



**Mendocino County Employees
Retirement Association
Performance Review**

Periods ended March 31, 2019

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Callan

CY 1Q 2019 Capital Market Overview

Global Economic Update 2019

The Big Picture

Global interest rate policies have yet to converge

- The Fed is largely alone on a path to normalize interest rates, but has paused after 9 rate hikes.
- Euro zone may skip this round of tightening entirely, leaving super low rates where they are.

U.S. economy remains strong, labor market very tight, reaching the limits of full employment

- Q1 increase in GDP (3.2%) a sign of resilience after Q4 market swoon and government shutdown in January.
- Consumer spending slowed in Q1, but it may be a blip, reflecting the impact of the shutdown.
- Signal from Fed that further rate hikes are on hold have boosted consumer and business confidence.
- Full impact of 9 rate hikes to date still working through the economy – borrowing costs are substantially higher than two years ago.

The U.S. and euro zone economies diverging again

- Eurozone unemployment has dropped, but economic growth stalled (GDP below 1.5%).
- Geopolitical turmoil across the zone, from Italy to Brexit.

China suffering serious slowdown in growth: industrial output, retail sales, implied GDP

- Resolution of trade uncertainty crucial to resumption of growth, far more important to China than the U.S.

Oil prices may (or may not) radically alter inflation outlook

- Wage pressures building in U.S. had yet to translate into headline inflation.
- Crude oil prices collapsed in the fourth quarter, but recovered somewhat in Q1, spurred risks posed from the supply side (Russia, Iran).

Rebound in Q1 After a Severe Downturn in Q4 2018

Was Q4 2018 the anomaly, or Q1 2019?

Three sharp declines during 2018

First quarter snapback

Dovish Fed comments, solid corporate fundamentals and low employment propelled equity markets in first quarter:

- low quality stocks outperform
- growth over value
- small cap over large cap
- Global equities rebound

China drives emerging markets

Fixed Income markets participate, too

- High yield is the strongest performer in the U.S.
- Credit spreads rally
- Yield curve shifts lower across maturities

Returns for Periods ended March 31, 2019

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	14.04	8.77	10.36	16.00	9.78
S&P 500	13.65	9.50	10.91	15.92	9.80
Russell 2000	14.58	2.05	7.05	15.36	8.99
Non-U.S. Equity					
MSCI World ex USA	10.45	-3.14	2.20	8.82	5.04
MSCI Emerging Markets	9.93	-7.40	3.68	8.95	--
MSCI ACWI ex USA Small Cap	10.26	-9.48	3.26	11.86	--
Fixed Income					
Bloomberg Barclays Aggregate	2.94	4.48	2.74	3.77	5.33
3-Month T-Bill	0.60	2.12	0.74	0.43	2.54
Bloomberg Barclays Long Gov/Credit	6.45	5.24	5.35	7.23	7.34
Bloomberg Barclays Global Agg ex-US	1.52	-4.13	-0.26	2.46	4.40
Real Estate					
NCREIF Property	1.80	6.83	9.13	8.50	9.36
FTSE NAREIT Equity	16.33	20.86	9.12	18.28	10.27
Alternatives					
CS Hedge Fund	3.99	0.20	2.26	5.42	7.72
Cambridge Private Equity*	-0.53	10.61	11.94	13.76	15.20
Bloomberg Commodity	6.32	-5.25	-8.92	-2.56	2.15
Gold Spot Price	1.34	-2.17	0.23	3.45	4.88
Inflation - CPI-U	1.18	1.86	1.47	1.80	2.21

*Cambridge PE data are available through December 31, 2018.

Source: Callan

Callan Periodic Table of Investment Returns

As of March 31, 2019

Annual Returns									Monthly Returns			
2010	2011	2012	2013	2014	2015	2016	2017	2018	Jan 2019	Feb 2019	Mar 2019	YTD 2019
Small Cap Equity	U.S. Fixed Income	Real Estate	Small Cap Equity	Real Estate	Large Cap Equity	Small Cap Equity	Emerging Market Equity	U.S. Fixed Income	Small Cap Equity	Small Cap Equity	Real Estate	Real Estate
26.85%	7.84%	27.73%	38.82%	15.02%	1.38%	21.31%	37.28%	0.01%	11.25%	5.20%	3.51%	14.59%
Real Estate	High Yield	Emerging Market Equity	Large Cap Equity	Large Cap Equity	U.S. Fixed Income	High Yield	Non-U.S. Equity	High Yield	Real Estate	Large Cap Equity	Large Cap Equity	Small Cap Equity
19.63%	4.98%	18.23%	32.39%	13.69%	0.55%	17.13%	24.21%	-2.08%	10.87%	3.21%	1.94%	14.58%
Emerging Market Equity	Non-U.S. Fixed Income	Non-U.S. Equity	Non-U.S. Equity	U.S. Fixed Income	Real Estate	Large Cap Equity	Large Cap Equity	Non-U.S. Fixed Income	Emerging Market Equity	Non-U.S. Equity	U.S. Fixed Income	Large Cap Equity
18.88%	4.36%	16.41%	21.02%	5.97%	-0.79%	11.96%	21.83%	-2.15%	8.77%	2.57%	1.92%	13.65%
High Yield	Large Cap Equity	Small Cap Equity	High Yield	Small Cap Equity	Non-U.S. Equity	Emerging Market Equity	Small Cap Equity	Large Cap Equity	Large Cap Equity	High Yield	High Yield	Non-U.S. Equity
15.12%	2.11%	16.35%	7.44%	4.89%	-3.04%	11.19%	14.65%	-4.38%	8.01%	1.66%	0.94%	10.45%
Large Cap Equity	Small Cap Equity	Large Cap Equity	Real Estate	High Yield	Small Cap Equity	Real Estate	Non-U.S. Fixed Income	Real Estate	Non-U.S. Equity	Emerging Market Equity	Emerging Market Equity	Emerging Market Equity
15.06%	-4.18%	16.00%	3.67%	2.45%	-4.41%	4.06%	10.51%	-5.63%	7.14%	0.22%	0.84%	9.93%
Non-U.S. Equity	Real Estate	High Yield	U.S. Fixed Income	Emerging Market Equity	High Yield	Non-U.S. Equity	Real Estate	Small Cap Equity	High Yield	U.S. Fixed Income	Non-U.S. Fixed Income	High Yield
8.95%	-6.46%	15.81%	-2.02%	-2.19%	-4.47%	2.75%	10.36%	-11.01%	4.52%	-0.06%	0.71%	7.26%
U.S. Fixed Income	Non-U.S. Equity	U.S. Fixed Income	Emerging Market Equity	Non-U.S. Fixed Income	Non-U.S. Fixed Income	U.S. Fixed Income	High Yield	Non-U.S. Equity	Non-U.S. Fixed Income	Real Estate	Non-U.S. Equity	U.S. Fixed Income
6.54%	-12.21%	4.21%	-2.60%	-3.08%	-6.02%	2.65%	7.50%	-14.09%	1.86%	-0.15%	0.51%	2.94%
Non-U.S. Fixed Income	Emerging Market Equity	Non-U.S. Fixed Income	Non-U.S. Fixed Income	Non-U.S. Equity	Emerging Market Equity	Non-U.S. Fixed Income	U.S. Fixed Income	Emerging Market Equity	U.S. Fixed Income	Non-U.S. Fixed Income	Small Cap Equity	Non-U.S. Fixed Income
4.95%	-18.42%	4.09%	-3.08%	-4.32%	-14.92%	1.49%	3.54%	-14.57%	1.06%	-1.04%	-2.09%	1.52%

Sources: ● Bloomberg Barclays Aggregate ● Bloomberg Barclays Corp High Yield ● Bloomberg Barclays Global Aggregate ex US
 ● FTSE EPRA Nareit Developed ● MSCI World ex USA ● MSCI Emerging Markets ● Russell 2000 ● S&P 500

U.S. Equity Performance: Solid Recovery

First quarter snapback

- Dovish Fed comments, solid corporate fundamentals and low employment propelled equity markets in first quarter.
- Risk-on market highlighted by low quality outperforming high quality by 440 basis points.
- Surprisingly, utilities and REITs produced solid returns as investors sought yield in face of flattening yield curve and end to rate hikes.

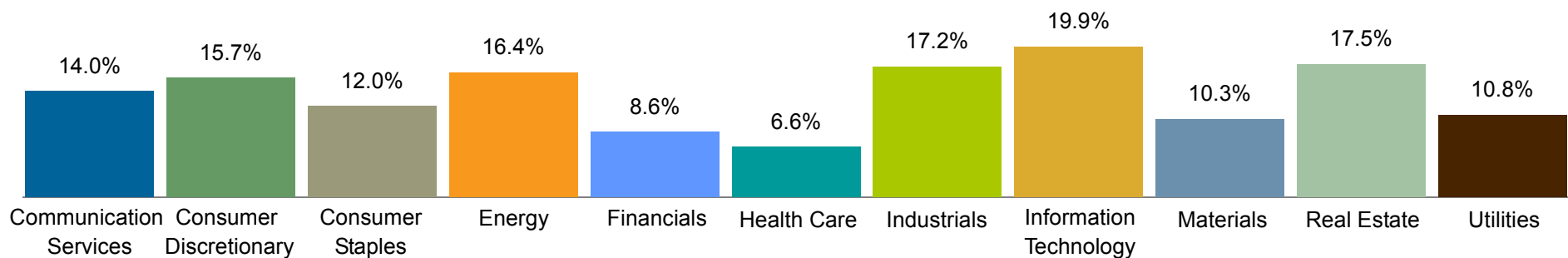
Growth outpaced value

- Sharp change in Fed rhetoric influenced stronger growth performance.
- Investors favored companies with stronger earnings prospects to counter softer economic environment.

Small cap over large cap

Risk-on appetite fed small cap.

Economic Sector Quarterly Performance (S&P 500)

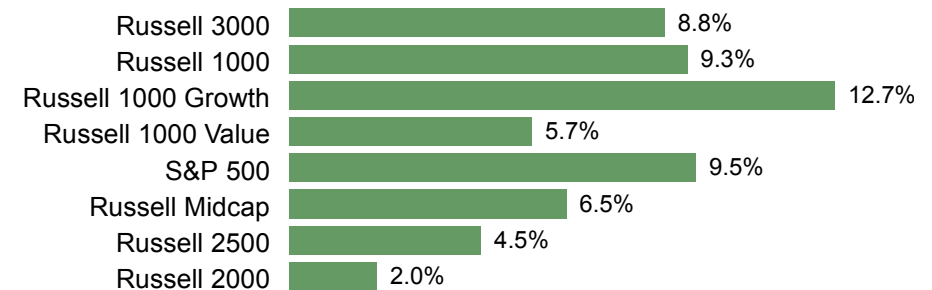


Sources: FTSE Russell, Standard & Poor's

U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns



Non-U.S. Equity Performance

Global equity rebound

- Investors resumed a risk-on outlook as central banks telegraphed more accommodative positioning.
- Market stabilized under delayed U.S./China trade talks and Brexit, although uncertain outcomes remain a future risk.
- Currency effect was mixed:
 - US\$ rose against euro and yen given soft economic data
 - Fell against British pound as possibility of “no-deal” Brexit diminished
- Factor performance favored growth (historical and projected) as investors believed accommodative Fed will extend growth cycle.

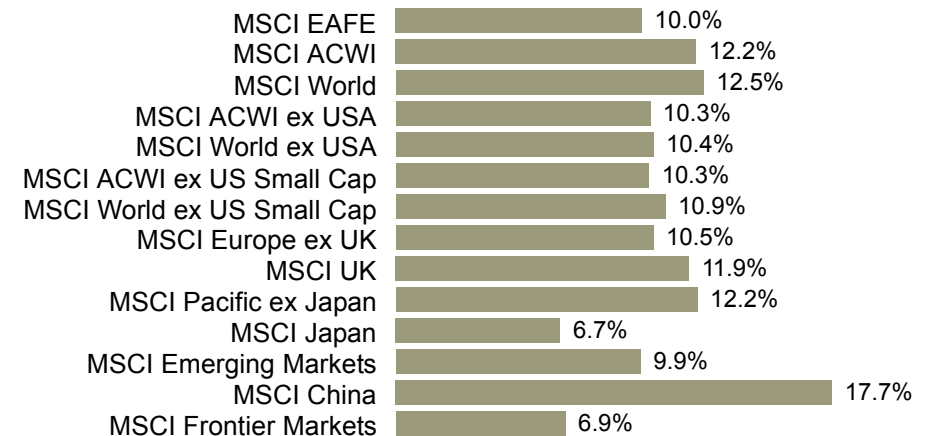
China drove emerging markets

- EM surged on stimulus measures in China which spurred optimism and diminished growth worries.
- Improving outlook for Chinese consumption and rebound in Asian Tech also contributed.

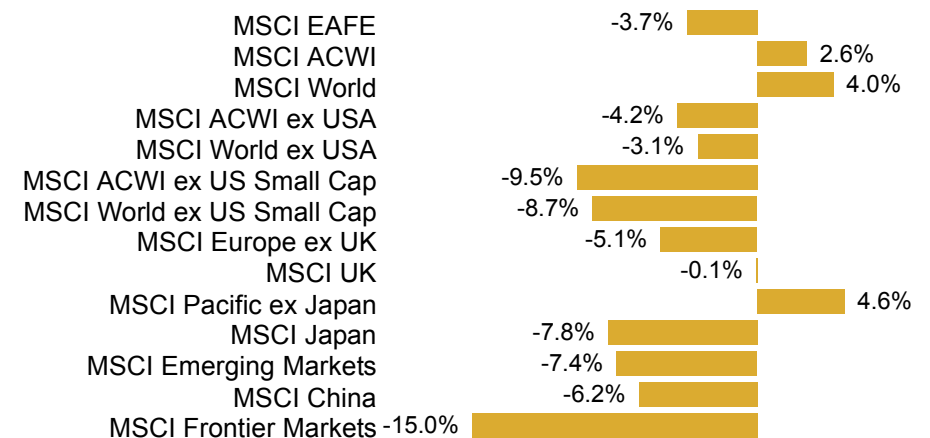
Non-U.S. small cap in line with large cap

- Cyclical sectors led with tech and energy up double digits.

