maximize total return and add value through duration and curve positioning, sector allocation, and security selection, while approximating benchmark risk. The strategy invests in a diversified portfolio 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

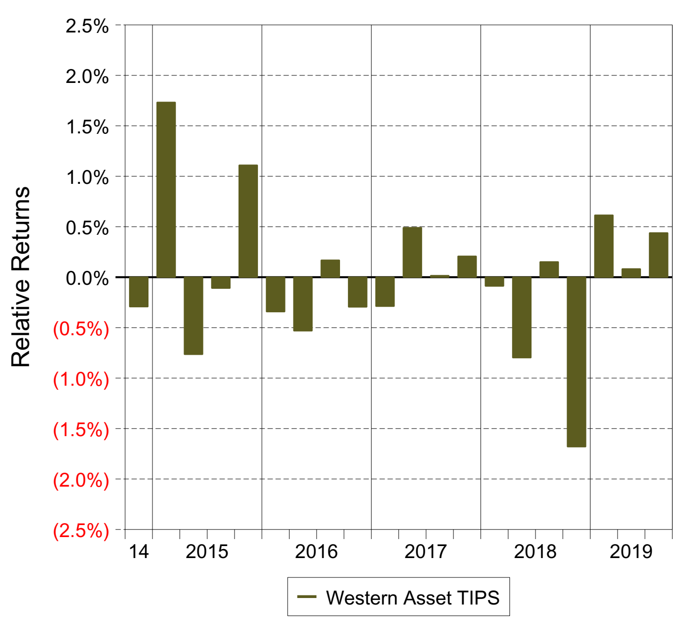
- Western Asset TIPS's portfolio outperformed the Benchmark by 0.44% for the quarter and underperformed the Benchmark for the year by 0.64%.

Quarterly Asset Growth

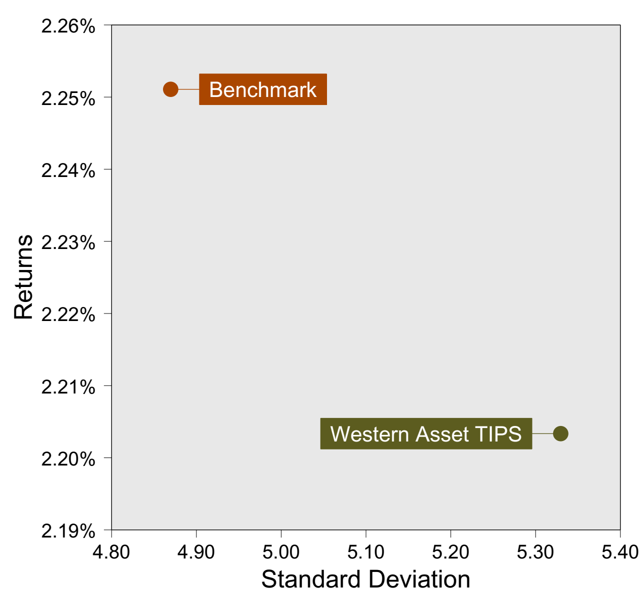
Beginning Market Value	$135,293,057
Net New Investment	$-39,823
Investment Gains/(Losses)	$2,590,024
Ending Market Value	$137,843,258



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Eastern Timber Opportunities
Period Ended September 30, 2019

Investment Philosophy

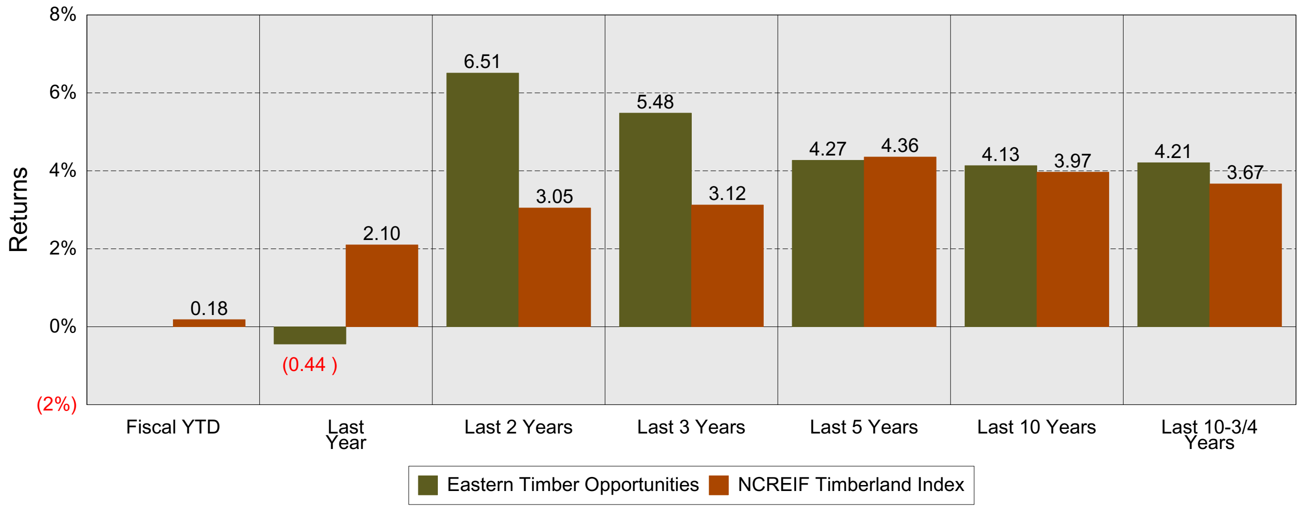
The investment objective of the Eastern Timberland Opportunities fund is to provide competitive timberland investment returns from Eastern US timberland investments by pursuing management strategies to increase timber production and land values through the investment term. TIR will maximize timber values 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

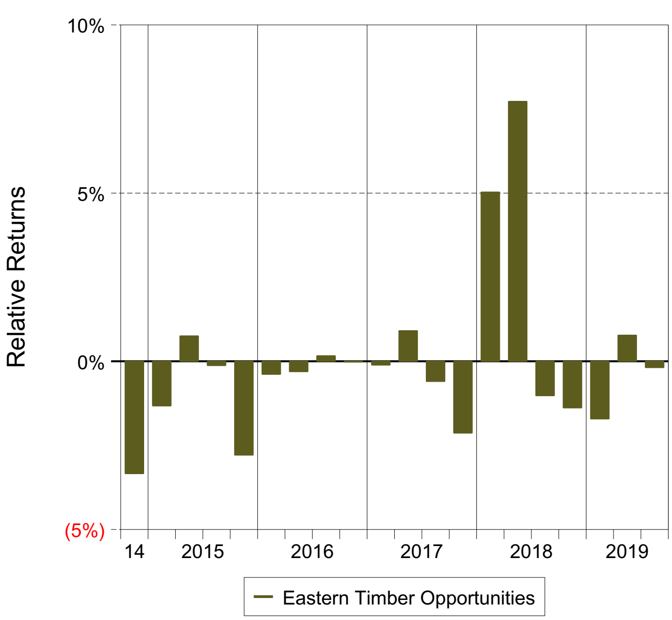
- Eastern Timber Opportunities's portfolio underperformed the NCREIF Timberland Index by 0.18% for the quarter and underperformed the NCREIF Timberland Index for the year by 2.55%.

Quarterly Asset Growth

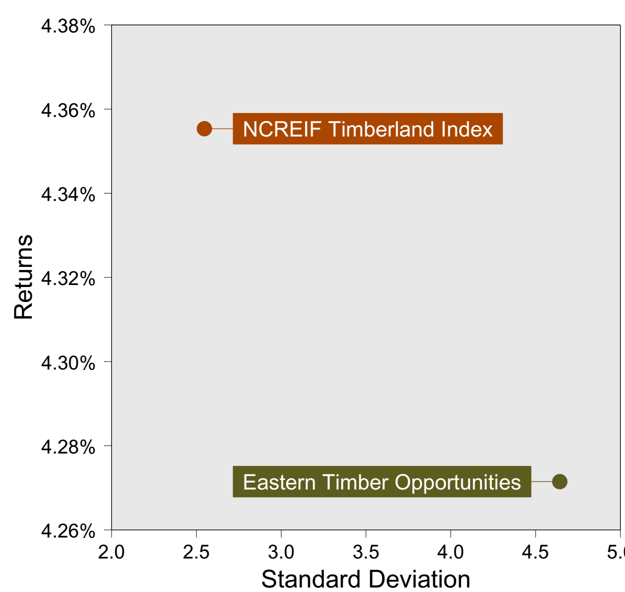
Beginning Market Value	$53,916,906
Net New Investment	$0
Investment Gains/(Losses)	$0
Ending Market Value	$53,916,906



Relative Return vs NCREIF Timberland Index



Annualized Five Year Risk vs Return



JP Morgan Infrastructure
Period Ended September 30, 2019

Investment Philosophy

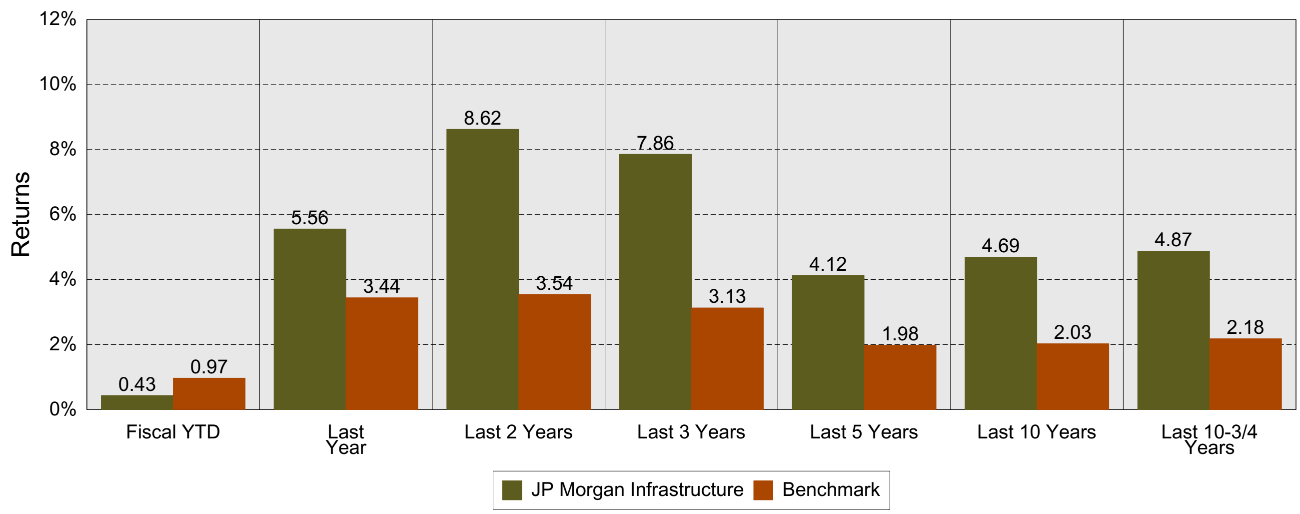
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas 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

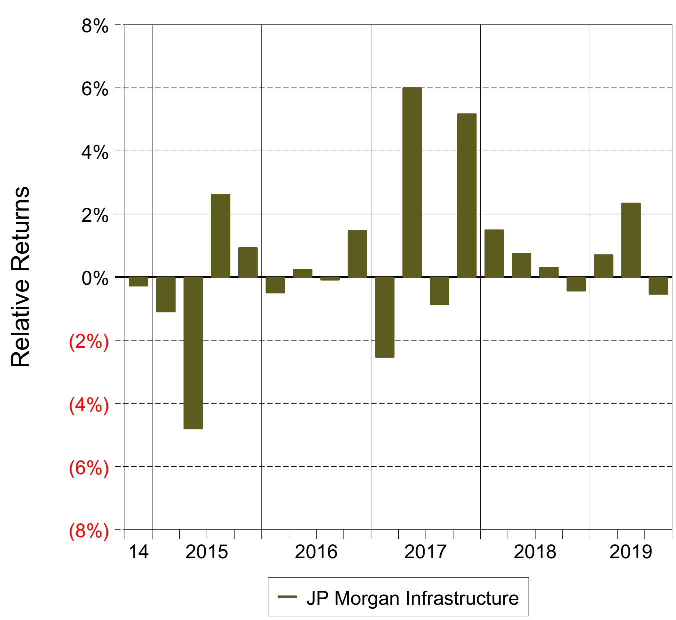
- JP Morgan Infrastructure's portfolio underperformed the Benchmark by 0.54% for the quarter and outperformed the Benchmark for the year by 2.11%.

Quarterly Asset Growth

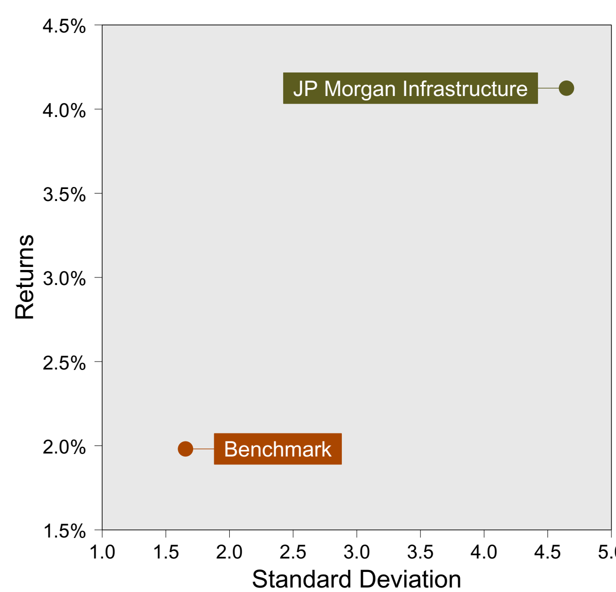
Beginning Market Value	$44,477,897
Net New Investment	$-1,083,039
Investment Gains/(Losses)	$192,533
Ending Market Value	$43,587,391



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Grosvenor Cust. Infrastructure
Period Ended September 30, 2019

Investment Philosophy

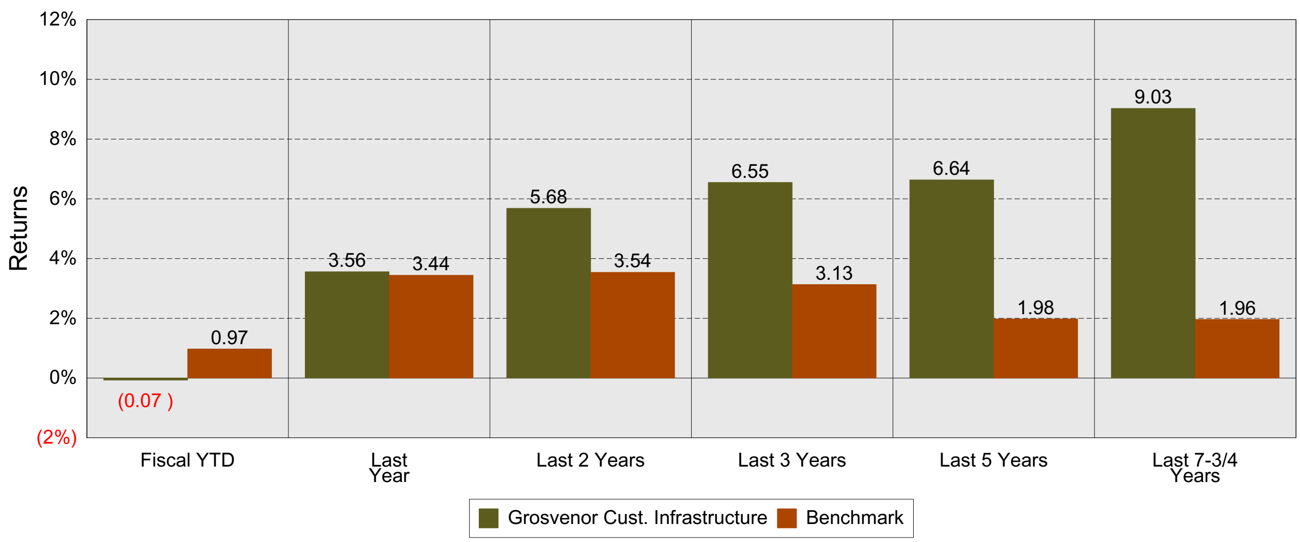
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified 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

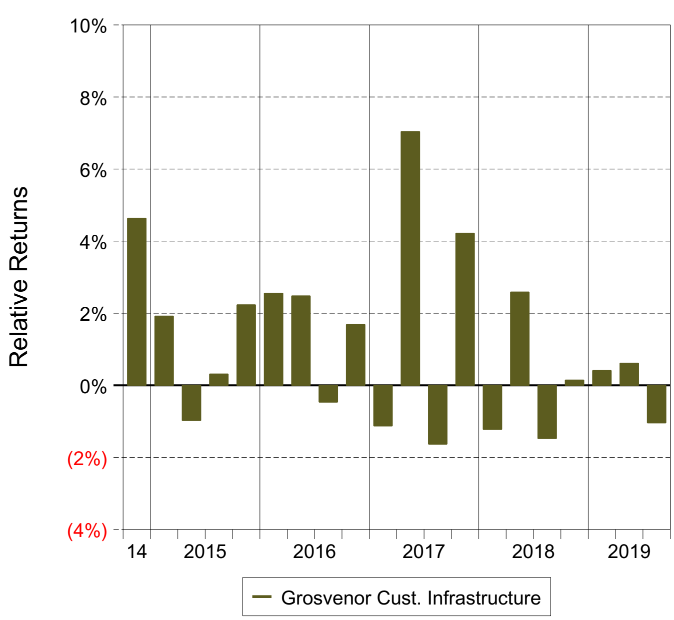
- Grosvenor Cust. Infrastructure's portfolio underperformed the Benchmark by 1.04% for the quarter and outperformed the Benchmark for the year by 0.12%.

Quarterly Asset Growth

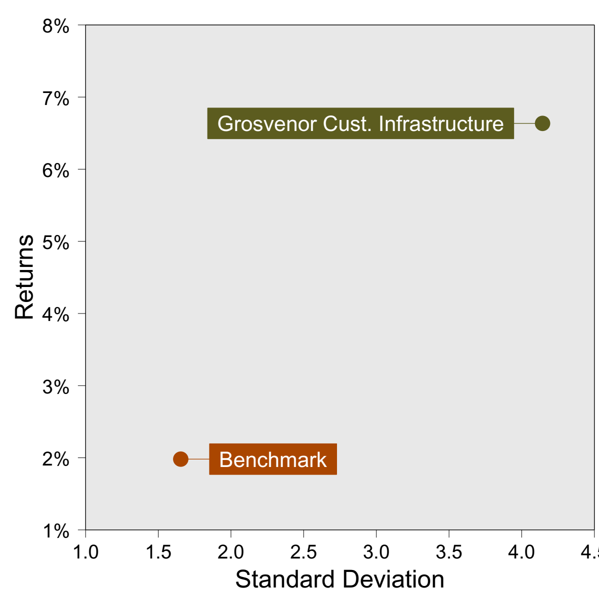
Beginning Market Value	$13,065,783
Net New Investment	$-365,630
Investment Gains/(Losses)	$-9,021
Ending Market Value	$12,691,132



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



Short Term Fixed Income
Period Ended September 30, 2019

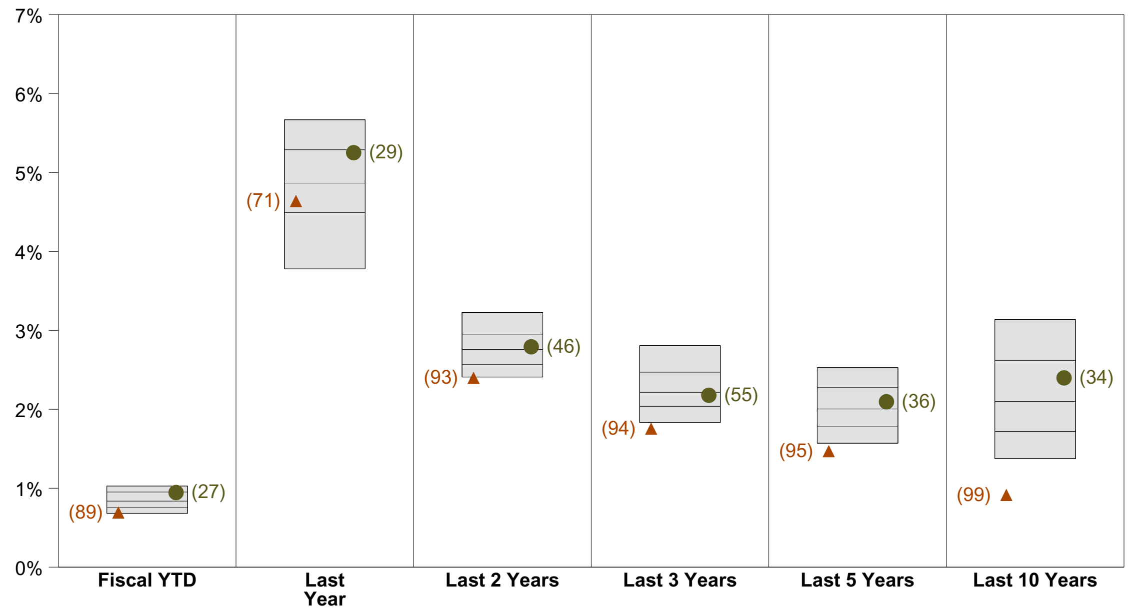
Quarterly Summary and Highlights

- Short Term Fixed Income's portfolio posted a 0.94% return for the quarter placing it in the 27 percentile of the Callan Short Term Fixed Income group for the quarter and in the 29 percentile for the last year.
- Short Term Fixed Income's portfolio outperformed the Short Term Fixed Target by 0.25% for the quarter and outperformed the Short Term Fixed Target for the year by 0.61%.

Quarterly Asset Growth

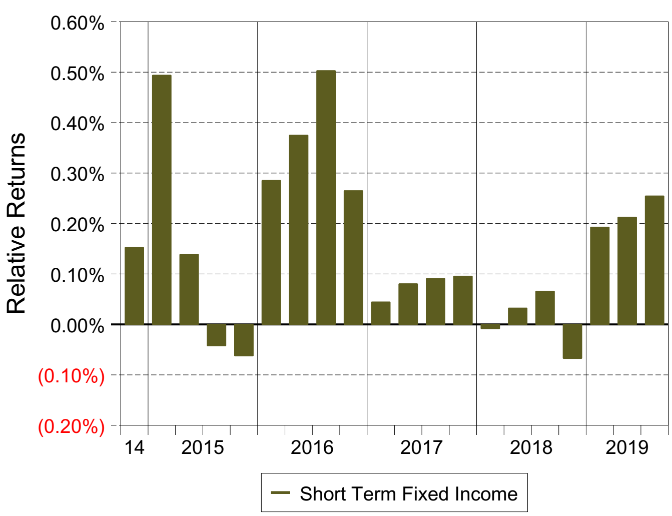
Beginning Market Value	$145,741,136
Net New Investment	$543,701,822
Investment Gains/(Losses)	$2,513,749
Ending Market Value	$691,956,708

Performance vs Callan Short Term Fixed Income (Gross)

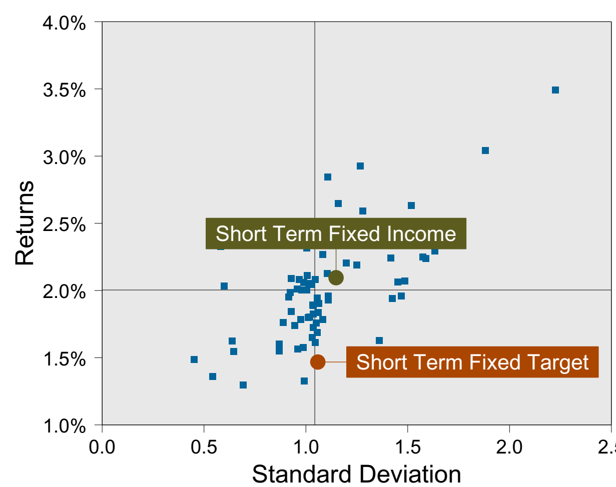


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.03	5.67	3.23	2.81	2.53	3.14
25th Percentile	0.95	5.29	2.94	2.47	2.27	2.62
Median	0.84	4.87	2.76	2.21	2.00	2.10
75th Percentile	0.75	4.49	2.57	2.04	1.78	1.72
90th Percentile	0.68	3.78	2.41	1.83	1.57	1.37
Short Term Fixed Income ●	0.94	5.25	2.79	2.18	2.10	2.40
Short Term Fixed Target ▲	0.69	4.64	2.40	1.75	1.47	0.91

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 September 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.

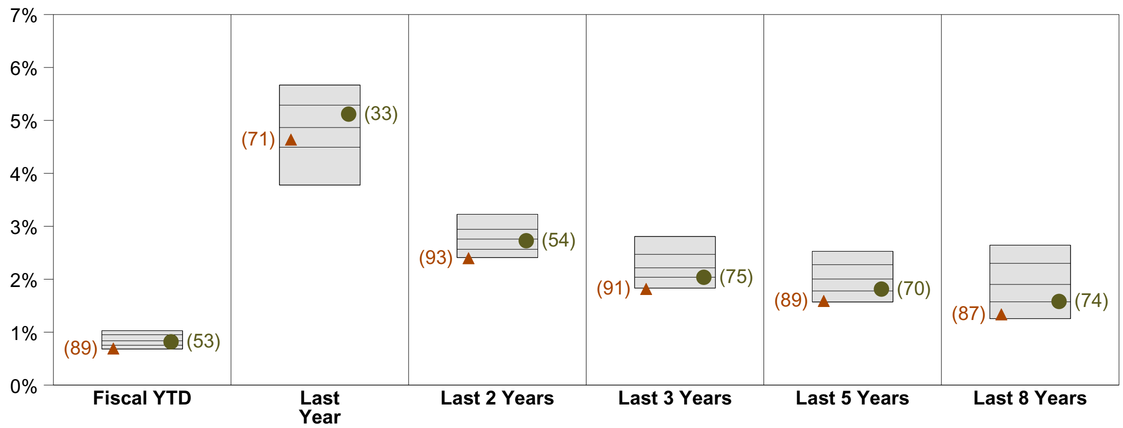
Quarterly Summary and Highlights

- JP Morgan Short Term Bonds's portfolio posted a 0.82% return for the quarter placing it in the 53 percentile of the Callan Short Term Fixed Income group for the quarter and in the 33 percentile for the last year.
- JP Morgan Short Term Bonds's portfolio outperformed the Blmbg Gov/Cred 1-3 Yr by 0.13% for the quarter and outperformed the Blmbg Gov/Cred 1-3 Yr for the year by 0.48%.

Quarterly Asset Growth

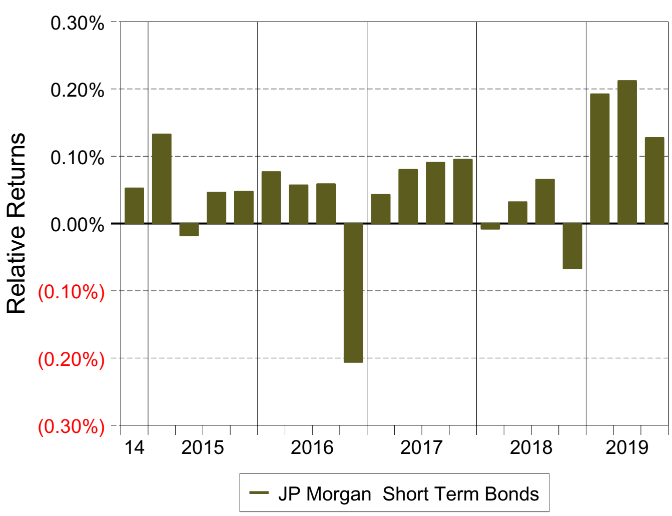
Beginning Market Value	$145,741,136
Net New Investment	$197,851,822
Investment Gains/(Losses)	$1,360,850
Ending Market Value	$344,953,808

Performance vs Callan Short Term Fixed Income (Gross)

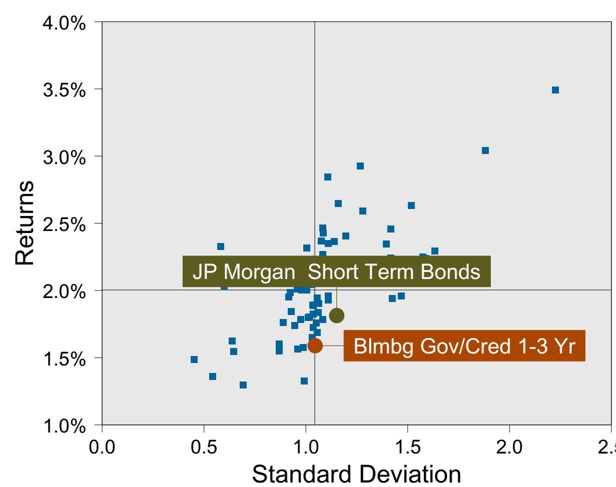


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 8 Years
10th Percentile	1.03	5.67	3.23	2.81	2.53	2.64
25th Percentile	0.95	5.29	2.94	2.47	2.27	2.30
Median	0.84	4.87	2.76	2.21	2.00	1.90
75th Percentile	0.75	4.49	2.57	2.04	1.78	1.57
90th Percentile	0.68	3.78	2.41	1.83	1.57	1.25
JP Morgan Short Term Bonds ●	0.82	5.12	2.73	2.04	1.81	1.58
Blmbg Gov/Cred 1-3 Yr ▲	0.69	4.64	2.40	1.82	1.59	1.34

Relative Return vs Blmbg Gov/Cred 1-3 Yr



Callan Short Term Fixed Income (Gross)
Annualized Five Year Risk vs Return

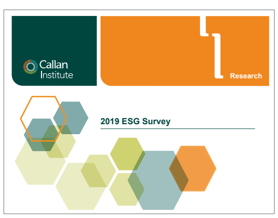


Research and Educational Programs

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

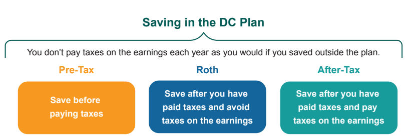
DTS Offers Some Key Advantages for Evaluating Fixed Income Portfolios | This paper describes duration times spread (DTS), which measures systematic credit-spread risk exposure. DTS estimates the return of any bond, by percentage, if its spread were to change from the current level, all else equal. DTS offers several advantages for monitoring risk in credit portfolios over other methods.



2019 ESG Survey | Callan's seventh annual survey assessing the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market.

Callan's DC Index in Detail | A video about the Callan DC Index™: why we started it, what it measures, and how it can benefit defined contribution plan sponsors.

DC Plan Hacks: Tips for an Efficient Design | Defined contribution plan sponsors should regularly evaluate their plans to make sure they serve the organization's benefits philosophy. When evaluating changes, the sponsor should consider its demographics, cost of benefits, vendor capabilities, impact on nondiscrimination testing, communication capabilities, and legal requirements.



2019 June Workshop Summary: In the Age of Illiquidity | For many nonprofits and defined benefit plans, the shift to higher-returning but less liquid asset classes has myriad implications. This summary discusses how consultants, institutional investors, and investment managers can work together to identify solutions tailored to each plan.

The Keys to Unlocking Private Equity Portfolio Assessment Private equity performance evaluation has some unique considerations, so return calculations and benchmarking methodologies differ from public securities. Closed-end private equity vehicles are assessed using ratio analyses and internal rate of return (IRR) measures. Using performance metrics, private equity portfolios can be evaluated at the partnership level, at the vintage year level, and then at the total portfolio level.

Survivorship Bias and the Walking Dead | Survivorship bias, the predisposition to evaluate a data set by focusing on the "survivors" rather than also examining the record of non-survivors, is important to understand for hedge fund peer groups, which tend to have a relatively large number of constituents that disappear. Using a proprietary approach, Callan is able to adjust peer group comparisons for survivorship bias. This better-informed perspective enables a more honest assessment in considering performance relative to other opportunities.

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 institutional investors, 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.

2020 National Conference
Celebrating the 40th anniversary of the Callan Institute
January 27-29, 2020 – San Francisco

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

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.

Introduction to Investments
April 21-22, 2020
July 21-22, 2020
This program familiarizes institutional investor trustees and 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.

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

Quarterly List as of September 30, 2019

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 an 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 Inc.
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
Aurelius Capital Management
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 LLC
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Corbin Capital Partners, L.P.
Cooke & Bieler, L.P.
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 Advisors, LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.

Manager Name
Heitman LLC
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 North America, Inc.
Ivy Investments
J.P. Morgan
Janus
Jarislowsky Fraser Global Investment Management
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
LMCG Investments, LLC
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 Investment Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
Mellon
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

Manager Name
Osterweis Capital Management, LLC
P/E Investments
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, LLC.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Polen Capital Management
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.
South Texas Money Management, Ltd.
State Street Global Advisors
Strategic Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
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

Callan

September 30, 2019

North Dakota State Investment Board Legacy Fund

Investment Measurement Service Quarterly Review

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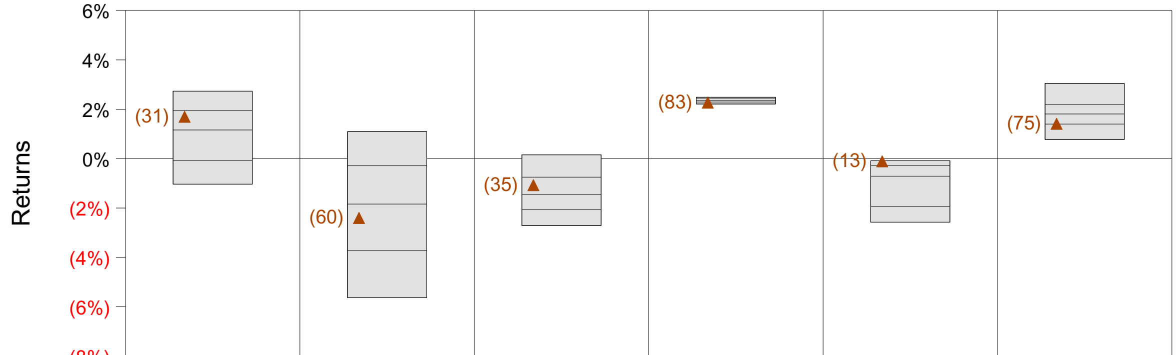
Market Overview
Active Management vs Index Returns

Market Overview

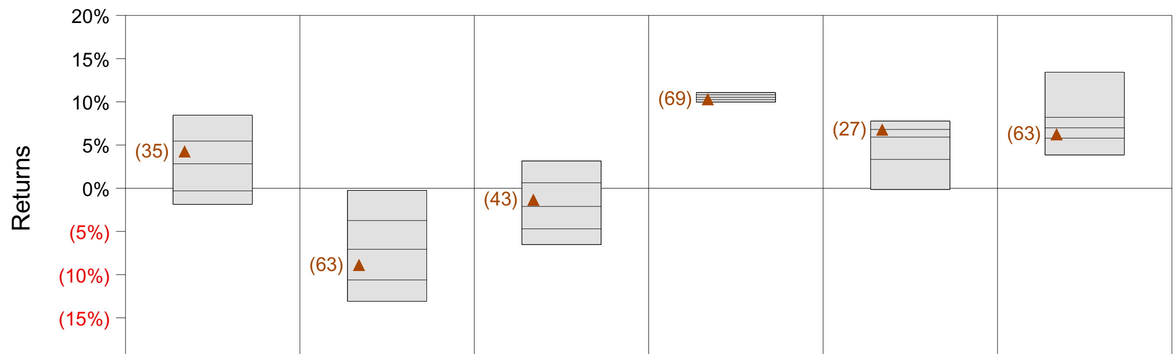
The charts below illustrate the range of returns across managers in Callan's Separate Account database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also 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 September 30, 2019



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	2.73	1.10	0.15	2.49	(0.08)	3.05
25th Percentile	1.95	(0.29)	(0.75)	2.45	(0.28)	2.20
Median	1.16	(1.84)	(1.44)	2.36	(0.71)	1.81
75th Percentile	(0.08)	(3.72)	(2.05)	2.29	(1.95)	1.40
90th Percentile	(1.03)	(5.63)	(2.71)	2.21	(2.57)	0.77
Index ▲	1.70	(2.40)	(1.07)	2.27	(0.11)	1.41

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



	Large Cap Equity vs S&P 500	Small Cap Equity vs Russell 2000	Non-US Equity vs MSCI EAFE	Domestic Fixed Income vs Blmbg Aggr Bd	Non-US Fixed Income vs Citi Non-US Govt	Real Estate vs NCREIF Index
10th Percentile	8.46	(0.24)	3.16	11.08	7.77	13.43
25th Percentile	5.46	(3.74)	0.63	10.82	6.80	8.21
Median	2.83	(7.07)	(2.10)	10.52	5.92	6.99
75th Percentile	(0.31)	(10.61)	(4.70)	10.26	3.34	5.80
90th Percentile	(1.87)	(13.09)	(6.52)	9.97	(0.14)	3.85
Index ▲	4.25	(8.89)	(1.34)	10.30	6.78	6.24

Callan Institute

Third Quarter 2019

Capital Market Review

The Four Most Dangerous Words

ECONOMY

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"This time, it's different" has been trotted out near the peak of most cycles as justification for why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Steady Returns Amid Equities Rebound

INSTITUTIONAL INVESTORS

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Corporate plans gained the most among plan types over the one-year period ending in the third quarter. Nonprofits trailed all fund types. Over the last 20 years, returns for investor types ranged from 6.2%-6.3%, outpacing the 6.1% return of a stocks-bonds benchmark.

U.S. Stocks Mixed; Global Markets Fall

EQUITY

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U.S. equity markets posted mixed results amid historic lows for 30-year Treasury yields and a historic factor rotation. Global equity markets turned negative after modest but positive results in the second quarter, buffeted by geopolitical turmoil.

After Two Rate Cuts, Yields Fall Globally

FIXED INCOME

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The Federal Open Market Committee cut short-term interest rates by 25 basis points twice in the third quarter. Yields fell in the U.S. and abroad given global growth headwinds. U.S. fixed income saw mostly positive returns; non-U.S. returns were mixed.

Real Estate Solid; Real Assets Down

REAL ESTATE/REAL ASSETS

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U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle. Global REITs gained 4.6% in the third quarter; U.S. REITs advanced 7.8%. Most real assets, with the notable exception of gold, finished the quarter lower.

A Bountiful but Smaller Harvest

PRIVATE EQUITY

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Most private equity activity measures were down in the third quarter. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and spooky geopolitical events dampened activity so far this year.

Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs

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Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat. Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.

Returns Moderate for Callan DC Index

DEFINED CONTRIBUTION

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The Callan DC Index™ rose 3.3% in the second quarter compared to 9.6% in the first quarter. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation. The Index's growth in balances returned to a normal level after a big gain in the first quarter.

Broad Market Quarterly Returns

U.S. Equity Russell 3000	Non-U.S. Equity MSCI ACWI ex USA	U.S. Fixed Income Bloomberg Barclays Agg	Non-U.S. Fixed Income Bloomberg Barclays Gbl ex US
1.2%	-1.8%	2.3%	-0.6%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Four Most Dangerous Words (This Time, It's Different…)

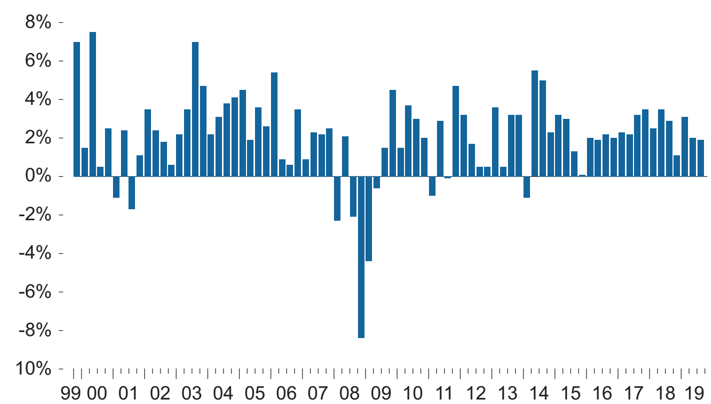
ECONOMY | Jay Kloepfer

Third quarter U.S. GDP growth surprised on the upside, coming in at 1.9% and extending what is now the longest economic expansion on record to 124 months. While 1.9% sounds modest compared to past cycles, it is positively robust compared to developed economies around the globe. The U.S. economy, and to an extent the entire global economy, has defied fears of an imminent collapse all year. While the current expansion may appear long in the tooth, elapsed time is not an economic variable. This expansion has been far weaker than each of the past 10, whether measured by cumulative GDP growth (at just under 25%, it's about half that of the 1990s), by job creation, or by investment. The overhang of the housing market collapse has weighed heavily on growth since 2009, and the measured pace of growth has in fact enabled the U.S. economy to maintain a slow burn.

Several long-held tenets of fundamental macroeconomics appear to be under serious re-consideration after the extraordinary 10-year period following the Global Financial Crisis: the cause (and the absence) of inflation; the execution of monetary policy; the role of central banks and in particular the pivot by the Federal Reserve at the start of 2019; and the business cycle. The new macroeconomic narrative says that first, the business cycle as we know it has been disrupted; second, the source and volatility of inflation has been altered going forward; third, central banks have added sustaining economic expansion to their official remit, therefore the quantitative easing (QE) genie is out of the bottle and we will not be stuffing it back in anytime soon. All of these changes to the macro world are interrelated, one sustaining the other, and are potentially pointing to a different path for the U.S. and global economy than would be expected, given past accepted relationships between inflation, monetary policy, and the business cycle.

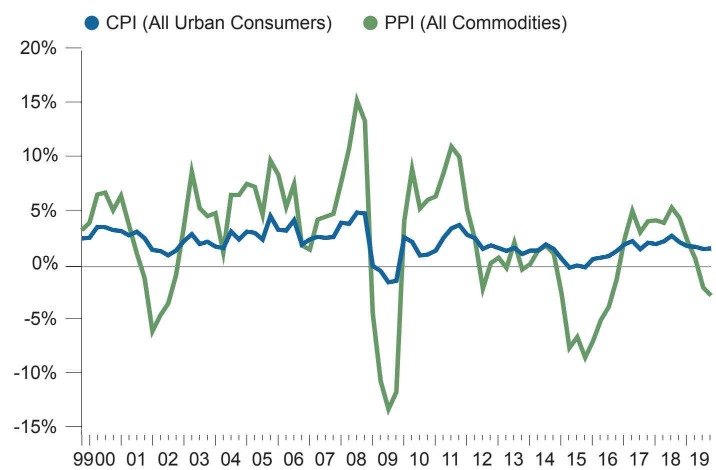
"This time, it's different" has been trotted out near the peak of most cycles to justify why the expansion can continue, at a time when imbalances typically push measures of economic soundness to their limits. This time, however, it may really be different.

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

In the words of many analysts, the Fed rate hike in December 2018 may have been the end of an era. The Fed's standard operating procedure until now has been to tighten preemptively before inflation takes off, and following the extraordinary period of zero interest rate policy, the Fed's goal had been to normalize rates while inflation was low. The Fed pivot in January to pause on rate hikes, and then to implement two cuts in the third quarter while the expansion continues, indicates that preemptive tightening and rate normalization are over, and we may not see them again. The macro world as we know it may have changed.

The headlines of impending doom that have dominated 2019 make the coming recession, if it ever materializes, the most anticipated slowdown ever. The economic result so far in 2019 is that the U.S. economy has shrugged off slowing global growth, a prolonged trade war with China, and geopolitical uncertainty in the euro zone due to Brexit—and continued to steam along. The job market remains strong, and the unemployment rate is at a generational low of 3.6%. U.S. economic growth is clearly moderating, but the expected plunge has yet to materialize, in part because of the lack of obvious imbalances, and in part because of the relatively insular nature of the U.S. economy. The trade war with China is top of the news, yet the cumulative impact on GDP growth since 2018 is less than 1%, as estimated by Capital Economics. The rest of the world has clearly slowed, and global GDP growth looks ready to fall to its weakest pace (near 2% next year) since 2012.

The source of inflation has shifted from the goods and commodities sectors to the service sector. Goods and commodities have shown substantial variability, with the attendant impact on the business cycle and on prices. The service sector shows much more subdued cyclicality, and as a result both the business cycle and inflation may become irrevocably less volatile, with the boom and bust of past cycles no longer the expectation. Headline inflation came in at a 1.7% annual rate in the third quarter, still well below the Fed's target of 2%, and producer price inflation in particular went negative during 2019, dragged down by commodity and goods prices. The persistence of low inflation in the face of continued expansion and a decade of accommodative monetary policy is one factor giving the Fed cover to cut rates while growth continues.

The Long-Term View

Index	2019 3rd Qtr	Periods ended Dec. 31, 2018 Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	1.2	-5.2	7.9	13.2	9.0
S&P 500	1.7	-4.4	8.5	13.1	9.1
Russell 2000	-2.4	-11.0	4.4	12.0	8.3
Non-U.S. Equity					
MSCI EAFE	-1.1	-13.8	0.5	6.3	4.6
MSCI ACWI ex USA	-1.8	-14.2	0.7	6.6	--
MSCI Emerging Markets	-4.2	-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	2.3	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 Gl Agg ex US	-0.6	-2.1	0.0	1.7	4.4
Real Estate					
NCREIF Property	1.4	6.7	9.3	7.5	9.3
FTSE Nareit Equity	7.8	-4.6	7.9	12.1	9.8
Alternatives					
CS Hedge Fund	0.3	-3.2	1.7	5.1	7.3
Cambridge PE*	4.3	10.6	11.9	13.8	15.2
Bloomberg Commodity	-1.8	-11.2	-8.8	-3.8	2.0
Gold Spot Price	4.2	-2.1	1.3	3.8	4.9
Inflation – CPI-U	0.2	1.9	1.5	1.8	2.2

*Data for most recent period lags by a quarter. Data as of June 30, 2019.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Standard & Poor's, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17
Employment Cost–Total Compensation Growth	2.8%	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%	2.6%
Nonfarm Business–Productivity Growth	-0.1%*	2.3%	3.5%	0.1%	1.2%	1.8%	0.9%	0.9%
GDP Growth	1.9%	2.0%	3.1%	1.1%	2.9%	3.5%	2.5%	3.5%
Manufacturing Capacity Utilization	75.5%	75.5%	76.4%	77.0%	76.9%	76.4%	76.1%	75.8%
Consumer Sentiment Index (1966=100)	93.8	98.4	94.5	98.2	98.1	98.3	98.9	98.4

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

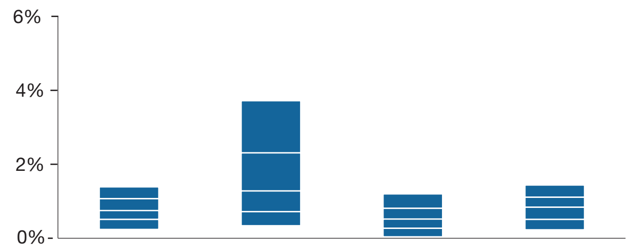
* Estimated figure provided by IHS Markit

Steady Returns Continue Amid Equities Rebound

INSTITUTIONAL INVESTORS

- A quarterly rebalanced 60% S&P 500/40% Bloomberg Barclays Aggregate portfolio returned 7.1% over the one year ended September 30, 2019. All broad institutional investor groups underperformed this benchmark.
- Both U.S. and non-U.S. equity markets continued their rebound in the third quarter after dropping during 2018. Non-U.S. equity underperformed relative to U.S. equity during 2018 and so far this year.
- Corporate plans gained the most among plan types over the one-year period, followed by public defined benefit (DB) plans. Nonprofits trailed all fund types. Over longer periods, Taft-Hartley plans have tended to perform best, but the range of returns for all institutional investor types tended to be in a narrow range; for instance, over the last 10 years, returns for all investor types ranged from 7.9%-8.4%.
- As the expansion continues, investors are discussing how long it can go on, and the fear of missing out is fading the longer the bull market runs. Investors are also addressing how the reversal in Fed policy changes the landscape, as it and other central banks take on the added role of sustaining the expansion. In addition, investors are examining what current yields portend for capital market assumptions.

Quarterly Returns, Callan Database Groups



	Public Database	Corporate Database	Nonprofit Database	Taft-Hartley Database
10th Percentile	1.39	3.72	1.20	1.44
25th Percentile	1.07	2.31	0.81	1.11
Median	0.75	1.28	0.52	0.84
75th Percentile	0.51	0.72	0.27	0.51
90th Percentile	0.24	0.34	0.04	0.23

Source: Callan

- Public DB plans are focused on returns from private markets, but face mounting pressure to control costs. One approach they have adopted is a barbelled pursuit of active management 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.

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

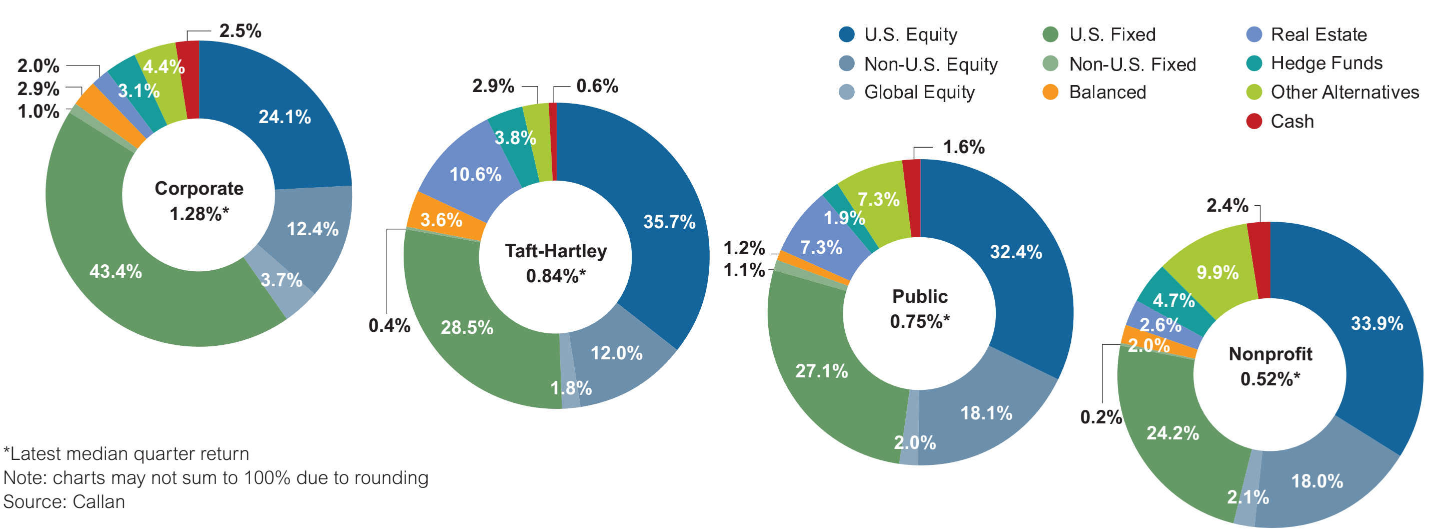
Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	**0.75**	**12.03**	**4.17**	**7.80**	**6.39**	**8.10**
Corporate Database	**1.28**	**14.11**	**6.39**	**7.78**	**6.51**	**8.17**
Nonprofit Database	**0.52**	**12.59**	**3.63**	**7.88**	**5.98**	**7.94**
Taft-Hartley Database	**0.84**	**11.92**	**3.88**	**8.03**	**6.91**	**8.40**
All Institutional Investors	**0.77**	**12.62**	**4.19**	**7.88**	**6.39**	**8.18**
Large (>$1 billion)	**0.88**	**11.86**	**4.57**	**8.11**	**6.63**	**8.43**
Medium ($100mm - $1bn)	**0.83**	**12.54**	**4.25**	**7.91**	**6.46**	**8.17**
Small (<$100 million)	**0.70**	**12.87**	**4.00**	**7.72**	**6.19**	**7.95**

*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.

– All investor types are considering lower equity exposures. They are also reevaluating the purpose and implementation of:
  - Real assets
  - Hedge funds and liquid alternatives
  - Fixed income
  - Equity
– For public DB plans, return enhancement is the most important issue. Alternative assets such as private equity and private real estate continue to draw interest from investors. Some plans appear to be rethinking their approach to passive investments and holding off increasing their allocation to them. Plans continue to express interest in reducing their allocations to U.S. equity.
– Corporate DB plans are most focused on risk control. Many are looking to decrease their equity allocation, with nearly the same number considering increases to fixed income. The percentage of corporate DB plans continuing to implement the process of de-risking has increased significantly over the last four years.
– For DC plans, fees remain top of mind. Retirement income options are also getting attention.
– Enhancing returns is the biggest concern for nonprofits, as they seek to meet spending needs and grow the corpus over time. Among all investor types, nonprofits historically have implemented or considered an outsourced chief investment officer (OCIO) at a higher rate than other types of institutional investors, and that trend continued this quarter.
– As part of their efforts to increase returns to meet plan targets, investors are evaluating how to implement private market allocations, and whether it is feasible to create a customized program implementation.
– For instance, public DB plans are expressing interest in multi-asset class (MAC) strategies. However, that interest is not widely shared. Corporate DB plans and nonprofits do not seem to be interested in increasing their exposure to MACs, and in fact corporate DB plans are increasingly expressing a desire to reduce their MAC allocations. Nonprofits showed a similar shift in sentiment.
– Private real estate and private equity have been staples of many investors' portfolios, and they continue to express interest in increasing their allocations to these asset classes. Investors, most notably nonprofits, are also beginning to indicate growing interest in increasing allocations to private credit.
– Fund liquidity may be a concern that prevents some investors from adding to illiquid investments.
– Despite the interest in alternatives, some plans are terminating their hedge fund exposures.

Average Asset Allocation, Callan Database Groups



*Latest median quarter return
Note: charts may not sum to 100% due to rounding
Source: Callan

Equity

U.S. Equities

U.S. equities posted mixed results amid a market that saw 30-year Treasury yields hit historic lows and the most meaningful, albeit short-lived, factor rotation among stocks since the Global Financial Crisis (GFC). Large cap (+1.4%) and mid cap stocks (+0.5%) posted modest gains for the quarter while small caps declined (Russell 2000: -2.4%). Ongoing U.S.-China trade tension, earnings and interest rate uncertainty, and the global political landscape continued to drive investor uncertainty.

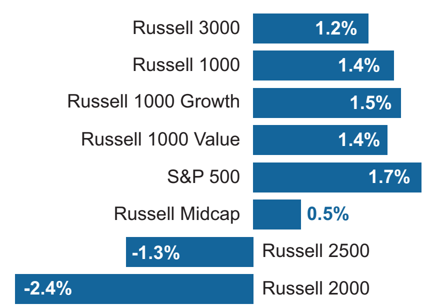
Large Cap ► *S&P 500: +1.7% | Russell 1000: +1.4%*

– Top sectors were in defensive areas including Utilities (+9.3%), Real Estate (+7.7%), and Consumer Staples (+6.1%) in response to investors' continued flight to quality.
– Energy, hurt by falling oil prices, fell 6.3%; Health Care lagged (-2.2%) amid discussions around price transparency and pricing reform by U.S. presidential candidates.
– Cyclical sector exposure has been volatile given uncertainty around the trade deal (and continued sideways movement of markets) along with slowed global growth.
– Up to September, momentum stocks (which have shifted to include many of the market's least volatile stocks) outperformed as investors shunned the cheapest quintile of value (and more volatile) stocks. This trend sharply reversed in early September as the 10-year Treasury yield rose from 1.46% to 1.73% and momentum stocks fell precipitously while value stocks traded up over the course of two days. The magnitude of the reversal gave a boost to value stocks across market capitalizations for the quarter.

Growth vs. Value ► *Russell 1000 Value: +1.4%, Russell 1000 Growth: +1.5% | Russell 2000 Value: -0.6%, Russell 2000 Growth: -4.2%)*

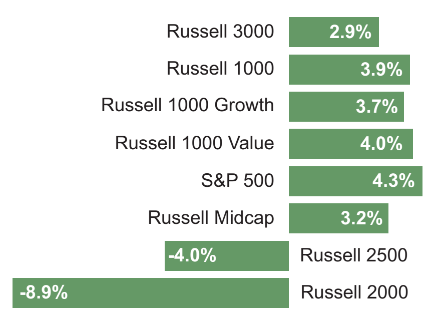
– While value continues to trail growth year-to-date, it gained ground during September's factor reversal, finishing the quarter essentially in line with growth within large caps.

U.S. Equity: Quarterly Returns



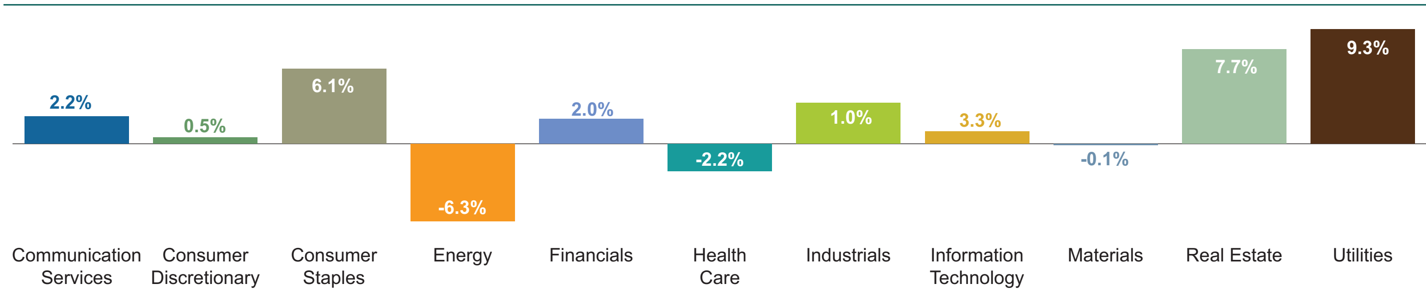
Sources: FTSE Russell and Standard & Poor's

U.S. Equity: One-Year Returns



Sources: FTSE Russell and Standard & Poor's

Quarterly Performance of Industry Sectors



Source: Standard & Poor's

- Within small cap, value benefited as investors favored the cheapest 20% of small caps while the most expensive quintile within the Russell 2000 declined double digits.

Non-U.S./Global Equities

Global equity markets turned negative in the third quarter. After more modest positive results in the second quarter, fears over continued trade war impacts, a no-deal Brexit, and a potential global slowdown impacted investor behavior. Given this backdrop, more defensive areas of the market outperformed.

Developed ► *MSCI EAFE: -1.1% | MSCI World ex USA: -0.9% | MSCI ACWI ex USA: -1.8% | MSCI Hong Kong: -11.9% | MSCI Japan: +3.1%*

- Boris Johnson's attempted suspension of Parliament and no-deal Brexit proclamations weighed on U.K. stocks (-2.5%).
- Germany (-4.0%) experienced recession fears; industrial production dropped 1.5% in June from the prior month, while the estimate was -0.5%.
- Hong Kong protests proved to be a headwind as its market fell 11.9% over the three-month period.
- Japan (+3.1%) was one of the few bright spots within developed markets as low short-term interest rates remain unchanged and a resolution to the Japan/South Korea trade war looked more promising.
- Cyclical sectors trailed as investors were positioned defensively; Energy (-6.5%) had the worst performance.
- For the quarter, factor performance reflected cautious investor behavior as quality and low volatility did well. However, the month of September saw a brief recovery in value across all markets as trade talks improved and central banks eased.

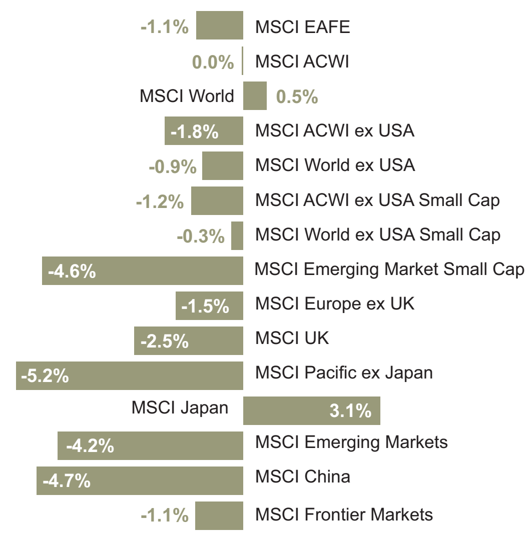
Emerging Markets ► *MSCI Emerging Markets Index: -4.2%*

- Emerging markets fared worst among global markets; uncertainty weighed heavily on these volatile countries.
- Though most emerging market countries fell during the quarter, Turkey (+11.7%) had strong results as its central bank cut rates two times in less than two months.
- Factor performance in emerging markets favored quality and price momentum as investors moved toward safe assets.

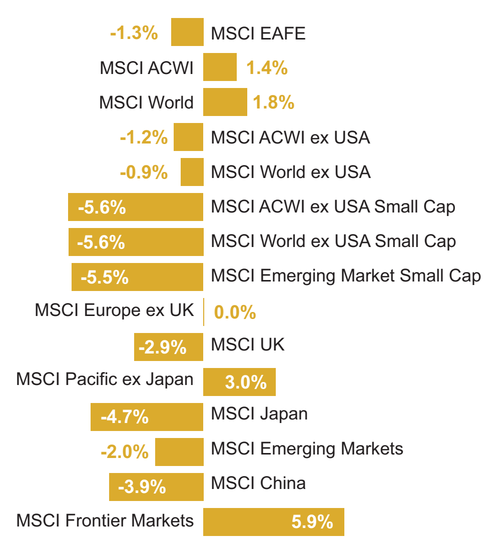
Non-U.S. Small Cap ► *MSCI World ex USA Small Cap: -0.3% | MSCI EM Small Cap: -4.6%*

- Small cap marginally outperformed large cap, both in developed and all country ex-U.S. markets; despite overall defensive posturing, idiosyncratic businesses pushed past global market issues.
- Japan (+4.0%) helped drive developed returns as small cap companies also benefited from low rates and resolved trade tensions; Hong Kong (-7.6%) detracted as local businesses were hurt by the protests.

Non-U.S. Equity: Quarterly Returns (U.S. Dollar)



Non-U.S. Equity: One-Year Returns (U.S. Dollar)



Source: MSCI

Fixed Income

The Federal Open Market Committee (FOMC) cut short-term interest rates by 25 basis points twice in the third quarter amid an economic backdrop that has been supported by strong consumer spending and a solid labor market, but challenged by weakening manufacturing data and business investment. The Fed chair stated that the FOMC would act as "appropriate to sustain the expansion," and the European Central Bank and other central banks around the world also moved in the direction of easing monetary policy. Yields fell in the U.S. and abroad given global growth headwinds fueled by mounting trade tensions as well as geopolitical uncertainty.

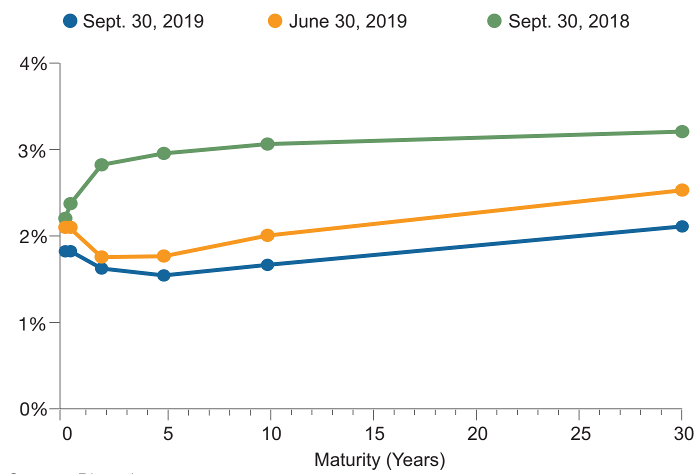
Core Fixed Income ▶ *Bloomberg Barclays US Agg: +2.3%*

- Treasuries returned 2.4% as rates fell across the yield curve.
- While the widely monitored 2- and 10-year key rates remained positive, the spread between the 3-month and 10-year key rates remained inverted.
- Long Treasuries soared (+7.9%) as 30-year yields fell roughly 40 bps.
- Nominal Treasuries outperformed TIPS as inflation expectations continued to fall; 10-year breakeven spreads were 1.53% as of quarter-end, down from 1.69% as of June 30. The 10-year real yield dipped briefly into negative territory in early September.

Investment-Grade Corporates ▶ *Bloomberg Barclays Corporate (Inv. Grade): +3.1%*

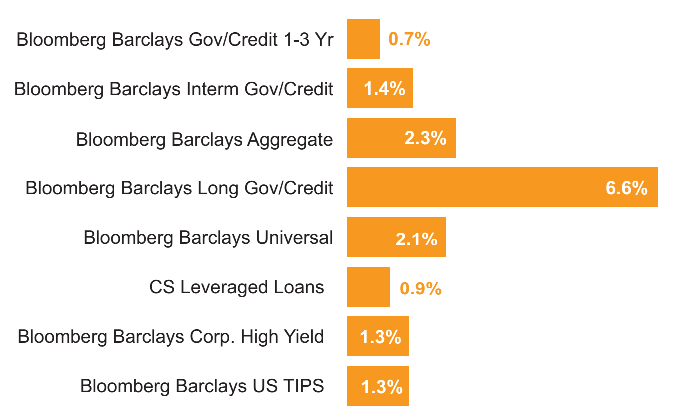
- Investment grade corporate credit spreads were range-bound, but their yield advantage was enough to generate positive excess returns versus like-duration Treasuries.
- Issuance in the corporate bond market was $320 billion in the quarter, $50 billion higher than a year ago; demand remained solid. BBB-rated corporates (+3.1%) modestly outperformed A-rated or higher corporates (+3.0%).

U.S. Treasury Yield Curves



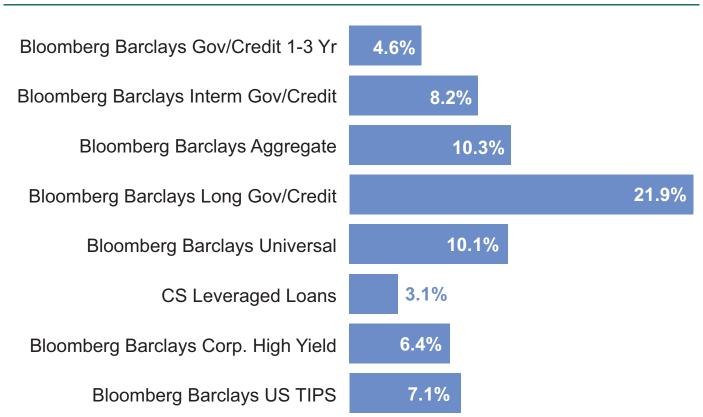
Source: Bloomberg

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

High Yield ▶ *Bloomberg Barclays Corporate HY: +1.3%*

– BB-rated corporates (+2.0%) outperformed CCC-rated corporates (-1.8%). BB- and B-rated spreads narrowed slightly, but the rally in rates helped drive outperformance as a result of higher quality bonds' greater sensitivity to interest rate movements.
– CCC-rated bond spreads widened significantly, representing some concern about deteriorating quality at the lower-end of the spectrum.

Leveraged Loans ▶ *CS Leveraged Loans: +0.9%*

– Bank loans, which have floating rate coupons, underperformed high yield bonds as rates rallied and investors worried about deteriorating credit quality.
– CLO issuance continued to exceed expectations, providing positive technical support to the leveraged loan market.

Non-U.S. Fixed Income

Global Fixed Income ▶ *Bloomberg Barclays Global Aggregate (unhedged): +0.7% | (hedged): +2.6%*

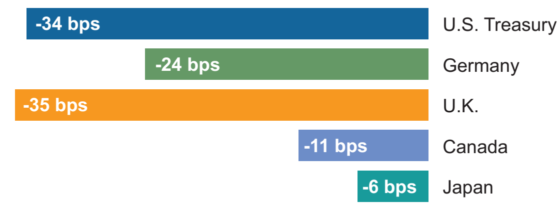
– Developed market sovereign bond yields rallied, pushing European sovereigns further into negative territory as the ECB reduced its deposit rate and announced a new bond purchasing stimulus program.
– Negative yielding debt totals nearly $17 trillion, a record high.
– The U.S. dollar was up 3.4% versus a basket of trade partner currencies and up 4.3% versus the beleaguered euro.

Emerging Market Debt ($US) ▶ *JPM EMBI Global Diversified: +1.5%* | (Local currency) ▶ *JPM GBI-EM Global Diversified: -0.8%*

– Broadly, emerging market currencies depreciated versus the U.S. dollar, hampering local currency returns.
– Within the dollar-denominated benchmark, Argentina (-42%) and Venezuela (-51%) were among the few to post negative returns. Conversely, returns in the local debt benchmark were more mixed with Turkey (+19%) and Argentina (-60%) being outliers.

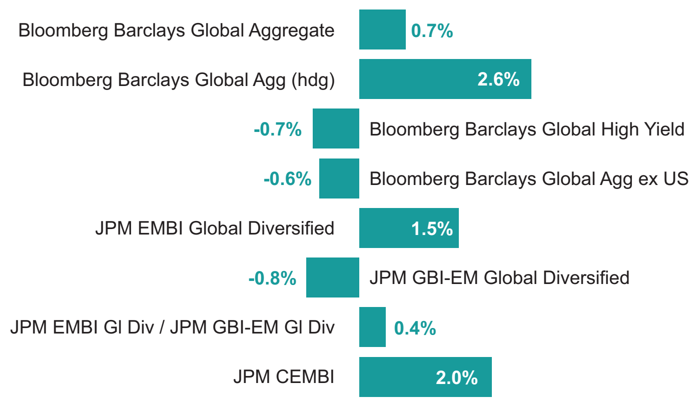
Change in 10-Year Global Government Bond Yields

2Q19 to 3Q19



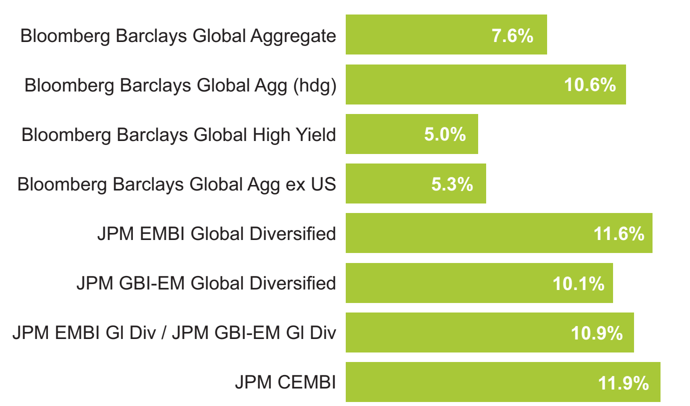
Source: Bloomberg Barclays

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 Stays Solid; Real Assets Mostly Down

REAL ESTATE/REAL ASSETS | Munir Iman and Kristin Bradbury

U.S. Real Estate

Real Estate Returns Continue to Moderate

- U.S. core real estate returns continue to be driven by income, with limited appreciation this late in the cycle.
- Returns are coming from net operating income (NOI) growth rather than further cap rate compression.
- Industrial continues to outperform other property types.
- Retail showing signs of depreciation

U.S. Real Estate Fundamentals Remain Healthy

- Steady returns continued, driven by above inflation-level rent growth in many metros.
- Within the NCREIF Property Index, the vacancy rate for U.S. Office was 9.6% in the quarter, the lowest in over 12 years.
- Net operating income (NOI) has been growing annually and is expected to be the primary return driver. Apartment and Industrial NOI growth fell slightly from the second quarter.

Pricing Remains Expensive in the U.S.

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

REITs Outperformed Global Equities

- U.S. REITs advanced 7.8% in the quarter, outpacing the S&P 500 Index, which rose 1.7%.
- Global REITs gained 4.6% compared to -0.2% for the MSCI ACWI IMI.
- Both U.S. and non-U.S. REITs are trading at net asset value.

Non-U.S. Real Estate

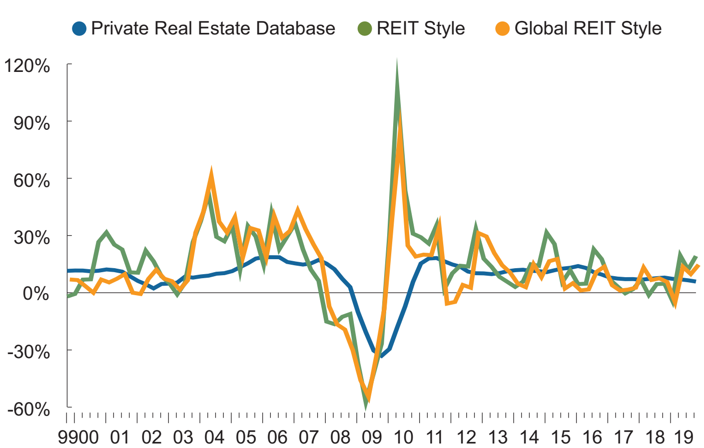
Asia Is Increasingly Important

- U.S.-China trade talks, unrest in Hong Kong, and other areas of political uncertainty have impacted real estate markets in the region. Managers continue to find attractive opportunities in some sectors of the market such as restructuring opportunities, necessity-based retail, and logistics.
- The number of open-end core funds focused on the Asia-Pacific market has increased in 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.
- During 2019, India had its first successful IPO for a REIT.

Europe Buffeted by Political Uncertainty

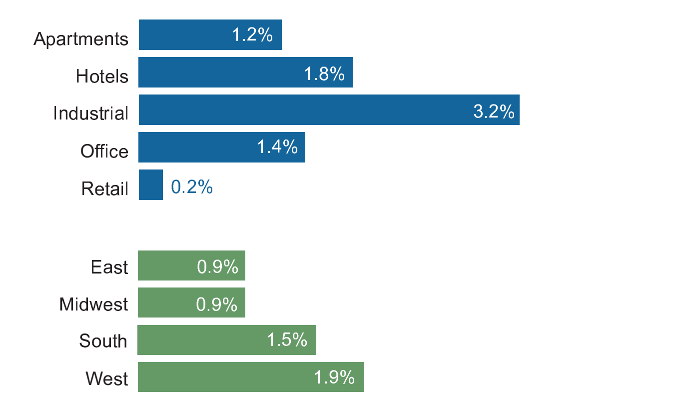
- Political uncertainty continues to weigh on overall economic growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given strong demand and the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Yields between prime and secondary real estate remain wide, providing opportunities for investors targeting transitional assets, as markets across Europe have less modern stock compared to 10 years ago.

Rolling One-Year Returns



Source: Callan

Sector Quarterly Returns by Property Type and Region



Source: NCREIF

Infrastructure Fundraising Momentum Continues

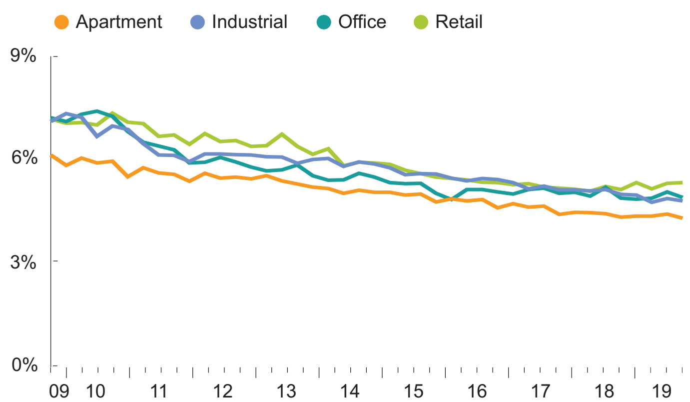
- Open end funds are raising significant capital, and the universe of investible funds keeps increasing.
- The closed end fund market continues to expand, with additional offerings in infrastructure debt, emerging markets, and sector-specific areas (e.g., communications and renewables).

Real Assets

Challenging Quarter as Oil Prices Slide

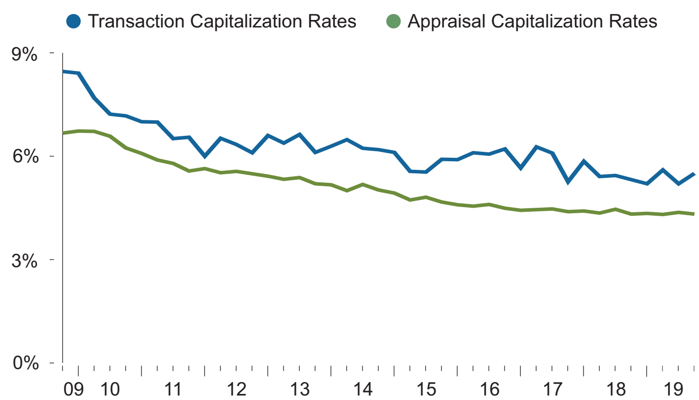
- While the MLP category generally benefits from declining rate environments, volatile and falling oil prices weighed more heavily on the space in the quarter (Alerian MLP Index: -5.0%; +11.0% YTD).
- Oil prices slid from $58.47 to $54.07 (WTI) during the quarter, and the energy-heavy Goldman Sachs Commodity Index was off 4.2%, while Gold (S&P Gold spot price: +4.3%; +15.0% YTD) benefited from its safe haven status.
- Looking across the rest of the commodity complex, Agriculture Commodities finished in negative territory (Bloomberg Commodity Agriculture Subindex: -6.2%), weighed down by coffee, corn, and cotton in particular, while nickel (+35.5%) almost single-handedly lifted the Industrial Metals Subindex (+2.4%) into positive territory for the quarter.

NCREIF Capitalization Rates by Property Type



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

NCREIF Transaction and Appraisal Capitalization Rates



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

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

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	**1.5**	**4.5**	**5.9**	**7.1**	**9.0**	**9.9**	**6.8**
NFI-ODCE (value wt net)	1.1	3.1	4.6	6.3	8.4	9.8	6.9
NCREIF Property	1.4	4.8	6.2	6.8	8.6	9.8	8.6
NCREIF Farmland	1.0	2.4	5.3	6.1	7.9	11.0	14.2
NCREIF Timberland	0.2	1.3	2.1	3.1	4.4	4.0	7.0
Public Real Estate							
Global Real Estate Style	**4.6**	**22.3**	**14.7**	**7.4**	**8.3**	**10.2**	**8.3**
FTSE EPRA Nareit Developed	4.6	19.8	13.0	5.6	6.8	8.6	--
Global ex-U.S. Real Estate Style	**2.8**	**17.9**	**11.7**	**7.9**	**7.8**	**8.1**	**7.8**
FTSE EPRA Nareit Dev ex US	1.5	14.6	8.9	5.9	5.0	6.5	--
U.S. REIT Style	**7.7**	**28.5**	**19.2**	**8.4**	**10.7**	**13.6**	**9.7**
EPRA Nareit Equity REITs	7.8	27.0	18.4	7.4	10.3	13.0	9.0

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

A Bountiful but Smaller Harvest

PRIVATE EQUITY | Gary Robertson

Private equity activity measures were down in the third quarter, except for upticks in dollar volume for fundraising and buyout exits. So far this year, all private equity liquidity measures that Callan tracks moderated. High prices, perceived slowing of global economic growth, and challenging geopolitical events dampened activity so far this year.

Private equity partnerships holding final closes totaled $188 billion, with 201 new partnerships formed, according to PitchBook. The dollar volume rose 27% from the prior quarter, but the number of funds holding final closes fell 7%. So far this year, 2019 is running 7% behind 2018. No strategy is dominating the market compared to historical commitment ranges, as investors focus on diversification.

New buyout transactions declined, according to PitchBook. Funds closed 1,491 company investments with $110 billion in disclosed deal value, representing a 14% decline in count and a 16% dip in dollar value from the second quarter.

According to PitchBook, new investments in venture capital companies totaled 4,664 rounds of financing with $57 billion of announced value. The number of investments was down 13% from the prior quarter, and announced value fell 15%. The median pre-money valuations of Series A through D rounds continued to increase, with only Seed Stage remaining flat.

Funds Closed January 1 to September 30, 2019

Strategy	No. of Funds	Amt ($mm)	Share
Venture Capital	263	46,702	10%
Growth Equity	50	61,789	13%
Buyouts	158	241,920	51%
Mezzanine Debt	39	60,308	13%
Distressed	8	12,203	3%
Energy	10	14,767	3%
Secondary and Other	39	27,970	6%
Fund-of-funds	20	7,358	2%
Totals	**587**	**473,017**	**100%**

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

There were 404 private M&A exits of private equity-backed companies (excluding venture capital), PitchBook reports, with disclosed values totaling $122 billion. Private sale count was down 6% from the prior quarter but announced dollar volume rose 12%. The year-to-date exit count declined 35%. There were 16 private-equity backed IPOs in the third quarter raising $6 billion, a steep decline from 42 totaling $16 billion previously.

Venture-backed M&A exits totaled 320 transactions with disclosed value of $12 billion. The number of sales fell 12% and announced dollar volume plunged 52%. The year-to-date exit count declined 13%. There were 47 VC-backed IPOs in the third quarter with a combined float of $9 billion. For comparison, the second quarter had 59 IPOs and total issuance of $22 billion. Peloton was the largest third quarter IPO, raising $1.2 billion.

Private Equity Performance Database (%) (Pooled Horizon IRRs through June 30, 2019*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	6.25	18.96	15.93	14.95	15.01	11.80	13.06
Growth Equity	4.70	15.37	17.71	13.26	14.77	13.59	13.53
All Buyouts	4.12	10.72	16.06	11.85	15.27	13.72	12.07
Mezzanine	2.37	8.05	11.64	10.28	11.05	10.63	8.73
Credit Opportunities	1.09	3.20	9.37	5.68	13.39	9.61	10.13
Control Distressed	1.95	4.27	10.47	7.62	12.16	10.63	10.58
All Private Equity	**4.34**	**12.31**	**15.52**	**11.98**	**14.79**	**12.88**	**12.13**
S&P 500	4.30	10.42	14.19	10.71	14.70	8.75	5.90

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.

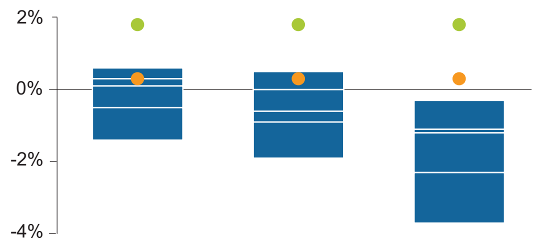
Hedge Funds Flat; MACs Struggle

HEDGE FUNDS/MACs | Jim McKee

Alpha trades flat as markets soften during the quarter

– Equity market churn, while Treasury yields fell further, had a mixed effect across hedge funds, leaving the broad hedge fund universe flat.
– *Managed Futures* (+3.5%) and *Global Macro* (+2.1%) were lead performers for the second quarter in a row, benefiting from continuing rate and currency trends.
– *Equity Market Neutral* (-1.7%) slipped hard, particularly given September's sudden factor rotation to value while momentum reversed.
– *Long/Short Equity* (+0.1%) was unchanged without much equity beta support; the equity factor reversal in September also hurt.
– *Distressed* (-3.5%) sank as spreads among weaker credits widened amid a flight-to-quality.
– Hedge fund portfolios with exposure to macro trading fared better while those with emerging market exposure, particularly Argentina, suffered more.