Global Equity: Quarterly Returns



Global Equity: Annual Returns



Source: MSCI

U.S. Fixed Income Performance

Sharp reversal

- High Yield strongest performer as risk markets reacted to Fed's dovish comments, solid economic data and tempered concern over slowing China.
- U.S. Treasuries +2.1% as yield curve shifted lower across maturities on lower growth/inflation expectations.
- Shape of yield curve did not materially change during quarter

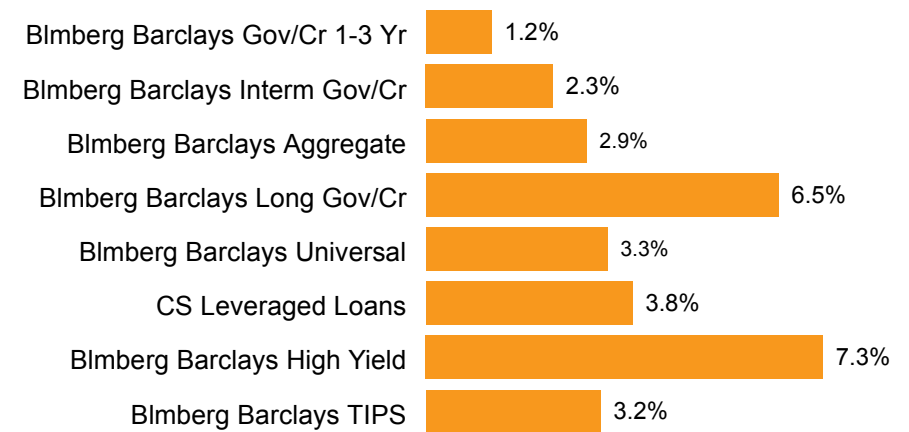
Higher inflation expectation

- TIPS outperformed Treasuries as Fed's balanced stance and unexpected wage pressures stoked higher inflation expectation.

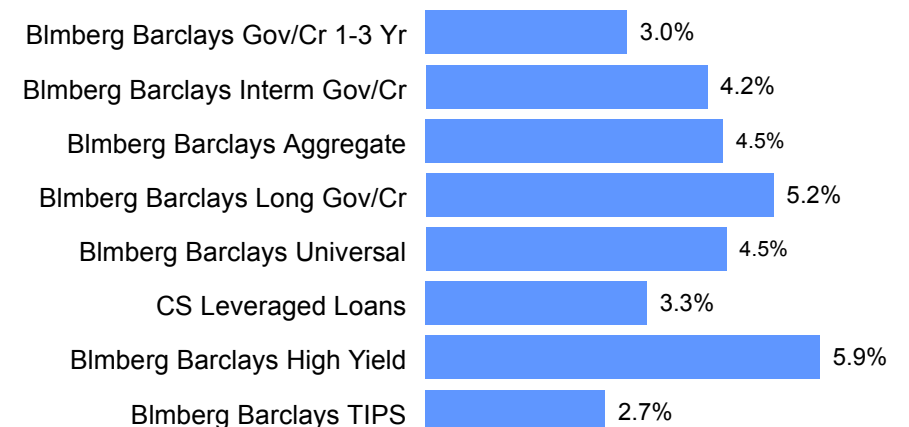
Credit spreads rallied

- Softer Fed stance, positive economic news, and better than expected corporate earnings contributed.
- Net new corporate issuance on par with a year ago.

U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: Annual Returns



Sources: Bloomberg Barclays, Credit Suisse

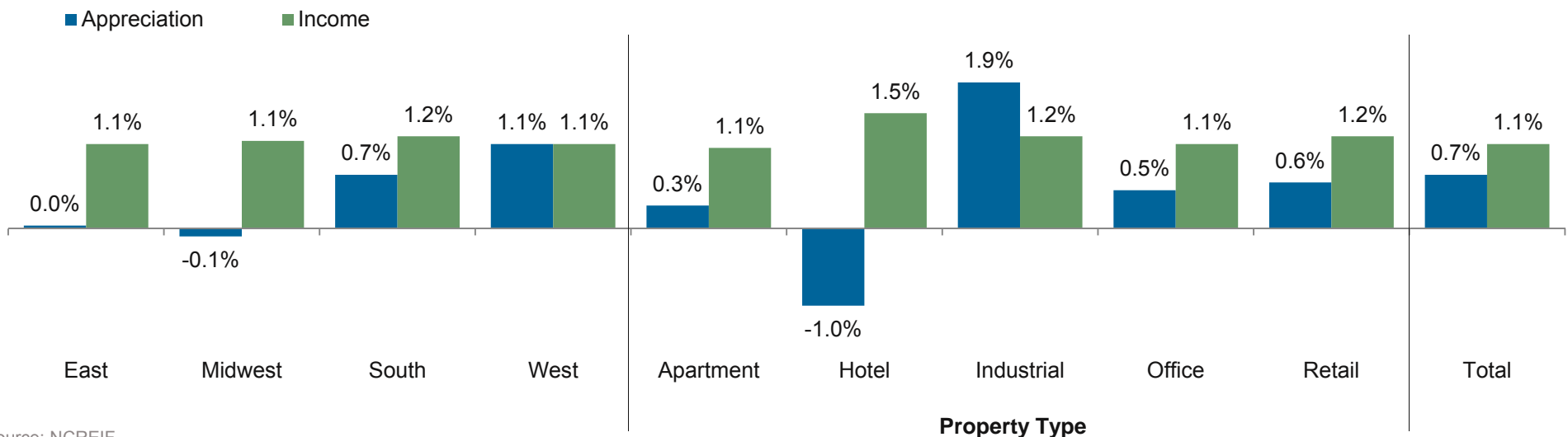
U.S. Real Estate

Returns continue to moderate

- U.S. core real estate returns are being driven by income with limited appreciation this late in the cycle.
- Appreciation coming from NOI growth rather than further cap rate compression.
- Industrial real estate continues to demonstrate the strongest performance.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
NCREIF ODCE	1.2%	6.6%	7.0%	9.2%	9.8%
Appreciation	0.4%	3.2%	3.5%	5.5%	5.8%
Income	0.8%	3.3%	3.4%	3.6%	3.8%
NCREIF Property Index	1.8%	6.8%	7.1%	9.1%	9.6%
Appreciation	0.7%	2.2%	2.3%	4.1%	4.4%
Income	1.1%	4.6%	4.7%	4.8%	5.1%

NCREIF Property Index Returns by Region and Property Type



Source: NCREIF

Modern Monetary Theory

Why all the talk?

Politicians are viewing Modern Monetary Theory (MMT) as the next step after central bank accommodation to spur economic growth.

Basic tenets:

- A government that prints and borrows in its own currency cannot be forced to default, since it can always print money to pay its creditors.
- Governments should direct their efforts towards fiscal policy that will manage demand and maintain full employment.
- The main constraint on government spending is not rising rates, but rather the availability of underutilized resources.
- The only cause of rapid inflation is spending when the economy is already at full capacity.
- Increases in taxes can keep a lid on inflation.
- The government can control the economy by spending when necessary to spur growth and tax when inflation is rising.
- Public debt does not matter at all—new money can pay for government spending or central banks can purchase that debt—as long as unemployment is low and prices are stable.

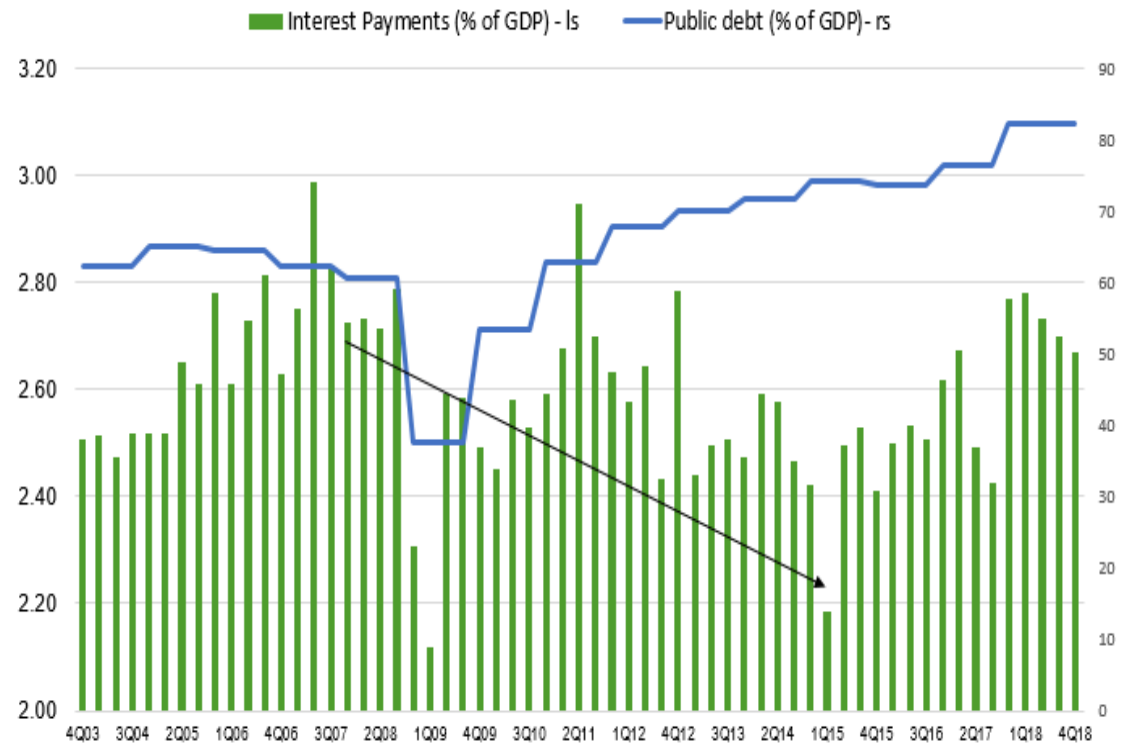
Modern Monetary Theory (continued)

Is MMT too good to be true? What are the risks?

- The cost of debt was held down during quantitative easing.
- Interest costs have increased while borrowing has risen.
- Debt still has a cost, per Larry Summers: “Although politicians shouldn’t make debt their top priority, they also shouldn’t act as if it doesn’t matter at all.”

US Interest Rate Payments and Public Debt

Q4 2003–Q4 2018

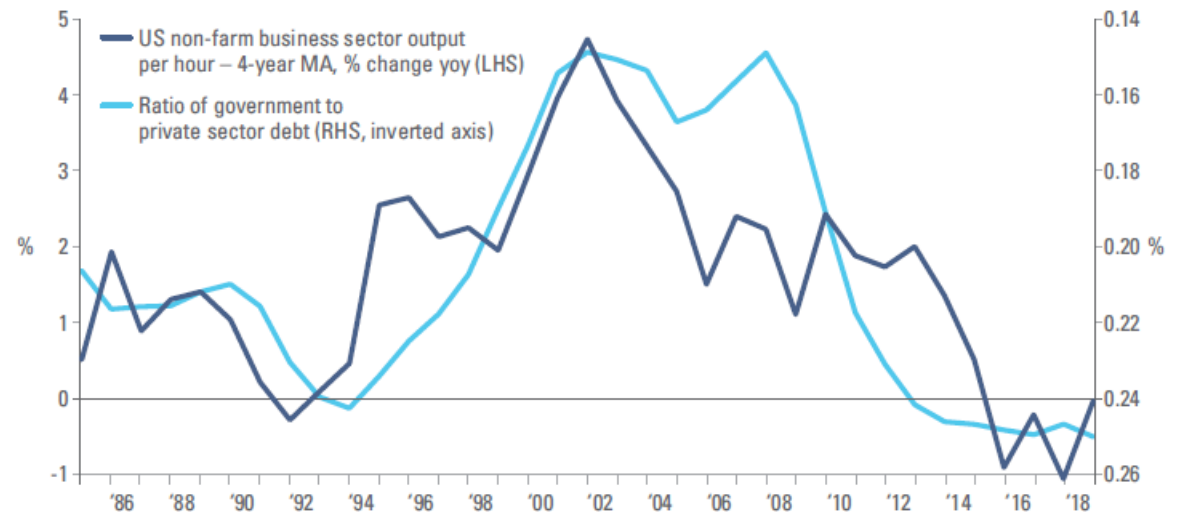


Sources: Bureau of Economic Analysis, Federal Reserve Bank of St. Louis.

Modern Monetary Theory (continued)

- Excess public debt tends to be correlated with slower trend growth and productivity.
- This is the result of the “crowding out” effect whereby government debt starves the private sector of money.
- Increased spending with a commensurate rise in borrowing may negatively impact future trend growth.

Fig 6: A rising share of government debt in total debt drives down productivity



Source: Ashmore, Bloomberg, US Treasury.