Hedge Fund-of-Funds Style Group Returns



	Absolute Return	Core Diversified	Long/Short Equity
10th Percentile	0.6	0.5	-0.3
25th Percentile	0.3	0.0	-1.1
Median	0.1	-0.6	-1.2
75th Percentile	-0.5	-0.9	-2.3
90th Percentile	-1.4	-1.9	-3.7
CS Hedge Fund ●	0.3	0.3	0.3
90-Day T-Bill +5% ●	1.8	1.8	1.8

Sources: Callan, Credit Suisse, and Federal Reserve

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

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	**-0.63**	**0.46**	**3.76**	**2.35**	**4.22**	**4.24**
Callan Absolute Return FOF Style	**0.07**	**0.80**	**3.60**	**2.32**	**4.16**	**3.95**
Callan Core Diversified FOF Style	**-0.62**	**0.23**	**3.37**	**2.02**	**3.99**	**4.12**
Callan Long/Short Equity FOF Style	**-1.19**	**0.02**	**4.57**	**3.40**	**4.67**	**5.37**
Credit Suisse Hedge Fund	0.26	2.13	3.83	2.30	4.32	4.97
CS Convertible Arbitrage	-0.41	1.29	2.55	2.28	4.36	3.78
CS Distressed	-3.46	-3.09	3.06	0.79	4.65	5.22
CS Emerging Markets	-4.11	1.81	3.29	3.02	4.28	5.99
CS Equity Market Neutral	-1.74	-4.37	0.27	0.16	1.14	-0.57
CS Event-Driven Multi	-0.80	0.18	3.49	0.16	3.37	5.05
CS Fixed Income Arb	0.28	2.38	4.39	3.23	5.66	3.84
CS Global Macro	2.12	7.66	5.35	3.11	4.89	6.43
CS Long/Short Equity	0.10	-0.36	4.85	3.38	4.88	5.74
CS Managed Futures	3.53	7.81	0.59	2.07	1.57	3.58
CS Multi-Strategy	0.68	1.94	4.23	4.18	6.23	5.95
CS Risk Arbitrage	0.23	1.98	3.18	2.64	2.68	3.81
HFRI Asset Wtd Composite	0.30	2.65	4.39	2.93	4.49	--
90-Day T-Bill + 5%	1.77	7.39	6.54	5.98	5.54	6.39

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

Amid choppy markets, MACs struggle for gains

- Multi-asset class (MAC) performance varied depending on net market exposures, but was mostly flat or down.
- The **HFR Risk Parity Index** targeting 10% volatility was positive (+1.9%), reflecting the modest lift of stocks and bonds.
- **Eurekahedge Multi-Factor Risk Premia Index** fell 5.1%, indicating broad headwinds for those seeking diversifying returns outside long-only markets.
- Within risk premia, *equity momentum* was a key detractor in light of September's factor reversal; *rates momentum* was an offsetting contributor given the trend of falling yields.
- *Long-Biased* trailed due to exposure to risk-on assets.
- *Absolute Return* benefited from exposure to higher-quality assets.

Volatility simmers slightly below average

- Markets are further discounting growth with lower expected rates, long and short.
- If global manufacturing data softens further, thereby overwhelming expectations of central banks easing, hedge funds are positioned reasonably well for an equity downturn.
- However, any economic rebound with tepid inflation will cause most hedge funds to lag.

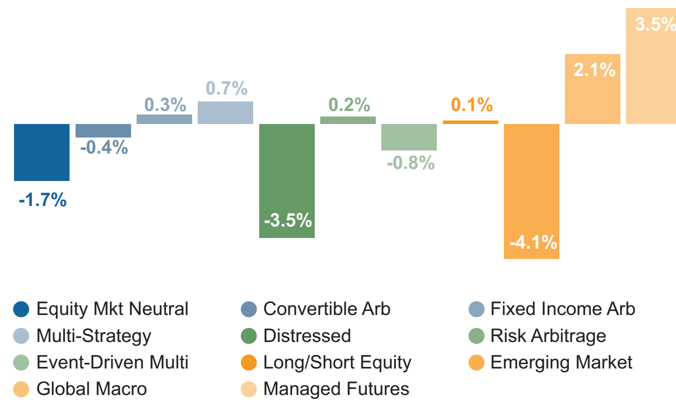
Falling yield curve shrinks the playing field, however level it may be

- Lower long rates factored into stocks and bonds leave less room for traditional assets to run, giving hedged strategies more opportunity to shine.
- However, as short rates also settle to lower levels, dwindling cash returns and short interest rebates take some wind out of hedge fund sails.

Industry outflows shade constructive mood

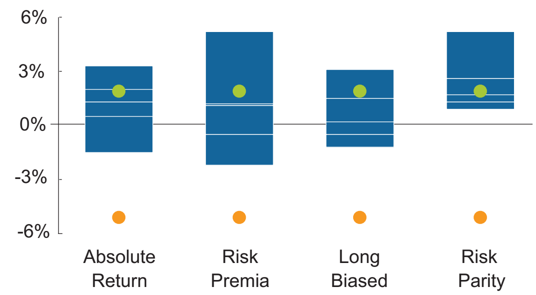
- The third quarter was the sixth consecutive quarter of industry asset outflows, which runs counter to the industry's positive view of an improving opportunity set ahead with increasing volatility tied to growing economic uncertainty.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



	Absolute Return	Risk Premia	Long Biased	Risk Parity
10th Percentile	3.3	5.2	3.1	5.2
25th Percentile	2.0	1.2	1.5	2.6
Median	1.3	1.1	0.2	1.7
75th Percentile	0.5	-0.5	-0.5	1.3
90th Percentile	-1.5	-2.2	-1.2	0.9
Eurekahedge MFRP (5%v) ●	-5.1	-5.1	-5.1	-5.1
60% S&P 500/ 40% BB Barclays Agg ●	1.9	1.9	1.9	1.9

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

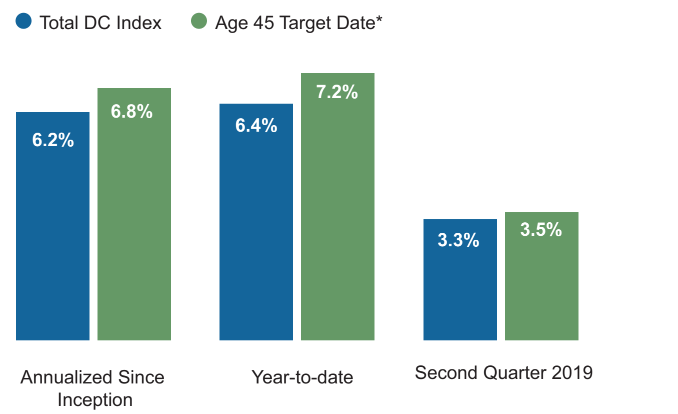
Performance Slows but Remains Solid

DEFINED CONTRIBUTION | Patrick Wisdom

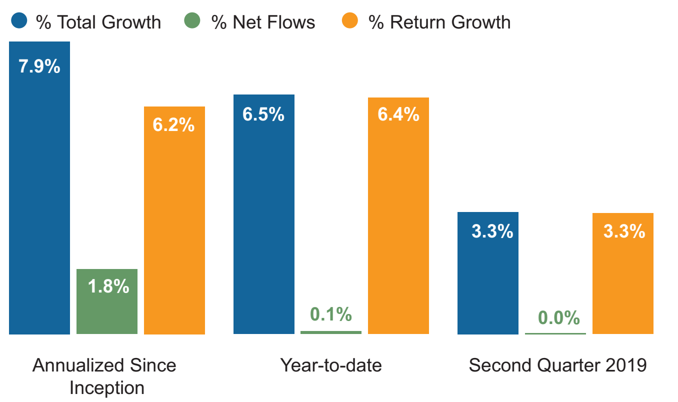
– The Callan DC Index™ gained 3.3% in the second quarter, compared to the first quarter's jump of 9.6%. The Age 45 Target Date Fund gained 3.5%, largely due to its higher equity allocation.
– The Index's growth in balances in the second quarter (3.3%) returned to a normal level after a robust gain in the first quarter (9.8%). Net flows were also positive but very small (0.03%).
– Target date funds (TDFs) yet again saw the largest inflows for the quarter. Both large-cap and small/mid-cap U.S. equity experienced large outflows. U.S. fixed income had relatively large inflows, while stable value options had relatively large outflows.
– Second quarter turnover (i.e., net transfer activity levels within DC plans) increased to 0.54% from the previous quarter's measure of 0.48%. Turnover has risen for three consecutive quarters but still sits below the historical average (0.60%).
– The overall allocation to equity increased to 70.0% from 69.5% in the previous quarter. The current allocation exceeds the Index's historical average by 2.2 percentage points.
– The percentage of assets allocated to U.S. large-cap equity rose. Gains as a result of strong performance outweighed outflows from the asset class. The current allocation to U.S. large-cap equity (25.2%) is now at its second highest level over the past decade.
– On the other hand, the percentage allocated to stable value decreased, while the allocation to TDFs remained steady.
– Stable value's prevalence within DC plans rose for the seventh consecutive quarter and is now at 77%. Additionally, more plans are now offering emerging market equity, global equity, and high yield fixed income as investment options.

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 (Second Quarter 2019)
(Top Two and Bottom Two Asset Gatherers)

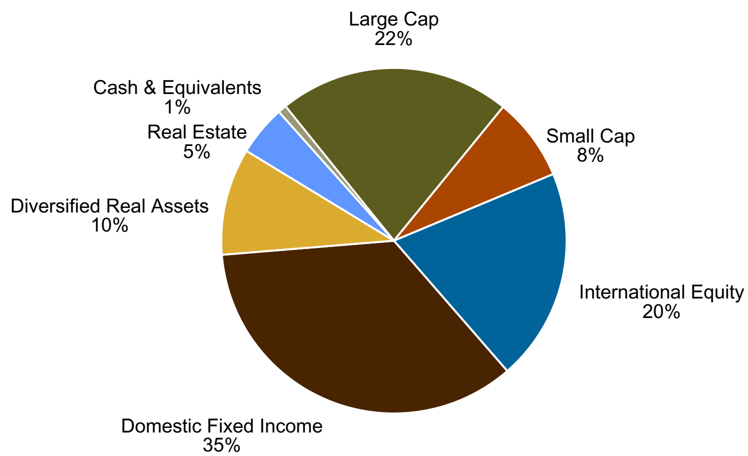
Asset Class	Flows as % of Total Net Flows
Target Date Funds	62.56%
U.S. Fixed Income	26.82%
U.S. Smid Cap	-20.40%
U.S. Large Cap	-45.95%
Total Turnover**	**0.54%**

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.

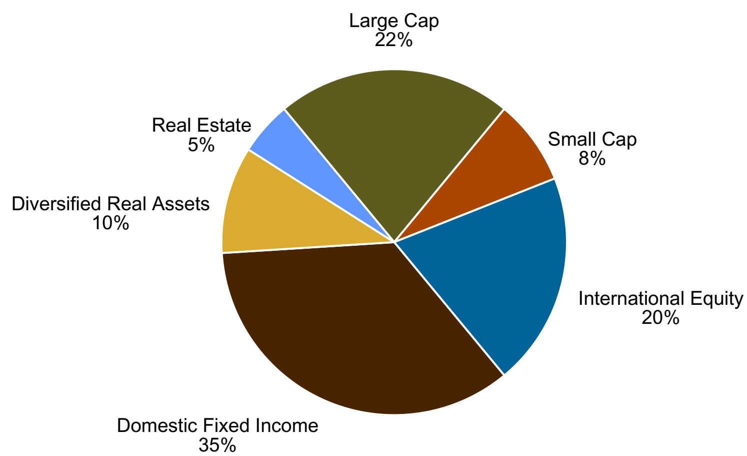
Actual vs Target Asset Allocation
As of September 30, 2019

The first chart below shows the Fund's asset allocation as of September 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



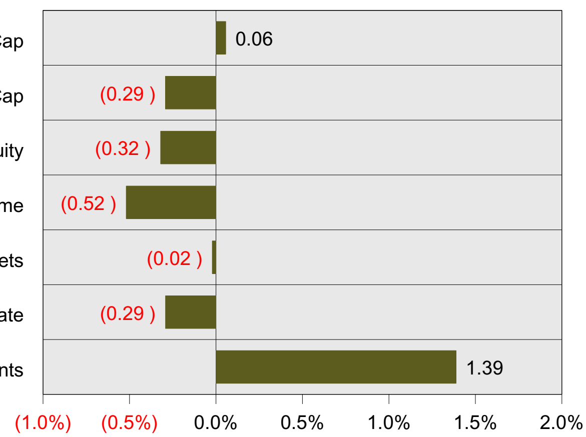
Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Large Cap	1,386,526	21.8%	22.0%	(0.2%)	(13,747)
Small Cap	495,669	7.8%	8.0%	(0.2%)	(13,521)
International Equity	1,265,199	19.9%	20.0%	(0.1%)	(7,777)
Domestic Fixed Income	2,235,053	35.1%	35.0%	0.1%	7,345
Diversified Real Assets	636,074	10.0%	10.0%	(0.0%)	(414)
Real Estate	297,218	4.7%	5.0%	(0.3%)	(21,026)
Cash & Equivalents	49,141	0.8%	0.0%	0.8%	49,141
Total	6,364,880	100.0%	100.0%		

* Current Quarter Target = 35.0% Blmbg 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.

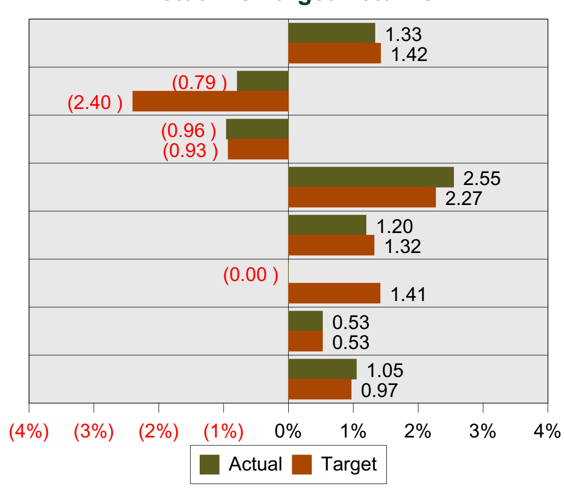
Quarterly Total Fund Relative Attribution - September 30, 2019

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.

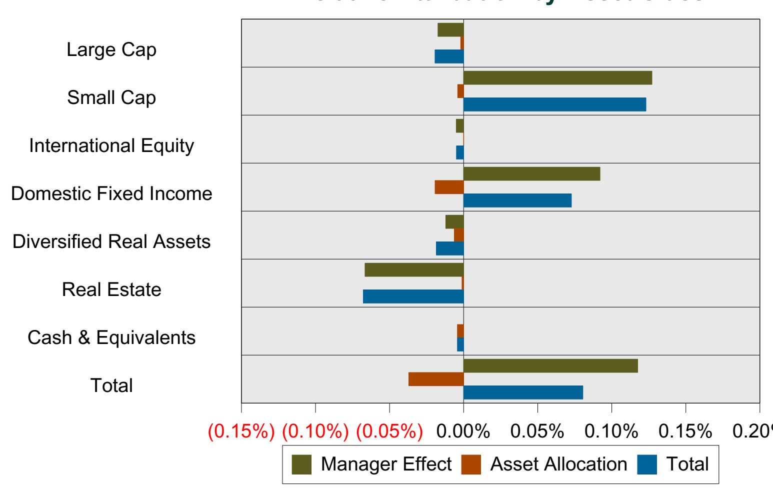
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended September 30, 2019

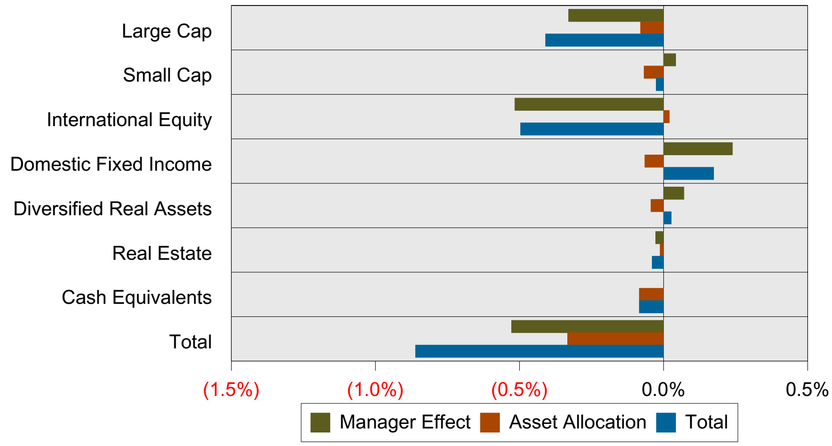
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	1.33%	1.42%	(0.02%)	(0.00%)	(0.02%)
Small Cap	8%	8%	(0.79%)	(2.40%)	0.13%	(0.00%)	0.12%
International Equity	20%	20%	(0.96%)	(0.93%)	(0.01%)	0.00%	(0.00%)
Domestic Fixed Income	34%	35%	2.55%	2.27%	0.09%	(0.02%)	0.07%
Diversified Real Assets	10%	10%	1.20%	1.32%	(0.01%)	(0.01%)	(0.02%)
Real Estate	5%	5%	(0.00%)	1.41%	(0.07%)	(0.00%)	(0.07%)
Cash & Equivalents	1%	0%	0.53%	0.53%	0.00%	(0.00%)	(0.00%)
Total			**1.05% =**	**0.97% +**	**0.12% +**	**(0.04%)**	**0.08%**

* 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.

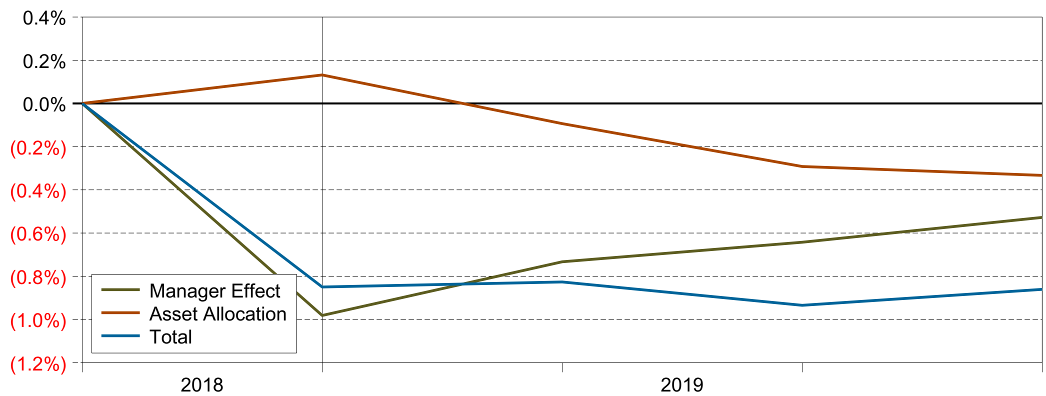
Cumulative Total Fund Relative Attribution - September 30, 2019

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

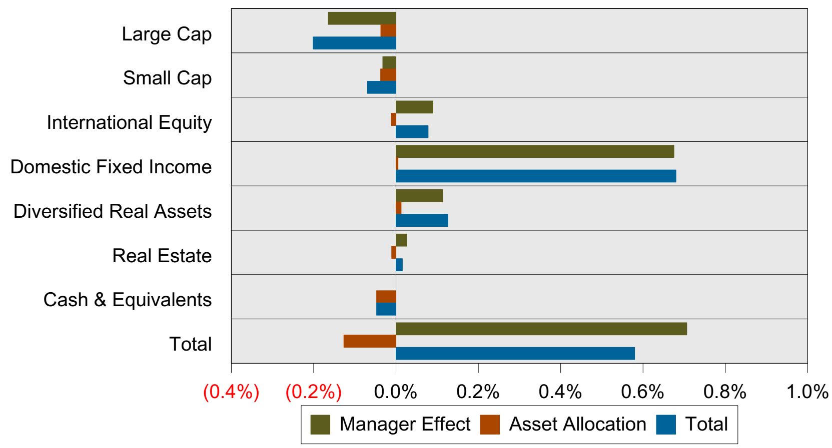
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	2.36%	3.87%	(0.33%)	(0.08%)	(0.41%)
Small Cap	8%	8%	(8.38%)	(8.89%)	0.04%	(0.07%)	(0.03%)
International Equity	19%	20%	(3.60%)	(0.95%)	(0.52%)	0.02%	(0.50%)
Domestic Fixed Income	35%	35%	11.13%	10.30%	0.24%	(0.07%)	0.17%
Diversified Real Assets	10%	10%	7.24%	6.47%	0.07%	(0.04%)	0.03%
Real Estate	5%	5%	5.57%	6.24%	(0.03%)	(0.01%)	(0.04%)
Cash Equivalents	1%	0%	2.23%	2.23%	0.00%	(0.08%)	(0.08%)
Total			**3.99% =**	**4.86% +**	**(0.53%) +**	**(0.33%)**	**(0.86%)**

* 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.

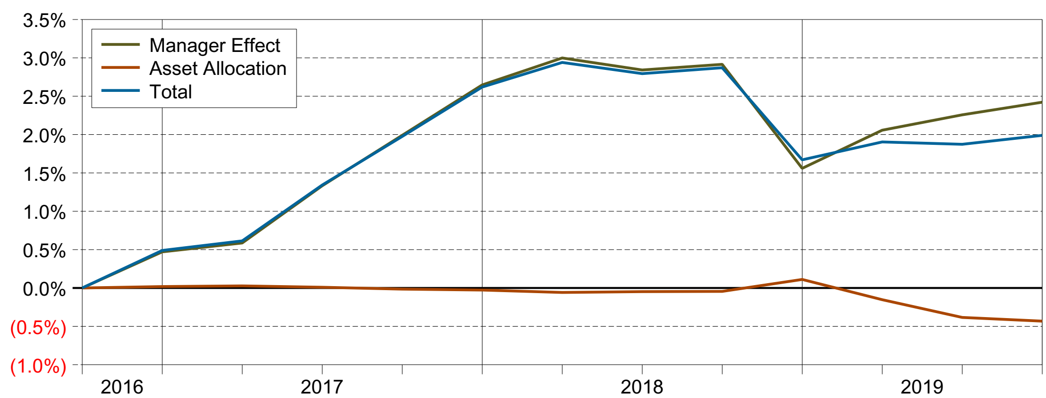
Cumulative Total Fund Relative Attribution - September 30, 2019

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

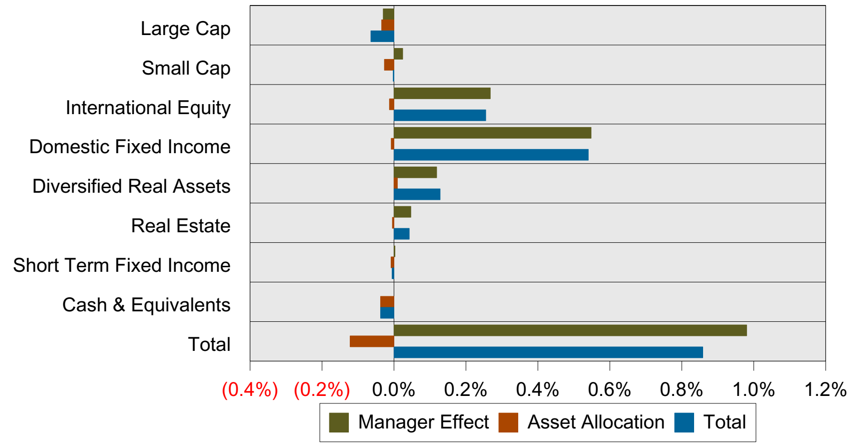
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	12.39%	13.19%	(0.16%)	(0.04%)	(0.20%)
Small Cap	8%	8%	7.85%	8.23%	(0.03%)	(0.04%)	(0.07%)
International Equity	20%	20%	6.82%	6.49%	0.09%	(0.01%)	0.08%
Domestic Fixed Income	34%	35%	4.88%	2.92%	0.68%	0.00%	0.68%
Diversified Real Assets	10%	10%	3.66%	2.49%	0.11%	0.01%	0.13%
Real Estate	5%	5%	7.10%	6.76%	0.03%	(0.01%)	0.02%
Cash & Equivalents	1%	0%	1.42%	1.42%	0.00%	(0.05%)	(0.05%)
Total			**7.25% =**	**6.67% +**	**0.71% +**	**(0.13%)**	**0.58%**

* 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.

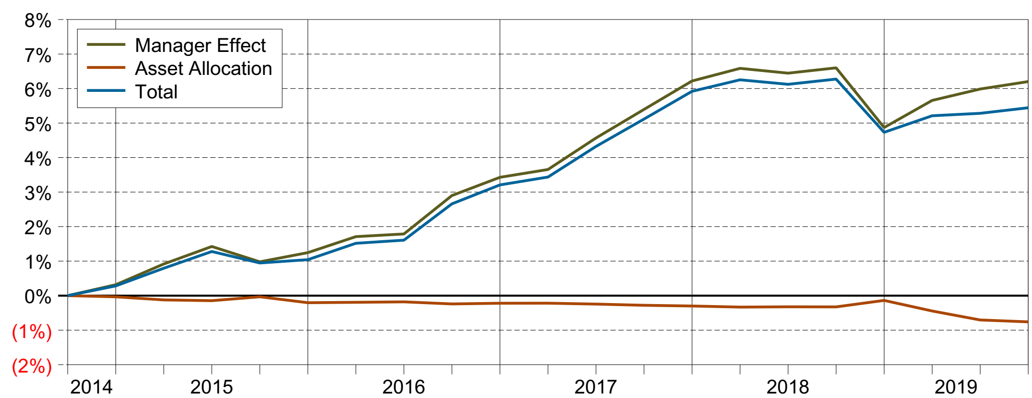
Cumulative Total Fund Relative Attribution - September 30, 2019

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

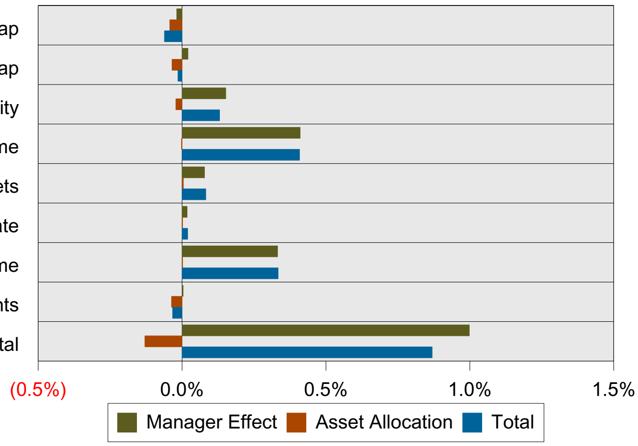
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	22%	22%	10.48%	10.62%	(0.03%)	(0.03%)	(0.06%)
Small Cap	8%	8%	8.55%	8.19%	0.02%	(0.03%)	(0.00%)
International Equity	20%	20%	4.50%	3.25%	0.27%	(0.01%)	0.26%
Domestic Fixed Income	34%	35%	4.98%	3.38%	0.55%	(0.01%)	0.54%
Diversified Real Assets	9%	10%	3.42%	2.21%	0.12%	0.01%	0.13%
Real Estate	5%	5%	9.43%	8.57%	0.05%	(0.00%)	0.04%
Short Term Fixed Income	0%	0%	-	-	0.00%	(0.01%)	(0.01%)
Cash & Equivalents	1%	0%	0.89%	0.89%	0.00%	(0.04%)	(0.04%)
Total			**6.54% =**	**5.69% +**	**0.98% +**	**(0.12%)**	**0.86%**

* 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.

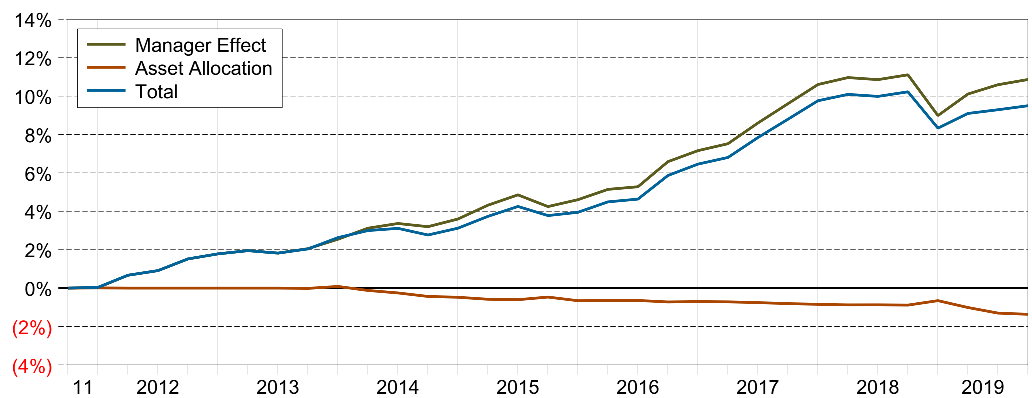
Cumulative Total Fund Relative Attribution - September 30, 2019

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.

Eight Year Annualized Relative Attribution Effects



Cumulative Relative Attribution Effects



Eight Year Annualized Relative Attribution Effects

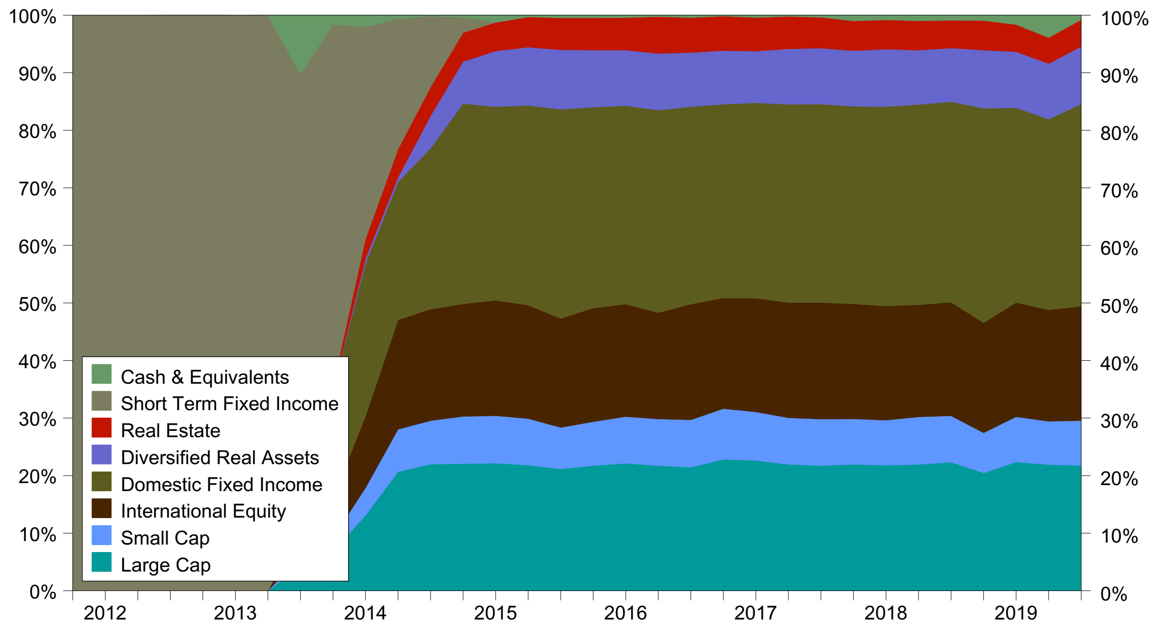
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Large Cap	15%	15%	-	-	(0.02%)	(0.04%)	(0.06%)
Small Cap	6%	6%	-	-	0.02%	(0.03%)	(0.01%)
International Equity	14%	14%	-	-	0.15%	(0.02%)	0.13%
Domestic Fixed Income	24%	24%	-	-	0.41%	(0.00%)	0.41%
Diversified Real Assets	6%	6%	-	-	0.08%	0.00%	0.08%
Real Estate	4%	4%	-	-	0.02%	0.00%	0.02%
Short Term Fixed Income	28%	29%	-	-	0.33%	0.00%	0.33%
Cash & Equivalents	3%	2%	0.60%	0.60%	0.00%	(0.04%)	(0.03%)
Total			**4.99% =**	**4.12% +**	**1.00% +**	**(0.13%)**	**0.87%**

* 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.

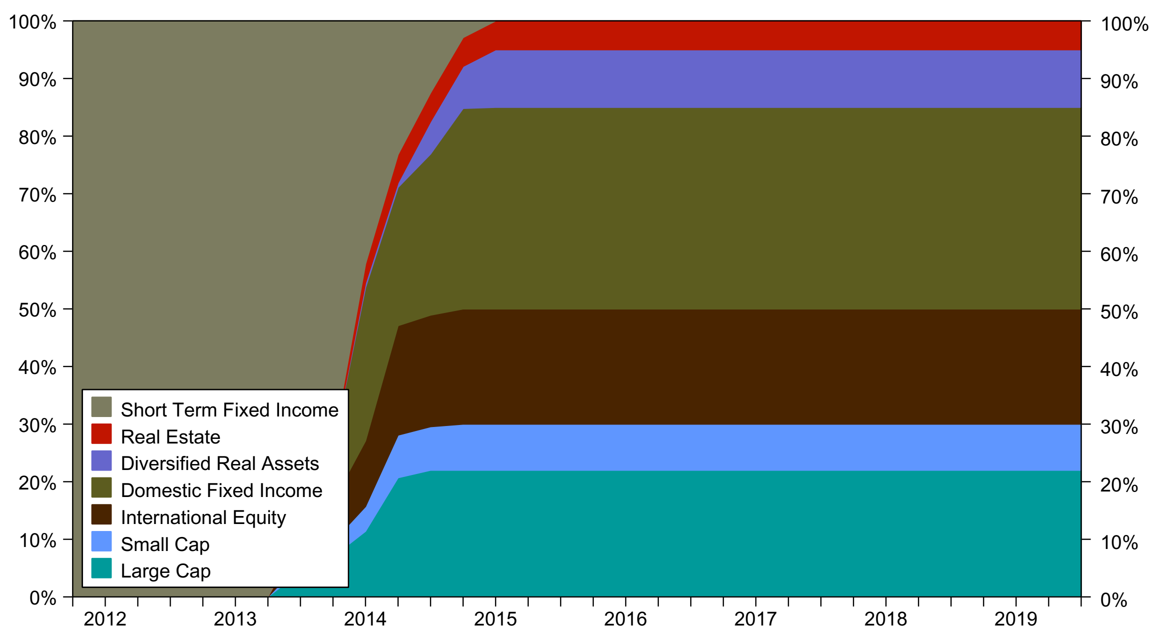
Actual vs Target Historical Asset Allocation

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

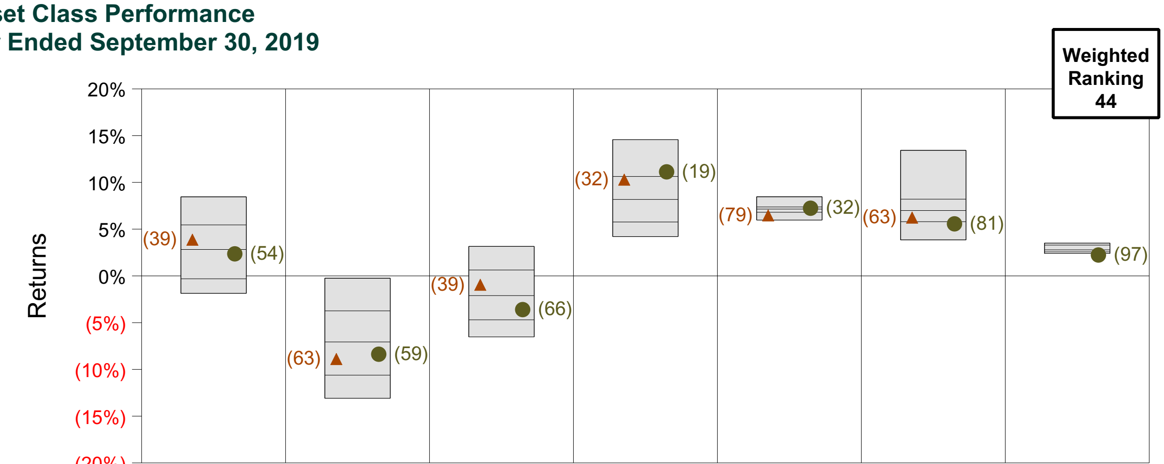


* Current Quarter Target = 35.0% Blmbg Aggregate, 22.0% Russell 1000 Index, 20.0% MSCI World ex US, 10.0% NDSIB Legacy DRA Weighted Benchmark, 8.0% Russell 2000 Index and 5.0% NCREIF Total Index.

Asset Class Rankings

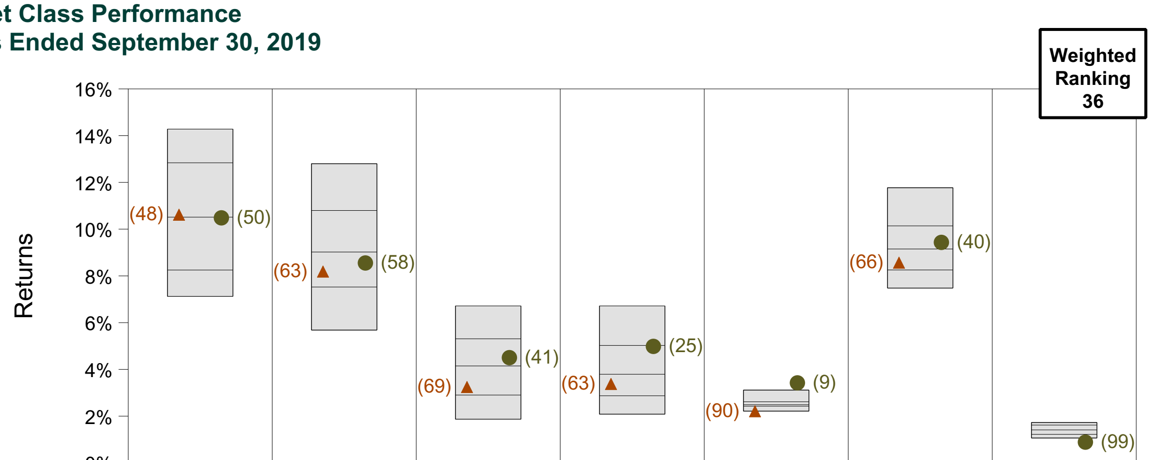
The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used 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 September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	8.46	(0.24)	3.16	14.57	8.46	13.43	3.51
25th Percentile	5.46	(3.74)	0.63	10.63	7.38	8.21	3.29
Median	2.83	(7.07)	(2.10)	8.18	7.15	6.99	2.79
75th Percentile	(0.31)	(10.61)	(4.70)	5.77	6.81	5.80	2.57
90th Percentile	(1.87)	(13.09)	(6.52)	4.21	5.97	3.85	2.40
Asset Class Composite ●	2.36	(8.38)	(3.60)	11.13	7.24	5.57	2.23
Composite Benchmark ▲	3.87	(8.89)	(0.95)	10.30	6.47	6.24	-

Total Asset Class Performance
Five Years Ended September 30, 2019



	Callan Large Cap	Callan Small Cap	Callan NonUS Eq	Total Dom Fixed-Inc DB	Real Returns	Callan Tot Real Est DB	Callan Cash
10th Percentile	14.28	12.80	6.72	6.72	3.12	11.77	1.73
25th Percentile	12.84	10.80	5.31	5.03	2.61	10.14	1.62
Median	10.51	9.02	4.15	3.79	2.49	9.15	1.41
75th Percentile	8.25	7.52	2.90	2.87	2.43	8.25	1.22
90th Percentile	7.12	5.68	1.87	2.08	2.21	7.48	1.06
Asset Class Composite ●	10.48	8.55	4.50	4.98	3.42	9.43	0.89
Composite Benchmark ▲	10.62	8.19	3.25	3.38	2.21	8.57	-

* 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.

Asset Class Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2019, with the distribution as of June 30, 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

	September 30, 2019				June 30, 2019	
	Market Value	**Weight**	**Net New Inv.**	**Inv. Return**	**Market Value**	**Weight**
Global Equity	**$3,147,394,489**	**49.45%**	**$(67,714,097)**	**$4,168,279**	**$3,210,940,307**	**48.79%**
Domestic Equity	**$1,882,195,071**	**29.57%**	**$(71,755,295)**	**$15,833,279**	**$1,938,117,087**	**29.45%**
Large Cap	**$1,386,526,036**	**21.78%**	**$(75,611,121)**	**$19,716,040**	**$1,442,421,117**	**21.92%**
L.A. Capital Enhanced	274,583,739	4.31%	(19,091,331)	3,960,606	289,714,464	4.40%
L.A. Capital Large Cap Growth	411,660,149	6.47%	(41,225,297)	4,900,779	447,984,666	6.81%
Parametric Clifton Large Cap	286,309,462	4.50%	(11,000,000)	5,837,576	291,471,887	4.43%
LSV Large Cap Value	413,972,686	6.50%	(4,294,493)	5,017,079	413,250,100	6.28%
Small Cap	**$495,669,035**	**7.79%**	**$3,855,826**	**$(3,882,761)**	**$495,695,970**	**7.53%**
Parametric Clifton SmallCap	246,703,594	3.88%	(2,000,000)	(4,825,851)	253,529,445	3.85%
PIMCO RAE	248,965,441	3.91%	5,855,826	943,090	242,166,525	3.68%
International Equity	**$1,265,199,418**	**19.88%**	**$4,041,198**	**$(11,665,000)**	**$1,272,823,220**	**19.34%**
DFA Intl SmallCap Value	131,503,725	2.07%	15,000,000	(94,504)	116,598,229	1.77%
LSV Intl Value	481,319,096	7.56%	(468,303)	(2,929,146)	484,716,545	7.37%
Vanguard Intl Explorer Fund	127,943,740	2.01%	9,000,000	(3,310,957)	122,254,697	1.86%
William Blair	524,432,857	8.24%	(19,490,499)	(5,330,393)	549,253,750	8.35%
Domestic Fixed Income	**$2,235,052,761**	**35.12%**	**$(1,239,160)**	**$54,694,338**	**$2,181,597,582**	**33.15%**
Ares ND Credit Strategies Fd	67,136,433	1.05%	12,000,000	0	55,136,433	0.84%
BND CDs	42,007,361	0.66%	4,026,347	332,397	37,648,617	0.57%
Cerberus ND Private Credit Fd	69,813,874	1.10%	8,000,000	887,681	60,926,193	0.93%
Declaration Total Return	168,391,262	2.65%	(93,095)	3,265,974	165,218,383	2.51%
PIMCO Bravo II	12,416,916	0.20%	(1,588,283)	(1)	14,005,200	0.21%
PIMCO DiSCO II	41,648,447	0.65%	0	336,823	41,311,624	0.63%
Prudential	679,591,130	10.68%	(36,282,156)	18,691,729	697,181,556	10.59%
SSgA US Govt Credit Bd Idx	308,856,319	4.85%	(7,031,044)	7,982,870	307,904,493	4.68%
Wells Capital	177,917,504	2.80%	(15,090,676)	5,678,529	187,329,651	2.85%
Western Asset Management	667,273,515	10.48%	34,819,747	17,518,337	614,935,431	9.34%
Global Real Assets	**$933,291,732**	**14.66%**	**$(6,236,831)**	**$7,150,426**	**$932,378,137**	**14.17%**
Real Estate	**$297,218,004**	**4.67%**	**$0**	**$(239)**	**$297,218,243**	**4.52%**
Invesco Core Real Estate	146,247,688	2.30%	0	(239)	146,247,927	2.22%
JP Morgan RE Inc & Growth	150,970,316	2.37%	0	0	150,970,316	2.29%
Diversified	**$636,073,728**	**9.99%**	**$(6,236,831)**	**$7,150,665**	**$635,159,894**	**9.65%**
Western Asset TIPS	404,378,526	6.35%	(24,123,886)	7,553,349	420,949,062	6.40%
ISQ Global Infrastructure II	26,320,119	0.41%	6,104,401	(384,156)	20,599,874	0.31%
JP Morgan Infrastructure	116,707,991	1.83%	(2,861,263)	476,877	119,092,377	1.81%
Grosvenor Cust. Infrastructure	44,477,304	0.70%	(599,773)	(167,892)	45,244,969	0.69%
Macquarie Infras. Partners IV	44,189,788	0.69%	15,243,690	(327,513)	29,273,611	0.44%
Cash	**$49,140,697**	**0.77%**	**$(207,259,129)**	**$555,910**	**$255,843,916**	**3.89%**
Insurance Cash Pool Account	371	0.00%	(320,583)	2,870	318,084	0.00%
Northern Trust Cash Account	26,431,928	0.42%	(21,938,546)	181,043	48,189,431	0.73%
Bank of ND	22,708,398	0.36%	(185,000,000)	371,996	207,336,401	3.15%
Securities Lending Income	**$0**	**0.00%**	**$(158,867)**	**$158,867**	**-**	**-**
Total Fund	**$6,364,879,678**	**100.0%**	**$(282,608,084)**	**$66,727,820**	**$6,580,759,942**	**100.0%**

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 8 Years
Global Equity					
Gross	0.10%	(1.79%)	-	-	-
Net	0.04%	(2.00%)	-	-	-
Weighted Benchmark	(0.13%)	(0.10%)	-	-	-
Domestic Equity					
Gross	0.79%	(0.56%)	11.20%	10.00%	-
Net	0.74%	(0.71%)	11.02%	9.78%	-
Weighted Benchmark	0.40%	0.37%	-	-	-
Large Cap					
Gross	1.33%	2.36%	12.39%	10.48%	-
Net	1.29%	2.19%	12.20%	10.28%	-
Russell 1000 Index	1.42%	3.87%	13.19%	10.62%	15.19%
L.A. Capital Enhanced - Gross	1.34%	3.87%	12.07%	10.57%	-
L.A. Capital Enhanced - Net	1.30%	3.73%	11.93%	10.42%	-
Russell 1000 Index	1.42%	3.87%	13.19%	10.62%	15.19%
L.A. Capital LargeCap Growth - Gross	0.93%	3.07%	14.50%	12.57%	-
L.A. Capital LargeCap Growth - Net	0.88%	2.85%	14.27%	12.34%	-
Russell 1000 Growth Index	1.49%	3.71%	16.89%	13.39%	16.71%
Parametric Clifton Large Cap - Gross	2.02%	4.95%	13.27%	11.05%	-
Parametric Clifton Large Cap - Net	2.02%	4.95%	13.29%	11.00%	-
S&P 500 Index	1.70%	4.25%	13.39%	10.84%	15.25%
LSV Large Cap Value - Gross	1.22%	(1.02%)	9.74%	7.80%	-
LSV Large Cap Value - Net	1.15%	(1.30%)	9.42%	7.49%	-
Russell 1000 Value Index	1.36%	4.00%	9.43%	7.79%	13.58%
Small Cap					
Gross	(0.79%)	(8.38%)	7.85%	8.55%	-
Net	(0.82%)	(8.48%)	7.71%	8.30%	-
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	12.91%
Parametric Clifton Small Cap - Gross	(1.95%)	(8.08%)	8.47%	9.06%	-
Parametric Clifton Small Cap - Net	(1.95%)	(8.08%)	8.44%	8.82%	-
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	12.91%
PIMCO RAE - Gross	0.40%	(8.69%)	7.09%	7.74%	-
PIMCO RAE - Net	0.34%	(8.90%)	6.83%	7.46%	-
Russell 2000 Index	(2.40%)	(8.89%)	8.23%	8.19%	12.91%
International Equity					
Gross	(0.96%)	(3.60%)	6.82%	4.50%	-
Net	(1.03%)	(3.89%)	6.49%	4.19%	-
Benchmark(1)	(0.93%)	(0.95%)	6.49%	3.25%	7.03%
DFA Intl Small Cap Value	(0.55%)	(11.17%)	2.61%	2.75%	-
World ex US SC Va	0.25%	(5.89%)	4.83%	3.82%	7.71%
LSV Intl Value - Gross	(0.60%)	(6.59%)	5.38%	3.20%	-
LSV Intl Value - Net	(0.70%)	(6.95%)	4.98%	2.80%	-
MSCI EAFE Index	(1.07%)	(1.34%)	6.48%	3.27%	7.05%
Vanguard Intl Explorer Fund	(2.72%)	(11.61%)	3.78%	3.72%	-
BMI, EPAC, <$2 B	(1.85%)	(11.18%)	3.05%	4.17%	7.45%
William Blair - Gross	(1.03%)	3.02%	9.76%	-	-
William Blair - Net	(1.12%)	2.64%	9.35%	-	-
MSCI ACWI ex US IMI	(1.72%)	(1.84%)	6.10%	3.05%	6.27%

(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 September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 8 Years
Domestic Fixed Income					
Gross	2.55%	11.13%	4.88%	4.98%	-
Net	2.52%	11.01%	4.77%	4.86%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.02%
Ares ND Credit Strategies Fd - Net	0.00%	8.03%	-	-	-
Cerberus ND Private Credit Fd - Net	1.35%	8.49%	-	-	-
S&P/LSTA Leveraged Loan B	0.98%	3.22%	4.68%	4.14%	5.31%
BND CDs - Net	0.88%	3.62%	-	-	-
Declaration Total Return - Net	1.98%	8.14%	4.86%	4.45%	-
Libor-3 Month	0.55%	2.56%	1.90%	1.31%	0.95%
PIMCO Bravo II - Net(1)	(0.00%)	3.10%	7.41%	7.91%	-
PIMCO DiSCO II - Net (1)	0.82%	4.99%	9.71%	8.10%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.02%
Prudential - Gross	2.81%	12.26%	4.85%	5.27%	-
Prudential - Net	2.77%	12.05%	4.60%	5.01%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.02%
Wells Capital - Gross	3.25%	13.60%	5.83%	5.62%	-
Wells Capital - Net	3.20%	13.41%	5.66%	5.45%	-
Blmbg Credit Baa	3.26%	13.49%	5.12%	4.89%	5.38%
Western Asset - Gross	2.85%	11.97%	4.40%	4.74%	-
Western Asset - Net	2.82%	11.84%	4.27%	4.60%	-
Blmbg Aggregate	2.27%	10.30%	2.92%	3.38%	3.02%
SSgA US Govt Credit Bd Idx - Gross	2.65%	11.40%	3.19%	3.63%	-
SSgA US Govt Credit Bd Idx - Net	2.64%	11.37%	3.16%	3.60%	-
Blmbg Govt/Credit Bd	2.64%	11.32%	3.16%	3.61%	3.21%

(1) Prior to 7/1/2019, the Legacy Fund participated in these portfolios via the Insurance Pool. Beginning 7/1/2019, its portion of the pool was segregated into its own portfolios. Returns prior to that date reflect the data from the Insurance pool.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 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 September 30, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 8 Years
Global Real Assets					
Gross	0.80%	6.74%	-	-	-
Net	0.80%	6.40%	-	-	-
Weighted Benchmark	1.36%	6.40%	-	-	-
Real Estate					
Gross	(0.00%)	5.57%	7.10%	9.43%	-
Net	0.02%	4.99%	6.52%	8.78%	-
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.50%
Invesco Core Real Estate - Gross	(0.00%)	7.05%	7.35%	9.44%	-
Invesco Core Real Estate - Net	(0.00%)	6.69%	7.02%	9.09%	-
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.50%
JP Morgan RE Inc & Growth - Gross	0.00%	4.17%	6.85%	9.42%	-
JP Morgan RE Inc & Growth - Net	0.04%	3.40%	6.05%	8.47%	-
NCREIF Total Index	1.41%	6.24%	6.76%	8.57%	9.50%
Diversified					
Gross	1.20%	7.24%	3.66%	3.42%	-
Net	1.18%	7.01%	3.43%	3.19%	-
Weighted Benchmark	1.32%	6.47%	2.49%	2.21%	-
Western Asset TIPS - Gross	1.88%	7.32%	1.96%	2.22%	-
Western Asset TIPS - Net	1.85%	7.20%	1.83%	2.09%	-
Benchmark(3)	1.48%	7.92%	2.37%	2.25%	2.73%
JP Morgan Infrastructure - Gross	0.40%	6.19%	8.51%	-	-
JP Morgan Infrastructure - Net	0.43%	5.50%	7.82%	-	-
Grosvenor Cust. Infrastructure - Net	(0.38%)	15.94%	9.27%	-	-
Benchmark(1)	0.97%	3.44%	3.13%	1.98%	1.81%
Macquarie Infras. Partners IV - Net	(1.05%)	-	-	-	-
ISQ Global Infrastructure II - Net	(1.45%)	(4.75%)	-	-	-
Benchmark(2)	0.97%	3.44%	-	-	-
Cash & Equivalents - Net	**0.53%**	**2.23%**	**1.43%**	**0.89%**	**0.60%**
NT Cash Account - Net	0.50%	-	-	-	-
Bank of ND - Net	0.54%	-	-	-	-
90 Day Treasury Bills	0.56%	2.39%	1.54%	0.98%	0.64%
Total Fund					
Gross	1.05%	3.99%	7.25%	6.54%	4.99%
Net	1.01%	3.79%	7.04%	6.32%	4.81%
Target*	0.97%	4.86%	6.67%	5.69%	4.12%

* 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) CPI-W through 6/30/2018; 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.
(3) Blmbg Global Inflation-Linked through 10/31/2018 and Blmbg US Govt Inflation Linked Bond Index thereafter.

Domestic Equity
Period Ended September 30, 2019

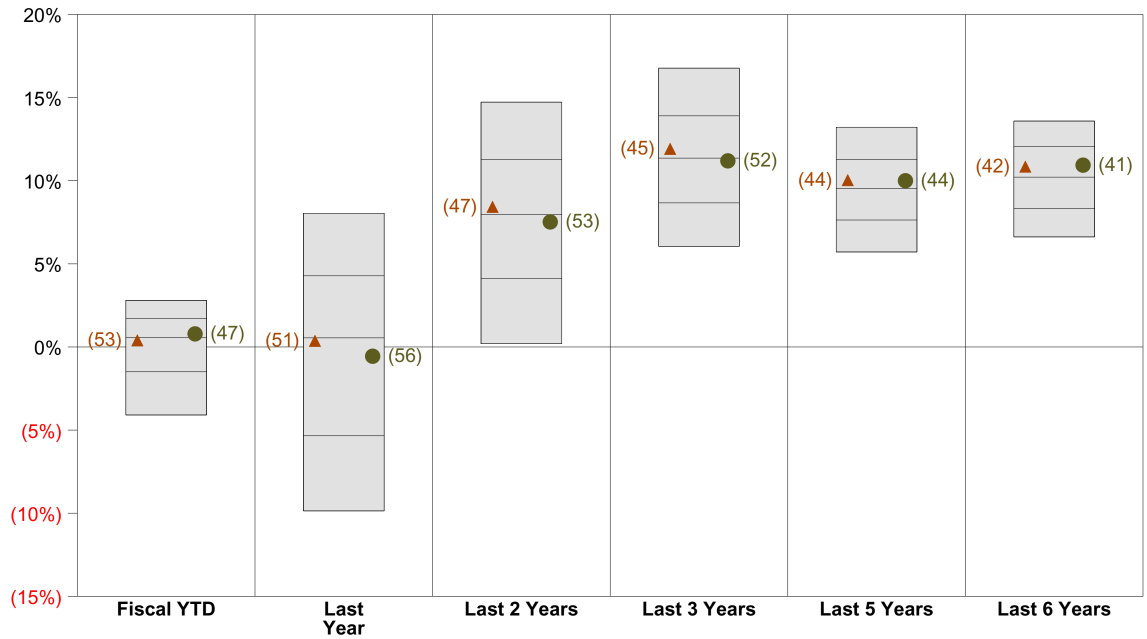
Quarterly Summary and Highlights

- Domestic Equity's portfolio posted a 0.79% return for the quarter placing it in the 47 percentile of the Total Domestic Equity Database group for the quarter and in the 56 percentile for the last year.
- Domestic Equity's portfolio outperformed the Domestic Equity Target by 0.39% for the quarter and underperformed the Domestic Equity Target for the year by 0.93%.

Quarterly Asset Growth

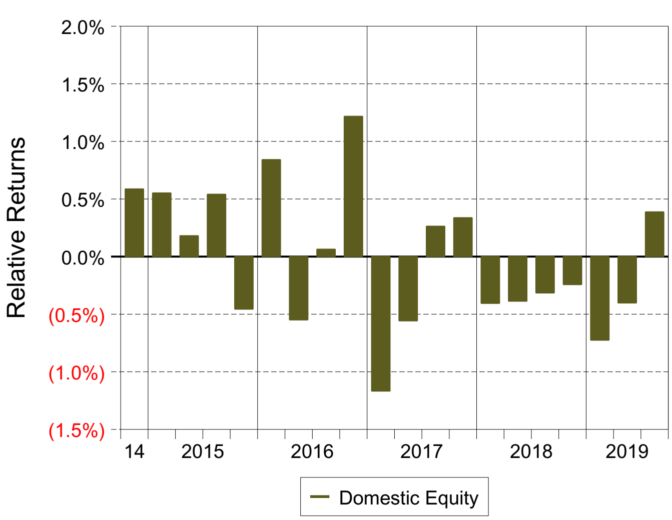
Beginning Market Value	$1,938,117,087
Net New Investment	$-71,755,295
Investment Gains/(Losses)	$15,833,279
Ending Market Value	$1,882,195,071

Performance vs Total Domestic Equity Database (Gross)

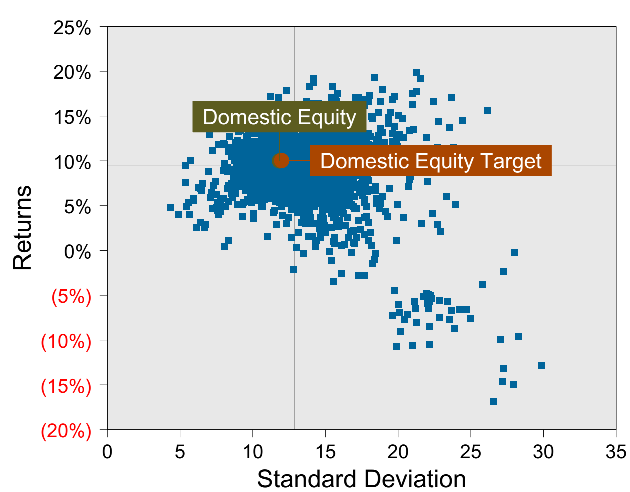


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	2.80	8.04	14.73	16.78	13.22	13.59
25th Percentile	1.71	4.28	11.29	13.90	11.28	12.07
Median	0.58	0.55	7.97	11.36	9.53	10.22
75th Percentile	(1.49)	(5.34)	4.12	8.67	7.64	8.32
90th Percentile	(4.09)	(9.86)	0.20	6.06	5.71	6.62
Domestic Equity ●	0.79	(0.56)	7.52	11.20	10.00	10.94
Domestic Equity Target ▲	0.40	0.37	8.43	11.92	10.04	10.85

Relative Return vs Domestic Equity Target



Total Domestic Equity Database (Gross) Annualized Five Year Risk vs Return



Parametric Clifton Large Cap
Period Ended September 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.

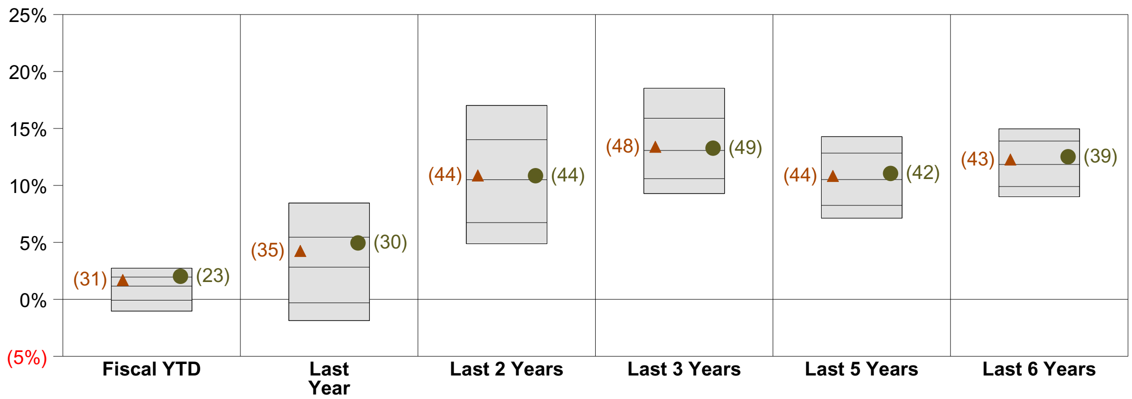
Quarterly Summary and Highlights

- Parametric Clifton Large Cap's portfolio posted a 2.02% return for the quarter placing it in the 23 percentile of the Callan Large Capitalization group for the quarter and in the 30 percentile for the last year.
- Parametric Clifton Large Cap's portfolio outperformed the S&P 500 Index by 0.32% for the quarter and outperformed the S&P 500 Index for the year by 0.70%.

Quarterly Asset Growth

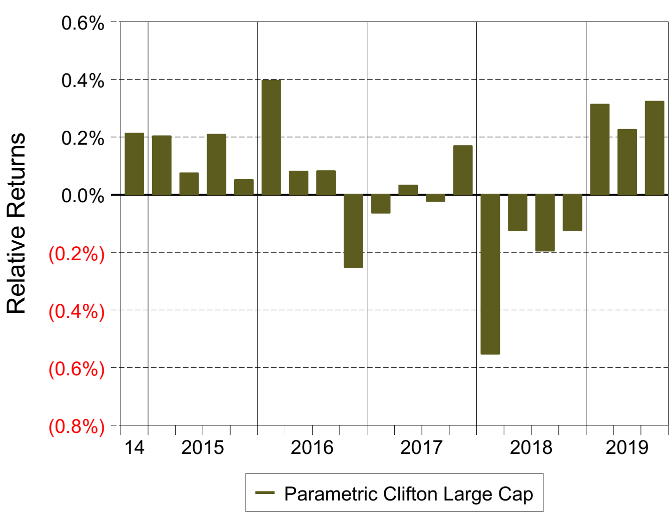
Beginning Market Value	$291,471,887
Net New Investment	$-11,000,000
Investment Gains/(Losses)	$5,837,576
Ending Market Value	$286,309,462

Performance vs Callan Large Capitalization (Gross)

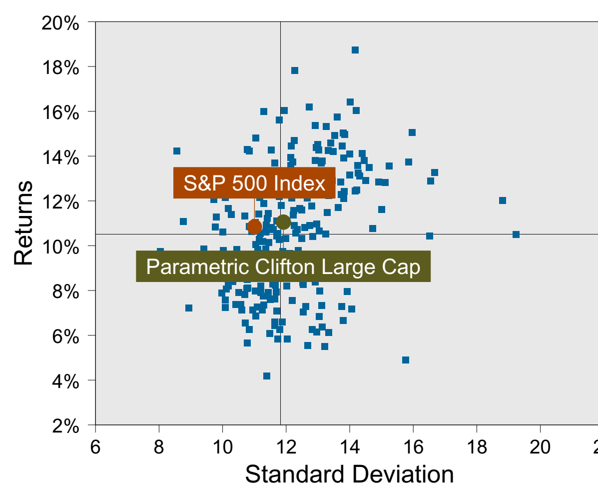


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	2.73	8.46	17.02	18.53	14.28	14.97
25th Percentile	1.95	5.46	14.01	15.90	12.84	13.90
Median	1.16	2.83	10.50	13.07	10.51	11.84
75th Percentile	(0.08)	(0.31)	6.73	10.59	8.25	9.90
90th Percentile	(1.03)	(1.87)	4.88	9.28	7.12	9.00
Parametric Clifton Large Cap ●	2.02	4.95	10.85	13.27	11.05	12.52
S&P 500 Index ▲	1.70	4.25	10.87	13.39	10.84	12.27

Relative Return vs S&P 500 Index



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



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.

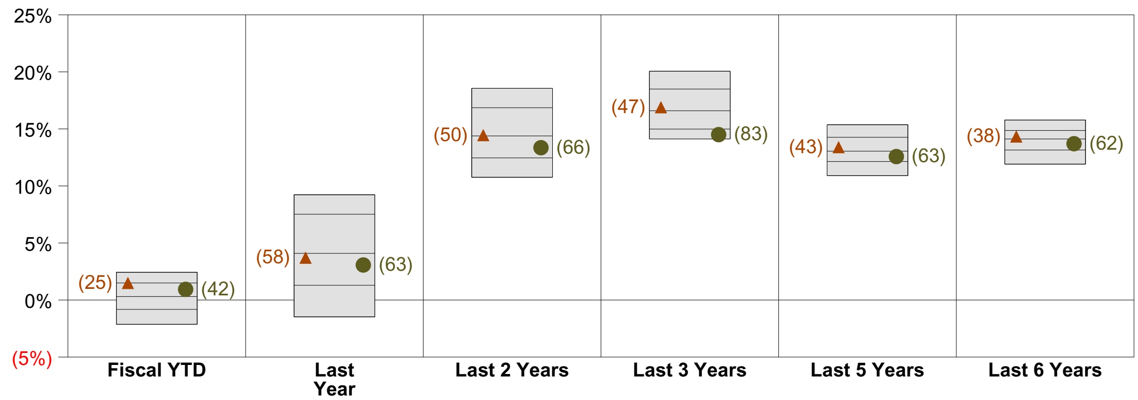
Quarterly Summary and Highlights

- L.A. Capital Large Cap Growth's portfolio posted a 0.93% return for the quarter placing it in the 42 percentile of the Callan Large Cap Growth group for the quarter and in the 63 percentile for the last year.
- L.A. Capital Large Cap Growth's portfolio underperformed the Russell 1000 Growth Index by 0.55% for the quarter and underperformed the Russell 1000 Growth Index for the year by 0.64%.

Quarterly Asset Growth

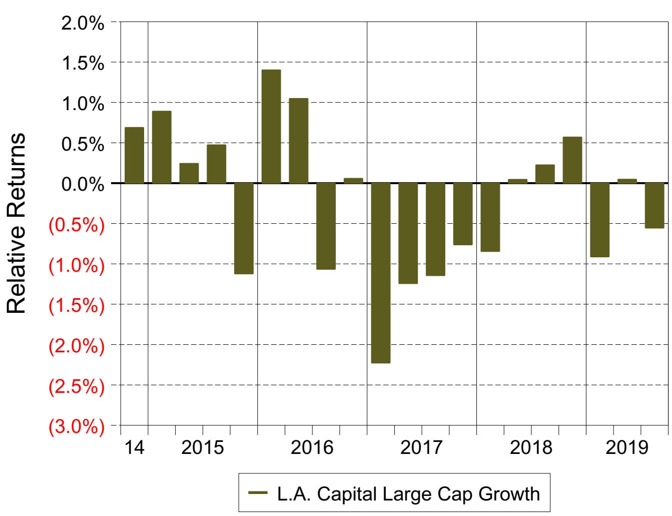
Beginning Market Value	$447,984,666
Net New Investment	$-41,225,297
Investment Gains/(Losses)	$4,900,779
Ending Market Value	$411,660,149

Performance vs Callan Large Cap Growth (Gross)

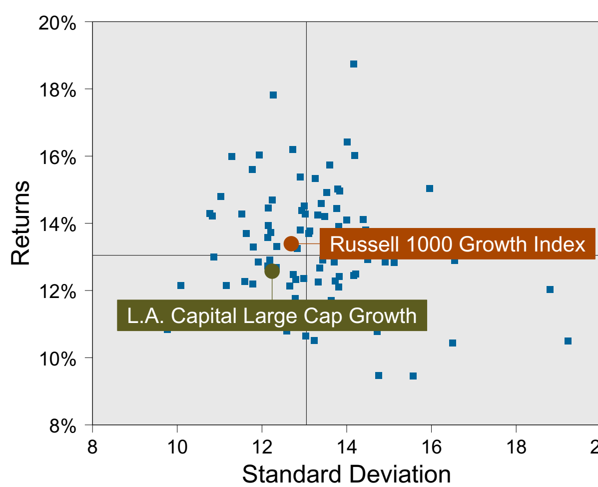


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	2.43	9.23	18.56	20.06	15.37	15.78
25th Percentile	1.50	7.52	16.86	18.49	14.27	14.86
Median	0.30	4.09	14.38	16.59	13.05	14.12
75th Percentile	(0.82)	1.29	12.46	14.99	12.14	13.15
90th Percentile	(2.13)	(1.47)	10.76	14.12	10.91	11.91
L.A. Capital Large Cap Growth ●	0.93	3.07	13.35	14.50	12.57	13.70
Russell 1000 Growth Index ▲	1.49	3.71	14.45	16.89	13.39	14.33

Relative Return vs Russell 1000 Growth Index



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



L.A. Capital Enhanced
Period Ended September 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.

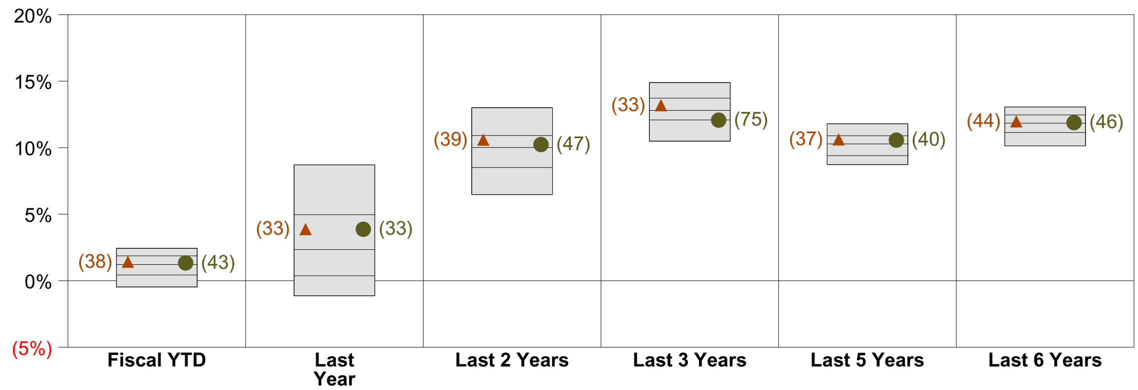
Quarterly Summary and Highlights

- L.A. Capital Enhanced's portfolio posted a 1.34% return for the quarter placing it in the 43 percentile of the Callan Large Cap Core group for the quarter and in the 33 percentile for the last year.
- L.A. Capital Enhanced's portfolio underperformed the Russell 1000 Index by 0.08% for the quarter and underperformed the Russell 1000 Index for the year by 0.01%.

Quarterly Asset Growth

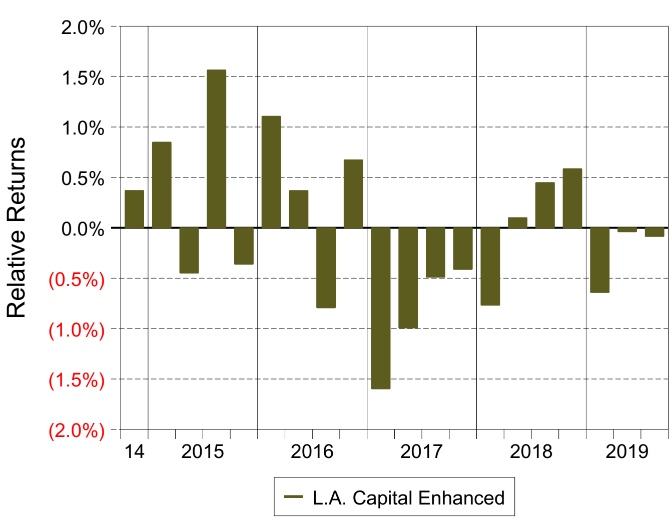
Beginning Market Value	$289,714,464
Net New Investment	$-19,091,331
Investment Gains/(Losses)	$3,960,606
Ending Market Value	$274,583,739

Performance vs Callan Large Cap Core (Gross)

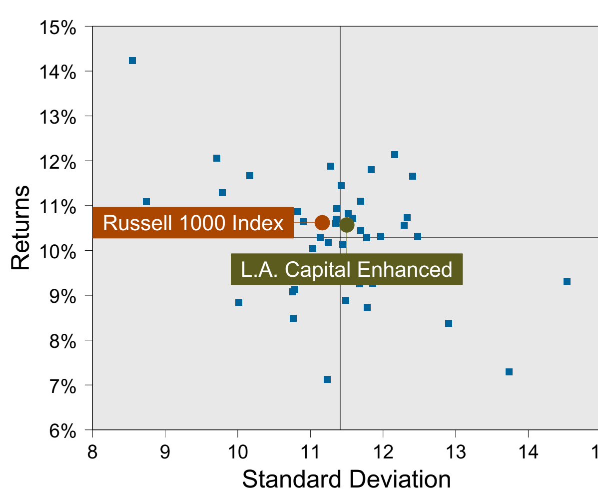


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	2.44	8.71	13.01	14.90	11.80	13.06
25th Percentile	1.87	4.96	10.91	13.73	10.90	12.46
Median	1.21	2.34	10.01	12.80	10.28	11.84
75th Percentile	0.43	0.37	8.51	12.08	9.40	11.14
90th Percentile	(0.47)	(1.13)	6.47	10.49	8.73	10.13
L.A. Capital Enhanced ●	1.34	3.87	10.24	12.07	10.57	11.88
Russell 1000 Index ▲	1.42	3.87	10.60	13.19	10.62	11.98

Relative Return vs Russell 1000 Index



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



LSV Asset Management
Period Ended September 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.

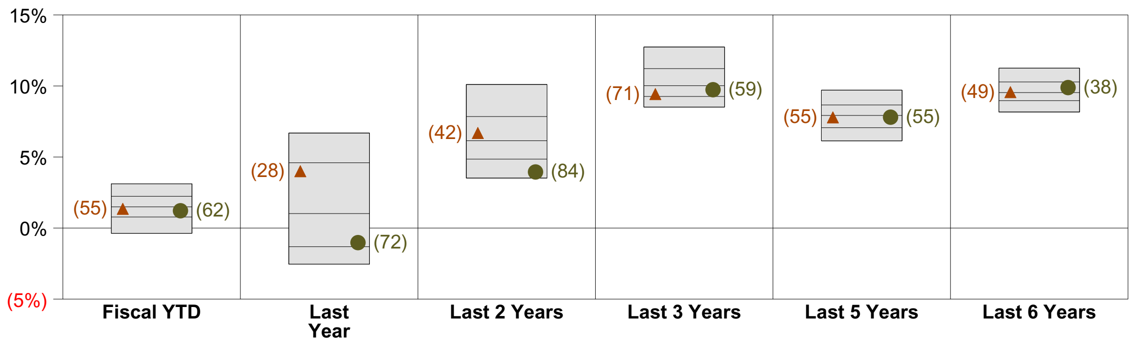
Quarterly Summary and Highlights

- LSV Large Cap Value's portfolio posted a 1.22% return for the quarter placing it in the 62 percentile of the Callan Large Cap Value group for the quarter and in the 72 percentile for the last year.
- LSV Large Cap Value's portfolio underperformed the Russell 1000 Value Index by 0.14% for the quarter and underperformed the Russell 1000 Value Index for the year by 5.03%.

Quarterly Asset Growth

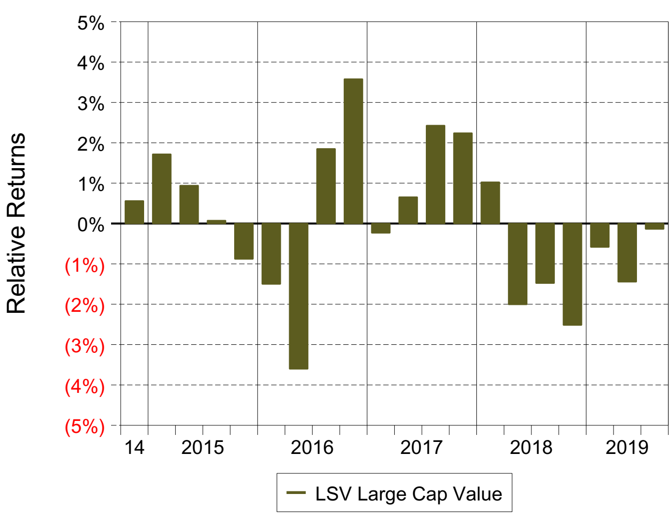
Beginning Market Value	$413,250,100
Net New Investment	$-4,294,493
Investment Gains/(Losses)	$5,017,079
Ending Market Value	$413,972,686

Performance vs Callan Large Cap Value (Gross)

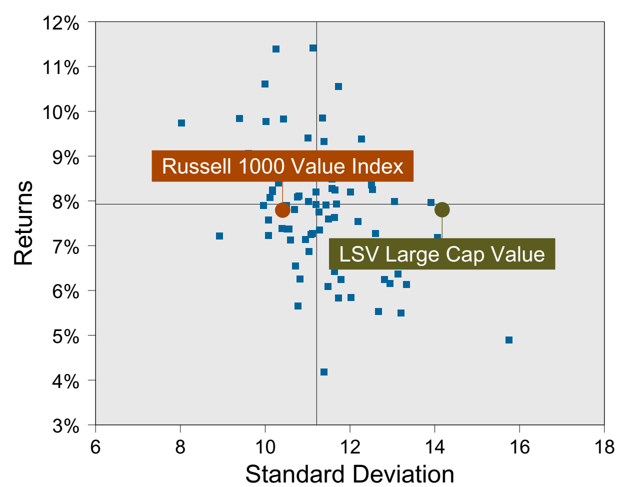


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	3.11	6.69	10.11	12.74	9.71	11.26
25th Percentile	2.23	4.60	7.85	11.22	8.66	10.28
Median	1.49	1.02	6.15	10.02	7.93	9.53
75th Percentile	0.78	(1.31)	4.85	9.26	7.06	8.97
90th Percentile	(0.37)	(2.54)	3.52	8.51	6.14	8.17
LSV Large Cap Value ●	1.22	(1.02)	3.95	9.74	7.80	9.89
Russell 1000 Value Index ▲	1.36	4.00	6.69	9.43	7.79	9.57

Relative Return vs Russell 1000 Value Index



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



Parametric Clifton Small Cap
Period Ended September 30, 2019

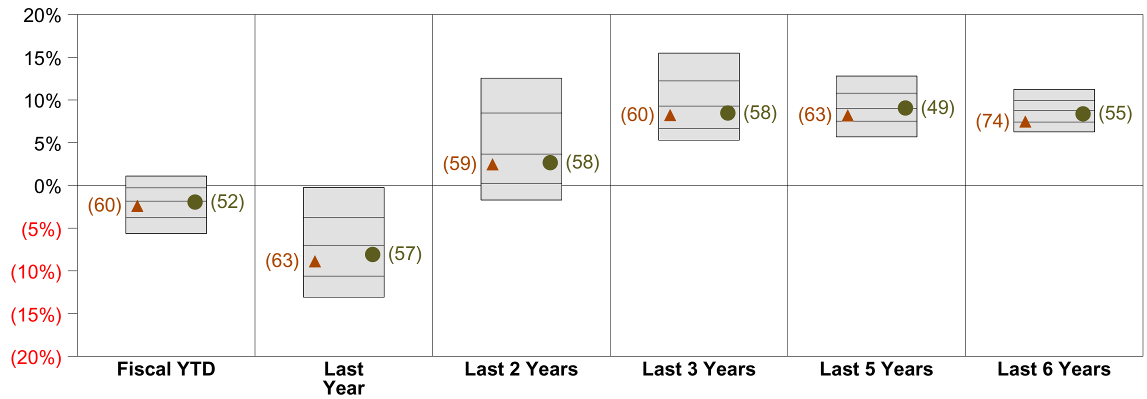
Investment Philosophy
Parametric Clifton utilizes equity futures to gain benchmark exposure in constructing the portfolio it believes provides the greatest likelihood of outperforming the index. In this construction the underlying cash portfolio is invested in a liquid, high quality short duration fixed 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 (1.95)% return for the quarter placing it in the 52 percentile of the Callan Small Capitalization group for the quarter and in the 57 percentile for the last year.
- Parametric Clifton Small Cap's portfolio outperformed the Russell 2000 Index by 0.45% for the quarter and outperformed the Russell 2000 Index for the year by 0.80%.

Quarterly Asset Growth

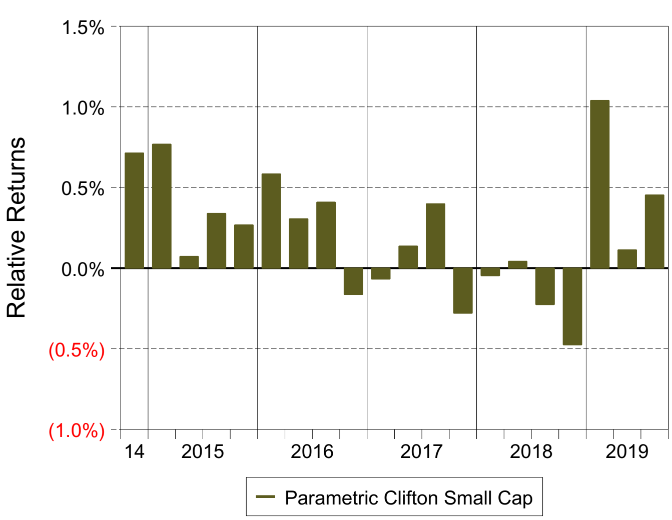
Beginning Market Value	$253,529,445
Net New Investment	$-2,000,000
Investment Gains/(Losses)	$-4,825,851
Ending Market Value	$246,703,594

Performance vs Callan Small Capitalization (Gross)

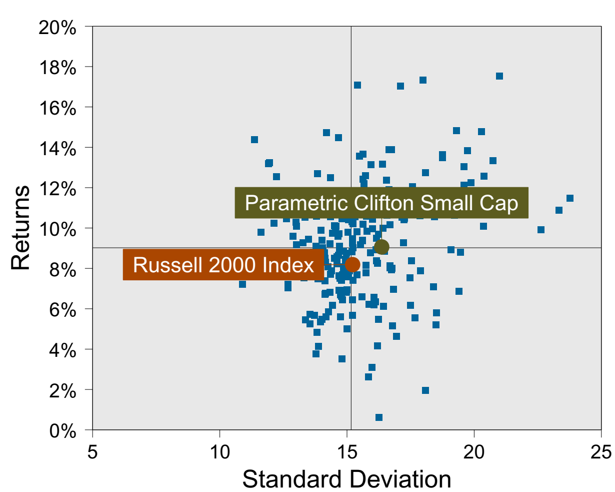


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	11.24
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	9.93
Median	(1.84)	(7.07)	3.67	9.29	9.02	8.78
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	7.42
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	6.27
Parametric Clifton Small Cap ●	(1.95)	(8.08)	2.66	8.47	9.06	8.37
Russell 2000 Index ▲	(2.40)	(8.89)	2.47	8.23	8.19	7.47

Relative Return vs Russell 2000 Index



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



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.

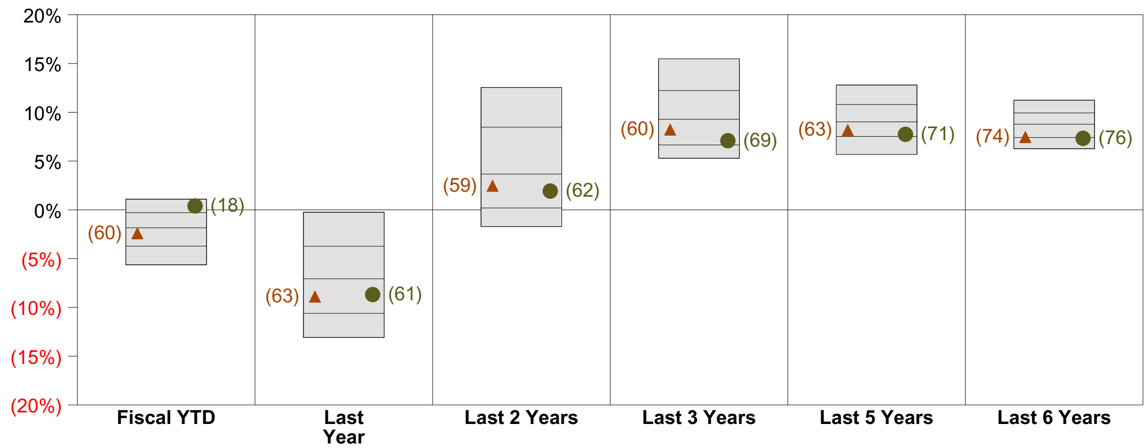
Quarterly Summary and Highlights

- PIMCO RAE's portfolio posted a 0.40% return for the quarter placing it in the 18 percentile of the Callan Small Capitalization group for the quarter and in the 61 percentile for the last year.
- PIMCO RAE's portfolio outperformed the Russell 2000 Index by 2.80% for the quarter and outperformed the Russell 2000 Index for the year by 0.20%.

Quarterly Asset Growth

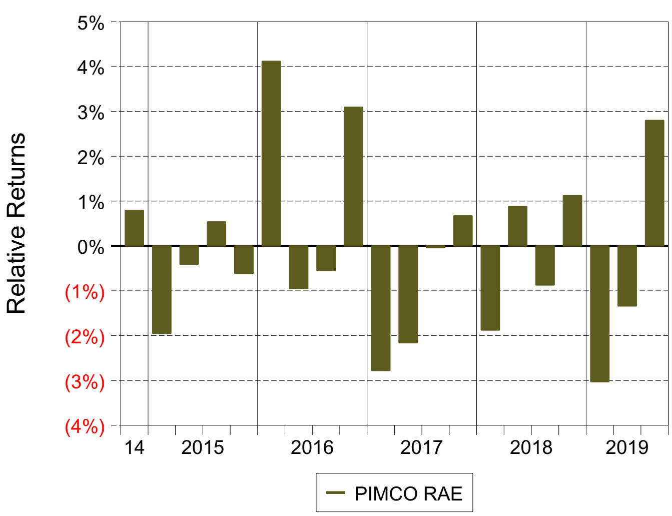
Beginning Market Value	$242,166,525
Net New Investment	$5,855,826
Investment Gains/(Losses)	$943,090
Ending Market Value	$248,965,441

Performance vs Callan Small Capitalization (Gross)

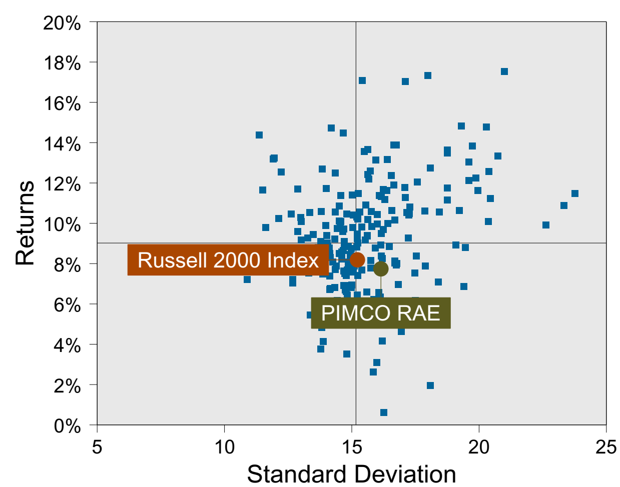


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	1.10	(0.24)	12.55	15.48	12.80	11.24
25th Percentile	(0.29)	(3.74)	8.47	12.23	10.80	9.93
Median	(1.84)	(7.07)	3.67	9.29	9.02	8.78
75th Percentile	(3.72)	(10.61)	0.19	6.65	7.52	7.42
90th Percentile	(5.63)	(13.09)	(1.71)	5.29	5.68	6.27
PIMCO RAE ●	0.40	(8.69)	1.93	7.09	7.74	7.33
Russell 2000 Index ▲	(2.40)	(8.89)	2.47	8.23	8.19	7.47

Relative Return vs Russell 2000 Index



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



International Equity
Period Ended September 30, 2019

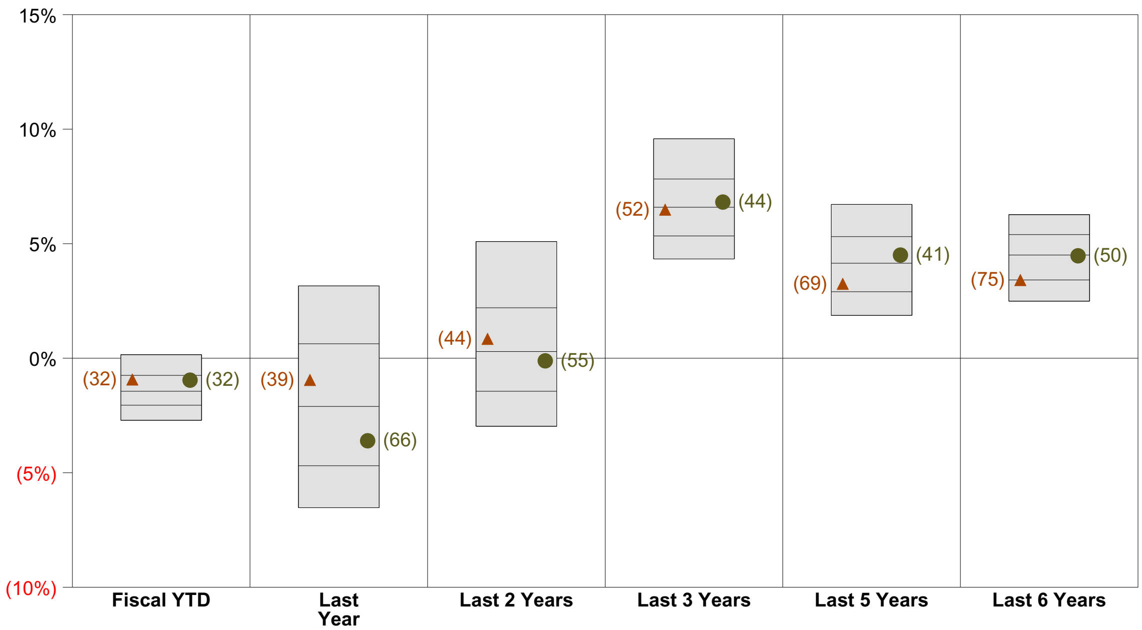
Quarterly Summary and Highlights

- International Equity's portfolio posted a (0.96)% return for the quarter placing it in the 32 percentile of the Callan Non-US Equity group for the quarter and in the 66 percentile for the last year.
- International Equity's portfolio underperformed the International Equity Target by 0.03% for the quarter and underperformed the International Equity Target for the year by 2.66%.

Quarterly Asset Growth

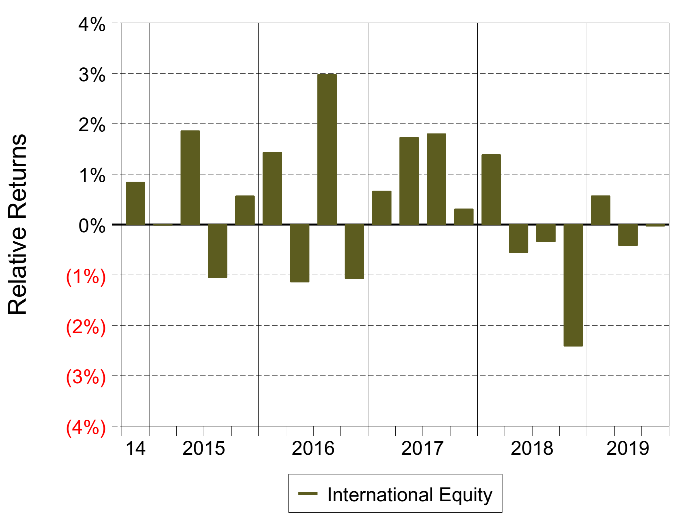
Beginning Market Value	$1,272,823,220
Net New Investment	$4,041,198
Investment Gains/(Losses)	$-11,665,000
Ending Market Value	$1,265,199,418

Performance vs Callan Non-US Equity (Gross)

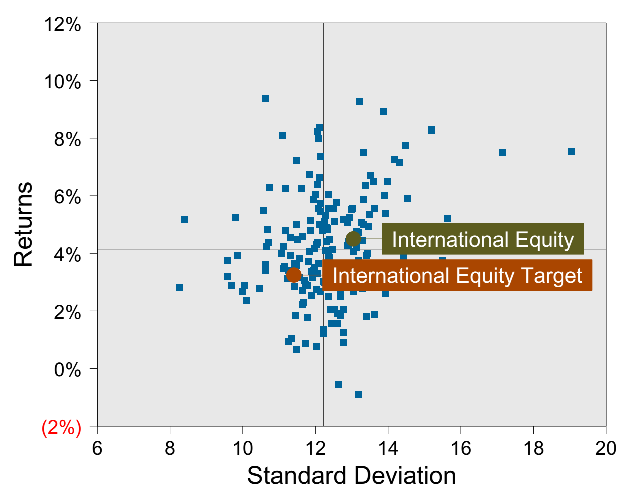


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	0.15	3.16	5.09	9.58	6.72	6.27
25th Percentile	(0.75)	0.63	2.20	7.82	5.31	5.40
Median	(1.44)	(2.10)	0.29	6.59	4.15	4.50
75th Percentile	(2.05)	(4.70)	(1.44)	5.34	2.90	3.42
90th Percentile	(2.71)	(6.52)	(2.97)	4.33	1.87	2.49
International Equity ●	(0.96)	(3.60)	(0.11)	6.82	4.50	4.47
International Equity Target ▲	(0.93)	(0.95)	0.84	6.49	3.25	3.41

Relative Return vs International Equity Target



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



DFA Intl Small Cap Value
Period Ended September 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.

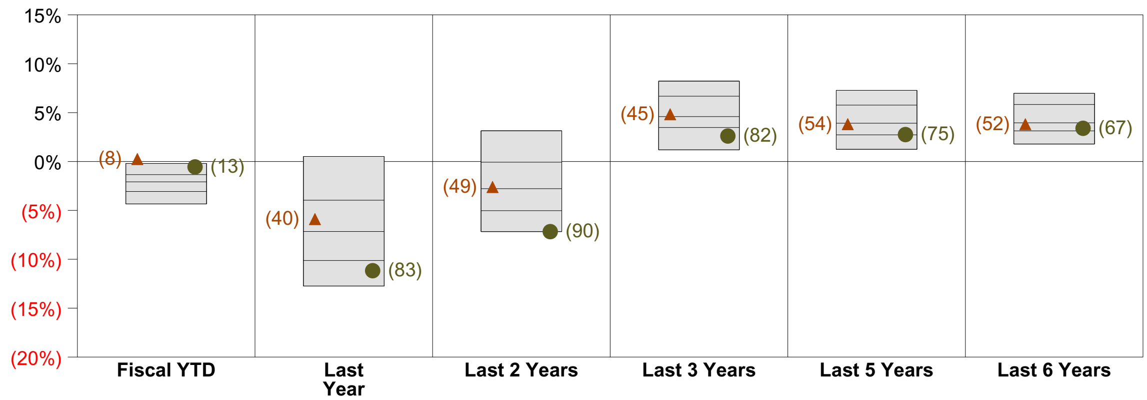
Quarterly Summary and Highlights

- DFA Intl Small Cap Value's portfolio posted a (0.55)% return for the quarter placing it in the 13 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 83 percentile for the last year.
- DFA Intl Small Cap Value's portfolio underperformed the World ex US SC Value by 0.81% for the quarter and underperformed the World ex US SC Value for the year by 5.28%.

Quarterly Asset Growth

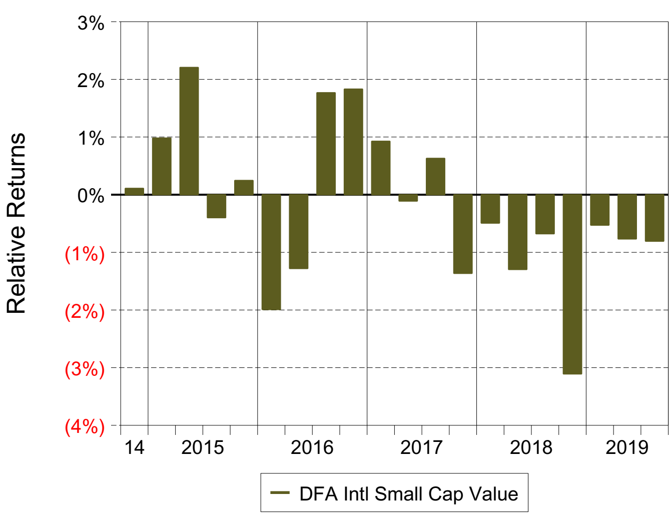
Beginning Market Value	$116,598,229
Net New Investment	$15,000,000
Investment Gains/(Losses)	$-94,504
Ending Market Value	$131,503,725

Performance vs Callan International Small Cap Mut Funds (Net)

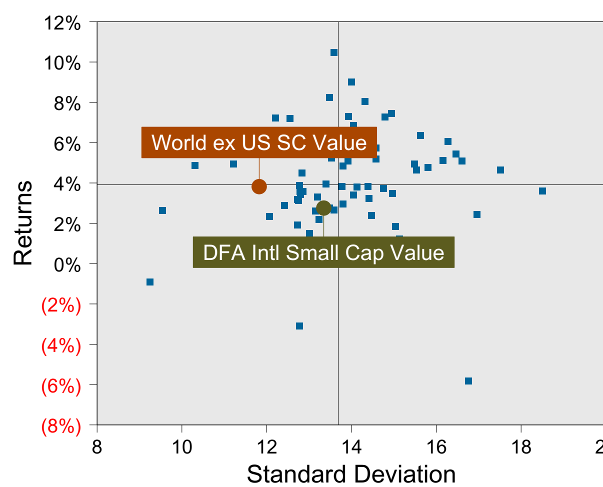


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	(0.20)	0.52	3.15	8.23	7.28	6.98
25th Percentile	(1.34)	(3.96)	(0.07)	6.68	5.77	5.83
Median	(2.08)	(7.16)	(2.78)	4.60	3.92	3.95
75th Percentile	(3.07)	(10.12)	(5.03)	3.48	2.73	3.13
90th Percentile	(4.34)	(12.74)	(7.17)	1.19	1.25	1.79
DFA Intl Small Cap Value ●	(0.55)	(11.17)	(7.17)	2.61	2.75	3.40
World ex US SC Value ▲	0.25	(5.89)	(2.61)	4.83	3.82	3.81

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 September 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.

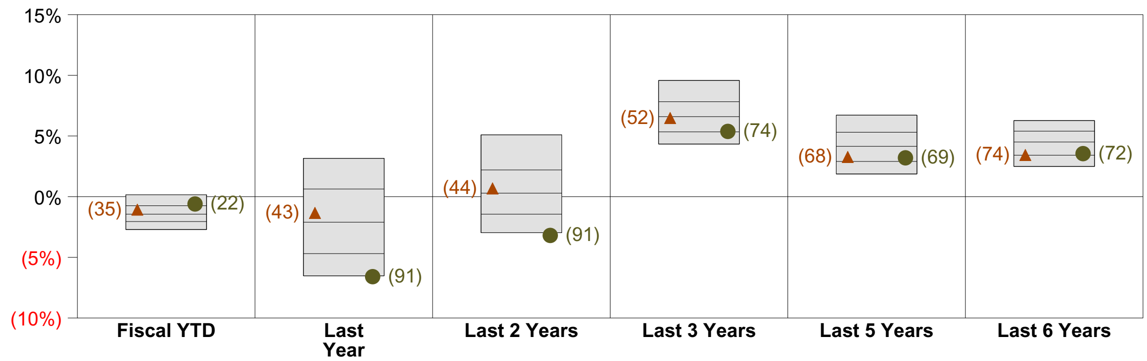
Quarterly Summary and Highlights

- LSV Intl Value's portfolio posted a (0.60)% return for the quarter placing it in the 22 percentile of the Callan Non-US Equity group for the quarter and in the 91 percentile for the last year.
- LSV Intl Value's portfolio outperformed the MSCI EAFE by 0.47% for the quarter and underperformed the MSCI EAFE for the year by 5.25%.

Quarterly Asset Growth

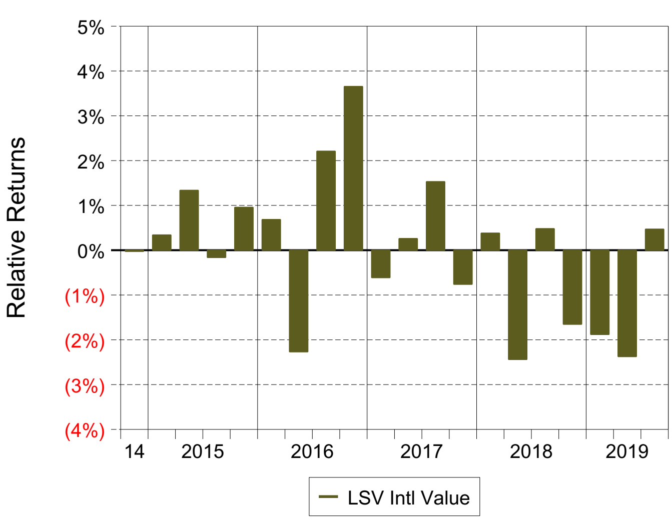
Beginning Market Value	$484,716,545
Net New Investment	$-468,303
Investment Gains/(Losses)	$-2,929,146
Ending Market Value	$481,319,096

Performance vs Callan Non-US Equity (Gross)

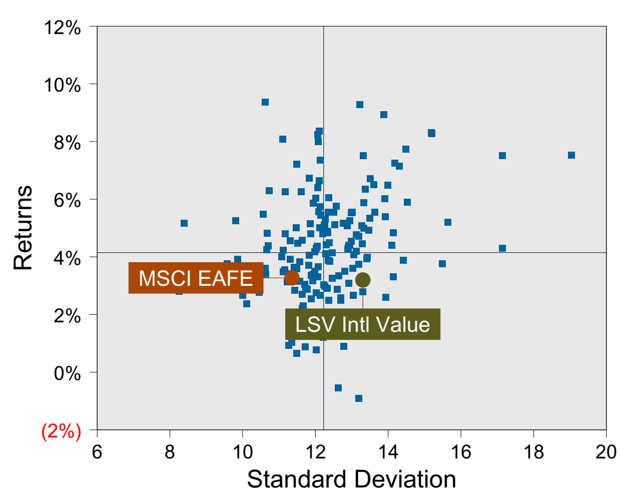


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	0.15	3.16	5.09	9.58	6.72	6.27
25th Percentile	(0.75)	0.63	2.20	7.82	5.31	5.40
Median	(1.44)	(2.10)	0.29	6.59	4.15	4.50
75th Percentile	(2.05)	(4.70)	(1.44)	5.34	2.90	3.42
90th Percentile	(2.71)	(6.52)	(2.97)	4.33	1.87	2.49
LSV Intl Value ●	(0.60)	(6.59)	(3.20)	5.38	3.20	3.55
MSCI EAFE ▲	(1.07)	(1.34)	0.68	6.48	3.27	3.43

Relative Return vs MSCI EAFE



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



Vanguard Intl Explorer Fund
Period Ended September 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.

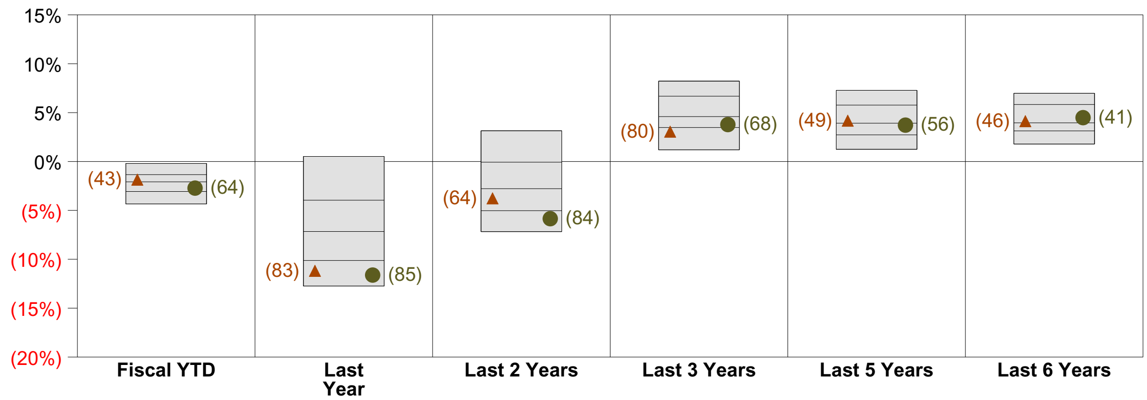
Quarterly Summary and Highlights

- Vanguard Intl Explorer Fund's portfolio posted a (2.72)% return for the quarter placing it in the 64 percentile of the Callan International Small Cap Mut Funds group for the quarter and in the 85 percentile for the last year.
- Vanguard Intl Explorer Fund's portfolio underperformed the S&P BMI EPAC <$2 B by 0.87% for the quarter and underperformed the S&P BMI EPAC <$2 B for the year by 0.43%.

Quarterly Asset Growth

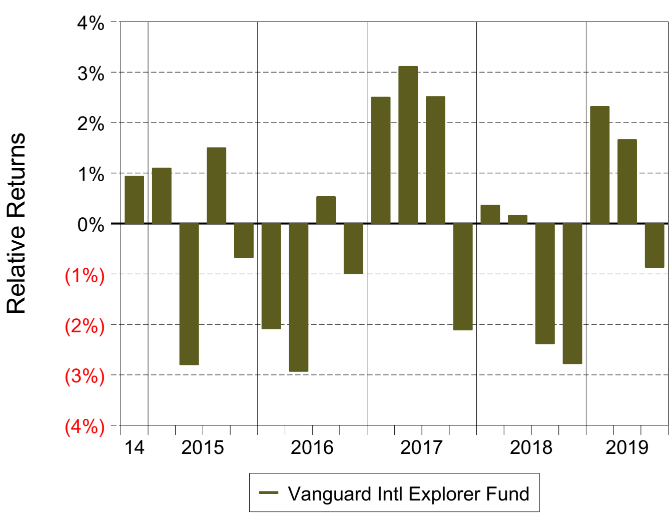
Beginning Market Value	$122,254,697
Net New Investment	$9,000,000
Investment Gains/(Losses)	$-3,310,957
Ending Market Value	$127,943,740

Performance vs Callan International Small Cap Mut Funds (Net)

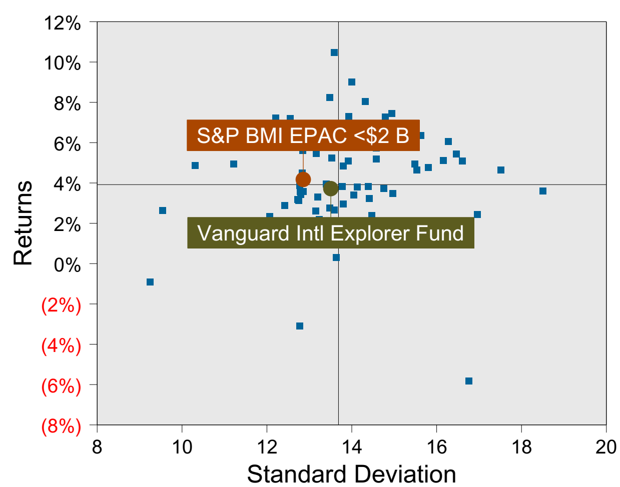


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	(0.20)	0.52	3.15	8.23	7.28	6.98
25th Percentile	(1.34)	(3.96)	(0.07)	6.68	5.77	5.83
Median	(2.08)	(7.16)	(2.78)	4.60	3.92	3.95
75th Percentile	(3.07)	(10.12)	(5.03)	3.48	2.73	3.13
90th Percentile	(4.34)	(12.74)	(7.17)	1.19	1.25	1.79
Vanguard Intl Explorer Fund ●	(2.72)	(11.61)	(5.85)	3.78	3.72	4.49
S&P BMI EPAC <$2 B ▲	(1.85)	(11.18)	(3.77)	3.05	4.17	4.13

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 September 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.

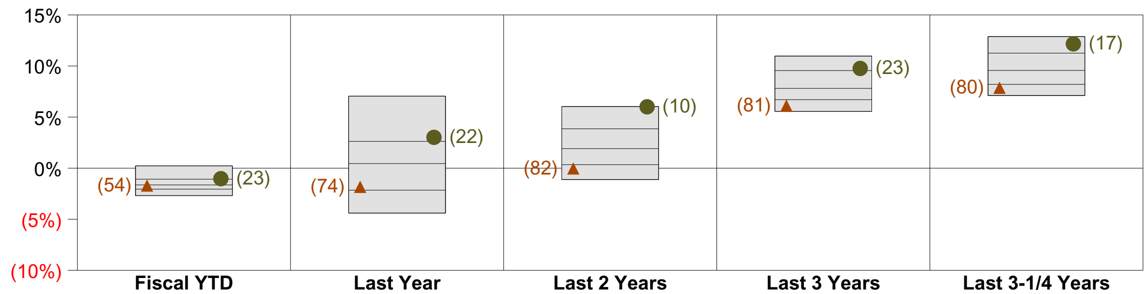
Quarterly Summary and Highlights

- William Blair's portfolio posted a (1.03)% return for the quarter placing it in the 23 percentile of the Callan Non-US All Country Growth Equity group for the quarter and in the 22 percentile for the last year.
- William Blair's portfolio outperformed the MSCI ACWI ex US IMI by 0.69% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 4.86%.

Quarterly Asset Growth

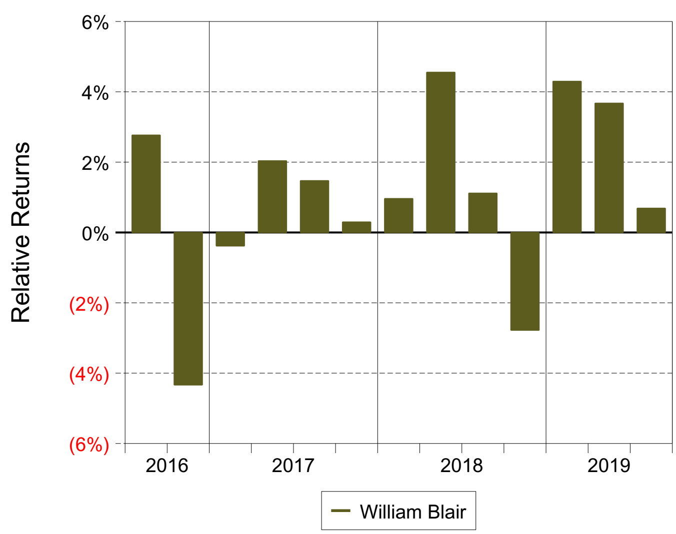
Beginning Market Value	$549,253,750
Net New Investment	$-19,490,499
Investment Gains/(Losses)	$-5,330,393
Ending Market Value	$524,432,857

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

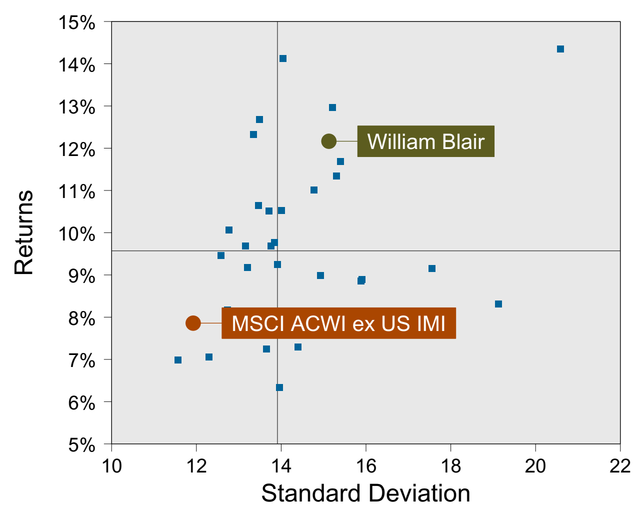


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 3-1/4 Years
10th Percentile	0.23	7.05	6.03	10.97	12.88
25th Percentile	(1.08)	2.62	3.85	9.55	11.26
Median	(1.64)	0.45	1.91	7.81	9.57
75th Percentile	(2.05)	(2.16)	0.34	6.70	8.21
90th Percentile	(2.69)	(4.40)	(1.12)	5.56	7.11
William Blair ●	(1.03)	3.02	6.00	9.76	12.16
MSCI ACWI ex US IMI ▲	(1.72)	(1.84)	(0.04)	6.10	7.86

Relative Return vs MSCI ACWI ex US IMI



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



Domestic Fixed Income
Period Ended September 30, 2019

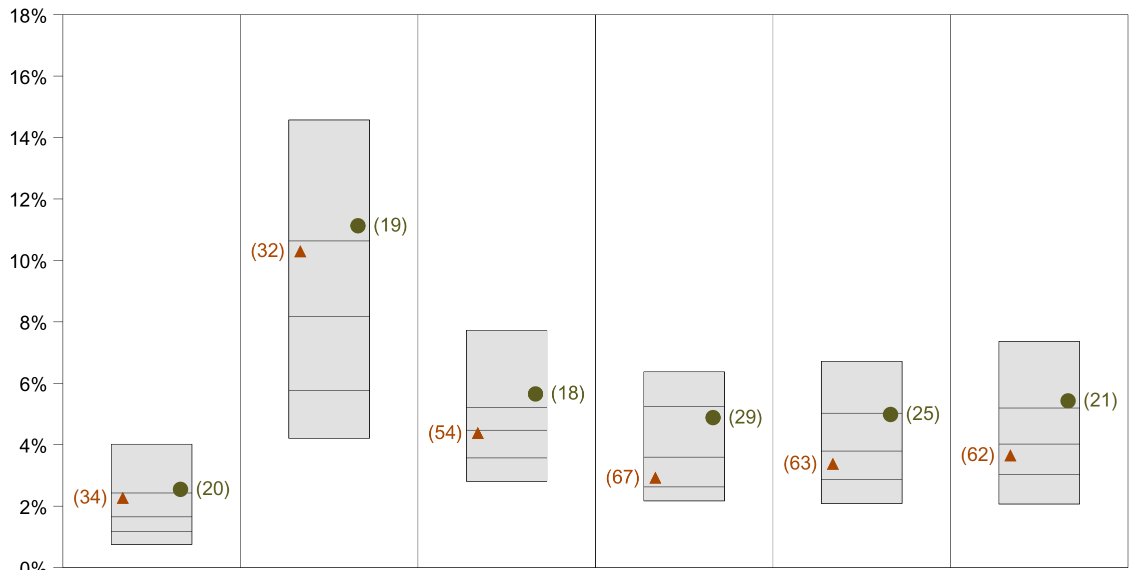
Quarterly Summary and Highlights

- Domestic Fixed Income's portfolio posted a 2.55% return for the quarter placing it in the 20 percentile of the Total Domestic Fixed-Inc Database group for the quarter and in the 19 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 0.83%.

Quarterly Asset Growth

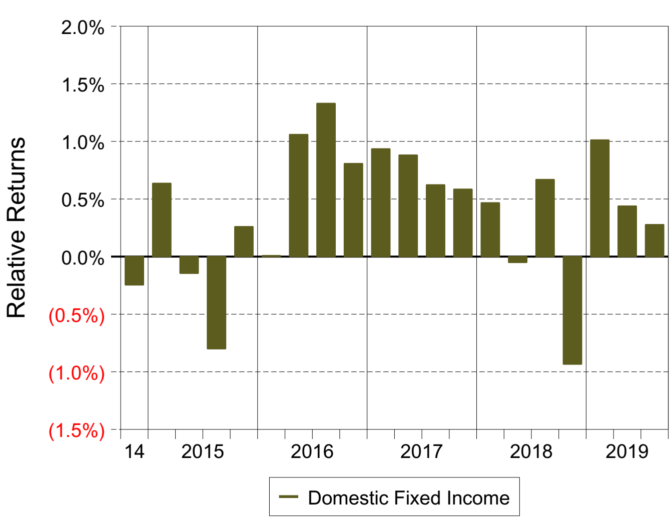
Beginning Market Value	$2,181,597,582
Net New Investment	$-1,239,160
Investment Gains/(Losses)	$54,694,338
Ending Market Value	$2,235,052,761

Performance vs Total Domestic Fixed-Inc Database (Gross)

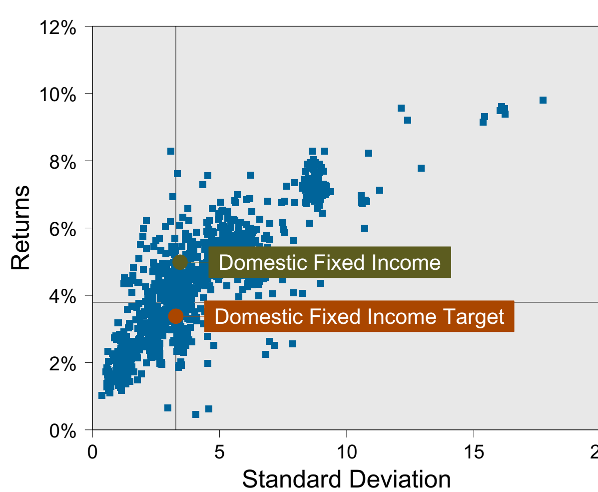


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	4.02	14.57	7.73	6.38	6.72	7.36
25th Percentile	2.43	10.63	5.21	5.25	5.03	5.19
Median	1.65	8.18	4.47	3.60	3.79	4.02
75th Percentile	1.17	5.77	3.57	2.63	2.87	3.03
90th Percentile	0.75	4.21	2.81	2.17	2.08	2.07
Domestic Fixed Income ●	2.55	11.13	5.65	4.88	4.98	5.43
Domestic Fixed Income Target ▲	2.27	10.30	4.38	2.92	3.38	3.65

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 September 30, 2019

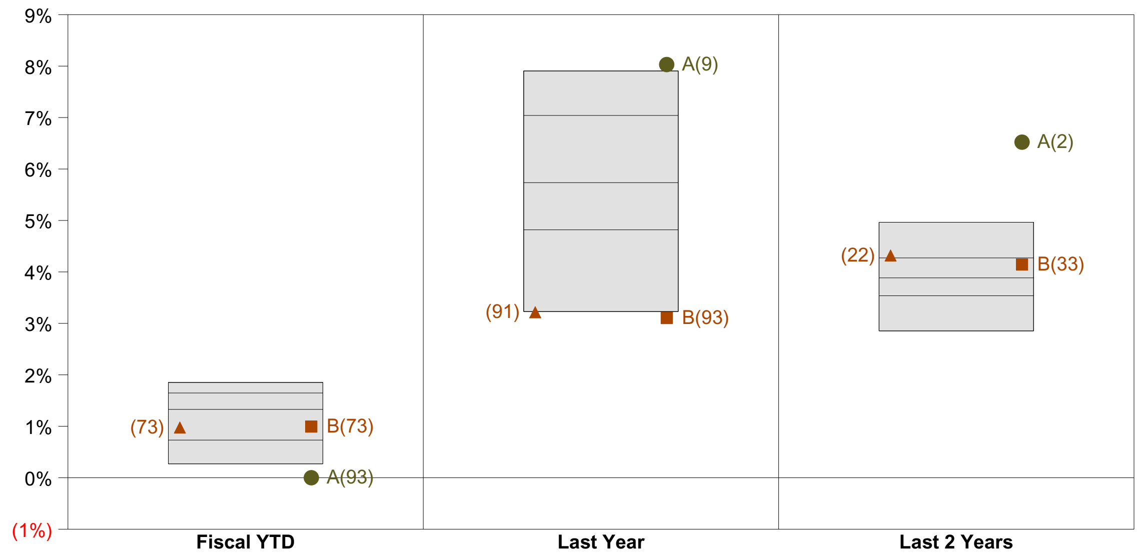
Quarterly Summary and Highlights

- Ares ND Credit Strategies Fd's portfolio posted a 0.00% return for the quarter placing it in the 93 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 9 percentile for the last year.
- Ares ND Credit Strategies Fd's portfolio underperformed the S&P/LSTA Leveraged Loan B Index by 0.98% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 4.81%.

Quarterly Asset Growth

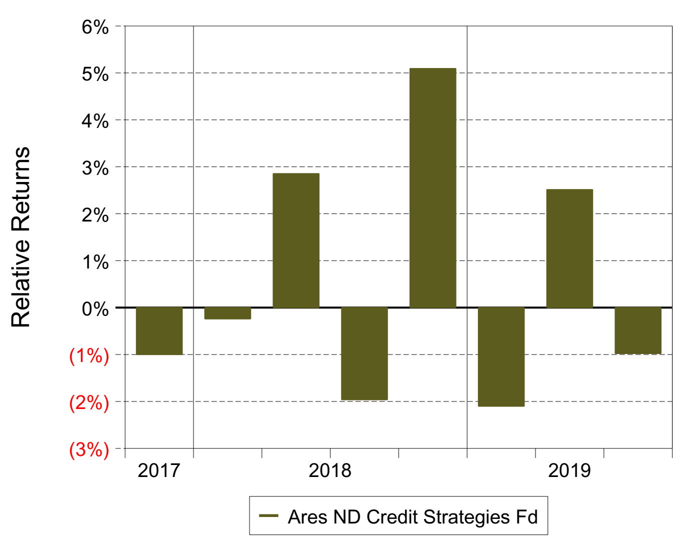
Beginning Market Value	$55,136,433
Net New Investment	$12,000,000
Investment Gains/(Losses)	$0
Ending Market Value	$67,136,433

Performance vs Callan High Yield Mutual Funds (Net)

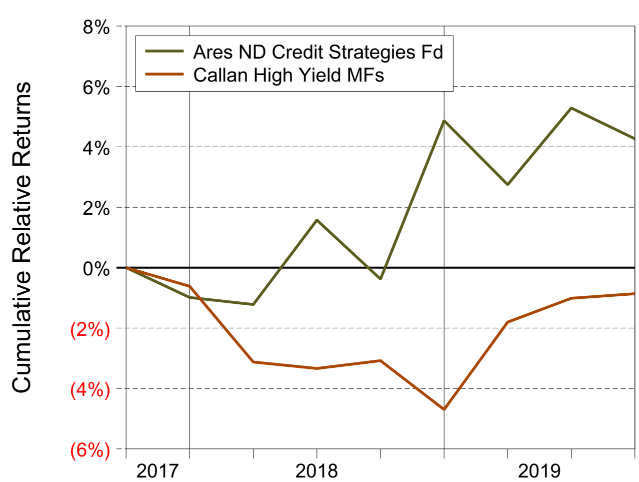


		Fiscal YTD	Last Year	Last 2 Years
10th Percentile		1.85	7.91	4.96
25th Percentile		1.65	7.04	4.27
Median		1.33	5.73	3.88
75th Percentile		0.73	4.82	3.54
90th Percentile		0.27	3.23	2.85
Ares ND Credit Strategies Fd	● A	0.00	8.03	6.52
S&P/LSTA Leveraged Loan	■ B	0.99	3.10	4.14
S&P/LSTA Leveraged Loan B Index	▲	0.98	3.22	4.32

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 September 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.

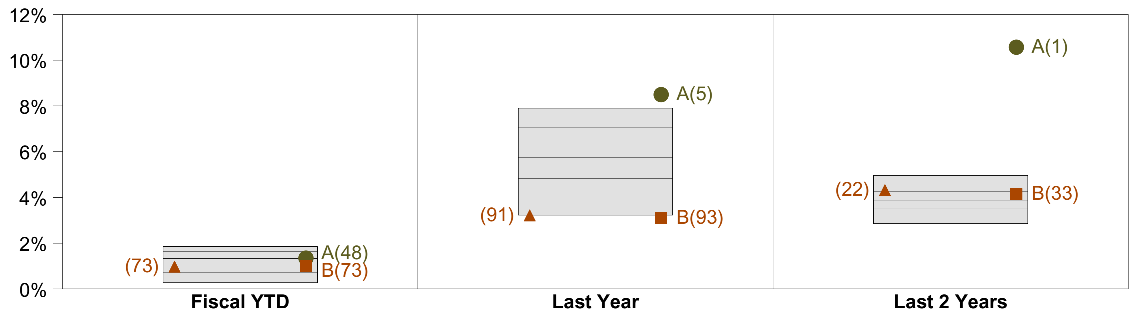
Quarterly Summary and Highlights

- Cerberus ND Private Credit Fd's portfolio posted a 1.35% return for the quarter placing it in the 48 percentile of the Callan High Yield Mutual Funds group for the quarter and in the 5 percentile for the last year.
- Cerberus ND Private Credit Fd's portfolio outperformed the S&P/LSTA Leveraged Loan B Index by 0.37% for the quarter and outperformed the S&P/LSTA Leveraged Loan B Index for the year by 5.28%.

Quarterly Asset Growth

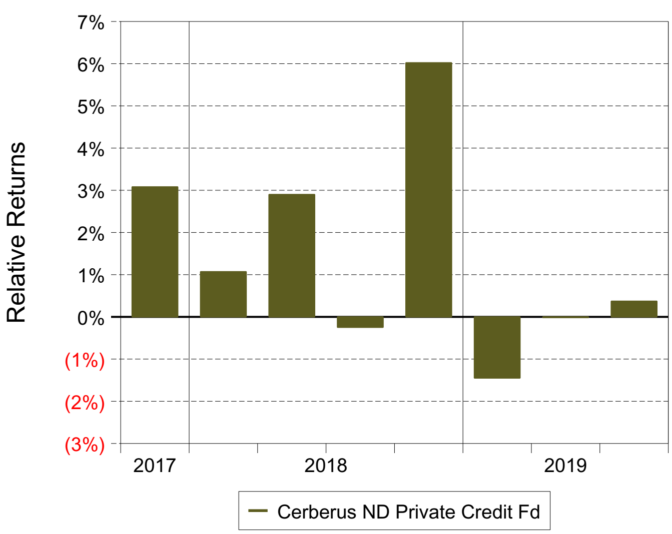
Beginning Market Value	$60,926,193
Net New Investment	$8,000,000
Investment Gains/(Losses)	$887,681
Ending Market Value	$69,813,874

Performance vs Callan High Yield Mutual Funds (Net)

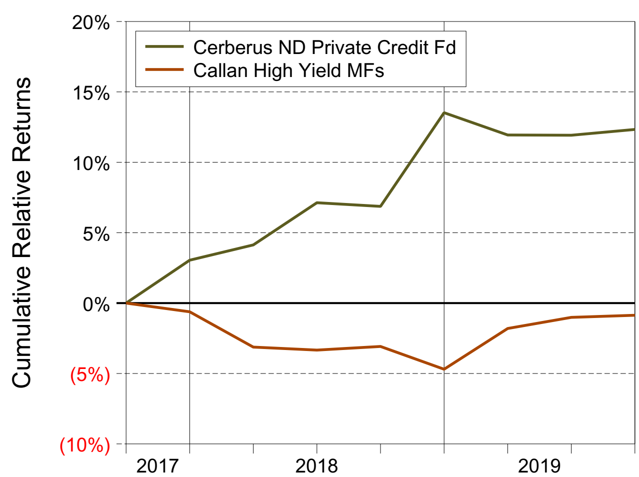


	Fiscal YTD	Last Year	Last 2 Years
10th Percentile	1.85	7.91	4.96
25th Percentile	1.65	7.04	4.27
Median	1.33	5.73	3.88
75th Percentile	0.73	4.82	3.54
90th Percentile	0.27	3.23	2.85
Cerberus ND Private Credit Fd ● A	1.35	8.49	10.57
S&P/LSTA Leveraged Loan ■ B	0.99	3.10	4.14
S&P/LSTA Leveraged Loan B Index ▲	0.98	3.22	4.32

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 September 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.

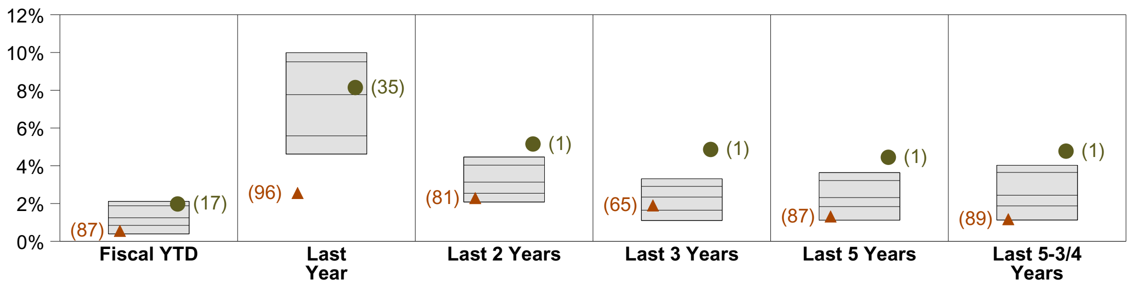
Quarterly Summary and Highlights

- Declaration Total Return's portfolio posted a 1.98% return for the quarter placing it in the 17 percentile of the Callan Intermediate Fixed Inc Mut Funds group for the quarter and in the 35 percentile for the last year.
- Declaration Total Return's portfolio outperformed the LIBOR - 3 Month by 1.42% for the quarter and outperformed the LIBOR - 3 Month for the year by 5.59%.

Quarterly Asset Growth

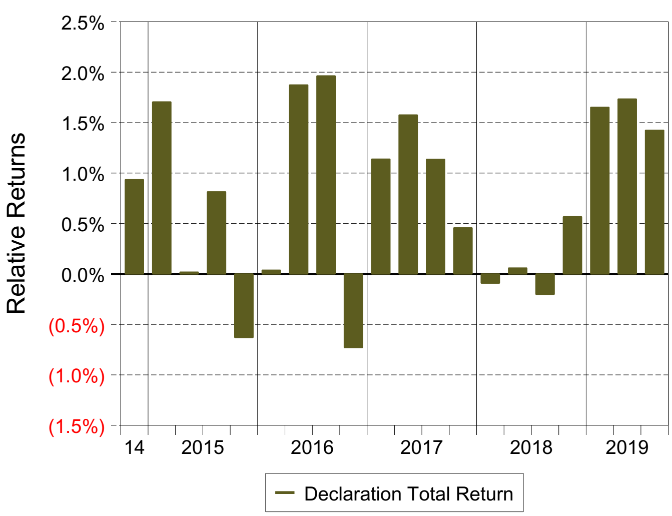
Beginning Market Value	$165,218,383
Net New Investment	$-93,095
Investment Gains/(Losses)	$3,265,974
Ending Market Value	$168,391,262

Performance vs Callan Intermediate Fixed Inc Mut Funds (Net)

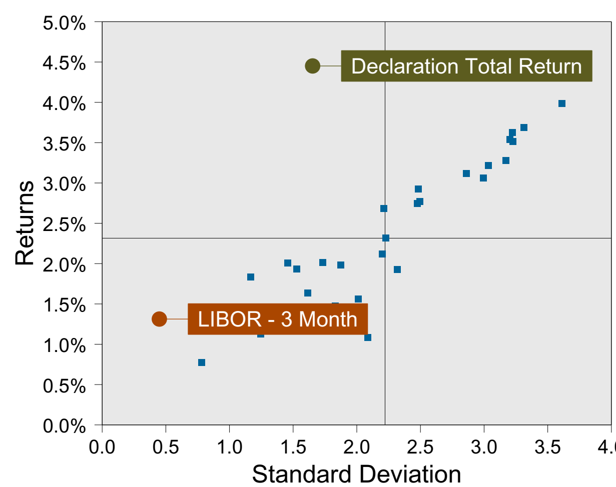


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.12	9.99	4.47	3.31	3.64	4.03
25th Percentile	1.88	9.51	4.03	2.91	3.22	3.65
Median	1.24	7.77	3.14	2.34	2.32	2.44
75th Percentile	0.84	5.58	2.54	1.65	1.84	1.87
90th Percentile	0.39	4.62	2.08	1.10	1.12	1.13
Declaration Total Return ●	1.98	8.14	5.15	4.86	4.45	4.78
LIBOR - 3 Month ▲	0.55	2.56	2.29	1.90	1.31	1.17

Relative Return vs LIBOR - 3 Month



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



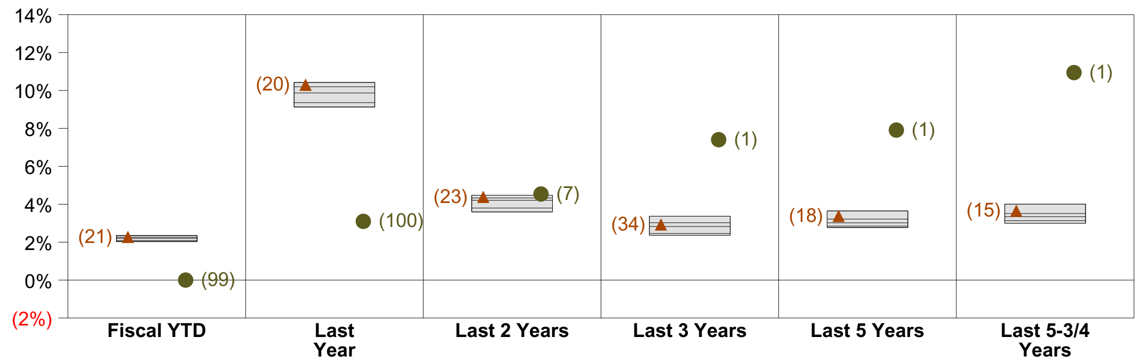
Investment Philosophy
The BRAVO II Fund is a private equity style fund targeting an annualized IRR of 15-20% and multiple of 1.8-2x, net of fees and carried interest with an initial 5-year term. The fund will seek to capitalize on non-economic asset sale decisions by global financial institutions. The 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. **Prior to July 1, 2019, the Legacy Fund participated in these portfolios via the Insurance Pool. Beginning July 1, 2019, its portion of the pool was segregated into its own portfolios. Returns prior to that date reflect the data from the Insurance pool.**

Quarterly Summary and Highlights
- PIMCO Bravo II's portfolio posted a (0.00)% 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 Bravo II's portfolio underperformed the Blmbg Aggregate by 2.27% for the quarter and underperformed the Blmbg Aggregate for the year by 7.20%.

Quarterly Asset Growth

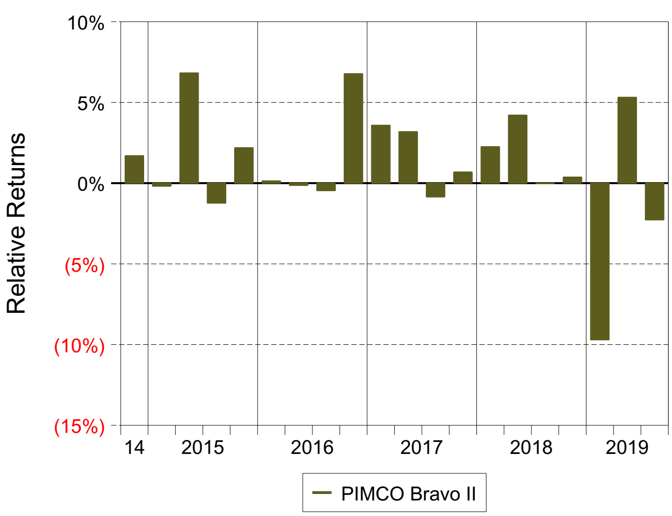
Beginning Market Value	$14,005,200
Net New Investment	$-1,588,283
Investment Gains/(Losses)	$-1
Ending Market Value	$12,416,916

Performance vs Callan Core Bond Mutual Funds (Net)

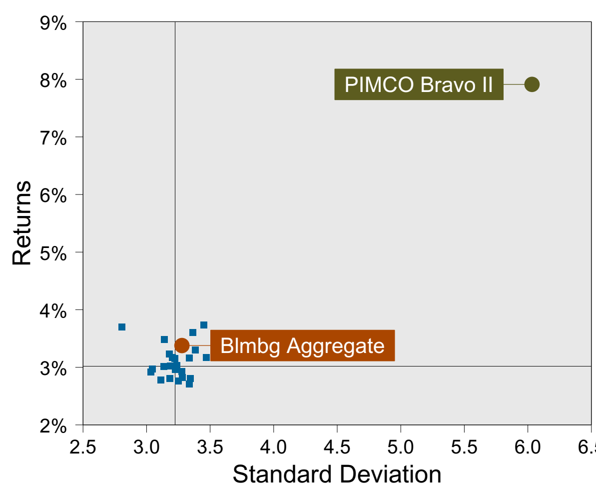


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.35	10.43	4.47	3.37	3.65	4.00
25th Percentile	2.26	10.19	4.33	3.02	3.22	3.51
Median	2.20	9.87	4.21	2.82	3.02	3.34
75th Percentile	2.08	9.36	3.80	2.46	2.85	3.13
90th Percentile	2.03	9.13	3.59	2.36	2.77	3.00
PIMCO Bravo II ●	(0.00)	3.10	4.54	7.41	7.91	10.94
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.65

Relative Return vs Blmbg Aggregate



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



PIMCO DiSCO II
Period Ended September 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. **Prior to July 1, 2019, the Legacy Fund participated in these portfolios via the Insurance Pool. Beginning July 1, 2019, its portion of the pool was segregated into its own portfolios. Returns prior to that date reflect the data from the Insurance pool.**

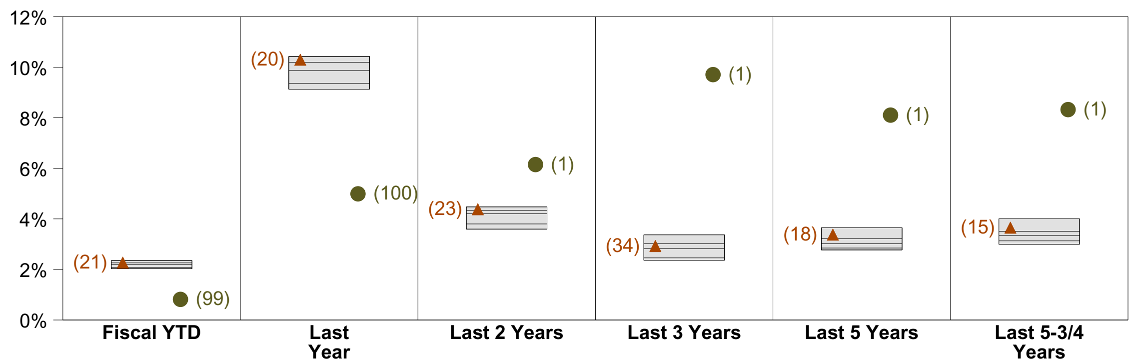
Quarterly Summary and Highlights

- PIMCO DiSCO II's portfolio posted a 0.82% 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 1.45% for the quarter and underperformed the Blmbg Aggregate for the year by 5.31%.

Quarterly Asset Growth

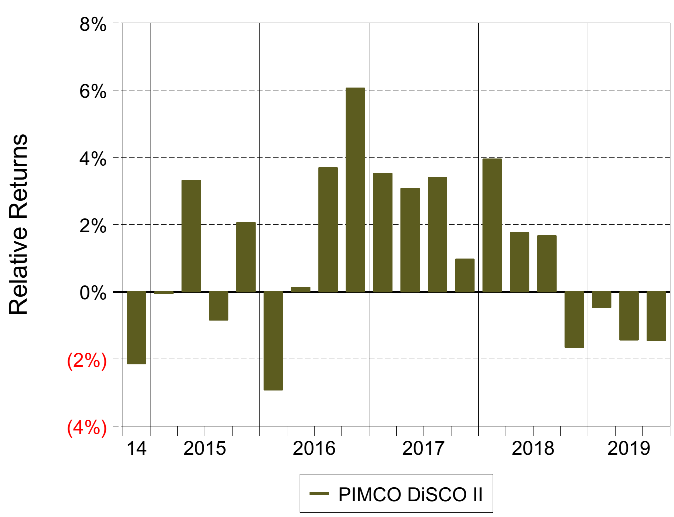
Beginning Market Value	$41,311,624
Net New Investment	$0
Investment Gains/(Losses)	$336,823
Ending Market Value	$41,648,447

Performance vs Callan Core Bond Mutual Funds (Net)

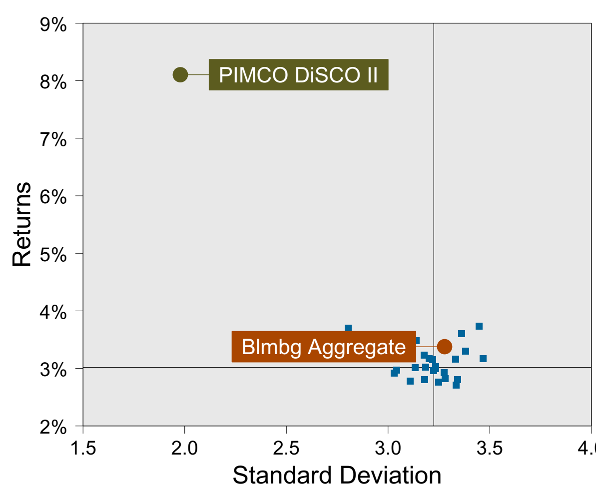


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.35	10.43	4.47	3.37	3.65	4.00
25th Percentile	2.26	10.19	4.33	3.02	3.22	3.51
Median	2.20	9.87	4.21	2.82	3.02	3.34
75th Percentile	2.08	9.36	3.80	2.46	2.85	3.13
90th Percentile	2.03	9.13	3.59	2.36	2.77	3.00
PIMCO DiSCO II ●	0.82	4.99	6.15	9.71	8.10	8.32
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.65

Relative Return vs Blmbg Aggregate



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



Prudential
Period Ended September 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.

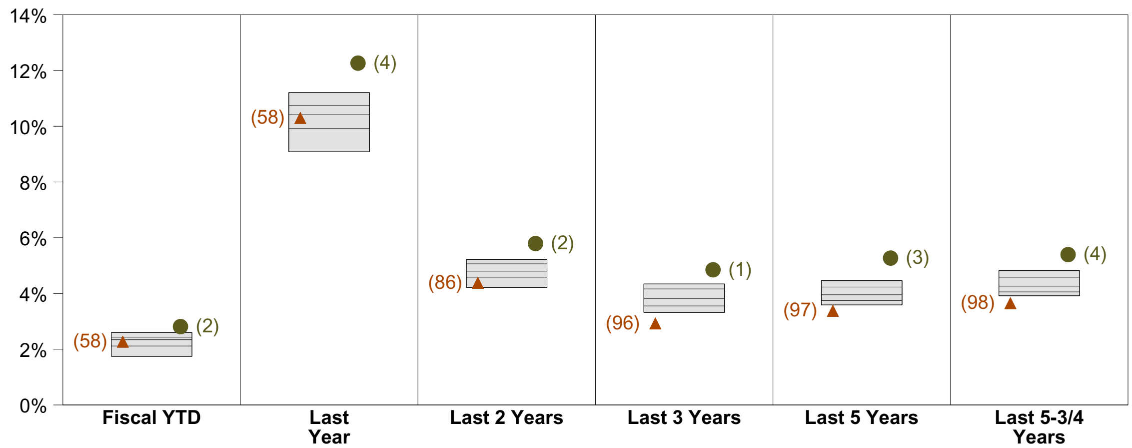
Quarterly Summary and Highlights

- Prudential's portfolio posted a 2.81% return for the quarter placing it in the 2 percentile of the Callan Core Plus Fixed Income group for the quarter and in the 4 percentile for the last year.
- Prudential's portfolio outperformed the Blmbg Aggregate by 0.54% for the quarter and outperformed the Blmbg Aggregate for the year by 1.97%.

Quarterly Asset Growth

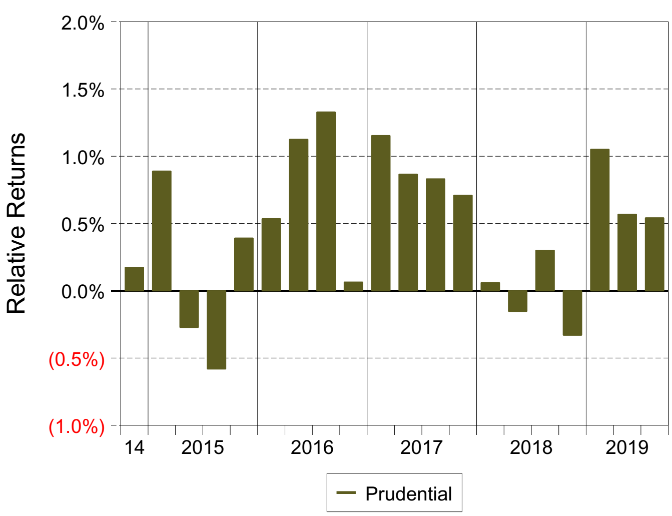
Beginning Market Value	$697,181,556
Net New Investment	$-36,282,156
Investment Gains/(Losses)	$18,691,729
Ending Market Value	$679,591,130

Performance vs Callan Core Plus Fixed Income (Gross)

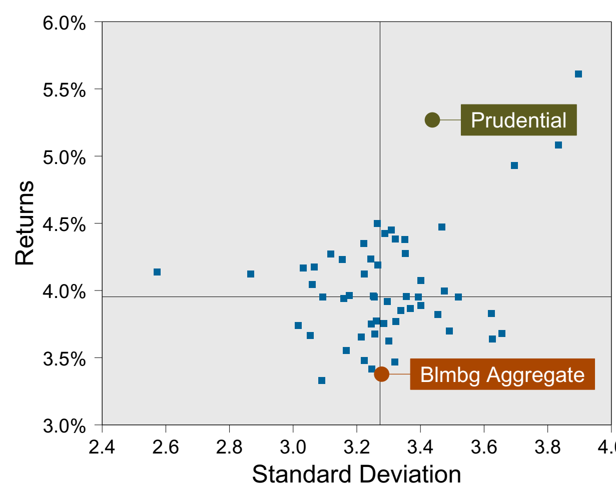


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.60	11.21	5.22	4.34	4.46	4.82
25th Percentile	2.43	10.74	5.06	4.16	4.23	4.58
Median	2.34	10.41	4.80	3.82	3.95	4.26
75th Percentile	2.11	9.91	4.58	3.55	3.75	4.06
90th Percentile	1.74	9.08	4.22	3.31	3.59	3.92
Prudential ●	2.81	12.26	5.79	4.85	5.27	5.39
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.65

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 September 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.

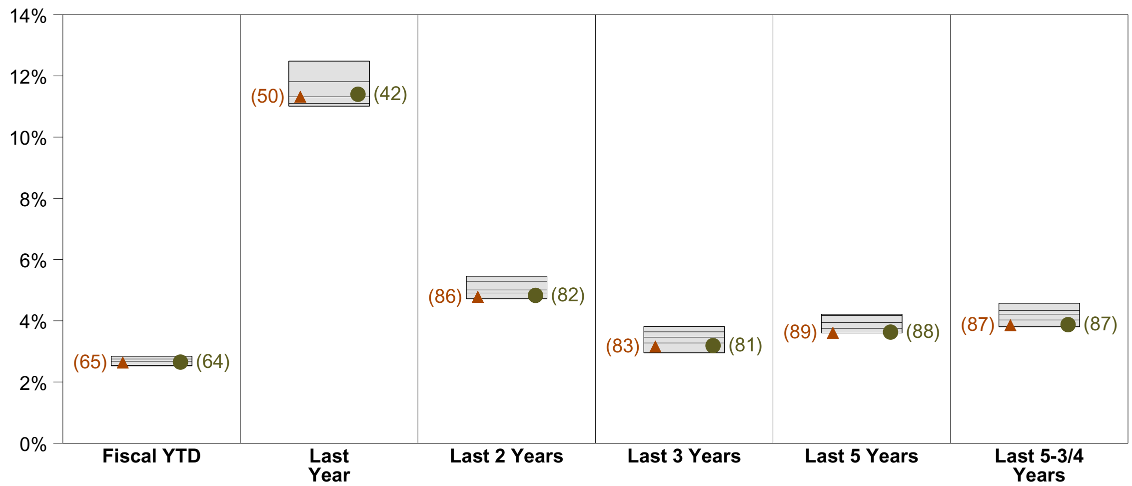
Quarterly Summary and Highlights

- SSgA US Govt Credit Bd Idx's portfolio posted a 2.65% return for the quarter placing it in the 64 percentile of the Callan Government/Credit group for the quarter and in the 42 percentile for the last year.
- SSgA US Govt Credit Bd Idx's portfolio outperformed the Blmbg Gov/Credit by 0.01% for the quarter and outperformed the Blmbg Gov/Credit for the year by 0.08%.

Quarterly Asset Growth

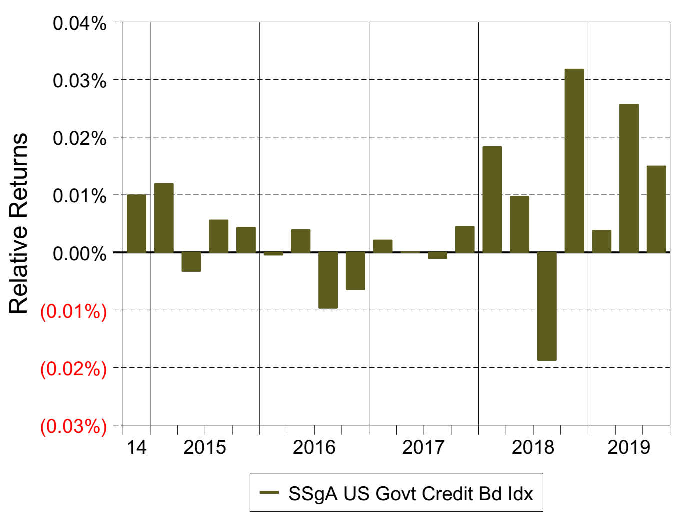
Beginning Market Value	$307,904,493
Net New Investment	$-7,031,044
Investment Gains/(Losses)	$7,982,870
Ending Market Value	$308,856,319

Performance vs Callan Government/Credit (Gross)

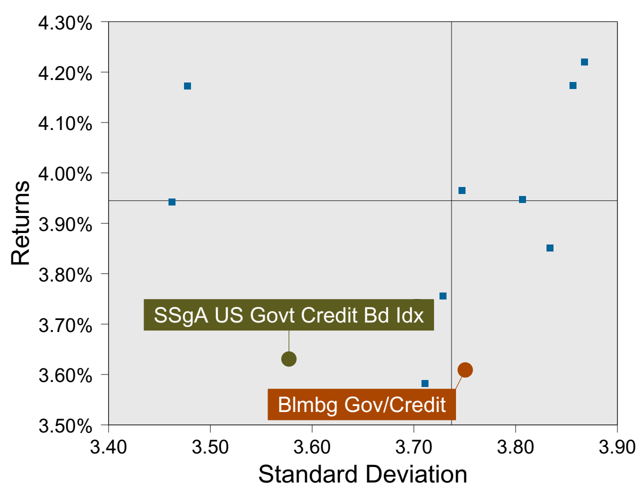


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.84	12.48	5.46	3.81	4.21	4.57
25th Percentile	2.75	11.81	5.29	3.64	4.17	4.34
Median	2.68	11.32	5.01	3.46	3.94	4.22
75th Percentile	2.55	11.10	4.91	3.28	3.75	4.03
90th Percentile	2.53	11.01	4.72	2.95	3.60	3.81
SSgA US Govt Credit Bd Idx ●	2.65	11.40	4.83	3.19	3.63	3.87
Blmbg Gov/Credit ▲	2.64	11.32	4.78	3.16	3.61	3.86

Relative Return vs Blmbg Gov/Credit



Callan Government/Credit (Gross)
Annualized Five Year Risk vs Return



Wells Capital
Period Ended September 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.

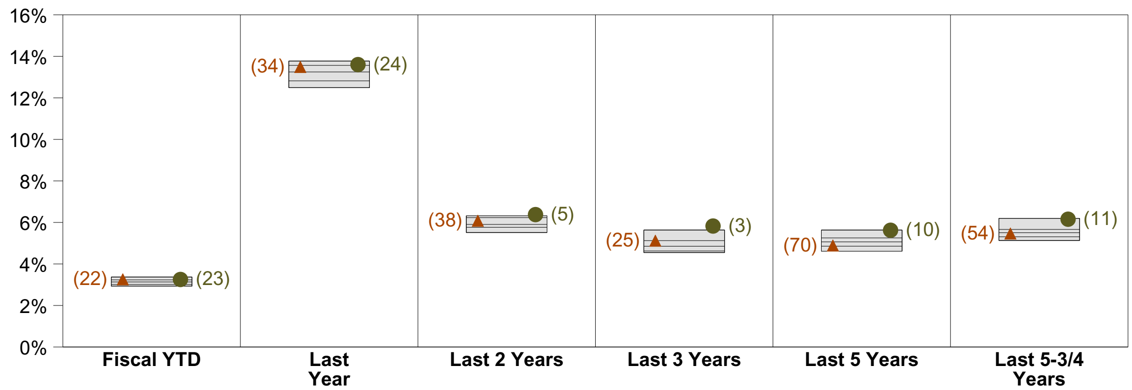
Quarterly Summary and Highlights

- Wells Capital's portfolio posted a 3.25% return for the quarter placing it in the 23 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 24 percentile for the last year.
- Wells Capital's portfolio underperformed the Blmbg Credit Baa by 0.01% for the quarter and outperformed the Blmbg Credit Baa for the year by 0.11%.

Quarterly Asset Growth

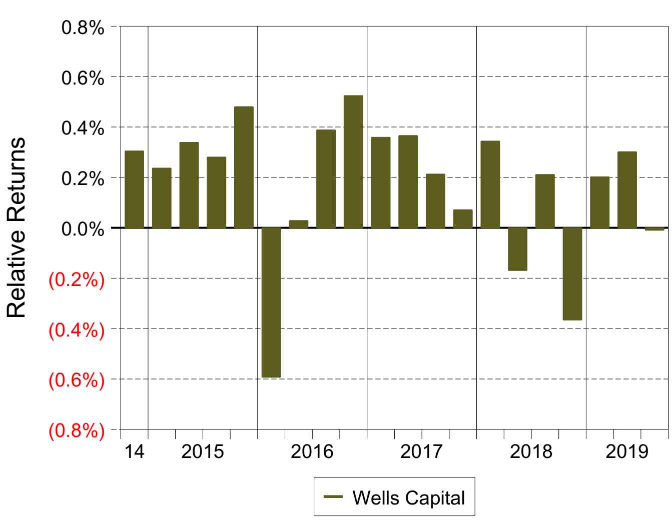
Beginning Market Value	$187,329,651
Net New Investment	$-15,090,676
Investment Gains/(Losses)	$5,678,529
Ending Market Value	$177,917,504

Performance vs Callan Investment Grade Credit Fixed Inc (Gross)

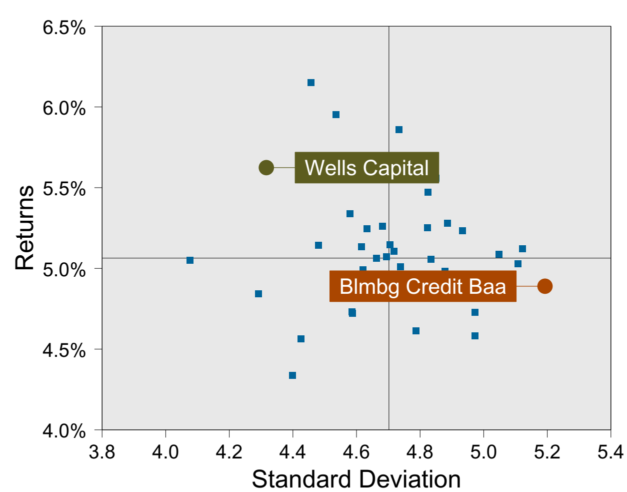


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	3.37	13.77	6.32	5.63	5.63	6.20
25th Percentile	3.23	13.57	6.23	5.12	5.25	5.66
Median	3.13	13.25	5.90	4.85	5.06	5.51
75th Percentile	3.01	12.82	5.77	4.63	4.86	5.31
90th Percentile	2.93	12.49	5.51	4.55	4.61	5.13
Wells Capital ●	3.25	13.60	6.38	5.83	5.62	6.16
Blmbg Credit Baa ▲	3.26	13.49	6.08	5.12	4.89	5.47

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 September 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.

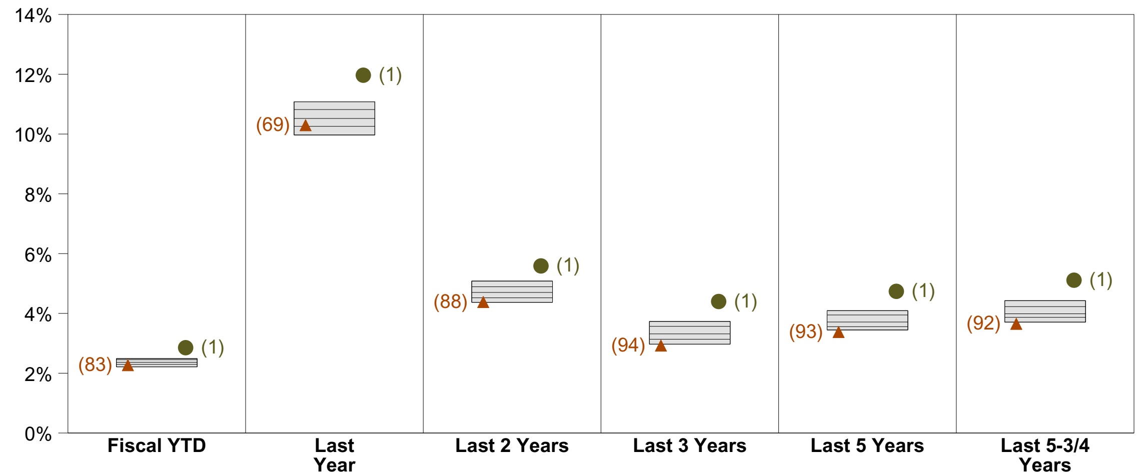
Quarterly Summary and Highlights

- Western Asset's portfolio posted a 2.85% return for the quarter placing it in the 1 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 0.58% for the quarter and outperformed the Blmbg Aggregate for the year by 1.67%.

Quarterly Asset Growth

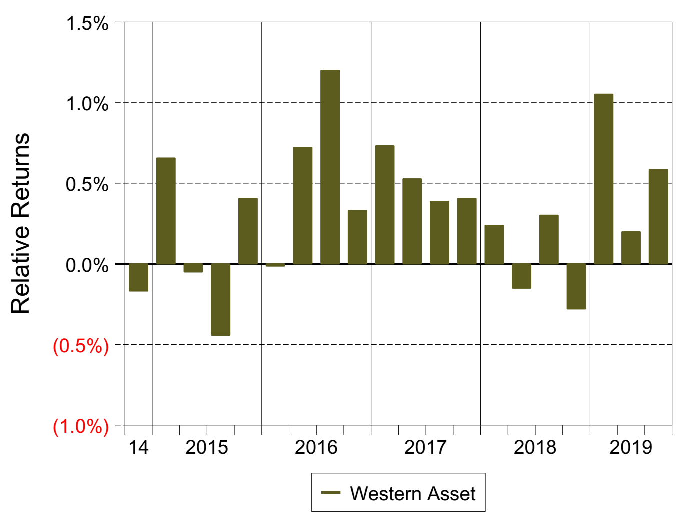
Beginning Market Value	$614,935,431
Net New Investment	$34,819,747
Investment Gains/(Losses)	$17,518,337
Ending Market Value	$667,273,515

Performance vs Callan Core Bond Fixed Income (Gross)

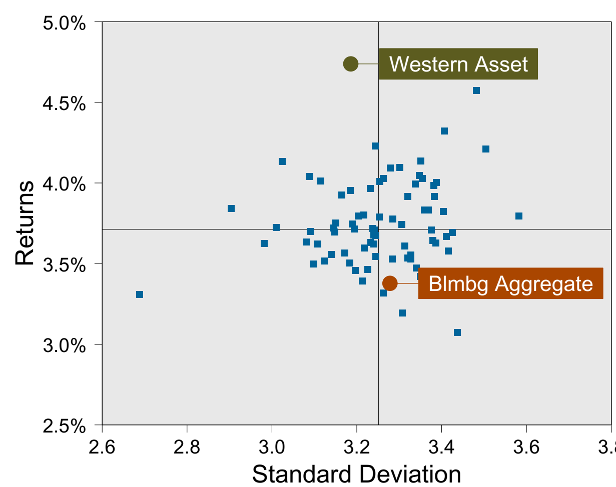


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 5-3/4 Years
10th Percentile	2.49	11.08	5.08	3.73	4.09	4.43
25th Percentile	2.45	10.82	4.89	3.57	3.95	4.23
Median	2.36	10.52	4.70	3.32	3.71	3.99
75th Percentile	2.29	10.26	4.52	3.14	3.56	3.87
90th Percentile	2.21	9.97	4.37	2.97	3.45	3.71
Western Asset ●	2.85	11.97	5.59	4.40	4.74	5.11
Blmbg Aggregate ▲	2.27	10.30	4.38	2.92	3.38	3.65

Relative Return vs Blmbg Aggregate



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



Invesco Core Real Estate
Period Ended September 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.

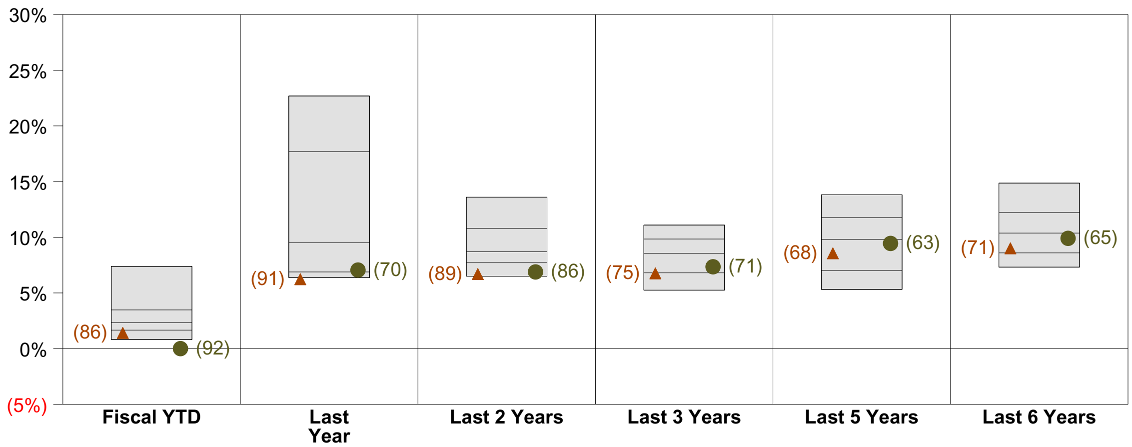
Quarterly Summary and Highlights

- Invesco Core Real Estate's portfolio posted a (0.00)% return for the quarter placing it in the 92 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 70 percentile for the last year.
- Invesco Core Real Estate's portfolio underperformed the NCREIF Total Index by 1.41% for the quarter and outperformed the NCREIF Total Index for the year by 0.82%.

Quarterly Asset Growth

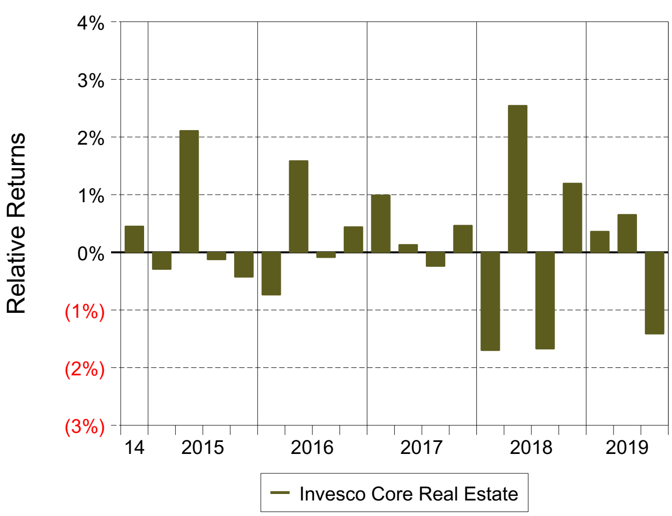
Beginning Market Value	$146,247,927
Net New Investment	$0
Investment Gains/(Losses)	$-239
Ending Market Value	$146,247,688

Performance vs Callan Total Domestic Real Estate DB (Gross)

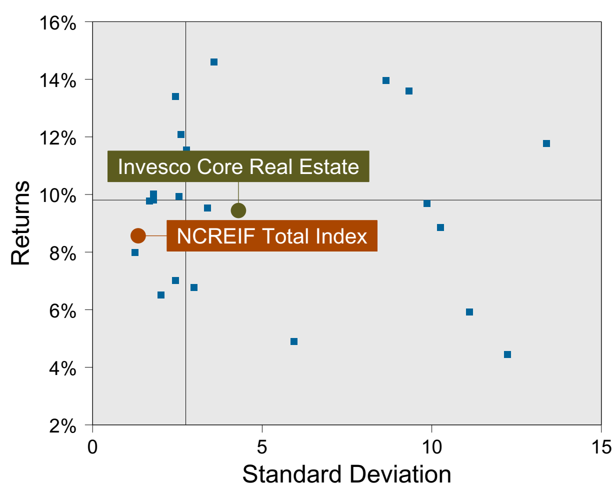


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	7.38	22.69	13.60	11.10	13.82	14.86
25th Percentile	3.47	17.70	10.79	9.84	11.77	12.22
Median	2.34	9.51	8.70	8.57	9.81	10.38
75th Percentile	1.66	6.88	7.76	6.81	7.02	8.60
90th Percentile	0.81	6.37	6.50	5.25	5.31	7.32
Invesco Core Real Estate ●	(0.00)	7.05	6.88	7.35	9.44	9.90
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.01

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 September 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.