Modern Monetary Theory

Key takeaways

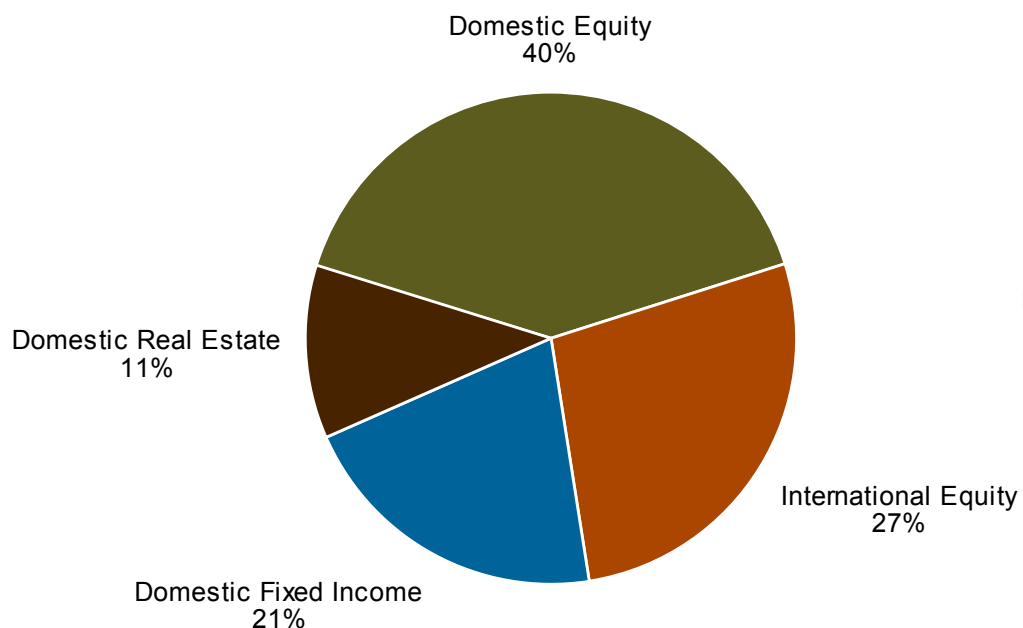
- MMT seems to have been politicized as a panacea to address increasing income and wealth inequality.
- Should expanded fiscal policy become part of the policy to address these issues, two potential outcomes could be steeper yield curves and a rise in inflation.

Callan

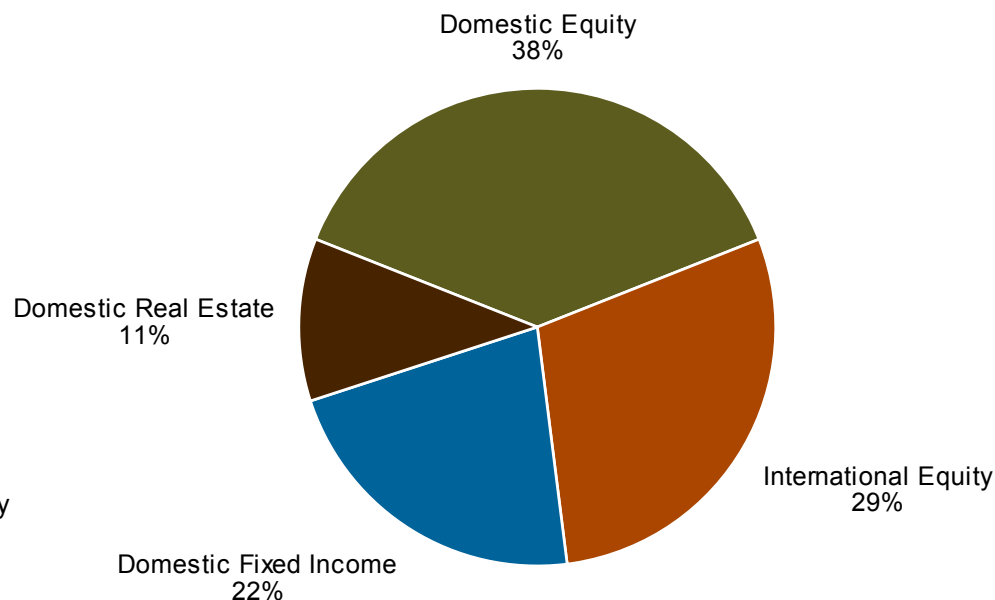
MCERA Plan Performance

MCERA Actual vs Target Asset Allocation as of March 31, 2019

Actual Asset Allocation



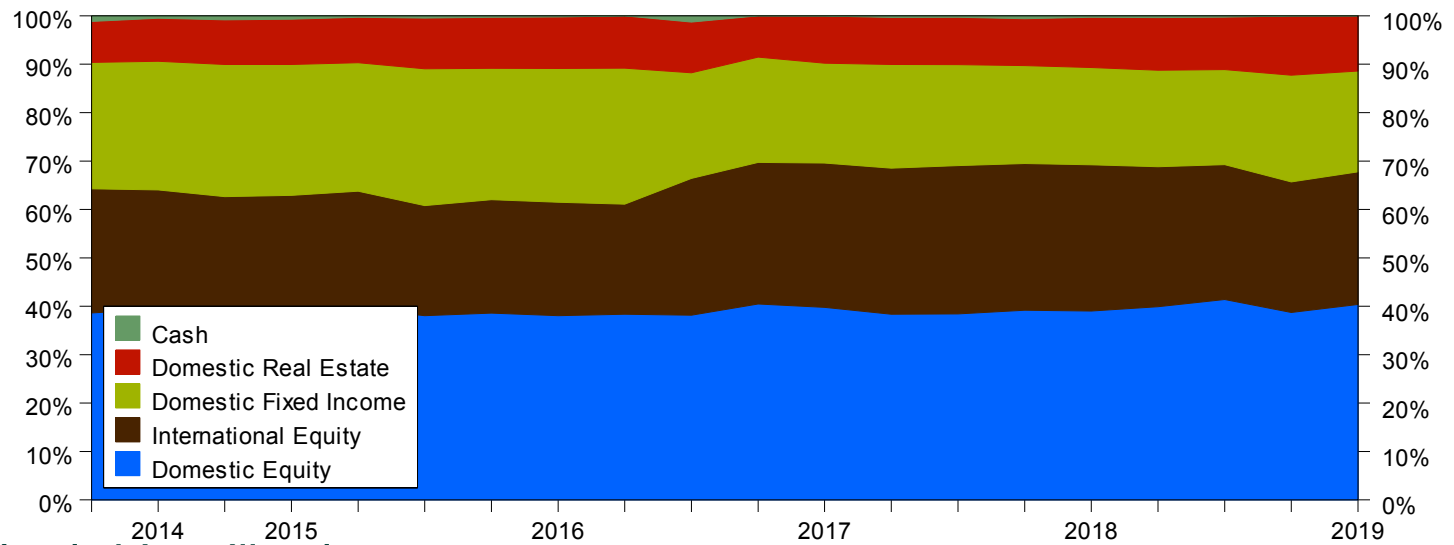
Target Asset Allocation



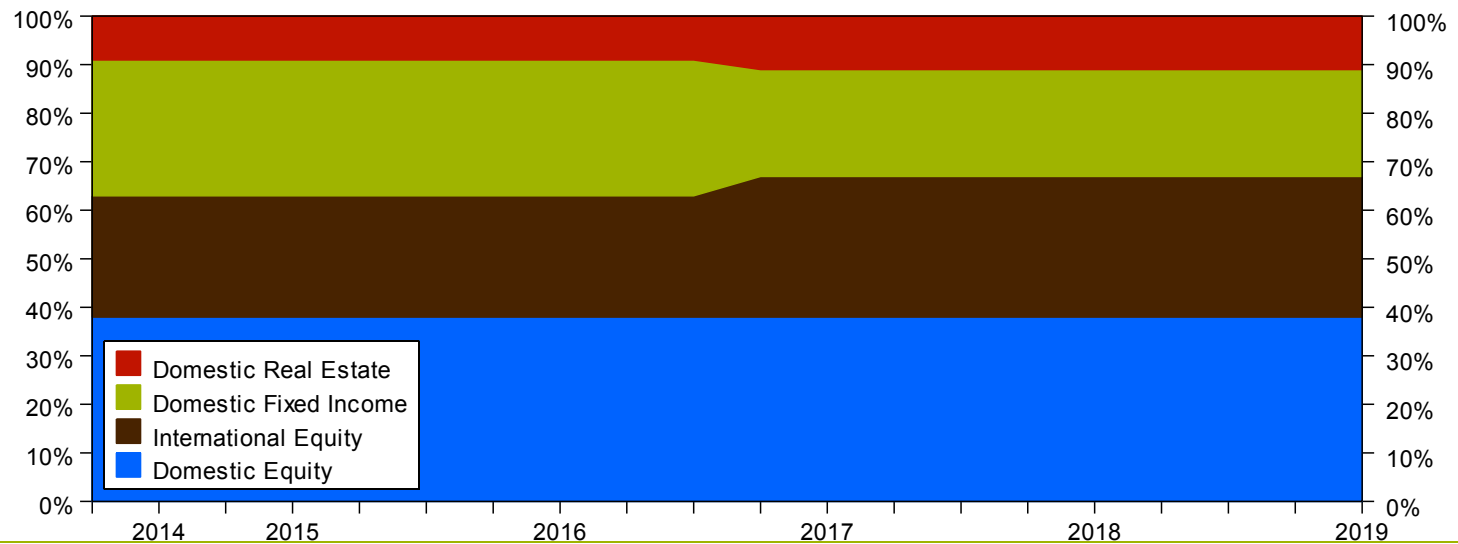
Asset Class	\$Dollars Actual	Weight Actual	Target	Percent Difference	Difference
Domestic Equity	210,033,715	40.4%	38.0%	2.4%	12,654,571
International Equity	142,266,688	27.4%	29.0%	(1.6%)	(8,364,762)
Domestic Fixed Income	108,419,439	20.9%	22.0%	(1.1%)	(5,852,698)
Domestic Real Estate	59,090,710	11.4%	11.0%	0.4%	1,954,642
Cash	-391,744	-0.1%	0.0%	(0.1%)	(391,744)
Total	519,418,808	100.0%	100.0%		

MCERA Actual vs Target Historical Asset Allocation

Actual Historical Asset Allocation

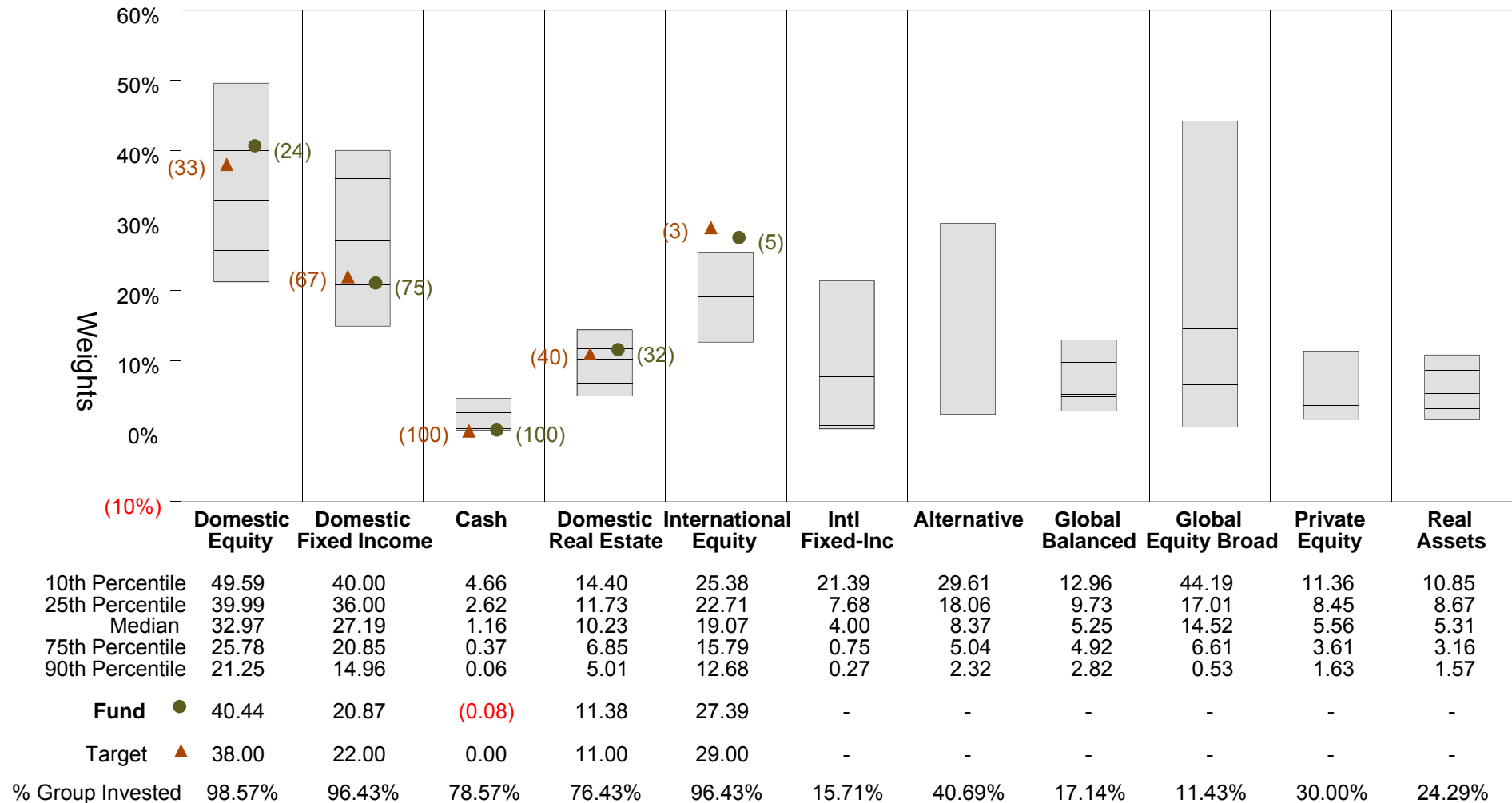


Target Historical Asset Allocation



MCERA Asset Class Weights vs Callan Public Fund Sponsor Database

Asset Class Weights vs Callan Public Fund Sponsor Database



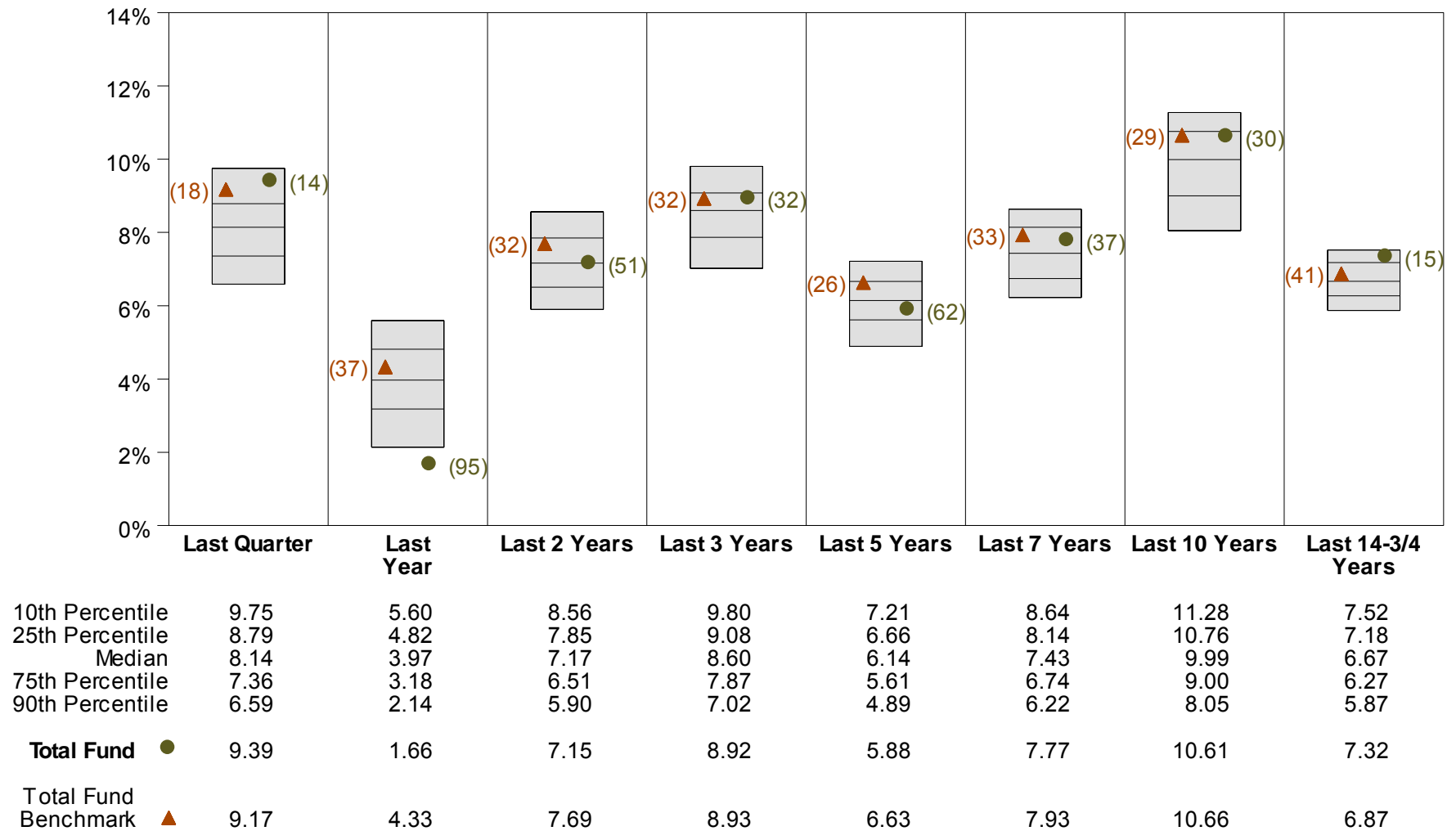
- The chart above ranks MCERA's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database

Asset Allocation as of March 31, 2019

	March 31, 2019				December 31, 2018	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Domestic Equities	\$210,033,715	40.44%	\$(1,000,000)	\$26,633,852	\$184,399,863	38.72%
Large Cap Equities	\$146,628,432	28.23%	\$(500,000)	\$17,908,944	\$129,219,488	27.14%
Vanguard S&P 500 Index	36,675,176	7.06%	(500,000)	4,439,217	32,735,958	6.87%
SSGA S&P Equal Weighted NL CTF	36,809,300	7.09%	0	4,798,312	32,010,988	6.72%
Boston Partners	35,592,531	6.85%	0	3,054,947	32,537,584	6.83%
Harbor Cap Appreciation	37,551,426	7.23%	0	5,616,468	31,934,958	6.71%
Mid Cap Equities	\$32,474,257	6.25%	\$(500,000)	\$4,102,471	\$28,871,786	6.06%
Fidelity Low Priced Stock	15,116,855	2.91%	0	1,426,178	13,690,677	2.87%
Janus Enterprise	17,357,403	3.34%	(500,000)	2,676,293	15,181,110	3.19%
Small Cap Equities	\$30,931,026	5.95%	\$0	\$4,622,437	\$26,308,589	5.52%
Prudential Small Cap Value	12,667,287	2.44%	0	1,343,038	11,324,250	2.38%
AB US Small Growth	18,263,738	3.52%	0	3,279,399	14,984,339	3.15%
International Equities	\$142,266,688	27.39%	\$0	\$13,775,357	\$128,491,331	26.98%
EuroPacific	25,999,176	5.01%	0	3,032,301	22,966,876	4.82%
Harbor International	27,963,442	5.38%	0	2,493,894	25,469,548	5.35%
Oakmark International	26,134,324	5.03%	0	2,162,841	23,971,484	5.03%
Mondrian International	26,161,556	5.04%	0	2,240,990	23,920,566	5.02%
T. Rowe Price Intl Small Cap	21,145,814	4.07%	0	2,311,878	18,833,937	3.96%
Investec	14,862,374	2.86%	0	1,533,454	13,328,920	2.80%
Domestic Fixed Income	\$108,419,439	20.87%	\$0	\$3,400,299	\$105,019,140	22.05%
Dodge & Cox Income	54,525,456	10.50%	0	1,943,398	52,582,058	11.04%
PIMCO	53,893,983	10.38%	0	1,456,901	52,437,082	11.01%
Real Estate	\$59,090,710	11.38%	\$(22,445)	\$999,508	\$58,113,647	12.20%
RREEF Private Fund	30,316,406	5.84%	0	479,461	29,836,945	6.27%
Barings Core Property Fund	27,624,305	5.32%	0	497,603	27,126,702	5.70%
625 Kings Court	1,150,000	0.22%	(22,445)	22,445	1,150,000	0.24%
Cash	\$-391,744	(0.08%)	\$(565,348)	\$0	\$173,604	0.04%
Total Fund	\$519,418,808	100.0%	\$(1,587,793)	\$44,809,017	\$476,197,584	100.0%

MCERA Total Fund Performance as of March 31, 2019

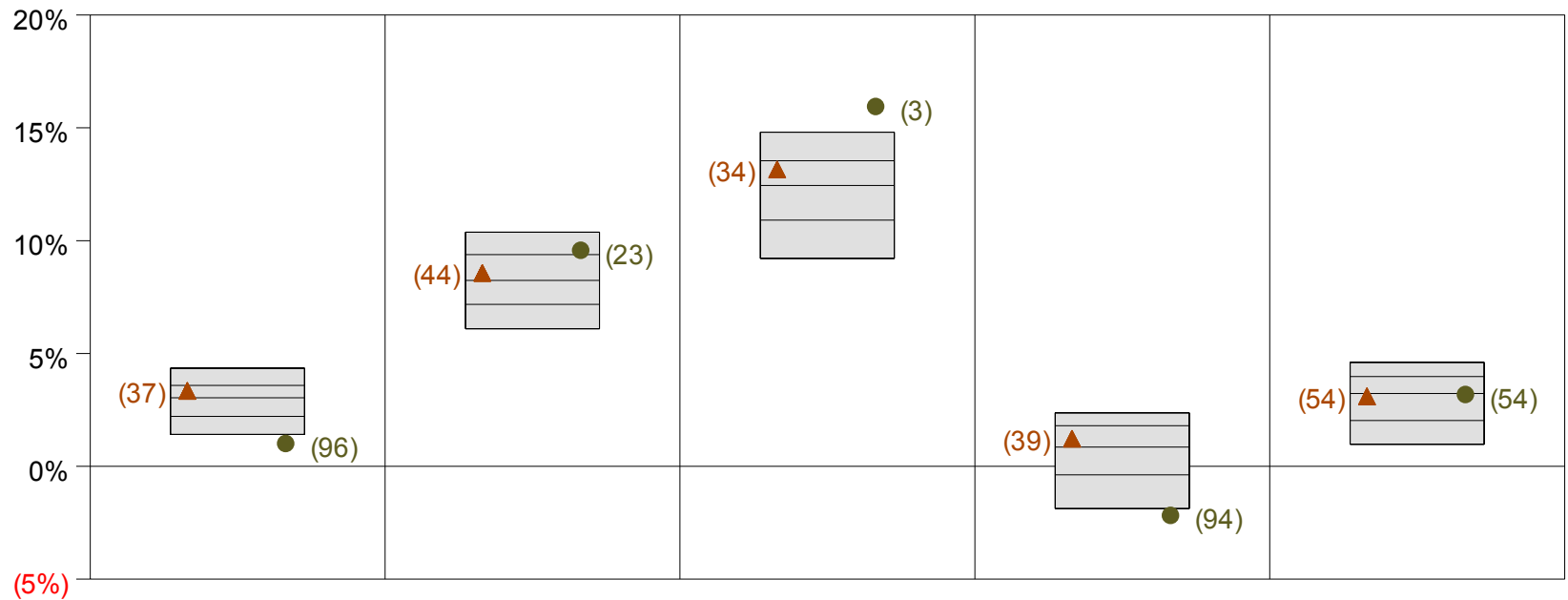
Performance vs Callan Public Fund Sponsor Database (Gross)



- The Callan Public Fund Sponsor Database consists of public employee pension total funds including both Callan LLC client and surveyed non-client funds.
- Returns greater than one year are annualized

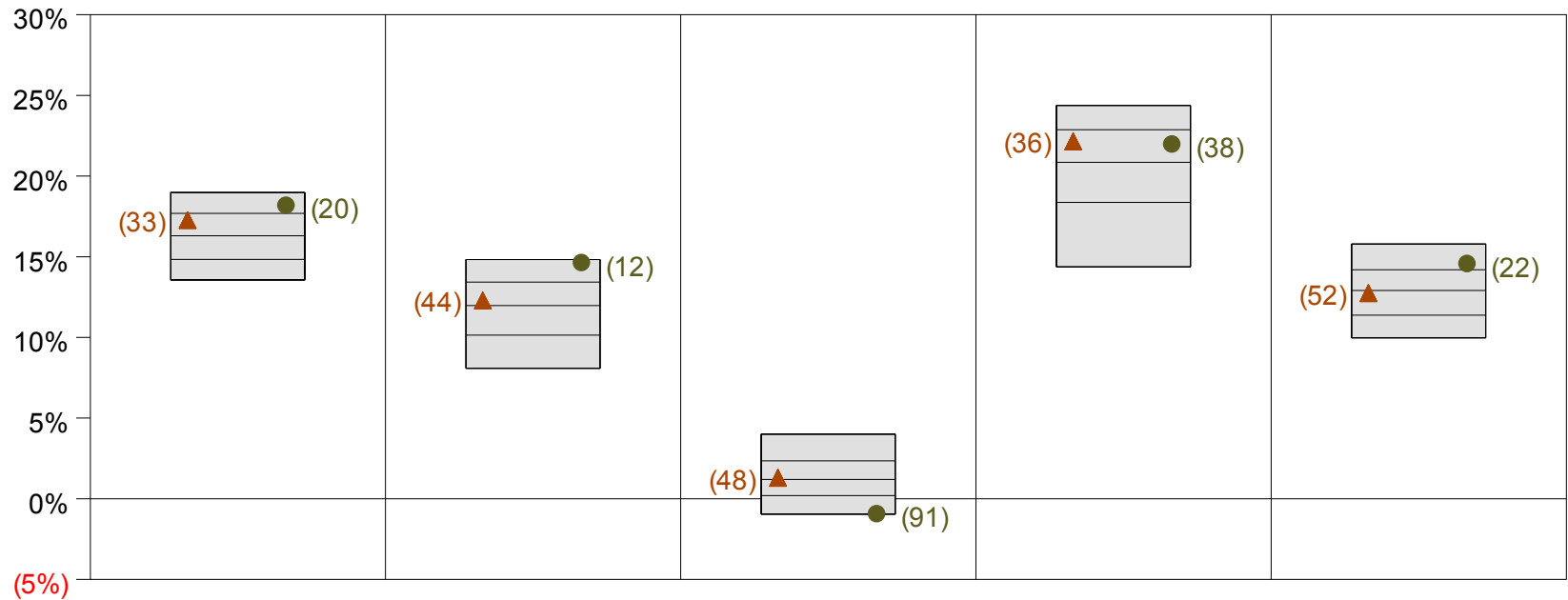
MCERA Total Fund Fiscal Year Performance

March 31, 2019



	Fiscal YTD	FY 2018	FY 2017	FY 2016	FY 2015
10th Percentile	4.35	10.38	14.80	2.37	4.61
25th Percentile	3.59	9.39	13.54	1.80	3.98
Median	3.04	8.24	12.45	0.86	3.23
75th Percentile	2.22	7.18	10.91	(0.38)	2.04
90th Percentile	1.41	6.09	9.21	(1.87)	0.98
Total Fund	0.92	9.48	15.86	(2.26)	3.09
Total Fund Benchmark	3.34	8.57	13.16	1.23	3.10

MCERA Total Fund Fiscal Year Performance (continued)