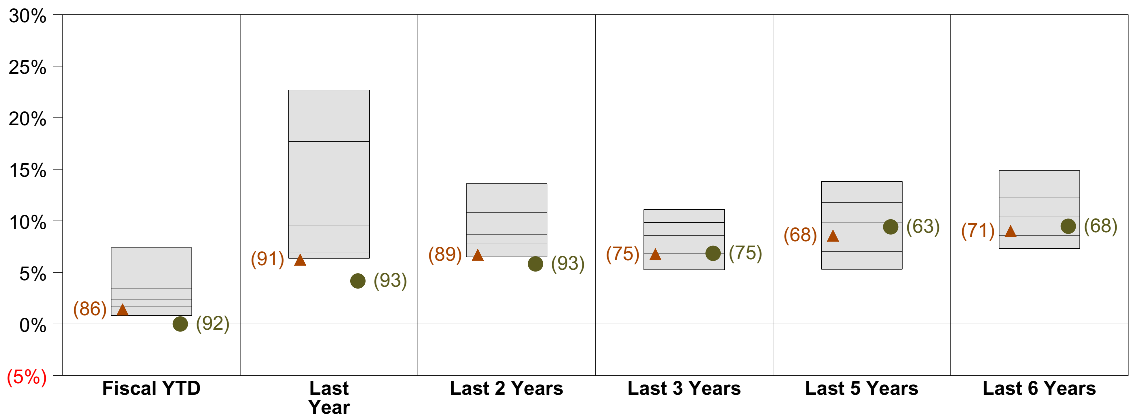
Quarterly Summary and Highlights

- JP Morgan RE Inc & Growth's portfolio posted a 0.00% return for the quarter placing it in the 92 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 93 percentile for the last year.
- JP Morgan RE Inc & Growth's portfolio underperformed the NCREIF Total Index by 1.41% for the quarter and underperformed the NCREIF Total Index for the year by 2.06%.

Quarterly Asset Growth

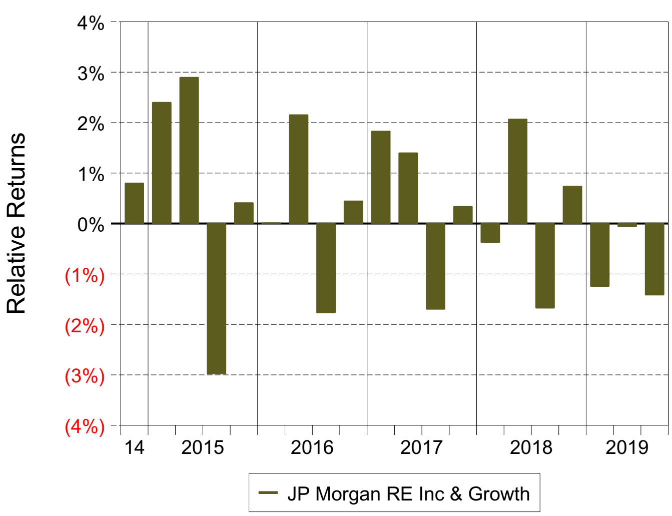
Beginning Market Value	$150,970,316
Net New Investment	$0
Investment Gains/(Losses)	$0
Ending Market Value	$150,970,316

Performance vs Callan Total Domestic Real Estate DB (Gross)

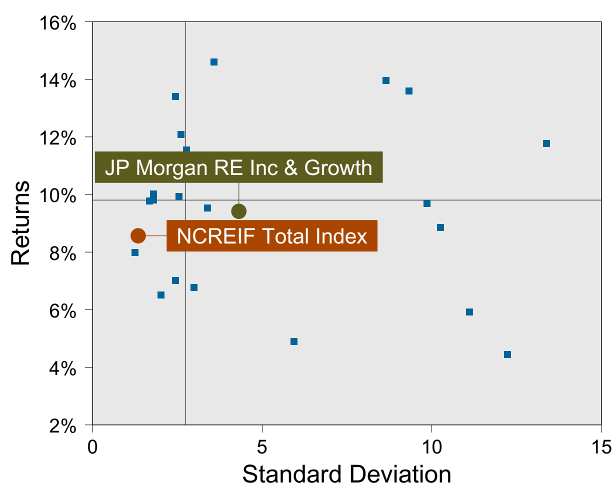


	Fiscal YTD	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	7.38	22.69	13.60	11.10	13.82	14.86
25th Percentile	3.47	17.70	10.79	9.84	11.77	12.22
Median	2.34	9.51	8.70	8.57	9.81	10.38
75th Percentile	1.66	6.88	7.76	6.81	7.02	8.60
90th Percentile	0.81	6.37	6.50	5.25	5.31	7.32
JP Morgan RE Inc & Growth ●	0.00	4.17	5.82	6.85	9.42	9.48
NCREIF Total Index ▲	1.41	6.24	6.70	6.76	8.57	9.01

Relative Return vs NCREIF Total Index



Callan Total Domestic Real Estate DB (Gross) Annualized Five Year Risk vs Return



Western Asset TIPS
Period Ended September 30, 2019

Investment Philosophy

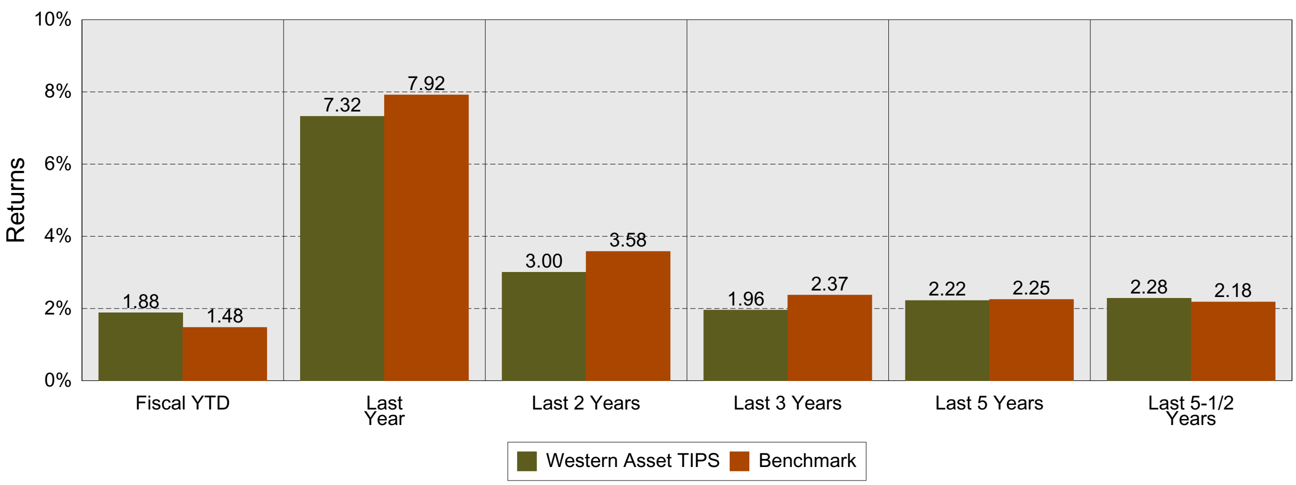
The Western Asset US TIPS Full Discretion strategy is an inflation-protected strategy that aims to maximize total return and add value through duration and curve positioning, sector allocation, and security selection, while approximating benchmark risk. The strategy invests in a diversified portfolio 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

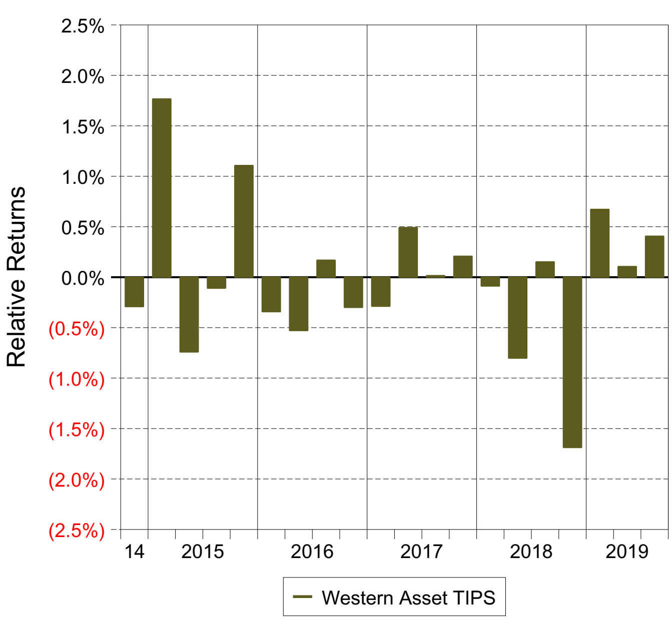
- Western Asset TIPS's portfolio outperformed the Benchmark by 0.41% for the quarter and underperformed the Benchmark for the year by 0.59%.

Quarterly Asset Growth

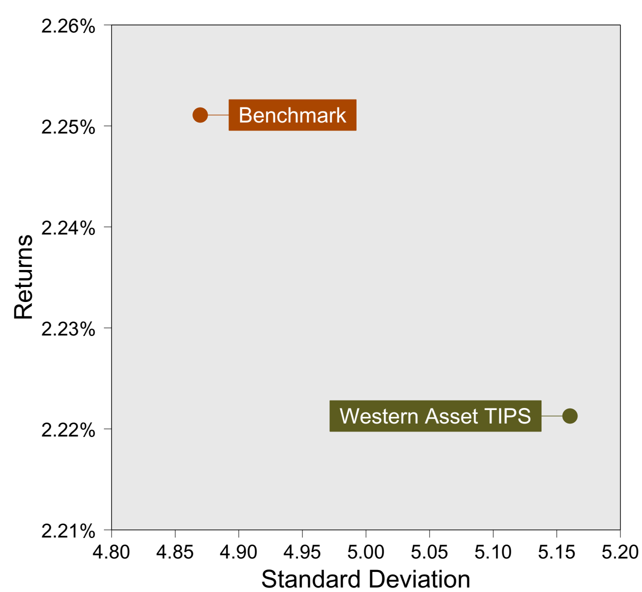
Beginning Market Value	$420,949,062
Net New Investment	$-24,123,886
Investment Gains/(Losses)	$7,553,349
Ending Market Value	$404,378,526



Relative Return vs Benchmark



Annualized Five Year Risk vs Return



ISQ Global Infrastructure II
Period Ended September 30, 2019

Investment Philosophy

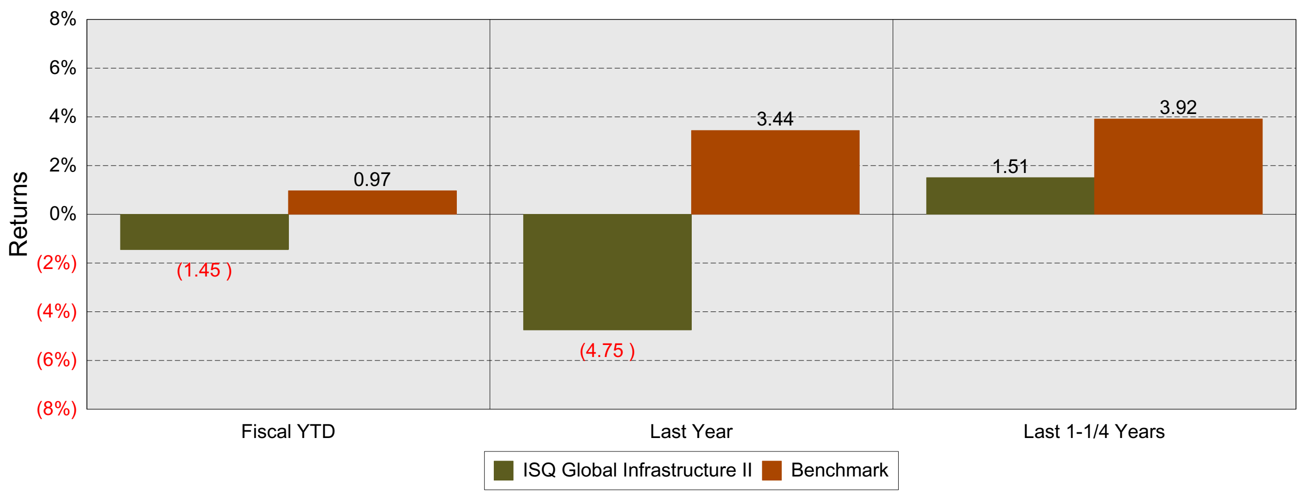
The ISQ Global Infrastructure Fund II seeks to achieve long-term capital appreciation as well as current income through equity and equity related investments in infrastructure and infrastructure related assets located globally, with a focus on North America, Europe, and selected growth economies in Asia 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

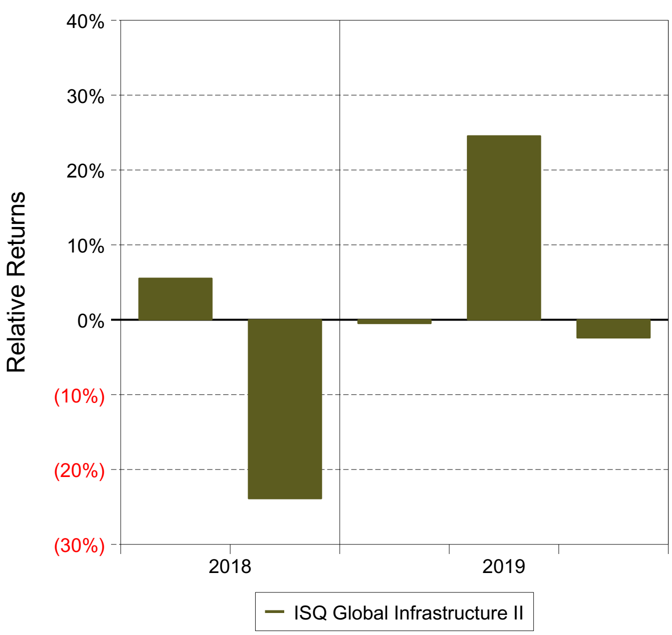
- ISQ Global Infrastructure II's portfolio underperformed the Benchmark by 2.42% for the quarter and underperformed the Benchmark for the year by 8.19%.

Quarterly Asset Growth

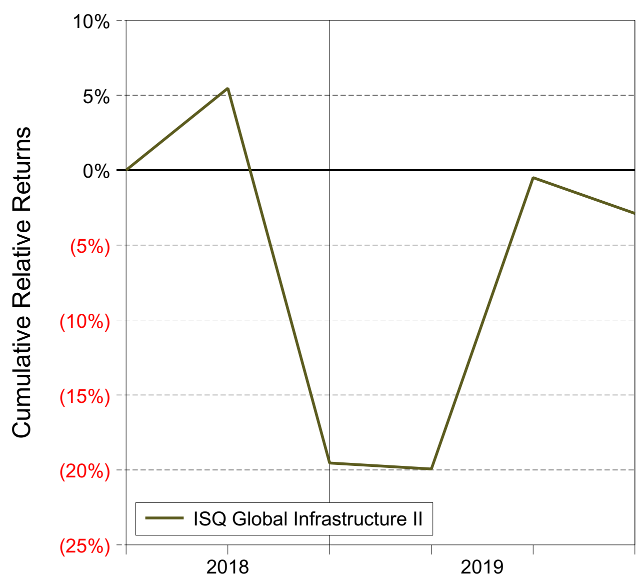
Beginning Market Value	$20,599,874
Net New Investment	$6,104,401
Investment Gains/(Losses)	$-384,156
Ending Market Value	$26,320,119



Relative Return vs Benchmark



Cumulative Returns vs Benchmark



JP Morgan Infrastructure
Period Ended September 30, 2019

Investment Philosophy

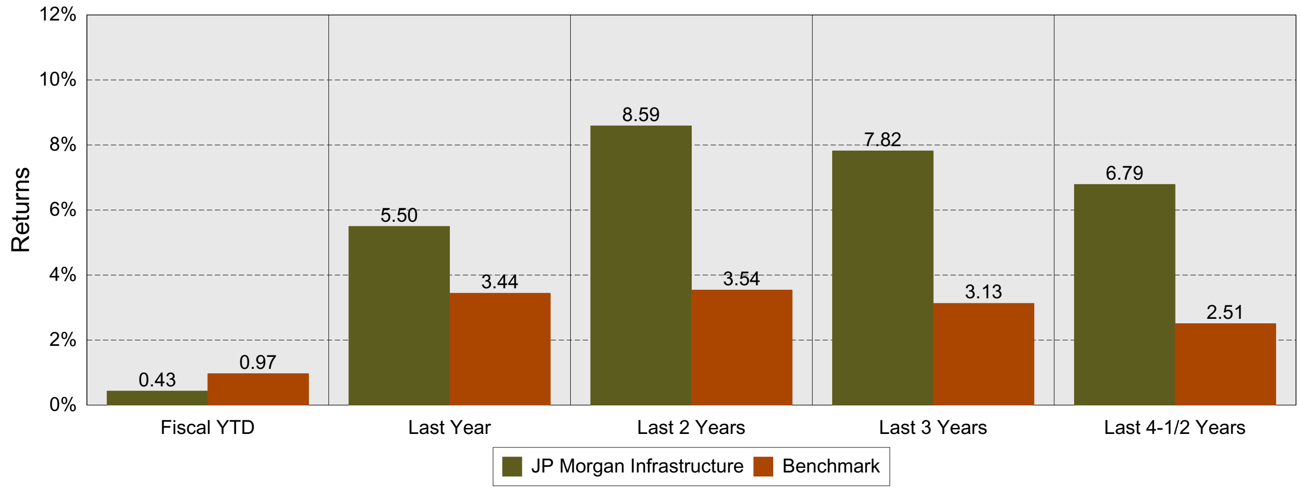
The only open-ended private commingled infrastructure fund in the U.S, the JPMorgan Infrastructure Investments Fund invests in stabilized assets in OECD countries with selected value-added opportunities, across infrastructure industry sub-sectors, including: toll roads, bridges and tunnels; oil and gas 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

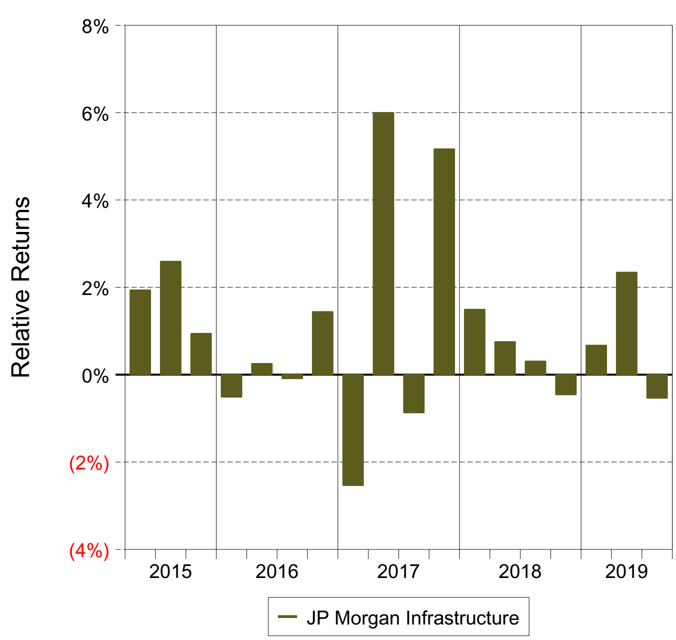
- JP Morgan Infrastructure's portfolio underperformed the Benchmark by 0.54% for the quarter and outperformed the Benchmark for the year by 2.06%.

Quarterly Asset Growth

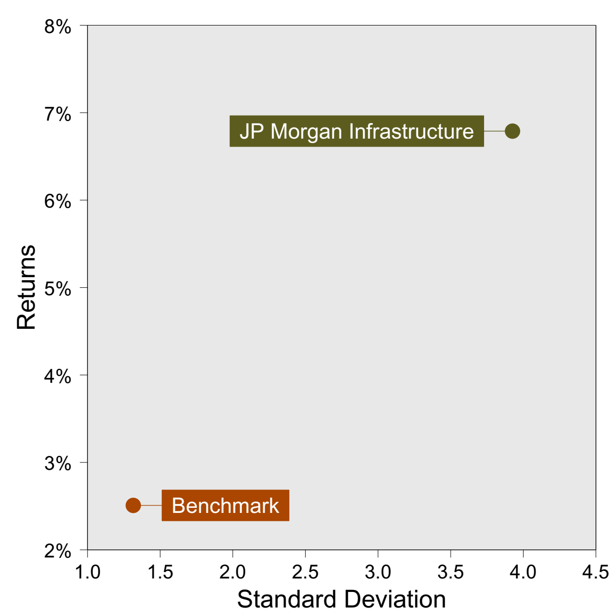
Beginning Market Value	$119,092,377
Net New Investment	$-2,899,905
Investment Gains/(Losses)	$515,519
Ending Market Value	$116,707,991



Relative Return vs Benchmark



Annualized Four and One-Half Year Risk vs Return



Grosvenor Cust. Infrastructure
Period Ended September 30, 2019

Investment Philosophy

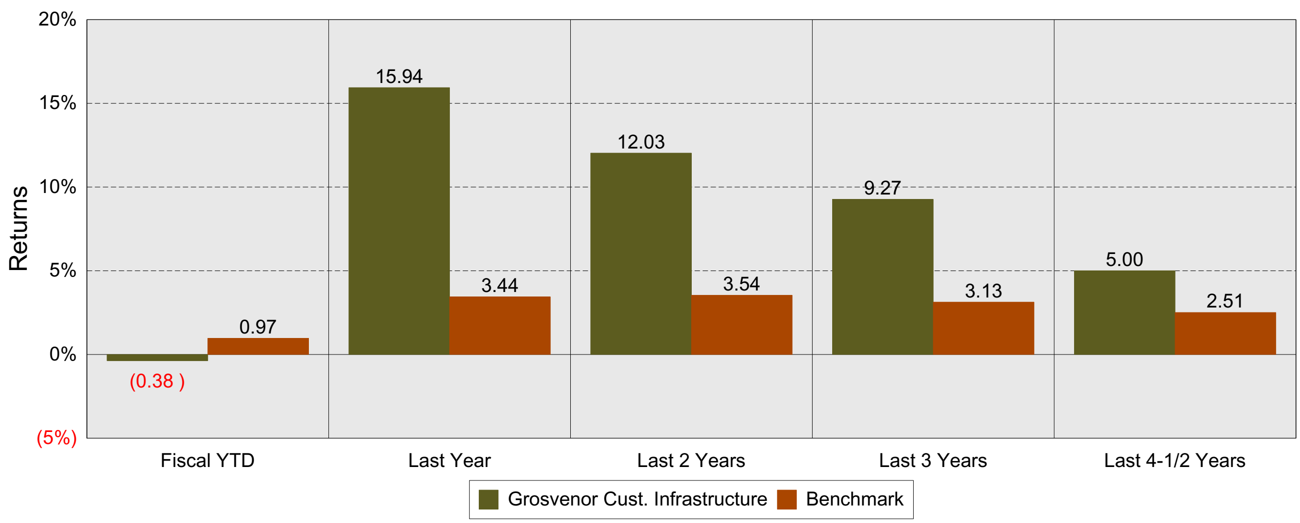
The Customized Infrastructure Strategies LP is a commingled fund focused on providing a comprehensive, diversified solution for investors looking to access the infrastructure asset class. The Fund seeks to generate stable, long-term yield and attractive risk-adjusted returns by investing in a diversified 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

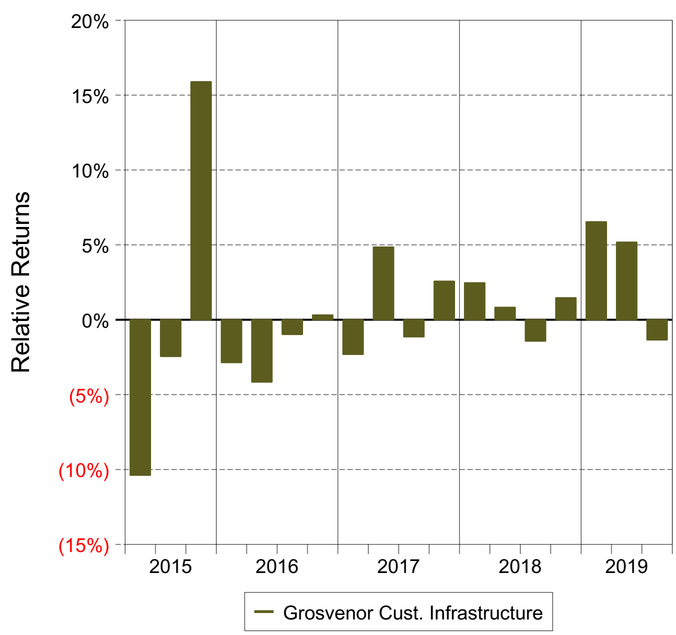
- Grosvenor Cust. Infrastructure's portfolio underperformed the Benchmark by 1.35% for the quarter and outperformed the Benchmark for the year by 12.50%.

Quarterly Asset Growth

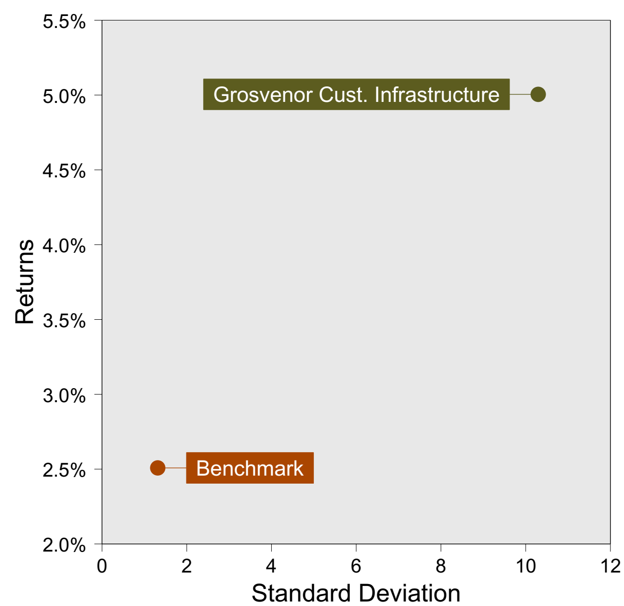
Beginning Market Value	$45,244,969
Net New Investment	$-599,773
Investment Gains/(Losses)	$-167,892
Ending Market Value	$44,477,304



Relative Return vs Benchmark



Annualized Four and One-Half Year Risk vs Return



Macquarie Infras. Partners IV
Period Ended September 30, 2019

Investment Philosophy

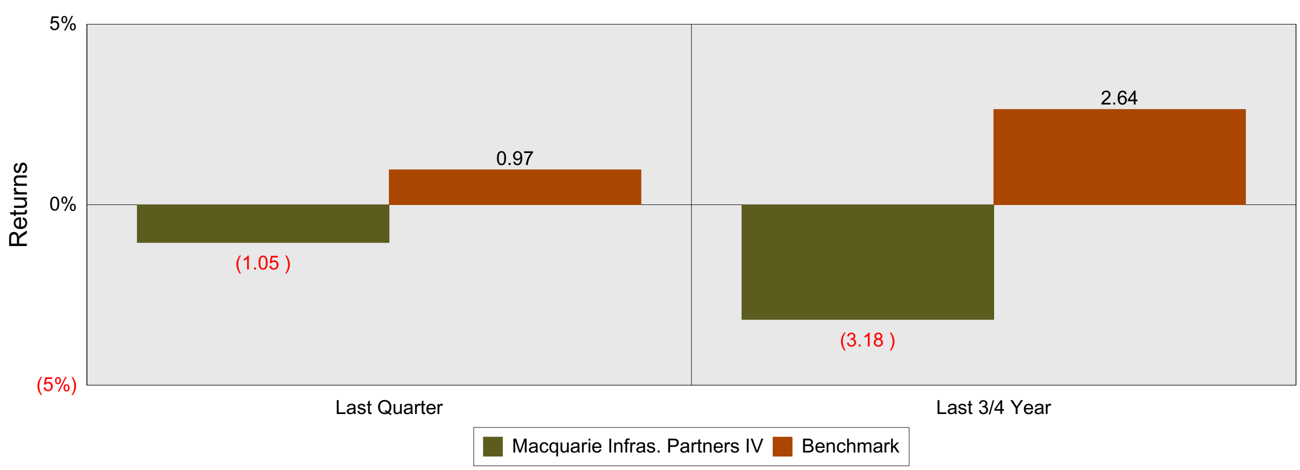
Macquarie's principal investment philosophy is to invest in infrastructure assets that exhibit monopolistic and/or contractual revenue drivers, limited substitution risk and high barriers to entry. The manager has continued to focus on investments where the team's sector expertise and operating experience 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

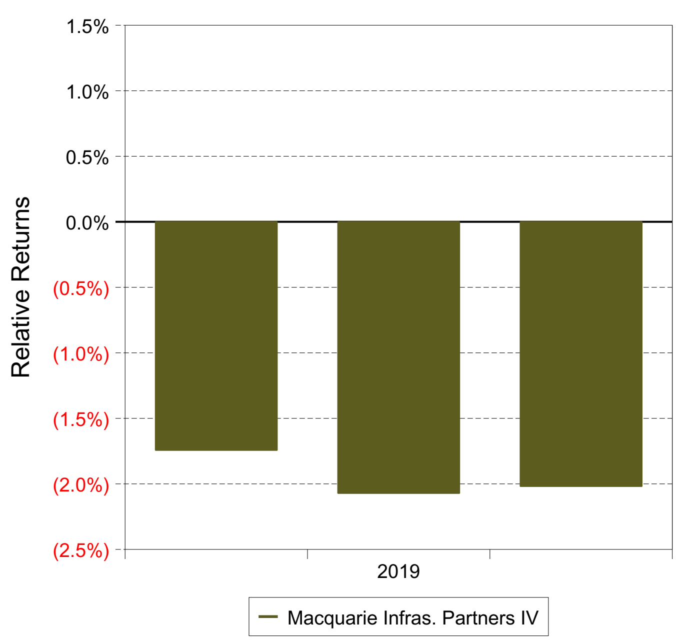
- Macquarie Infras. Partners IV's portfolio underperformed the Benchmark by 2.02% for the quarter and underperformed the Benchmark for the three-quarter year by 5.82%.

Quarterly Asset Growth

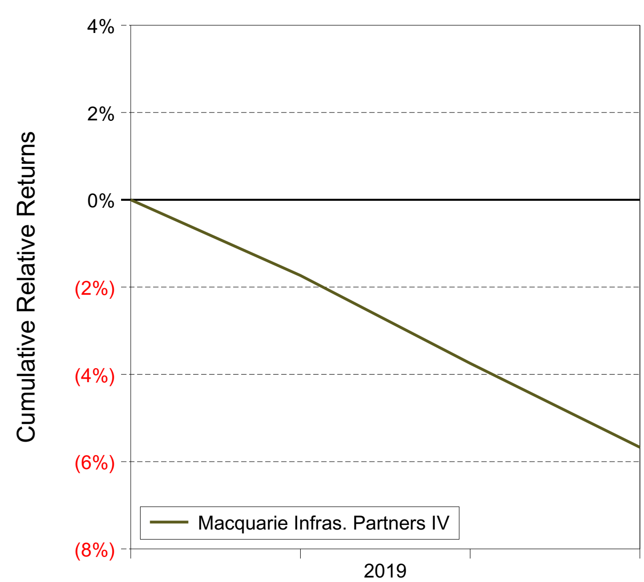
Beginning Market Value	$29,273,611
Net New Investment	$15,243,690
Investment Gains/(Losses)	$-327,513
Ending Market Value	$44,189,788



Relative Return vs Benchmark



Cumulative Returns vs Benchmark

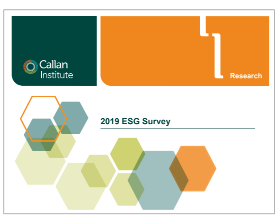


Research and Educational Programs

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

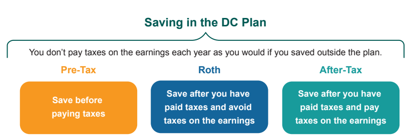
DTS Offers Some Key Advantages for Evaluating Fixed Income Portfolios | This paper describes duration times spread (DTS), which measures systematic credit-spread risk exposure. DTS estimates the return of any bond, by percentage, if its spread were to change from the current level, all else equal. DTS offers several advantages for monitoring risk in credit portfolios over other methods.



2019 ESG Survey | Callan's seventh annual survey assessing the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market.

Callan's DC Index in Detail | A video about the Callan DC Index™: why we started it, what it measures, and how it can benefit defined contribution plan sponsors.

DC Plan Hacks: Tips for an Efficient Design | Defined contribution plan sponsors should regularly evaluate their plans to make sure they serve the organization's benefits philosophy. When evaluating changes, the sponsor should consider its demographics, cost of benefits, vendor capabilities, impact on nondiscrimination testing, communication capabilities, and legal requirements.



2019 June Workshop Summary: In the Age of Illiquidity | For many nonprofits and defined benefit plans, the shift to higher-returning but less liquid asset classes has myriad implications. This summary discusses how consultants, institutional investors, and investment managers can work together to identify solutions tailored to each plan.

The Keys to Unlocking Private Equity Portfolio Assessment Private equity performance evaluation has some unique considerations, so return calculations and benchmarking methodologies differ from public securities. Closed-end private equity vehicles are assessed using ratio analyses and internal rate of return (IRR) measures. Using performance metrics, private equity portfolios can be evaluated at the partnership level, at the vintage year level, and then at the total portfolio level.

Survivorship Bias and the Walking Dead | Survivorship bias, the predisposition to evaluate a data set by focusing on the "survivors" rather than also examining the record of non-survivors, is important to understand for hedge fund peer groups, which tend to have a relatively large number of constituents that disappear. Using a proprietary approach, Callan is able to adjust peer group comparisons for survivorship bias. This better-informed perspective enables a more honest assessment in considering performance relative to other opportunities.

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 institutional investors, 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.

2020 National Conference
Celebrating the 40th anniversary of the Callan Institute
January 27-29, 2020 – San Francisco

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

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.

Introduction to Investments
April 21-22, 2020
July 21-22, 2020
This program familiarizes institutional investor trustees and 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.

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

Quarterly List as of
September 30, 2019

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 an 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 Inc.
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
Aurelius Capital Management
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 LLC
Chartwell Investment Partners

Manager Name
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Threadneedle Investments
Columbus Circle Investors
Corbin Capital Partners, L.P.
Cooke & Bieler, L.P.
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 Advisors, LLC
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.

Manager Name
Heitman LLC
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 North America, Inc.
Ivy Investments
J.P. Morgan
Janus
Jarislowsky Fraser Global Investment Management
Jennison Associates LLC
Jobs Peak Advisors
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
LMCG Investments, LLC
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 Investment Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
Mellon
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

Manager Name
Osterweis Capital Management, LLC
P/E Investments
Pacific Investment Management Company
Pathway Capital Management
Peregrine Capital Management, LLC.
Perkins Investment Management
PGIM Fixed Income
PineBridge Investments
PNC Capital Advisors, LLC
Polen Capital Management
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.
South Texas Money Management, Ltd.
State Street Global Advisors
Strategic Global Advisors
Stone Harbor Investment Partners, L.P.
Sun Life Investment Management
T. Rowe Price Associates, Inc.
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

Callan

November 21, 2019

Private Markets Discussion

North Dakota State
Investment Board

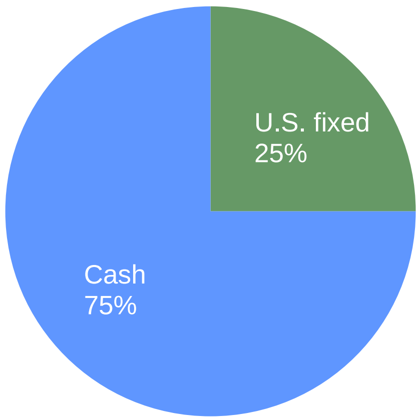
Paul Erlendson
Denver Fund Sponsor Consulting

Pete Keliuotis, CFA
Alternatives Consulting

Alex Browning
Denver Fund Sponsor Consulting

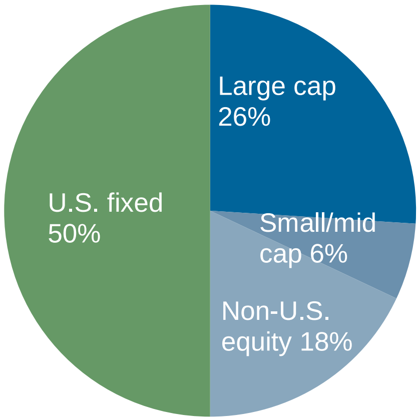
Diversification and Complexity Has Grown Over The Years

Increasing Complexity



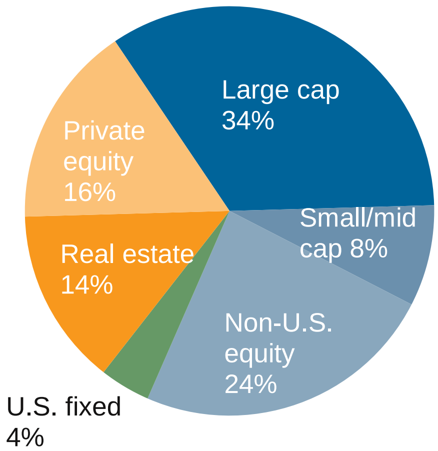
1989

Return:	**7.5%**
Risk:	**3.1%**



2004

Return:	**7.5%**
Risk:	**8.9%**



2019

Return:	**7.5%**
Risk:	**18.0%**

Increasing Risk

In 1989, our expectations for cash and broad U.S. fixed income were 6.80% and 9.35%, respectively

Growth assets were not required to earn a 7.5% expected return

15 years later, an investor would have needed half of the portfolio in public equities to achieve a 7.5% expected return, nearly tripling the portfolio volatility of 1989

Today an investor is required to include 96% in growth assets to earn a 7.5% expected return at almost 6x the volatility compared to 1989

Source: Callan

North Dakota State Investment Board

Private Equity Portfolio Activity Summary

- NDSIB has a mature Private Equity program:
  - 1998 initial vintage year
  - 84% paid-in
- During Q1 capital was called at a faster pace than capital distributed
- Cumulative distributions almost equal to paid-in capital
- Performance lagging Refinitiv/ Cambridge benchmark
  - Net TVPI: 3rd Quartile
  - Net IRR: 3rd Quartile
- Performance impacted by pre-GFC commitments, Distressed, Energy, and non-US exposure
- Pace of commitments accelerated in 2006-07, then again in 2015-19

Total Private Equity
Period Ended March 31, 2019

	March 31, 2019	Quarter Change	December 31, 2018
Summary			
Vintage Years	22 in 1998-2019		22 in 1998-2019
Changes in Value			
Capital Commitments	$962,918,157	-	$962,918,157
Paid-In Capital	$811,983,498	$9,752,397	$802,231,101
Uncalled Capital	$308,410,744	$(9,752,397)	$318,163,141
% Paid-In	84.33%	1.01%	83.31%
Distributed Capital	$731,270,654	$1,431,567	$729,839,087
Net Asset Value	$205,488,234	$12,792,726	$192,695,508
Total Realized and Unrealized Value	**$936,758,888**	**$14,224,293**	**$922,534,595**
Ratios and Performance			
Distributions to Paid-In Capital (DPI)	0.90x	(0.01)x	0.91x
Residual Value to Paid-In Capital (RVPI)	0.25x	0.01x	0.24x
Total Value to Paid-In Capital (TVPI)	1.15x	0.00x	1.15x
Quartile Ranking	3rd		3rd
Net IRR	4.27%	0.06%	4.21%
Quartile Ranking	3rd		3rd
Additional Performance Metrics			
Distribution Rate, as % of Beginning NAV		0.74%	
Unrealized Gain/(Loss), Dollars		$4,471,896	
Unrealized Gain/(Loss), %		2.32%	

Financial Figures include liquidated funds.

Quartile rankings against the All Private Equity, All Regions Refinitiv/Cambridge database as of the prior quarter.

North Dakota State Investment Board

Private Equity Manager and Performance Detail

North Dakota State Investment Board
Manager Detail as of March 31, 2019

The following table summarizes changes in each manager's aggregated cash flows and valuation information as of March 31, 2019.

Manager	Vintage Year	Capital Commitments ($000s)	Paid-In Capital ($000s)	Uncalled Capital ($000s)	% Paid-In	Distributed Capital ($000s)	Net Asset Value ($000s)	DPI	RVPI	TVPI	Net IRR
Adams St 1998 Partnership	1998-2001	$5,230	5,236	27	100.12%	7,840	13	1.50x	0.00x	1.50x 2nd	7.24% 2nd
Adams St 1999 Partnership	1999-2002	$9,041	8,664	377	95.83%	11,142	118	1.29x	0.01x	1.30x 2nd	4.26% 3rd
Adams St 1999 Non-US	1999-2005	$3,812	3,572	240	93.69%	6,925	72	1.94x	0.02x	1.96x 1st	12.46% 2nd
Adams St BVCF IV Fund	1999	$25,000	25,000	0	100.00%	43,736	3,360	1.75x	0.13x	1.88x 1st	7.57% 2nd
Hearthstone Advisors MSII	2000	$3,500	26,576	3,500	759.31%	36,855	-1	1.39x	-0.00x	1.39x 2nd	(99.99%) 4th
Adams St 2000 Partnership	2000-2003	$17,195	17,511	844	101.84%	26,189	348	1.50x	0.02x	1.52x 2nd	7.18% 2nd
Adams St 2000 Non-US	2000-2005	$4,538	4,538	0	100.00%	8,498	356	1.87x	0.08x	1.95x 2nd	13.19% 2nd
Adams St 2001 Partnership	2001-2004	$9,530	9,121	410	95.70%	14,101	552	1.55x	0.06x	1.61x 2nd	7.18% 3rd
Adams St 2001 Non-US	2001-2005	$3,354	3,354	0	100.00%	6,217	94	1.85x	0.03x	1.88x 2nd	13.45% 2nd
Adams St 2002 Partnership	2002-2005	$5,318	5,150	167	96.85%	9,390	139	1.82x	0.03x	1.85x 2nd	13.03% 2nd
Adams St 2002 Non-US	2002-2005	$5,834	6,057	-19	103.81%	11,611	90	1.92x	0.01x	1.93x 2nd	15.22% 2nd
Lewis & Clark, LP	2002	$7,500	6,806	694	90.75%	6,504	1,028	0.96x	0.15x	1.11x 3rd	1.09% 3rd
Adams St 2003 Partnership	2003-2006	$1,877	1,780	97	94.84%	2,981	161	1.67x	0.09x	1.76x 2nd	11.40% 2nd
Adams St 2003 Non-US	2003-2006	$4,741	4,507	234	95.07%	10,125	177	2.25x	0.04x	2.29x 1st	23.19% 1st
Hearthstone Advisors MSIII	2003	$8,750	37,058	4,475	423.52%	45,026	2,541	1.22x	0.07x	1.28x 3rd	24.60% 1st
Adams St 2004 Non-US	2004-2007	$2,244	2,139	105	95.33%	3,319	216	1.55x	0.10x	1.65x 2nd	10.03% 2nd
MatlinPatterson II	2004	$40,000	59,254	1	148.13%	33,246	1,190	0.56x	0.02x	0.58x 4th	(20.10%) 4th
Adams St Direct Co-Invest	2006	$20,000	19,100	900	95.50%	27,155	714	1.42x	0.04x	1.46x 3rd	5.23% 3rd
Capital International V	2007	$35,279	41,422	5,585	117.41%	37,629	752	0.91x	0.02x	0.93x 4th	(2.57%) 4th
CorsAir III	2007	$25,148	34,558	395	137.42%	17,045	6,645	0.49x	0.19x	0.69x 4th	(6.87%) 4th
EIG Energy Fund XIV	2007	$45,000	59,496	1,243	132.21%	51,000	4,838	0.86x	0.08x	0.94x 4th	(2.56%) 4th
MatlinPatterson III	2007	$40,000	52,477	-1,568	131.19%	54,401	11,426	1.04x	0.22x	1.25x 3rd	4.91% 3rd
Quantum Energy Partners	2007	$15,000	15,130	1,005	100.87%	14,831	1,619	0.98x	0.11x	1.09x 4th	2.56% 4th
Adams St 2008 Non-US	2008-2012	$10,000	9,133	867	91.33%	7,558	7,537	0.83x	0.83x	1.65x 2nd	10.79% 3rd
Lewis & Clark II	2009	$15,000	13,578	1,422	90.52%	7,450	4,343	0.55x	0.32x	0.87x 4th	(2.34%) 4th
Adams St 2010 Direct Fund	2010	$1,500	1,424	76	94.90%	1,685	831	1.18x	0.58x	1.77x 2nd	12.89% 3rd
Adams St 2010 Partnership	2010-2014	$7,500	6,608	892	88.10%	4,670	6,901	0.71x	1.04x	1.75x 2nd	14.57% 2nd
Adams St 2010 Non-US EM	2010-2014	$1,500	1,347	153	89.80%	355	1,835	0.26x	1.36x	1.63x 2nd	11.58% 3rd
Adams St 2010 Non-US Dev	2010-2014	$4,500	3,940	560	87.55%	2,846	3,178	0.72x	0.81x	1.53x 3rd	11.72% 3rd
Capital International VI	2011	$38,092	38,963	1,677	102.29%	8,770	31,520	0.23x	0.81x	1.03x 4th	0.94% 4th
Adams St 2015 Global Fd	2015-2016	$30,000	17,284	12,716	57.61%	1,603	22,166	0.09x	1.28x	1.38x 2nd	26.11% 1st
Adams St 2016 Global Fd	2016-2017	$30,000	12,289	17,711	40.96%	0	14,497	0.00x	1.18x	1.18x 2nd	18.02% 2nd
BlackRock	2017-2019	$200,000	47,185	152,815	23.59%	0	48,146	0.00x	1.02x	1.02x 2nd	1.89% 2nd
Adams St 2017 Global Fd	2017-2019	$60,000	19,726	40,274	32.88%	1,175	19,961	0.06x	1.01x	1.07x 2nd	12.61% 1st
Adams St 2018 Global Fd	2018-2019	$65,000	7,452	57,548	11.47%	0	8,126	0.00x	1.09x	1.09x 1st	14.98% 1st
Total Private Equity		**$962,918**	**811,983**	**308,411**	**84.33%**	**731,271**	**205,488**	**0.90x**	**0.25x**	**1.15x** 3rd	**4.27%** 3rd

Total Private Equity includes liquidated funds.
Quartile rankings against the All Private Equity, All Regions Refinitiv/Cambridge database.

Asset Allocation Biases

Roles of Asset Classes

Asset classes can be viewed based on their responses to different economic/market scenarios

Growth

Equities

- Global equity
- **Private equity**
- Alternative beta
- **Long/short equity**

Credit Sensitive

- High yield
- Emerging debt
- Bank loans
- Long credit
- **Private debt**

Risk Mitigation

Income Producing

- Short duration
- U.S. fixed income
- Non-U.S. fixed
- Global fixed

Rising Rate Protection

- Cash equivalents
- Short duration
- Floating rate securities

Flight to Quality

- Long treasury

Inflation Sensitive

Short/Intermediate Hedge

- Inflation-linked debt
- Commodities

Long-Term Hedge

- REITs
- MLPs
- Natural resource equities
- **Private real estate**
- **Infrastructure**
- **Timber**
- **Agriculture**

Absolute Return (volatility hedge)

- **Hedge funds**
- Multi-asset class
- Unconstrained fixed income

Role of Alternatives

Investors should consider what each asset class contributes to the return, risk, and income level of the total fund in different economic environments.

Private Equity

Growth
- Venture Capital
- Buyouts
- Growth Equity
- Distressed Debt
- Energy

Income
- Private Credit
- Specialty Lending

Real Assets

Growth
- Real Estate (VA/Opp)
- Infrastructure (VA/Opp)
- Timber

Income
- Real Estate (Core/Core+)
- Infrastructure (Core)
- Real Asset Debt
- Farmland

Inflation Hedge
- Commodities
- Infrastructure (Core)

Diversifying Assets

Downside Protection
- Global Macro
- CTAs
- Relative Value

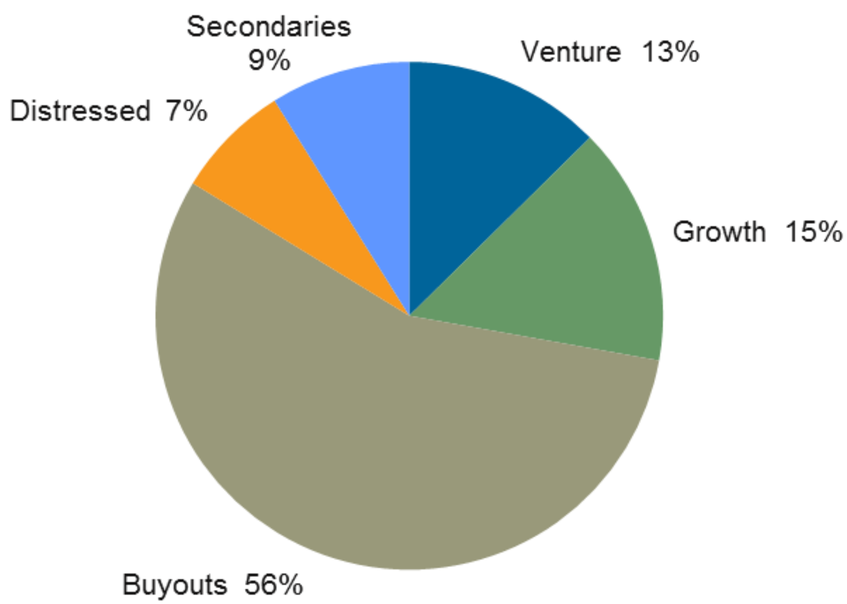
Alpha
- Long/Short Equity
- Long/Short Credit
- Event Driven

Diversifying Returns
- MACs/Risk Premia
- Insurance Linked Securities
- Specialty Lending

Private Markets Portfolio Construction

Strategy Allocations: Private Equity and Real Assets

Strategy Type Composition of Refinitiv/Cambridge Benchmark[1]
(Cumulative Commitments for 10 Years ended 6/30/2018)



[1] Refinitiv/Cambridge data as of June 30, 2018 for vintage 2008 and later funds, totaling $1.71 trillion across 1,892 funds.

Typical Private Equity Strategy Allocations

Strategy	% Target
Venture Capital	0 – 15%
Growth Equity	0 – 15%
Buyouts*	40 – 60%
Debt Related**	10 – 25%
Non-US (total)	10 – 30%

* May include Private Energy (0-10%)

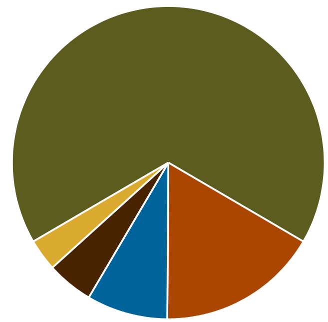
** Debt Related includes Senior Loans, Mezzanine, Distressed, and Special Situations

NDSIB Portfolio Construction

Strategy, Geography, and Industry Sector Allocations

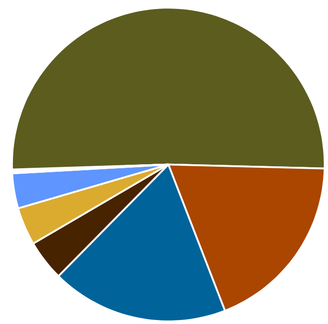
- Like most large investors, NDSIB has the bulk of its Private Equity exposure in buyout strategies. Exposure to venture capital and growth equity strategies is smaller, typical for large investors. Opportunities to invest in distressed strategies have been diminishing in recent years.
- NDSIB has an above-average allocation to non-US strategies, especially Asia/Pacific and Emerging Markets. This has improved diversification but non-US PE has experienced weaker performance overall than US PE in recent years.
- The NDSIB PE portfolio has a growth orientation, with Technology, Healthcare, and Consumer comprising over 50% of the portfolio. This has benefited performance since the GFC.

NDSIB Private Equity Portfolio Composition as of 3/31/2019



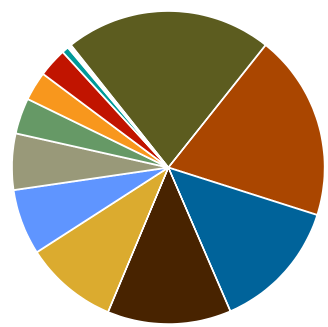
Strategy Allocations

Buyout	66.78%
Venture/Growth Capital	16.71%
Distressed/Restructuring	8.40%
Special Situations	4.84%
Mezzanine	3.27%



Geography Allocations

United States	50.95%
Asia/Pacific	18.74%
Europe	18.29%
Other	4.22%
Africa	3.93%
Latin America & Caribbean	3.56%
Middle East	0.31%
Canada	0.01%



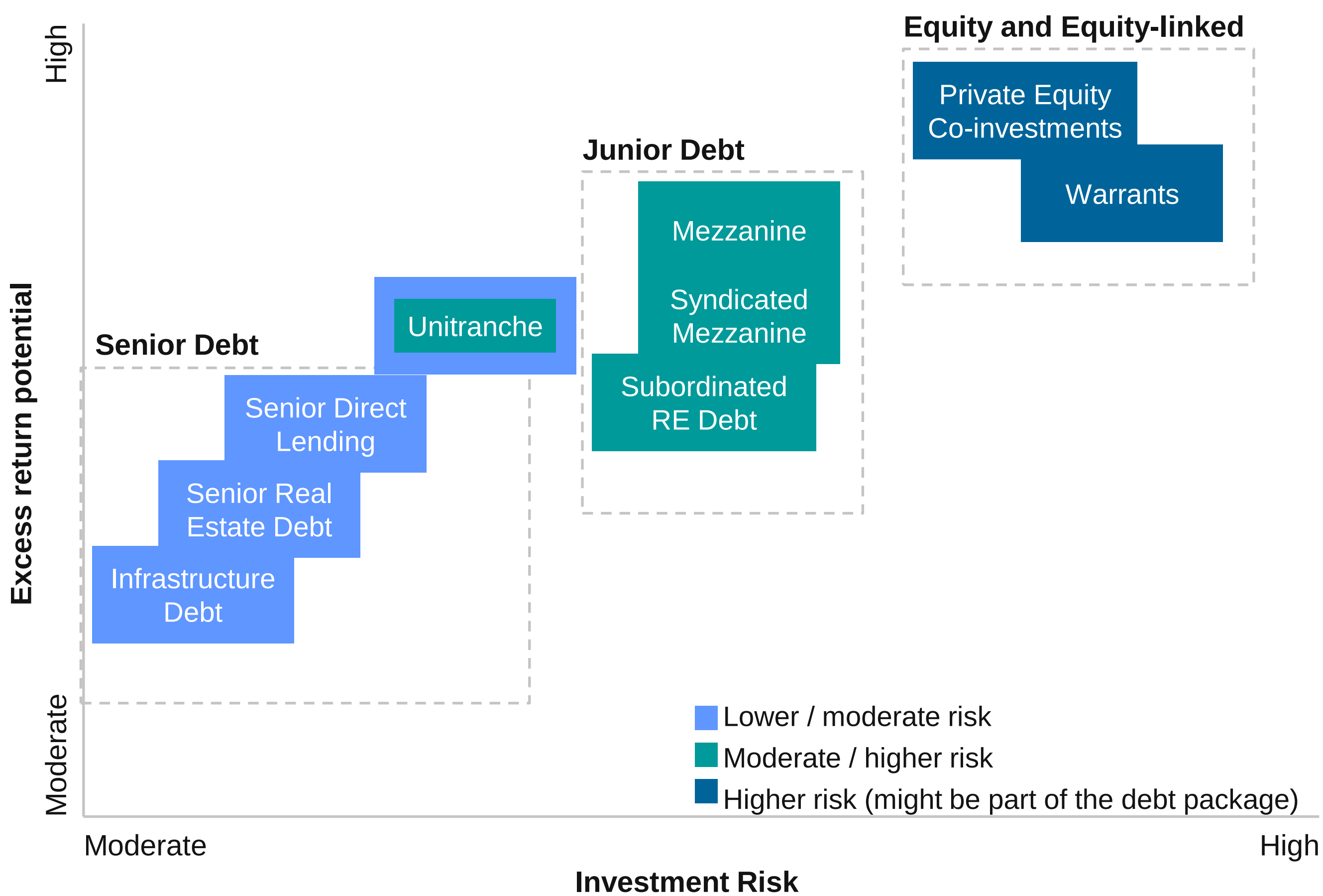
Industry Allocations

Technology	21.38%
Health Care	19.17%
Consumer Discretionary	13.60%
Financial	12.77%
Industrials	9.63%
Consumer Staples	6.76%
Energy	5.84%
Communication Services	3.72%
Materials	3.00%
Real Estate	2.99%
Utilities	0.73%
Other/Misc	0.40%

Private Credit Portfolio Construction

Opportunity Set Across Risk Spectrum

- Return assumption a key factor in determining appropriate strategy(s)
- Must be mindful of true economic risk of an asset class that may exhibit low mark-to-market volatility
- Other risks to consider: credit, carry, liquidity
- Opportunity set of strategies with a variety of risk / return profiles



Callan Diversifying Assets Classifications

Balanced portfolio construction while avoiding over-diversification

Primary Hedge Fund Strategy Categories			Other Diversifiers
Fundamental	**Quantitative**	**Multi-Strategy**	

Non-Directional
– Global Macro
– Equity Long/Short (low net)
– Convertible Arbitrage
Directional
– Equity Long/Short (long or short biased)
– Event Driven
– Credit-Distressed
– Structured Credit
	Non-Directional
	– Volatility Arbitrage
	– Quant Equity Market Neutral
	– Fixed Income Relative Value
	– Systematic Macro
	Directional
	– Quantitative Directional Equity
	– Managed Futures (trend)
		Non-Directional
		– Multi-Asset Class (MAC)
		  – Risk Premia
		  – Absolute Return
		  – Risk Parity
		Directional
		– Equity Long/Short
		– Event Driven
		– Multi-Asset Class (MAC)
		  – Long Biased
		  – Real Return
			Yield Oriented
			– Litigation Finance
			– Royalties
			Balanced
			– Insurance Linked (ILS)
			– Life Settlements
			– Regulatory Capital
			Tail Risk Hedge
			– Options Overlay
			– Put Write

Callan Diversifying Assets Portfolio Construction Objectives:

1. Diversify by strategy and style
2. Utilize limited number of institutional quality managers
3. Optimize fees vs. beta-adjusted expected alpha

Callan Approach to Private Markets Investing

Alternatives Research Resources

Experience with all types of Alternative Investments

1989	36	$60+bn
Began Providing Alternative Investments Research Services	Alternative Investments Clients	Total Alternative Investment Commitments Advised

Dedicated Resources

– 23 specialists across alternatives
– Proprietary database & portfolio modeling

Customized Approach

– Investment objectives and liquidity profile set in context of total plan
– Bespoke portfolios and manager selection
– Client web portal

Disciplined & Collaborative Process

– Alternatives Review Committee (“ARC”) ensures quality control and adherence to well-defined process
– Research is transparent, collaborative, and well-documented
– Strong focus on GP/LP alignment

Planning & Structuring

Annual Investment Plan
Strategy Allocation Plan
Cash Flow Modeling & Liquidity Analysis

Plan Implementation

Focus List Review
Due Diligence
Terms Negotiation
Fee Analysis

Education & Research

Client-Driven Research
Topical White Papers
Callan College, Conferences & Workshops
Market Trends & Insights

Monitoring & Evaluation

Performance Measurement
Risk Monitoring
Fund & Manager Monitoring
Partnership Amendment Review

Key Pillars of Our Approach

Private Markets Research & Consulting Framework

	Program Design	Investment Planning	Portfolio Construction	Monitoring & Reporting
Key Objectives	Define clear objectives and risk parameters; align policies and process for improved execution	Design customized plans that incorporate unique goals and constraints	Apply a wide lens and a transparent and rigorous process	Critically assess the portfolio's attributes to improve implementation

Education & Research

Program Design

Private Markets Research & Consulting Framework

Program Design	Investment Planning	Portfolio Construction	Monitoring & Reporting

Key Objectives

- Establish and codify clear investment and operational goals and objectives.
- Assess current program structure vis-à-vis goals and objectives to identify gaps.
- Develop a strategic roadmap to align policies, procedures, governance, internal/external resources, systems, etc. to achieve investment and operational goals and objectives.

Processes

Document Collection & Review » Stakeholder Discussions » Drafting of Investment & Operational Strategic Plan » Socialize, Review and Adopt Strategic Plan » Strategic Plan Implementation

Client Deliverables

- Strategic Goals and Objectives
- Program Assessment & Gap Analysis
- Investment & Operational Strategic Plan
- Investment Policy Statement
- ESG, MWBDO & Other Goals Assessment

Investment Planning

Private Markets Research & Consulting Framework

Program Design	**Investment Planning**	Portfolio Construction	Monitoring & Reporting

Key Objectives

- Develop clear short- and long-term investment plans to construct a strategic private markets portfolio fitting the client's objectives and constraints.
- Establish investment pacing budgets and key areas of portfolio construction focus.
- Evaluate the market environment for key investment risks and opportunities.

Processes

Perform Portfolio Review » Evaluate Market and Manager Landscape » Draft Annual Investment Plan » Socialize, Review and Adopt Annual Investment Plan » Implement Investment Plan

Client Deliverables

- Annual Investment Plan
- Commitment Pacing Analysis
- Cash Flow & Liquidity Analysis
- Market Overview
- Global Forward Calendar
- Private Markets Manager Focus Lists

Portfolio Construction

Private Markets Research & Consulting Framework

Program Design	Investment Planning	Portfolio Construction	Monitoring & Reporting

Key Objectives

- Develop a wide lens to maximize the investable opportunity set.
- Proactively identify and target top quality investment opportunities of best fit for the program.
- Perform rigorous screening and due diligence to validate key investment merits and assess key investment risks.

Processes

Proactive Outreach & Sourcing » Screening: Review Offering Docs & Benchmarking » Quant Review: Attribution and Value Creation Analysis » Due Diligence: Review GP, Team & Strategy » Formal Due Diligence Report

Customized client involvement and communication throughout process

Client Deliverables

- Global Forward Calendar
- Pipeline Review
- Fund Offering Factsheets & Meeting Notes
- Attribution & Value Creation Analyses
- Peer Benchmarking
- Formal Due Diligence Report

Portfolio Construction (Continued)

Private Markets Research Process

Program Design | Investment Planning | **Portfolio Construction** | Monitoring & Reporting

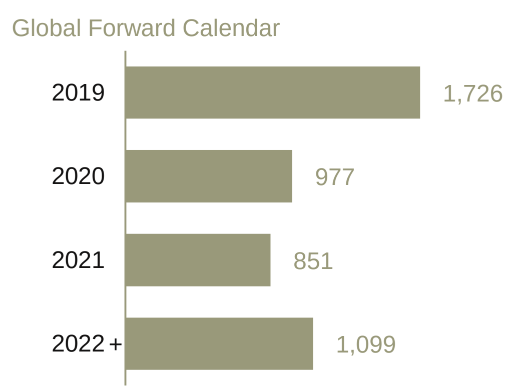
Proactive Capital Budgeting, Outreach & Sourcing

We have developed a dynamic and proprietary Global Forward Calendar to identify and prioritize research efforts on opportunities of highest quality and of best fit for clients

Customized target segments are defined for each client in the Investment Planning process and we use the Global Forward Calendar to proactively target, or wait for, opportunities offering compelling performance potential and portfolio fit.

	North America	Europe	Asia/ Pacific	Global	Emerging Markets	Total
Venture	1,021	290	433	192	104	2,040
Growth	238	128	286	55	86	793
Buyout	505	243	158	37	70	1,013
Distressed	38	11	5	21	3	78
Credit	298	108	43	79	16	554
Energy	108	29	16	22	10	185
Active Funds	2,208	809	941	406	289	**4,653**
					Total Fund Universe	20,000+

»



Note: Private Equity forward calendar statistics as of September 11, 2019; Callan follows a similar global approach for Real Assets.

Monitoring & Reporting

Private Markets Research & Consulting Framework

Program Design	Investment Planning	Portfolio Construction	Monitoring & Reporting

Key Objectives

- Establish a clear picture of the composition of the private markets portfolio, including underlying investment exposures.
- Evaluate investment performance of the funds and portfolio relative to investment objectives and performance expectations.
- Proactively monitor investments to identify portfolio management opportunities and concerns, as well as key action items.

Monitoring & Reporting Service Levels

Portfolio-Level Reporting	Fund-Level Reporting	Fund Level Reporting & Monitoring	Fee & Expense Reporting

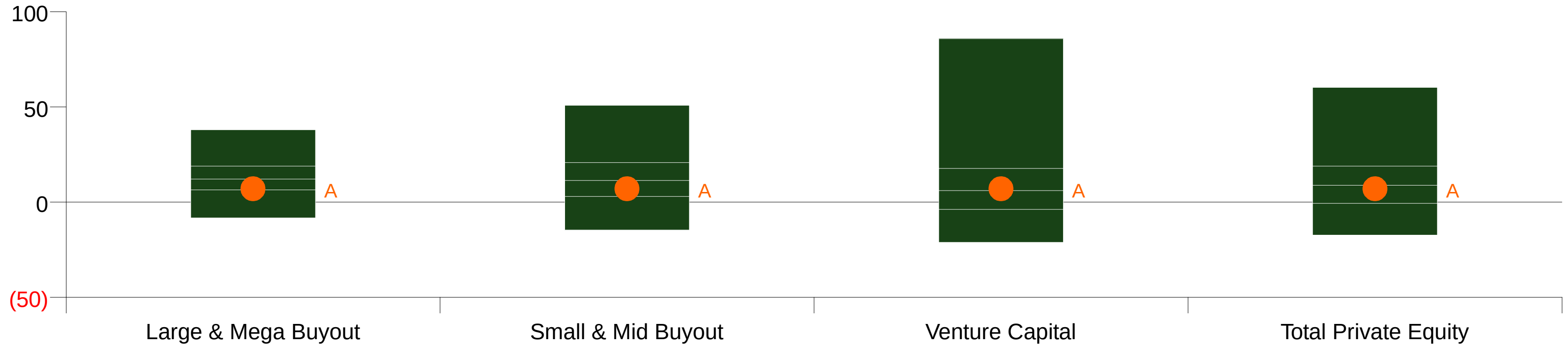
Client Deliverables

- Customized Performance Report
- Portfolio- & Fund-Level Benchmarking
- Company-Level Holdings Analysis
- Key Fund & Manager Updates
- Stoplight Report w/ Potential Action Items
- Data Reconciliation & File Management

Private Equity from a Historical Perspective

The Importance of a Balanced Approach

Private Equity 20-Year Horizon Return



	Large & Mega Buyout	Small & Mid Buyout	Venture Capital	Total Private Equity
5th Percentile	38.06	50.89	85.89	60.28
25th Percentile	18.94	20.83	17.71	18.99
Median	**12.16**	**11.36**	**6.13**	**8.93**
75th Percentile	6.43	3.04	(3.80)	(0.60)
95th Percentile	(8.25)	(14.54)	(21.10)	(17.24)
	Large & Mega Buyout	Small & Mid Buyout	Venture Capital	Total Private Equity
S&P500 A	7.00	7.00	7.00	7.00

Wide return dispersion in private equity performance vs. public equities

- Total Private Equity – 19.6% top/lower quartile return dispersion vs. 2.6% for Small-Cap Growth Equity

The 20-year VC returns shown still include the very good 1998-1999 returns. Those will roll off soon.

- A VC manager must rank better than top quartile in order to beat other PE strategies

Source: Thomson Cambridge Private Equity Index (as of September 30, 2017). Total Private Equity includes Buyout, Growth Equity, Venture Capital and Control-Oriented Distressed strategies.

Private Equity Metrics

Private Equity Monitoring

Investment Exposure Metrics

Vintage Year »	Two methods used to determine vintage year are: (1) the year of the investment vehicle's first drawdown or capital call from its investors; or (2) the year when the first committed capital from outside investors is closed and legally binding.
Committed Capital »	Pledges of capital to an investment vehicle by investors (limited partners and the general partner) or by the firm. committed capital is typically not drawn down at once but drawn down over a period of time. Also known as "commitments."
Paid-In Capital »	Capital inflows to an investment vehicle. Committed capital is typically drawn down from limited partners (or investors) over a period of time through a series of capital calls, which are at the discretion of the general partner or firm. Paid-in capital is equal to the amount of committed capital that has been drawn down since inception. Paid-in capital includes distributions that are subsequently recalled by the general partner or firm and reinvested into the investment vehicle.
Distribution »	Cash or stock distributed to limited partners (or investors) from an investment vehicle. Distributions are typically at the discretion of the general partner (or the firm). Distributions include both recallable and non-recallable distributions.
Unrealized Value/ Residual Value »	The remaining equity that limited partners (or investors) have in an investment vehicle at the end of the performance reporting period.
Total Value »	Residual value plus Distributions

Source: Global Investment Performance Standards Handbook (2010).

Private Equity Monitoring

Investment Return Metrics

Internal Rate of Return	»	The internal rate of return (IRR) is the implied discount rate or effective compounded rate of return that equates the present value of cash outflows (Paid-In Capital) with the present value of cash inflows (Distributions).
Total Value to Paid-In Capital (TVPI)	»	Total value divided by since inception Paid-In Capital
Residual Value to Paid-In Capital (RVPI)	»	Residual value divided by since inception Paid-In Capital
Distributions to Paid-In Capital (DPI)	»	Distributions divided by since inception Paid-In Capital. Also referred to as the Realization Multiple.
Public Markets Equivalent (PME)	»	The performance of a public market index expressed in terms of an internal rate of return (IRR), using the same cash flows and timing as those of the composite over the same time period. A PME can be used as a benchmark by comparing the IRR of a private equity composite with the PME of a public market index.
Paid-In Capital Multiple (PIC)	»	Paid-In Capital divided by since inception Committed Capital

Source: Global Investment Performance Standards Handbook (2010).

Private Equity Monitoring

Other Metrics

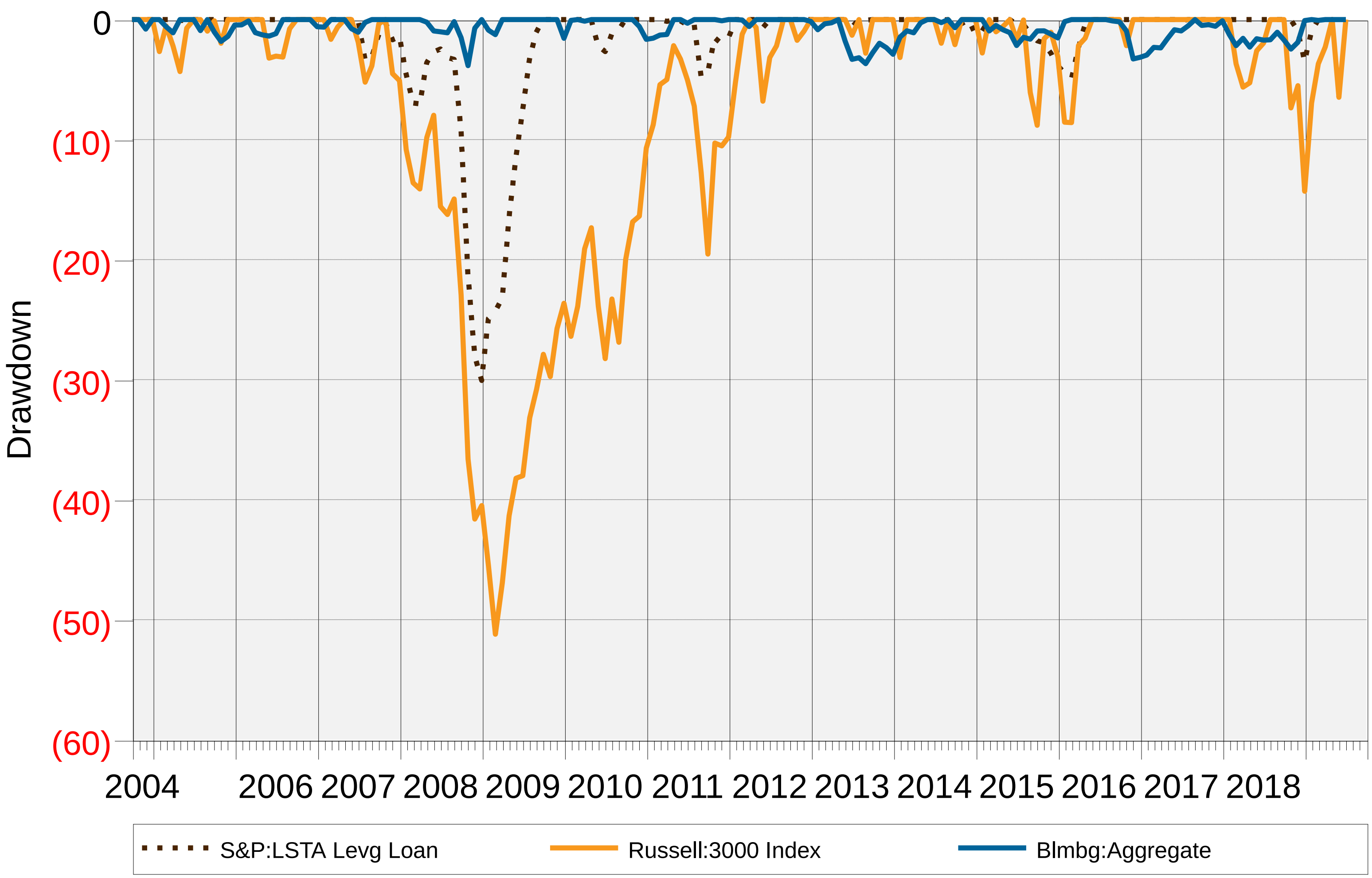
Loss Ratio	»	The proportion of a fund's invested capital that has produced a realized or unrealized loss.
Recovery Rate	»	The sum of investment proceeds and unrealized value divided by invested capital, for the investments of a fund that have produced a realized or unrealized loss.
Enterprise Value (EV)	»	A measure of a company's total value, including all ownership interests and asset claims from both debt and equity are included. EV can be thought of as the effective cost of buying a company or the theoretical price of a target company. EV = Market Value of Common Equity + Market Value of Preferred Equity + Market Value of Debt + Minority Interest – Cash and Equivalents
EBITDA	»	Earnings before interest, taxes, depreciation and amortization. A measure of a company's financial performance intended to allow for a comparison of profitability of different companies by isolating the effects of interest payments from different forms of financing, political jurisdictions or tax treatments and accounting methods for depreciation or amortization.
Valuation Multiple	»	Enterprise Value divided by EBITDA
Leverage Multiple	»	Total Debt divided by EBITDA The Leverage Multiple may also may be presented as Net Debt divided by EBITDA, where Net Debt equals Total Debt less Cash and Equivalents.

Appendix

U.S. Syndicated Bank Loans Return Drawdown

As a liquid, public proxy for Direct Lending and Private Debt

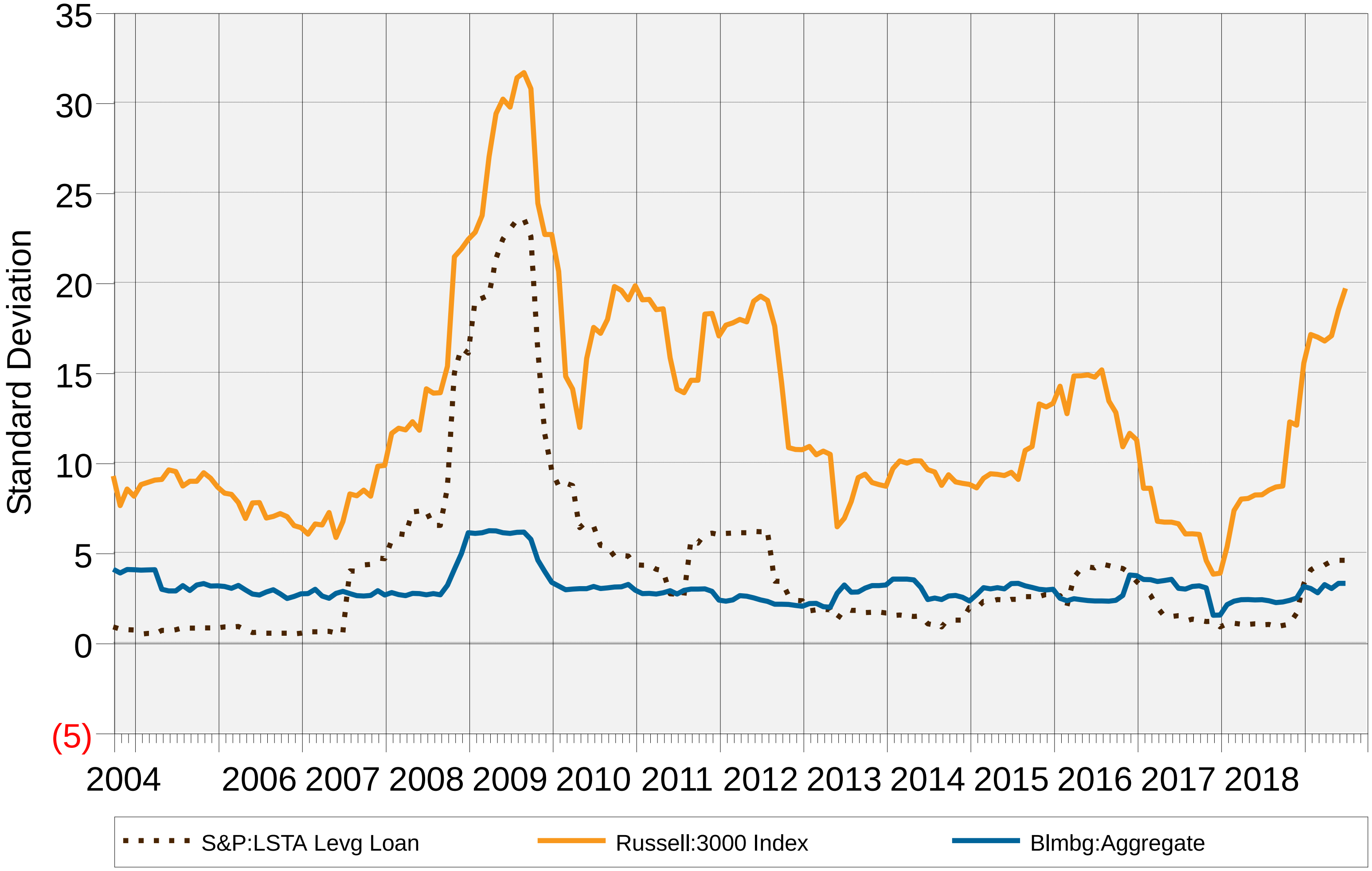
Drawdown
for 15 Years Ended September 30, 2019



U.S. Syndicated Bank Loans

Pricing Risk in Equity Market Drawdowns

Rolling 12 Month Standard Deviation
for 15 Years Ended September 30, 2019



AGENDA ITEM III.C.

Board Acceptance Requested

TO: **State Investment Board**

FROM: Dave Hunter

DATE: November 19, 2019

SUBJECT: **General Investment Consulting Service Update**

During the past year, RIO reached out to the ten largest investment consulting firms to discover which firms were most interested in working with the SIB and to gain a better understanding of which firms would be the most well suited to assist us in future investment consulting engagements.

Consultants Ranked by Assets Under Advisement (AUA)

As of June 30, 2018

		Assets Under Advisement ($ in trillions)
1	Mercer	$11.6
2	Aon	$3.1
3	Cambridge Associates	$2.6
4	Russell Investments	$2.5
5	Callan	$2.3
6	RVK	$2.3
7	Willis Towers Watson	$2.2
8	Pension Consulting Alliance	$1.4
9	Meketa Investments	$1.1
10	NEPC	$1.0
11	Wilshire Associates	$1.0

Source: Pensions & Investments data deemed to be materially accurate but unaudited.

RIO expanded the top ten list to include Wilshire after Meketa announced its acquisition of PCA in mid-2019 noting that Wilshire's AUA approached $1 trillion at June 30, 2019. RIO also notes that *"Private equity owner TA Associates (recently) hired Goldman Sachs to explore a sale of Russell Investments putting the $293 billion asset manager on the block as part of a wave of consolidation in the fund management industry … Russell Investments was last valued at $1.15 billion in 2016 when TA Associates acquired the group …". Financial Times - November 19, 2019*

In summary, all of the top ten institutional consulting firms expressed a strong desire to work with the SIB at some level.

Tier 1 Project Consultants: Mercer, Russell and Willis Towers Watson did not convey a strong desire to serve as a general investment consultant due to concerns over legal liability and/or the belief they could offer higher value added services on a project basis or as a specialist. RIO notes the SIB previously engaged Mercer as a private infrastructure project consultant in 2017 prior to hiring I-Squared and Macquarie in 2018.

Tier 1 Project and General Consultants: Cambridge and Meketa/PCA were willing to serve as a general investment consultant, although RIO believed these firms were generally more interested in working as alternative investment specialists or project consultants given our organizational structure (with seven distinct reporting entities including the Legacy Fund, PERS, TFFR, WSI and Budget Stabilization Fund within the Pension and Insurance pools) and were generally accompanied by higher indicative fee levels.

Tier 1 General Investment Consultants: RIO has identified Callan, RVK, Aon, NEPC and Wilshire as our top five "Tier 1 General Investment Consultants" largely due to these firms presenting the most compelling overall business proposals based on the breadth and depth of their firm resources and their willingness to offer cost efficient solutions to U.S. public pension plan and U.S. sovereign wealth fund sponsors most similar to ourselves.

RIO notes that Callan, NEPC and RVK are the top three investment consulting firms when ranked by assets under management for U.S. Sovereign Wealth Funds (SWF's), while Aon has conducted an asset allocation project for the Alaska Permanent Fund. Aon also serves as the general investment consultant for many large public pension plans which include smaller SWF's such as the Nebraska Investment Council and Florida SBA.

- **Callan SWF clients** include Alaska Permanent Fund at $67 billion, **North Dakota Legacy at $6.4 billion** and Idaho Endowment (Public Schools) at $2.4 billion.
- **RVK SWF clients** include New Mexico State Investment Council at $23 billion, Wyoming Permanent Mineral Trust Fund at $8 billion and **North Dakota Common Schools Trust Fund at approximately $5 billion**.
- **NEPC SWF clients** include the Texas School Permanent Fund at $47 billion.

RIO notes that all of the Tier 1 General and Project Consultants provided very competitive proposals from a pricing perspective including NEPC and Wilshire.

Callan has served as the general investment consultant and performance evaluator for the TFFR board since 1984. The TFFR board selected Callan to serve as its general consultant in January of 1984. Later that year, Callan representatives helped TFFR staff develop an investment policy which was adopted by the board trustees in July. RIO also believes that Callan served as PERS general investment consultant dating back to the mid-1970's.

Board Acceptance Requested:

If the SIB concurs, RIO will share written presentations from our two highest rated "Tier 1 General Investments Consultants" (including Aon, Callan, NEPC, RVK and Wilshire) **at our next SIB meeting on January 24, 2020.** It is important to note that RIO has no concerns with our mutually beneficial and long standing relationship with Callan, even though the SIB and RIO have occasionally engaged other third party consultants to obtain differing expert opinion on certain topics such as best practices in board governance or to conduct specialized due diligence in certain private market sectors.

RIO will highlight recent consultant discussions with each of the top five firms identified above in addition to recent conversations with our U.S. public pension plan & U.S. sovereign wealth fund peers relating to general investment consultant search activity and transition challenges.

Sovereign Wealth Fund Institute (SWFI)
Top U.S. Sovereign Wealth Funds
Ranked by Total Assets

		U.S. $ in billions	General Consultant
1	**Alaska Permanent Fund Corporation**	**$ 67.2**	**Callan**
2	Texas Permanent School Fund	$ 46.5	NEPC
3	University of Texas Investment Management Co.	$ 44.0	-
4	New Mexico State Investment Council	$ 23.3	RVK
5	Wyoming Permanent Mineral Trust Fund	$ 8.0	RVK
6	**North Dakota Legacy Fund** *1*	**$ 6.4**	**Callan**
7	*Arizona State Treasurer Office - Land Endowment* *2*	$ 6.2	-
8	*North Dakota Common Schools Trust* *2*	$ 5.0	RVK
9	Alabama Trust Fund	$ 3.3	Callan
10	Utah School & Institutional Trust Funds Office	$ 2.6	F.E.G.