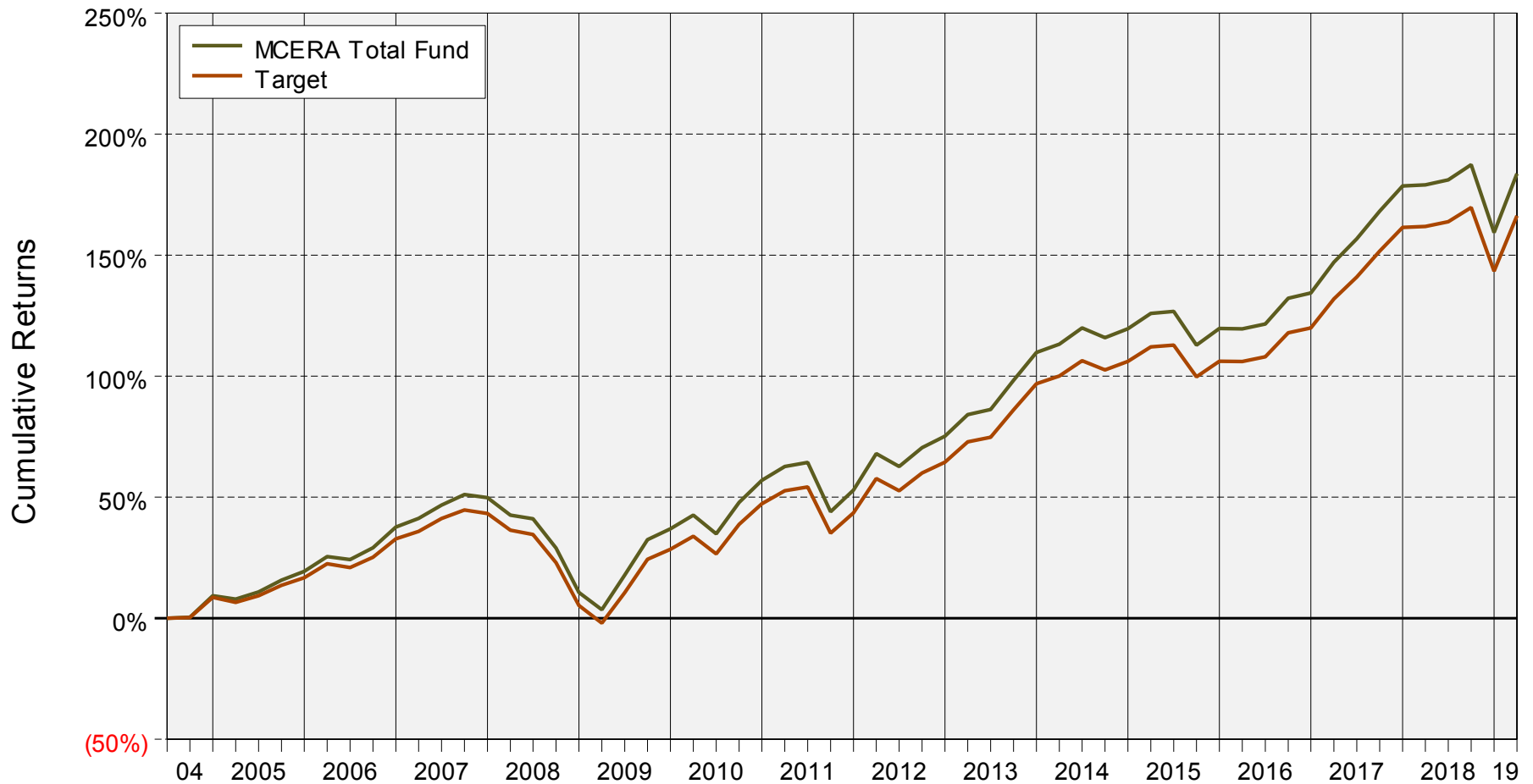


	FY 2014	FY 2013	FY 2012	FY 2011	FY 2010
10th Percentile	18.99	14.82	3.99	24.38	15.80
25th Percentile	17.69	13.43	2.36	22.87	14.20
Median	16.31	11.98	1.20	20.86	12.90
75th Percentile	14.83	10.14	0.20	18.36	11.38
90th Percentile	13.56	8.08	(0.96)	14.38	9.98
Total Fund ●	18.08	14.52	(1.04)	21.87	14.47
Total Fund Benchmark ▲	17.27	12.29	1.30	22.15	12.74

MCERA Cumulative Total Fund Performance

For 14 ³/₄ Years Ended March 31, 2019

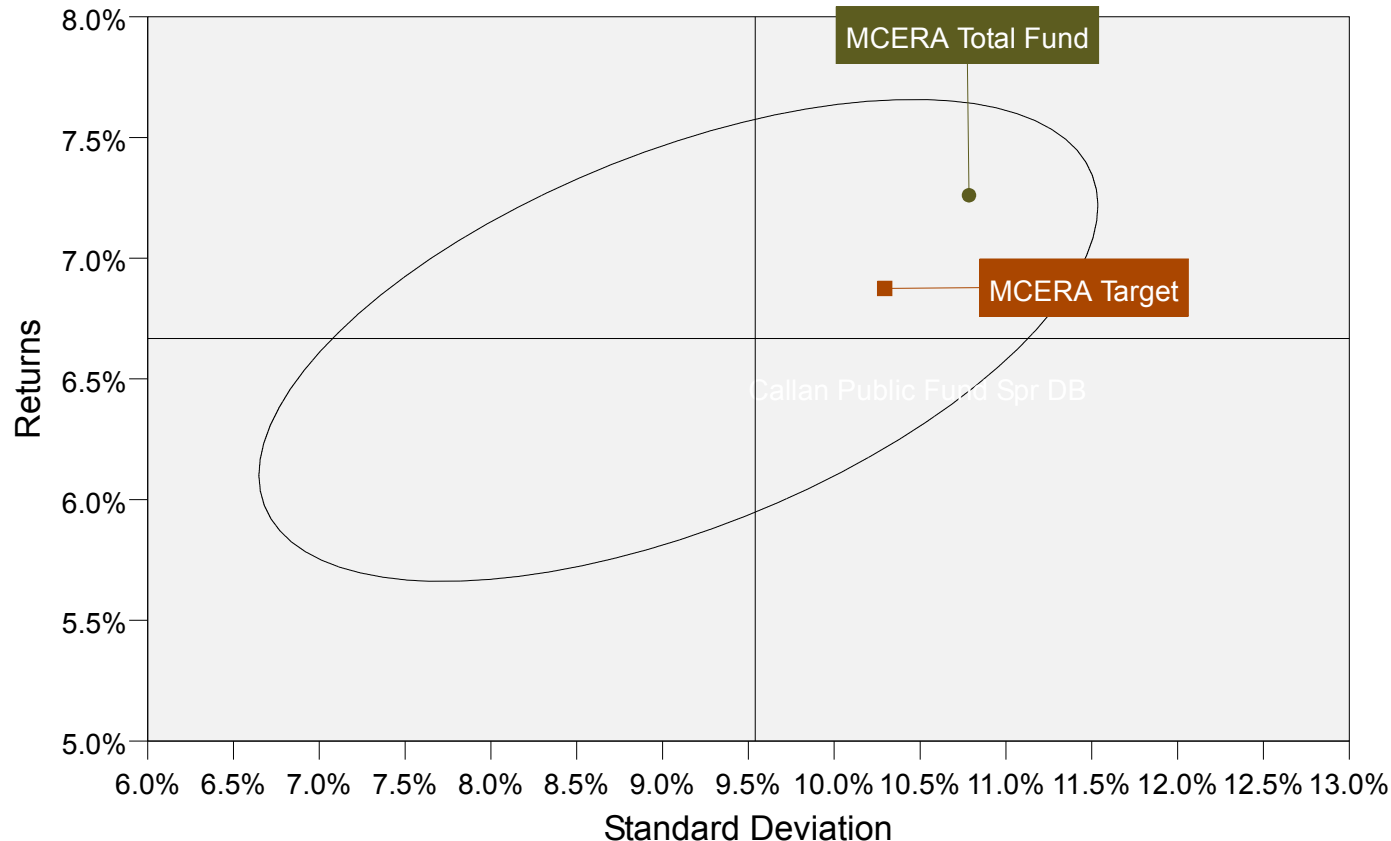
Fourteen and Three-Quarter Year Cumulative Returns



MCERA Annualized Return vs Risk

14 3/4 Years Ended March 31, 2019

Group: Callan Public Fund Sponsor Database



- The chart above plots 14 3/4 year annualized return vs standard deviation of the MCERA Total Fund and the Total Fund Target. Over the trailing 14 3/4 year period the MCERA Total Fund has achieved an annualized return higher than the Total Fund Target with moderately higher volatility.

Investment Manager Returns for Periods Ended March 31, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Equities	14.47%	6.82%	14.59%	9.72%	16.33%
Russell 3000 Index	14.04%	8.77%	13.48%	10.36%	16.00%
Large Cap Equities					
Vanguard S&P 500 Index	13.65%	9.47%	13.48%	10.88%	-
S&P 500 Index	13.65%	9.50%	13.51%	10.91%	15.92%
SSGA S&P Eq Weighted NL CTF	14.98%	7.09%	-	-	-
S&P 500 Eq Weighted	14.91%	7.22%	12.03%	9.52%	17.75%
Boston Partners	9.39%	1.26%	10.71%	6.73%	-
S&P 500 Index	13.65%	9.50%	13.51%	10.91%	15.92%
Russell 1000 Value Index	11.93%	5.67%	10.45%	7.72%	14.52%
Harbor Cap Appreciation	17.59%	11.60%	18.57%	13.99%	17.23%
S&P 500 Index	13.65%	9.50%	13.51%	10.91%	15.92%
Russell 1000 Growth Index	16.10%	12.75%	16.53%	13.50%	17.52%
Mid Cap Equities					
Fidelity Low Priced Stock	10.42%	(0.40%)	8.60%	6.30%	14.91%
Russell MidCap Value Idx	14.37%	2.89%	9.50%	7.22%	16.39%
Janus Enterprise	17.88%	11.39%	17.33%	13.52%	18.84%
Russell MidCap Growth Idx	19.62%	11.51%	15.06%	10.89%	17.60%
Small Cap Equities					
Prudential Small Cap Value	11.86%	(6.23%)	8.19%	4.71%	-
US Small Cap Value Idx	12.90%	0.79%	9.82%	6.25%	15.53%
Russell 2000 Value Index	11.93%	0.17%	10.86%	5.59%	14.12%
AB US Small Growth	21.89%	15.12%	23.83%	11.07%	20.22%
Russell 2000 Growth Index	17.14%	3.85%	14.87%	8.41%	16.52%

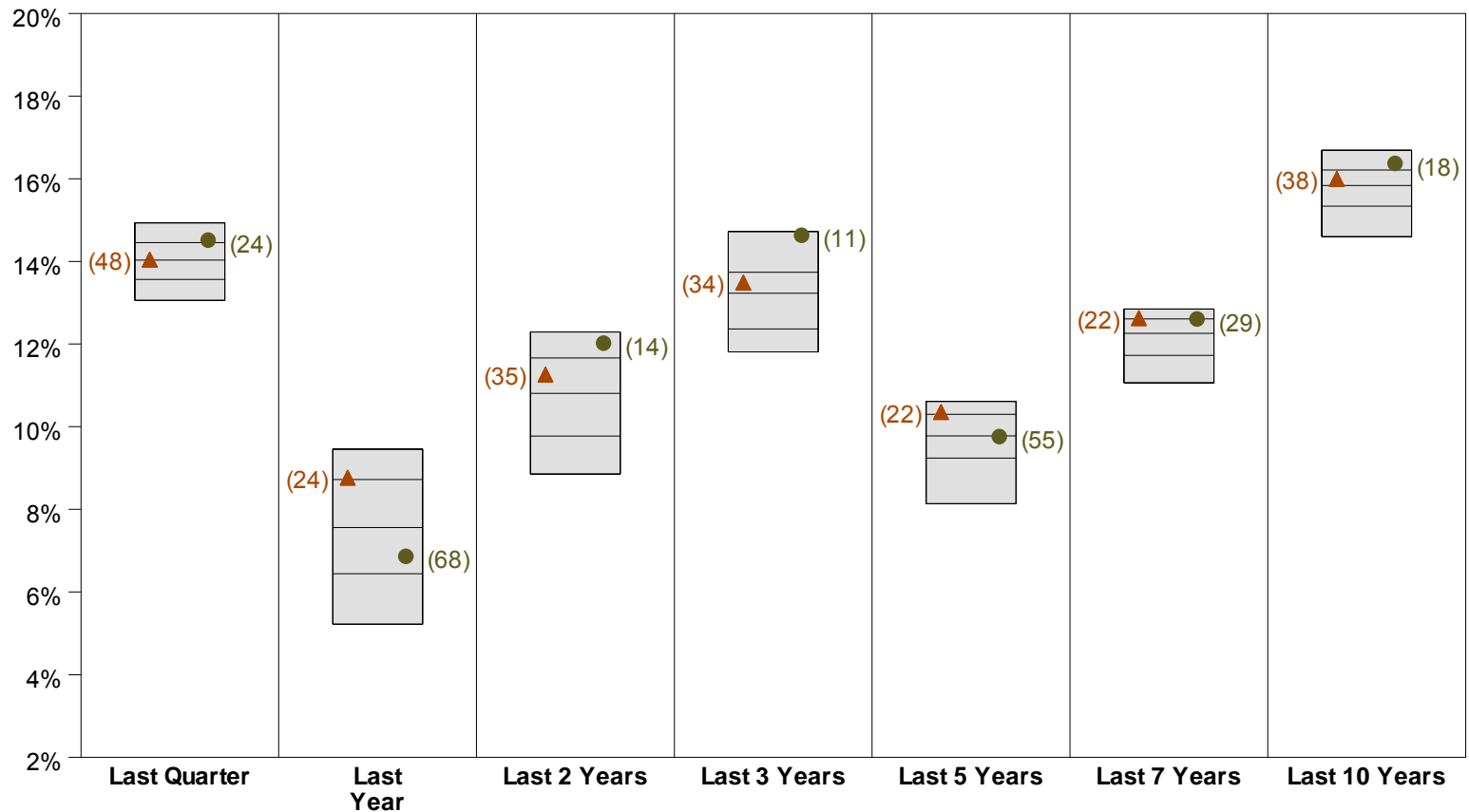
Investment Manager Returns for Periods Ended March 31, 2019 (continued)