1 - NDSIB client assets exceed $16.8 billion as of November 18, 2019.

2 - SWFI omitted AZ State Treasurer Office & ND Common Schools Trust Fund

Data shown above is unaudited, subject to change and based on the most recently reported market valuations.

North Dakota's Legacy Fund is ranked as the 6th largest U.S. Sovereign Wealth Fund as of Sep. 30, 2019. Most U.S. SWF's engage an investment consultant to assist their governing boards in asset allocation.

RETIREMENT AND INVESTMENT OFFICE
Internal Audit
2018-2019 1st Quarter Audit Activities Report
July 1, 2019 – September 30, 2019

The audit objective of Internal Audit is twofold: first, to provide comprehensive, practical audit coverage of the Retirement and Investment Office (RIO) programs; second, to assist RIO management and the State Investment Board (SIB) by conducting special reviews or audits.

Audit coverage is based on the July 1, 2019 through June 30, 2020 work plan approved by the SIB Audit Committee. The audit activities undertaken are consistent with the Internal Audit charter and goals, and the goals of RIO. To the extent possible, our audits are being carried out in accordance with the International Standards for the Professional Practice of Internal Auditing. Audit effort is being directed to the needs of RIO and the concerns of management and the SIB Audit Committee.

Investment and Agency Audit Activities

- **Executive Limitation Audit**

Each year the SIB conducts a customer satisfaction survey. The purpose of this annual survey is to determine how well the SIB, through the staff of the RIO, is meeting the expectations of its clients. This survey is part of the SIB's ongoing effort to be more responsive to the needs of their clients and to continually improve the services that are provided. Internal Audit facilitated the survey in July and August 2019 and results were provided to the SIB at their October 25, 2019 meeting.

- **External Audit Support**

Internal Audit provided support to our external audit partners, CliftonLarsonAllen (CLA), during the GASB 68 Census Data Audits. Internal A notified twelve employers of an upcoming GASB 68 Census Data Audit in July 2019. CLA anticipated that GASB 68 Census Data Audit work would conclude in mid-October. In August 2019, Internal Audit sent out twenty-four employer confirmations as part of the financial statement audit.

- **Investment Due Diligence Audit**

Internal Audit developed an audit about the ongoing due diligence that is being performed on the investment managers that have been hired by the SIB. Discussions with investment staff and research went into the development of this new audit program. This audit includes the review of the procedures and documentation that is being done with the investment managers by RIO's staff. This audit was completed and issued in July 2019.

- **Administrative Expense Audit**

A review of RIO's policies pertaining to travel and expenses which will be compared to OMB policy and state purchasing requirements. A sample of travel vouchers from both board members and staff will be reviewed, including in-state, out-of-state, and international travel to ensure compliance with policy and regulations. A sample of invoices (ex. rent, cleaning, etc.) will be selected. These invoices will be reviewed to ensure proper approvals were obtained, verify invoice with expense voucher, review contract, and review that payment was issued and cleared.

This audit is currently in progress.

Retirement Program Audit Activities

- **TFFR Employer Salary Reviews**

Internal Audit examines employer reporting to the Teachers' Fund for Retirement (TFFR) to determine whether retirement salaries and contributions reported for members of TFFR for accuracy with the definition of salary as it appears in the TFFR Employer Guide. Other reporting procedures reviewed during the audit process are calculation of service hours and eligibility for TFFR membership. A written report is issued after each review is completed to Retirement Services.

Status of TFFR Employer Audits as of September 30, 2019:

  - Three (3) employer audits had been completed.
  - One (1) employer audit was in progress.

- **File Maintenance**

A review of changes made to TFFR member account data by Retirement and Investment Office employees is reviewed on an annual basis. Internal Audit reviews system generated (CPAS) audit tables to ensure transactions initiated by staff are expected and appropriate given an individual's role within the organization. Member accounts are also reviewed to ensure contact and demographic information has been updated correctly per Member Action Forms on file. Other procedures reviewed are change of addresses and the posting of beneficiary deaths that are not in pay status.

The audit fieldwork has been completed and a report will be issued in November 2019.

Administrative Activities

The Supervisor of Internal Audit attended the monthly RIO staff meetings, monthly RIO manager's meetings, divisional meetings, three SIB meetings, and one TFFR meeting. The Internal Audit staff member attended the monthly RIO staff meetings, divisional meetings, two TFFR meetings. The Supervisor of Internal Audit also had meetings with the new audit committee members as part of orientation to the committee.

Professional Development/CE/General Education

The Supervisor Internal Audit is pursuing a Master's in Business Administration with a concentration in Public Administration and completed the following courses: Statistics and Research, Business Ethics, and Foundations of Public Administration.

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES DIVISION
FISCAL YEAR 2019 -2020

	FY 2019 1st QTR	FY 2019 2nd QTR	FY 2020 3rd QTR	FY 2020 4th QTR	FY 2020 TOTAL
Audit Activities					
Retirement Program Audits:					
TFFR Employer Audit Program					283
New England-working with census data file	42				42.25
Warwick Public School District	5				5.25
Wilton	76				76.25
Jamestown Public Schools	67				66.5
General Employer Audits					
Audit Peer Reviews/TFFR Meeting(s)/Audit Planning/Audit Notifications	92				92.25
Benefits Audit - Deaths, Long-Outstanding Checks, Long-term Members	1				1
TFFR Cost Effective Benefit Payment Audit	0				0
TFFR Data Analytics	1				1
TFFR File Maintenance Audit	37				37
TFFR Purchase-Refund Audit	0				0
TFFR Task reports	56				56
Annual Salary Verification Project	30				30
Audit Continuous Improvement Project - Employer Audit Program - Census Data Audit File	0				0
Agency Administrative and Investment Audits:					
Executive Limitations Audit	10				10
Investment Due Diligence	48				48
Risk Assessment	0				0
Consulting	11				11
RIO External Auditor Assistance	41				41
Administrative Activities					
Administrative - Staff Mtgs, Time Reports, Email, Records Retention, General Reporting	170				170
Audit Committee/SIB/TFFR Attendance and Preparation	162				162
Professional Development/CE/General Education	2				2
Annual Leave, Sick Leave, and Holidays	190				190
Quarterly Total:	**1040**	**0**	**0**	**0**	**1040**

Total Hours for 2019-2020	4,160
D. Thorsen Total Hours 2019-2020	2,080
S. Sauter Total Hours 2019-2020	2080

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
INTERNAL AUDIT SERVICES
TFFR EMPLOYER REVIEW OF SALARIES, SERVICE HOURS, AND ELIGIBITY OF TEACHERS REPORTED
JULY 1, 2019 TO JUNE 30, 2020

✕ **Reviews Pending - (0)**
& **Reviews in Progress - (1)**
✔ **Reviews Completed - (3)**

			EMPLOYER		FISCAL YEARS	TOTAL MEMBERS	REPORT DATE	TOTAL REVIEW HOURS	EMPLOYER CONTRIB'S DR(CR)	MEMBER SALARY ADJUSTED	MEMBER SERVICE CREDIT ADJUSTED	STATUS
1	✔	SS	Jamestown		2017-2018	212	10/16/2019	73.50	0.00	0	0	**One Finding Noted:** Ineligible summer salary was reported without a summer written agreement or without a continuing contract for the next fiscal year.
2	&	DT	Minot		2017-2018	685						Audit notification sent 9/9/2019- received information 10/25/2019.
3	✔	DT	New England	*	2016-2017	26	7/30/2019	95	($185.28)	2	1	**Three findings noted:** Salaries were reported incorrectly: in-staff subbing was not reported, athletic supervision was not reported, and contract salary was reported incorrectly, service hours reported incorrectly, and hours were not monitored for retired teachers who returned to covered employment.
4	✔	DT	Wilton	*^	2016-2017	32	8/22/2019	72	$0.00	5	0	**Three findings noted:** Salaries were reported incorrectly: athletic supervision was not reported, summer salary was reported in the incorrect fiscal year, and service hours were reported incorrectly.
					Totals	955		167	($185.28)	7	1	

* Expanded member accounts reviewed
^ Expanded number of years reviewed

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
TFFR EMPLOYER AUDIT PROGRESS AND STATUS REPORT
FOURTH AUDIT CYCLE
FOURTH AUDIT CYCLE START DATE: May 23, 2016
FOURTH AUDIT CYCLE END DATE:

	Size	District ID	Auditor	Employer	Anticipated Notification Timeframe	100% or On-site	Info Request	Info Received	Audit Started	Report Date	Corrections to Retirement Services	Invoice/Check Received from Retirement Services	Status	Members	Days b/w Info Request and Received (Business Days)	Days b/w Info Received and Report (Business Days)	Days b/w Info Received and Start Date (Business Days)	Days b/w Start and Report (Business Days)	Days w/Retirement Services (Business Days)	Audit Findings	Hours to Complete
END OF FISCAL YEAR 2017-2018																					
1	S	27-002	DT	ALEXANDER SCHOOL	July 2017		7/31/2017	8/15/2017	2/27/2018	10/25/2018	10/18/2018	10/25/2018	Complete	23	12	436	141	240	7	4 Findings noted	120
2	S	28-051	DT	GARRISON SCHOOL New Bus. Mgr. 11/2016	July 2017		7/31/2017	8/9/2017	8/8/2018	10/29/2018	N/A	N/A	Complete	44	8	446	261	82	0	1 Finding noted	58
3	S	39-028	DT	LIDGERWOOD SCHOOL	July 2017		7/31/2017	9/7/2017	8/1/2018	9/12/2018	N/A	N/A	Complete	45	29	370	235	42	0	1 Finding noted	46
4	S	03-029	DT	WARWICK SCHOOL - NIC REVIEW	March 2018		3/7/2018	4/5/2018	2/28/2019	5/23/2019	N/A	N/A	Complete	31	22	413	236	84	0	4 Findings noted	82
END OF FISCAL YEAR 2018-2019																					
1	S	21-009	DT	NEW ENGLAND SCHOOL	March 2018		3/9/2018	4/6/2018	5/31/2019	7/30/2019	N/A	N/A	Complete	26	21	480	301	60	0	3 Findings	95
2	S	28-001	DT	WILTON SCHOOL	March 2018		3/14/2018	4/13/2018	6/25/2019	8/22/2019	N/A	N/A	Complete	32	23	496	313	58	0	3 Findings	72
3	L	47-001	SS	JAMESTOWN SCHOOL	March 2019		3/7/2019	4/3/2019	8/27/2019	10/16/2019	N/A	10/25/2019	Complete	212	20	196	105	50	0	0 Findings	74
4	L	51-001		MINOT SCHOOL	August 2019		9/9/2019						Pending	685							
5	L	08-001		BISMARCK PUBLIC SCHOOLS	November 2019									1173							
6	M	35-005		RUGBY SCHOOL										61							
7	M	39-037		WAHPETON SCHOOL										108							
8	M	29-027		BEULAH SCHOOL										66							
9	L	30-001		MANDAN PUBLIC SCHOOLS										342							
10	M	11-041		OAKES SCHOOL										38							
11	M	45-009		SOUTH HEART SCHOOL										38							
12	M	12-001		DIVIDE SCHOOL										40							
13	M	22-001		KIDDER COUNTY SCHOOL DISTRICT										46							
END OF FISCAL YEAR 2019-2020																					

**CHARTER OF THE
AUDIT COMMITTEE OF THE
NORTH DAKOTA STATE INVESTMENT BOARD**

PURPOSE

The Audit Committee (the Committee) is a standing committee of the North Dakota State Investment Board (SIB) created to fulfill its fiduciary oversight responsibilities of the North Dakota Retirement and Investment Office (RIO) and to serve as a communications link among the SIB, the RIO's management and ~~Audit Services~~ Internal Audit staff, independent auditors, and others.

The Committee will assist with the integrity of the RIO's financial reporting process and system of internal controls, the RIO's compliance with legal and regulatory requirements, the performance of the RIO's ~~Audit Services~~ Internal Audit function and independent auditors, and the RIO's management of risks in the Committee's areas of responsibility. ~~Audit Services~~ Internal Audit will assist RIO in accomplishing its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

AUTHORITY

The Committee is authorized to provide oversight to the ~~Audit Services~~ Internal Audit function and the independent audit for the RIO. These activities provide assurance that RIO's financial condition and results of operations are accomplished in accordance with the RIO's policies and procedures and legal and regulatory requirements. The Committee may investigate any activity of the RIO and may retain persons as necessary from within or outside the RIO having special competence to assist the Committee in the accomplishment of its responsibilities.

The RIO's Supervisor of ~~Audit Services~~ Internal Audit will be the staff member reporting administratively to the Executive Director/Chief Investment Officer and functionally to the Committee.

The Executive Director will supervise the administrative activities of the ~~Audit Services~~ Internal Audit function and independent audit activities such as securing contracts, paying fees, maintaining official reports, and other appropriate activities.

COMPOSITION

The Committee will consist of five members, selected by and approved by the SIB. Three members of the Committee will represent the three groups on the SIB: Teachers' Fund for Retirement (TFFR) Board, Public Employees Retirement System (PERS) Board, and elected and appointed officials, and two members selected from outside of the SIB and the RIO. The SIB should select committee members who are both independent and financially literate.

Membership on the Committee will be for one year or termination of term on the SIB. Vacancies will be filled by the SIB at the first scheduled meeting following the vacancy. There will be no limit to the number of terms served on the Committee
The Committee will elect a Chair, and a Vice Chair. A liaison will be appointed by the Chair. The Chair will preside at all meetings of the Committee. In the absence of the Chair, the Vice Chair will perform the duties of the Chair. The liaison will report annually to the SIB on the results of the independent audit and at least four times a year to the SIB and TFFR board on the activities of the Committee and other pertinent information.

The Committee may form, and delegate authority to, subcommittees when it deems appropriate.

MEETINGS
The Committee will meet generally four times a year, with authority to convene additional meetings, as circumstances require or to adequately fulfill all the obligations and duties as outlined in this charter.

Meeting agendas will be prepared by the Supervisor of ~~Audit Services~~ Internal Audit and approved by the Committee Chair, unless otherwise directed by the Committee and will be provided to the Committee members along with briefing materials before the scheduled committee meeting.

Committee members are expected to attend each meeting, in person or via tele- or video-conference. The Supervisor ~~of Audit Services~~of Internal Audit, a representative of RIO's management team and others necessary to provide information and to conduct business will attend meetings. The Committee may invite staff of the RIO, auditors or others to attend meetings, as necessary. Meetings will be conducted in accordance with NDCC 44-04-17.1. The Committee may hold executive sessions as allowed under state law.

The Committee will act only on the affirmative vote of three of the committee members at a meeting. To conduct business, a quorum will be three members of the Committee. Should a quorum not be present before a scheduled meeting or during a meeting, the Chair will announce the absence of a quorum and the members will disburse. Meeting minutes will be prepared by the RIO, or as otherwise directed by the Committee. Approved meeting minutes of the Committee will be submitted to the SIB.

RESPONSIBILITIES
The RIO's management is responsible for financial and other reporting, internal controls, and compliance with laws, regulations, and ethics. The Committee has the responsibility to provide oversight in the areas of:

- the reliability and integrity of financial and operating information;
- compliance with policies, plans, procedures, pertinent laws and regulations;
- compliance with the Code of Conduct applicable to the SIB, TFFR Board, and RIO employees;
- safeguarding of assets;
- economical and efficient use of resources; and

- effectiveness of achieving desired results from operations.

To this end, the Committee will:

Independent Audit

- Review the independent auditors' proposed audit scope and approach, including coordination of audit effort with RIO's ~~Audit Services~~ Internal Audit staff and any developments in accounting principles and auditing standards that may affect either the financial statements or the audit.

- Inquire as to any proposed changes in accounting or financial reporting procedures and of any unusual events that could impact the financial statements.

- Review the results of the financial statements report with the independent auditors and the RIO's management, prior to the release of the financial statements report to the SIB and other officials. This review will include the following, as applicable:

    - Any major problems encountered by the independent auditors and the resolution thereof;
    - The effect on the audit of any developments;
    - Any unresolved differences between the independent auditors and the RIO's management;
    - Any other significant comments or recommendations of the independent auditors or the RIO's management;
    - The adequacy of the RIO's internal accounting controls and accounting policies, procedures, and practices; and
    - Understand the scope of independent auditors' review of internal control over financial reporting, and obtain reports on significant findings and recommendations, together with the RIO's management responses.

- Consider the effectiveness of the RIO's internal control system, including information technology security and control.

- Consider whether the financial statements are complete, consistent with information known to committee members, and reflect appropriate accounting principles. This will include the following, as applicable:

    - The accuracy and completeness of the information in other sections of the annual report and related regulatory filings;
    - The significant accounting and reporting issues, including complex or unusual transactions and highly judgmental areas, and recent professional and regulatory pronouncements, and understand their impact on the financial statements; and
    - All matters required to be communicated to the Committee under generally accepted auditing standards with the RIO's management and the independent auditors.

- Review non-audit services, if any, performed for the RIO by the independent auditors.

Audit Services

- Consider the effectiveness of the ~~Audit Services~~ Internal Audit function, within The Institute of Internal Auditors' *International Professional Practices Framework for Internal Auditing* consisting of the *Definition of Internal Auditing, Code of Ethics and the Standards.*

- Review with the Executive Director and the Supervisor of ~~Audit Services~~ Internal Audit the audit charter, activities, staffing, and organizational structure of ~~Audit Services~~Internal Audit.

- Review and approve the annual risk-based audit work plan and all major changes to the plan.

- Bring to attention of the Board any internal audit issues the Committee determines significant and appropriate for Board consideration.

- Participate with the Executive Director in the appointment and annual evaluation of the Supervisor of ~~Audit Services~~ Internal Audit. Work with the Executive Director on any changes in staffing, including the addition, termination, or replacement of auditors, and the approval of salary increases and/or promotions other than those authorized by the legislature.

Risk Management

- Obtain information and/or training to enhance the Committee's understanding of organization and its related risk management processes.

- Review the adequacy of the organization's policy on risk management.

- Review the effectiveness of the organization's system for assessing, monitoring, and controlling significant risks or exposures.

- Review management's reports on risks and related risk mitigations.

- Hire outside experts and consultants in risk management, as necessary, subject to full board approval.

Compliance

- ~~Review compliance by TFFR participating employers as it relates to TFFR laws, rules and policies through the receipt of employer audit results.~~

- Review staff compliance with federal and state laws and North Dakota administrative code as applicable to RIO, the SIB and TFFR Board programs, and the process for communicating the code of conduct to the RIO's staff, and for monitoring compliance through the receipt of the audit results.

- Review the process for communicating and monitoring compliance with the code of ethics, code of conduct, and fraud policies.

- Review the findings of any examinations by regulatory agencies, any auditor observations related to compliance, and the responsiveness and timeliness of management's actions to address the findings/recommendations.
- Obtain updates from the RIO's management and legal counsel regarding compliance matters, as deemed necessary.

Reporting Responsibilities

- Report to the SIB about the Committee's activities, issues, and related recommendations.

Provide a written report annually to the SIB, describing the Committee's composition, responsibilities and how they were discharged, and any other information required.

Other Responsibilities

- Make recommendations to the North Dakota State Auditor's Office, when appropriate, as it relates to selection, evaluation, and termination of independent auditors.
- Obtain the information and training needed to enhance the committee members' understanding of the role of ~~Audit Services~~ Internal Audit and the independent auditor, the risk management process, internal controls, and a certain level of familiarity in financial reporting standards and processes so the Committee may adequately oversee.
- Serve as an open avenue of communication among the SIB, the RIO's management and ~~Audit Service~~ Internal Audit~~s~~, the independent auditors, and others.
- Serve as an appropriate confidential body for individuals to provide information on potentially fraudulent financial reporting or breaches of internal control.
- Inquire of management and ~~Audit Services~~ Internal Audit regarding the procedures in place for the prevention of illegal payments, conflicts of interest, or other questionable practices.
- Perform other activities related to this charter as requested by the SIB.
- Institute and oversee special investigations as needed.
- Review any other reports the RIO issues that relates to the Committee's responsibilities.
- Review and assess the adequacy of the Committee charter annually, requesting the SIB approval for proposed changes.
- Confirm annually the review of all responsibilities outlined in this charter.

DATE OF CREATION OF COMMITTEE AMENDMENTS: December 14, 1993
DATE AUDIT COMMITTEE CHARTER ADOPTED AND APPROVED: June 24, 1994

REVISED: November 22, 1996, February 13, 1997, November 6, 2001, May 19, 2006, May 18, 2007, June 26, 2009, May 19, 2016, November 15, 2018.

STATE INVESTMENT BOARD
AUDIT COMMITTEE MEETING
MINUTES OF THE
SEPTEMBER 26, 2019 MEETING

COMMITTEE MEMBERS PRESENT:	Yvonne Smith, PERS Board, Chair Rob Lech, TFFR Board, Vice Chair Julie Dahle, External Representative (tlcf) Jon Griffin, External Representative
MEMBERS ABSENT:	Jodi Smith, Commissioner of Dept. of Trust Lands
STAFF PRESENT:	Connie Flanagan, Chief Financial Officer Bonnie Heit, Admin Svs Suprv David Hunter, ED/CIO Fay Kopp, Dep ED/CRO Sara Sauter, Suprv of Internal Audit Shelly Schumacher, Retirement Program Manager Dottie Thorsen, Internal Auditor
GUEST:	Anders Odegaard, Attorney General's Office

CALL TO ORDER:

Ms. Smith called the State Investment Board (SIB) Audit Committee meeting to order at 10:00 a.m. on Thursday, September 26, 2019, at the Retirement and Investment Office (RIO), 3442 E Century Ave., Bismarck, ND.

A quorum was present for conducting business.

AGENDA:

The agenda was considered for the September 26, 2019, meeting.

IT WAS MOVED BY DR. LECH AND SECONDED BY MR. GRIFFIN AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE SEPTEMBER 26, 2019, MEETING AS DISTRIBUTED.

AYES: DR. LECH, MS. DAHLE, MR. GRIFFIN, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

MINUTES:

IT WAS MOVED BY MR. GRIFFIN AND SECONDED BY DR. LECH AND CARRIED BY A VOICE VOTE TO ACCEPT THE MAY 23, 2019, MINUTES AS DISTRIBUTED.

AYES: MS. DAHLE, DR. LECH, MR. GRIFFIN, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

ELECTION OF OFFICERS:

The position of Chair was open for election. Dr. Lech nominated Ms. Smith.

IT WAS MOVED BY DR. LECH AND SECONDED BY MR. GRIFFIN AND CARRIED BY A VOICE VOTE TO CEASE NOMINATIONS AND CAST A UNANIMOUS BALLOT FOR MS. SMITH TO SERVE AS CHAIR OF THE SIB AUDIT COMMITTEE FOR THE PERIOD OF JULY 1, 2019 - JUNE 30, 2020.

AYES: DR. LECH, MS. DAHLE, MR. GRIFFIN, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

The position of Vice Chair was open for election. Mr. Griffin nominated Dr. Lech.

IT WAS MOVED BY MR. GRIFFIN AND SECONDED BY MS. SMITH AND CARRIED BY A VOICE VOTE TO CEASE NOMINATIONS AND CAST A UNANIMOUS BALLET FOR DR. LECH TO SERVE AS VICE CHAIR OF THE SIB AUDIT COMMITTEE FOR THE PERIOD OF JULY 1, 2019 - JUNE 30, 2020.

AYES: MR. GRIFFIN, MS. DAHLE, DR. LECH, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

The Audit Committee concurred to forgo the appointment of a liaison to the SIB as Ms. Sauter has been providing updates to the SIB. In the event there would be a need to appoint a liaison, the Audit Committee will address it at that time.

CODE OF CONDUCT:

Ms. Flanagan reviewed the SIB Governance Manual Policy B-8, Board Members' Code of Conduct, which details the code of ethical responsibility applicable to members of the SIB. The SIB Audit Committee, as a standing committee of the SIB, is required to adhere to any applicable policies contained within the SIB Governance Manual. Ms. Flanagan requested the Audit Committee members affirm their understanding of the policies by signing and returning the Code of Conduct policy affirmation.

AUDIT ACTIVITIES REPORT:

Ms. Sauter reported on year end internal audit activities for the period of July 1, 2018 - June 30, 2019.

Teachers' Fund for Retirement (TFFR) - Four TFFR Employer Audits were completed. The workplan included 10 audits. Procedures for the TFFR Employer Audit Program were changed in November 2018. This resulted in less reviews being completed, as the new procedures needed to be developed and put into practice.

The Cost Benefit and Purchase/Refund Audits were completed. The File Maintenance Audit is in progress and is expected to be completed in the first quarter of 2019-20. The Salary Verification project was completed on July 17, 2019. The scope for randomly selected member accounts was expanded from 50 to 64.

Discussion followed on the implications of the Internal Audit Division transitioning from a compliance unit of TFFR to an internal audit function. Ms. Kopp discussed her concerns regarding the additional workload, particularly the Employer audits, as well as other areas that Retirement Services will eventually have oversite over. Ms. Kopp felt the additional workload, would not allow Retirement Services and the Information Technology staff the time needed to address core business operations, Outreach Programs, and the Pension Administration Software project which will require significant staff resources. Ms. Kopp felt that an additional position will need to be assigned to Retirement Services to oversee compliance issues in the future given the Internal Audit Division's transitioning from a compliance unit of TFFR to an Internal Audit Division.

Ms. Sauter suggested the workload be outsourced in the interim and once the Pension Administration System (PAS) is finalized, reevaluate the operations of the Retirement Services Division. Discussion followed on outsourcing the work.

The Audit Committee took no action but will continue to have dialogue on this matter to come up with a viable solution that works for everyone.

SIB - The Executive Limitations Audit, Executive Director/CIO Effectiveness Survey, Executive Review Committee survey, and the SIB Self-Assessment were completed.

The Investment Due Diligence Audit was completed on July 31, 2019.

Retirement and Investment Office - The agency risk assessment was completed in September 2018.

Assistance was provided to CliftonLarsonAllen during the FY2019 financial audit of RIO as well as the GASB 68 census data audits.

The Internal Audit Division, as members of the Institute of Internal Auditors, attended monthly meetings along with biannual seminars.

Ms. Sauter reviewed the Investment Due Diligence Audit, Salary Verification Audit, the New England and Wilton Employer Audits, and the Warwick compliance audit.

IT WAS MOVED BY MR. GRIFFIN AND SECONDED BY DR. LECH AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE JULY 1, 2018 - JUNE 30, 2019 INTERNAL AUDIT ACTIVITIES REPORT.

AYES: MR. GRIFFIN, DR. LECH, MS. DAHLE, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

SIB REPORT:

Ms. Sauter reviewed the Audit Committee's activity report to the SIB for the period of July 1, 2018 - June 30, 2019.

IT WAS MOVED BY DR. LECH AND SECONDED BY MR. GRIFFIN AND CARRIED BY A VOICE VOTE TO APPROVE THE AUDIT COMMITTEE ACTIVITIES REPORT TO THE SIB FOR THE PERIOD OF JULY 1, 2018 - JUNE 30, 2019.

AYES: MS. DAHLE, DR. LECH, MR. GRIFFIN, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

AUDIT CHARTER:

On an annual basis, the Audit Committee's charter is to be reviewed and approved by the Audit Committee as well as the SIB. Ms. Sauter highlighted the Audit Committee's charter and addressed how the work of the Audit Committee is being addressed according to their Charter. The most significant changes to the charter included the Risk Assessment of RIO and RIO's legal counsel informing Internal Audit that they could no longer determine if Employer salaries are in compliance and that it was Retirement Services responsibility to follow-up on errors with the Employers.

The Audit Committee had no changes to their Charter.

IT WAS MOVED BY DR. LECH AND SECONDED BY MR. GRIFFIN AND CARRIED BY A VOICE VOTE TO APPROVE THE ANNUAL REVIEW OF THE AUDIT COMMITTEE CHARTER.

AYES: MR. GRIFFIN, MS. DAHLE, DR. LECH, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

EDUCATION:

Ms. Sauter presented an educational segment on "Internal Audit Background."

AUDIT WORKPLAN:

Ms. Sauter reviewed changes to the July 1, 2019 - June 30, 2020 workplan. Additional time has been allocated to Portfolio Monitoring Procedures and Administrative Manual updates.

Discussion followed on the allocation of hours.

The Audit Committee suggested a contingency plan be put in place to give more of a cushion as no workplan is exact as they continually revolve.

IT WAS MOVED BY MR. GRIFFIN AND SECONDED BY DR. LECH AND CARRIED BY A VOICE VOTE TO ACCEPT THE JULY 1, 2019 - JUNE 30, 2020, WORKPLAN.

AYES: DR. LECH, MS. DAHLE, MR. GRIFFIN, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

INTERNAL AUDIT ACTIVITIES:

Ms. Sauter provided an update on current activities of Internal Audit.

Additional time has been allocated to the TFFR File Maintenance Audit. Internal Audit is conducting a review of the flow of work of those staff that support the Retirement Services Division. Internal Audit, once they have a clear understanding of the operations, can work with the TFFR support staff in a collaborative effort to assist in identifying efficiencies as staff work through the implementation of the new PAS. The information can also be helpful in conducting various audits.

Ms. Kopp felt Internal Audit's review of the work flow could be postponed as the operations of the Retirement Services Division will be documented in detail as part of the re-engineering and automating of business processes during the PAS upgrade project. Ms. Kopp recommended more time be spent on this during or after the transition as opposed to now since current retirement processes and workflows will be done differently once a new web based system is in place. Retirement Services may not be able to address any recommendations from Internal Audit as all the processes will be changing in the future.

The Audit Committee took no action but will continue to have dialogue on this matter.

Ms. Sauter requested direction from the Audit Committee on the TFFR Employer salary review process.

Historically, two years are reviewed and a third year was added if systemic problems are identified in the two-year period. A sample of members are selected and the accuracy of retirement salaries, member contributions, and employer contributions reported to TFFR are verified. Service hours are reviewed for reasonableness and eligibility of members is also confirmed. If problems are identified during the review, the scope could be expanded to 100% of the members being reported to TFFR with the additional third year being reviewed. Since Internal Audit is focusing more on larger districts, expanding scopes will result in less mid-size employers being reviewed and possibly less other internal audits being completed.

Discussion followed on two possible options for the TFFR Employer Salary Reviews going forward:

1. A sample of members from two fiscal years are selected and the accuracy of retirement salaries, member contributions, and employer contributions reported to TFFR are verified. Service hours are reviewed for reasonableness and eligibility. Errors will be documented and forwarded to Retirement Services, but scope will not be expanded an additional year or members.
2. Keep scope the same.

Ms. Kopp requested the scope remain the same because of the implications of the Internal Audit Division transitioning from a compliance role to an internal audit function. The additional workload to Retirement Services is a concern. Ms. Kopp felt it would be more efficient if the third year is reviewed by Internal Audit.

Discussion followed on the options. After discussion, the Audit Committee concurred to keep the scope the same. The Audit Committee suggested Internal Audit allocate the appropriate hours to the TFFR program if a scope would need to be expanded. Another option would be to work with the Business Managers and have them correct the third year. Internal Audit is also to continue to identify the higher risk areas and prioritize projects based on that.

Other projects Internal Audit is currently working on is the Jamestown and Minot Employer audits, Benefit Payment Audit, File Maintenance Audit, Administrative Expense Audit, SIB Client Survey, and Cash Management and Rebalancing Audit.

IT WAS MOVED BY MR. GRIFFIN AND SECONDED BY DR. LECH AND CARRIED BY A VOICE VOTE TO ACCEPT THE CURRENT INTERNAL AUDIT ACTIVITIES REPORT.

AYES: MR. GRIFFIN, DR. LECH, MS. DAHLE, AND MS. SMITH
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER SMITH

OTHER:

The next Audit Committee meeting is scheduled for Wednesday, November 13, 2019, at 3:00 p.m. at the Retirement and Investment Office, 3442 East Century Ave., Bismarck, ND.

With no further business to come before the Audit Committee, Ms. Smith adjourned the meeting at 12:10 p.m.

Respectfully Submitted:

Yvonne M Smith

Ms. Yvonne Smith, Chair
SIB Audit Committee

Bonnie Heit

Bonnie Heit
Recorder

CliftonLarsonAllen LLP
CLAconnect.com

State Investment Board
Teachers' Fund for Retirement
North Dakota Retirement and Investment Office
Bismarck, North Dakota

We have audited the financial statements of the North Dakota Retirement and Investment Office (RIO) as of and for the year ended June 30, 2019, and have issued our report thereon dated October 30, 2019. We have previously communicated to you information about our responsibilities under auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. Professional standards also require that we communicate to you the following information related to our audit.

Significant audit findings

Qualitative aspects of accounting practices

Accounting policies

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by RIO are described in Note 1 to the financial statements.

No new accounting policies were adopted and the application of existing policies was not changed during fiscal year 2019.

We noted no transactions entered into by RIO during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. There were significant estimates in the valuation of alternative investments and the calculation of the actuarial information included in the footnotes and required supplementary information.

The valuation of alternative investments, including private equity and real asset investments, are a management estimate which is primarily based upon net asset values reported by the investment managers and comprise 16% of the total investment portfolio. The values for these investments are reported based upon the most recent financial data available and are adjusted for cash flows through June 30, 2019. Our audit procedures validated this approach through the use of confirmations sent directly to a sample of investment managers and the review of the most recent audited financial statements for these sampled funds. Furthermore, we reviewed management's estimate and found it to be reasonable.

The actuarially calculated information was based on the assumptions and methods adopted by the Board, including an expected investment rate of return of 7.75% per annum compounded annually. The valuation takes into account all of the promised benefits required by the Retirement Code to which members are entitled as of July 1, 2019. Our audit procedures included reviewing the actuarial valuation and related assumptions used therein and we believe the estimate to be reasonable.

Financial statement disclosures

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. There were no particularly sensitive financial statement disclosures.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties encountered in performing the audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Uncorrected misstatements

Professional standards require us to accumulate all misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management did not identify and we did not notify them of any uncorrected financial statement misstatements.

Corrected misstatements

Management did not identify and we did not notify them of any financial statement misstatements detected as a result of audit procedures.

Disagreements with management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditors' report. No such disagreements arose during our audit.

Management representations

We have requested certain representations from management that are included in the attached management representation letter dated October 30, 2019.

Management consultations with other independent accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to RIO's financial statements or a determination of the type of auditors' opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Significant issues discussed with management prior to engagement

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to engagement as RIO's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our engagement.

Other information in documents containing audited financial statements

With respect to the required supplementary information (RSI) accompanying the financial statements, we made certain inquiries of management about the methods of preparing the RSI, including whether the RSI has been measured and presented in accordance with prescribed guidelines, whether the methods of measurement and preparation have been changed from the prior period and the reasons for any such changes, and whether there were any significant assumptions or interpretations underlying the measurement or presentation of the RSI. We compared the RSI for consistency with management's responses to the foregoing inquiries, the basic financial statements, and other knowledge obtained during the audit of the basic financial statements. Because these limited procedures do not provide sufficient evidence, we did not express an opinion or provide any assurance on the RSI.

With respect to the schedules of administrative expenses, consultant expenses, investment expenses, and appropriations – budget basis – fiduciary funds (collectively, the supplementary information) accompanying the financial statements, on which we were engaged to report in relation to the financial statements as a whole, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period or the reasons for such changes, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves. We have issued our report thereon dated October 30, 2019.

Other information is being included in documents containing the audited financial statements and the auditors' report thereon. Our responsibility for such other information does not extend beyond the financial information identified in our auditors' report. We have no responsibility for determining whether such other information is properly stated and do not have an obligation to perform any procedures to corroborate other information contained in such documents. As required by professional standards, we read the introductory, investment, actuarial and statistical sections of the comprehensive annual financial report (the other information) in order to identify material inconsistencies between the audited financial statements and the other information. We did not identify any material inconsistencies between the other information and the audited financial statements.

Our auditors' opinion, the audited financial statements, and the notes to financial statements should only be used in their entirety. Inclusion of the audited financial statements in a document you prepare, such as an annual report, should be done only with our prior approval and review of the document.

* * *

This communication is intended solely for the information and use of the State Investment Board, the Board of the Teachers' Fund for Retirement and management of RIO and is not intended to be, and should not be, used by anyone other than these specified parties.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 30, 2019

North Dakota Retirement & Investment Office
Teachers' Fund for Retirement
State Investment Board

3442 East Century Avenue | P.O. Box 7100 | Bismarck, ND 58507-7100
Telephone: 701-328-9885 | Toll Free: 800-952-2970| Fax: 701-328-9897|www.nd.gov/rio

October 30, 2019

CliftonLarsonAllen LLP
1966 Greenspring Drive, Suite 300
Timonium, MD 21093

This representation letter is provided in connection with your audit of the financial statements of North Dakota Retirement and Investment Office (RIO), which comprise the fiduciary net position of the entity as of June 30, 2019, and the related changes in fiduciary net position for the year then ended, and the related notes to the financial statements, for the purpose of expressing opinions on whether the financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm, to the best of our knowledge and belief, as of October 30, 2019, the following representations made to you during your audit.

Financial Statements

1. We have fulfilled our responsibilities, as set out in the terms of the Contract between the State of North Dakota and CliftonLarsonAllen LLP dated March 7, 2018, for the preparation and fair presentation of the financial statements in accordance with U.S. GAAP. The financial statements include all properly classified funds and other financial information of the primary government and all component units required by generally accepted accounting principles to be included in the financial reporting entity.

2. We acknowledge and have fulfilled our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

3. We acknowledge our responsibility for the design, implementation, and maintenance of internal control to prevent and detect fraud.

4. All significant plan amendments, adopted during the period or subsequent to the date of the financial statements, and their effects on benefits and financial status have been disclosed in the financial statements.

5. The values of non-readily marketable investments represent good faith estimates of fair value. The methods and significant assumptions used result in a measure of fair value appropriate for financial measurement and disclosure purposes.

6. Significant estimates have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP. Significant estimates are estimates at the financial statement date that could change materially within the next year.

7. No events, including instances of noncompliance, have occurred subsequent to the financial statement date and through the date of this letter that would require adjustment to, or disclosure in, the financial statements.

8. We have not identified or been notified of any uncorrected financial statement misstatements.

9. The effects of all known actual or possible litigation, claims, and assessments have been accounted for and disclosed in accordance with U.S. GAAP.

10. Guarantees, whether written or oral, under which the entity is contingently liable, if any, have been properly recorded or disclosed in accordance with U.S. GAAP.

11. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.

12. With respect to actuarial assumptions and valuations:

    a. Management agrees with the actuarial methods and assumptions used by the actuary for funding purposes and for determining the total pension liability and has no knowledge or belief that would make such methods or assumptions inappropriate in the circumstances. We did not give any, nor cause any, instructions to be given to RIO's actuary with respect to values or amounts derived, and we are not aware of any matters that have impacted the independence or objectivity of RIO's actuary.

    b. There were no omissions from the participant data provided to the actuary for the purpose of determining the total pension liability and other actuarially determined amounts in the financial statements.

    c. There have been no changes in the actuarial methods or assumptions used in calculating the amounts recorded or disclosed in the financial statements. There have been no changes in plan provisions between the actuarial valuation date and the date of this letter.

13. We believe the plan and trust established under the plan is qualified under the appropriate section of The North Dakota Century Code, and we intend to continue them as a qualified plan and trust.

14. We are not aware of any present legislative intentions to terminate the plan.

Information Provided

1. We have provided you with:

    a. Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements such as records, documentation, and other matters.

    b. Additional information that you have requested from us for the purpose of the audit.

    c. Unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.

    d. Complete minutes of the meetings of the governing board and related committees, or summaries of actions of recent meetings for which minutes have not yet been prepared.

    e. All actuarial reports prepared for the plan during the year.

2. All material transactions have been recorded in the accounting records and are reflected in the financial statements.

3. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

4. We have no knowledge of any fraud or suspected fraud that affects the entity and involves:

a. Management;

b. Employees who have significant roles in internal control; or

c. Others when the fraud could have a material effect on the financial statements.

5. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the entity's financial statements communicated by employees, former employees, regulators, or others.

6. We have no knowledge of any instances of noncompliance or suspected noncompliance with laws and regulations and provisions of contracts, or abuse whose effects should be considered when preparing financial statements.

7. We have disclosed to you all known actual or possible litigation, claims, and assessments whose effects should be considered when preparing the financial statements.

8. There are no other material liabilities or gain or loss contingencies that are required to be accrued or disclosed in accordance with U.S. GAAP.

9. We have disclosed to you the identity of the entity's related parties and all the related party relationships and transactions of which we are aware.

10. We are responsible for compliance with the laws, regulations, and provisions of contracts applicable to RIO, and we have identified and disclosed to you all laws, regulations, and provisions of contracts that we believe have a direct and material effect on the determination of financial statement amounts or other financial data significant to the audit objectives, including legal and contractual provisions for reporting specific activities in separate funds.

11. There are no violations or possible violations of budget ordinances, laws and regulations (including those pertaining to adopting, approving, and amending budgets), provisions of contracts, or any debt covenants whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.

12. The entity has complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.

13. We have followed all applicable laws and regulations in adopting, approving, and amending budgets.

14. Investments, derivative instruments, and land and other real estate held by RIO are properly valued.

15. Expenses have been appropriately classified the statement of changes in net position, and allocations have been made on a reasonable basis.

16. Revenues are appropriately classified in the statement of changes in net position.

17. Interfund, internal, and intra-entity activity and balances have been appropriately classified and reported.

18. Deposits and investment securities and derivative instruments are properly classified as to risk and are properly valued and disclosed.

19. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.

20. We acknowledge our responsibility for the required supplementary information (RSI). The RSI is measured and presented within prescribed guidelines and the methods of measurement and presentation have not changed from

those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.

21. We acknowledge our responsibility for presenting the schedules (the supplementary information) in accordance with U.S. GAAP, and we believe the supplementary information, including its form and content, is fairly presented in accordance with U.S. GAAP. The methods of measurement and presentation of the supplementary information have not changed from those used in the prior period, and we have disclosed to you any significant assumptions or interpretations underlying the measurement and presentation of the supplementary information. If the supplementary information is not presented with the audited financial statements, we will make the audited financial statements readily available to the intended users of the supplementary information no later than the date we issue the supplementary information and the auditors' report thereon.

Signature: ______________________ Title: Executive Director/CIO

Signature: ______________________ Title: Chief Financial Officer

NORTH DAKOTA RETIREMENT
AND INVESTMENT OFFICE
Bismarck, ND

FINANCIAL STATEMENTS
June 30, 2019 and 2018

PAGE

CliftonLarsonAllen LLP
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INDEPENDENT AUDITORS' REPORT

Governor Doug Burgum
The Legislative Assembly
David Hunter, Executive Director/CIO
State Investment Board
Teachers' Fund for Retirement Board
North Dakota Retirement and Investment Office

Report on the Financial Statements

We have audited the accompanying financial statements of the North Dakota Retirement and Investment Office (RIO), a department of the State of North Dakota, which comprise the statement of net position – fiduciary funds as of June 30, 2019 and 2018, and the related statement of changes in net position – fiduciary funds for the years then ended, and the related notes to the financial statements, which collectively comprise RIO's basic financial statements, and the combining and individual fund financial statements as of and for the years ended June 30, 2019 and 2018, as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of RIO as of June 30, 2019 and 2018, and the respective changes in financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America. Also, in our opinion, the combining and individual fund financial statements referred to above present fairly, in all material respects, the financial position of each of the individual funds of RIO as of June 30, 2019 and 2018, and the results of the changes in financial position of such funds for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1, the financial statements of RIO are intended to present the financial position and the changes in financial position of only that portion of the State of North Dakota that is attributable to the transactions of RIO. They do not purport to, and do not, present fairly the financial position of the State of North Dakota as of June 30, 2019 and 2018, and the changes in its financial position for the years then ended in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management’s discussion and analysis and the schedules of changes in NPL and related ratios - ND Teachers’ Fund for Retirement and employer contributions - ND Teachers’ Fund for Retirement, investment returns - ND Teachers’ Fund for Retirement, employer’s share of NPL and NOL – ND Public Employees Retirement System and employer contributions – ND Public Employees Retirement System and related notes, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management’s responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise RIO's basic financial statements and the combining and individual fund financial statements. The schedules of administrative expenses, consultant expenses, investment expenses, and appropriations – budget basis – fiduciary funds, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

These schedules are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Audit Standards*, we have also issued our report dated October 30, 2019, on our consideration of RIO's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of RIO's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering RIO's internal control over financial reporting.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 30, 2019

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Governor Doug Burgum
The Legislative Assembly
David Hunter, Executive Director/CIO
State Investment Board
Teachers' Fund for Retirement Board
North Dakota Retirement and Investment Office

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the basic financial statements of the North Dakota Retirement and Investment Office (RIO), a department of the State of North Dakota, which collectively comprise RIO's basic financial statements, and the combining and individual fund financial statements, as of and for the year ended June 30, 2019, and the related notes to the financial statements, and have issued our report thereon dated October 30, 2019.

Internal Control over Financial Reporting

Management of RIO is responsible for establishing and maintaining effective internal control over financial reporting. In planning and performing our audit, we considered RIO's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of RIO's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of RIO's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Governor Doug Burgum
The Legislative Assembly
David Hunter, Executive Director/CIO
State Investment Board
Teachers' Fund for Retirement Board
North Dakota Retirement and Investment Office

Compliance and Other Matters

As part of obtaining reasonable assurance about whether RIO's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of RIO's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering RIO's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 30, 2019

Our discussion and analysis of the ND Retirement and Investment Office's (RIO) financial performance provides an overview of RIO's financial activities for the fiscal years ended June 30, 2019 and 2018. Please read it in conjunction with the basic financial statements, which follow this discussion.

RIO administers two fiduciary funds, a pension trust fund for the ND Teachers' Fund for Retirement (TFFR) and an investment trust fund for the ND State Investment Board (SIB) consisting of 24 investment clients in two investment pools and four individual investment accounts.

Financial Highlights

Total net position increased from the previous fiscal year in the fiduciary funds by $885.4 million (6.4%) and $1.5 billion (11.8%) in FY2019 and FY2018, respectively. Approximately 62% of the FY2019 increase and 61% of the FY2018 increase is due to the growth of the Legacy Fund. The Legacy Fund was created by a constitutional amendment in 2010. The amendment provides that 30% of oil and gas gross production and oil extraction taxes on oil produced after June 30, 2011, be transferred to the Legacy Fund. Transfers into the Legacy Fund totaled $692.6 million and $529.9 million, and net investment income exceeded $309 million and $361 million in FY2019 and FY2018, respectively.

Total additions in the fiduciary funds for FY2019 and FY2018 decreased by $60.1 million (3.0%) and $78.1 million (3.7%), respectively. Net investment income decreased in both years (by $181.6 million and $302 million respectively), due to weaker financial markets during those two years. There was an increase in new purchases of units in the investment program in both fiscal years due to strong oil and gas tax collections affecting the Legacy Fund. Total fiduciary fund purchases of units increased $116.6 million (13.4%) and $223.2 million (34.4%) in FY2019 and FY2018, respectively.

Deductions in the fiduciary funds increased by $511.2 million (93.3%) in FY2019 after decreasing the prior year by $562.8 million (50.7%). The majority of the increase from FY2018 to FY2019 was in redemptions of units, which increased by $497.8 million (148.1%) due to the constitutionally mandated earnings transfer from the Legacy Fund to the General Fund. The State Constitution requires that all earnings accrued after June 30, 2017, be transferred to the General Fund at the end of each biennium. A transfer of $455.3 million was made in July, 2019, and accrued as of the end of FY2019. The majority of the decrease in deductions from FY 2017 to FY2018 came from the $574.5 million decrease in redemptions of units caused by the large drawdown of $572.5 million in the Budget Stabilization Fund in FY2017 to cover the State's income shortfall during the 2015-17 biennium.

Payments to TFFR members in the form of benefits and refunds increased by $13.2 million (6.4%) and $11.5 million (5.8%) in FY2019 and FY2018, respectively. These increases represented a rise in the total number of retirees drawing retirement benefits from the pension fund as well as an increase in the retirement salaries on which the benefits of new retirees are based.

As of June 30, 2019 and 2018, the TFFR pension plan had a Net Pension Liability (NPL) of $1.38 billion and $1.33 billion, and Plan Fiduciary Net Position as a percent of Total Pension Liability (TPL) of 65.5% and 65.5%, respectively.

Overview of the Financial Statements

This report consists of four parts – management's discussion and analysis (this section), the basic financial statements, required supplementary information, and additional supplementary information that presents combining statements for the investment trust funds. The basic financial statements include fund financial statements that focus on individual parts of RIO's activities (fiduciary funds).

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of required supplementary information that further explains and supports the information in the financial statements. In addition to these required elements, we have included additional supplementary information, including combining statements that provide details about our investment trust funds, each of which are added together and presented in single columns in the basic financial statements.

Fund Financial Statements

The fund financial statements provide detailed information about RIO's activities. Funds are accounting devices that RIO uses to keep track of specific sources of funding and spending for particular purposes.

RIO uses fiduciary funds as RIO is the trustee, or fiduciary, for TFFR (a pension plan) and SIB (investment trust funds). RIO is responsible for ensuring that the assets reported in these funds are used for their intended purposes. All of RIO's fiduciary activities are reported in a statement of net position and a statement of changes in net position.

Financial Analysis

RIO's fiduciary fund total assets as of June 30, 2019 and 2018, were $15.2 billion and $13.8 billion, respectively, and were comprised mainly of investments. Total assets increased by $1.3 billion (9.7%) and $1.4 billion (11.5%) from each prior year primarily due to strong financial markets.

Total liabilities as of June 30, 2019 and 2018, were $511.3 and $54.7 million. Over 90% of the liabilities ($455.3 million) as of June 30, 2019, were the Legacy Fund's earnings due to the General Fund at the end of the biennium. Previous year-end liabilities were comprised mainly of the securities lending collateral payable.

RIO's fiduciary fund total net position was $14.7 billion and $13.8 billion at the close of fiscal years 2019 and 2018, respectively.

North Dakota Retirement and Investment Office
Net Position – Fiduciary Funds
(In Millions)

	2019	2018	Total % Change
Assets			
Investments	$ 15,028.7	$ 13,696.7	9.7%
Securities Lending Collateral	46.3	48.1	-3.9%
Receivables	87.7	75.2	16.6%
Cash & Other	20.5	20.9	-1.6%
Total Assets	15,183.2	13,840.9	9.7%
Deferred Outflows of Resources			
Deferred outflows related to pensions	1.2	1.4	-12.9%
Liabilities			
Obligations under Securities Lending	46.3	48.1	-3.9%
Accounts Payable & Accrued Expenses	465.0	6.6	6990.3%
Total Liabilities	511.3	54.7	834.8%
Deferred Inflows of Resources			
Deferred inflows related to pensions	0.2	0.1	124.4%
Total Net Position	$ 14,672.9	$ 13,787.5	6.4%

	2018	2017	Total % Change
Assets			
Investments	$ 13,696.7	$ 12,251.5	11.8%
Securities Lending Collateral	48.1	77.7	-38.0%
Receivables	75.2	69.0	9.1%
Cash & Other	20.9	19.3	8.1%
Total Assets	13,840.9	12,417.5	11.5%
Deferred Outflows of Resources			
Deferred outflows related to pensions	1.4	0.6	113.3%
Liabilities			
Obligations under Securities Lending	48.1	77.7	-38.0%
Accounts Payable & Accrued Expenses	6.6	9.5	-30.9%
Total Liabilities	54.7	87.2	-37.3%
Deferred Inflows of Resources			
Deferred inflows related to pensions	0.1	0.1	-13.0%
Total Net Position	$ 13,787.5	$ 12,330.8	11.8%

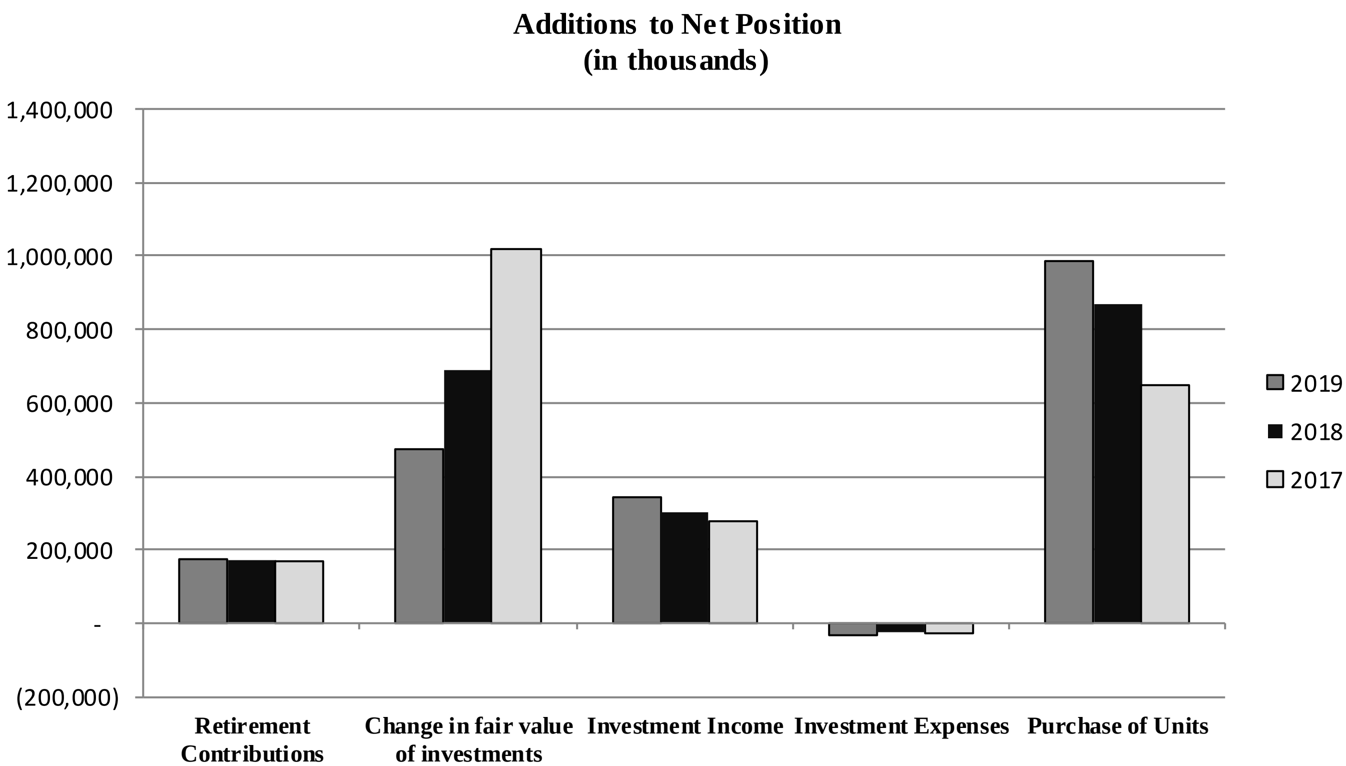
North Dakota Retirement and Investment Office
Changes in Net Position – Fiduciary Funds
(In Millions)

	2019	2018	Total % Change
Additions:			
Contributions	$ 173.9	$ 168.9	3.0%
Net Investment Income	781.6	963.2	-18.9%
Net Securities Lending Income	1.2	1.3	-7.3%
Purchase of Units	987.8	871.3	13.4%
Total Additions	1,944.5	2,004.7	-3.0%
Deductions:			
Payments to TFFR members	221.2	208.0	6.4%
Administrative Expenses	4.0	3.8	6.1%
Redemption of Units	833.9	336.2	148.1%
Total Deductions	1,059.2	548.0	93.3%
Total Change in Net Position	$ 885.4	$ 1,456.7	-39.2%

	2018	2017	Total % Change
Additions:			
Contributions	$ 168.9	$ 168.1	0.5%
Net Investment Income	963.2	1,265.3	-23.9%
Net Securities Lending Income	1.3	1.2	5.5%
Purchase of Units	871.3	648.1	34.4%
Total Additions	2,004.7	2,082.7	-3.7%
Deductions:			
Payments to TFFR members	208.0	196.5	5.8%
Administrative Expenses	3.8	3.5	9.3%
Redemption of Units	336.2	910.7	-63.1%
Total Deductions	548.0	1,110.7	-50.7%
Total Change in Net Position	$ 1,456.7	$ 972.0	49.9%

Statement of Changes in Net Position – Additions

Contributions collected by the pension trust fund increased by $5.0 million (3.0%) and $0.8 million (0.5%) over the previous fiscal years due to both an increase in the number of active members contributing to the fund and an increase in the average salary of active members. Net investment income (including net securities lending income and net of investment expenses) decreased by $181.7 million (18.8%) and $302 million (23.8%) in FY2019 and FY2018, respectively. This was the result of weaker financial markets in both years compared to FY2017. Deposits of funds into the investment trust fund (purchase of units) continue to increase year-over–year, from $648.1 million in FY2017 to $987.8 million in FY2019, mainly due to increased deposits to the Legacy Fund.

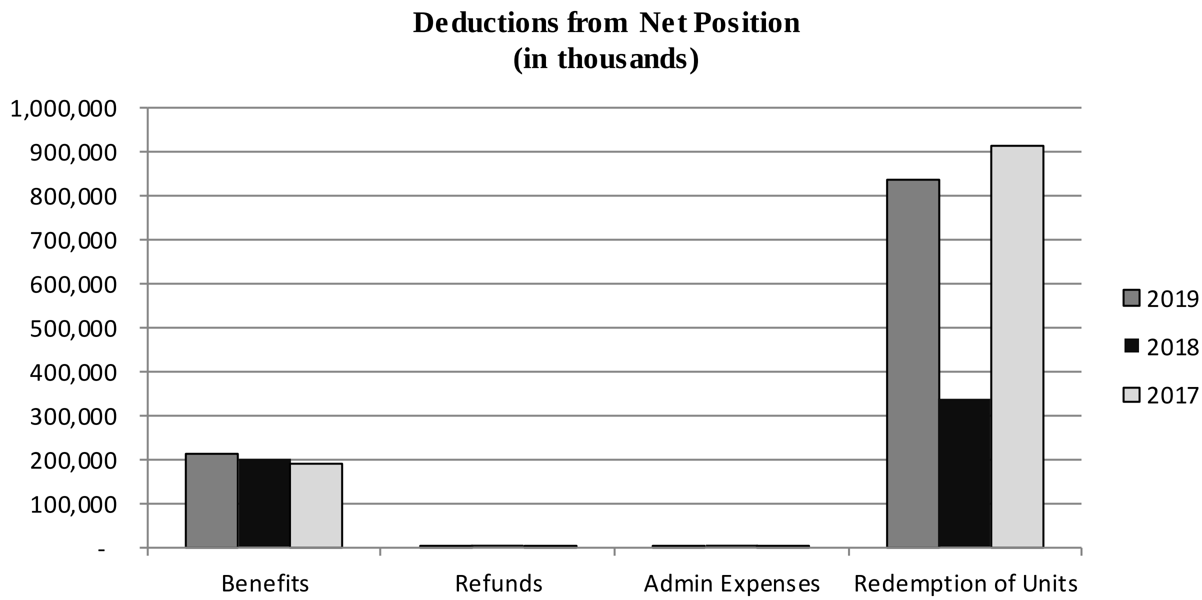


Statement of Changes in Net Position – Deductions

Benefits paid to TFFR plan participants, including partial lump-sum distributions, increased by $13.2 million (6.4%) and $11.3 million (5.9%) in FY2019 and FY2018, respectively. The increases are due to an increase in the total number of retirees in the plan as well as an increased retirement salary on which the benefits are based upon. Refunds increased by nearly $339,000 (6.1%) and $150,000 (2.8%) in fiscal years 2019 and 2018, respectively.

Administrative expenses increased by nearly $233,000 in fiscal year 2019 and $322,000 in fiscal year 2018. This increase was mainly due to an increase in IT contractual services, including the addition of investment risk analysis/monitoring software in the second half of the fiscal year 2017 (a full year in fiscal year 2018), the payment of the biennial retirement administration software maintenance fee in FY2019; and an increase in pension expense each year due to RIO's participation in the NDPERS pension plan.

The redemption of units in the investment trust funds increased by $497.8 million in FY2019 due to the first biennial earnings transfer from the Legacy Fund. The redemption of units decreased in FY2018 by $574.5 million due almost entirely to the FY2017 drawdown of $572.5 million in the Budget Stabilization Fund to cover the State's income shortfall during the 2015-17 biennium.



Conclusion

For the fiscal year ended June 30, 2019, the pension investment pool (which includes the TFFR pension plan) and the Legacy Fund generated net time weighted investment returns of 5.5% and 5%, respectively, trailing their respective policy benchmarks. The insurance investment pool achieved a net time weighted return of 6.4% last year. Investment returns for global equities did not meet long-term expectations in fiscal 2019 due to the continued weakness in the international markets and significant return divergence between large and small companies, with larger companies in the United States returning over 10% last year (as referenced by the S&P 500 Index and Russell 1000 Index) while smaller U.S. companies fell over 3.3% in fiscal 2019 (as referenced by the Russell 2000 Index). Overall investment performance was negatively impacted by escalating concerns over the global trade war between the United States and China which significantly heightened volatility. Federal Reserve Board actions in the fourth quarter of 2018, which included a 0.25% rise in the target Federal Funds Rate, also dampened investor sentiment. Equity returns varied widely with U.S. equities in the pension investment pool earning over 8.3% in fiscal 2019 whereas international equities fell by 0.50%. Fixed income results were strong, gaining 7.8% in FY19, while global equities only gained 4.2% last year. Real asset performance was mixed but largely in line with overall benchmarks for the pension investment pool, with real estate up 6%, infrastructure up 5.1%, and timber up 4.1% in the last year. Private equity returns improved within the pension investment pool and rose 8.6% for the 1-year ended June 30, 2019.

For the fiscal year ended June 30, 2018, the pension investment pool and the Legacy Fund generated net time weighted investment returns of 9.1% and 7.5%, respectively, surpassing their respective policy benchmarks. The TFFR pension plan generated a net time weighted return of 9.1%, also exceeding its policy benchmark. The insurance investment pool also performed well and achieved a net time weighted return of 5.2% that year. Investment returns exceeded long-term expectations in fiscal 2018 due to the continued strength of the equity markets particularly in the United States. Investment performance benefited from favorable U.S. income tax policy developments which bolstered revenues, margins and capital spending. Global equities earned over 12.3% within the pension pool with the U.S. equity portfolio (up 16.4%) significantly outpacing international equity returns (up 10.1%). Fixed income results were also strong in the U.S. where investment grade debt earned 1.6% and noninvestment grade debt earned over 5.1% in FY18 within the pension pool, noting that international debt strategies were largely eliminated during the past year. Real asset performance was mixed with generally strong, above benchmark returns posted in real estate and infrastructure (both up over 7%), while our timber portfolio lost 2.5% within the pension pool last year. Private equity returns were also disappointing within the pension pool earning slightly over 5.25% for the 1-year ended June 30, 2018.

While cumulative returns in the post-credit crisis era remained fairly strong, albeit weakening in the past year, investors today face numerous challenges that may limit the potential for future global growth rates to continue and possibly further amplify investment risk. First, one could argue that many asset classes and strategies no longer offer compelling valuations for investors. Second, the ever-growing debt burden from unprecedented monetary policy and muted economic growth in a range of economies makes it less and less likely that authorities will be in a position to provide a cushion in a downturn when it occurs. Finally, the escalating uncertainty of global trade relations and policies between the U.S. and China and the United Kingdom and Europe poses a challenge to certain asset classes and strategies to varying degrees. To meet this challenge, the State Investment Board will continue to research strategies and investment options that mitigate and diversify the sources of risk accepted to address funding issues in the challenging years ahead.

TFFR's funding objective is to meet long-term pension benefit obligations through contributions and investment income. To address TFFR's funding shortfall, the ND State Legislature took action in 2011 and approved legislation to increase contributions (4% member and 4% employer) and modify certain benefits for non-grandfathered members. Increased contribution rates will be in effect until TFFR reaches 100% funding on an actuarial basis. This comprehensive funding recovery plan, along with solid investment performance in the future, is expected to improve TFFR's funding level over the long term. However, the Board is continuing to closely assess plan risks and monitor funding progress.

TFFR's funding level increased from 65.4% to 66.0% on an actuarial basis (and remained the same on a market basis at 65.5%) from July 1, 2018 to July 1, 2019. Once net investment losses over the past 5 years are recognized, the plan's funding level is expected to gradually improve over the long term, if all actuarial assumptions are met in the future, including the 7.75% investment return assumption. An Actuarial Experience Study will be conducted in the upcoming year to evaluate current actuarial assumptions, and changes will be considered if recommended by the actuary.

Protecting the long term solvency of the pension plan is the TFFR Board's fiduciary responsibility. The Board will continue to proactively address TFFR funding issues so the plan will be financially strong and sustainable for past, present, and future ND educators.

Contacting RIO Financial Management

This financial report is designed to provide our Boards, our membership, our clients and the general public with a general overview of RIO's finances and to demonstrate RIO's accountability for the money we receive. If you have any questions about this report or need additional information, contact the North Dakota Retirement and Investment Office, PO Box 7100, Bismarck, ND 58507-7100.

	Pension Trust		Investment Trust		Total	
	2019	2018	2019	2018	2019	2018
Assets:						
Investments, at fair value						
Global equities	$ 1,495,354,621	1,441,132,463	$ 5,758,237,240	$ 5,205,817,256	$ 7,253,591,861	$ 6,646,949,719
Global fixed income	575,551,625	589,368,951	4,510,779,742	4,099,552,552	5,086,331,367	4,688,921,503
Global real assets	455,163,805	416,937,112	1,889,505,508	1,788,156,119	2,344,669,313	2,205,093,231
Cash equivalents	35,025,659	28,631,157	309,039,173	127,104,537	344,064,832	155,735,694
Total investments	2,561,095,710	2,476,069,683	12,467,561,663	11,220,630,464	15,028,657,373	13,696,700,147
Invested securities lending collateral	8,495,437	7,413,200	37,770,485	40,721,545	46,265,922	48,134,745
Receivables:						
Investment income	12,526,857	9,765,629	50,051,024	38,863,279	62,577,881	48,628,908
Contributions	25,070,538	26,548,463	-	-	25,070,538	26,548,463
Miscellaneous	6,394	8,127	26,379	28,001	32,773	36,128
Total receivables	37,603,789	36,322,219	50,077,403	38,891,280	87,681,192	75,213,499
Due from other state agency	-	174	-	-	-	174
Cash and cash equivalents	20,305,041	20,486,449	257,511	410,261	20,562,552	20,896,710
Equipment & Software (net of depr)	4,949	6,749	-	-	4,949	6,749
Total assets	2,627,504,926	2,540,298,474	12,555,667,062	11,300,653,550	15,183,171,988	13,840,952,024
Deferred outflows of resources						
Related to pensions	709,618	813,903	472,668	544,101	1,182,286	1,358,004
Liabilities:						
Accounts payable	178,293	126,480	253,814	136,431	432,107	262,911
Investment expenses payable	812,385	459,438	4,829,521	2,279,952	5,641,906	2,739,390
Securities lending collateral	8,495,437	7,413,200	37,770,485	40,721,545	46,265,922	48,134,745
Accrued expenses	2,445,348	2,395,362	1,193,588	1,111,661	3,638,936	3,507,023
Miscellaneous payable	-	-	32,115	34,655	32,115	34,655
Due to other state funds	-	-	455,263,216	-	455,263,216	-
Due to other state agencies	7,954	11,967	1,470	2,572	9,424	14,539
Total liabilities	11,939,417	10,406,447	499,344,209	44,286,816	511,283,626	54,693,263
Deferred inflows of resources						
Related to pensions	104,071	48,519	67,473	27,917	171,544	76,436
Fiduciary net position:						
Restricted for pensions	2,616,171,056	2,530,657,411	-	-	2,616,171,056	2,530,657,411
Held in trust for external investment pool participants:						
Pension pool	-	-	3,373,539,596	3,233,154,948	3,373,539,596	3,233,154,948
Insurance pool	-	-	2,318,620,683	2,171,169,377	2,318,620,683	2,171,169,377
Held in trust for individual investment accounts	-	-	6,364,567,769	5,852,558,593	6,364,567,769	5,852,558,593
Total fiduciary net position	$ 2,616,171,056	$ 2,530,657,411	$ 12,056,728,048	$ 11,256,882,918	$ 14,672,899,104	$ 13,787,540,329
Each participant unit is valued at $1.00						
Participant units outstanding			12,056,728,048	11,256,882,918		

	Pension Trust		Investment Trust		Total	
	2019	2018	2019	2018	2019	2018
Additions:						
Contributions:						
Employer contributions	$ 89,444,881	$ 86,675,715	$ -	$ -	$ 89,444,881	$ 86,675,715
Member contributions	82,429,594	79,877,611	-	-	82,429,594	79,877,611
Purchased service credit	1,916,787	2,181,106	-	-	1,916,787	2,181,106
Interest, penalties and other	158,713	194,028	-	-	158,713	194,028
Total contributions	173,949,975	168,928,460	-	-	173,949,975	168,928,460
Investment income:						
Net change in fair value of investments	84,701,380	162,026,369	388,737,303	527,542,620	473,438,683	689,568,989
Interest, dividends and other income	56,434,954	54,486,768	284,507,483	246,166,774	340,942,437	300,653,542
	141,136,334	216,513,137	673,244,786	773,709,394	814,381,120	990,222,531
Less investment expenses	6,272,801	5,352,945	26,513,804	21,653,138	32,786,605	27,006,083
Net investment income	134,863,533	211,160,192	646,730,982	752,056,256	781,594,515	963,216,448
Securities lending activity:						
Securities lending income	224,713	231,448	1,226,258	1,334,400	1,450,971	1,565,848
Less securities lending expenses	(44,927)	(46,271)	(245,058)	(266,663)	(289,985)	(312,934)
Net securities lending income	179,786	185,177	981,200	1,067,737	1,160,986	1,252,914
Purchase of units ($1 per unit)	-	-	987,842,755	871,266,337	987,842,755	871,266,337
Total additions	308,993,294	380,273,829	1,635,554,937	1,624,390,330	1,944,548,231	2,004,664,159
Deductions:						
Benefits paid to participants	214,091,045	201,648,202	-	-	214,091,045	201,648,202
Partial lump-sum distributions	1,237,129	768,829	-	-	1,237,129	768,829
Refunds	5,900,392	5,561,668	-	-	5,900,392	5,561,668
Administrative expenses	2,251,083	2,128,794	1,779,837	1,669,600	4,030,920	3,798,394
Redemption of units ($1 per unit)	-	-	833,929,970	336,169,172	833,929,970	336,169,172
Total deductions	223,479,649	210,107,493	835,709,807	337,838,772	1,059,189,456	547,946,265
Change in fiduciary net position	85,513,645	170,166,336	799,845,130	1,286,551,558	885,358,775	1,456,717,894
Fiduciary net position:						
Beginning of year	2,530,657,411	$ 2,360,491,075	$ 11,256,882,918	$ 9,970,331,360	$ 13,787,540,329	$ 12,330,822,435
End of Year	$ 2,616,171,056	$ 2,530,657,411	$ 12,056,728,048	$ 11,256,882,918	$ 14,672,899,104	$ 13,787,540,329

Note 1 - Summary of Significant Accounting Policies

RIO is an agency of the State of North Dakota operating through the legislative authority of North Dakota Century Code (NDCC) Chapter 54-52.5 and is considered part of the State of North Dakota financial reporting entity and included in the State of North Dakota's Comprehensive Annual Financial Report.

For financial reporting purposes, RIO has included all funds, and has considered all potential component units for which RIO is financially accountable, and other organizations for which the nature and significance of their relationship with RIO are such that exclusion would cause RIO's financial statements to be misleading or incomplete. The Governmental Accounting Standards Board has set forth criteria to be considered in determining financial accountability. These criteria include appointing a voting majority of an organization's governing body and (1) the ability of RIO to impose its will on that organization or (2) the potential for the organization to provide specific financial benefits to, or impose specific financial burdens on RIO.

Based upon these criteria, there are no component units to be included within RIO as a reporting entity and RIO is part of the State of North Dakota as a reporting entity.

Fund Financial Statement

All activities of RIO are accounted for within the pension and investment trust funds and are shown, by fund, in the fiduciary fund financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

The financial statements of RIO are reported using the economic resources measurement focus and the accrual basis of accounting.

This measurement focus includes all assets and liabilities associated with the operations of the fiduciary funds on the statements of net position. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

New Accounting Standards

In fiscal year 2018, RIO implemented GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions, ("GASB 75"). The primary objective of this statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB).

Fiduciary Fund

A pension trust fund and investment trust funds have been established to account for the assets held by RIO in a trustee capacity for TFFR and as an agent for other governmental units or funds which have placed certain investment assets under the management of SIB. The SIB manages two external investment pools and four individual investment accounts. The two external investment pools consist of a pension pool and insurance pool. SIB manages the investments of the North Dakota Public Employees Retirement System, Bismarck City Employees and Police, City of Grand Forks Employees and City of Grand Forks Park District Employees pension plans in the pension pool. The investments of Workforce Safety & Insurance, State Fire and Tornado, State Bonding, Petroleum Tank Release Compensation Fund, Insurance Regulatory Trust, North Dakota Association of Counties Fund, Risk Management, Risk Management Workers Comp, PERS Group Insurance, City of Bismarck Deferred Sick Leave, City of Fargo FargoDome Permanent Fund, Cultural Endowment Fund, ND State Board of

Medicine, Lewis and Clark Interpretive Center Endowment Fund and Budget Stabilization Fund are managed in the insurance pool. The Legacy Fund, Job Service of North Dakota, Tobacco Prevention and Control Fund, and PERS Retiree Health investments are managed by SIB in individual investment accounts; except for a small portion of the Legacy Fund fixed income and cash allocations that will be removed from the pools in July 2019.

RIO has no statutory authority over, nor responsibility for, these investment trust funds other than the investment responsibility provided for by statute or through contracts with the individual agencies. The funds that are required to participate according to statute are: Public Employees Retirement System, Workforce Safety & Insurance, State Fire and Tornado, State Bonding, Petroleum Tank Release Compensation Fund, Insurance Regulatory Trust, Risk Management, Risk Management Workers Comp, Cultural Endowment Fund, Legacy Fund and Budget Stabilization Fund.

RIO follows the pronouncements of the Governmental Accounting Standards Board (GASB), which is the nationally accepted standard setting body for establishing accounting principles generally accepted in the United States of America for governmental entities.

Pension and Investment Trust Funds are accounted for using the accrual basis of accounting. Member contributions are recognized in the period in which they are due. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the NDCC.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

RIO utilizes various investment instruments. Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and that such change could materially affect the amounts reported in the statements of net position.

Budgetary Process

RIO operates through a biennial appropriation, which represents appropriations recommended by the Governor and presented to the General Assembly (the Assembly) at the beginning of each legislative session. The Assembly enacts RIO’s budget through passage of a specific appropriation bill. The State of North Dakota’s budget is prepared principally on a modified accrual basis. The Governor has line item veto power over all legislation, subject to legislative override.

Once passed and signed, the appropriation bill becomes RIO’s financial plan for the next two years. Changes to the appropriation are limited to Emergency Commission authorization, initiative, or referendum action. The Emergency Commission can authorize receipt of federal or other moneys not appropriated by the Assembly if the Assembly did not indicate intent to reject the money. The Emergency Commission may authorize pass-through federal funds from one state agency to another. The Emergency Commission may authorize the transfer of expenditure authority between appropriated line items, however RIO has specific authority as a special fund to transfer between the contingency line item and other line items. Unexpended appropriations lapse at the end of each biennium, except certain capital expenditures covered under the NDCC section 54-44.1-11.

RIO does not use encumbrance accounting. The legal level of budgetary control is at the agency, appropriation and expenditure line item level. RIO does not formally budget revenues and it does not budget by fund. The statement of revenues, expenditures and changes in fund balances - budget and actual is not prepared because revenues are not budgeted.

Capital Assets and Depreciation

Capital asset expenditures greater than $5,000 are capitalized at cost in accordance with Section 54-27-21 of the NDCC. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. The estimated useful lives are as follows:

	Years
Office equipment	5
Furniture and fixtures	5

Investments

NDCC Section 21-10-07 states that the SIB shall apply the prudent investor rule when investing funds under its supervision. The prudent investor rule means that in making investments, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation, but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income.

The pension fund belonging to TFFR and investment trust funds attributable to the City of Bismarck Employee Pension Plan, the City of Bismarck Police Pension Plan, Job Service of North Dakota, City of Grand Forks Employee Pension Plan, City of Grand Forks Park District Pension Plan and the Public Employees Retirement System (PERS) must be invested exclusively for the benefit of their members. All investments are made in accordance with the respective fund's long-term investment objectives and performance goals.

Pooled Investments

Many funds whose investments are under the supervision of the SIB participate in pooled investments. The agencies transfer money into the investment pools and receive an appropriate percentage ownership of the pooled portfolio based upon fair value. All activities of the investment pools are allocated to the agencies based upon their respective ownership percentages. Each participant unit is valued at $1.00 per unit.

Investment Valuation and Income Recognition

Investments are reported at fair value. Quoted market prices, when available, have been used to value investments. The fair values for securities that have no quoted market price represent estimated fair value. International securities are valued based upon quoted foreign market prices and translated into U.S. dollars at the exchange rate in effect at June 30. In general, corporate debt securities have been valued at quoted market prices or, if not available, values are based on yields currently available on comparable securities of issuers with similar credit ratings. Mortgages have been valued on the basis of their future principal and interest payments discounted at prevailing interest rates for similar instruments. The fair value of real estate investments, including timberland, is based on appraisals plus fiscal year-to-date capital transactions. Publicly traded alternative investments are valued based on quoted market prices. When not readily available, alternative investment securities are valued using current estimates of fair value from the investment manager. Such valuations consider variables such as financial performance of the issuer, comparison of comparable companies' earnings multiples, cash flow analysis, recent sales prices of investments, withdrawal restrictions, and other pertinent information. Because of the inherent uncertainty of the valuation for these other alternative investments, the estimated fair value may differ from the values that would have been used had a ready market existed.

The net change in fair value of investments consists of the realized gains or losses and the unrealized increase or decrease in fair value of investments during the year. Realized gains and losses on sales of investments are computed based on the difference between the sales price and the original cost of the investment sold. Realized gains and losses on investments that had been held in more than one fiscal year and sold in the current fiscal year were included as a change in the fair value of investments reported in the prior year(s) and the current year.

Unrealized gains and losses are computed based on changes in the fair value of investments between years. Security transactions are accounted for on a trade date basis. Interest income is recognized when earned. Dividend income is recorded on the ex-dividend date.

Pensions and Other Postemployment Benefits (OPEB)

For purposes of measuring the net pension and OPEB liabilities, deferred outflows of resources and deferred inflows of resources related to pensions and OPEB, and pension and OPEB expenses, information about the fiduciary net position of the ND Public Employees Retirement System (NDPERS) defined benefit pension and OPEB plans, and additions to/deductions from NDPERS' fiduciary net position have been determined on the same basis as they are reported by NDPERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Note 2 - Cash and Cash Equivalents

Custodial Credit Risk

State law generally requires that all state funds be deposited in the Bank of North Dakota. NDCC 21-04-01 provides that public funds belonging to or in the custody of the state shall be deposited in the Bank of North Dakota. Also, NDCC 6-09-07 states, "[a]ll state funds … must be deposited in the Bank of North Dakota" or must be deposited in accordance with constitutional and statutory provisions.

Pension Trust Fund

Deposits held by the Pension Trust Fund at June 30, 2019 were deposited in the Bank of North Dakota. At June 30, 2019 and 2018, the carrying amount of TFFR's deposits was $20,305,041 and $20,486,449, respectively, and the bank balance was $20,402,305 and $20,528,537, respectively. The difference results from checks outstanding or deposits not yet processed by the bank. These deposits are exposed to custodial credit risk as uninsured and uncollateralized. However, these deposits at the Bank of North Dakota are guaranteed by the State of North Dakota through NDCC Section 6-09-10.

Investment Trust Funds

Certificates of deposit, an insurance pool cash account, a pension pool cash account and a Legacy Fund cash account are recorded as investments and have a cost and carrying value of $276,189,990 and $88,601,097 at June 30, 2019 and 2018, respectively. In addition, these funds carry cash and cash equivalents totaling $257,511 and $410,261 June 30, 2019 and 2018, respectively. These deposits are exposed to custodial credit risk as uninsured and uncollateralized. However, these deposits held at the Bank of North Dakota are guaranteed by the State of North Dakota through NDCC Section 6-09-10.

Note 3 - Investments

The investment policy of the SIB is governed by NDCC 21-10. The SIB shall apply the prudent investor rule in investing for funds under its supervision. The “prudent investor rule” means that in making investments, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income. The retirement funds belonging to the teachers’ fund for retirement and the public employees’ retirement system must be invested exclusively for the benefit of their members and in accordance with the respective funds’ investment goals and objectives.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates of debt securities will adversely affect the fair value of an investment. The price of a debt security typically moves in the opposite direction of the change in interest rates. The SIB does not have a formal investment policy that limits investment maturities as a means of managing its exposure to potential fair value losses arising from future changes in interest rates.

At June 30, 2019 and 2018, the following tables show the investments by investment type and maturity (expressed in thousands).

2019	Total Fair Value	Less than 1 Year	1-6 Years	6-10 Years	More than 10 Years
Asset Backed Securities	$ 316,024	$ 347	$ 71,850	$ 69,713	$ 174,114
Bank Deposits	10,010	10,010	-	-	-
Bank Loans	4,372	-	3,195	1,177	-
Collateralized Bonds	2,716	-	-	250	2,466
Commercial Mortgage-Backed	238,449	898	5,521	3,321	228,709
Commercial Paper	1,596	1,596	-	-	-
Corporate Bonds	1,660,145	50,523	831,926	460,176	317,520
Corporate Convertible Bonds	21,761	721	12,187	2,443	6,410
Government Agencies	75,933	2,699	43,751	20,108	9,375
Government Bonds	603,757	23,646	269,268	102,364	208,479
Gov't Mortgage Backed	662,483	12	7,010	21,930	633,531
Gov't-issued CMB	101,527	16	6,696	34,673	60,142
Index Linked Government Bonds	582,630	12,957	154,761	261,770	153,142
Municipal/Provincial Bonds	35,474	600	13,806	5,942	15,126
Non-Government Backed CMOs	72,142	29	6,677	9,251	56,185
Other Fixed Income	1,003	-	1,003	-	-
Repurchase Agreements	(20,003)	(20,003)	-	-	-
Short Term Bills and Notes	31,986	31,986	-	-	-
Funds/Pooled Investments	1,416,917	-	743,936	452,982	219,999
Total Debt Securities	$ 5,818,922	$ 116,037	$ 2,171,587	$ 1,446,100	$ 2,085,198

	All values in $000				
2018	Total Fair Value	Less than 1 Year	1-6 Years	6-10 Years	More than 10 Years
Asset Backed Securities	$ 205,023	$ 470	$ 44,775	$ 41,176	$ 118,602
Bank Deposits	2,736	2,736	-	-	-
Bank Loans	2,636	387	1,085	1,164	-
Collateralized Bonds	2,752	-	-	250	2,502
Commercial Mortgage-Backed	142,460	-	1,777	968	139,715
Commercial Paper	11,886	11,886	-	-	-
Corporate Bonds	1,479,560	31,658	579,400	451,040	417,462
Corporate Convertible Bonds	24,247	-	14,064	5,156	5,027
Government Agencies	105,819	7,183	62,478	18,693	17,465
Government Bonds	585,476	19,918	230,575	122,793	212,190
Gov't Mortgage Backed	580,245	30	5,555	14,467	560,193
Gov't-issued CMB	106,687	9	605	24,048	82,025
Index Linked Government Bonds	4,618	-	696	-	3,922
Municipal/Provincial Bonds	33,218	600	14,331	2,897	15,390
Non-Government Backed CMOs	60,910	43	2,603	1,724	56,540
Other Fixed Income	2,176	1,739	437	-	-
Repurchase Agreements	(18,967)	(18,967)	-	-	-
Short Term Bills and Notes	44,156	44,156	-	-	-
Sukuk	200	200	-	-	-
Funds/Pooled Investments	1,819,095	-	161,997	1,061,786	595,312
Total Debt Securities	$ 5,194,933	$ 102,048	$ 1,120,378	$ 1,746,162	$ 2,226,345

In the tables above, the fair values of inflation indexed bonds are reflected in the columns based on their stated maturity dates. The principal balances of these bonds are adjusted every six months based on the inflation index for that period.