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
International Equities	10.62%	(8.50%)	6.53%	1.35%	9.23%
MSCI ACWI ex-US Index	10.44%	(3.73%)	8.61%	3.05%	9.35%
EuroPacific	13.20%	(4.66%)	9.33%	4.27%	9.95%
Harbor International	9.79%	(9.34%)	3.41%	(0.28%)	8.61%
Oakmark International	9.02%	(14.32%)	6.59%	1.18%	11.89%
Mondrian International	9.16%	(3.31%)	6.23%	1.62%	-
MSCI EAFE Index	9.98%	(3.71%)	7.27%	2.33%	8.96%
MSCI ACWI ex-US Index	10.44%	(3.73%)	8.61%	3.05%	9.35%
T. Rowe Price Intl Small Cap	11.99%	(10.88%)	-	-	-
MSCI ACWI ex US Small Cap	10.26%	(9.48%)	7.01%	3.26%	11.86%
Investec	11.29%	(7.40%)	-	-	-
MSCI Emerging Markets Index	9.93%	(7.40%)	10.68%	3.68%	8.95%
Domestic Fixed Income	3.24%	4.07%	3.21%	3.00%	4.98%
Blmbg Aggregate Index	2.94%	4.48%	2.03%	2.74%	3.77%
Dodge & Cox Income	3.70%	4.31%	3.64%	3.15%	5.56%
PIMCO	2.78%	3.83%	2.79%	2.85%	4.84%
Blmbg Aggregate Index	2.94%	4.48%	2.03%	2.74%	3.77%
Real Estate	1.72%	6.76%	6.63%	9.05%	11.37%
Real Estate Custom Benchmark	1.48%	6.80%	7.11%	9.35%	12.90%
RREEF Private	1.61%	6.86%	7.22%	9.59%	8.90%
Barings Core Property Fund	1.83%	6.61%	6.88%	8.72%	-
NFI-ODCE Equal Weight Net	1.48%	6.80%	7.26%	9.42%	7.52%
625 Kings Court	1.95%	7.75%	13.99%	12.45%	9.06%
Total Fund	9.39%	1.66%	8.92%	5.88%	10.61%
Total Fund Benchmark	9.17%	4.33%	8.93%	6.63%	10.66%

MCERA Domestic Equity Composite Performance

For Periods Ended March 31, 2019

Performance vs Public Fund - Domestic Equity (Gross)



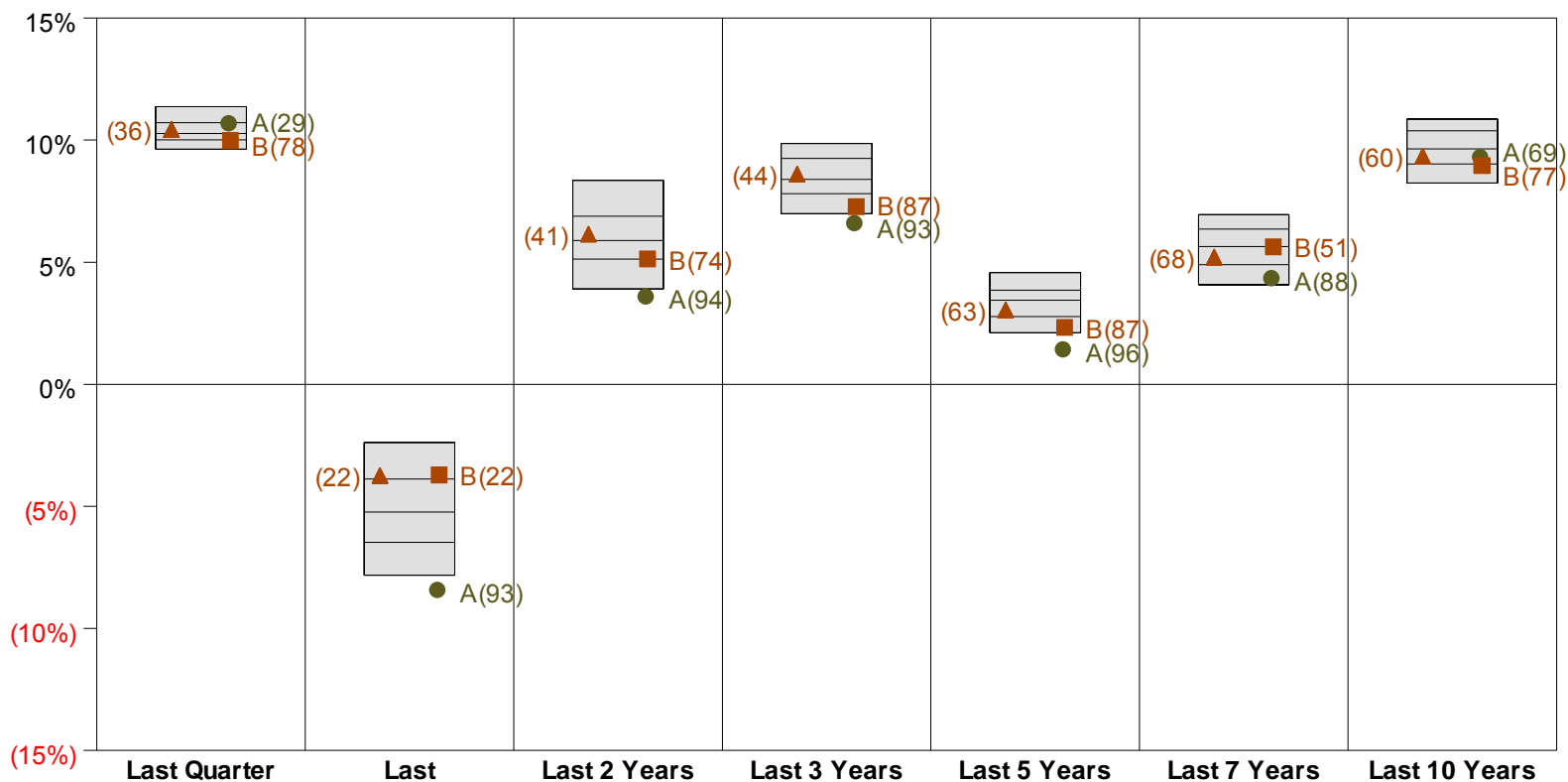
10th Percentile	14.93	9.46	12.29	14.72	10.61	12.85	16.69
25th Percentile	14.46	8.72	11.66	13.74	10.30	12.61	16.21
Median	14.03	7.56	10.81	13.23	9.78	12.26	15.84
75th Percentile	13.57	6.44	9.77	12.37	9.24	11.72	15.33
90th Percentile	13.06	5.22	8.85	11.81	8.14	11.06	14.60

Domestic Equity Composite	●	14.47	6.82	11.98	14.59	9.72	12.56	16.33
Russell 3000 Index	▲	14.04	8.77	11.26	13.48	10.36	12.63	16.00

MCERA International Equity Composite Performance

For Periods Ended March 31, 2019

Performance vs Public Fund - International Equity (Gross)



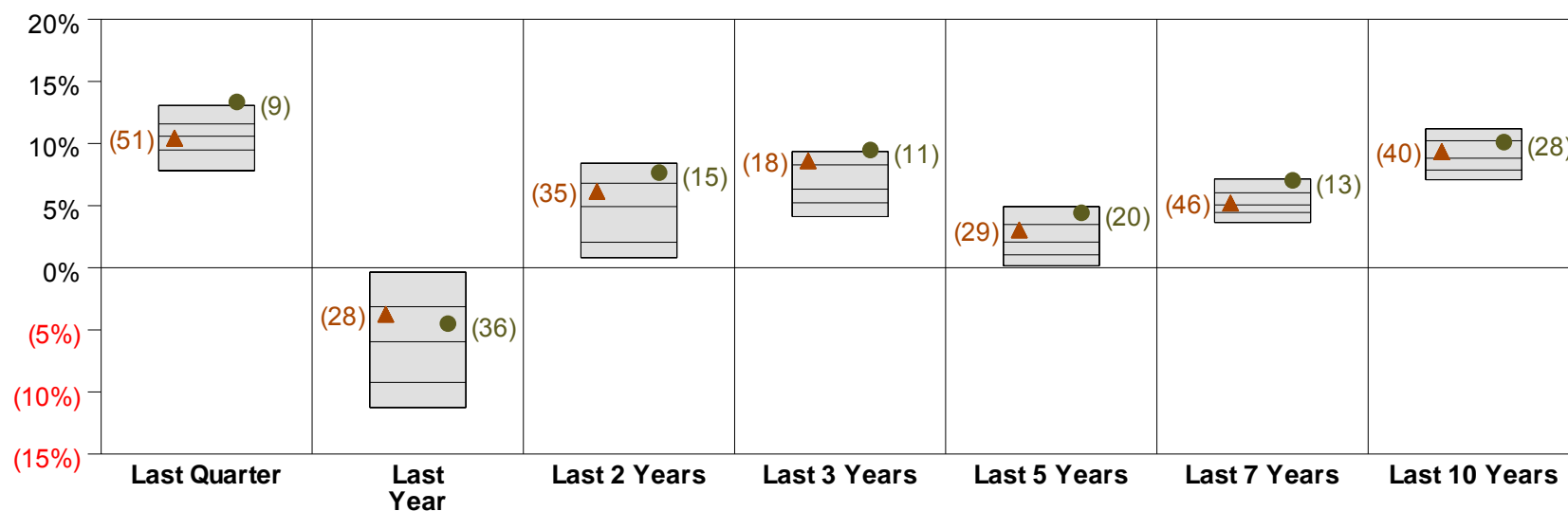
10th Percentile	11.37	(2.39)	8.35	9.86	4.57	6.94	10.86
25th Percentile	10.72	(3.88)	6.89	9.26	3.85	6.35	10.39
Median	10.28	(5.24)	5.89	8.39	3.44	5.64	9.64
75th Percentile	10.01	(6.48)	5.13	7.81	2.77	4.90	9.02
90th Percentile	9.63	(7.83)	3.90	6.99	2.11	4.07	8.24

International Equity Composite	● A	10.62	(8.50)	3.52	6.53	1.35	4.27	9.23
MSCI EAFE Index	■ B	9.98	(3.71)	5.14	7.27	2.33	5.63	8.96
MSCI ACWIxUS Gross	▲	10.44	(3.73)	6.15	8.61	3.05	5.21	9.35

EuroPacific Growth Performance

For Periods Ended March 31, 2019

Performance vs Callan Non US Equity Mutual Funds (Net)



10th Percentile	13.06	(0.35)	8.41	9.35	4.93	7.15	11.19
25th Percentile	11.58	(3.15)	6.80	8.29	3.49	6.03	10.22
Median	10.60	(5.95)	4.93	6.33	2.07	5.06	8.82
75th Percentile	9.47	(9.22)	2.05	5.23	1.03	4.46	7.87
90th Percentile	7.82	(11.26)	0.81	4.12	0.15	3.65	7.09
EuroPacific	13.20	(4.66)	7.49	9.33	4.27	6.88	9.95

MSCI ACWIxUS Gross	10.44	(3.73)	6.15	8.61	3.05	5.21	9.35
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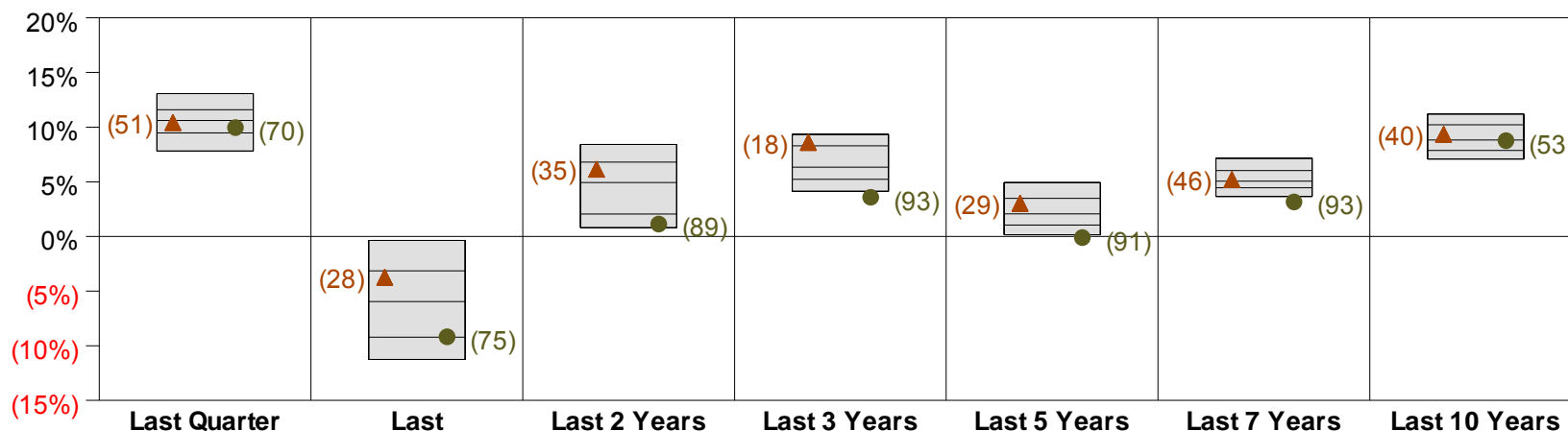
Investment Philosophy

Capital Group has a research-driven approach to non-U.S. investing. Their bottom-up fundamental approach is blended with macroeconomic and political judgments on the outlook of economies, industries, currencies, and markets. The fund uses a "multiple manager" approach where individual portfolio managers, each with different styles, manage separate sleeves of the strategy independently. Sleeves are combined to form the fund. Individual managers are selected so that the aggregate fund adheres to its stated objective of capital appreciation. Switched from Class R-5 Shares to Class R-6 Shares in December 2009.

Harbor International Performance

For Periods Ended March 31, 2019

Performance vs Callan Non US Equity Mutual Funds (Net)



10th Percentile	13.06	(0.35)	8.41	9.35	4.93	7.15	11.19
25th Percentile	11.58	(3.15)	6.80	8.29	3.49	6.03	10.22
Median	10.60	(5.95)	4.93	6.33	2.07	5.06	8.82
75th Percentile	9.47	(9.22)	2.05	5.23	1.03	4.46	7.87
90th Percentile	7.82	(11.26)	0.81	4.12	0.15	3.65	7.09
Harbor International	● 9.79	(9.34)	0.98	3.41	(0.28)	3.00	8.61
MSCI ACWIxUS Gross	▲ 10.44	(3.73)	6.15	8.61	3.05	5.21	9.35

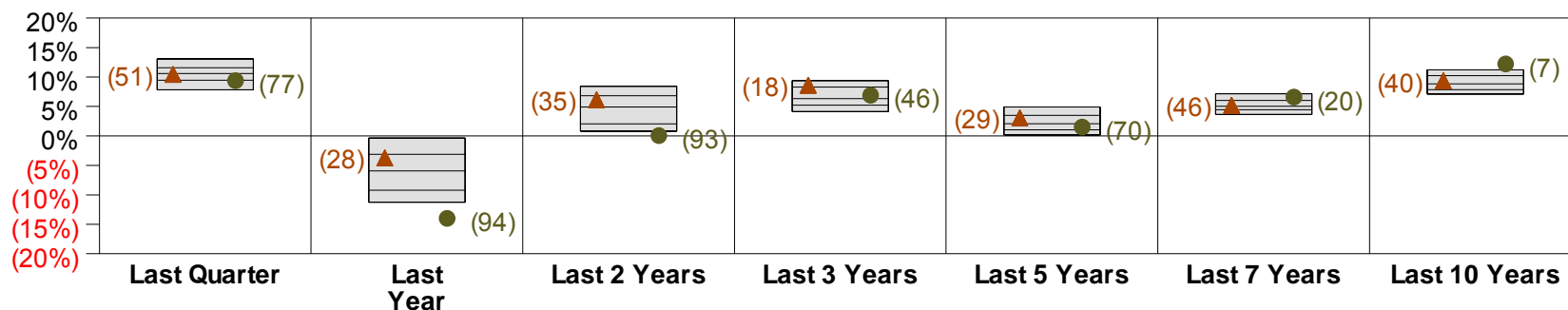
Investment Philosophy

The Harbor International Fund is sub-advised by Marathon-London. At the heart of Marathon's investment philosophy is the "capital cycle" approach to investment. This is based on the idea that the prospect of high returns will attract excessive capital (and hence competition), and vice versa. In addition, the assessment of how management responds to the forces of the capital cycle - particularly whether they curtail investment when returns have been poor - and how they are incentivized are critical to the investment outcome. Given the contrarian and long-term nature of the capital cycle, the investment philosophy results in strong views versus the market and long holding periods (5 years plus). The attractiveness of an individual security, therefore, should be evaluated within this timeframe.

Oakmark International Performance

For Periods Ended March 31, 2019

Performance vs Callan Non US Equity Mutual Funds (Net)



10th Percentile	13.06	(0.35)	8.41	9.35	4.93	7.15	11.19	
25th Percentile	11.58	(3.15)	6.80	8.29	3.49	6.03	10.22	
Median	10.60	(5.95)	4.93	6.33	2.07	5.06	8.82	
75th Percentile	9.47	(9.22)	2.05	5.23	1.03	4.46	7.87	
90th Percentile	7.82	(11.26)	0.81	4.12	0.15	3.65	7.09	
<hr/>								
Oakmark International	●	9.02	(14.32)	(0.28)	6.59	1.18	6.26	11.89
MSCI ACWIxUS Gross	▲	10.44	(3.73)	6.15	8.61	3.05	5.21	9.35

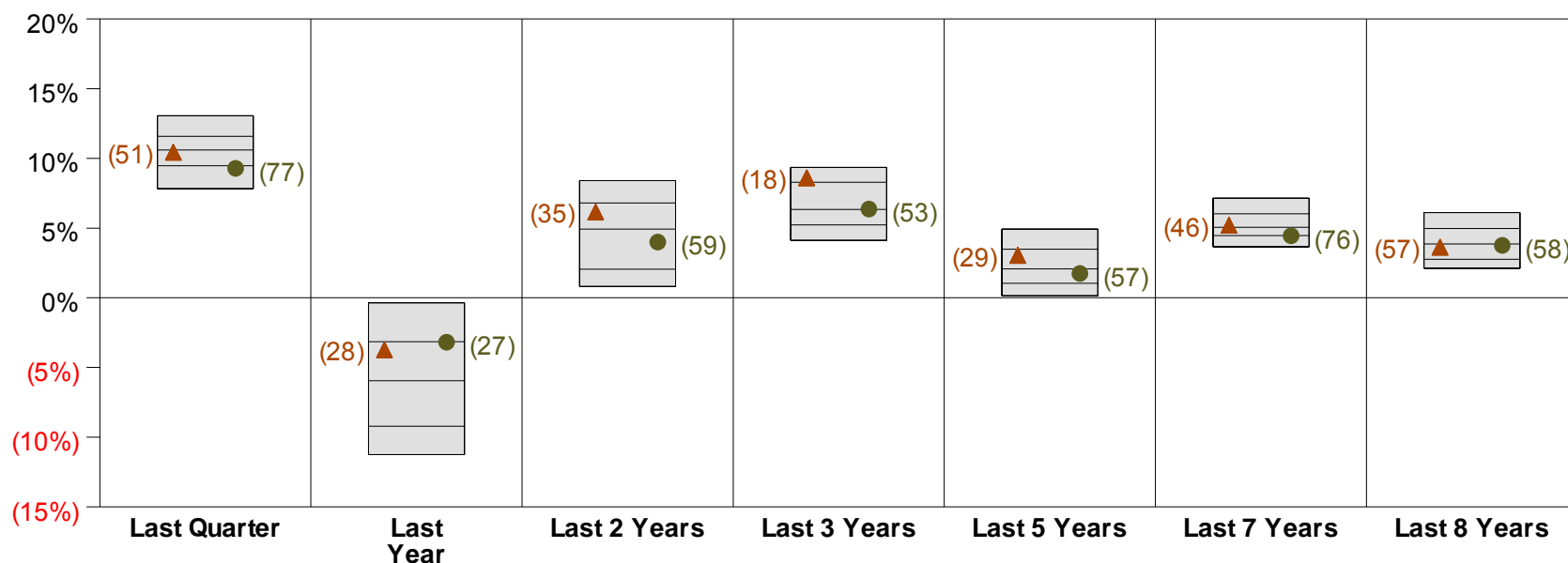
Investment Philosophy

Harris Associates are value investors. They seek to invest in companies that trade at a substantial discount to their underlying business values and run by managers who think and act as owners. They believe that purchasing a quality business at a discount to its underlying value minimizes risk while providing substantial profit potential. Over time, they believe the price of a stock will rise to reflect the company's underlying business value; in practice, their investment time horizon is generally three to five years. They are concentrated investors, building focused portfolios that provide diversification but are concentrated enough so that their best ideas can make a meaningful impact on investment performance. They believe they can add value through their stock selection capabilities and low correlation to international indices and peers. Harris believes their greatest competitive advantage is their long-term investment horizon, exploiting the mispricing of securities caused by what they believe is the short-term focus of many market participants. *This fund was converted into a CIT in November 2015.

Mondrian International Performance

For Periods Ended March 31, 2019

Performance vs Callan Non US Equity Mutual Funds (Net)



10th Percentile	13.06	(0.35)	8.41	9.35	4.93	7.15	6.11
25th Percentile	11.58	(3.15)	6.80	8.29	3.49	6.03	4.97
Median	10.60	(5.95)	4.93	6.33	2.07	5.06	3.86
75th Percentile	9.47	(9.22)	2.05	5.23	1.03	4.46	2.76
90th Percentile	7.82	(11.26)	0.81	4.12	0.15	3.65	2.12

Mondrian International



9.16

(3.31)

3.88

6.23

1.62

4.32

3.62

MSCI

ACWIxUS Gross



10.44

(3.73)

6.15

8.61

3.05

5.21

3.64

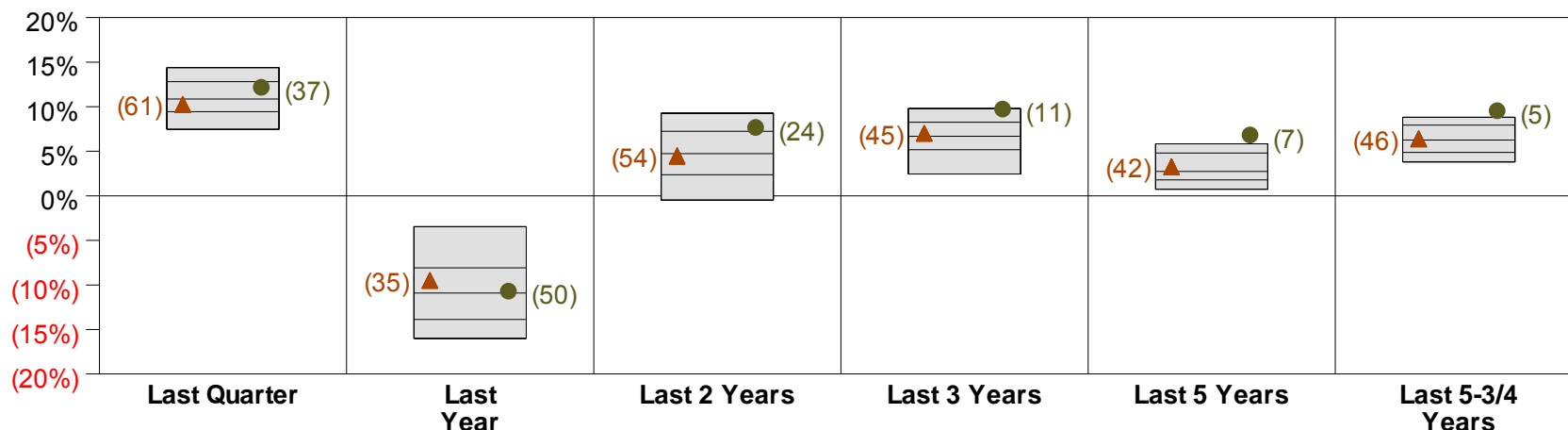
Investment Philosophy

Mondrian's value driven investment philosophy is based on the belief that investments need to be evaluated in terms of their fundamental long-term value. In the management of international equity assets, they invest in securities where rigorous dividend discount analysis identifies value in terms of the long term flow of income. Mondrian's management fees is 80 bps on all assets.

T. Rowe Price International Small Cap Performance

For Periods Ended March 31, 2019

Performance vs Callan International Small Cap Mut Funds (Net)



10th Percentile	14.39	(3.47)	9.27	9.79	5.82	8.81
25th Percentile	12.81	(8.10)	7.25	8.24	4.81	7.94
Median	10.86	(10.91)	4.73	6.68	2.73	6.26
75th Percentile	9.43	(13.86)	2.37	5.17	1.79	4.85
90th Percentile	7.46	(16.01)	(0.48)	2.44	0.72	3.79

T. Rowe Price Intl Small Cap ●	11.99	(10.88)	7.47	9.52	6.63	9.35
MSCI ACWI ex US Small Cap ▲	10.26	(9.48)	4.48	7.01	3.26	6.40

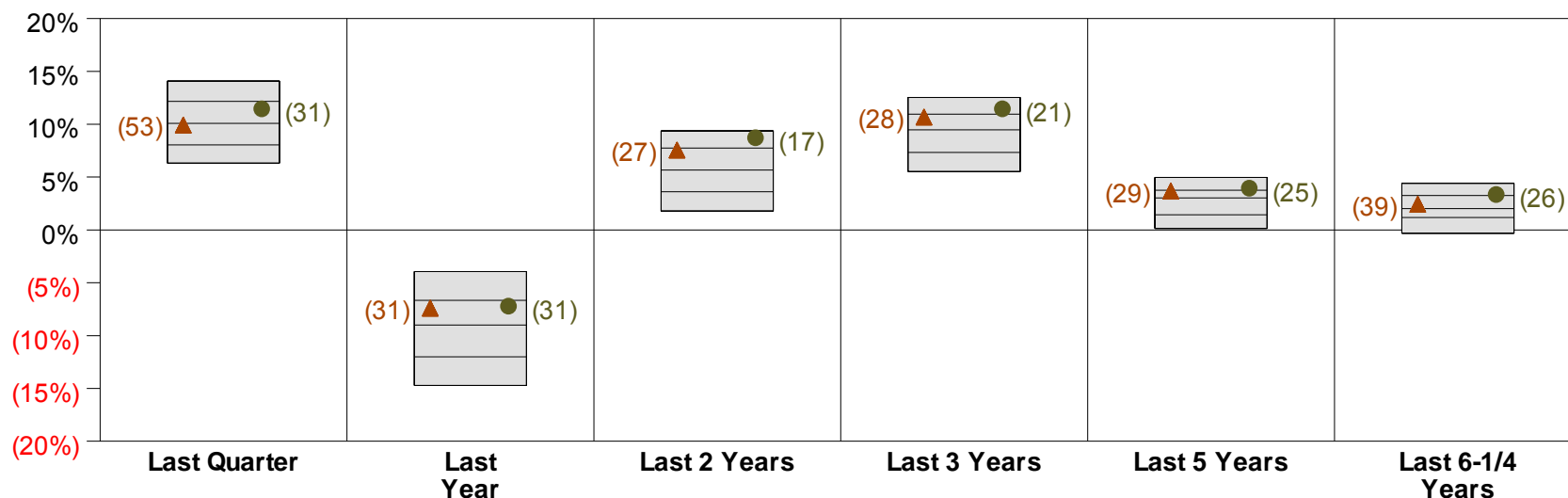
Investment Philosophy

Central to T. Rowe's investment philosophy is the belief that the market for international small-cap equities has significant pricing inefficiencies. These inefficiencies stem from the fact that global investors tend to be underexposed to international small-cap equities and that these equities are under researched given the sheer size and scope of the opportunity set. Further, they believe that a disciplined decision-making process nourished by superior research information is the best way to take advantage of market inefficiencies. The team's approach emphasizes reasonably priced growth stocks that they believe can grow their earnings faster than the overall market, which should result in a portfolio of stocks that outperforms the broad market over time. Portfolio was funded September 2017. Historical returns are that of the manager's composite.