Some investments are more sensitive to interest rate changes than others. Variable and floating rate collateralized mortgage obligations (CMOs), asset-backed securities (ABS), interest-only and principal-only securities are examples of investments whose fair values may be highly sensitive to interest rate changes.

Interest-only (IO) and principal-only (PO) strips are transactions which involve the separation of the interest and principal components of a security. They are highly sensitive to prepayments by mortgagors, which may result from a decline in interest rates. The SIB held no POs and held IOs valued at $18.8 and $6.7 million at June 30, 2019 and 2018, respectively. The SIB has no policy regarding IO or PO strips.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The State Investment Board maintains a highly diversified portfolio of debt securities encompassing a wide range of credit ratings. Although the SIB has no overall policy regarding credit risk, each debt securities manager is given a specific set of guidelines to invest within based on the mandate for which it was hired. The guidelines specify in which range of credit the manager may invest. These ranges include investment grade and below investment grade categories. The following tables present the SIB's ratings as of June 30, 2019 and 2018, (expressed in thousands).

2019	Total Fair Value	Credit Rating* AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Asset Backed Securities	$ 316,024	$ 217,426	$ 34,170	$ 10,085	$ 5,356	$ 4,202	$ 2,391	$ 4,876	$ 1,876	$ -	$ 1,319	$ 34,323
Bank Deposits	10,010	-	1,528	8,482	-	-	-	-	-	-	-	-
Bank Loans	4,372	-	-	-	1,077	2,091	694	510	-	-	-	-
Collateralized Bond	2,716	2,716	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage Backed	238,051	209,223	7,294	1,824	2,106	4,418	2,848	306	-	387	257	9,388
Commercial Paper	1,596	-	-	1,596	-	-	-	-	-	-	-	-
Corporate Bonds	1,660,145	13,187	83,331	527,582	752,212	183,056	85,478	9,374	233	-	878	4,814
Corporate Convertible Bonds	21,761	-	-	547	1,349	7,289	1,275	3,452	-	-	-	7,849
Gov't Agencies	61,492	4,969	35,290	6,939	13,673	-	-	621	-	-	-	-
Gov't Bonds	603,757	4,969	479,780	5,775	60,556	15,590	36,281	-	-	-	-	806
Gov't Mortgage Backed	496,512	-	495,487	200	825	-	-	-	-	-	-	-
Gov't Issued CMB	45,306	-	45,306	-	-	-	-	-	-	-	-	-
Index Linked Government Bonds	582,630	-	582,630	-	-	-	-	-	-	-	-	-
Municipal/Provincial Bonds	35,474	2,282	10,899	13,117	4,018	2,271	2,887	-	-	-	-	-
Non-Gov't Backed CMOs	72,142	26,000	4,758	3,733	1,723	515	2,128	2,830	1,395	-	207	28,853
Other Fixed Income	1,003	-	-	1,003	-	-	-	-	-	-	-	-
Repurchase Agreements	(20,003)	-	(20,003)	-	-	-	-	-	-	-	-	-
Short Term Bills & Notes	31,986	-	2,094	29,892	-	-	-	-	-	-	-	-
Funds/Pooled Investments	1,416,917	303,535	307,910	618,772	109,788	42,433	34,479	-	-	-	-	-
Total Credit Risk of Debt Securities	5,581,891	$ 784,307	$2,070,474	$1,229,547	$ 952,683	$ 261,865	$ 168,461	$ 21,969	$ 3,504	$ 387	$ 2,661	$ 86,033
US Gov't & Agencies **	237,031											
Total Debt Securities	$ 5,818,922											

2018	Total Fair Value	Credit Rating* AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Asset Backed Securities	$ 204,368	$ 144,343	$ 18,759	$ 11,250	$ 9,889	$ 3,163	$ 1,873	$ 5,965	$ 2,976	$ -	$ 1,495	$ 4,655
Bank Deposits	2,736	-	-	2,736	-	-	-	-	-	-	-	-
Bank Loans	2,636	-	-	-	387	887	858	272	-	-	-	232
Collateralized Bond	2,752	2,752	-	-	-	-	-	-	-	-	-	-
Commercial Mortgage Backed	141,995	107,878	6,804	5,158	5,673	6,284	1,140	4,431	520	883	1,232	1,992
Commercial Paper	11,886	-	-	10,810	-	-	-	-	-	-	-	1,076
Corporate Bonds	1,479,560	10,261	52,467	311,750	870,000	170,852	56,483	7,745	-	-	2	-
Corporate Convertible Bonds	24,247	-	-	-	1,742	6,265	7,365	8,875	-	-	-	-
Gov't Agencies	92,701	3,096	61,504	1,594	24,799	1,708	-	-	-	-	-	-
Gov't Bonds	75,958	-	3,763	6,033	43,886	9,699	12,577	-	-	-	-	-
Gov't Mortgage Backed	487,236	-	487,236	-	-	-	-	-	-	-	-	-
Gov't Issued CMB	27,991	-	27,991	-	-	-	-	-	-	-	-	-
Index Linked Government Bonds	696	-	-	-	-	-	696	-	-	-	-	-
Municipal/Provincial Bonds	33,218	235	8,326	13,277	7,863	574	2,943	-	-	-	-	-
Non-Gov't Backed CMOs	60,910	23,309	2,398	11,858	2,745	728	2,136	3,344	3,806	-	809	9,777
Other Fixed Income	2,176	-	-	1,499	480	-	-	-	-	-	-	197
Repurchase Agreements	(18,967)	-	(18,967)	-	-	-	-	-	-	-	-	-
Short Term Bills & Notes	42,636	-	7,422	35,214	-	-	-	-	-	-	-	-
Sukuk	200	-	-	-	-	200	-	-	-	-	-	-
Funds/Pooled Investments	1,819,095	-	1,279,292	110,643	355,231	19,052	54,877	-	-	-	-	-
Total Credit Risk of Debt Securities	4,494,030	$ 291,874	$1,936,995	$ 521,822	$ 1,322,695	$ 219,412	$ 140,948	$ 30,632	$ 7,302	$ 883	$ 3,538	$ 17,929
US Gov't & Agencies **	700,903											
Total Debt Securities	$ 5,194,933											

* Ratings are determined in the following order:

1. S&P rating
2. Moody's rating
3. Fitch rating
4. Manager-determined rating (internal rating)
5. If no ratings available using steps 1-4, then shown as not rated.

** US government agency securities explicitly guaranteed by the US government are categorized here. Credit ratings of US government agency securities that are only implicitly guaranteed by the US government are categorized accordingly in the main body of these tables. Implicitly guaranteed agency securities included in the *Asset Backed, Commercial Mortgage-Backed, Gov't Issued Commercial & Gov't Mortgage Backed, Gov't Agencies, Gov't Bonds, Index Linked Gov't Bonds and Short Term Bills and Notes* categories are issued by FNMA, FHLB, FHLMC, FAMC and TVA.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of an investment in a single issuer. As of June 30, 2019 and 2018, the SIB's portfolio has no single issuer exposure that comprises 5% or more of the overall portfolio, excluding investments issued or explicitly guaranteed by the U.S. government and investments in mutual funds, external investment pools, and other pooled investments. Therefore, there is no concentration of credit risk.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. Although the SIB does not have a formal investment policy governing foreign currency risk, the SIB manages its exposure to fair value loss by requiring their international securities investment managers to maintain diversified portfolios to limit foreign currency and security risk. The SIB's exposure to foreign currency risk is presented in the following tables as of June 30, 2019 and 2018 (expressed in thousands).

2019

Currency	Short-Term	Debt	Equity	Real Estate	Total
Argentine peso	$ 82	$ 1,011	$ -	$ -	$ 1,093
Australian dollar	20,277	(18,935)	83,638	-	84,980
Brazilian real	214	-	7,957	-	8,171
British pound sterling	7,752	(5,981)	236,946	-	238,717
Canadian dollar	3,374	(3,500)	72,112	-	71,986
Chilean peso	53	-	-	-	53
Chinese yuan renminbi	(3)	-	-	-	(3)
Colombian peso	195	-	-	-	195
Czech koruna	-	-	-	-	-
Danish krone	108	-	38,568	-	38,676
Euro	(12,041)	13,867	479,747	5,815	487,388
Hong Kong dollar	792	-	139,204	-	139,996
Hungarian forint	172	520	3,833	-	4,525
Indonesian rupiah	56	-	-	-	56
Japanese yen	16,211	-	252,971	-	269,182
Malaysian ringgit	210	509	-	-	719
Mexican peso	37	74	1,321	-	1,432
New Israeli shekel	118	-	2,219	-	2,337
New Taiwan dollar	25	-	4,570	-	4,595
New Zealand dollar	(40)	-	211	-	171
Norwegian krone	621	495	11,845	-	12,961
Polish zloty	(50)	-	2,648	-	2,598
Singapore dollar	351	-	8,021	-	8,372
South African rand	323	-	7,843	-	8,166
South Korean won	177	-	13,080	-	13,257
Swedish krona	1,268	-	56,585	-	57,853
Swiss franc	960	-	119,456	-	120,416
Thai baht	312	-	6,086	-	6,398
Turkish lira	89	-	1,352	-	1,441
International commingled funds (various currencies)	-	-	995,814	28,930	1,024,744
Total international investment securities	$ 41,643	$ (11,940)	$ 2,546,027	$ 34,745	$ 2,610,475

2018

Currency	Short-Term	Debt	Equity	Real Estate	Total
Argentine peso	$ 63	$ 3,064	$ -	$ -	$ 3,127
Australian dollar	9,035	(7,424)	86,331	-	87,942
Brazilian real	875	-	3,703	-	4,578
British pound sterling	5,554	(4,870)	224,748	-	225,432
Canadian dollar	3,862	(3,637)	73,146	-	73,371
Chilean peso	55	-	-	-	55
Colombian peso	213	275	-	-	488
Czech koruna	335	-	-	-	335
Danish krone	20	-	22,089	-	22,109
Egyptian pound	308	-	-	-	308
Euro	13,098	(12,059)	444,208	5,312	450,559
Hong Kong dollar	825	-	113,541	-	114,366
Hungarian forint	154	-	3,432	-	3,586
Indonesian rupiah	55	-	-	-	55
Japanese yen	(3,273)	-	235,053	-	231,780
Malaysian ringgit	154	-	1,683	-	1,837
Mexican peso	609	5,671	1,167	-	7,447
New Israeli shekel	246	-	3,755	-	4,001
New Taiwan dollar	142	-	5,441	-	5,583
New Zealand dollar	946	-	468	-	1,414
Norwegian krone	78	-	14,658	-	14,736
Polish zloty	29	-	1,311	-	1,340
Russian ruble	38	-	-	-	38
Singapore dollar	53	-	7,450	-	7,503
South African rand	(1,276)	1,843	6,443	-	7,010
South Korean won	583	-	12,581	-	13,164
Swedish krona	4,746	-	44,887	-	49,633
Swiss franc	1,554	-	82,868	-	84,422
Thai baht	426	-	5,163	-	5,589
Turkish lira	39	-	737	-	776
International commingled funds (various currencies)	-	-	952,235	25,105	977,340
Total international investment securities	$ 39,546	$ (17,137)	$ 2,347,098	$ 30,417	$ 2,399,924

Negative amounts represent short positions.

Derivative Securities

Derivatives are financial arrangements between two parties whose payments are based on, or "derived" from, the performance of some agreed upon benchmark. The investment policies of the SIB's clients allow the use of derivative securities to hedge or replicate underlying exposures but not for speculation. All derivatives are considered investment derivative instruments. The fair value of all derivative securities is reported in the statement of net position. At June 30, 2019 and 2018, the SIB had four types of derivative securities: futures, options, swaps and currency forwards.

Futures

Futures represent commitments to purchase (asset) or sell (liability) securities at a future date and at a specific price. Futures contracts are traded on organized exchanges (exchange traded) thereby minimizing the SIB's counterparty risk. The net change in the futures contracts' value is settled daily in cash with the exchanges. Net gains or losses resulting from the daily settlements are included in net change in fair value of investments in the statement of changes in net position and totaled $17.0 and $100.0 million for fiscal years 2019 and 2018, respectively. At June 30, 2019 and 2018, the SIB investment portfolio had the notional futures balances shown below (expressed in thousands).

Futures	Notional Value	
	June 30, 2019	June 30, 2018
Cash & Cash Equivalent Derivative Futures		
Long	$ 188,152	$ 226,320
Short	(657,304)	(962,500)
Equity Derivative Futures		
Long	808,005	647,386
Short	-	-
Fixed Income Derivative Futures		
Long	352,611	378,144
Short	(141,400)	(132,120)
Total Futures	$ 550,064	$ 157,230

Options

Options represent or give buyers the right, but not the obligation, to buy (call) or sell (put) an asset at a preset price over a specified period. Options are traded on organized exchanges (exchange traded) thereby minimizing the SIB's counterparty credit risk. The option's price is usually a small percentage of the underlying asset's value. As a seller of a financial option, the SIB, through its investment manager, receives a premium at the beginning of the agreement and bears the risk of an unfavorable change in the price of the financial instrument underlying the option. As a buyer of a financial option, the SIB, through its investment manager, pays a premium at the beginning of the agreement and the counterparty bears the risk of an unfavorable change in the price of the financial instrument underlying the option. Gains and losses on options are determined based on fair values and recorded with the net change in fair value of investments in the statement of changes in net position and totaled $3.3 million and $(9.1) million for fiscal years 2019 and 2018, respectively. At June 30, 2019 and 2018, the SIB investment portfolio had the following option balances (expressed in thousands).

Options	Fair Value	
	June 30, 2019	June 30, 2018
Cash & Other Options		
Call	$ (10)	$ (149)
Put	1	(363)
Fixed Income Options		
Call	(38)	-
Put	(241)	(5)
Total Options	$ (288)	$ (517)

Swaps

A swap is a derivative in which counterparties exchange certain benefits of one party's financial instrument for those of the other party's financial instrument. Specifically, the two counterparties agree to exchange one stream of cash flows for another stream. The SIB, through its investment managers, has entered into various swap agreements in an attempt to manage its exposure to interest rate, inflation, credit, currency and total return risk.

Gains and losses on swaps are determined based on fair values and are recorded with the net change in fair value of investments in the statement of changes in net position and totaled $(18.6) and $3.6 million for fiscal years 2019 and 2018, respectively. The maximum loss that would be recognized at June 30, 2019 and 2018, if all counterparties failed to perform as contracted is $3.0 million and $2.75 million, respectively. Swap fair values are determined by a third party pricing source. At June 30, 2019 and 2018, the SIB's investment portfolio had the swap fair value balances as shown below (expressed in thousands).

Credit Default Swaps

Credit risk represents the exposure to fair value losses arising from a credit event such as default, failure to pay, restructuring or bankruptcy. In a credit default swap (CDS) contract, the protection buyer of the CDS makes a series of payments to the protection seller and, in exchange, receives a payoff if the credit instrument experiences a credit event. CDS contracts are also used to establish exposure to a desired credit instrument.

	Notional Amount			Fair Value	
Counterparty/Moody's Rating	June 30, 2019	June 30, 2018	Expiration Date Range	June 30, 2019	June 30, 2018
Bank of America/Aa2 (2 contracts)	$ (430)		2021-2025	$ (32)	
Bank of America/A1 (2 contracts)		(2,700)	2021		13
BNP Paribas/A1 (1 contract)		(400)	2019		(2)
Citibank/A1 (34 contracts)	(2,535)		2019 - 2024	(172)	
Citibank/A1 (23 contracts)		(9,005)	2018 - 2024		(55)
Credit Suisse First Boston/A1 (8 contracts)	(43,200)		2022 - 2024	931	
Credit Suisse First Boston/A1 (2 contracts)		(89,400)	2022 - 2023		1,369
Deutsche Bank/A3 (2 contracts)	2,000		2059	(16)	
Deutsche Bank/Baa2 (2 contracts)		2,000	2059		9
Goldman Sachs/A3 (4 contracts)	(1,900)		2020 - 2024	(28)	
Goldman Sachs/A3 (10 contracts)		(4,890)	2019 - 2063		37
HSBC Bank/Aa3 (2 contracts)	(1,550)		2019	2	
HSBC Bank/A1 (1 contract)		(100)	2023		(1)
JP Morgan Chase/Aa2 (2 contracts)	(400)		2019 - 2024	1	
JP Morgan Chase/Aa3 (1 contract)		(300)	2019		4
Morgan Stanley/A3 (2 contracts)	(245)		2024	2	
Total Credit Default Swaps	$ (48,260)	$ (104,795)		$ 688	$ 1,374

The notional amount may be positive or negative, depending on whether the position is long or short, respectively.

Currency Swaps

Currency risk represents the exposure to fair value losses arising from the change in price of one currency against another. A currency swap is a foreign-exchange agreement between two parties to exchange principal and interest in one currency for the same in another currency.

	Notional Amount			Fair Value	
Counterparty/Moody's Rating	June 30, 2019	June 30, 2018	Expiration Date Range	June 30, 2019	June 30, 2018
JP Morgan Chase/Aa3 (1 contract)	$ -	$ 106	2020	$ -	$ (7)
Total Currency Swaps	$ -	$ 106		$ -	$ (7)

The notional amount may be positive or negative, depending on whether the position is long or short, respectively.

Interest Rate Swaps

Interest rate risk represents the exposure to fair value losses arising from future changes in prevailing market interest rates. In the most common type of interest rate swap arrangement, one party agrees to pay fixed interest payments on designated dates to a counterparty, who in turn agrees to make return interest payments that float with some reference rate.

Counterparty/Moody's Rating	Notional Amount June 30, 2019	Notional Amount June 30, 2018	Expiration Date Range	Fair Value June 30, 2019	Fair Value June 30, 2018
Citigroup Global Markets/A1 (24 contracts)	$ 84,455		2020 - 2049	$ (3,427)	
Citigroup Global Markets/A1 (5 contracts)		(28,885)	2019 - 2025		1,018
Credit Suisse First Boston/A1 (39 contracts)	128,462		2019 - 2049	12	
Credit Suisse First Boston/A1 (32 contracts)		94,495	2019 - 2048		2,275
JP Morgan Chase/Aa2 (119 contracts)	447,530		2020 - 2048	(14,715)	
JP Morgan Chase/Aa3 (176 contracts)		(134,106)	2018 - 2048		3,122
Total Interest Rate Swaps	$ 660,447	$ (68,496)		$ (18,130)	$ 6,415

The notional amount may be positive or negative, depending on whether the position is long (fixed rate payer) or short (floating rate payer), respectively.

Inflation Swaps

Inflation risk represents the exposure to fair value losses arising from future changes in prevailing market inflation. In an inflation swap, one party pays a fixed rate on a notional principal amount, while the other party pays a floating rate linked to an inflation index, such as the Consumer Price Index (CPI).

Counterparty/Moody's Rating	Notional Amount June 30, 2019	Notional Amount June 30, 2018	Expiration Date Range	Fair Value June 30, 2019	Fair Value June 30, 2018
JP Morgan Chase/Aa3 (22 contracts)	$ -	$ 5,730	2022 - 2057	$ -	$ (25)
Total Inflation Swaps	$ -	$ 5,730		$ -	$ (25)

The notional amount may be positive or negative, depending on whether the position is long (fixed rate payer) or short (floating rate payer), respectively.

Total Return Swaps

A total return swap is an agreement in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of an underlying asset (income and capital gains). The underlying asset, or reference asset, is owned by the party receiving the set rate payment.

Counterparty/Moody's Rating	Notional Amount June 30, 2019	Notional Amount June 30, 2018	Expiration Date Range	Fair Value June 30, 2019	Fair Value June 30, 2018
Credit Suisse International/A1 (2 contracts)	$ 4,800	$ 4,800	2041	$ (23)	$ (20)
Total Total Return Swaps	$ 4,800	$ 4,800		$ (23)	$ (20)

The notional amount may be positive or negative, depending on whether the position is long (fixed rate payer) or short (floating rate payer), respectively.

Currency Forwards

Currency forwards represent forward exchange contracts that are entered into in order to manage the exposure to changes in currency exchange rates on the currency denominated portfolio holdings. A forward exchange contract is a commitment to purchase (positive) or sell (negative) a currency at a future date at a negotiated forward rate. The gain or loss arising from the difference between the original contracts and the closing of such contracts is included in the net change in fair value of investments in the statements of changes in net position and totaled $1.7 million and $2.2 million for fiscal years 2019 and 2018, respectively. At June 30, 2019 and 2018, the SIB's investment portfolio included the currency forwards balances shown below (expressed in thousands).

				Fair Value	
Currency	Cost	Purchases	Sales	6/30/2019	6/30/2018
Argentine peso	$ 15	$ 15	$ -	$ 15	$ 2
Australian dollar	(1,472)	-	(1,472)	(1,484)	(1,832)
Brazilian real	(18)	-	(18)	(30)	1,207
British pound sterling	(8,241)	15,387	(23,628)	(8,279)	(3,549)
Canadian dollar	(8,460)	9,960	(18,420)	(8,491)	(2,737)
Colombian peso	186	186	-	195	213
Egyptian pound	-	-	-	-	308
Euro	(61,622)	37,046	(98,668)	(62,411)	(17,897)
Japanese yen	(17,609)	13,100	(30,709)	(18,046)	(44,049)
Mexican peso	6	2,818	(2,812)	38	83
Russian ruble	-	-	-	-	38
South African rand	(13)	1,608	(1,621)	-	(1,727)
Swedish krona	-	-	-	-	4,629
United States dollar	97,228	177,348	(80,120)	97,228	67,119
Total forwards subject to currency risk				$ (1,265)	$ 1,808

Derivative Interest Rate Risk

Derivative interest rate risk is the risk that changes in interest rates will adversely affect the value of an interest rate-based derivative investment. The SIB does not have a formal investment policy regarding such derivative investments. At June 30, 2019 and 2018, the tables below show the SIB's derivative investments subject to interest rate risk (expressed in thousands).

2019

	Total Notional Value	3 months or less	3 to 6 months	6 to 12 months	1-5 years	Greater than 5 years
Futures-interest rate contracts	$ (257,941)	$ 162,528	$ (525,813)	$ 105,344	$ -	$ -
Options-margined interest rate contracts	-	-	-	-	-	-
Total	$ (257,941)	$ 162,528	$ (525,813)	$ 105,344	$ -	$ -

	Total Fair Value	3 months or less	3 to 6 months	6 to 12 months	1-5 years	Greater than 5 years
Options on futures	$ (279)	$ (279)	$ -	$ -	$ -	$ -
Swaps - interest rate contracts	(18,130)	-	5	293	(536)	(17,892)
Swaps - credit contracts	688	(1)	2	5	776	(94)
Total	$ (17,721)	$ (280)	$ 7	$ 298	$ 240	$ (17,986)

2018

	Total Notional Value	3 months or less	3 to 6 months	6 to 12 months	1-5 years	Greater than 5 years
Futures-interest rate contracts	$ (490,157)	$ (442,696)	$ (160,157)	$ (50,322)	$ 163,018	$ -
Options-margined interest rate contracts	(17)	(17)	-	-	-	-
Total	$ (490,174)	$ (442,713)	$ (160,157)	$ (50,322)	$ 163,018	$ -

	Total Fair Value	3 months or less	3 to 6 months	6 to 12 months	1-5 years	Greater than 5 years
Options - interest rate contracts	$ -	$ -	$ -	$ -	$ -	$ -
Options on futures	(5)	(5)	-	-	-	-
Swaps - interest rate contracts	6,390	-	251	179	1,229	4,731
Swaps - credit contracts	1,374	-	37	2	1,392	(57)
Total	$ 7,759	$ (5)	$ 288	$ 181	$ 2,621	$ 4,674

Fair Value Measurement

The SIB categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

Level 1 Unadjusted quoted prices for identical instruments in active markets.

Level 2 Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

The following tables show the fair value leveling of the SIB's investment portfolio at June 30, 2019 and 2018 (expressed in thousands).

2019	Fair Value 6/30/19	Quoted Prices in Active Markets for Indentical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	Dollars in $(000)	Fair Value Measures Using		
Investments by fair value level				
Short Term Securities				
Commercial Paper	$ 1,596	$ -	$ 1,596	$ -
Short Term Bills and Notes	31,986	-	31,986	-
Short Term Securities	**33,582**	**-**	**33,582**	**-**
Fixed income investments				
Asset Backed Securities	310,664	-	303,159	7,505
Bank Loans	4,372	-	4,372	-
Collateralized Bonds	2,716	-	2,716	-
Commercial Mortgage-Backed	238,449	-	238,449	-
Corporate Bonds	1,660,145	-	1,656,435	3,710
Corporate Convertible Bonds	21,761	-	20,995	766
Funds - Fixed Income ETF	23,735	23,735	-	-
Government Agencies	73,034	-	73,034	-
Government Bonds	603,757	-	603,757	-
Government Mortgage Backed Securities	662,483	-	662,483	-
Gov't-issued Commercial Mortgage-Backed	101,527	-	101,527	-
Index Linked Government Bonds	582,630	-	582,630	-
Municipal/Provincial Bonds	35,474	-	35,474	-
Non-Government Backed C.M.O.s	63,752	-	57,495	6,257
Other Fixed Income	1,003	-	1,003	-
Total fixed income investments	**4,385,502**	**23,735**	**4,343,529**	**18,238**
Equity investments				
Common Stock	4,648,105	4,648,050	-	55
Convertible Equity	2,816	-	2,816	-
Funds - Equities ETF	173,072	173,072	-	-
Preferred Stock	4,561	4,561	-	-
Rights/Warrants	776	776	-	-
Stapled Securities	4,520	4,520	-	-
Total equity investments	**4,833,850**	**4,830,979**	**2,816**	**55**
Derivative investments				
Exchange Cleared Swaps	(17,168)	-	(17,168)	-
Options	(288)	(279)	(9)	-
Swaps	(297)	-	(297)	-
Total derivative investments	**(17,753)**	**(279)**	**(17,474)**	**-**
Total investments by fair value level	**$ 9,235,181**	**$ 4,854,435**	**$ 4,362,453**	**$ 18,293**

Investments measured at the net asset value (NAV)		Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Funds-Debt	$ 1,393,182	$ -	Daily, monthly	1-15 days
Commingled Funds-Equities	1,109,757	-	Daily, monthly	1-15 days
Distressed Debt	235,686	76,921	Quarterly, Not eligible	60 days
Long/Short	223,575	-	Monthly	15 days
Mezzanine Debt	496	8,499	Not eligible	Not eligible
Private Credit	290,157	146,200	Not eligible	Not eligible
Private Equity	229,364	339,869	Not eligible	Not eligible
Real Assets	1,798,987	358,278	Quarterly, Not eligible	30-90 days
Total investments measured at the NAV	**$ 5,281,204**	**$ 929,767**		
Investments at other than fair value				
Cash and adjustments to cash	$ 478,322			
Bank Certificates of Deposit	37,300			
Other miscellaneous securities	16,653			
Repurchase Agreements	(20,003)			
Total investments at other than fair value	**$ 512,272**			
Total investments	**$ 15,028,657**			

2018		Dollars in $(000) Fair Value Measures Using		
	Fair Value 6/30/18	Quoted Prices in Active Markets for Indentical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
Short Term Securities				
Commercial Paper	$ 11,886	$ -	$ 11,886	$ -
Short Term Bills and Notes	44,156	-	44,156	-
Short Term Securities	**56,042**	**-**	**56,042**	**-**
Fixed income investments				
Asset Backed Securities	192,586	-	192,586	-
Bank Loans	2,636	-	2,636	-
Collateralized Bonds	2,752	-	2,752	-
Commercial Mortgage-Backed	140,642	-	137,012	3,630
Corporate Bonds	1,479,560	-	1,479,296	264
Corporate Convertible Bonds	24,247	-	24,247	-
Funds - Fixed Income ETF	28,654	28,654	-	-
Government Agencies	105,819	-	104,115	1,704
Government Bonds	585,476	-	585,476	-
Government Mortgage Backed Securities	580,245	-	580,245	-
Gov't-issued Commercial Mortgage-Backed	106,687	-	106,687	-
Index Linked Government Bonds	4,618	-	4,618	-
Municipal/Provincial Bonds	33,218	-	33,218	-
Non-Government Backed C.M.O.s	55,798	-	53,407	2,391
Other Fixed Income	2,376	-	2,376	-
Total fixed income investments	**3,345,314**	**28,654**	**3,308,671**	**7,989**
Equity investments				
Common Stock	4,193,715	4,193,668	-	47
Convertible Equity	2,547	-	2,547	-
Funds - Equities ETF	276,921	276,921	-	-
Preferred Stock	2,060	2,049	11	-
Rights/Warrants	167	167	-	-
Stapled Securities	4,865	4,865	-	-
Total equity investments	**4,480,275**	**4,477,670**	**2,558**	**47**
Derivative investments				
Exchange Cleared Swaps	7,739	-	7,739	-
Options	(517)	(5)	(512)	-
Swaps	(2)	-	(2)	-
Total derivative investments	**7,220**	**(5)**	**7,225**	**-**
Total investments by fair value level	**$ 7,888,851**	**$ 4,506,319**	**$ 3,374,496**	**$ 8,036**

Investments measured at the net asset value (NAV)		Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Funds-Debt	$ 1,790,441	$ -	Daily, monthly	1-15 days
Commingled Funds-Equities	1,082,603	-	Daily, monthly	1-15 days
Distressed Debt	310,992	45,971	Quarterly, Not eligible	60 days
Long/Short	208,253	-	Monthly	15 days
Mezzanine Debt	540	8,505	Not eligible	Not eligible
Private Credit	238,107	177,200	Not eligible	Not eligible
Private Equity	191,437	300,526	Not eligible	Not eligible
Real Assets	1,729,935	265,460	Quarterly, Not eligible	30-90 days
Total investments measured at the NAV	**$ 5,552,308**	**$ 797,662**		
Investments at other than fair value				
Cash and adjustments to cash	$ 196,912			
Bank Certificates of Deposit	58,222			
Other miscellaneous securities	19,374			
Repurchase Agreements	(18,967)			
Total investments at other than fair value	**$ 255,541**			
Total investments	**$ 13,696,700**			

Securities classified in Level 1 are valued using quoted prices in active markets for those securities. Securities classified in Level 2 and Level 3 are valued using methodologies such as various bid evaluations, market averages and other matrix pricing techniques as well as values derived from associated traded securities or last trade data. In instances where inputs used to measure fair value fall into different levels, the fair value is categorized based on the lowest level input that is significant to the valuation.

Investments valued at the net asset value (NAV) per share (or its equivalent) have been classified separately in the tables above and include investments considered to be *alternative investments* as defined by the AICPA. The definition includes investments for which a readily determinable fair value does not exist (that is, investments not listed on national exchanges or over-the-counter markets, or for which quoted market prices are not available from sources such as financial publications, the exchanges, or NASDAQ). These types of investments can be held within any of the asset classes used by the SIB based on underlying portfolio holdings and analysis of risk and return relationships. These investments can be structured in different ways, including limited partnerships, limited liability companies, common trusts and mutual funds. Some are closed-ended with a specific life and capital commitment while others are open-ended with opportunity for ad hoc contributions or withdrawals and termination upon proper notice.

Commingled/Mutual Funds — These types of funds are open-ended funds and may be utilized in equity or fixed income asset classes. They are funds made up of underlying securities that have readily available fair values (publicly traded stocks or bonds). The SIB owns units of these funds rather than the individual securities. Contributions or withdrawals from these funds can be made as needed, generally with daily or monthly liquidity, with a notice period of one to fifteen days. Because they are liquid funds, there are no unfunded commitments for these types of investments.

Distressed Debt — these include investments in the debt instruments of companies which may be publicly traded or privately held that are financially distressed and are either in bankruptcy or likely candidates for bankruptcy. Typical holdings are senior and subordinated debt instruments, mortgages and bank loans. The SIB is including these types of investments in its global fixed income allocations. As of June 30, 2019 and 2018, unfunded commitments in one of its two distressed debt funds totaled $76.9 million and $46.0 million, respectively. This fund is not eligible for redemptions. The other fund is eligible for redemptions with quarterly liquidity and 60 days notice, and has no unfunded commitment.

Equity Long/Short — This strategy is a combination of long and short positions, primarily in publicly traded equities. The SIB utilizes this strategy, through a limited partnership structure, within its global equity allocations. This is an open-ended fund with monthly liquidity with a notice period of 15 days. There was no unfunded commitment as of June 30, 2019 and 2018.

Mezzanine Debt — This strategy is a hybrid of debt and equity financing. It is essentially debt capital that gives the lender the rights to convert to an ownership or equity interest in the company if the loan is not paid back in time and in full. It is generally subordinated to senior debt. The SIB utilizes this strategy, through a limited partnership structure, in its global fixed income allocation. The two funds in this category are not eligible for redemptions, have remaining lives of 2-5 years, and unfunded commitments of $8.5 million and $8.5 million as of June 30, 2019 and 2018, respectively.

Private Credit — These investments include loans to private companies, privately placed debt of public companies, or loans backed by real assets. Loan repayment can be derived from either cash flows from an operating company or cash flows generated by a physical or esoteric asset. Private debt is typically secured and has various protections/covenants in place. The debt is customized to the borrower’s requirement, thus rendering it illiquid. The SIB includes these strategies within its global fixed income allocation through limited partnership-type structures. Private credit issuers may be investment grade but are typically below-investment grade and similar in some respect to the syndicated bank loan and high yield markets. The SIB employs two senior private credit funds, commonly referred to as direct lenders, which are structured as custom managed accounts that are not eligible for redemptions during remaining investment lives of 2 to 3 years, and the unfunded commitments totaled $146.2 million and $177.2 million as of June 30, 2019 and 2018, respectively.

Private Equity — Private Equity investments are typically private interests in corporations across different areas of the capital structure and in different stages of the corporations’ development via limited partnership vehicles. Private Equity investments are illiquid and long term in nature (10-12 years), typically held until maturity. Private Equity portfolios generally have a “J-Curve Effect” whereby there are low to negative returns in the initial years due to the payment of investment management fees and initial funding of investments made by the General Partner during a period when investments are typically carried at cost and returns have not been realized. To diversify the program, Private Equity investments are made across business cycles, vintage years, and different strategies. The SIB has a dedicated sub-asset class for private equity investments within its global equity allocation in the pension pool. The SIB does not have the option to request redemptions from its private equity funds. The General Partner distributes earnings and proceeds from the sale of the underlying investments as transactions occur. The SIB has $339.9 million and $300.5 million in unfunded private equity commitments as of June 30, 2019 and 2018, respectively.

Venture Capital — these include investments in companies in a range of stages of development from start-up/seed stage, early stage, and later/expansion stage. Investments are typically made in years one through six and returns typically occur in years four through ten.

Buyouts — these include investments in funds that seek out and purchase underperforming or undervalued companies in order to improve them and sell them or take them public many years later. These funds are also often involved in management buyouts, which are buyouts conducted by the management of the company being purchased, and they often play key roles in leveraged buyouts, which are buyouts that are funded with borrowed money.

Real Assets — These investments are intended to provide allocations to tangible assets that are expected to be inflation protected and provide performance above the inflation rate as indicated by the CPI. Investments are generally structured as limited partnerships or limited liability companies. Investments in Real Assets include:

Real Estate — includes investments in private vehicles through limited partnerships or commingled vehicles that have an ownership interest in direct real estate properties. The investment strategies may include "value added" strategies, which derive their return from both income and appreciation, "opportunistic", which derive their return primarily through appreciation, and "alternative" which invest in less traditional types of property. Both domestic and international real estate funds are utilized. The SIB has a dedicated sub-asset class for these types of investments within global real assets. There are currently 10 different real estate funds in the portfolio. Three of those funds are open-ended vehicles that accept redemption requests quarterly with a 30-90 day notification period. The remaining seven funds are closed-ended limited partnerships that are not eligible for redemptions. Those seven funds have a combined unfunded commitment of $114.4 million and $79.2 million as of June 30, 2019 and 2018, respectively.

Timberland — includes investments in limited liability companies that have an ownership interest in properties where the value of the property is derived mainly from income-producing timber but also from the "higher and better use" value of the underlying land. The SIB includes these assets within its global real assets allocations. There are three funds in the portfolio and they have no unfunded commitments. The funds are not eligible for redemption other than distributions of income and/or proceeds as determined by the investment manager. The funds have remaining lives of 2-7 years.

Infrastructure — includes investments in limited partnerships that have an ownership interest in transportation assets such as toll roads, tunnels and bridges; and regulated assets such as electricity transmission, gas and oil distribution and wastewater collection. Other possible investments would include communication assets and social infrastructure. The SIB includes these assets within its global real assets allocations. The infrastructure investments in the portfolio as of June 30, 2019 and 2018, include both open and closed-ended funds. The open-ended funds have no unfunded commitments and are eligible for redemptions quarterly with 90 days notice. There may be a 3-12 month queue for receiving redemptions. The closed-ended funds have unfunded commitments of $243.9 million and $186.3 million at June 30, 2019 and 2018, respectively, and are not eligible for redemptions.

Securities Lending

State statutes permit and the SIB has authorized the use of securities lending – loans of securities to broker-dealers and other entities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. Northern Trust is the securities lending agent for the SIB. Securities are loaned versus collateral that may include cash, U.S. government securities and irrevocable letters of credit. U.S. securities are loaned versus collateral valued at 102% of the fair value of the securities plus any accrued interest. Non-U.S. securities are loaned versus collateral valued at 105% of the fair value of the securities plus any accrued interest.

Non-cash collateral cannot be pledged or sold unless the borrower defaults. All securities loans can be terminated on demand by either the lender or the borrower, although the average term of SIB loans was approximately 71 and 61 days as of June 30, 2019 and 2018, respectively. Cash open collateral is invested in a short term investment pool, which had an interest sensitivity of 3 days as of June 30, 2019 and 2018. This pool is valued based on amortized cost. There were no violations of legal or contractual provisions, no borrower or lending agent default losses known to the securities lending agent. There are no dividends or coupon payments owing on the securities lent. Securities lending earnings are credited to participating clients on approximately the fifteenth day of the following month.

Indemnification deals with the situation in which a client's securities are not returned due to the insolvency of a borrower and Northern Trust has failed to live up to its contractual responsibilities relating to the lending of those securities. Northern Trust's responsibilities include performing appropriate borrower and collateral investment credit analyses, demanding adequate types and levels of collateral, and complying with applicable Department of Labor and Federal Financial Institutions Examination Council regulations concerning securities lending.

For securities loaned at fiscal year end, the SIB has no credit risk exposure to borrowers because the amounts the SIB owes the borrowers exceeds the amounts the borrowers owe the SIB.

The following represents the balances relating to the securities lending transactions at June 30, 2019 and 2018 (expressed in thousands).

2019	**Securities Lent**	**Non-Cash Collateral Value**	**Cash Collateral Investment Value**
Lent for cash collateral:			
US agency securities	$ 528	$ -	$ 541
US government securities	4,387	-	4,481
US corporate fixed income securities	20,637	-	21,047
Global agency securities	1,559		1,636
Global government securities	100		107
Global corporate fixed income securities	1,565	-	1,667
US equities	14,560	-	14,762
Global equities	1,934	-	2,025
Lent for non-cash collateral:			
US agency securities	200	202	-
US government securities	17,679	17,968	-
US corporate fixed income securities	64,979	65,750	-
US equities	211,061	213,840	-
Global equities	17,900	18,960	-
Total	$ 357,089	$ 316,720	$ 46,266

2018	Securities Lent	Non-Cash Collateral Value	Cash Collateral Investment Value
Lent for cash collateral:			
US agency securities	$ 27	$ -	$ 28
US government securities	885	-	909
US corporate fixed income securities	19,599	-	20,129
Global corporate fixed income securities	942	-	990
US equities	22,812	-	23,365
Global equities	2,583	-	2,714
Lent for non-cash collateral:			
US agency securities	751	772	-
US government securities	3,894	4,005	-
US corporate fixed income securities	149,102	153,336	-
US equities	208,835	214,360	-
Global equities	41,776	44,399	-
Total	$ 451,206	$ 416,872	$ 48,135

Note 4 - Capital Assets

	June 30, 2017	Additions	Retirements	June 30, 2018	Additions	Retirements	June 30, 2019
Office equipment	$16,879	$ -	$ -	$16,879	$ -	$ -	$16,879
Less accumulated depreciation on office equipment	(8,330)	(1,800)	-	(10,130)	(1,800)	-	(11,930)
Software	1,213,500	-	-	1,213,500	-	-	1,213,500
Less accumulated depreciation on software	(1,213,500)	-	-	(1,213,500)	-	-	(1,213,500)
	$ 8,549	$ (1,800)	$ -	$ 6,749	$ (1,800)	$ -	$ 4,949

Note 5 - State Agency Transactions

Due To/From Other State Agencies and Other State Funds

Amounts due from/to other state agencies and other state funds are as follows as of June 30, 2019 and 2018:

	2019	2018
Due To Other State Agencies		
Information Technology Department	$ 7,848	$ 7,280
Office of Administrative Hearings	-	33
Office of Attorney General	1,288	7,157
Office of Management and Budget	150	69
Rough Rider Industries	137	-
Total due to other state agencies	$ 9,424	$ 14,539
Due From Other State Agencies		
Public Employees Retirement System	$ -	$ 174
Due To Other State Funds		
General Fund	$ 455,263,216	$ -

Due to/from other state agencies balances are a result of a time lag between the dates that services are provided, the payments are made, and the transactions are entered into the accounting system. Due to other state funds represents the statutorily defined earnings of the Legacy Fund for the 2017-19 biennium that is required by the State Constitution to be transferred to the general fund at the end of the biennium.

Note 6 - Operating Leases

RIO leased office space under an operating lease effective July 1, 2017 through June 30, 2023. RIO also incurs rent expense at other locations on a temporary basis to sponsor retirement education for TFFR members. Rent expense totaled $87,766 annually, for fiscal years 2019 and 2018. Minimum payments under the lease for fiscal 2020 are $88,365 annually.

Note 7 - Changes in Noncurrent Liabilities

Changes in noncurrent liabilities are included in accrued expenses in the statements of changes in net position. The changes for the years ended June 30, 2019 and 2018 are summarized as follows:

	Beginning Balance 7/1/2018	Additions	Reductions	Ending Balance 6/30/2019	Amounts Due Within One Year
Accrued Leave	$196,079	$149,667	($151,519)	$194,227	$126,078

	Beginning Balance 7/1/2017	Additions	Reductions	Ending Balance 6/30/2018	Amounts Due Within One Year
Accrued Leave	$176,864	$144,638	($125,423)	$196,079	$117,453

Pension and Investment Trust Funds liquidate the accrued annual leave.

Note 8 - North Dakota Teachers' Fund for Retirement

Administration

The following brief description of TFFR is provided for general information purposes only. Participants should refer to NDCC Chapter 15-39.1 for more complete information.

TFFR is a cost-sharing multiple-employer defined benefit pension plan covering all North Dakota public teachers and certain other teachers who meet various membership requirements. TFFR provides for pension, death and disability benefits. The cost to administer the TFFR plan is financed by investment income and contributions.

Responsibility for administration of the TFFR benefits program is assigned to a seven-member Board of Trustees (Board). The Board consists of the State Treasurer, the Superintendent of Public Instruction, and five members appointed by the Governor. The appointed members serve five-year terms which end on June 30 of alternate years. The appointed Board members must include two active teachers, one active school administrator, and two retired members. The TFFR Board submits any necessary or desirable changes in statutes relating to the administration of the fund, including benefit terms, to the Legislative Assembly for consideration. The Legislative Assembly has final authority for changes to benefit terms and contribution rates.

Membership

As of June 30, 2019 and 2018, the number of participating employer units was 213 and 214, respectively, consisting of the following:

	June 30, 2019	June 30, 2018
Public School Districts	175	176
County Superintendents	6	6
Special Education Units	19	19
Vocational Education Units	4	4
Other	9	9
Total	213	214

TFFR's membership consisted of the following:

	2019	2018
Retirees and beneficiaries currently receiving benefits	8,918	8,743
Terminated employees - vested	1,657	1,623
Terminated employees - nonvested	1,035	971
Total	11,610	11,337
Current employees		
Vested	7,936	7,696
Nonvested	3,239	3,185
Total	11,175	10,881

Member and Employer Contributions

Member and employer contributions paid to TFFR are set by NDCC Section 15-39.1-09. Every eligible teacher in the State of North Dakota is required to be a member of TFFR and is assessed at a rate of 11.75% of salary as defined by NDCC Section 15-39.1-04. Every governmental body employing a teacher must also pay into TFFR a sum equal to 12.75% of the teacher's salary. Member and employer contributions will be reduced to 7.75% each when the fund reaches 100% funded ratio on an actuarial basis.

A vested member who terminates covered employment may elect a refund of contributions paid plus 6% interest or defer payment until eligible for pension benefits. A nonvested member who terminates covered employment must claim a refund of contributions paid before age 70½. Refunded members forfeit all service credits under TFFR. These service credits may be repurchased upon return to covered employment under certain circumstances, as defined by the NDCC.

Pension Benefits

For purposes of determining pension benefits, members are classified within one of three categories. Tier 1 grandfathered and Tier 1 non-grandfathered members are those with service credit on file as of July 1, 2008. Tier 2 members are those newly employed and returning refunded members on or after July 1, 2008.

Tier 1 Grandfathered

A Tier 1 grandfathered member is entitled to receive unreduced benefits when three or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or the sum of age and years of service credit equals or exceeds 85. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 6% per year for every year the member's retirement age is less than 65 years or the date as of which age plus service equal 85. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the three highest annual salaries earned divided by 36 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Tier 1 Non-grandfathered

A Tier 1 non-grandfathered member is entitled to receive unreduced benefits when three or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or has reached age 60 and the sum of age and years of service credit equals or exceeds 90. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 8% per year from the earlier of age 60/Rule of 90 or age 65. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the three highest annual salaries earned divided by 36 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Tier 2

A Tier 2 member is entitled to receive unreduced benefits when five or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or has reached age 60 and the sum of age and years of service credit equals or exceeds 90. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 8% per year from the earlier of age 60/Rule of 90 or age 65. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the five highest annual salaries earned divided by 60 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Death and Disability Benefits

Death benefits may be paid to a member's designated beneficiary. If a member's death occurs before retirement, the benefit options available are determined by the member's vesting status prior to death. If a member's death occurs after retirement, the death benefit received by the beneficiary (if any) is based on the retirement plan the member selected at retirement.

An active member is eligible to receive disability benefits when: (a) a total disability lasting 12 months or more does not allow the continuation of teaching, (b) the member has accumulated five years of credited service in North Dakota, and (c) the Board of Trustees of TFFR has determined eligibility based upon medical evidence. The amount of the disability benefit is computed by the retirement formula in NDCC Section 15-39.1-10 without consideration of age and uses the member's actual years of credited service. There is no actuarial reduction for reason of disability retirement.

Investment Rate of Return

The annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 5.46% and 9.15% for the years ended June 30, 2019 and 2018, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Realized Gains and Losses

Realized gains and losses on sales of investments are components of net change in fair value of investments and are computed as described in Note 1. For the years ended June 30, 2019 and 2018, TFFR had net realized gains of $66,548,800 and $108,984,395, respectively.

Net Pension Liability

The components of the net pension liability of TFFR at June 30, 2019 and 2018 (expressed in thousands), were as follows:

	June 30, 2019	June 30, 2018
Total pension liability	$ 3,993,424	$ 3,863,515
Plan fiduciary net position	(2,616,171)	(2,530,657)
Net pension liability (NPL)	$ 1,377,253	$ 1,332,858
Plan fiduciary net position as a percentage of the total pension liability	65.5%	65.5%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of July 1, 2019 and 2018, using the following actuarial assumptions:

Valuation date	July 1, 2019	July 1, 2018
Inflation	2.75%	2.75%
Salary increases	4.25% to 14.50%; varying by service, including inflation and productivity	4.25% to 14.50%; varying by service, including inflation and productivity
Cost of living adjustments	None	None
Investment rate of return	7.75% net of investment expenses, including inflation	7.75% net of investment expenses, including inflation

For active and inactive members, mortality rates were based on the RP-2014 Employee Mortality Table projected generationally using Scale MP-2014. For healthy retirees, mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table set back one year, multiplied by 50% for ages under 75 and grading up to 100% by age 80, projected generationally using Scale MP-2014. For disabled retirees, mortality rates were based on the RP-2014 Disabled Mortality Table set forward four years.

The actuarial assumptions used in the July 1, 2019 and 2018 valuations were based on the results of an actuarial experience study dated April 30, 2015, for the period July 1, 2009 – June 30, 2014. An actuarial experience study is generally conducted every five years.

The TFFR Board is responsible for establishing investment policy for the fund assets under NDCC 15-39.1-05.2. Benefit payments are projected to occur over a long period of time. This allows TFFR to adopt a long-term investment horizon and asset allocation policy for the management of fund assets. Asset allocation policy is critical because it defines the basic risk and return characteristics of the investment portfolio. Asset allocation targets are established using an asset-liability analysis designed to assist the Board in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. This asset-liability analysis considers both sides of the plan balance sheet, utilizing both quantitative and qualitative inputs, in order to estimate the potential impact of various asset class mixes on key measures of total plan risk, including the resulting estimated impact of funded status and contribution rates.

The long-term expected rate of return on TFFR investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the TFFR target asset allocation as of July 1, 2019 and 2018 are summarized in the following tables:

2019	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	58.0%	6.9%
Global Fixed Income	23.0%	2.1%
Global Real Assets	18.0%	5.4%
Cash Equivalents	1.0%	0.0%

2018

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	58.0%	6.7%
Global Fixed Income	23.0%	1.5%
Global Real Assets	18.0%	5.1%
Cash Equivalents	1.0%	0.0%

As part of the most recent asset/liability study, the total fund real rate of return was upwardly adjusted by 0.50% to reflect a longer investment time horizon than is assumed in the investment consultant’s expected returns and to account for above benchmark returns achieved through active management. In order to estimate the nominal rate of return, the real rate of return was adjusted upward by 2.75% for expected inflation.

Discount Rate

The discount rate used to measure the total pension liability was 7.75% as of June 30, 2019 and 2018. The projection of cash flows used to determine the discount rate assumed that member and employer contributions will be made at rates equal to those based on the July 1, 2019 and 2018 Actuarial Valuation Report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, TFFR’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members as of July 1, 2019 and 2018. Therefore, the long-term expected rate of return on TFFR investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2019 and 2018.

Sensitivity of Net Pension Liability

The following presents the net pension liability of the TFFR employers calculated using the discount rate of 7.75% as of June 30, 2018 and 2017, as well as what the employers' net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

2019	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Employers' net pension liability	$ 1,859,994,289	$ 1,377,253,104	$ 976,082,834

2018	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Employers' net pension liability	$ 1,799,744,383	$ 1,332,858,315	$ 944,554,161

Note 9 - ND Public Employees Retirement System (NDPERS)

Permanent employees of RIO participate in the pension and other post-employment benefit (OPEB) plans of NDPERS, which is also an agency of the State of North Dakota financial reporting entity and is included in the State of North Dakota's Comprehensive Annual Financial Report. The following brief description of NDPERS is provided for general information purposes only. Participants should refer to NDCC Chapter 54-52 for more complete information.

NDPERS pension (Main System) and OPEB plans are cost-sharing multiple-employer defined benefit plans that cover employees/retirees of the State of North Dakota, its agencies and various participating political subdivisions. NDPERS pension plan provides for pension, death and disability benefits. NDPERS OPEB plan provides a credit toward the monthly health insurance premium of members receiving retirement benefits from the PERS, HPRS and Judges retirement under Chapter 27-17 of the North Dakota Century Code. Effective July 1, 2015, the credit is also available to apply towards monthly premiums under the state dental, vision and long-term care plan and any other health insurance plan. The cost to administer the pension plan is financed through the contributions and investment earnings of the plan. The Retiree Health Insurance Credit Fund is advance-funded on an actuarially determined basis.

Responsibility for administration of the NDPERS defined benefit pension and OPEB plans is assigned to a Board comprised of nine members. The Board consists of a Chairman, who is appointed by the Governor, one member appointed by the Attorney General, one member appointed by the State Health Officer, three members elected by the active membership of the NDPERS system, one member elected by the retired public employees and two members of the legislative assembly appointed by the chairman of the legislative management.

Pension Benefits

Benefits are set by statute. NDPERS has no provisions or policies with respect to automatic and ad hoc post-retirement benefit increases. Members of the Main System are entitled to unreduced monthly pension benefits beginning when the sum of age and years of credited service equal or exceed 85 (Rule of 85), or at normal retirement age (65). For members hired on or after January 1, 2016 the Rule of 85 is replaced with the Rule of 90 with a minimum age of 60. The monthly pension benefit is equal to 2.00% of their average monthly salary, using the highest 36 months out of the last 180 months of service, for each year of service. The plan permits early retirement at ages 55-64 with three or more years of service.

Members may elect to receive the pension benefits in the form of a single life, joint and survivor, term-certain annuity, or partial lump sum with ongoing annuity. Members may elect to receive the value of their accumulated contributions, plus interest, as a lump sum distribution upon retirement or termination, or they may elect to receive their benefits in the form of an annuity. For each member electing an annuity, total payment will not be less than the members' accumulated contributions plus interest.

Death and Disability Benefits

Death and disability benefits are set by statute. If an active member dies with less than three years of service, a death benefit equal to the value of the member's accumulated contributions, plus interest, is paid to the member's beneficiary. If the member has earned more than three years of credited service, the surviving spouse will be entitled to a single payment refund, life-time monthly payment in an amount equal to 50% of the member's accrued normal retirement benefit, or monthly payments in an amount equal to the member's accrued 100% Joint and Survivor retirement benefit if the member had reached normal retirement age prior to date of death. If the surviving spouse dies before the member's accumulated pension benefits are paid, the balance will be payable to the surviving spouse's beneficiary.

Eligible members, who become totally disabled after a minimum of 180 days of service, receive monthly disability benefits equal to 25% of their final average salary with a minimum benefit of $100. To qualify under this section, the member has to become disabled during the period of eligible employment and apply for benefits within one year of termination. The definition for disabled is set by the System in the North Dakota Administrative Code.

Refunds of Member Contributions

Upon termination, if a member is not vested (is not 65 or does not have three years of service credited for the NDPERS) they will receive the accumulated member contributions plus interest, or may elect to receive this amount at a later date. If a member has vested, they have the option of applying for a refund or can remain as a terminated vested participant. If a member terminated and withdrew their accumulated member contributions and is subsequently reemployed, they have the option of repurchasing their previous service.

Member and Employer Contributions

Member and employer contributions paid to NDPERS are set by statute and are established as a percent of salaries and wages. Member contribution rates are 7% and employer contribution rates are 7.12% of covered compensation.

The member's account balance includes the vested employer contributions equal to the member's contributions to an eligible deferred compensation plan. The minimum member contribution is $25 and the maximum may not exceed the following:

1 to 12 months of service – Greater of one percent of monthly salary or $25
13 to 24 months of service – Greater of two percent of monthly salary or $25
25 to 36 months of service – Greater of three percent of monthly salary or $25
Longer than 36 months of service – Greater of four percent of monthly salary or $25

OPEB Benefits

The employer contribution for the PERS, the HPRS and the Defined Contribution Plan is set by statute at 1.14% of covered compensation. The employer contribution for employees of the state board of career and technical education is 2.99% of covered compensation for a period of eight years ending October 1, 2015. Employees participating in the retirement plan as part-time/temporary members are required to contribute 1.14% of their covered compensation to the Retiree Health Insurance Credit Fund. Employees purchasing previous service credit are also required to make an employee contribution to the Fund. The benefit amount applied each year is shown as "prefunded credit applied" on the Statement of Changes in Plan Net Position for the OPEB trust funds.

Retiree health insurance credit benefits and death and disability benefits are set by statute. There are no provisions or policies with respect to automatic and ad hoc post-retirement benefit increases. Employees who are receiving monthly retirement benefits from the PERS, the HPRS, the Defined Contribution Plan, the Chapter 27-17 judges or an employee receiving disability benefits, or the spouse of a deceased annuitant receiving a surviving spouse benefit or if the member selected a joint and survivor option are eligible to receive a credit toward their monthly health insurance premium under the state health plan.

Effective July 1, 2015, the credit is also available to apply towards monthly premiums under the state dental, vision and long-term care plan and any other health insurance plan. The benefits are equal to $5.00 for each of the employee’s, or deceased employee's years of credited service not to exceed the premium in effect for selected coverage. The retiree health insurance credit is also available for early retirement with reduced benefits.

Pension & OPEB Liabilities, Pension & OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions & OPEB

At June 30, 2019 and 2018, RIO reported a liability of $2,704,103 and $2,629,203, respectively, for its proportionate share of the net pension and OPEB liability. These amounts are included in the accrued liabilities in the statements of net position. The net pension and OPEB liability was measured as of June 30, 2018 and 2017, and the total pension and OPEB liability used to calculate the net pension and OPEB liability was determined by an actuarial valuation as of that date. RIO's proportion of the net pension liability was based on RIO's share of covered payroll in the pension and OPEB plans relative to the covered payroll of all participating NDPERS Main System and OPEB employers. At June 30, 2018, RIO’s pension plan proportion was 0.153507 percent and as of June 30, 2017, was 0.156317 percent. RIO’s OPEB plan proportion was 0.144121 percent as of June 30, 2018, and 0.147503% as of June 30, 2017.

RIO recognized pension and OPEB expense of $345,458 and $405,602 for the years ended June 30, 2019 and 2018, respectively. At June 30, 2019 and 2018, RIO reported deferred outflows of resources and deferred inflows of resources related to pensions and OPEB from the following sources:

	Deferred Outflows of Resources		Deferred Inflows of Resources	
	2019	2018	2019	2018
Differences between expected and actual experience	$ 10,258	$ 14,934	$ 90,482	$ 15,088
Changes in assumptions	944,466	1,041,506	36,976	56,669
Net differences between projected and actual earnings on plan investments	-	33,791	15,046	4,411
Changes in proportion and differences between employer contributions and proportionate share of contributions	96,731	138,324	29,040	268
Employer contributions subsequent to the measurement date	130,831	129,449	-	-
Total	$ 1,182,286	$ 1,358,004	$ 171,544	$ 76,436

Deferred outflows of resources related to pensions and OPEB resulting from employer contributions subsequent to the measurement date in the amount of $130,831 will be recognized as a reduction of the net pension liability in the year ended June 30, 2020.

Other amounts reported as deferred outflows of resources and (deferred inflows of resources) related to pensions and OPEB will be recognized in pension expense as follows:

Year Ended June 30	
2020	$ 302,482
2021	267,407
2022	198,444
2023	105,306
2024	5,670
Thereafter	602
	$ 879,911

Actuarial assumptions

The total pension and OPEB liabilities in the July 1, 2018 and 2017 actuarial valuation were determined using the following actuarial assumptions, applied to all periods included in the measurement:

2018 – Pension Plan

Inflation			2.50%	
Salary increases	Service at Beginning of Year:		State Employee	Non-State Employee
		0	12.00%	15.00%
		1	9.50%	10.00%
		2	7.25%	8.00%
	Age*			
		Under 30	7.25%	10.00%
		30 - 39	6.50%	7.50%
		40 - 49	6.25%	6.75%
		50 - 59	5.75%	6.50%
		60+	5.00%	5.25%

*Age-based salary increase rates apply for employees with three or more years of service

Investment rate of return	7.75%, net of investment expenses
Cost-of-living adjustments	None

2017 – Pension Plan

Inflation			3.50%
Salary increases	Service at Beginning of Year:		Increase Rate:
		0	15.00%
		1	10.00%
		2	8.00%
	Age*		
		Under 36	8.00%
		36 - 40	7.50%
		41 - 49	6.00%
		50+	5.00%

*Age-based salary increase rates apply for employees with three or more years of service

Investment rate of return	7.75%, net of investment expenses
Cost-of-living adjustments	None

For active members, inactive members and healthy retirees, mortality rates were based on the RP-2000 Combined Healthy Mortality Table set back two years for males and three years for females, projected generationally using the SSA 2014 Intermediate Cost scale from 2014. For disabled retirees, mortality rates were based on the RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%.

The actuarial assumptions used were based on the results of an actuarial experience study completed in 2015. They are the same as the assumptions used in the July 1, 2018 and 2017, funding actuarial valuation for NDPERS.

As a result of the 2015 actuarial experience study, the NDPERS Board adopted several changes to the actuarial assumptions effective July 1, 2015. This includes changes to the mortality tables, disability incidence rates, retirement rates, administrative expenses, salary scale, and percent married assumption.

2018 and 2017 - OPEB Plan

Inflation	2.50%
Salary increase	Not applicable
Investment Rate of Return	7.50%, net of investment expenses
Cost of Living Adjustment	None

For active members, inactive members and healthy retirees, mortality rates were based on the RP-2000 Combined Healthy Mortality Table set back two years for males and three years for females, projected generationally using the SSA 2014 Intermediate Cost scale from 2014. For disabled retirees, mortality rates were based on the RP-2000 Disabled Mortality Table set back one year for males (no setback for females) multiplied by 125%.

The long-term expected rate of return on pension and OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plans' target asset allocations are summarized in the following table:

2019 - Pension Plan

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	57%	6.8%
Global Fixed Income	23%	1.5%
Global Real Assets	20%	5.1%

2018 - Pension Plan

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	57%	6.7%
Global Fixed Income	22%	1.0%
Global Real Assets	20%	5.2%
Cash Equivalents	1%	0.0%

2019 - OPEB Plan

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Large Cap Domestic Equity	37%	5.8%
Small Cap Domestic Equity	9%	7.1%
International Equity	14%	6.2%
Core-Plus Fixed Income	40%	1.5%

2018 - OPEB Plan

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Large Cap Domestic Equity	37%	5.8%
Small Cap Domestic Equity	9%	7.1%
International Equity	14%	6.2%
Core-Plus Fixed Income	40%	1.6%

Discount rate

For pension plans, GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the System to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The current employer and employee fixed rate contributions are assumed to be made in each future year. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. In years where assets are not projected to be sufficient to meet benefit payments, which is the case for the PERS pension plan as of June 30, 2018 and 2017, the use of a municipal bond rate is required.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of the 2018 valuation, the expected rate of return on pension plan investments is 7.75%, the municipal bond rate is 3.62%, and the resulting Single Discount Rate is 6.32%. For the purpose of the 2017 valuation, the expected rate of return on pension plan investments is 7.75%, the municipal bond rate is 3.56%, and the resulting Single Discount Rate is 6.44%.

The discount rate used to measure the total OPEB liability for both 2018 and 2017 was 7.5%. The projection of cash flows used to determine the discount rate assumed plan member and statutory/Board approved employer contributions will be made at rates equal to those based on the July 1, 2018, 2017 and 2016 OPEB actuarial valuation reports. For this purpose, only employer contributions that are intended to fund benefits of current OPEB members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the OPEB fiduciary net position was projected to be sufficient to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB investments was applied to all periods of projected benefit payments to determine the total OPEB liability for both years.

Sensitivity of the Employer's proportionate share of the net pension and OPEB liability to changes in the discount rate

The following presents the RIO's proportionate share of the net pension and OPEB liability calculated using the current discount rate, as well as what the RIO's proportionate share of the net pension and OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

2019

	1% Decrease (5.32%)	Current Discount Rate (6.32%)	1% Increase (7.32%)
RIO's net pension liability	$ 3,520,141	$ 2,590,598	$ 1,814,924
	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
RIO's net OPEB liability	143,611	113,505	87,696

2018

	1% Decrease (5.44%)	Current Discount Rate (6.44%)	1% Increase (7.44%)
RIO's net pension liability	$ 3,410,833	$ 2,512,527	$ 1,765,175
	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
RIO's net OPEB liability	146,065	116,676	91,486

Sensitivity for Healthcare Cost Trend Rates

The benefit provided by the North Dakota retiree health insurance credit fund is a fixed dollar subsidy and is not affected by the healthcare cost trend. Therefore, a sensitivity analysis was not performed.

Pension and OPEB plan fiduciary net position

Detailed information about the pension and OPEB plans' fiduciary net position is available in the separately issued NDPERS Comprehensive Annual Financial Report. This report can be accessed on the NDPERS website at https://ndpers.nd.gov/about/financial/annual-report-archive/.

Note 10 - Related Parties

As stated in Note 1, RIO is an agency of the State of North Dakota; as such, other agencies of the state are related parties.

Note 11 - Contingencies/Litigation

The State Investment Board has been named as a defendant in two cases, arising out of the Tribune and General Motors bankruptcy proceedings, relating to securities that were purchased by external investment managers in one or more portfolios held by the SIB on behalf of its investment client funds. Outside counsel has been retained for both cases, in addition to assistance received from the ND Office of Attorney General. The SIB became a party to a Settlement Agreement dated April 10, 2019, as a Term Lender in the General Motors bankruptcy proceeding. The liability will be borne by other parties, so no liability was accrued by the SIB as of June 30, 2019. On July 15, 2019, in the Tribune proceeding, the Litigation Trustee filed a Notice of Appeal to the Second Circuit, appealing the various judgments of the U.S. District Court that dismissed his claims against defendants in the Action and denying leave to amend his complaint to add a constructive fraudulent transfer claim. It is expected that briefing of all the legal issues before the Second Circuit will occur in late 2019 and early 2020. Accordingly, no liability has been recorded for this case.

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
North Dakota Teachers' Fund for Retirement
Last 10 Fiscal Years*
(Dollars in thousands)

	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	$ 77,756	$ 78,041	$ 75,476	$ 68,239	$ 60,618	$ 56,752
Interest	296,876	287,375	276,412	265,440	249,064	237,821
Changes of benefit terms	-	-	-	-	-	-
Differences between expected and actual experience	(23,495)	(27,939)	(10,749)	(8,093)	2,209	9,347
Changes of assumptions	-	-	-	-	171,325	-
Benefit payments, including refunds of member contributions	(221,228)	(207,979)	(196,516)	(185,969)	(172,239)	(162,259)
Net change in total pension liability	129,909	129,498	144,623	139,617	310,977	141,661
Total pension liability - beginning	3,863,515	3,734,017	3,589,394	3,449,777	3,138,800	2,997,139
Total pension liability - ending (a)	$ 3,993,424	$3,863,515	$3,734,017	$3,589,394	$3,449,777	$ 3,138,800
Plan fiduciary net position						
Contributions - employer	$ 89,445	$ 86,676	$ 86,059	$ 82,840	$ 78,422	$ 62,355
Contributions - member	82,429	79,878	79,309	76,343	72,268	56,555
Contributions - purchased service credit	1,917	2,181	2,553	2,768	1,601	2,034
Contributions - other	159	194	236	45	172	48
Net investment income	135,043	211,345	266,688	8,239	73,205	294,246
Benefit payments, including refunds of member contributions	(221,228)	(207,979)	(196,516)	(185,969)	(172,239)	(162,259)
Administrative expenses	(2,251)	(2,129)	(2,173)	(1,852)	(1,923)	(1,586)
Net change in plan fiduciary net position	85,514	170,166	236,156	(17,586)	51,506	251,393
Plan fiduciary net position - beginning **	2,530,657	2,360,491	2,124,335	2,141,921	2,090,415	1,839,584
Plan fiduciary net position - ending (b)	$ 2,616,171	$2,530,657	$2,360,491	$2,124,335	$2,141,921	$ 2,090,977
Plan's net pension liability - ending (a) - (b)	$ 1,377,253	$1,332,858	$1,373,526	$1,465,059	$1,307,856	$ 1,047,823
Plan fiduciary net position as a percentage of the total pension liability	65.5%	65.5%	63.2%	59.2%	62.1%	66.6%
Covered payroll	$ 701,528	$ 679,809	$ 674,971	$ 649,725	$ 615,105	$ 580,053
Plan's net pension liability as a percentage of covered payroll	196.3%	196.1%	203.5%	225.5%	212.6%	180.6%

Notes to Schedule:

* *Complete data for this schedule is not available prior to 2014.*
** *Restated in 2015 due to GASB 68 implementation.*

Changes of assumptions: In 2015, amounts reported as changes of assumptions resulted primarily from a decrease in the investment return assumption from 8% to 7.75% and an updated mortality improvement scale.

Schedule of Employer Contributions
North Dakota Teachers' Fund for Retirement
Last 10 Fiscal Years
(Dollars in thousands)

Fiscal Year	Actuarially determined contribution	Contributions in relation to the actuarially determined contribution	Contribution deficiency (excess)	Covered payroll	Contributions as a percentage of covered payroll
2010	$ 52,053	$ 39,837	$ 12,216	$ 482,868	8.25%
2011	65,113	44,545	20,568	509,091	8.75%
2012	69,374	46,126	23,248	527,156	8.75%
2013	52,396	59,301	(6,905)	551,656	10.75%
2014	59,513	62,355	(2,842)	580,053	10.75%
2015	71,168	78,422	(7,254)	615,105	12.75%
2016	84,724	82,840	1,884	649,725	12.75%
2017	89,231	86,059	3,172	674,971	12.75%
2018	88,307	86,676	1,631	679,809	12.75%
2019	90,778	89,445	1,333	701,528	12.75%

Notes to Schedule

Valuation Date: Actuarially determined contributions for each fiscal year are based on the actuarial valuation as of the beginning of the year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	24 years
Asset valuation method	5-year smoothed market
Inflation	2.75%; decreased from 3% prior to July 1, 2015.
Salary increases	4.25% - 14.5%, including inflation and productivity; 4.5% - 14.75% prior to July 1, 2015.
Investment rate of return	7.75%, net of investment expenses, including inflation. Rate was decreased from 8% beginning July 1, 2015.
Retirement age	In the 2015 valuation, rates of retirement were changed to better reflect anticipated future experience. In the 2010 valuation, expected retirement ages of plan members were adjusted to more closely reflect actual experience.
Mortality	In the 2015 valuation, assumed life expectancies were adjusted as a result of adopting the RP-2014 mortality tables with generational improvement. In prior years, those assumptions were based on percentages of GRS post termination non-disabled tables and RP-2000 disabled-life tables.

Schedule of Investment Returns
North Dakota Teachers' Fund for Retirement
Last 10 Fiscal Years*

ANNUAL MONEY-WEIGHTED RATE OF RETURN, NET OF INVESTMENT EXPENSES

	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return, net of investment expense	5.46%	9.15%	12.81%	0.39%	3.56%	16.35%	13.60%

***Note**: Annual money-weighted rates of return not available prior to 2013.

Schedule of Employer's Share of Net Pension and OPEB Liability
ND Public Employees Retirement System
Last 10 Fiscal Years*
(Dollars in thousands)

	2019	2018	2017	2016	2015
RIO's proportion of NDPERS net pension liability (asset)	0.153507%	0.156317%	0.152969%	0.145546%	0.121849%
RIO's proportion of NDPERS net OPEB liability (asset)	0.144121%	0.147503%			
RIO's proportionate share of NDPERS net pension liability (asset)	$ 2,591	$ 2,513	$ 1,491	$ 990	$ 773
RIO's proportionate share of NDPERS net OPEB liability (asset)	114	117			
RIO's covered payroll	$ 1,567	$ 1,596	$ 1,507	$ 1,377	$ 1,026
RIO's proportionate share of NDPERS net pension liability (asset) as a percentage of its covered payroll	165.35%	157.46%	98.94%	71.90%	75.34%
RIO's proportionate share of NDPERS net OPEB liability (asset) as a percentage of its covered payroll	7.28%	7.31%			
NDPERS Plan fiduciary net position as a percentage of the total pension liability	62.80%	61.98%	70.46%	77.15%	77.70%
NDPERS Plan fiduciary net position as a percentage of the total OPEB liability	61.89%	59.78%			

*Complete data for this schedule is not available prior to 2015 for pension liability and prior to 2018 for OPEB liability. Amounts presented for each fiscal year have a measurement date of the previous fiscal year end.

Schedule of Employer Pension and OPEB Contributions
ND Public Employees Retirement System
Last 10 Years*
(Dollars in thousands)

	2019	2018	2017	2016	2015	2014
RIO's Statutorily required pension contributions	$ 113	$ 112	$ 114	$ 107	$ 98	$ 73
RIO's Statutorily required OPEB contributions	18	18	18			
RIO's pension contributions in relation to the statutory required contribution	113	112	114	107	98	73
RIO's OPEB contributions in relation to the statutory required contribution	18	18	18			
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -
RIO's Covered payroll	$1,584	$1,567	$1,596	$1,507	$1,377	$1,026
RIO's pension contributions as a percentage of covered payroll	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%
RIO's OPEB contributions as a percentage of covered payroll	1.14%	1.14%	1.14%			

*Complete data for this schedule is not available prior to 2014 for pension contributions and 2017 for OPEB contributions.

	Pension Pool Participants					Insurance Pool Participants						
	Public Employees Retirement System	Bismarck City Employee Pension Plan	Bismarck City Police Pension Plan	City of Grand Forks Employee Pension Plan	City of Grand Forks Park District	Workforce Safety & Insurance	State Fire & Tornado	State Bonding	Petroleum Tank Release Comp. Fund	Insurance Regulatory Trust Fund	Cultural Endowment Fund	Risk Mgmt
Assets:												
Investments												
Global equities	$1,833,414,529	$49,404,652	$21,887,634	$41,894,381	$3,997,403	$461,780,018	$7,954,401	$0	$0	$1,885,842	$261,358	$1,473,923
Global fixed income	709,190,088	34,333,280	11,722,774	15,888,990	1,764,054	1,236,575,110	12,389,926	1,959,837	2,943,031	2,159,203	175,687	3,141,696
Global real assets	581,869,362	20,136,760	8,047,190	9,823,761	1,376,593	340,272,112	-	-	-	-	23,891	-
Cash equivalents	18,590,413	321,335	78,715	653,416	14,962	16,110,908	2,270,428	1,621,474	2,990,789	2,163,394	14,038	245,073
Total investments	3,143,064,392	104,196,027	41,736,313	68,260,548	7,153,012	2,054,738,148	22,614,755	3,581,311	5,933,820	6,208,439	474,974	4,860,692
Invested sec lending collateral	10,241,786	374,163	139,760	228,950	31,006	6,100,164	70,368	8,340	12,389	13,623	1,436	17,799
Investment income receivable	9,865,697	321,219	126,662	158,753	23,415	10,662,254	146,703	28,111	60,415	10,343	337	48,931
Operating Cash	70,823	-	-	-	-	43,795	1,278	1,563	963	1,261	202	1,168
Miscellaneous receivable	7,037	-	-	-	-	4,647	52	8	13	5	1	11
Due from other state agencies	-	-	-	-	-	-	-	-	-	-	-	-
Total assets	3,163,249,735	104,891,409	42,002,735	68,648,251	7,207,433	2,071,549,008	22,833,156	3,619,333	6,007,600	6,233,671	476,950	4,928,601
Deferred outflows of resources												
Related to pensions	137,835	-	-	-	-	92,624	1,120	165	326	88	21	279
Liabilities:												
Investment expenses payable	1,036,493	46,885	18,660	15,840	2,368	517,008	4,797	741	1,131	740	28	540
Securities lending collateral	10,241,786	374,163	139,760	228,950	31,006	6,100,164	70,368	8,340	12,389	13,623	1,436	17,799
Accounts payable	68,450	-	-	-	-	44,687	505	79	133	48	10	106
Accrued expenses	361,740	-	-	-	-	248,338	3,366	454	923	228	56	778
Miscellaneous payable	-	5,777	2,328	3,572	389	-	-	-	-	-	-	-
Due to other state funds	-	-	-	-	-	-	-	-	-	-	-	-
Due to other state agencies	392	-	-	-	-	259	3	-	1	-	-	1
Total liabilities	11,708,861	426,825	160,748	248,362	33,763	6,910,456	79,039	9,614	14,577	14,639	1,530	19,224
Deferred inflows of resources												
Related to pensions	$19,243	$0	$0	$0	$0	$13,592	$185	$25	$50	$7	$3	$46
Fiduciary net position held in trust for external investment pool participants	$ 3,151,659,466	$ 104,464,584	$ 41,841,987	$68,399,889	$ 7,173,670	$2,064,717,584	$ 22,755,052	$ 3,609,859	$ 5,993,299	$ 6,219,113	$ 475,438	$ 4,909,610
Each participant unit is valued at $1.00												
Participant units outstanding	3,151,659,466	104,464,584	41,841,987	68,399,889	7,173,670	2,064,717,584	22,755,052	3,609,859	5,993,299	6,219,113	475,438	4,909,610

Insurance Pool Participants								Individual Investment Accounts					
Risk Mgmt Workers' Comp	ND Ass'n. of Counties Fund	PERS Group Insurance	Budget Stabilization Fund	City of Bismarck Deferred Sick Leave	City of Fargo FargoDome Fund	State Board of Medicine	Lewis & Clark Interpretive Center Endowment	Legacy Fund	Job Service of North Dakota	Tobacco Prevention and Control Fund	PERS Retiree Health Credit Fund	Totals 2019	Totals 2018
$1,919,428	$2,221,513	$0	$0	$233,945	$22,440,882	$498,707	$263,953	$3,203,129,265	$19,094,960	$0	$84,480,446	$ 5,758,237,240	$ 5,205,817,256
3,106,809	3,918,313	28,207,330	115,349,456	505,062	17,458,242	1,809,875	480,083	2,170,475,305	77,780,193	7,972,749	51,472,649	4,510,779,742	4,099,552,552
-	-	-	-	-	4,420,372	46,881	-	923,488,586	-	-	-	1,889,505,508	1,788,156,119
155,645	189,199	2,867,344	2,673,336	38,811	447,844	10,907	7,499	255,829,361	409,888	1,324,990	9,404	309,039,173	127,104,537
5,181,882	6,329,025	31,074,674	118,022,792	777,818	44,767,340	2,366,370	751,535	6,552,922,517	97,285,041	9,297,739	135,962,499	12,467,561,663	11,220,630,464
19,080	21,196	183,946	757,197	2,607	139,195	12,084	2,625	19,392,771	-	-	-	37,770,485	40,721,545
5,998	4,028	(7,554)	684,339	1,779	73,292	(3,985)	228	27,837,411	237	2,389	22	50,051,024	38,863,279
1,147	-	-	21,591	-	-	-	-	113,720	-	-	-	257,511	410,261
12	-	-	270	-	-	-	-	14,323	-	-	-	26,379	28,001
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,208,119	6,354,249	31,251,066	119,486,189	782,204	44,979,827	2,374,469	754,388	6,600,280,742	97,285,278	9,300,128	135,962,521	12,555,667,062	11,300,653,550
275	-	-	5,766	-	-	-	-	234,169	-	-	-	472,668	544,101
299	1,417	12,076	49,281	201	9,561	782	216	2,917,084	83,874	6,670	102,829	4,829,521	2,279,952
19,080	21,196	183,946	757,197	2,607	139,195	12,084	2,625	19,392,771	-	-	-	37,770,485	40,721,545
112	-	-	2,580	-	-	-	-	137,104	-	-	-	253,814	136,431
739	-	-	31,560	-	-	-	-	545,406	-	-	-	1,193,588	1,111,661
-	348	1,802	-	250	2,493	250	250	-	5,728	1,614	7,314	32,115	34,655
-	-	-	-	-	-	-	-	455,263,216	-	-	-	455,263,216	-
1	-	-	15	-	-	-	-	798	-	-	-	1,470	2,572
20,231	22,961	197,824	840,633	3,058	151,249	13,116	3,091	478,256,379	89,602	8,284	110,143	499,344,209	44,286,816
$43	$0	$0	$3,618	$0	$0	$0	$0	$30,661	$0	$0	-	67,473	27,917
$ 5,188,120	$ 6,331,288	$ 31,053,242	$ 118,647,704	$ 779,146	$ 44,828,578	$ 2,361,353	$ 751,297	$ 6,122,227,871	$ 97,195,676	$ 9,291,844	$ 135,852,378	$ 12,056,728,048	$ 11,256,882,918
5,188,120	6,331,288	31,053,242	118,647,704	779,146	44,828,578	2,361,353	751,297	6,122,227,871	97,195,676	9,291,844	135,852,378	12,056,728,048	11,256,882,918

	Pension Pool Participants					Insurance Pool Participants						
	Public Employees Retirement System	Bismarck City Employee Pension Plan	Bismarck City Police Pension Plan	City of Grand Forks Employee Pension Plan	City of Grand Forks Park District Pension Plan	Workforce Safety & Insurance	State Fire & Tornado	State Bonding	Petroleum Tank Release Comp. Fund	Insurance Regulatory Trust Fund	Cultural Endowment Fund	Risk Mgmt
Additions:												
Investment income:												
Net change in fair value of investments	$ 103,282,337	$ 3,701,861	$ 1,426,526	$ 2,413,739	$ 258,536	$ 86,250,882	$ 871,338	$ 121,242	$ 191,339	$ 174,407	$ 16,907	$ 253,740
Interest, dividends and other income	68,783,166	2,384,963	929,699	1,463,331	167,316	50,611,227	531,919	80,844	140,430	81,816	10,871	106,435
	172,065,503	6,086,824	2,356,225	3,877,070	425,852	136,862,109	1,403,257	202,086	331,769	256,223	27,778	360,175
Less investment expenses	7,736,583	265,103	106,866	160,844	20,402	3,714,157	34,550	2,556	4,014	3,890	900	6,532
Net investment income	164,328,920	5,821,721	2,249,359	3,716,226	405,450	133,147,952	1,368,707	199,530	327,755	252,333	26,878	353,643
Securities lending activity:												
Securities lending income	271,874	8,461	3,430	6,197	635	144,933	2,144	113	179	280	52	371
Less Securities lending expenses	(54,358)	(1,692)	(686)	(1,239)	(127)	(28,932)	(430)	(24)	(36)	(56)	(12)	(73)
Net securities lending income	217,516	6,769	2,744	4,958	508	116,001	1,714	89	143	224	40	298
Purchase of units ($1 per unit)	6,000,000	-	-	7,540,108	386,104	53,500,000	1,000,000	-	-	5,079,100	-	-
Total Additions	170,546,436	5,828,490	2,252,103	11,261,292	792,062	186,763,953	2,370,421	199,619	327,898	5,331,657	26,918	353,941
Deductions:												
Administrative Expenses	519,043	-	-	-	-	304,691	3,608	1,007	1,187	979	670	1,097
Redemption of units ($1 per unit)	41,900,000	500,000	500,000	6,485,051	391,641	44,500,000	2,675,000	-	500,000	4,750,000	-	400,000
Total Deductions	42,419,043	500,000	500,000	6,485,051	391,641	44,804,691	2,678,608	1,007	501,187	4,750,979	670	401,097
Change in fiduciary net position	128,127,393	5,328,490	1,752,103	4,776,241	400,421	141,959,262	(308,187)	198,612	(173,289)	580,678	26,248	(47,156)
Fiduciary net position:												
Beginning of year	3,023,532,073	99,136,094	40,089,884	63,623,648	6,773,249	1,922,758,322	23,063,239	3,411,247	6,166,588	5,638,435	449,190	4,956,766
End of year	$ 3,151,659,466	$ 104,464,584	$ 41,841,987	$ 68,399,889	$ 7,173,670	$ 2,064,717,584	$ 22,755,052	$ 3,609,859	$5,993,299	$ 6,219,113	$ 475,438	$ 4,909,610

Insurance Pool Participants								Individual Investment Accounts					
Risk Mgmt Workers' Comp	ND Ass'n of Counties Fund	PERS Group Insurance	Budget Stabilization Fund	City of Bismarck Deferred Sick Leave	City of Fargo FargoDome Fund	State Board of Medicine	Lewis & Clark Interpretive Center Endowment	Legacy Fund	Job Service of North Dakota	Tobacco Prevention and Control Fund	PERS Retiree Health Credit Fund	Totals 2019	Totals 2018
$ 285,789	$ 286,310	$ 603,923	$ 2,511,852	$ 33,901	$ 1,219,139	$ 60,744	$ 32,619	$ 174,927,813	$ 3,497,989	$ 1,117,230	$ 5,197,140	$ 388,737,303	$ 527,542,620
102,266	145,905	917,321	2,762,013	17,687	1,034,503	54,930	17,960	147,634,462	3,043,292	113,765	3,371,362	284,507,483	246,166,774
388,055	432,215	1,521,244	5,273,865	51,588	2,253,642	115,674	50,579	322,562,275	6,541,281	1,230,995	8,568,502	673,244,786	773,709,394
6,588	10,924	43,655	165,988	2,152	88,641	4,935	2,240	13,412,391	311,651	16,826	391,416	26,513,804	21,653,138
381,467	421,291	1,477,589	5,107,877	49,436	2,165,001	110,739	48,339	309,149,884	6,229,630	1,214,169	8,177,086	646,730,982	752,056,256
394	578	1,979	7,918	68	5,468	205	75	770,904	-	-	-	1,226,258	1,334,400
(78)	(117)	(395)	(1,580)	(14)	(1,089)	(40)	(14)	(154,066)	-	-	-	(245,058)	(266,663)
316	461	1,584	6,338	54	4,379	165	61	616,838	-	-	-	981,200	1,067,737
1,250,000	-	219,199,000	-	-	-	-	-	692,568,943	-	-	1,319,500	987,842,755	871,266,337
1,631,783	421,752	220,678,173	5,114,215	49,490	2,169,380	110,904	48,400	1,002,335,665	6,229,630	1,214,169	9,496,586	1,635,554,937	1,624,390,330
1,119	-	-	17,840	-	-	-	-	928,596	-	-	-	1,779,837	1,669,600
1,800,000	-	221,225,000	-	-	1,965,000	-	-	455,263,216	4,645,062	46,280,000	150,000	833,929,970	336,169,172
1,801,119	-	221,225,000	17,840	-	1,965,000	-	-	456,191,812	4,645,062	46,280,000	150,000	835,709,807	337,838,772
(169,336)	421,752	(546,827)	5,096,375	49,490	204,380	110,904	48,400	546,143,853	1,584,568	(45,065,831)	9,346,586	799,845,130	1,286,551,558
5,357,456	5,909,536	31,600,069	113,551,329	729,656	44,624,198	2,250,449	702,897	5,576,084,018	95,611,108	54,357,675	126,505,792	11,256,882,918	9,970,331,360
$ 5,188,120	$ 6,331,288	$ 31,053,242	$ 118,647,704	$ 779,146	$ 44,828,578	$ 2,361,353	$ 751,297	$ 6,122,227,871	$ 97,195,676	$ 9,291,844	$ 135,852,378	$ 12,056,728,048	$ 11,256,882,918

	Pension Trust		Investment Trust	
	2019	2018	2019	2018
Salaries and wages:				
Salaries and wages	$ 832,908	$ 792,299	$ 836,638	$ 792,288
Fringe benefits	508,007	568,887	409,387	419,698
Total salaries and wages	1,340,915	1,361,186	1,246,025	1,211,986
Operating expenses:				
Travel	24,162	15,062	30,646	35,114
Supplies	3,167	2,266	1,563	932
Postage and Mailing Services	35,178	36,993	14,833	13,593
Printing	12,426	15,606	3,470	4,500
Small Office Equipment and Furniture	14,910	2,908	11,744	1,339
Insurance	398	387	228	223
Rent/Lease of Building Space	55,396	55,396	32,370	32,370
Repairs	917	155	536	75
Information Technology and Communications	74,217	71,000	17,519	17,863
IT Contractual Services	156,553	109,750	447,097	443,184
Professional Development	20,808	8,184	12,693	2,878
Operating Fees and Services	16,807	15,106	20,655	21,014
Professional Fees and Services	10,763	15,629	6,339	22,771
Consultant Services	263,269	198,099	153,516	81,025
Total operating expenses	688,971	546,541	753,209	676,881
Pension trust portion of investment program expenses	219,397	219,267	(219,397)	(219,267)
Depreciation	1,800	1,800	-	-
Total administrative expenses	2,251,083	2,128,794	1,779,837	1,669,600
Less - nonappropriated items:				
Consultant Services	263,269	198,099	153,516	81,025
Other operating fees paid under continuing appropriation	132,871	125,270	498,969	509,663
Depreciation	1,800	1,800	-	-
Accrual adjustments to employee benefits	196,388	255,922	147,218	168,895
Total nonappropriated items	594,328	581,091	799,703	759,583
Total appropriated expenditures	$ 1,656,755	$ 1,547,703	$ 980,134	$ 910,017

	Pension Trust		Investment Trust	
	2019	2018	2019	2018
Actuary fees:				
Segal Company	$ 108,000	$ 71,499	$ -	$ -
Auditing/Accounting fees:				
CliftonLarsonAllen LLP	97,514	82,527	30,587	29,073
Disability consulting fees:				
Sanford Health	350	425	-	-
Legal fees:				
Office of Administrative Hearings	3,383	-	-	-
K&L Gates LLP	12,880	16,541	17,066	21,646
Kasowitz, Benson, Torres & Friedman	239	197	313	309
Jackson Walker LLP	3,105	3,105	54,804	9,316
ND Attorney General	37,798	23,805	50,746	20,681
Total legal fees:	57,405	43,648	122,929	51,952
Total consultant expenses	$ 263,269	$ 198,099	$ 153,516	$ 81,025

	Pension Trust		Investment Trust	
	2019	2018	2019	2018
Investment managers' fees:				
Global equity managers	$ 1,367,498	$ 1,380,401	$ 1,802,596	$ 1,794,894
Domestic large cap equity managers	730,141	(368,098)	4,636,321	557,670
Domestic small cap equity managers	429,127	586,340	1,817,606	1,544,538
International equity managers	888,364	954,958	6,526,839	6,229,944
Emerging markets equity managers	607,541	697,607	987,011	1,124,677
Domestic fixed income managers	1,137,802	1,593,550	10,833,676	11,337,399
Below investment grade fixed income managers	2,446,530	1,953,550	3,346,917	2,675,936
Diversified real assets managers	-	-	5,770,890	4,036,212
International fixed income managers	-	270,428	-	311,924
Real estate managers	2,258,800	2,660,866	5,412,650	5,965,804
Infrastructure managers	1,920,619	1,316,541	2,521,180	1,681,789
Timber managers	380,628	395,760	462,600	480,991
Private equity managers	1,667,745	1,513,944	1,953,934	1,773,739
Short term fixed income managers	-	-	194,551	122,965
Cash & equivalents managers	30,119	36,561	175,858	165,053
Balanced account managers	-	-	979,322	965,154
Total investment managers' fees	$ 13,864,914	$ 12,992,408	$ 47,421,951	$ 40,768,689
Custodian fees	235,778	233,938	1,076,406	927,794
Investment consultant fees	129,878	150,251	482,208	566,574
SIB Service Fees	-	-	81,815	82,764
Total investment expenses	$ 14,230,570	$ 13,376,597	$ 49,062,380	$ 42,345,821

Reconciliation of investment expenses to financial statements

	2019	2018	2019	2018
Investment expenses as reflected in the financial statements	$ 6,272,801	$ 5,352,945	$ 26,513,804	$ 21,653,138
Plus investment management fees included in investment income				
Domestic large cap equity managers	117,130	94,592	686,854	364,567
Domestic small cap equity managers	-	-	-	-
International equity managers	240,154	273,564	1,664,052	1,603,690
Emerging markets equity managers	607,541	697,608	987,011	1,124,677
Domestic fixed income managers	749,012	1,236,026	6,550,173	7,619,590
Below investment grade fixed income managers	1,986,029	1,541,521	2,782,655	2,133,969
Diversified real assets managers	-	-	3,989,293	2,037,750
Real estate managers	829,250	1,514,375	1,174,455	2,110,333
Infrastructure managers	1,380,280	758,699	1,811,371	974,220
Timber managers	380,628	395,760	462,600	480,991
Private equity managers	1,667,745	1,511,507	1,953,932	1,770,886
Cash equivalents managers	-	-	160,065	140,122
Balanced account managers	-	-	326,115	331,888
Investment expenses per schedule	$ 14,230,570	$ 13,376,597	$ 49,062,380	$ 42,345,821

	Approved 2017-2019 Appropriation	2017-2019 Appropriation Adjustment	Adjusted 2017-2019 Appropriation	Fiscal 2019 Expenses	Fiscal 2018 Expenses	Unexpended Appropriations
All Fund Types:						
Salaries and wages	$ 4,425,570	$ -	$ 4,425,570	$ 2,243,334	$ 2,148,355	$ 33,881
Operating expenses	862,484	-	862,484	393,555	309,365	159,564
Contingency	52,000	-	52,000	-	-	52,000
Total	$ 5,340,054	$ -	$ 5,340,054	$ 2,636,889	$ 2,457,720	$ 245,445

NOTE: *Only those expenses for which there are appropriations are included in this statement.*

Reconciliation of Administrative Expenses to Appropriated Expenditures

	2019	2018
Administrative expenses as reflected in the financial statements	$ 4,030,920	$ 3,798,394
Less:		
Consulting Services*	(416,785)	(279,124)
Other operating fees paid under continuing appropriations*	(631,840)	(634,933)
Depreciation expense	(1,800)	(1,800)
Changes in benefit accrual amounts	(343,606)	(424,817)
Total appropriated expenses	$ 2,636,889	$ 2,457,720

* North Dakota Century Code 21-10-06.2 and 15-39.1-05.2 provide authorization for the continuing appropriation.

Special Comments Requested by the Legislative Audit
and Fiscal Review Committee
Year Ended June 30, 2019

The Legislative Audit and Fiscal Review Committee requires that certain items be addressed by auditors performing audits of state agencies. These items and our responses are as follows:

Audit Report Communications

1. What type of opinion was issued on the financial statements?

Unmodified

2. Was there compliance with statutes, laws, rules, regulations under which the agency was created and is functioning?

Yes

3. Was internal control adequate and functioning effectively?

Yes

4. Were there any indications of lack of efficiency in financial operations and management of the agency?

No

5. Has action been taken on findings and recommendations included in prior year reports?

There were no prior year findings or recommendations.

6. Was a management letter issued? If so, provide a summary below, including any recommendations and the management response.

No

Audit Committee Communications

1. Identify any significant changes in accounting policies, any management conflicts of interest, any contingent liabilities, or any significant unusual transactions.

   For the year ended June 30, 2019, no new accounting policies were adopted and the application of existing policies was not changed.

2. Identify any significant accounting estimates, the process used by management to formulate the accounting estimates, and the basis for the auditor's conclusions regarding the reasonableness of those estimates.

   The valuation of alternative investments, including private equity and real asset investments, are a management estimate which is primarily based upon net asset values reported by the investment managers and comprise 16% of the total investment portfolio. The values for these investments are reported based upon the most recent financial data available and are adjusted for cash flows through June 30, 2019. Our audit procedures validated this approach through the use of confirmations sent directly to a sample of investment managers and the review of the most recent audited financial statements for these funds. Furthermore, we reviewed management's estimate and found it to be reasonable.

   The actuarial valuation was based on the actuarial assumptions and methods adopted by the Board, including an actuarial expected investment rate of return of 7.75% per annum compounded annually. The valuation takes into account all of the promised benefits to which members are entitled as of July 1, 2019 as required by the North Dakota Century Code. The valuation provides certain information required by GASB to be disclosed in the financial statements. Additionally, the valuation is used to determine the adequacy of the current employer contribution rate. Our audit procedures included reviewing the actuarial valuation and related assumptions used therein and we believe the estimate to be reasonable.

3. Identify any significant audit adjustments.

   None

4. Identify any disagreements with management, whether or not resolved to the auditor's satisfaction, relating to financial accounting, reporting, or auditing matters that could be significant to the financial statements.

   None

5. Identify any significant difficulties encountered in performing the audit.

   None

6. Identify any major issues discussed with management prior to retention.

   None

7. Identify any management consultations with other accounts about auditing and accounting matters.

None

8. Identify any high-risk information technology systems critical to operations based on the auditor's overall assessment of the importance of the system to the agency and its mission or whether any exceptions identified in the six audit report questions addressed above are directly related to the operations of an information technology system.

Based on the audit procedures performed, the Retirement and Investment Office's critical information technology system is the CPAS system. There were no exceptions identified that were directly related to this application.

This report is intended solely for the information and use of the audit committee, management, the Legislative Audit and Fiscal Review Committee, and other state officials, and is not intended to be and should not be used by anyone other than these specified parties.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 30, 2019

AGENDA ITEM IV.B.

Board Acceptance Requested

TO: **State Investment Board**

FROM: Dave Hunter

DATE: November 18, 2019

SUBJECT: **SIB Securities Litigation Committee Meeting Update**

The SIB approved Charter for the Securities Litigation Committee (SLC) specifically states:

"The Committee will determine when an active role should be pursued in regards to securities litigation affecting securities within the SIB's portfolio."

The SLC Charter also states:

"The Committee is authorized to:

- draft policy (to be formally approved by the SIB) regarding the dollar and/or risk thresholds for determining when to opt-out 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 attorney general in cases of direct litigation."

Based on recent SLC discussions with approved outside counsel including Eric Belfi and Frank McConville of Labaton Sucharow, **the SIB will be requested to confirm the SLC is duly authorized to** "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".

The SLC is seeking this confirmation given practical time constraints inherent in pursuing "opt-out" securities litigation cases in the U.S. The "opt-out" claim filing period of 60-days constructively impairs, if not prohibits, the SIB from seeking direct litigation in the U.S. unless the SLC is duly authorized to take this action during interim periods between scheduled SIB meetings.

The SLC invites board member discussion or clarification of the background surrounding this request.

If the SIB so desires, the SLC requests the SIB to confirm the SLC is duly authorized to "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".

Informational

Proxy Voting Due Diligence Update:

RIO continues to conduct due diligence on the service providers generally regarded as the most established firms in proxy voting services including International Shareholder Services, Glass Lewis and Broadridge. This due diligence includes general discussions with SIB approved external consultants and legal counsel (including Callan and Labaton Sucharow).

Proxy Advisor - International Shareholder Services (ISS):

ISS states it is the largest proxy voting service provider which offers the "simplicity of working with one provider that utilizes proprietary data and the ease of using one integrated platform for proxy research, voting and reporting" serving approximately 2,000 institutional clients.

Proxy Exchange leverages ISS' decades of corporate governance and proxy voting expertise to guide the user in voting proxies in a relatively quick, reliable and secure electronic environment.

ISS produces more than 42,000 proxy analyses each year in 115 global capital markets.

Proxy Advisor - Glass Lewis:

Glass Lewis states it is "the leading independent provider of global governance and engagement support services, helping institutional investors understand and connect with the companies they invest".

Glass Lewis is a trusted ally of more than 1,300 institutional clients globally who use its high-quality, unbiased Proxy Paper research and industry leading Viewpoint proxy management solution to drive value across all their governance activities.

Glass Lewis issues more than 20,000 research reports annually with 360+ employees.

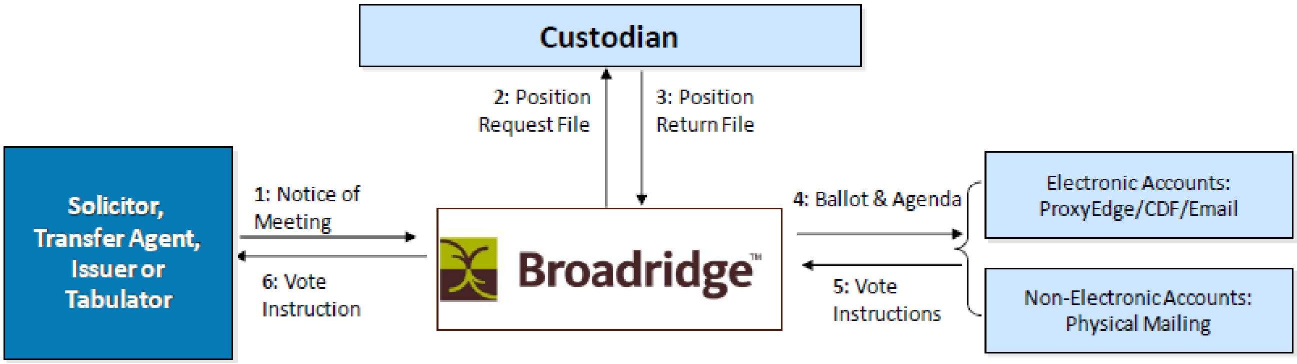
Investor Communication - Broadridge Financial Solutions:

Broadridge facilitates the investor communications process, including proxy creation and distribution, on behalf of 99% of banks/brokers and custodians for any institutional or retail investor. They create and deliver over five billion communications annually including proxies, annual/special meeting materials, prospectuses, company annual/semi-annual filings. Based on the beneficial investor, Broadridge delivers these materials either via physical mail or digitally to: ProxyEdge, ISS, Glass Lewis and every other vote agent that exists.

The Proxy Flow Chart illustrates how Broadridge engages with our custodians and managers to facilitate the proxy distribution process. Step four and five is where ISS and Glass Lewis enter the picture. They pair vote recommendations to the ballots received from Broadridge and pass the vote back to Broadridge for execution.

Proxy voting for SIB client portfolios are currently delegated to our investment managers as stated in our governance manual. As stated at our last Board meeting, RIO's investment team will work with Dept. of Trust Lands to ensure both entities are managing their proxy voting in the best interests of the State of North Dakota.

Broadridge Process Flow Diagram



LEGEND
1: BR receives the notice of meeting from one of several sources: Solicitor, Transfer Agent, Issuer or Tabulator.
2: BR creates a record date file that contains the security information (CUSIP) for upcoming meetings. The file is picked-up by the custodian and used to create a position file.
3: The custodian returns a position file with the account information for the securities that were included on the record date file. The account information includes: account number, shares, name/address. BR loads the custodian file and flags accounts as being electronic or non-electronic based upon the account being setup on BR's electronic account table.
4: BR distributes ballot & agenda information to shareholders. The distribution medium is either electronic or paper depending upon the setup of the custodian's accounts.
5: BR receives the vote instruction from the shareholders. Instructions may be received electronically via ProxyEdge/ProxyVote/CDF/Telephone Voting or physically via paper return.
6: BR delivers the aggregated vote instructions to the appropriate entity via vote file, hard copy or fax. In some cases, BR may not deliver the vote instructions to the tabulator for the meeting. For those meetings, the recipient of the BR vote would need to pass on those instructions to the tabulator.

RIO CAFR Footnote Disclosure – Contingencies / Litigation

RIO will review Contingency and Litigation related footnote disclosure with our SIB referencing our audited financial statements as of Jun30, 2019, as excerpted immediately below:

Note 11 - Contingencies/Litigation

The State Investment Board has been named as a defendant in two cases, arising out of the Tribune and General Motors bankruptcy proceedings, relating to securities that were purchased by external investment managers in one or more portfolios held by the SIB on behalf of its investment client funds. Outside counsel has been retained for both cases, in addition to assistance received from the ND Office of Attorney General. The SIB became a party to a Settlement Agreement dated April 10, 2019, as a Term Lender in the General Motors bankruptcy proceeding. This liability will be borne by other parties, so no liability was accrued by the SIB as of June 30, 2019. On July 15, 2019, in the Tribune proceeding, the Litigation Trustee filed a Notice of Appeal to the Second Circuit, appealing the various judgements of the U.S. District Court that dismissed his claims against defendants in the Action and denying leave to amend his complaint to add a constructive fraudulent conveyance claim. It is expected that briefing of the legal issues before the Second Circuit will occur in late 2019 and early 2020. Accordingly, no liability has been recorded at this time.

Note: K&L Gates has been retained for legal representation in the Tribune case and Kasowitz Benson Torres has been retained for legal representation in the General Motors case, as overseen and approved by North Dakota's Office of the Attorney General.

Agenda Item 4.B.

Committee Action Requested

TO: SIB Securities Litigation Committee

FROM: Dave Hunter and Connie Flanagan

DATE: September 20, 2019

SUBJECT: **Annual Election of Chair and Vice Chair**

Securities Litigation Committee, Charter and Policy Background:

Committee - On January 26, 2018, the SIB established a new five member Securities Litigation Committee including Chief Deputy Attorney General Troy Seibel, State Treasurer Kelly Schmidt, Assistant Attorney General Patrick Brooke, RIO Chief Financial Officer Connie Flanagan and RIO Executive Director Dave Hunter.

Charter and Policy - On April 27, 2018, the SIB unanimously approved the following Securities Litigation Committee Charter and Securities Monitoring and Litigation Policy.

CHARTER OF THE
SECURITIES LITIGATION COMMITTEE OF THE
NORTH DAKOTA STATE INVESTMENT BOARD

PURPOSE

The Securities Litigation Committee (the Committee) is a standing committee of the North Dakota State Investment Board (SIB) created to assist in fulfilling its fiduciary oversight responsibilities of monitoring the investment of 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 Committee will determine when an active role should be pursued in regards to securities litigation affecting securities within the SIB's portfolios.

AUTHORITY

The Committee 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 cases of direct litigation.

COMPOSITION

The Committee will consist of the Executive Director of RIO, one member of RIO fiscal or investment staff, RIO general counsel, and two members of the SIB appointed by the Chair.

Membership on the Committee will be for one year or termination of term on the SIB. Vacancies will be filled by the SIB Chair at the first scheduled meeting following the vacancy. There will be no limit to the number of terms served on the Committee.

ACTION: The Committee will elect a Chair and a Vice Chair. The Chair will preside at all meetings of the Committee and serve as the liaison to the SIB. In the absence of the Chair, the Vice Chair will perform the duties of the Chair. The liaison will report at least two ~~four~~ times a year to the SIB on the activities of the Committee and other pertinent information.

The Committee may form, and delegate authority to, subcommittees when it deems appropriate.

MEETINGS

The Committee will meet generally four times a year, with authority to convene additional meetings, as circumstances require or to adequately fulfill all the obligations and duties as outlined in this charter.

Meeting agendas will be prepared by the Executive Director and approved by the Committee Chair, unless otherwise directed by the Committee and will be provided to the Committee members along with briefing materials before the scheduled committee meeting.

Committee members are expected to attend each meeting, in person or via tele- or video-conference. RIO's executive management and others necessary to provide information and to conduct business will attend meetings. The Committee may invite staff of RIO or others to attend meetings, as necessary. The Committee may hold executive sessions as allowed under state law.

The Committee will act only on the affirmative vote of three of the committee members at a meeting. To conduct business, a quorum will be three members of the Committee. Should a quorum not be present before a scheduled meeting or during a meeting, the Chair will announce the absence of a quorum and the members will disburse. Meetings unable to transact business for lack of a quorum are not considered meetings. Meeting minutes will be prepared by RIO, or as otherwise directed by the Committee. Approved meeting minutes of the Committee will be submitted to the SIB.

RESPONSIBILITIES

RIO's management is responsible for ongoing monitoring of securities litigation and claims filing. Based on SIB approved policy guidelines, the Committee has the responsibility to provide oversight in the areas of:

- policy development
- determination on direct litigation and/or lead plaintiff status
- approval of special assistant attorneys (outside counsel)

To this end, the Committee will:

- Develop initial policy and periodically review policy to determine if changes are needed.
- Review reports from RIO staff and third parties in order to maintain awareness of potential and actual securities litigation affecting the SIB portfolios.
- Make decisions on whether to pursue direct litigation and/or lead plaintiff status on cases exceeding policy thresholds for passive participation.
- Select third party litigation firms when deemed appropriate.
- Perform other activities related to this charter as requested by the SIB.
- Review and assess the adequacy of the Committee charter annually, requesting the SIB approval for proposed changes.
- Confirm annually the review of all responsibilities outlined in this charter.

Reporting Responsibilities

- Report to the SIB about the Committee's activities, issues, and related recommendations.
- Provide a written report annually to the SIB, describing the Committee's composition, responsibilities and how they were discharged, and any other information required.

DATE SECURITIES LITIGATION COMMITTEE CHARTER ADOPTED: April 27, 2018

POLICY TITLE: *SECURITIES MONITORING AND LITIGATION POLICY*

General Purpose

1. The North Dakota State Investment Board ("SIB") is a fiduciary for assets held in trust for the benefit of SIB clients, including their beneficiaries.

2. In order to carry out its fiduciary duty to prudently invest and diversify the assets of the various investment funds, the SIB invests considerable assets in global public securities markets.

3. The efficient and effective deployment of plan assets requires that in seeking returns market risks must be prudently assumed and managed. Investing in publicly-traded securities in regulated markets under accounting, disclosure and business practice laws and regulations provides general, but not perfect assurance that the information forming the basis for investments is accurate, conforms with accepted accounting practices, and is not distorted due to misfeasance, malfeasance or nonfeasance, or the timing of information disclosures by persons or entities with the ability to affect market prices of the investment securities.

4. Legal action is sometimes necessary to attempt to recover all or part of losses the funds may incur due to alleged improper action or inaction which results in the impairment of the value of the funds' security holdings.

5. Most such actions will be prosecuted through class action litigation whether or not the SIB takes an active role as a plaintiff or a passive role as a member of a certified class of plaintiffs. Any ultimate award or settlement from a class action will be ratably allocated among legitimate claimants.

6. The SIB will generally only consider pursuing active participation in securities actions when such a role is expected to add value by enhancing the prospect for recovery, increasing the amount of recovery, assuring more efficient and effective prosecution of the case, or identifying and addressing corporate governance issues through litigation.

For purposes of this Policy, "active participation" means seeking status as lead plaintiff, co-lead plaintiff, or filing separate legal action.

<u>Non-Active Recovery and Filing</u>

1. SIB will require as part of its agreement with its custodial bank or other designated agent, that adequate securities class action monitoring is maintained on an ongoing basis, sufficient to assure that most of the actual awards and settlements for such cases are tracked and identified and that proof of claim forms, including supporting documentation, will be properly and timely filed.

2. SIB may engage one or more legal firms that specialize in prosecuting security class-action cases; any such engagement is subject to the special appointment requirements of N.D.C.C. § 54-12-08. For these purposes only, such firm(s) may

be granted ongoing access to security holdings information through the custodian bank or other designated agent.

3. An agreement with any law firm for non-litigation services will not commit SIB to employing said firm in the event that it seeks to represent SIB as an active participant in any securities related litigation. Such representation must be effected by a separate retainer agreement between the SIB and said firm, or another, depending on such factors as the potential monetary scope, the nature of the case and industry specialty that may be required, the allocation of current or past cases among candidate firms, the likely duration and cost of prosecuting such a case, retainer fees or contingency splits, the venue in which the case is to be filed, and other considerations.

4. The custodial bank or other designated agent will be required to provide the Retirement and Investment Office ("RIO") with periodic reports that detail class action cases monitored, claims filed, and award or settlement distributions received. RIO will maintain these records and provide an update to the SIB or Securities Litigation Committee (Committee) with regards to accounting information on distributions received on claims filed by the custodian bank or other designated agent on our behalf.

<u>Active Participation in Cases</u>

1. The Executive Director will initiate active participation in securities cases only upon prior review and approval of the SIB or Committee. Before bringing any recommendations to the SIB or Committee, the Executive Director, with significant assistance from legal counsel from the Office of the Attorney General, will assess the merits and prospects for active participation by reference to the criteria and factors outlined in this section.

2. Decision Criteria and Factors:

   a. The decision to participate in an active capacity in security litigation should be based on the totality of the circumstances. Dollar loss amounts are important, but not the sole or overriding factor to consider in making such recommendations by the Executive Director, or determinations by the SIB or Committee.

   b. Potential losses to SIB clients must be significant in order to warrant participation as a lead plaintiff, co-lead plaintiff, or separate litigant in U.S. or Canadian cases. Generally, in cases where the potential loss does not exceed the $5 million, the SIB will generally avoid active participation.

   c. The *prima facia* merits of the claim for loss, and the factual basis for the action, recognizing that the full discovery process will not commence until the class has been certified by the court in which such case is to be filed.

d. The availability of witnesses, and possible support that may be obtained from investment managers, consultants, and the custodial bank through discovery.

e. The potential that any defendants or insurers will be able to pay an adequate recovery to the class, without impairing the value of any current security holdings SIB may yet hold in the issuer in the portfolio.

f. The ability of the law firm recommending action on the part of SIB to prosecute the case effectively, in the venue where such case is likely to be filed, and the experience of the firm in managing such cases individually or in partnership with other firms.

g. Potential long-term benefits from corporate governance changes from pursuing litigation.

h. The ability of SIB to serve as a fiduciary on behalf of all class members in the case, especially in relative terms to other institutional investors that may be considering the same case.

i. Potential costs that may be incurred. Special consideration must be given to any case that must be filed in a non-U.S. venue under the "Morrison" criteria established by the U. S. Supreme Court in a 2010 decision, since costs of litigation and potential liabilities of unsuccessful claims may be significant.

j. Current workload and staffing resources required for the fulfillment of SIB's primary member service functions, and whether participation might displace time and staff resources needed for core business functions.

3. Decision Criteria and Factors for cases filed in a non-U.S. venue: In addition to the Criteria and Factors set forth in Subsection 2, the SIB or Committee may consider the following:

   a. The proposed funding arrangements for the action.

   b. Evaluate the merits and risks of the case in light of the law of the jurisdiction in which the action would be brought. Generally, in cases where the potential loss does not exceed the Jurisdictional Thresholds referenced in Exhibit A, the SIB will avoid opt-in or group litigation participation.

Roles in Managing & Monitoring Litigation

1. The SIB or Committee will make the final determination of whether it is in the SIB's best interest to pursue active participation in any case and whether to engage any law firm and the terms of such engagement.

2. Decisions regarding the conduct and implementation of the SIB's or Committee's decision to participate will be the responsibility of the Executive Director, or an approved member of the management staff if he so delegates. When feasible and advisable, the Executive Director shall seek advice and direction from the SIB or Committee on strategic and legal issues that may arise in prosecuting the action on behalf of the SIB and its clients. The Executive Director shall timely report to the SIB or Committee on the progress of the litigation.

3. The Executive Director shall be responsible for management of the relationship with any portfolio monitoring law firm or organization for such purpose. Based on the need for additional coverage, the Executive Director and Committee will determine whether one or several firms are needed to fulfill the goals of this Policy and may terminate such monitoring agreements as judgment advises.

4. Any agreement for portfolio monitoring services that includes a fee or subscription cost must first be approved by the SIB or Committee before execution by the Executive Director.

Policy Review

1. The Committee and SIB shall review this policy at least every three years to ensure that it remains relevant and appropriate.

Board Approved on May 24, 2019 (following SLC approval on May 20, 2019):

In order to adhere to industry best practices, RIO requested FRT to provide an annual review of our own securities litigation monitoring and claims filing policies including: 1) "U.S. Opt-out" settlements; 2) "International Opt-in" Actions and Jurisdictions; and 3) Global Anti-Trust activity. Based on this review, RIO recommend to lower the International "Opt-In" threshold from $20,000 to zero for "Passive/Very Low Risk Jurisdictions". The Committee approved this recommendation on May 20, 2019, which the SIB approved on May 24, 2019.

Exhibit A
Non-US Opt-In and Group Litigation Jurisdictional Thresholds

Jurisdictional Description	Threshold
Passive/very low risk jurisdictions, simple registration or claim filing (no participation in litigation required, strong anonymity, very low costs) including, but potentially not limited to: Australia, Israel, Netherlands (including Dutch Foundations), regulatory funds (e.g. Compensation Schemes in UK)	**$20,000 (FRT proposal to lower to zero)**
Low risk jurisdictions (no discovery, low cost) including, but potentially not limited to: Japan	**$1 million**
Moderate risk jurisdictions (moderate cost, funded/insured to protect from cost shifting, some restricted discovery, not fully public) including but potentially not limited to: Germany, Austria, Belgium, Switzerland, Denmark, Spain, Finland, France, Hong Kong, Indonesia, Ireland, Italy, Korea, Luxembourg, Malaysia, Norway, New Zealand, Portugal, Sweden, and Thailand	**$5 million**
High risk jurisdictions (potential in-person discovery, no anonymity, uncapped fees) including, but potentially not limited to: Taiwan, United Kingdom, Singapore, Brazil	**$10 million**

Jurisdictional Thresholds are developed in consultation with legal counsel including other designated agents which are experts in global securities litigation matters.

Policy Implemented: November 20, 2015
Policy Amended: April 27, 2018

ND STATE INVESTMENT BOARD
SECURITIES LITIGATION COMMITTEE MEETING

Thursday, November 7, 2019 – 3:00 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 (September 20, 2019) **Committee Action**

3. Securities Litigation Committee Meeting Schedule - Mr. Hunter (5 minutes) **Committee Action**

4. Securities Litigation Firm Updates – Lead Plaintiff Process Overview (45 minutes) *Informational*
   a. Labaton Sucharow - Mr. Eric Belfi and Mr. Francis McConville
   b. Market Update: Proxy Voting - Mr. Hunter

5. Securities Litigation Footnote Disclosure of Contingencies - Mr. Hunter (10 minutes) *Informational*
   a. General Motors (Kasowitz Benson Torres)
   b. Tribune (K & L Gates)

6. Other - Next Proposed SIB Securities Litigation Committee Meeting

   North Dakota Retirement and Investment Office
   3442 E Century Ave, Bismarck, ND 58503
   Tuesday, February 4, 2020 at 1:00 PM

7. Adjournment

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.

NORTH DAKOTA STATE INVESTMENT BOARD
SECURITIES LITIGATION COMMITTEE
MINUTES OF THE SEPTEMBER 20, 2019, MEETING

BOARD MEMBERS PRESENT: Troy Seibel, Chair
Jodi Smith, Vice Chair
Connie Flanagan, Chief Financial Officer
David Hunter, Executive Director/CIO
Anders Odegaard, Attorney General's Office

STAFF PRESENT: Bonnie Heit, Admin Svs Suprv

GUESTS: Craig D'Alessio, Financial Recovery Technologies (TLCF)
Olav Haazen, Grant & Eisenhofer (TLCF)
Mike Lang, Financial Recovery Technologies (TLCF)
Marc Weinberger, Grant & Eisenhofer (TLCF)

CALL TO ORDER:

Mr. Seibel, Chair, called the State Investment Board (SIB) Securities Litigation Committee meeting to order at 2:36 p.m. on Friday, September 20, 2019, at the Retirement and Investment Office, 3442 E Century Ave, Bismarck, ND.

AGENDA:

IT WAS MOVED BY COMMISSIONER SMITH AND SECONDED BY MS. FLANAGAN AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE SEPTEMBER 20, 2019, MEETING.

AYES: COMMISSIONER SMITH, MR. SEIBEL, MR. HUNTER, MS. FLANAGAN, AND MR. ODEGAARD
NAYS: NONE
MOTION CARRIED

MINUTES:

IT WAS MOVED BY MR. HUNTER AND SECONDED BY MR. ODEGAARD AND CARRIED BY A VOICE VOTE TO ACCEPT THE MINUTES OF THE MAY 20, 2019, MEETING AS DISTRIBUTED.

AYES: MS. FLANAGAN, MR. ODEGAARD, COMMISSIONER SMITH, MR. SEIBEL, AND MR. HUNTER
NAYS: NONE
MOTION CARRIED

SECURITIES LITIGATION REVIEW:

Mr. Hunter reviewed the history and make-up of the Securities Litigation Committee, their Charter, and the SIB Securities Litigation policy's thresholds for pursuing securities litigation.

Election of Officers:

IT WAS MOVED BY COMMISSIONER SMITH AND SECONDED BY MR. HUNTER AND CARRIED BY A ROLL CALL VOTE TO NOMINATE MR. SEIBEL AS CHAIR OF THE SIB SECURITIES LITIGATION COMMITTEE FOR THE PERIOD OF JULY 1, 2019 – JUNE 30, 2020.

AYES: MR. ODEGAARD, MR. HUNTER, MS. FLANAGAN, MR. SEIBEL, AND COMMISSIONER SMITH
NAYS: NONE
MOTION CARRIED

IT WAS MOVED BY MR. ODEGAARD AND SECONDED BY MR. SEIBEL AND CARRIED BY A ROLL CALL VOTE TO NOMINATE COMMISSIONER SMITH AS VICE CHAIR OF THE SIB SECURITIES LITIGATION COMMITTEE FOR THE PERIOD OF JULY 1, 2019 – JUNE 30, 2020.

AYES: MR. HUNTER, MS. FLANAGAN, MR. SEIBEL, COMMISSIONER SMITH, AND MR. ODEGAARD
NAYS: NONE
MOTION CARRIED

IT WAS MOVED BY MS. FLANAGAN AND SECONDED BY MR. ODEGAARD AND CARRIED BY A ROLL CALL VOTE THAT THE SIB SECURITIES LITIGATION COMMITTEE CHAIR, AS LIAISON TO THE SIB, WILL PROVIDE A REPORT TO THE SIB AT LEAST ON A BIANNUAL BASIS.

AYES: COMMISSIONER SMITH, MR. SEIBEL, MR. HUNTER, MS. FLANAGAN, AND MR. ODEGAARD
NAYS: NONE
MOTION CARRIED

<u>Securities Litigation Firms</u> – Mr. Hunter reviewed pre-approved law firms the Securities Litigation Committee has identified that will be utilized on a case by case basis to provide expert advice when new securities litigation related cases are raised for further consideration by the Securities Litigation Committee. The following firms were preapproved - Bernstein Litowitz Berger & Grossman; Grant & Eisenhofer; and Labaton Sucharow.

The SIB has engaged Grant & Eisenhofer to recover investment losses in the Volkswagen and Danske Bank international securities litigation cases.

Financial Recovery Technologies (FRT) has been retained since 2018 to oversee the recovery of investment losses in the U.S. and international securities litigation cases.

<u>Biennial Agenda</u> – The Securities Litigation Committee reviewed their biennial agenda. No adjustments were made to the agenda.

<u>Securities Litigation Report</u> – Ms. Flanagan reviewed the securities litigation activity report for the fiscal year ending June 30, 2019. There were 60 cases of which $344,684 was recovered by FRT and The Northern Trust.

<u>Securities Litigation Case Updates</u> – The Securities Litigation Committee entertained a motion to enter into Executive Session to receive an update from Grant & Eisenhofer on the Volkswagen and Danske Bank cases.

IT WAS MOVED BY MR. HUNTER AND SECONDED BY MS. FLANAGAN AND CARRIED BY A ROLL CALL VOTE TO ENTER INTO EXECUTIVE SESSION FOR ATTORNEY CONSULTATION PURSUANT TO NDCC §44-04-18.4(1), §44-04-19.1(9), & §44-04-19.2.

AYES: MS. FLANAGAN, MR. ODEGAARD, COMMISSIONER SMITH, MR. SEIBEL, AND MR. HUNTER
NAYS: NONE
MOTION CARRIED

The Securities Litigation Committee entered into Executive Session at 2:59 p.m. Mr. Seibel, Commissioner Smith, Mr. Hunter, Ms. Flanagan, Mr. Odegaard, Ms. Heit, Mr. Weinstein and Mr. Haazen were present.

After the review, the Securities Litigation Committee entered into Open Session at 3:14 p.m.

The Securities Litigation Committee took no action.

Mr. Weinstein also updated the Securities Litigation Committee on the 3M Company case.

Discussion followed.

The Securities Litigation Committee also received FRT's insight on the 3M Company case by Mr. Lang and Mr. D'Alessio.

Discussion followed on options for the State of ND. The Dept. of Trust Lands and the SIB will both review their own estimated losses and consider the total dollar amount when considering potential actions in the future. The deadline to file the necessary paperwork is September 27, 2019. The Securities Litigation Committee took no action noting the current estimated amount of losses is below the SIB's approved policy threshold, given time constraints, and the amount of time it would take to analyze the data and prepare the paperwork. Mr. Hunter will provide a brief update to the SIB at their September 27, 2019, meeting.

OTHER:

The next Securities Litigation meeting is scheduled for Thursday, November 7, 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 3:50 p.m.

____

Mr. Seibel, Chair

____

Bonnie Heit
Recorder

Agenda Item 3

Informational

TO: SIB Securities Litigation Committee (SLC)

FROM: Dave Hunter

DATE: November 1, 2019

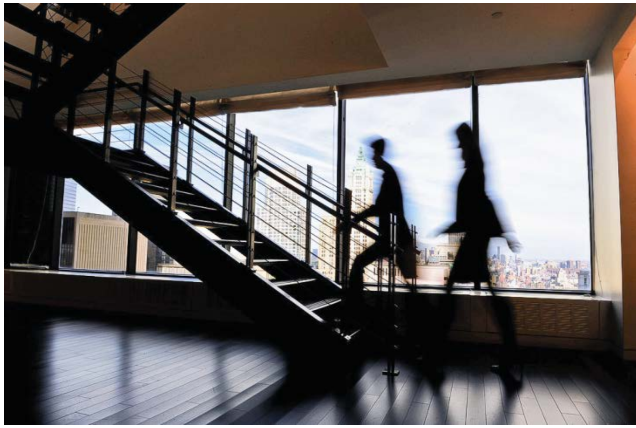
SUBJECT: **Proposed Meeting Schedule for 2020**

Proposed meeting dates for the SIB Securities Litigation Committee are as follows for 2020:

February 4, 2020 (Tuesday from 1:00 to 2:30 p.m.)
May 19, 2020 (Tuesday from 1:00 to 2:30 p.m.)
August 11, 2020 (Tuesday from 2:00 to 3:30 p.m.)
November 5, 2020 (Thursday from 1:00 to 2:30 p.m.)

RIO will seek to review the proposed 2020 meeting schedule and seek Committee member input at our SLC meeting on November 7, 2019.

Labaton Sucharow

North Dakota State Investment Board

Securities Class Action Litigation
The Benefits and Responsibilities of Being Lead Plaintiff

Presented by Eric J. Belfi and Francis P. McConville

November 7, 2019

Agenda

- The Private Securities Litigation Reform Act
- Overview of Lead Plaintiff Process
- Class Action Case Evaluation
- Benefits and Responsibilities of Serving as Lead Plaintiff
- Analysis of Exposure and Assessment of Legal Options
- About Us

Purpose of the Private Securities Litigation Reform Act (“PSLRA”)

- The PSLRA was intended “to increase the likelihood that institutional investors will serve as lead plaintiffs” because, among other reasons, institutional investors and other class members with large amounts at stake “will represent the interests of the plaintiff class more effectively than class members with small amounts at stake.”

Labaton Sucharow

- H.R. Rep. No 104-369, at 34 (1995).

Overview of Securities Class Action Lead Plaintiff Appointment Process

- New case filing and appointment of lead plaintiff
  - PSLRA (15 U.S.C. § 78u-4) regulates initial process
  - 60 days to file lead plaintiff motion after initial complaint
  - Clear statutory guidelines regarding lead plaintiff selection criteria
  - Race to the courthouse days are over

How Lead Plaintiffs Are Selected

- The court shall adopt a presumption that the most adequate plaintiff in any private action arising under this title is the person or group of persons that:
  - Has either filed the complaint or made a motion in response to a notice [within 60 days of publication of the notice];
  - In the determination of the court, has the ***largest financial interest*** in the relief sought by the class; and
  - Otherwise satisfies the requirements of Rule 23 of the Federal Rules of Civil Procedure.

• Exchange Act § 21D(a)(3)(B)(iii)(I)

Securities Portfolio Monitoring and Case Evaluation Services

	**Director of Market Intelligence** investigates unusual share price movements and tracks new cases
	**Case Evaluation Team** reviews: ▪ SEC Filings ▪ Press Releases ▪ Analyst Reports ▪ Media Reports
	**Investigative Team**, composed of eight in-house investigators, locates and develops confidential witnesses with information relating to alleged and potential fraud and corporate misconduct, is led by a former FBI agent
	**Case Evaluation Team** assesses strengths and weaknesses of claims based upon multiple factors, including evidence of wrongdoing, existence of government investigations, etc.
	**Data Analysis Team**: ▪ Provides global portfolio monitoring ▪ Assesses client losses ▪ Evaluates client exposure to potential matters

Case-Specific Recommendations Current Example: 3M Company

- Initial Case Report
  - Overview of facts
  - Analysis of stock reaction to disclosures
  - Preliminary analysis recommendations
- Comprehensive Case Report
  - Detailed description of the facts
  - Results of our investigation, including confidential witness statements
  - Legal analysis of claims and potential defenses
  - Analysis of damages and loss causation
  - Analysis of court and judge assigned to case
  - Report on Labaton Sucharow's experience in similar cases


INITIAL CASE REPORT

Labaton Sucharow
SECURITIES LITIGATION

Privileged & Confidential

3M COMPANY

The following is our preliminary analysis of claims advanced against 3M Company ("3M" or the "Company") in the United States District Court for the District of New Jersey.[1] The Action alleges violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 (the "Exchange Act"), and Rule 10b-5 promulgated thereunder by the Securities and Exchange Commission (the "SEC"), on behalf of all persons or entities that purchased 3M securities between February 9, 2017 and May 28, 2019, inclusive (the "Class Period").

The North Dakota State Investment Board ("North Dakota" or the "Fund") incurred losses of **$2,736,609** on its transactions in 3M common stock throughout the Class Period. Based on our analysis of Labaton Sucharow's 200+ portfolio monitoring clients, North Dakota's loss is one of the largest among monitoring clients currently considering lead plaintiff appointment in this Action.

We believe there is merit to the Action as plead. The Action centers on Defendants' misrepresentations and omissions related to 3M's most lucrative product, PFAS. Specifically, the Action alleges that while publicly denying that PFAS causes harm to humans and the environment, Defendants concealed and misrepresented: (i) 3M's vast internal evidence dating back decades confirming that PFAS are toxic; (ii) 3M's decades-long history of suppressing negative information and/or damaging data about PFAS; and (iii) 3M's legal exposure to state, county, and local governments and individuals

Ticker	MMM (NYSE)
CUSIP	88579Y101
ISIN	US88579Y1010
Based	St. Paul, Minnesota
Incorporated	Delaware
Class Period	02.00.2017 – 05.28.2019
L.P. Deadline	09.27.2019
Venue; Judge	D. N.J.; Claire C. Cecchi
Loss	2,736,609

[1] *See Heavy & General Laborers' Locals 472 & 172 Welfare Fund v. 3M Company*, 19-cv-15982 (D. N.J.) (the "Action"). In addition to the Company, the Action names the following individuals as defendants: (1) Inge G. Thulin, the Company's former Chief Executive Officer ("CEO"); (2) Michael F. Roman, the Company's current CEO; and (3) Nicholas C. Gangestad, the Company's current Chief Financial Officer ("CFO") (together with 3M, the "Defendants"). A copycat action against Defendants expanding the class definition to include all "securities" was filed on August 22, 2019, in Federal District Court for the District of New Jersey. *See Rousseau v. 3M Company*, 19-cv-17090 (D. N.J.).

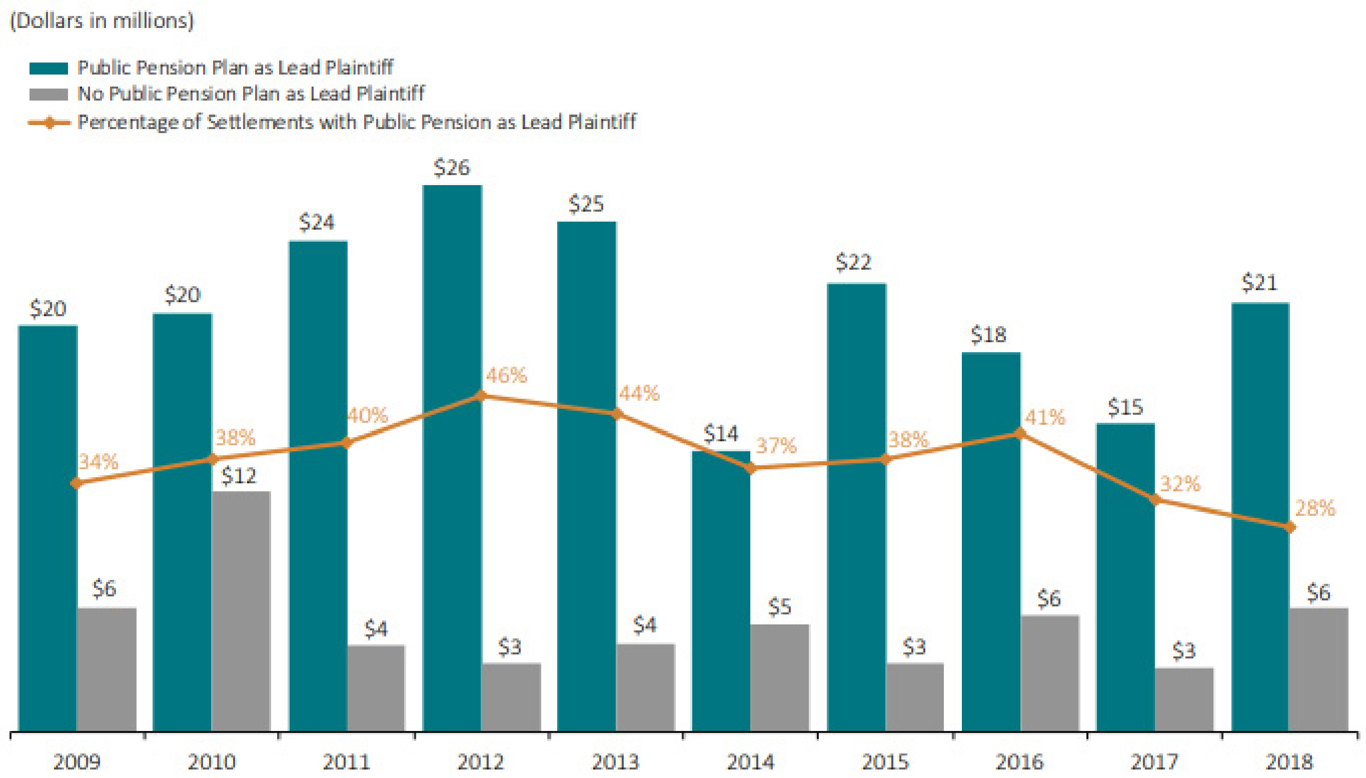
Labaton Sucharow

Active Participation:
Benefits of Serving as Lead Plaintiff

- Actions led by institutional investors are taken more seriously by courts and defendants, ***increasing likelihood of success***
  - Leadership of an institutional investor often makes the difference between achieving a recovery or having a case dismissed
- Actions led by institutional investors ***have larger recoveries***
- Institutional investor lead plaintiffs have greater influence over the ***quality and experience-level of lawyers*** litigating action
- Institutional investor lead plaintiffs with large financial interests have greater ability to ***negotiate reasonable attorneys fees***
- Institutional investor lead plaintiffs are more likely to seek ***corporate governance improvement*** for long-term share value

Involvement by Institutions Leads to Higher Settlement Values

- Data indicates that when public pension funds are appointed as lead plaintiff, they tend to obtain better results for the class



Labaton Sucharow

•Note: Settlement dollars are adjusted for inflation; 2018 dollar equivalent figures are used.
Cornerstone Research: Securities Class Action Settlements – 2018 Review and Analysis

Responsibilities of Lead Plaintiff

- Lead Plaintiff represents similarly situated shareholders and acts in the best interests of the class, working with its counsel to oversee litigation
- During the first 12 to 18 months of litigation very little staff/board time is required: ***no more than a few hours every few months***
  - Review retention and fee agreement
  - Review periodic case updates and pleadings
  - Preserve relevant documents related to share purchases
- During later phase of litigation slightly more staff time may be required, but ***it will be kept to a minimum***
  - Review periodic case updates and pleadings
  - In some cases sit for a short deposition, but this is often unnecessary
  - Authorize and participate in settlement negotiations

Determination of Taking Legal Action

- We can identify securities litigation matters where NDSIB has exposure and provide client-specific analysis regarding the loss and options for recovery
- We are mindful of our clients' limited time and prioritize our recommendations accordingly – we ***rarely recommend active participation*** in litigation

Active Participation	Passive Participation
• Consider when ***exposure*** is significant • Seek appointment as lead plaintiff in certain cases – courts generally appoint investor with largest financial interest • Pursue "opt-out" from class action and/or bring a direct action	• Remain member of class in U.S. class action - Cede control of contours of class action to lead plaintiff and their counsel

About Us

- Internal Infrastructure
  - More than 70 attorneys
    - Firm Locations:
      - New York
      - Delaware
      - Washington, D.C.
  - Significant trial and appellate court experience
  - Largest team of in-house investigators in the plaintiffs securities bar (including former FBI agents and other law enforcement)
  - Forensic accountants, certified public accountant, and certified fraud examiners
  - Securities/financial analysts
    - Includes analyst with experience as an examiner, financial engineer, and quantitative analyst for the SEC, and as a portfolio manager and specialist for a number of investment firms and asset managers

Representative Clients

- Retained by more than 300 major financial institutions (including over 30 State pension funds) with combined assets under management in excess of $2 trillion, including:
  - Public Employees’ Retirement System of Mississippi
  - Nebraska State Investment Council
  - Indiana Public Retirement System
  - Public Employee Retirement System of Idaho
  - Employees Retirement System of Rhode Island
  - Connecticut Retirement Plans and Trust Funds
  - Virginia Retirement System
  - Maryland State Retirement System

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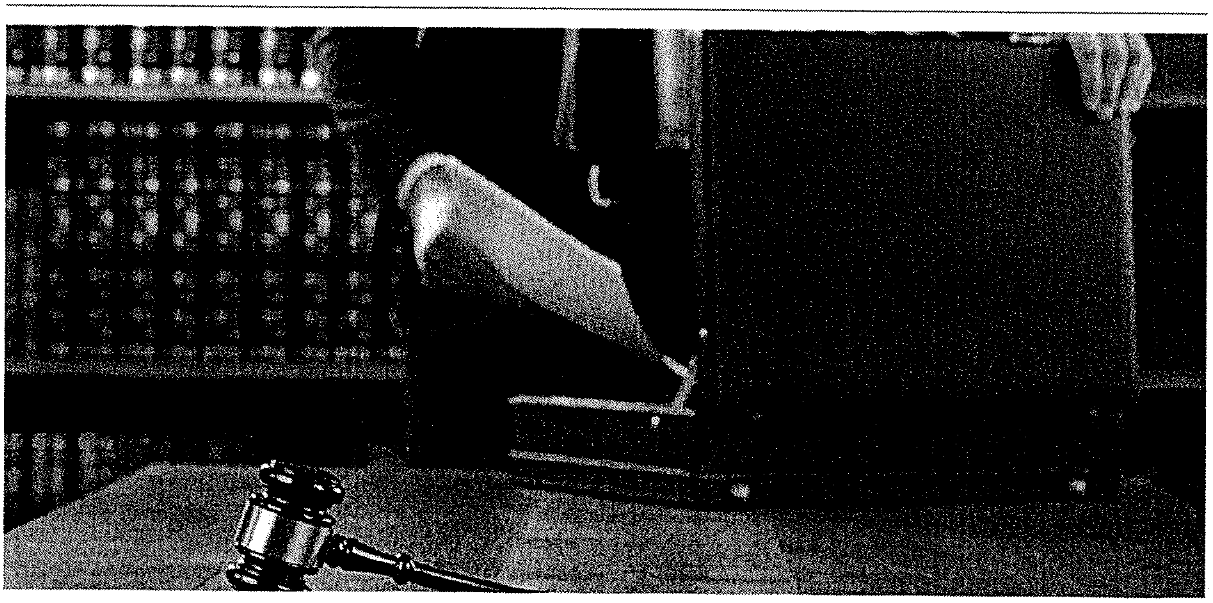
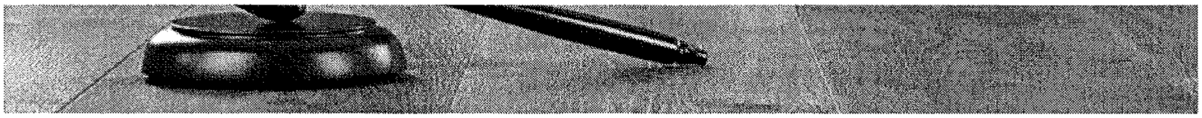
October 31, 2019 04:02 PM | 12 HOURS AGO

ISS sues SEC to stop proxy guidance

HAZEL BRADFORD





Getty Images/iStockphoto

Proxy advisory firm Institutional Shareholder Services Inc. filed a lawsuit Thursday against the Securities and Exchange Commission to halt agency guidance stipulating that proxy advisory firms must disclose how they reach their shareholder recommendations, among other changes.

The complaint, filed in the U.S. District Court for the District of Columbia, Washington, contends that the guidance issued Aug. 21 is unlawful because it exceeds the SEC's statutory authority and was not developed according to rule-making standards.

The lawsuit also contends that the guidance is arbitrary and capricious "because, even though it marks a significant change in the regulatory regime applicable to proxy advice, the SEC has denied that it is changing its position at all. The agency has thus flouted the basic requirement of reasoned decision-making that it at least display awareness that it is changing its position,' ISS said in a release.

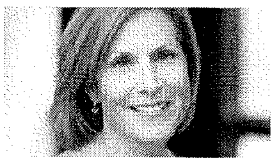
"We are deeply concerned that it will be used or interpreted in a way that could impede our ability to deliver our data, research and analyses in an independent and timely manner," ISS President and CEO Gary Retelny said in the release. "We believe litigation to be necessary to prevent the chill of proxy advisers' protected speech and to ensure the timeliness and independence of the advice that shareholders rely on to make decisions with regards to the governance of their publicly traded portfolio companies."

Linda Kelly, senior vice president, legal, general counsel, and corporate secretary for the National Association of Manufacturers, said in a statement responding to the ISS lawsuit that the SEC "clearly has the authority to provide appropriate oversight of proxy advisory firms via the proxy solicitation rules. We recognize the role these firms play, but they have a track record of providing error-ridden and biased reports that pose a danger to Main Street investors' retirement savings." NAM members, she said, "will continue to support the SEC's efforts to restore balance to the proxy process."

Concern over the guidance and an upcoming Nov. 5 vote on more proxy adviser rule-making is also shared by the Council of Institutional Investors, Washington. In an Oct. 24 letter to the SEC, CII Executive Director Ken Bertsch told the commissioners that the reports of pervasive factual errors in proxy adviser reports are exaggerated or based on misinformation by business groups, and urged SEC officials to gather evidence itself before moving forward on any new rules.

"If the SEC intends to impose a new regulatory structure on proxy advisory firms, it needs to develop evidence, not just leave it to assertions by the subjects of proxy adviser analysis," Mr. Bertsch wrote.

RELATED ARTICLES



SEC shifting to more oversight of proxy firms

SEC lays out proxy advisory firms' responsibilities

Commentary: It's time for the SEC to tackle proxy advisory firms

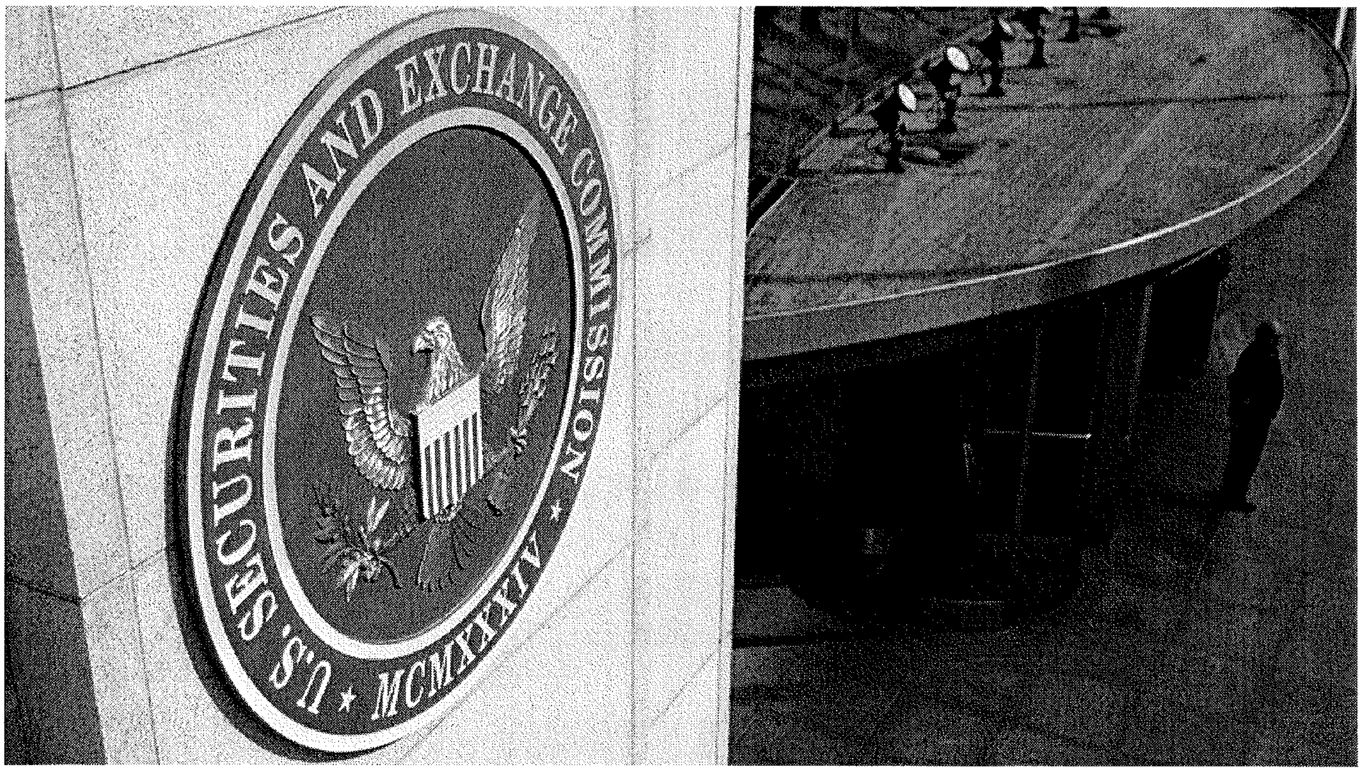
Pensions&Investments

October 30, 2019 01:39 PM | UPDATED 3 HOURS AGO

SEC to vote on changes to shareholder proposal process

Agency to also weigh tighter rules for proxy advisory firms

HAZEL BRADFORD



Bloomberg

The SEC will consider requiring more disclosure of any material conflicts of interest and create procedures for issuer and shareholder engagement.

The SEC is to vote on amending rules governing the shareholder proposal process and to issue rules on disclosure from proxy advisory firms.

The Securities and Exchange Commission is to vote Nov. 5 on whether to amend rules governing the shareholder proposal process and to issue rules requiring more disclosure from proxy advisory firms.

The commission will consider requiring more disclosure of any material conflicts of interest and create procedures "to facilitate issuer and shareholder engagement," a move supported by business groups. In August, the SEC approved guidance stipulating that proxy advisory firms must disclose how they reach their shareholder recommendations.

On the shareholder proposal process changes, a notice on the SEC website posted Wednesday describes it as modernizing submission and resubmission requirements and updating procedural requirements, which is expected to include higher ownership thresholds for submitting proposals.

The shareholder proposal process under SEC Rule 14a-8 allows shareholders meeting certain criteria to submit proposals to be included in a company's proxy statement to be voted on by all shareholders. Business groups have pushed for changes, including higher ownership thresholds. An October 2018 report by the U.S. Chamber of Commerce's Center for Capital Markets Competitiveness found that "zombie proposals" — ones submitted three or more times without garnering majority support — divert corporate resources and harm other shareholders.

Institutional investors consider those shareholder proposals and votes part of their fiduciary duty to beneficiaries. "We don't yet know what the SEC will propose, but we are concerned it may reduce shareholder rights," said Ken Bertsch, executive director of the Council of Institutional Investors, in an email.

Mr. Bertsch said the SEC description of what changes are being considered for proxy advisers "is particularly cryptic, but we gather from news reports that the commission may propose a regulatory structure that would undercut the contractual relationship between investor clients and proxy advisory firms, limiting the firms' independence and business viability.

"The goal appears to be a more management-friendly approach by proxy advisers, particularly on executive compensation," Mr. Bertsch said. "As we wrote to the SEC last week, there is little evidence for the main contention of CEO organizations that tighter regulation is needed because of pervasive errors in proxy advisory firm reports. The SEC should proceed based on evidence, not pressure from CEOs who would like more control of the voting process."

The current commission includes two Democrats and three Republicans, including Chairman Jay Clayton.

The changes are expected to be approved.

RELATED ARTICLES

CII urges SEC to reconsider proxy advisory firm regulation

SEC lays out proxy advisory firms' responsibilities

Sierra Club sues SEC over denial of climate-related shareholder resolutions

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Inline Play

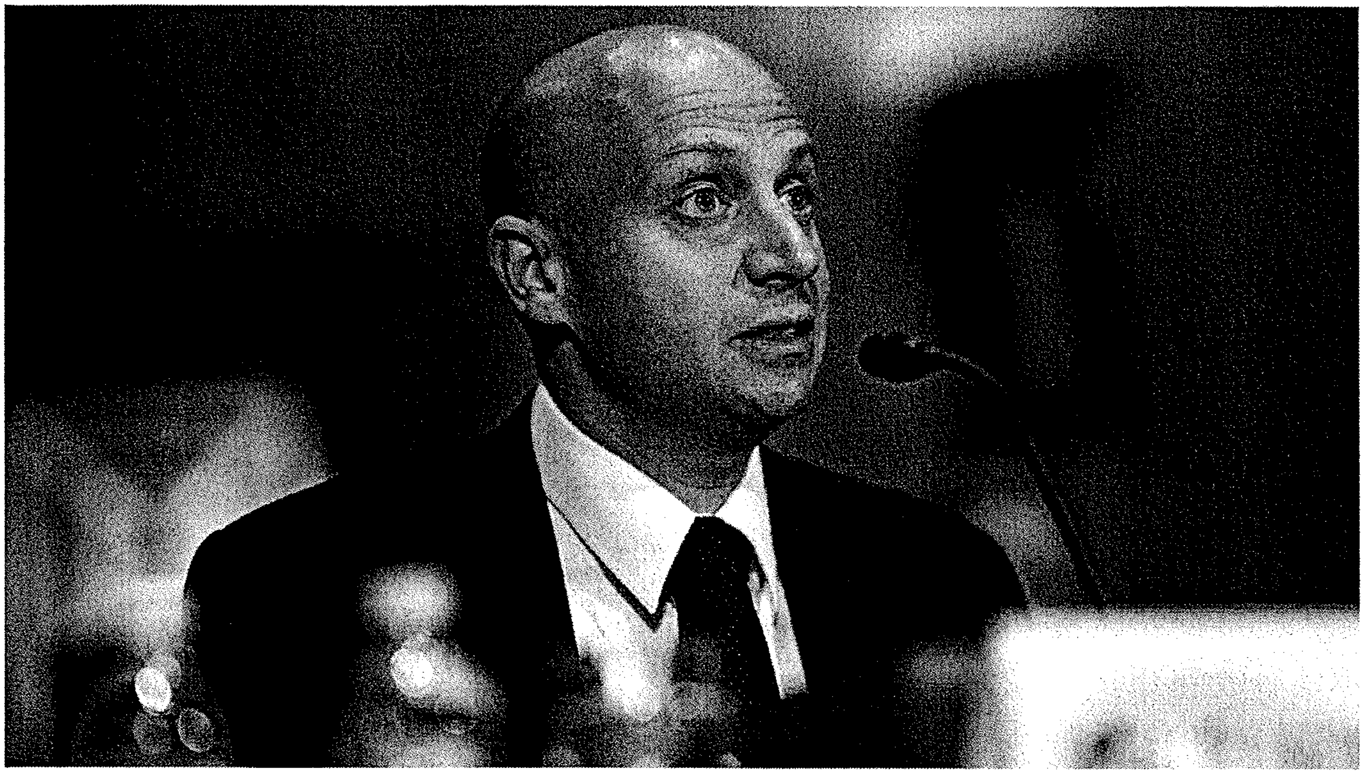
Source URL: ***https://www.pionline.com/regulation/sec-vote-changes-shareholder-proposal-process***

Pensions&Investments

August 21, 2019 03:16 PM

SEC lays out proxy advisory firms' responsibilities

BRIAN CROCE



Bloomberg

Elad Roisman is leading SEC efforts to revamp the proxy voting process; he said the Wednesday vote will not be the last on this issue.

SEC commissioners approved guidance stipulating that proxy advisory firms must disclose how they reach their shareholder recommendations.

SEC commissioners approved guidance Wednesday stipulating that proxy advisory firms must disclose how they reach their shareholder recommendations, in a move applauded by the business community.

The SEC issued an interpretation that proxy voting advice provided by proxy advisory firms generally constitutes a "solicitation" under the federal proxy rules and said the failure to disclose certain information required under existing law would render the advice materially false or misleading.

The commissioners also approved guidance that clarifies how an investment adviser's fiduciary duty relates to an adviser's proxy voting on behalf of clients, particularly if the investment adviser retains a proxy advisory firm. The guidance follows a question-and-answer format and provides examples to help facilitate compliance.

"It's giving a road map of what can be done to help you navigate the existing rules," said Laura D. Richman, counsel at law firm Mayer Brown, who focuses on corporate governance issues and public disclosure obligations.

Both measures passed in 3-2 votes; Democratic commissioners Robert Jackson Jr. and Allison H. Lee dissented.

Ms. Lee said the guidance introduces "increased costs and time pressure into an already byzantine and highly compressed process." Moreover, it calls for "more issuer involvement in the process despite widespread agreement among institutional investors and investment advisers that greater involvement would undermine the reliability and independence of voting recommendations."

Gary Retelny, president and CEO of Institutional Shareholder Services, a proxy advisory firm that along with Glass Lewis & Co., controls about 97% of the market, said the guidance could hurt business and its clients.

"While we will carefully review the guidance issued today to understand the potential impacts for our clients, upon initial review we are concerned that the guidance will hamper our ability to deliver independent, timely and accurate research, data, insights and perspectives to aid in the discharge of their fiduciary duties, " said Gary Retelny, president and CEO of ISS, in a statement.

Business groups like the U.S. Chamber of Commerce, applauded the SEC's decision.

"Proxy advisory firms have been riddled with conflicts of interest, failed to link advice with economic return or company specific information, and lack process and transparency," said Tom Quaadman, executive vice president of the chamber's Center of Capital Markets Competitiveness, in a statement. "We commend the SEC for taking a critical first step in bringing much-needed oversight to proxy advisory firms, and we hope the SEC and other regulators take further action to ensure that proxy advisory firms provide 'decision useful' information to investors."

Through its votes Wednesday, the SEC is not building a new regulatory regime but is explaining the contours of an existing one to help investment advisers and proxy advisers carry out their responsibilities, Commissioner Hester M. Peirce said at the meeting.

"The guidance we are issuing today regarding the provision of proxy advice is designed to help proxy advisers think through their role in the proxy process," Ms. Peirce said.

Gail C. Bernstein, general counsel for the Investment Advisers Association, said she is concerned the guidance will increase costs for advisers and also increase barriers to entry for proxy advisory firms. "While the commission stated at the open meeting that its actions do not create new obligations, we believe that as a practical matter they will for investment advisers," Ms. Bernstein said in a statement. "We are disappointed that the guidance was issued without the opportunity for public comment and without the benefit of an economic analysis."

Commissioner Elad L. Roisman, who is leading the commission's efforts to revamp the proxy voting process, indicated that Wednesday's votes will not be the last on this issue.

Pensions&Investments
July 17, 2019 12:00 PM

Commentary: It's time for the SEC to tackle proxy advisory firms

J.W. Verret

J.W. Verret

It's time for the Securities and Exchange Commission to force the hand of proxy advisers to provide real transparency to the market.

As annual general meeting season comes to a close, there is greater significance to the Securities and Exchange Commission's recent attention to the debate over the role of proxy advisers. The SEC is considering rules on proxy adviser regulation that stand to reshape the industry. Critics of proxy adviser reform question the need for action and argue that investors are not calling for reform. They are wrong.

Among institutional investors, the view is mixed. Certain fund managers such as Trillium Asset Management and Neuberger Berman have been vocal in their defense of the services that proxy advisers provide them. Others, most notably Blackrock, have called for greater accuracy in the data provided by proxy firms, as well as transparency over their operations. That view is shared by many retail investors. Recently, nearly 5,000 participated in a survey of their views on the role and influence of proxy advisers in an extensive study I helped to design. A clear majority voiced support for greater regulatory oversight of proxy advisers.

The power of these firms is unquestionable — and their recommendations shape the outcome of many annual meetings and transactions across capital markets. Hidden behind a veil of opacity, the leading proxy advisers, Institutional Shareholder Services and Glass Lewis, and their proponents argue they have no material influence over voting and merely provide independent research to thousands of institutional investors. Starboard Value, Rite Aid and Albertsons Cos. and a host of companies on the receiving end of negative recommendations are likely to disagree. Those anecdotes are supplemented by academic research.

SEC Commissioner Elad Roisman recently said that "asset managers disclose that they have adopted the proxy voting policies developed by proxy advisory firms." Certain funds not only tend to follow a proxy advisers' house policy but have internal policies in place that make it extremely difficult to vote in a way that diverges from recommendations. Emboldened, ISS and Glass Lewis have anointed themselves as quasi-regulators. The most egregious and recent example is Glass Lewis' statement that it would consider recommending against directors on boards that have excluded proposals under SEC rules. It seems Glass Lewis may view itself as a higher power than the regulator of U.S. capital markets. Worse, ISS has been known to threaten companies to use their "consulting services" in order to spur favorable recommendations. Unsurprisingly, a growing number of stakeholders are starting to voice their concerns over the duopoly that exists in the proxy adviser market.

If proxy advisers were simply a product of market competition, there would be no need for action. But the SEC created the market for these entities with a series of regulatory guidance letters 15 years ago, and early entrants took over the market. The power and prominence of ISS and Glass Lewis is inextricably linked to providing recommendations that allow institutional investors to meet their fiduciary obligations. Without the recommendations, their often-cited research may not be considered very valuable. Having put in place rules creating an artificial demand for proxy advisers, and encouraging investment advisers to use them, the SEC must take a level of responsibility over these entities.

Encouragingly, the SEC has now embarked on that journey to enhance investor protection by reviewing the role proxy advisers play in the U.S. proxy system. Providing clarification that institutional investors can elect when to vote or default to management would be a positive step to tackle the problems associated with existing rules. The SEC should also require added disclosure about how proxy advisers make recommendations, the expertise of those issuing recommendations and — failing an outright ban on clear conflicts of interests — far greater disclosure of their existence, including how they market consulting services to issuers under the soft threat of bad recommendations. And efforts must be made to ensure the accuracy of research being provided — by allowing companies to review draft reports and requiring proxy advisers to report on errors spotted by clients.

The efforts to enhance the quality of proxy adviser reports are likely to meet resistance.

One of the key aims of investment is generating sufficient returns to safeguard the future of investors. Institutional investors claim to discharge their fiduciary obligation by delegating voting decisions to firms who enjoy artificial demand for their services created by regulation, without having to meet any regulatory standards themselves.

Until the SEC can fully undo the damage done by the initial proxy adviser letters, it should be guided by the maxim that sunlight is the best disinfectant. It's time for regulators to force the hand of proxy advisers to provide real transparency to the market.

J.W. Verret is an associate professor at the Antonin Scalia Law School at George Mason University, Fairfax, Va. He also serves on the investor advisory committee of the Securities and Exchange Commission. *This content represents the views of the author. It was submitted and edited under P&I guidelines but is not a product of P&I's editorial team.*

Pensions&Investments

October 15, 2018 01:00 AM

ISS, CII launch website in opposition to House proxy agency bill

BRIAN CROCE

ISS and CII have created a website in opposition of a bill in Congress that they say would alter the nation's proxy advisory landscape.

Institutional Shareholders Services and the Council of Institutional Investors have created a website in opposition of a bill being floated in Congress that they say would alter the nation's proxy advisory landscape.

The website, Protect the Voice of Shareholders, was launched Oct. 2 and "corrects the inaccurate rhetoric pushed by H.R. 4015 proponents," according to an ISS and CII news release.

H.R. 4015, the Corporate Governance Reform and Transparency Act of 2017, passed the House of Representatives late last year and is now being considered in the Senate. Under the bill, proxy firms would have to register with the Securities and Exchange Commission, disclose potential conflicts of interest and codes of ethics, and make public their methodologies for formulating proxy recommendations and analyses.

ISS and CII are opposed to the bill.

"While proponents of H.R. 4015 have created the illusion of problems in proxy advising that need fixing by Congress, what they really seek to do is minimize the voice of shareholders and investors on matters like CEO pay," said Ken Bertsch, executive director of CII, in the news release. "H.R. 4015 would require proxy advisory firms to share their research reports and voting recommendations with the companies that are the subject of their reports and recommendations before they share them with their paying customers, institutional investors. Giving companies the right to review proxy advisors' work before it goes to actual clients is unprecedented interference in the commercial marketplace."

The new website prompts visitors to contact their senators and tell them to oppose H.R. 4015. It also touts a Morning Consult poll conducted in August that found 63% of voters are against the proposed legislation.

Inline Play

Corporate Governance

CorpGov.net: improving accountability through democratic corporate governance since 1995

DON'T LET SPECIAL INTERESTS SILENCE YOUR RIGHT TO HOLD CORPORATIONS ACCOUNTABLE

PROTECT YOUR TOMORROW. TODAY.

TELL CONGRESS NO ON H.R. 4015

Protect the Voice of Shareholders

James McRitchie, October 3, 2018 ,

Protect the Voice of Shareholders is the name of a new website created by Institutional Shareholders Services (ISS) and the Council of Institutional Investors (CII). The educational **website** supports the current system, where institutional investors pay for and receive independent research and voting recommendations from proxy advisory firms for the public corporations in which they are owners.

The site was launched in conjunction with a new Morning Consult **poll** of nearly 2,000 registered voters that found voters do not want Senators to advance the mis-named Corporate Governance Reform and Transparency Act of 2017 (H.R. 4015). H.R. 4015 passed in December 2017 in the U.S. House of Representatives and that, among other changes, would permit public company management to potentially stall or block proxy adviser reports and recommendations to their investor clients.

Said Gary Retelny, ISS president and CEO,

> *H.R. 4015 would harm workers and retirement savers across the country who entrust institutional investors with making informed investment decisions with their hard-earned money. This poll makes clear that American voters want their pension, IRA, and 401(k) managers to continue to receive unbiased, independent research and recommendations from proxy voting advisers and do not support a new law that would change the current system.*

The new **website**, *Protect the Voice of Shareholders* ***(www.ProtectShareholders.org)***, corrects the inaccurate rhetoric pushed by H.R. 4015 proponents and shines light on the powerful special interests that are pushing the legislation. ISS and CII encourage individuals to visit the website to understand why they have collaborated to provide clarity and transparency on these important issues.

Said Ken Bertsch, Executive Director of the Council of Institutional Investors,

> *While proponents of H.R. 4015 have created the illusion of problems in proxy advising that need fixing by Congress, what they really seek to do is minimize the voice of shareholders and investors on matters like CEO pay. H.R. 4015, would require proxy advisory firms to share their research reports and voting recommendations with the companies that are the subject of their reports and recommendations before they share them with their paying customers, institutional investors.*
>
> *Giving companies the right to review proxy advisors' work before it goes to actual clients is unprecedented interference in the commercial marketplace. In practice, it could have the effect of slowing down the issuance of these reports, giving institutional investors less time to do their own analysis. It could also have the effect of encouraging proxy advisory firms to skew their reports and recommendations in favor of companies and no longer allow institutional investors to receive the unbiased and independent information they find useful in assisting them in making informed proxy voting decisions.*
>
> *Finally, H.R. 4015 would increase regulatory costs imposing higher barriers to entry for new firms to enter, or existing firms to remain in, the industry.*

A Morning Consult **poll** of 1,975 registered voters, fielded August 27-29, finds H.R. 4015 to be an important bipartisan issue that Senators should take into account when considering legislation that would undermine institutional investors and their proxy voting advisers. The findings include:

Voters oppose H.R. 4015 and want their Senator to oppose it too

- When asked "Do you support or oppose your Senator backing this proposed law?" of those who expressed opposition (strong or somewhat) or support (strong or somewhat), which was 1,031 respondents, a vast majority – 61% – oppose their Senator backing this legislation.

Institutional Investors should get first look at proxy adviser reports

- Registered voters. 47% of registered voters say Institutional Investors should get a first look at the research and recommendations prepared by proxy advisers, while only 13% say the CEOs and management teams should get a first peek.
- Party Affiliation. There is strong support across the political spectrum for this position – 65% from Democrats, 61% from Republicans, and 55% from independents.

Weighing in on corporate voting matters: Registered voters believe that CEOs and the management teams of public corporations should not interfere with corporate voting matters.

- Across the board, respondents agreed that firms that invest in public corporations on behalf of shareholders should have the ability to receive independent research and vote recommendations, and that public corporation CEOs and management should not interfere in the preparation of that research.
- In fact, voter support is **more than double** (54% versus 20%) compared to the point of view that "if they have a difference of opinion, CEOs and management of public corporations should be able to add their own comments to research reports made by independent researchers on matters like setting their own pay or appointing new people to serve on the Board."

Opposition to H.R. 4015 also comes down to cost.

- 45% of registered voters say they are less likely to support the proposed law on the basis it may increase the cost to everyday shareholders saving for their futures through a pension, IRA or 401(k) plan. By contrast, just 18% say they would be more likely to support the law.
- This sentiment is strongest among Baby Boomers (and 54 – 72), with 54% less likely to support the proposed law due to cost.