Investec Performance

For Periods Ended March 31, 2019

Performance vs Morningstar Diversified Emg Mkts Fds (Net)



10th Percentile	14.08	(3.95)	9.37	12.53	4.98	4.41
25th Percentile	12.16	(6.67)	7.76	10.96	3.75	3.24
Median	10.09	(9.01)	5.66	9.47	3.03	2.02
75th Percentile	8.05	(12.01)	3.61	7.33	1.43	1.17
90th Percentile	6.33	(14.71)	1.79	5.51	0.14	(0.32)
Investec	11.29	(7.40)	8.52	11.28	3.75	3.16
MSCI EM	9.93	(7.40)	7.56	10.68	3.68	2.43

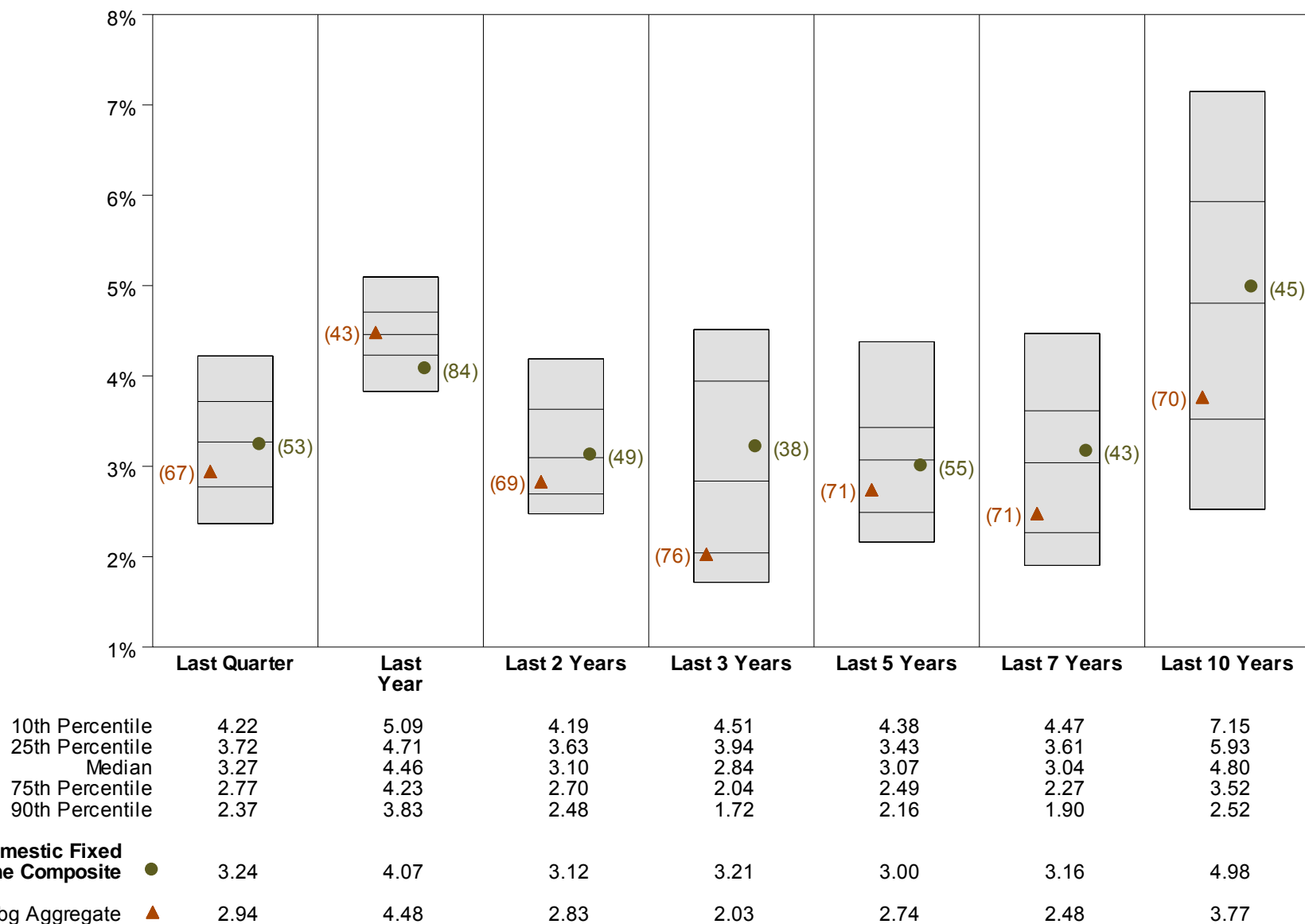
Investment Philosophy

Investec's 4Factor Equity team believes that share prices are driven by four key attributes over time and investing in companies that display these characteristics will drive long-term performance. They look to invest in high quality, attractively valued companies, which are improving operating performance and receiving increasing investor attention. These four factors (i.e., Strategy, Value, Earnings, and Technicals) are confirmed as performance drivers by academic research, empirical testing and intuitive reasoning. They believe that each factor can be a source of outperformance but in combination they are intended to produce more stable returns over the market cycle. Investec's management fee is 80bps on all assets. The portfolio was funded June 2017. Historical returns are that of the manager's composite.

MCERA Fixed Income Composite Performance

For Periods Ended March 31, 2019

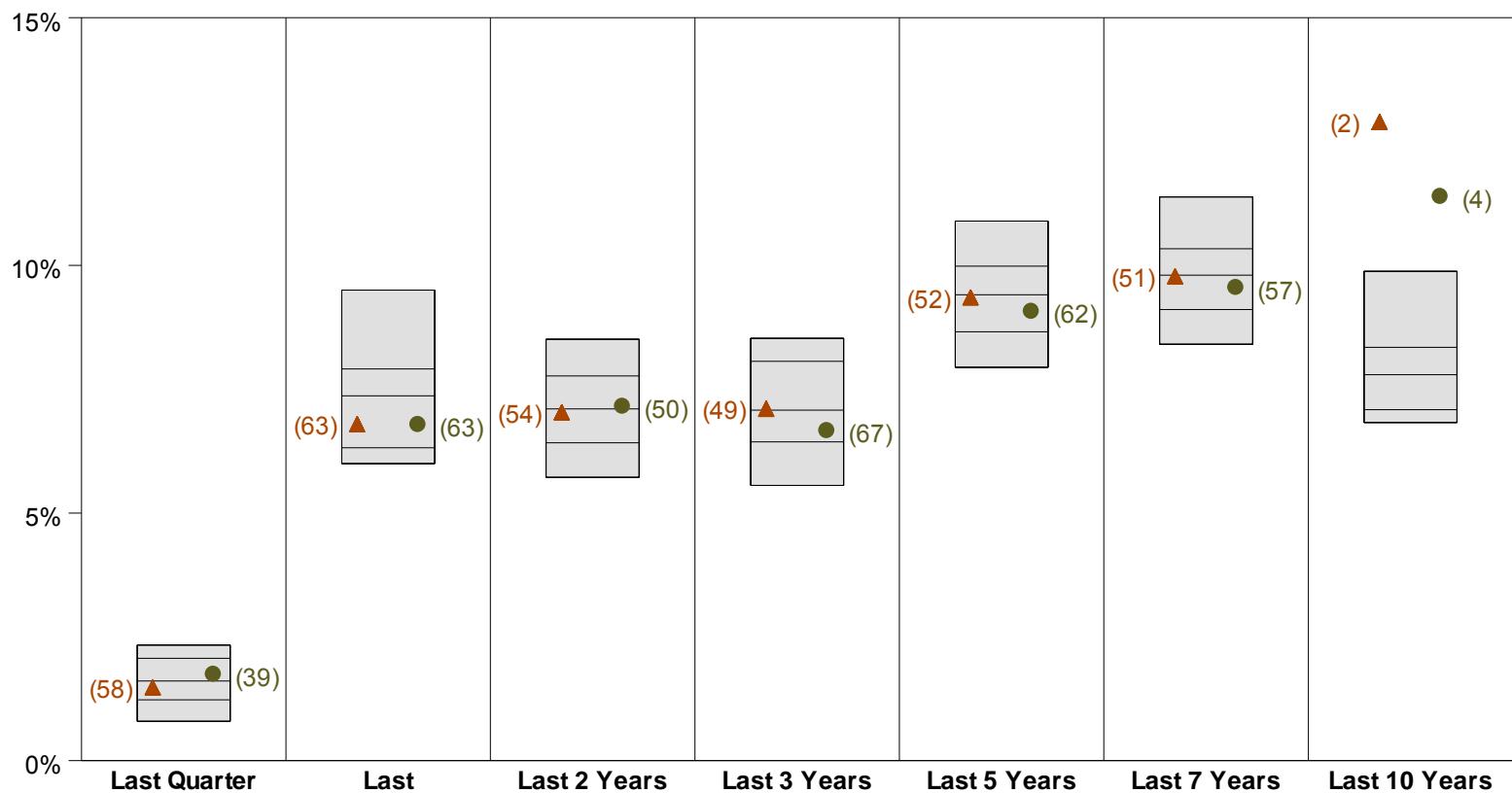
Performance vs Public Fund - Domestic Fixed (Gross)



MCERA Real Estate Composite Performance

For Periods Ended March 31, 2019

Performance vs Callan Open End Core Cmmingled Real Est (Net)



10th Percentile	2.34	9.50	8.51	8.53	10.89	11.38	9.88
25th Percentile	2.07	7.91	7.77	8.06	9.99	10.34	8.34
Median	1.61	7.36	7.10	7.08	9.40	9.80	7.79
75th Percentile	1.23	6.32	6.42	6.43	8.66	9.11	7.09
90th Percentile	0.80	6.00	5.72	5.56	7.94	8.41	6.83

Real Estate Composite	1.72	6.76	7.13	6.63	9.05	9.52	11.37
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Real Estate Custom Benchmark	1.48	6.80	7.04	7.11	9.35	9.78	12.90
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Callan

Callan Update

Published Research Highlights from 1Q19

Callan's 2019–2028 Capital Market Projections

0.80	0.80	0.99	1.00						
0.86	0.86	0.94	0.88	1.00					
-0.22	-0.26	-0.25	-0.23	-0.28	1.00				
-0.10	-0.15	-0.14	-0.12	-0.17	0.88	1.00			
0.11	0.10	0.08	0.09	0.04	0.74	0.93	1		
-0.04	-0.08	-0.06	-0.05	-0.09	0.56	0.64	0		
0.63	0.62	0.63	0.61	0.62	-0.13	0.02	0		
0.01	0.00	0.07	0.05	0.10	0.48	0.53	0		
0.57	0.55	0.57	0.54	0.58	-0.04	0.10	0		
0.73	0.72	0.71	0.68	0.70	-0.13	-0.04	0		
0.92	0.88	0.88	0.86	0.86	-0.30	-0.23	-0		

2019 DC Trends Survey



The Callan Periodic Table Collection: Year-End 2018

Large Funds	Real Estate Funds	Non-U.S.
13.13%	13.95%	2.7%
High Yield	Large Cap Equity	U.S.
2.45%	1.38%	2.6%
2014: 0.76%	2015: 0.73%	2016:
Equivalent	U.S. Fixed	Non-U.S.
0.04%	0.55%	1.4%
Emerging Markets	Cash Equivalent	Hedge
2.19%	0.05%	1.2%
U.S. Fixed	Hedge Funds	Cash E
2.99%	0.71%	0.4%

Two Questions to Help DC Plans Save on Litigation Costs



Popular Blog Posts

How DTS Helps Us Evaluate Bonds

Kevin Machiz

Securities Lending 101

Kyle Fekete and
Mark Kinoshita

A Look at the New Communication Services Sector

Irina Sushch

Additional Reading

Private Equity Trends quarterly newsletter
Active vs. Passive quarterly charts
Capital Market Review quarterly newsletter
 Monthly Updates to the Periodic Table
Market Pulse Flipbook quarterly markets update

Callan Institute Events

Upcoming Conferences, Workshops, and Webinars

2019 June Regional Workshops

- Atlanta, June 4, 2019
- San Francisco, June 5, 2019

2019 October Regional Workshops

- Denver, October 22, 2019
- Chicago, October 24, 2019

“Callan College”—Ongoing fiduciary education

Introduction to Investments sessions

- San Francisco, July 16–17, 2019
- Chicago, October 22–23, 2019
- Atlanta, TBD

Alternative Investments session

- Chicago, October TBD

Upcoming Webinar:

- Cobbler’s Shoes Webinar, June 18, 2019, 11am PST

Webinars: On-Demand now available at
<https://www.callan.com/ondemandwebinar/>

Our library of pre-recorded webinars on specific investment-related topics, such as:

- ESG Adoption and Implementation Trends
- Infrastructure: Real Perspectives on an Evolving Asset Class
- Investigating Private Equity Implementation

“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, Chief Research Officer



Callan Updates

Firm updates by the numbers, as of March 31, 2019

Total Associates: 191

Ownership

- 100% employees
- Broadly distributed across more than 95 shareholders

Leadership Changes

- No executive additions or departures
- Added Pete Keliuotis, Head of Alternatives Consulting
- Executive Chairman Ron Peyton completes his 45th year at Callan

Total General and Fund Sponsor Consultants: more than 45

Total Specialty and Research Consultants: more than 60

Total CFA/CAIA/FRMs: more than 50

Total Fund Sponsor Clients: more than 400

AUA: more than \$2.4 trillion

“The Callan culture that we have all built together over the years is the reason we like coming to work each day..... Our culture of supporting and caring about each other, of appreciating and respecting each other while still having some fun and good humor has been the key to our longevity and success. We never want to diminish it.”

— Ron Peyton, Executive Chairman



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Past performance is no guarantee of future results.

The statements made herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties such that actual results may differ materially from these statements. There is no obligation to update or alter any forward-looking statement, whether as a result of new information, future events or otherwise. Undue reliance should not be placed on forward-looking statements.