More poll details can be found **here**. Full **list of organizations supporting** *Protect the Voice of Shareholders* effort. Congratulations to CII and ISS. I hope *Protect the Voice of Shareholders* will more reach more Americans than the fake news of the so-called **Main Street Investors Coalition**, which is spending millions to ensure corporations are controlled by managers and entrenched boards.

Agenda Item 5

Informational

TO: SIB Securities Litigation Committee

FROM: Dave Hunter, ED/CIO, and Connie Flanagan, Chief Financial Officer

DATE: November 1, 2019

SUBJECT: Securities Litigation – Footnote Disclosure of Contingencies

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Note 11 - Contingencies/Litigation

The State Investment Board has been named as a defendant in two cases, arising out of the Tribune and General Motors bankruptcy proceedings, relating to securities that were purchased by external investment managers in one or more portfolios held by the SIB on behalf of its investment client funds. Outside counsel has been retained for both cases, in addition to assistance received from the ND Office of Attorney General. The SIB became a party to a Settlement Agreement dated April 10, 2019, as a Term Lender in the General Motors bankruptcy proceeding. This liability will be borne by other parties, so no liability was accrued by the SIB as of June 30, 2019. On July 15, 2019, in the Tribune proceeding, the Litigation Trustee filed a Notice of Appeal to the Second Circuit, appealing the various judgements of the U.S. District Court that dismissed his claims against defendants in the Action and denying leave to amend his complaint to add a constructive fraudulent conveyance claim. It is expected that briefing of the legal issues before the Second Circuit will occur in late 2019 and early 2020. Accordingly, no liability has been recorded at this time.

Note: K&L Gates has been retained for legal representation in the Tribune case and Kasowitz Benson Torres has been retained for legal representation in the General Motors case, as overseen and approved by North Dakota's Office of the Attorney General.

AGENDA ITEM IV.C.

Informational

TO: **State Investment Board**

FROM: Dave Hunter

DATE: November 18, 2019

SUBJECT: **Legacy Fund Earnings Committee Update**

RIO was requested to provide an overview of U.S. Sovereign Wealth Funds (SWF) to the Legacy Fund Earnings Committee. **The attached presentation was used to guide a discussion of RVK's recent SWF survey results, while highlighting use of the Percent of Market Value (POMV) approach when establish a sustainable spending policy that is prudent, responsible and transparent.** RIO noted the POMV approach is commonly used by most other SWF's including *North Dakota's Common Schools Trust Fund*, and is widely accepted as a best practice by many endowments and foundations.

The presentation included examples for computing the "spending rate" using the POMV approach assuming smoothing periods of 3 or 5 years and an assumed 4% annual spending rate (based on discussion with Callan and other SWF's).

Senator Rich Wardner referenced the POMV approach is his earnings presentation which included a 4% annual spending rate.

Mr. David Teal, Director, Alaska Division of Legislative Finance, also referenced the benefits of the POMV approach in his presentation on the "*Alaska Permanent Fund and Its Impact on the State Budget – Implications for North Dakota*".

RIO highlighted the budget challenges presented by the current definition of Legacy Fund earnings, as defined by NDCC 21-10-12, noting that investment earnings are inherently volatile over shorter time periods (such as a two-year budget cycle). RIO also noted the risk inherent in attempting to develop and finalize a biennial budget at least two months prior to the end of the current biennium when it is based on a volatile earnings definition which is uncertain until the end of the biennium. RIO believes most legislative attendees understood these risks and the importance of adopting an earnings formula or spending policy which was less volatile and less uncertain than the current earnings definition, **although some concern was raised about the establishment of an "earnings reserve fund" in order to prevent principal (deposits) from being spent (without a super majority vote).**

RIO understands the benefits of an earnings reserve fund, which was also referenced by Mr. David Teal. However, RIO believes that earnings can be easily tracked and reported on a monthly basis using our existing financial reporting system. RIO already reports earnings as defined by NDCC 21-10-12 on Legacy Funds' financial statements which are reported on our NDRIO website after every month-end. Inception to date earnings, as defined by U.S. GAAP, totaled approximately $1.479 billion as of September 30, 2019, versus inception to date distributions of $455.263 million. By reporting inception to date earnings and distributions on the face of our Legacy Fund financial statements each month-end, the informed financial statement reader will be able to determine when earnings distributions are approaching inception to date earnings thereby raising public awareness and understanding of this event without having to incur any incremental cost or administrative burden of establishing a separate earning reserve fund. RIO is not opposed to establishing an earning reserve fund if it is deemed to be important for other reasons. At this time, however, RIO believes the establishment of a separate reserve account is unnecessary as it will create an additional administrative burden, slightly increase investing costs, and potentially increase program complexity.

The Legacy Fund Earnings Committee presentation included two examples for computing the "spending rate" using the POMV approach. The most widely used POMV approach uses a historical "smoothing period" of 5-years in addition to an alternative POMV approach which uses a historical "smoothing period" of 3-years. Both alternatives assumed a 4% annual spending rate which appears to be conservative when compared to most other SWF's. Please note the most recent fiscal year end of any biennium is excluded to enhance budget certainty and eliminate undue risk.

Ending Fund Market Value Example (5-Years)							
Year 5	$4	billion					
Year 4	$5	billion					
Year 3	$6	billion					
Year 2	$7	billion					
Year 1	$8	billion					
5-Year Average	$6	billion	x	4%	=	$240	million
						2	years
						$480	million

Ending Fund Market Value Example (3-Years)							
Year 3	$6	billion					
Year 2	$7	billion					
Year 1	$8	billion					
3-Year Average	$7	billion	x	4%	=	$280	million
						2	years
						$560	million

Key Highlights: David Teal, Director, Legislative Finance Division – Presentation on "*Alaska Permanent Fund and Its Impact on the State Budget – Implications for North Dakota*" follows RIO Legacy Fund Earnings Committee presentation.

Key Question on Spending Legacy Fund Earnings (slide 8):

Why would you spend earnings on operating items before your oil production curve turns downward?

Considerations on Spending Legacy Fund Earnings

1. The 30% set-aside of oil revenue that you (and your predecessors) didn't spend is the legacy. The fund is a financial asset that you created to generate future revenue. The other 70% of oil revenue provides current benefits.
2. Future revenue is not designated for legacy projects; earnings are simply general fund revenue that is intended to replace declining oil revenue.
3. Nothing prevents current earnings from adding to the legacy fund or being used for legacy projects or programs.
4. Use of current earnings for purposes other than increasing the size of the legacy fund will reduce future earnings.
5. If earnings go to the general fund, the revenue stream should be stripped of as much volatility as possible.
6. Why spend annual earnings before oil production begins to decline? Doing so shifts benefits from the future to the present.

What can North Dakota learn from Alaska's experience?

Focus on the intent: build a true legacy fund—one that transfers wealth from the "producing generation" to "post production" generations.

1. **Do not eliminate "normal" revenue sources.** Ensure that reducing taxes is based on the 70% revenue stream to the general fund, not grabbing a share of the 30% revenue stream to the legacy fund.
2. **Avoid using earnings for government services before oil revenue begins to decline.**
3. **When you begin to use earnings, implement a variable POMV payout system.** It will give you a sustainable revenue stream that can protect the real value of the fund and offers tremendous advantages in budget planning.
4. **Keep the payout simple.** Alaska wasted three years on overly complex mechanisms—a simple system with the payout rate rising as production declines has many advantages—including a larger legacy.
5. **Avoid paying dividends to individuals.** Individual dividends will create an entitlement mentality that will haunt you in the future. Community dividends are less insidious, but are less progressive.
6. **North Dakota government can retire if you do this right.** If Alaska had not paid dividends, the fund balance would be sufficient to generate a sustainable payout that covers all general fund expenditures.

Legacy Fund Earnings Committee

Overview of U.S. Sovereign Wealth Funds

November 13, 2019

Dave Hunter, Executive Director/CIO

Darren Schulz, Deputy Chief Investment Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

NORTH Dakota | Retirement and Investment

Be Legendary.™

Summary of Top U.S. Sovereign Wealth Funds

Sovereign Wealth Fund Institute (SWFI)
Top U.S. Sovereign Wealth Funds
Ranked by Total Assets

		U.S. $ in billions	General Consultant
1	**Alaska Permanent Fund Corporation**	**$ 67.2**	**Callan**
2	Texas Permanent School Fund	$ 46.5	NEPC
3	University of Texas Investment Management Co.	$ 44.0	-
4	New Mexico State Investment Council	$ 23.3	RVK
5	Wyoming Permanent Mineral Trust Fund	$ 8.0	RVK
6	**North Dakota Legacy Fund** *1*	**$ 6.4**	**Callan**
7	*Arizona State Treasurer Office - Land Endowment* 2	$ 6.2	-
8	*North Dakota Common Schools Trust* 2	$ 5.0	RVK
9	Alabama Trust Fund	$ 3.3	Callan
10	Utah School & Institutional Trust Funds Office	$ 2.6	F.E.G.

1 - NDSIB client assets exceed $16.7 billion in mid-November of 2019

2 - SWFI omitted AZ State Treasurer Office & ND Common Schools Trust Fund

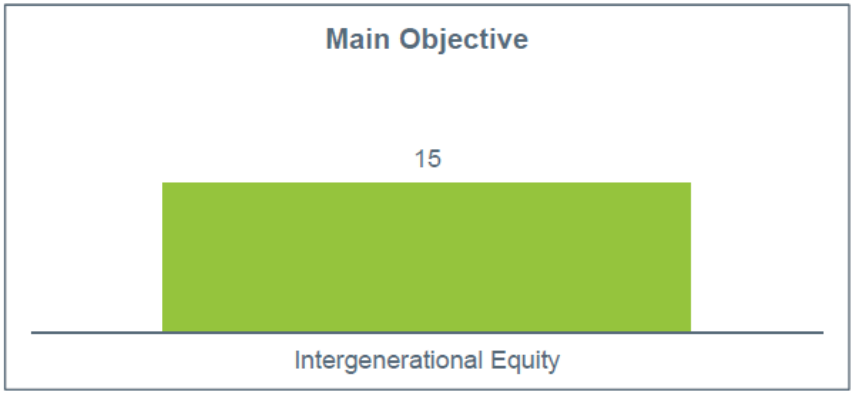
North Dakota's Legacy Fund is ranked as the 6th largest U.S. Sovereign Wealth Fund as of Sep. 30, 2019.

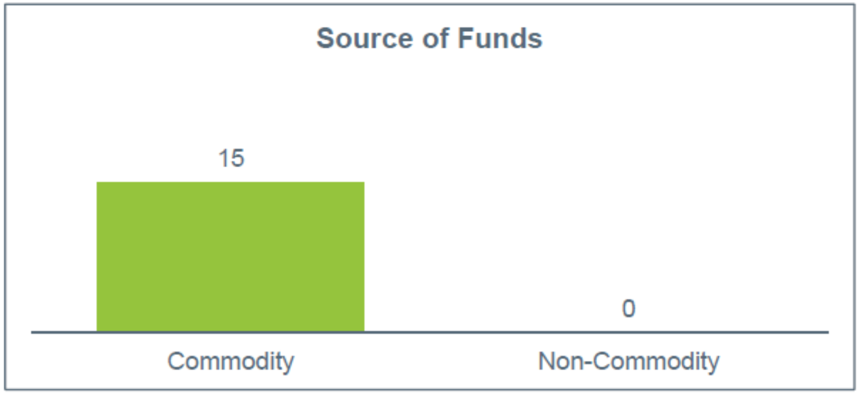
Most U.S. SWF's engage an investment consultant to assist their governing boards in asset allocation.

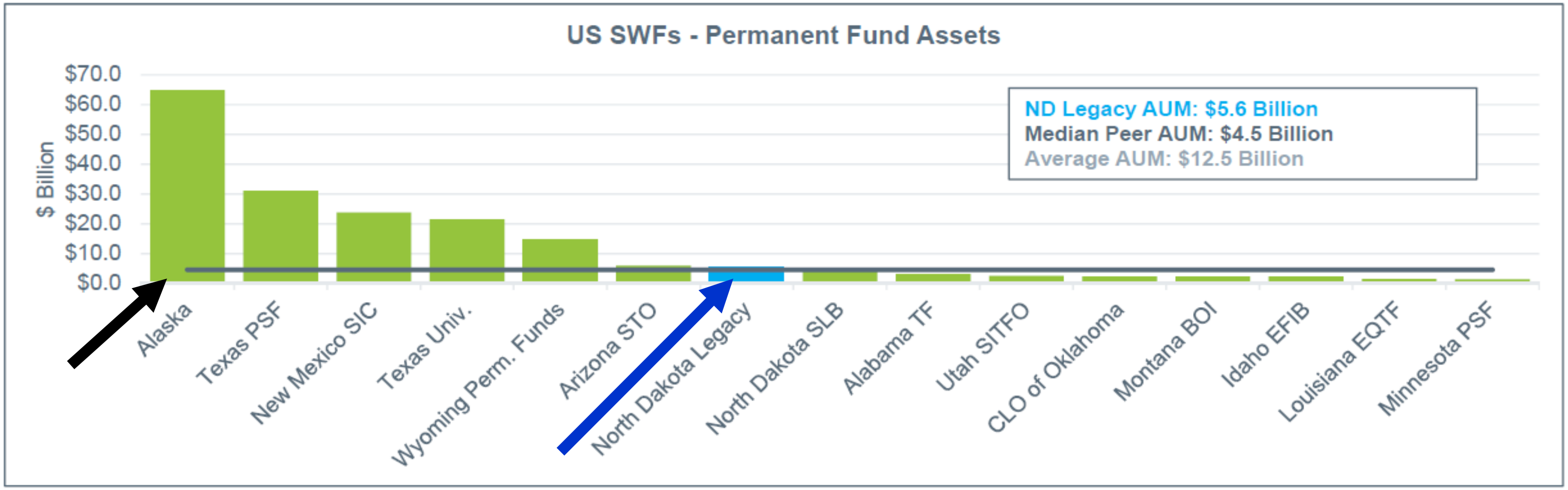
Data shown above is unaudited, subject to change and based on the most recently reported market valuations.

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.

Most U.S. Sovereign Wealth Funds use Percent of Market Value (POMV) to determine a Spending Rate

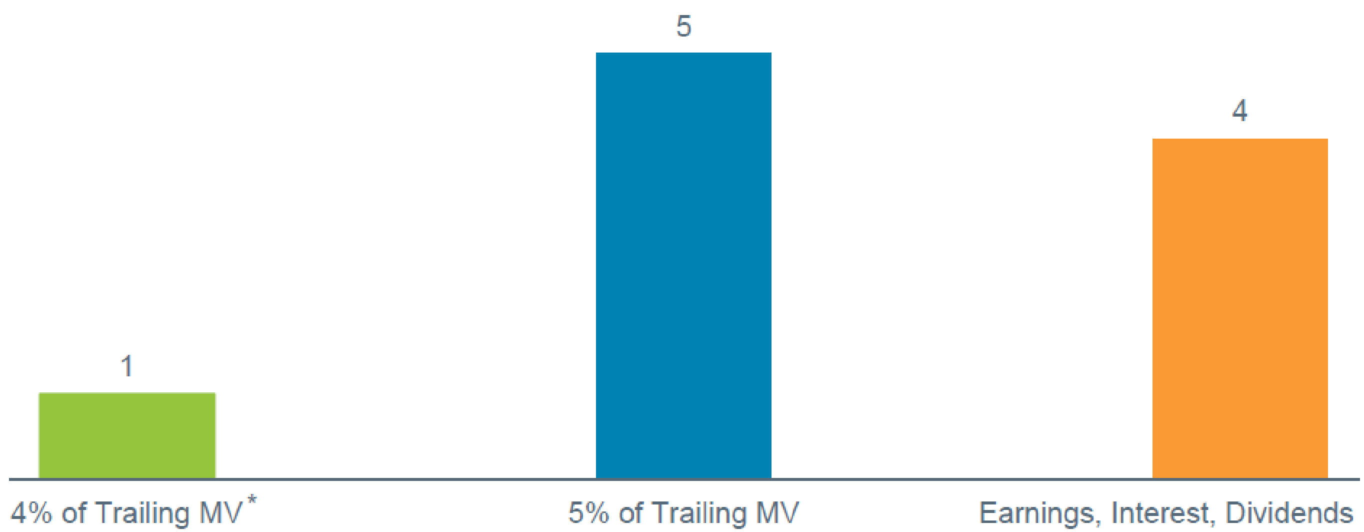
Constraints and Spending

RVK

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



Most SWF's use a predetermined percentage (of 4% to 5%) applied to the total fund market value for the prior 3 to 5 years.

Percent of Market Value (POMV) Example

Example: The POMV approach uses the average ending market value of a fund from the prior 5 fiscal years and applies an earnings distribution of 4 percent to establish a sustainable spending policy for the future.

Ending Fund Market Value Example (5-Years)

Year 5	**$4 billion**					
Year 4	**$5 billion**					
Year 3	**$6 billion**					
Year 2	**$7 billion**					
Year 1	**$8 billion**					
5-Year Average	**$6 billion**	**x**	**4%**	**=**	**$240**	**million**
					2	**years**
					$480	**million**

Ending Fund Market Value Example (3-Years)

Year 3	**$6 billion**					
Year 2	**$7 billion**					
Year 1	**$8 billion**					
3-Year Average	**$7 billion**	**x**	**4%**	**=**	**$280**	**million**
					2	**years**
					$560	**million**

Notes:* *Earnings distribution rates commonly range from 4% to 5% and the trailing number of years generally range from 3 to 5 years. The annual spending (or distribution) rate of 4% is multiplied by 2 due to the State of North Dakota's two-year budget cycle.

- The Percent of Market Value (POMV) approach is prudent, responsible and transparent method for defining future Legacy Fund earnings.
- 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.
- *"This approach seeks to eliminate undue risk when developing a sustainable spending policy for future state budgeting and reporting purposes." State Treasurer Kelly Schmidt*
- *"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*

North Dakota Legacy Fund
Estimated Future Earnings Using Percent of Market Value Approach
Forecast as of June 30, 2021

	Deposits	Total Net Earnings	Total Distributions	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*	*(455,263,216)*	*546,143,853*	*6,122,227,871*
*FY2020 **	*643,000,000*	-	-	*643,000,000*	*6,765,227,871*
FY2021		*The most recent fiscal year end is excluded each biennium*			-
		Average net position for five prior FYE's			5,391,143,767
		Average net position for three prior FYE's			6,154,513,254
		Potential Annual Spend Rate			4.00%
		Potential Biennial Spend Rate (times 2)			2
POMV 5-YEAR AVERAGE		Potential Biennial Spend Rate in $ with 5-YEAR AVERAGE			431,291,501
POMV 3-YEAR AVERAGE		Potential Biennial Spend Rate in $ with 3-YEAR AVERAGE			492,361,060

** FY2020 Deposits are forecasted estimates whereas FY 2020 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 3, 4, or 5 percent to establish a sustainable spending policy. The POMV 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.

ND Legacy Fund
Summary of Deposits, Earnings and Net Position
As of May 31, 2019

Fiscal Year End data as of June 30, 2019, will not be available until late-August.

	Deposits	Total Net Earnings	Net Increase/ (Decrease)	Ending Net Position	Earnings as defined by NDCC 21-10-12
FY2012	**396,585,658**	2,300,225	398,885,883	398,885,883	2,571,475
FY2013	**791,126,479**	4,216,026	795,342,505	1,194,228,388	15,949,089
FY2014	**907,214,971**	113,153,662	1,020,368,633	**2,214,597,021**	50,033,655
FY2015	**1,011,343,040**	99,895,650	1,111,238,690	**3,325,835,711**	95,143,905
FY2016	**434,853,950**	45,851,680	480,705,630	**3,806,541,341**	65,326,673
FY2017	**399,501,134**	479,595,256	879,096,390	**4,685,637,731**	207,814,875
FY2018	**529,870,755**	360,575,532	890,446,287	**5,576,084,018**	**242,859,840**
FY2019 *	***628,610,681***	*53,186,743*	*681,797,424*	***6,257,881,442***	***212,403,376***
Since Inception	**5,099,106,668**	**1,158,774,774**	**6,257,881,442**	**6,257,881,442**	**892,102,888**

All earnings up to June 30, 2017, became part of principal	436,839,672
Current Earnings Defintion ========> FY 2018 and FY 2019 earnings transferred out on July 23, 2019	**455,263,216**

NDCC 21-10-12 defines "earnings" as net income in accordance with generally accepted accounting principles <u>excluding any unrealized gains or losses</u>.

NOTE: Earnings, as defined by NDCC 21-10-12, are inherently volatile and therefore difficult to forecast and rely upon for State budgeting purposes. Risk can be reduced by redefining transferrable earnings to be based on a Percent of Market Value of Legacy Fund assets in prior fiscal years.

In-State Investment Program Update -
North Dakota Legacy Fund and Alaska Permanent Fund

NORTH DAKOTA

On August 23, 2019, the ND State Investment Board (SIB) dedicated an additional $100 million in Legacy Fund investments to providing cost-efficient financing to companies seeking to develop new businesses in North Dakota.

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. Funding for this program was transferred into the Legacy Fund from the Budget Stabilization Fund in early-2017.

"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.

***Alaska Permanent Fund Corporation (APFC) Launches In-State Investment Program** – **September 20, 2019** – APFC is pleased to announce the launch of the Alaska Investment Program. Recognizing the opportunity to earn attractive returns by backing emerging private market fund managers and private market investment opportunities in Alaska, APFC's Board of Trustees, through Resolution 18-03, directed APFC staff to select external private market fund managers to execute an Alaska focused private markets investment program with an initial allocation of **$200 million**.*

Consistent with the requirements of Alaska Statute 37.13.120(c), this strategic approach to identifying and supporting talented private market fund managers and investments within Alaska will target a rate of return and a risk profile consistent with similar investments outside of Alaska.

*Following a competitive process, two external fund managers were selected to implement this strategy: McKinley Capital Management, LLC and Barings, LLC. At a presentation before Accelerate Alaska in Anchorage, **CEO Angela Rodell noted "we are excited to get this program underway and look forward to working with these two managers to achieve competitive, market-based investment returns and capture investment potential right here in Alaska."***

McKinley Capital Management, LLC ("McKinley") was founded in 1990 and today is the largest private financial services company in Alaska. McKinley currently manages approximately $5 billion worldwide for corporate and public pension funds, sovereign wealth funds, and other institutional investors.

A subsidiary of MassMutual, Barings, LLC is a global investment firm dedicated to meeting the evolving needs of clients and customers. Headquartered in Charlotte, North Carolina, Barings LLC and its subsidiaries have $325 billion under management and maintain a strong global presence with business and investment professionals located across North America, Europe and Asia Pacific.

Interim Update of Investment Returns -
North Dakota Legacy Fund and Alaska Permanent Fund

North Dakota Legacy Fund Returns for the first quarter of Fiscal Year 2020 **November 12, 2019**

North Dakota's Legacy Fund (Legacy) investments gained 1.01% during the first quarter of the fiscal year 2020, and the Legacy Fund ended September 30, 2019, with total assets under management valued at $6.4 billion (unaudited).

For performance evaluations purposes, the North Dakota Retirement and Investment Office (RIO) reports net investment results on a monthly and quarterly basis, but generally focuses on **5-year trailing returns** at every quarter end as reviewed by our performance consultant, Callan. It is understood that there will be a wide range of returns delivered by each asset class of the Legacy Fund over any given time. Callan projects a total return of 5.8% over the next 10-year period based on the asset allocation policy approved by the Legacy Fund Advisory Board and the North Dakota State Investment Board (SIB). It is accepted that actual results for individual years will be higher and lower, but it is expected that they will average approximately **6%** over the next 10 years.

	Qtr. Ended 9/30/2019	1 Yr Ended 9/30/2019	3 Yrs Ended 9/30/2019	5 Yrs Ended 9/30/2019
Total Fund Return - Net	**1.01%**	**3.79%**	**7.04%**	**6.32%**
Policy Benchmark Return	0.99%	4.88%	6.67%	5.68%
Total Relative Return	0.02%	-1.08%	0.37%	0.63%

The Legacy Fund has earned a net investment return of 6.3% for the 5-years ended September 30, 2019, surpassing its long-term assumed rate of return of approximately 6%.

Investment performance reviews will be presented by Callan and RIO at our next quarterly SIB meeting on Friday, November 22, 2019. The SIB meeting agenda will be posted on https://www.nd.gov/rio/SIB/Board/SIB%20Meeting%20Materials/default.htm a week in advance of the meeting.

Alaska Permanent Fund Returns for the first quarter of Fiscal Year 2020 ***November 1, 2019***

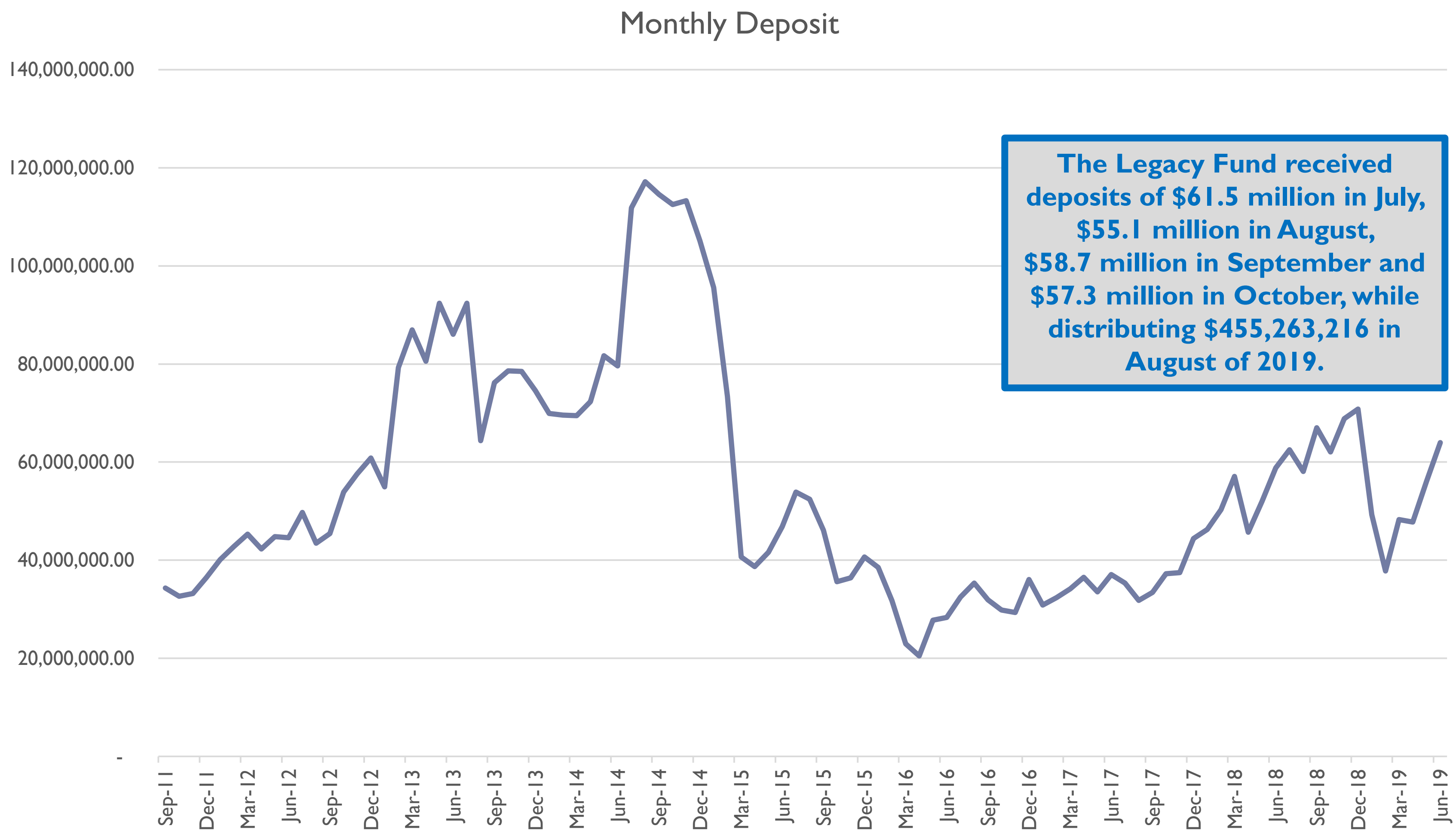
The Alaska Permanent Fund's (Fund) investments gained 1.24% during the first quarter of the fiscal year 2020, and the Fund ended September 30, 2019, with total assets under management valued at $64.1 billion (unaudited).

… For planning purposes, APFC references both a current fiscal year and a 10-year forecast for the projected return of the Fund that is provided by our performance consultant, Callan Associates. It is understood that there will be a wide range of returns delivered by each asset class to the total Fund performance over any given time. Callan Associates projects a total return of 7% over the next 10-year period for the portfolio that APFC has constructed for the Fund. … It is accepted that actual results for individual years will be higher and lower, but it is expected that they will average to ***7%*** *over the forecasted period of 10 years.*

… Performance overviews and updates for each asset class will be presented by Callan Associates and APFC's Directors to APFC's Board of Trustees during their quarterly meeting on December 3-4, 2019, in Fairbanks. The public is welcome to attend the meeting in person or via webinar, and the agenda will be posted on apfc.org one week in advance of the meeting.

Data shown above is unaudited and subject to change, but deemed to be materially accurate.

Monthly Deposits into Legacy Fund



The Legacy Fund received deposits of $61.5 million in July, $55.1 million in August, $58.7 million in September and $57.3 million in October, while distributing $455,263,216 in August of 2019.

Legacy Fund earnings have exceeded $1.5 billion since inception as of October 31, 2019.

RVK U.S. Sovereign Wealth Fund Survey Report

<u>Overview of RVK Peer Survey</u>:

In 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.

At the request of the Legacy Fund Earnings Committee, RIO's investment team worked with RVK investment consultants Josh Kevan and Jake Derrah to obtain the attached RVK U.S. Sovereign Wealth Fund Report.

RVK's U.S. Sovereign Wealth Fund Survey Consultants

Joshua Kevan, CFA
Senior Consultant, Principal

Joshua ("Josh") Kevan is a Senior Consultant with RVK. He joined RVK in 2000 and leads our Boise, Idaho office. As a Senior Consultant, Josh advises a diverse mix of clients that include defined benefit plans, defined contribution plans, endowments and foundations, insurance companies, and other special purpose funds.

Josh earned a Bachelor of Arts degree in Business from the University of Washington. He holds the Chartered Financial Analyst designation and is a member of the CFA Institute and the CFA Society of Idaho. Josh is a shareholder of the firm.

Jake Derrah
Investment Associate

Jake Derrah is an Investment Associate with RVK. He joined RVK in 2013 and is located in our Portland office. As an Investment Associate, Jake works with a diverse client base including public and corporate pensions, endowments and foundations, sovereign wealth funds, and defined contribution plans. As a member of the consulting team, he works on a variety of projects including asset allocation studies, manager structure analyses, client education presentations, and portfolio rebalancing.

Jake graduated from Oregon State University with cum laude honors and a Bachelor of Science degree in Finance and Marketing.

Alaska's Permanent Fund and Its Impact on the State Budget:

Implications for North Dakota

North Dakota Legacy Fund Earnings Committee

November 13, 2019

David Teal, Director, Legislative Finance Division, Alaska

The Purpose of the Permanent Fund

1. "The Permanent Fund began, chiefly, with a 'negative' goal, to place part of the one-time oil wealth beyond the reach of day-to-day spending." Elmer Rasmuson, first chairman of the Permanent Fund Board of Trustees
2. Governor Jay Hammond wanted to make an intergenerational transfer and he hoped to achieve it by converting finite natural resource wealth into perpetual (or permanent) financial wealth that would generate revenue for the benefit of future Alaskans long after the oil was gone.

Comparing Alaska's Permanent Fund to North Dakota's Legacy Fund

What money goes into the funds?

Both Alaska and North Dakota constitutionally protect a portion of oil and gas revenue.

Comparing Alaska's Permanent Fund to North Dakota's Legacy Fund

How is the fund protected from appropriation?

1. Alaska has a ***permanent*** fund—the principal of the fund cannot be appropriated.

Article IX, sec. 15, Constitution of the State of Alaska

At least twenty-five percent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses received by the State shall be placed in a permanent fund, **the principal of which shall be used only for those income-producing investments** specifically designated by law as eligible for permanent fund investments. All income from the permanent fund shall be deposited in the general fund unless otherwise provided by law. (Effective February 21, 1977)

2. North Dakota has a ***legacy*** fund—principal can be appropriated with a supermajority vote.

Is your goal to provide legacy infrastructure or legacy financial strength?

Considerations:

1. The more money that is deposited into the fund and the less money that is spent, the larger the financial legacy.
2. Roughly 30% of the principal of the Permanent Fund is attributable to constitutionally mandated deposits.
3. You may choose to
   a) never appropriate principal,
   b) make additional deposits to offset the impact of inflation,
   c) make non-mandatory deposits to prevent money from being spent for unsustainable operating or capital purposes, and/or
   d) not spend earnings on “normal” government operations.
4. If you do all four, you would be following in Alaska’s footsteps.

Comparing Alaska’s Permanent Fund to North Dakota’s Legacy Fund

How can the fund be invested?

1. Investment options aren’t a critical difference.
2. Investors balance risk and return. In the early years, Alaska could invest only in high grade bonds. Rules have loosened over the years and we have very few restrictions any more. I expect that the board will come to you if they need more investment flexibility.

Comparing Alaska’s Permanent Fund to North Dakota’s Legacy Fund

What is the purpose of the fund?

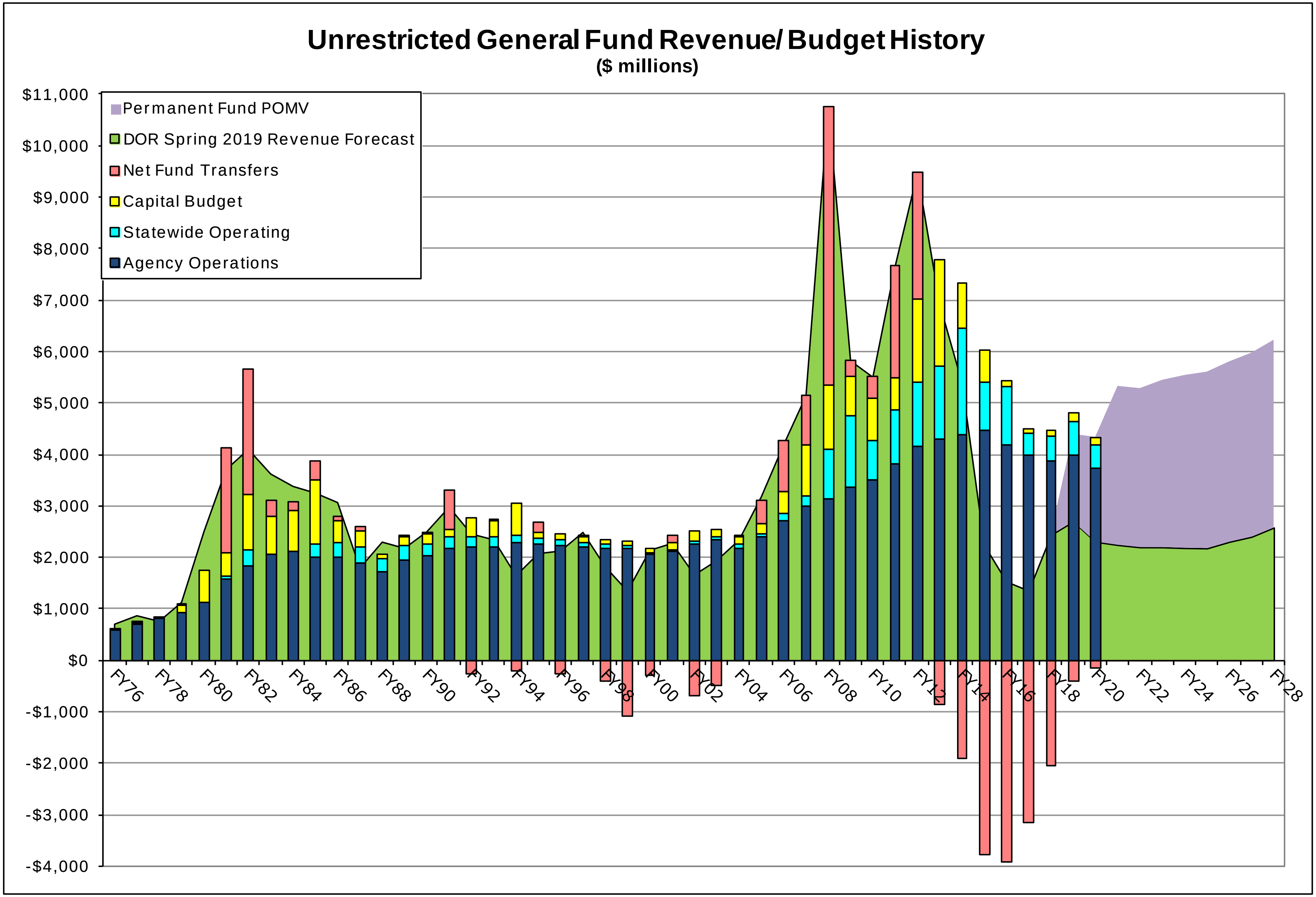
1. “Purpose” does not refer to why a portion of nonrenewable resource revenue should be set aside for future generations. To all but the greedy, establishing a legacy is fair and reasonable. You have taken that step.
2. The debate is about earnings: when, how much, and for what purposes should they be used?

Spending Legacy Fund Earnings

1. You are now at a point that earnings are available and spending decisions will be made—by default if not by design.
2. Question: Why would you spend earnings on operating items before your oil production curve turns downward?

How did the Permanent Fund affect Alaska's budget?

1. Alaska transferred Permanent Fund earnings to the general fund and spent them for a few years, just as outlined in the Constitution.
2. Then we eliminated the individual income tax in 1980. (Not attributable directly to earnings of the Permanent Fund—The non-legacy portion of revenue was so large that some people saw no need to tax.)
   - Big mistake
     a) The legacy just took a big shift from post-oil generations to the oil-producing generation. Could have set more aside.
     b) We became more reliant on oil—a volatile revenue source.
     c) Repeal of the income tax was Governor Hammond's "greatest regret."


Unrestricted General Fund Revenue/ Budget History
($ millions)
Permanent Fund POMV
DOR Spring 2019 Revenue Forecast
Net Fund Transfers
Capital Budget
Statewide Operating
Agency Operations
$11,000
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
-$1,000
-$2,000
-$3,000
-$4,000
FY76
FY78
FY80
FY82
FY84
FY86
FY88
FY90
FY92
FY94
FY96
FY98
FY00
FY02
FY04
FY06
FY08
FY10
FY12
FY14
FY16
FY18
FY20
FY22
FY24
FY26
FY28

How did the Permanent Fund affect Alaska's budget?

3. Alaska began paying dividends to citizens in 1982.
   a) Not only did this shift benefits from the future to the present, it created an entitlement mentality that is proving extremely difficult to change: some Alaskans believe they should not pay taxes and that dividends are the way we get our fair share of the mineral rights that the state stole from us upon statehood.
   b) Dividends prompted the following changes
      1. inflation proofing (good idea—accounts for 1/3 of the fund's value).
      2. an earnings reserve account (a necessary evil to address volatility of earnings).
      3. a halt to spending earnings for public services that persisted until FY19. The impact of this policy tradition significantly increased the size of the legacy

Why did Alaska pay dividends?

1. **Build a political constituency to protect the Permanent Fund's principal against raids by special interests.** May have been important.
2. **People make the best spending choices.** In theory, the State cuts assistance to communities, communities claw back the dividends according to local choice. This was a failed experiment.
3. **People have a right to a share of the oil wealth.** Why cash instead of services?
4. **Deliver benefits more equitably than alternative uses of the surplus oil money.** But that means that any reduction to dividends is regressive.
5. **Fortify the safety net for low-income Alaskans.** Flawed concept.

How did the Permanent Fund affect Alaska's budget?

3. Alaska began paying dividends to citizens in 1982. Alaska has the only sovereign wealth fund in the world that distributes money to citizens.
   a) Not only did this shift benefits from the future to the present, it created an entitlement mentality that is proving extremely difficult to change: some Alaskans believe they should not pay taxes and that dividends are the way we get our fair share of the mineral rights that the state stole from us upon statehood.
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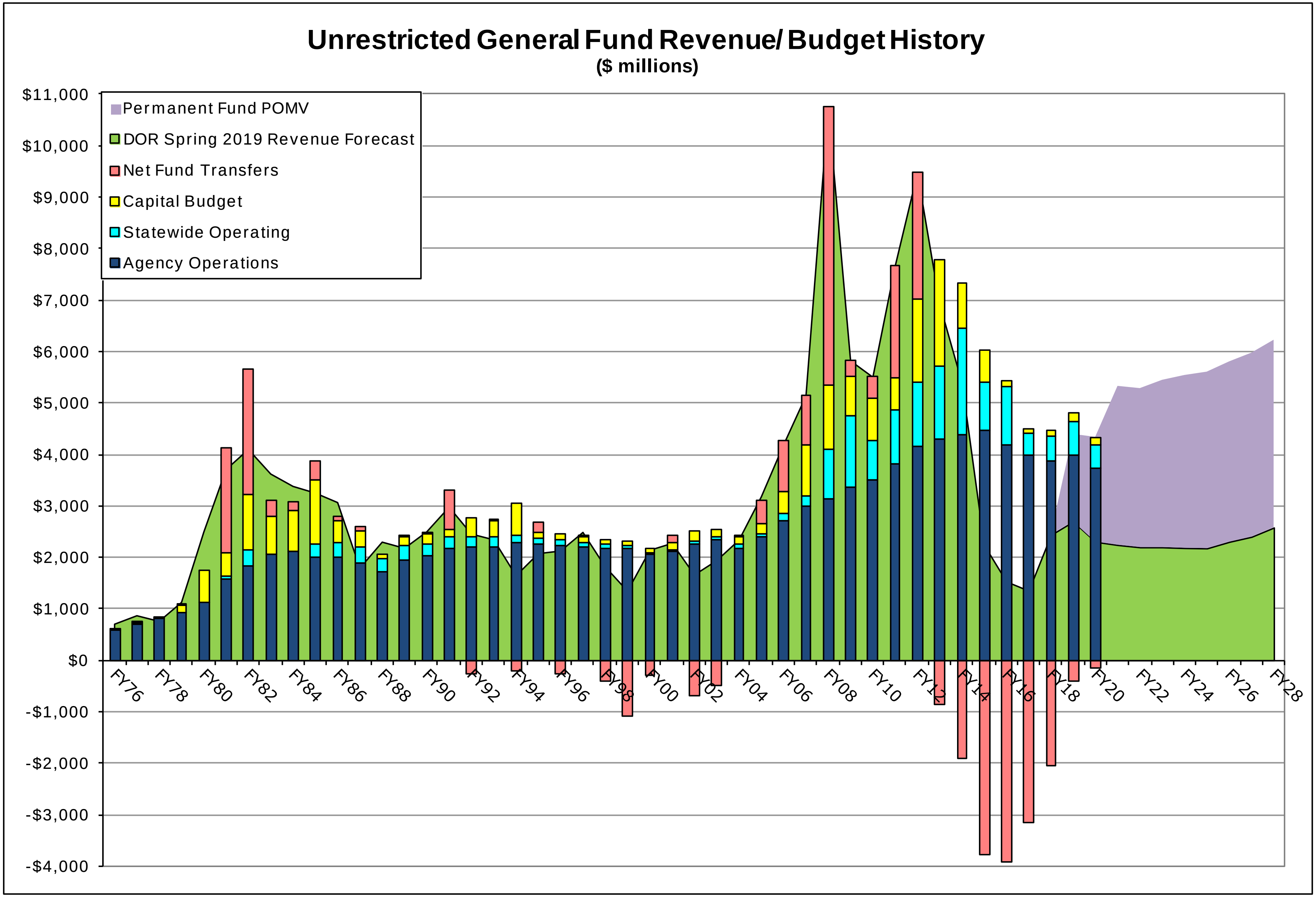
      1. inflation proofing (good idea—accounts for 1/3 of the fund's value).
      2. an earnings reserve account (a necessary evil to address volatility of earnings).
      3. a halt to spending earnings for public services that persisted until FY19. The impact of this policy tradition significantly increased the size of the legacy

How did Permanent Fund <u>earnings</u> affect Alaska's budget process?

1. They didn't (until FY19). Earnings are not shown on the graph.
2. Effectively, we pretended earnings did not exist. Earnings were not counted as revenue and were not spent on anything but dividends and those were not counted as state expenditures.
3. Then came the crash. Oil revenue covered only about one third of expenditures. Reserves dwindled.
4. POMV was resurrected. We fought about it for several years and finally went with 5.25%/5.00% payout to the GF, which adds $3b annually to revenue.
5. You may think this greatly eased the budget process.



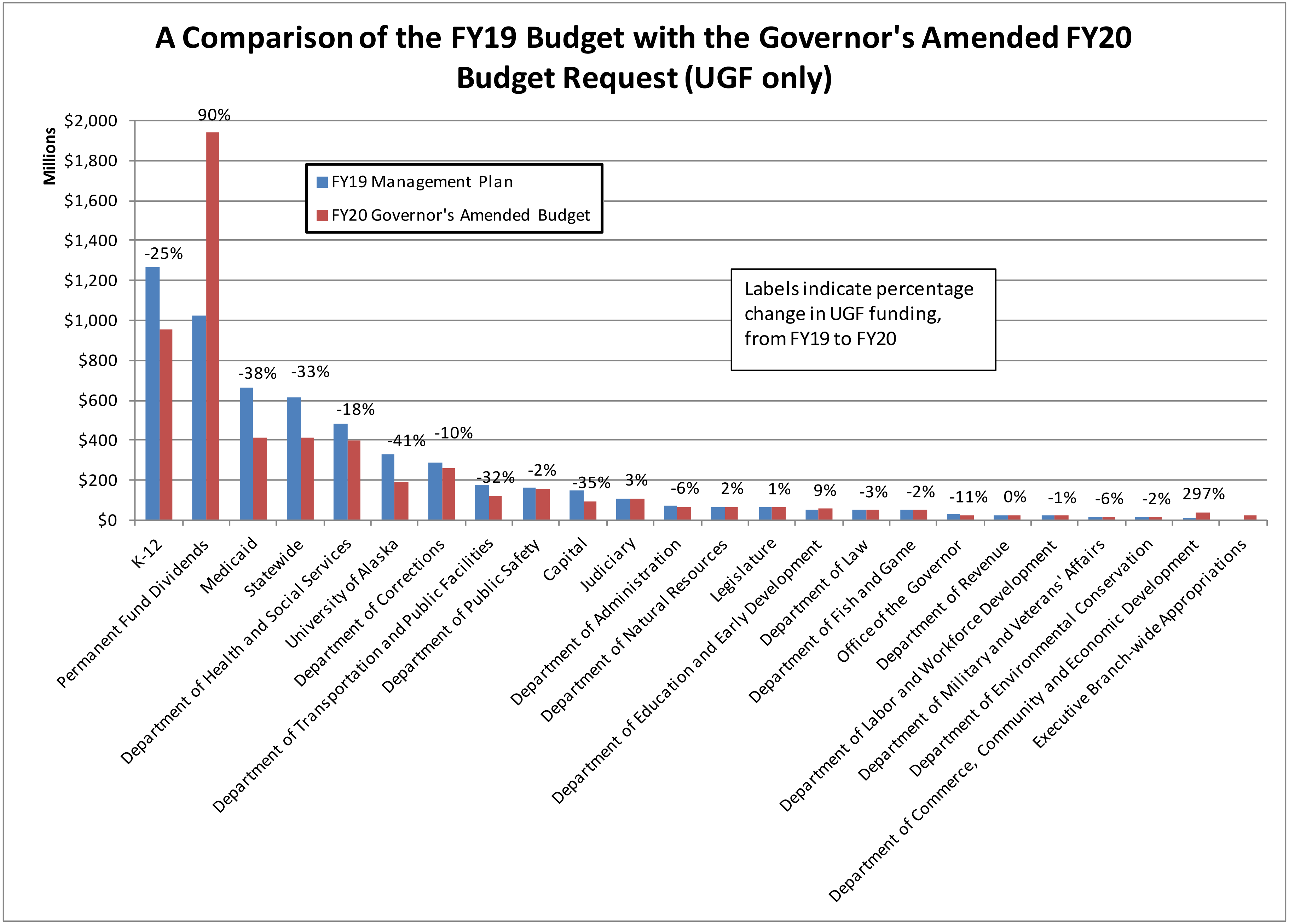
Unrestricted General Fund Revenue/ Budget History
($ millions)
$11,000
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
-$1,000
-$2,000
-$3,000
-$4,000
Permanent Fund POMV
DOR Spring 2019 Revenue Forecast
Net Fund Transfers
Capital Budget
Statewide Operating
Agency Operations
FY76
FY78
FY80
FY82
FY84
FY86
FY88
FY90
FY92
FY94
FY96
FY98
FY00
FY02
FY04
FY06
FY08
FY10
FY12
FY14
FY16
FY18
FY20
FY22
FY24
FY26
FY28

How did Permanent Fund ***earnings*** affect Alaska's budget?

Concluding that POMV has eased the budget process couldn't be further from the truth—disagreements about how the payout should be used (particularly for dividends)

1. caused multiple extended sessions and special sessions and
2. entirely changed the world we live in.

Dividends are part of the budget and there is a dollar for dollar trade-off between dividends and government services.



A Comparison of the FY19 Budget with the Governor's Amended FY20 Budget Request (UGF only)
Millions
$2,000
$1,800
$1,600
$1,400
$1,200
$1,000
$800
$600
$400
$200
$0
FY19 Management Plan
FY20 Governor's Amended Budget
Labels indicate percentage change in UGF funding, from FY19 to FY20
-25%
90%
-38%
-33%
-18%
-41%
-10%
-32%
-2%
-35%
3%
-6%
2%
1%
9%
-3%
-2%
-11%
0%
-1%
-6%
-2%
297%
K-12
Permanent Fund Dividends
Medicaid
Statewide
Department of Health and Social Services
University of Alaska
Department of Corrections
Department of Transportation and Public Facilities
Department of Public Safety
Capital
Judiciary
Department of Administration
Department of Natural Resources
Legislature
Department of Education and Early Development
Department of Law
Department of Fish and Game
Office of the Governor
Department of Revenue
Department of Labor and Workforce Development
Department of Military and Veterans' Affairs
Department of Environmental Conservation
Department of Commerce, Community and Economic Development
Executive Branch-wide Appropriations

Considerations on Spending Legacy Fund Earnings

1. The 30% set-aside of oil revenue that you (and your predecessors) didn’t spend is the legacy. The fund is a financial asset that you created to generate future revenue. The other 70% of oil revenue provides current benefits.
2. Future revenue is not designated for legacy projects; earnings are simply general fund revenue that is intended to replace declining oil revenue.
3. Nothing prevents current earnings from adding to the legacy fund or being used for legacy projects or programs.
4. Use of current earnings for purposes other than increasing the size of the legacy fund will reduce future earnings.
5. If earnings go to the general fund, the revenue stream should be stripped of as much volatility as possible.
6. Why spend annual earnings before oil production begins to decline? Doing so shifts benefits from the future to the present.

What can North Dakota learn from Alaska's experience?

Focus on the intent: build a true legacy fund—one that transfers wealth from the "producing generation" to "post production" generations.

1. **Do not eliminate "normal" revenue sources.** Ensure that reducing taxes is based on the 70% revenue stream to the general fund, not grabbing a share of the 30% revenue stream to the legacy fund.
2. **Avoid using earnings for government services before oil revenue begins to decline.**
3. **When you begin to use earnings, implement a variable POMV payout system.** It will give you a sustainable revenue stream that can protect the real value of the fund and offers tremendous advantages in budget planning.
4. **Keep the payout simple.** Alaska wasted three years on overly complex mechanisms—a simple system with the payout rate rising as production declines has many advantages—including a larger legacy.
5. **Avoid paying dividends to individuals.** Individual dividends will create an entitlement mentality that will haunt you in the future. Community dividends are less insidious, but are less progressive.
6. **North Dakota government can retire if you do this right.** If Alaska had not paid dividends, the fund balance would be sufficient to generate a sustainable payout that covers all general fund expenditures.

COMPANY	PRIVATE EQUITY FIRM(S)	ACQUIRED	ESTIMATED EMPLOYEES	GAIN/LOSS UNDER PE	BANKRUPTCY DATE
PetCo	CVC Capital Partners, Canada Pension Plan	Jan 2016	25,000	0	
The Fresh Market	Apollo Global Management	Apr 2016	12,600	200	
Bass Pro Shops/ Cabela's	Goldman Sachs Group, Pamplona Capital Management	Oct 2016	40,000	300	
Belk	Sycamore Partners, Apollo Investment	Dec 2015	25,000	650	
Guitar Center	Ares Management, Bain Capital	2007, 2014	11,000	812	
The Container Store	Leonard Green & Partners	Jul 2007	4,950	950	
Jo-Ann Stores	Leonard Green & Partners	Mar 2011	23,000	1,547	
PetSmart	BC Partners, Caisse de dépôt, ACE & Company, Korea Investment Corporation, StepStone Group, GIC, Ardian Holding, Longview Asset Management	Mar 2015	55,000	2,000	
National Vision	KKR	Feb 2014	10,668	3,668	
Smart and Final (SFS)	Ares Management	Dec 2012	12,232	4,068	
Savers	TPG Capital, The Carlyle Group, GoldPoint Partners, Leonard Green	Jul 2012	22,000	5,000	
99 Cents Only Stores	Ares Management, Canada Pension Plan	Jan 2012	17,200	5,200	
Party City	TH Lee Partners, Advent International	Oct 2012	19,900	5,273	
Michaels	Bain Capital, Blackstone Group	Oct 2006	49,000	5,300	
Academy Sports + Outdoors	KKR	Aug 2011	23,000	7,000	
Albertsons	Cerberus, Lubert-Adler, Kimco Realty	2006, 2013	275,000	34,000	

BOARD LEADERSHIP

INNOVATIVE APPROACHES TO GOVERNANCE

NUMBER 166, NOV.–DEC. 2019

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Harnessing Human Capital to Achieve Big-Picture Goals

By Dr. Matt Brubaker

Dr. Matt Brubaker is CEO of human capital advisory firm FMG Leading. He is an expert in sustainable transformation, and his client work focuses on enterprisewide change initiatives, C-level development, and building high-performing, strategically aligned executive teams. This article aims to help boards greenlight, suggest, and/or advance thoughtful human capital plans poised to generate sustainable, long-term performance and measurable return on investment.

Boards of directors hold governance responsibility over myriad aspects of the organizations they oversee. While many who serve in these roles are practiced in such areas as finance and operations, few bring expertise in human capital strategy—an area increasingly recognized for its ability to help unlock value and achieve overarching goals. This gap makes it difficult for boards to differentiate initiatives devised in response to trendy, novelty concepts and those rooted in substance and strategy.

Human capital strategy is best characterized as an integrated plan—designed, executed, measured and refined as needed—to ensure an organization's human core is prepared to effectively and efficiently achieve its big-picture goals. It's rooted in the idea that the people systems in an organization can be tuned to facilitate alignment of goals, high engagement, and retention of key talent. Most organizations already deploy significant effort to issues of employee training, motivation, compensation, communication, etc. A human capital strategy integrates these tactics into a plan designed to drive enterprise strategy and can yield tremendous, tangible results.

With growing numbers of leaders testifying to the power of such initiatives to spur growth, even in challenging business environments, people-centric thinking has become increasingly trendy, with many organizations clamoring to put in place their own programs to ensure they're not outperformed by competition. Still others have been resistant to human capital spend, skeptical of this relatively new, touchy-feely business focus and the enthusiasm surrounding it.

Like all areas worthy of investment, human capital efforts can be undertaken judiciously or inadequately. Harnessing the true power of these investments and thus generating return on investment (ROI) requires deliberate and thoughtful planning rooted in best practice versus novelty and misunderstanding. Boards can play a significant role ensuring their organizations come out on the right side

(continued on page 2)

ALSO IN THIS ISSUE

CALENDAR OF EVENTS

January 21–23, 2020

The Society for Corporate Governance Essentials Conference

Loews Portofino Bay Hotel, 5601 Universal Blvd., Orlando, FL 32819, USA

According to organizers, this conference is designed as both basic training for new corporate secretaries and as a refresher course for those with more experience.

The three-day program is taught by seasoned corporate secretaries and governance professionals who have mastered the tools needed to manage the multifaceted responsibilities of corporate governance.

Attendees include corporate secretaries, assistant secretaries, general counsel, other corporate counsel, paralegals, compliance or ethics professionals, and industry-related service providers, such as auditing firms and legal experts, among others. There are also institutional investors and IR professionals, and others employed by public or privately held companies, public authorities, or nonprofits.

For more information, visit https://www.societycorpgov.org. ❑

Thinking of publishing in Board Leadership? Contact Nicholas King for criteria at nicholaskingllc@gmail.com

Goals

(continued from front page)

of this equation by understanding the central factors that lead to success.

Aligning With Growth Strategy

The core component of an effective human capital strategy is its alignment with an organization's central business strategy, and thus its ability to empower its human core to work in lockstep to support the focus areas most likely to spur real momentum. For example, health care delivery companies that rely on referrals from certain kinds of physicians would be wise to consider how to best engage and support employees that interface with the doctors, inspiring their trust. Similarly, hospitality companies at the mercy of online customer reviews yield returns from investment in training for staff members that work most closely with their guests.

To best achieve strategic alignment, board members should take it upon themselves to question the thinking behind proposed human capital initiatives, from leadership training to recruitment and compensation planning, ensuring they're not just "nice ideas" but positively linked to identified drivers of organizational success. With an ear tuned to such issues, they can identify projects that might benefit from minor to significant adjustment. For example, an HR presentation might reveal planned training and development exercises for those most senior, ignoring crucial new hires poised to lead the organization into its next chapter.

Board members might also spot opportunities in which planning tied to human capital makes clear sense but is all but completely absent. For example, they might learn from the CEO about strategy adjustments that fail to consider core people implications, exposing gaps, limitations, and vulnerabilities. In these situations, board members can ensure organizations don't proceed unwisely—risking scenarios ranging from opportunity loss to outright failure.

Leading From the Top Down

Historically, all responsibilities related to the people issues of an organization have been delegated to the human resources department, thus siloed and separated from the leaders and discussions that set overarching priorities, identify central challenges, and propose strategies for success. Then and now, this arrangement makes it near-impossible to elevate human capital planning such that it's strategically aligned with big-picture strategy.

Focusing on human capital in a way that is holistic, and thus effective, requires a more top-down approach. Specifically, an organization's chief executive should be seen as the sponsor and assume responsibility for strategic efforts tied to people and culture, with key support from an empowered and expert chief human resources officer (CHRO).

Boards can drive major improvements through human capital by simply recommending or sanctioning this CEO-led model. It best ensures initiatives aren't proposed and executed in a vacuum but integrate with big-picture strategies for growth; prevents critical human-related issues from being lost amidst other priorities; and sends a clear, positive message about how organizations value people and recognizes their potential.

This shift of sponsorship from HR to CEO is reminiscent of how organizations have rethought best practices concerning strategies related to technology. The early days of personal computing and e-commerce brought awareness of the need for IT departments, investment in expertise, and, ultimately, chief technology officers with real budget and influence. But crises ranging from cybersecurity attacks to technology-related disruption have made it best practice for organizations to include issues of technology as a priority for its most senior leadership team.

Measuring by Impact Not Dollars

Evangelists of people-focused programs often push for the greatest possible human capital spend for the largest number of individuals—a testament to their passion for these projects and a strong belief in what they can achieve. Those new to this kind of thinking often become similarly bold with their budgets as a means of overcompensating as they learn about the issues—in effect, throwing money at what they consider a problem, hoping it will lead to a solution.

The savviest human capital strategists carefully consider the anticipated ROI of such plans and determine investments accordingly. They are interested in impact, not dollars, as the tool of human capital measurement, and push back on projects that don't align with an organization's big-picture goals. In other words, they understand blind adoption of initiatives, even so-called "best practices," doesn't lead to success simply because they worked somewhere else.

Board members can be similarly savvy by serving as a check on overenthusiastic human capital spending, not assuming more is more. For example, they can question the returned value on investments in fully automated talent and performance management toolkits, embedded in most enterprise resource plans. In many cases, the value proposed by these massive expenditures is linked to the reduction in manual paperwork processes for managers. Savvy board members would dig deeper into the motivation for and impact of such tools before simply signing off.

Focusing on concepts central to effective human capital strategy—aligning with big-picture goals, elevating planning to the CEO level, and measuring for impact, not dollars—can go a long way toward helping board members serve as powerful, judicious supporters of people-focused programs. That said, pitfalls can still deter their efforts and the organization's best-laid human capital plans.

The most common human capital pitfalls include:

- *Blind spots to organizational realities.* Board members are usually far removed from the day-to-day realities of the organizations they oversee. Interactions with them are anticipated, rehearsed, and polished, making it hard to spot dysfunction. They're thus likely to see the organization through rose-tinted glasses, presuming management is working together effectively, even when people-related problems are negatively impacting the organization's progress or potential. They're especially unable to spot such problems when they involve the board itself.

This miscalculation is all too common. To illustrate, consulting and technology firm Accordion recently publicized survey results showing highly incongruent views between private equity firm-level executives and accompanying portfolio company finance chiefs. Its data showed that out of such 200 leadership pairs polled, 92% of board-level executives expressed confidence that they were living up to the expectations of their CFOs. Only 29% of the CFOs agreed.[1]

- *Overreliance on compensation.* Even leaders who believe in human capital investment sometimes minimize its importance, assuming financial compensation that aligns investors and management is enough to motivate people to get the job done. This assumption ignores the reality that even the most motivated C-suite leaders can, and often do, work at cross purposes or demonstrate resistance to board-issued mandates. It also flies in the face of growing research that shows money is not the reliable motivator once presumed. A meta-analysis of academic studies on this subject, published in *Harvard Business Review*, makes this painstakingly clear, saying outright "if we want an engaged workforce, money is clearly not the answer."[2]

Human capital strategies must always include a strong focus on compensation, but also other equally powerful motivators. For example, organizations that forge a deep sense of belonging through their mission and culture enjoy high levels of employee engagement, productivity and loyalty.

- *Undervaluing those outside the management-leadership chain.* Top business leaders understand the value and contributions of other top business leaders—as well as the people they lean on for support—but often miss key roles played by others. These "invisible" employee populations can go overlooked and undervalued at the expense of the organization. An article in Harvard Business Review offers helpful categories for such individuals: essential experts, customer experience creators, and critical contractors.[3] These team members might not aspire to management or demand high salaries, but their work can be indispensable.

It is unreasonable to expect board members to be able to identify invisible employees, but they should expect this of management and, if necessary, question and prompt leaders to include such individuals in human capital planning.

- *Equating mere tools with strategic investments.* Quick fixes like automation of core HR processes can generate tremendous enthusiasm among management and result in requests to boards for budget to adopt these often-pricey tools. This is understandable given heavy meeting schedules, reporting demands, and other important responsibilities. Yet investing in such fixes doesn't usually lead to real solutions, as they don't address the heart of fundamental problems. Tools themselves can even add to employees' burdens, duplicate processes, and go underutilized.

Board members fielding such requests as easy solutions to complex problems can dig deeper to explore root causes. For example, they might reveal a workplace culture that makes it difficult to delegate responsibility. If top management is expected to attend every meeting and be cc'ed on every email, it's no wonder they're looking for any means of reducing their workload. New software isn't going to address this problem. Instead, organizations must do the more difficult work of changing their culture.

To recap, the best way for board members to ensure their organizations navigate common human capital pitfalls effectively is by:

- Requesting that the most senior management, not just HR, take ownership of a thoughtful, integrated human capital plan.
- Confirming that a meaningful business case be made for human capital investments. Saving time is not enough.
- Conveying skepticism of best practice adoption for its own sake.
- Identifying and prioritizing people-centric fundamentals underlying real opportunities (i.e., culture, change agility, and management excellence).
- Recognizing both visible and invisible employee populations in the organization's value-creation chain.
- Successfully distinguishing spending from impact, and tools from strategy.

Human capital strategy done well can yield momentous impact for organizations of all types and sizes. It isn't dependent on outside factors like the talent market or economic outlook, but reflects the understanding, dedication, and savvy of those, like boards, with the greatest enterprisewide responsibilities. ❑

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Director Obligations to Implement and Monitor Oversight Systems

By Stephanie Resnick and Carl Neff

Stephanie Resnick is chair of the Directors & Officers Liability & Corporate Governance Group at Fox Rothschild LLP. Carl Neff is a partner in the Litigation practice at Fox Rothschild. In this article, they explore the oversight responsibilities of boards of directors in light of a major recent court decision.

Delaware case law has consistently held that a *Caremark* claim[1] constitutes "possibly the most difficult theory in corporation law upon which a plaintiff might hope to win a judgment."[2] A *Caremark* claim contends that the directors set in motion or "allowed a situation to develop and continue which exposed the corporation to enormous legal liability and that in doing so they violated a duty to be active monitors of corporate performance."[3]

Given the difficulty in proving these claims, the question becomes, what must be pled in order to survive a motion to dismiss a *Caremark* claim? This article discusses the recent Delaware Supreme Court decision in *Marchand v. Barnhill*,[4] which sheds light on this question, and demonstrates that directors must ensure that proper "board-level" oversight systems are in place and monitored in order to minimize material risks to their companies and limit their liability. In *Marchand*, the Delaware Supreme Court overturned the dismissal of a *Caremark* claim, while providing a stern warning to directors to "make a good faith effort to implement an oversight system and then monitor it."[5] This opinion should be closely examined by directors of Delaware corporations and their corporate counsel.

Factual and Procedural Background

Blue Bell Creameries USA Inc., one of the country's largest ice cream manufacturers, suffered a listeria outbreak in 2015, which caused the company to recall all of its products, shut down production at all of its plants, and lay off over a third of its workforce.[6] Blue Bell's failure to contain listeria's spread in its manufacturing plants caused listeria to be present in its products and had substantial consequences, leading to the death of three individuals.[7] The U.S. Food and Drug Administration (FDA) inspected the company's plants, finding major deficiencies at each facility.[8] Faced with a liquidity crisis, Blue Bell was forced to accept a dilutive private equity financing investment, which caused the stock price to fall.[9]

Plaintiff stockholder Jack Marchand filed a derivative complaint before the Delaware Court of Chancery, asserting, among other things, that Blue Bell's board of directors breached its duty of loyalty under *Caremark* by failing to implement adequate controls.[10] According to the complaint, the directors of the board failed to properly inform themselves of listeria or food safety issues generally until the initial listeria-forced recall,[11] and never scheduled any additional emergency meetings to obtain updates, effectively leaving management to handle these material issues.[12]

Defendants moved to dismiss on the grounds that the complaint failed to state a *Caremark* claim, which was granted by the Court of Chancery.[13] The trial court concluded that there was a monitoring system in place, taking into account "Blue Bell's compliance with FDA regulations, ongoing third-party monitoring for contamination, and consistent reporting by senior management to Blue Bell's board on operations."[14] Moreover, the trial court placed weight on the company's sanitation manual with standard operating and reporting procedures, and promulgated written procedures for processing and reporting consumer complaints.[15] The Court of Chancery opined that the plaintiff challenges "not the existence of monitoring and reporting controls, but the *effectiveness* of monitoring and reporting controls."[16] Per the Court of Chancery, that did not state a *Caremark* claim.

Delaware Supreme Court Analysis

On appeal, the Delaware Supreme Court reversed the rulings of the Court of Chancery. The High Court stated that, for Blue Bell, as a company that makes ice cream, "food safety was essential and mission critical."[17] Despite this, the court noted that despite a number of positive tests showing the presence of listeria, the relevant board minutes reflected "no board-level discussion of listeria."[18] Moreover, the Supreme Court observed allegations that the board had no committee overseeing food safety, no full board-level process to address food safety issues, and no protocol by which the board was expected to be advised of food safety reports and developments.[19]

Chief Justice Leo E. Strine Jr., authoring the unanimous decision for the Delaware Supreme Court, wrote that while "directors have great discretion to design context- and industry-specific approaches tailored to their companies' businesses and resources[,] *Caremark* does have a bottom-line requirement that is important: the board must make a good faith effort—i.e., try—to put in place a reasonable board-level system of monitoring and reporting."[20] The issue was not the *effectiveness* of the system, but rather whether the court could reasonably infer from the pleadings "that the board did not undertake good faith efforts to put a board-level system of monitoring and reporting in place."[21]

The Supreme Court held that the complaint did support an inference that no system of board-level compliance monitoring and reporting existed at Blue Bell, noting the following allegations:

- "no board committee existed that addressed food safety issues;
- no regular process or protocols that required management to keep the board apprised of food safety compliance practices, risks, or reports existed;
- no schedule for the board to consider on a regular basis, such as quarterly or biannually, any key food safety risks existed;
- during a key period leading up to the deaths of three customers, management received reports that contained what could be considered red, or at least yellow, flags, and the board minutes of the relevant period revealed no evidence that these were disclosed to the board;
- the board was given certain favorable information about food safety by management, but was not given important reports that presented a much different picture; and
- the board meetings are devoid of any suggestion that there was any regular discussion of food safety issues."[22]

The court further noted that "after the listeria outbreak, the FDA discovered a number of systematic deficiencies in all of Blue Bell's plants ... that might have been rectified had any reasonable reporting system that required management to relay food safety information to the board on an ongoing basis been in place."[23]

Thus, the Supreme Court found that "the complaint supports an inference that no system of board-level compliance monitoring and reporting existed at Blue Bell."[24] The court further held that "[w]hen a plaintiff can plead an inference that a board has undertaken no efforts to make sure it is informed of a compliance issue intrinsically critical to the company's business operation, then that supports an inference that the board has not made the good faith effort that Caremark requires."[25]

Implication for Director Liability

Notwithstanding the rationale of this decision, nothing changes the fact that *Caremark* claims are notoriously difficult to prove. That said, simply showing that the company complied with FDA guidelines, that certain manuals for employees regarding safety practices existed, and that the company commissioned audits from time to time is not alone sufficient to demonstrate that the board implemented appropriate internal controls to defeat a *Caremark* claim. Rather, the *board* must implement a monitoring system at the *board level*. In other words, "[i]f *Caremark* means anything, it is that a corporate board must make a good faith effort to exercise its duty of care."[26]

There are several key takeaways from this decision that should be considered by directors to limit their potential liability:

- First, to demonstrate good-faith efforts to implement and monitor a risk oversight system, directors should cause the company to have in place systems that identify, monitor, and mitigate significant risks to the company. These systems should be continually monitored and updated as necessary, and there should be periodic reporting to the board, especially when signs of known material risks are apparent.
- Second, a board should form a committee specifically to address such material risks to prevent harm to the company. Relatedly, directors must not ignore critical information that comes to the attention of the board as it relates to such known risks.
- Third, directors should make sure to document compliance efforts in board minutes and other meeting materials. Board minutes are an important aspect of corporate diligence, and detailing efforts taken by the board through the board minutes to implement adequate controls will make *Caremark* claims even more difficult to establish.

Taking these steps will not only minimize potential director liability in connection with a *Caremark* claim, but, just as importantly, will decrease the chances that material events causing harm to a company, which could form the basis of a *Caremark* claim, will arise in the first place. ❑

Endnotes

1 In re Caremark Int'l Inc. Derivative Litig., 698 A.2d 959 (Del. Ch. 1996).
2 Stone v. Ritter, 911 A.2d 362, 372 (Del. 2006); Caremark, 698 A.2d at 967 ("The theory here advanced is possibly the most difficult theory in corporation law upon which a plaintiff might hope to win a judgment.").
3 Caremark, 698 A.2d at 967.
4 212 A.3d 805 (Del. 2019).
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6 Id. at 807.
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FOOD FOR THOUGHT

"If your actions inspire others to dream more, learn more, do more and become more, you are a leader."

John Quincy Adams

Opportunity and Risk Often Arrive at the Party Simultaneously

By Dr. Linda Henman

Dr. Linda Henman is the author of six books, including Tough Calls: How to Move Beyond Indecision and Good Intentions. *She has more than 35 years of experience working with executives and boards in Fortune 500 companies and small businesses to help them exceed their strategic objectives by maximizing talent. In this article, Dr. Henman looks at what boards can do to better prepare their organizations for future changes that will impact them and their industries—even those completely unexpected.*

The phrase "black swan" comes from 2nd-century Roman poet Juvenal, who described "a rare bird in the lands and very much like a black swan." The poet and most others assumed that black swans didn't exist. They were wrong. Today we use the term as a metaphor for the fragility of any system of thought that can come undone once we disprove a set of assumptions.

Today, expanding on the theory Nassim Nicholas Taleb developed, we explain things as black swans if they are hard-to-predict, rare events that don't fit our expectations. Taleb regarded almost all major scientific discoveries, historical events, and artistic accomplishments as "black swans"—undirected and unpredicted. He was wrong, too.

Boards have to do better. Companies count on them to recognize that black swans exist and to identify them before the competition does. To do that, directors must overcome the psychological biases that blind them to uncertainty and a rare event's potential risk. Traditional enterprise risk management processes may not address key assumptions on which the organization's strategy and operating models are based. Nor will these conventional approaches help them determine the impact and likelihood of *potential* risks in order to prioritize scarce resources. Too often, boardroom discussions involve an examination of *past* performance, which can limit insights about unexpected and rare risks. Instead, these discussions should address the changing landscape, customer demands, and innovation.

Who's Going to Try to Kill Us Today?

In 1983, Motorola introduced the world's first cell phone, the DynaTAC 8000x. In 1987, Nokia introduced its first mobile phone, the Mobira Cityman 900. No one was paying attention to Apple, but after the company's first smartphone in 2005, no one could ignore them. What were once large and bulky luxury items became small, compact devices we can't live without. In fact, by 2018, 95% of Americans owned a cell phone of some kind, and 77% of those were smartphones. Directors at Nokia and Motorola probably thought of Apple as a computer company, as we all did. Apple's application for a patent should have mobilized those making mobile phones to suspect a black swan might be lurking, but it didn't, because directors didn't have "situational awareness."

In general, situational awareness involves three segments: perception of the elements in the environment, comprehension of the situation, and projection of future status. Although the term itself is fairly recent, the concept has roots in military theory and appears in Sun Tzu's *The Art of War* and in World War I records, where it was recognized as a crucial skill for crews in military aircraft. In the boardroom, situational awareness means directors should be aware of their own biases that stem from their past experiences and personal, yet limited perspectives. Only then can they ask, "In today's climate, what business are we really in?" That will lead them to ask, "What are we doing proactively to listen to customers and to respond to the direction our industry is taking us?"

What Will Your Customers Want Tomorrow?

Too many boards focus on last year or last quarter. They need to quit looking in the rearview mirror and start inviting other directors to view the company through a kaleidoscope to see multiple possible futures and to develop a mindset devoted to continuous learning. Certainly, effective directors need to be students of history, but boards that keep their eyes on the future realize they need a soothsayer—a human crystal ball who can look into the future to identify where and when the opportunities and risks will appear. Many directors fail this future-oriented litmus test, however.

For example, General Electric (GE), famed for its analytical rigor, faced some very unpleasant music in November 2017. That's when the company announced a dividend cut—only the second since the Great Depression. Even after the cut, some analysts predicted that dividends would eat up about 85% of GE's estimated free cash flow, which had deteriorated for six straight years. The company also reported considering multiple, significant divestitures, including the original light bulb business started by founder Thomas Edison 125 years ago.

When leaders acquire a company, of course they believe the deal will work. If they felt otherwise, they wouldn't have gone forward. Human beings have a psychological tendency to justify our decisions, making it difficult to see the signs that we made a mistake. Thus, a leader who drove an M&A deal is usually more hesitant to pull the plug than someone who didn't make the acquisition in the first place.

Retail probably leads the pack as the industry that has suffered the most from a failure to ask what customers will want tomorrow. In the 1980s, shopping malls cropped up like dandelions along every interstate and in small towns. Today, those that haven't been sold for their real estate value have become ghost towns. At first, no one could have anticipated the impact of internet shopping, but eventually, shouldn't directors have started asking, "Is this how our best customers will want to shop tomorrow?"

Boards of health care organizations have done better. They realized years ago that a hospital's best customers don't want to be patients in the hospital. So, they started offering more outpatient options, including same-day surgery centers. They asked themselves the question their customers wanted them to ask, "What can a health care organization do to keep people from becoming patients?"

Unfortunately, too many directors focus too much on reviewing data and setting it aside until it's time to review the data again—usually within a terribly short interval. The value isn't in tracking the metrics, however. The real value in metrics is the discussions they drive, the decisions directors make, and the actions they take from the discussions. The process starts with the right questions, which lead to an understanding of which data are important and which measurements they should really pay attention to. By doing this, they will spot customer patterns *before* the trends cease being trends. Learning from the data can also help them engage in scenario planning to speculate about the unknown.

Adaptive Governance

Adaptive governance describes an emergent form of environmental governance that scholars and practitioners increasingly call upon to coordinate resource management regimes in the face of the complexity and uncertainty associated with rapid environmental change. When applying the term to board governance, the National Association of Corporate Directors defines adaptive governance as the "active involvement by directors in setting and maintaining a boardroom culture that is centered on open discussion, constructive challenge, and active self-reflection." They recommend devoting ample time on board agendas to looking at the future because failure to respond appropriately to disruptive situations can make the difference between profitable growth and becoming an also-ran. They also recommended these:

- an openness to alternative, nontraditional viewpoints;
- a willingness to question assumptions;
- receptivity to management sharing bad news and an insistence that they share it early;
- recognition that some level of tension is acceptable;
- a bias in favor of continuous improvement; and
- active, ongoing and honest self-reflection.

Unfortunately, too many boards underperform in these areas. According to KPMG's *Building a Great Board: Global Boardroom Insights*, 43% of respondents to their global survey reported their boards exhibited resistance to change, and 33% reported board cultures that discouraged questions and open discussion.

Directors committed to adaptive governance understand that they need to encourage innovation and learning, set ethical standards, and promote accountability, especially with the CEO. Most important, directors must take a *proactive* approach to the oversight of culture to drive sustained success and long-term value creation.

What do we mean by "culture"? Legends tend to have differing adaptations; the truth has no versions. Both influence—either intentionally or unintentionally—the cultures we build. Corporate culture, the way we do things around here, the pattern of shared assumptions the group has adopted and adapted, develops in much the same way as legends and traditions do.

Organizations learn as they solve their problems and adjust to the world around them. When something works well over time, leaders consider it valid, and members of the organization

(continued on next page)

WHEN WE SAY…

Board Leadership's mission is "to discover, explain and discuss innovative approaches to board governance with the goal of helping organizations achieve effective, meaningful and successful leadership to fulfill their missions."

Board Leadership aims to fulfill this mission by engaging its readers in a lively and illuminating inquiry into how board governance can be made more effective. This inquiry is based on three key assumptions:

- Boards exist to lead organizations, not merely monitor them.
- Effective board governance is not about either systems, structures, processes, theories, practices, culture, or behaviors—it is about all of them.
- Significant improvements are likely to come only through challenging the status quo and trying out new ideas in theory and in practice.

Uniquely among regular publications on board governance, *Board Leadership* primarily focuses on the job of board leadership as a whole, rather than on individual elements of practice within the overall job.

Over time, *Board Leadership* will provide a repository of different approaches to governance created through its regular "One Way to Govern" feature.

Here's what a few of the key terms we use mean to us:

- **Innovative:** Creating significant positive change
- **Approaches:** Principles, theories, ideas, methodologies and practices.
- **Board governance:** The job of governing whole organizations. ❑

Opportunity

(continued from page 7)

begin to teach the behavior or idea to new people. Through this process, new directors find out what those around them perceive, think, and feel about issues that touch the organization.

Excellent decisions serve as the coinage of the organizational realm. When directors consistently make good decisions, little else matters; when they make bad decisions, *nothing* else matters. A pivotal decision—or, more likely, a series of pivotal decisions—literally separates the businesses that flourish from those that flounder. Every success, mistake, opportunity seized, or threat mitigated started with a decision.

Success doesn't happen without decisions, but neither do mistakes, except when the decision involves indecision—a kind of decision not to decide. When directors play in the most competitive leagues, they will have mishaps and missteps, but indecision doesn't have to be among them. However, the culture of too many organizations conspires against success. Decisions—good, bad, or decent—get stuck in the entrails of the organization, much as flotsam and jetsam accumulates on an untended beach. Boards create their own bottlenecks and harm themselves in ways the competition never could. They become their own strongest competitors—the enemy within—the entity that *creates* risk rather than mitigates it.

Effective directors set the tone at the top and lead the never-ending journey to discover new and better ways to solve problems and adapt to the world around them. For example, when discussing risk, directors often home in on data breaches because this sort of risk can quickly move from bad news to a full-blown catastrophe. Addressing a data breach should be done quickly, honestly, and responsibly. Frequently, however, companies minimize the seriousness, explain what happened but fail to apologize, or treat it as merely a public relations problem. Boards spend time discussing cyber risk, but a cyber breach won't usually put them out of business. A failure to learn from mistakes and make the requisite changes can, however.

Board directors tend to underestimate the importance of a change-oriented board and organizational culture when they should see it as among their top governance imperatives. Culture inextricably links strategy and risk, and it can be an organization's biggest asset or its greatest liability. Yet, recent studies indicate that more than 80% of directors don't have a firm grasp of the culture that exists in the organizations they serve. Most directors would be hard-pressed to define corporate culture, and those that can don't always know what their role should be in influencing it.

Successful directors realize that, in the long run, *how* a company does business is as important as short-term gains. Now more than ever, directors are taking their responsibilities seriously, speaking up, and striving for results; but in many cases, the evolving relationship between the company's executives and the board has not found the right symmetry. Both the company and the board benefit when directors take a more active role in influencing culture.

Conclusion

In *The Yogi Book*, baseball's great philosopher, Yogi Berra, cautioned us that we can't know the future because it "ain't what it used to be." Berra was correct. Directors can't know the future, yet the companies they serve depend on them to do just that—and the future arrives more quickly than it used to. Today, directors are learning that opportunity and risk often arrive concurrently—and instantaneously, without warning. Directors need to strengthen the aspects of board culture that help the organization identify and respond to disruptive risks—to make the board's culture a corporate asset. When they do that, they will support the management team, even while engaging in uncomfortable conversations. They need to see tension as a catalyst that motivates deeper engagement. Then, they will be able to welcome both opportunity and risk to the party. ❑

BOARD LEADERSHIP

INNOVATIVE APPROACHES TO GOVERNANCE

BOARD LEADERSHIP: INNOVATIVE APPROACHES TO GOVERNANCE (Print ISSN: 1061-4249; Online ISSN: 1542-7862) is published bimonthly by Wiley Subscription Services, Inc., a Wiley Company, 111 River St., Hoboken, NJ 07030-5774 USA.

Postmaster: Send all address changes to *BOARD LEADERSHIP*, John Wiley & Sons Inc., C/O The Sheridan Press, PO Box 465, Hanover, PA 17331 USA.

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