Callan

December 31, 2017

City of Milwaukee Employes' Retirement System

Investment Measurement Service Quarterly Review

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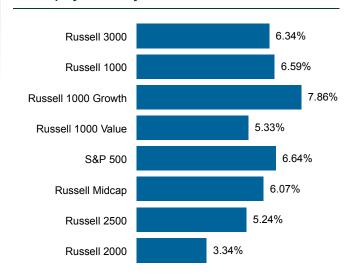
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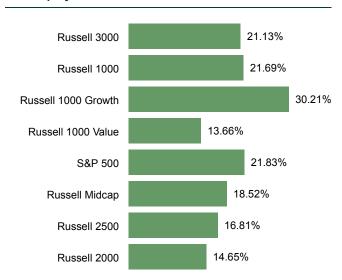
U.S. EQUITY

- The U.S. equity market continued its upward trajectory in the 4th quarter, closing out a very strong year marked by continued low volatility despite a turbulent U.S. political landscape and a record year in terms of global catastrophes. Investors embraced accelerating global economic growth as well as low interest rates and inflation. Corporate earnings registered double-digit growth for the quarter, receiving a boost from the U.S. tax reform bill that passed in late December.
- Large Cap (S&P 500 & Russell 1000: +6.6%) outperformed Small Cap (Russell 2000: +3.3%) across styles for the quarter.
- Risk assets continued to lead the equity market in the quarter. Consumer Discretionary (+9.9%) and Tech (+9%) were the strongest performers with Apple, Amazon, and Microsoft posting 10%-20% returns due to ongoing exceptional cash flow generation and growth in global markets. The Tech sector now accounts for 24% of the S&P 500 and 38% of the Russell 1000 Growth index; returns for the FAAMG stocks (Facebook, Apple, Amazon, Microsoft, and Google) ranged from 36% to 56% for 2017.
- Consumer Discretionary benefited from strong year-end retail sales as well as positive tax reform expectations as the retailing industry carries the highest industry effective tax rate at 35%. The "Amazon Effect," however, continues to threaten the sector as many large retailers have been forced to close stores or lower prices to unsustainable levels.
- The Energy sector (+6.0%) continued to improve in the 4th quarter although it closed out the year among the worst performers (-1.0%). A combination of optimism and improvements in the global economy has spurred demand in recent months. More near-term volatility is anticipated in the price of oil as U.S. output is expected to surpass production out of Saudi Arabia for the first time since the early 1990s.
- Growth outperformed Value during the quarter across the market cap range (Russell 1000 Growth: +7.9% vs Russell 1000 Value: +5.3%); Russell 2000 Growth: +4.6% vs Russell 2000 Value: +2.0%).

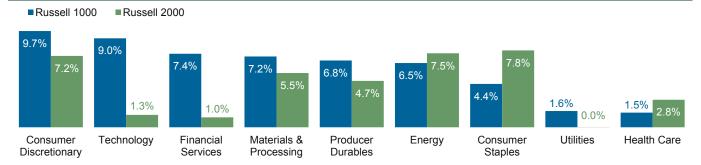
U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns



Quarter ended December 31, 2017



Sources: Russell Investment Group, Standard & Poor's

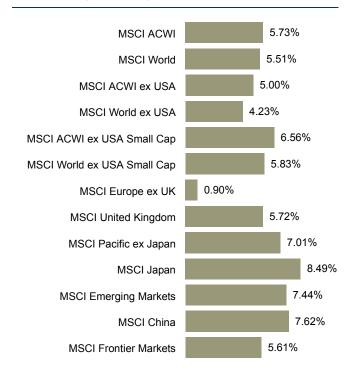


- The overweight to Tech and Consumer Discretionary in the Growth indices drove the outperformance. Investors favored the stronger earnings and top-line growth outlook in the Tech sector, which also benefited from positive investor sentiment following tax reform.
- Momentum-oriented stocks (MSCI Momentum Index: +37.8%) posted their biggest annual gain since 1999, leaving valuations stretched in the space; the MSCI Defensive Index rose 12.3% for 2017. Anecdotally, some momentum-oriented managers are finding their bench of ideas shrinking as they take profits on their winners while defensively oriented managers continue to sit on cash waiting for more favorable entry points.

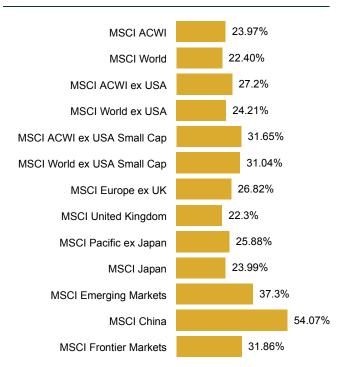
Global / Non-U.S. Equity

- Major non-U.S. markets performed largely in-line with each other during the 4th quarter, which saw a bit of an inflection point as investors were more willing to capitalize on synchronized global growth and began to rotate out of momentum winners into more cyclical areas such as Financials, Energy, and Materials. Cyclicals led as tax reform, improving commodity prices, and growth projections overcame Brexit fears and election uncertainty in Germany in a risk-on quarter. Emerging markets outpaced developed ones for the fourth consecutive quarter, fueled by a soft U.S. dollar, synchronized global growth, strong oil and commodity prices, and renewed investor interest.
- Non-U.S. developed (MSCI EAFE & MSCI World ex USA: +4.2%) trailed U.S. (MSCI USA: +6.4%) after beating in the previous three quarters. The U.S. benefited late in the quarter from much anticipated tax reform and a strong consumer/holiday period.
- Europe, which led markets in the 3rd quarter on earnings growth and political stability, reverted and trailed other developed regions on Brexit negotiation concerns and political uncertainty following German elections. The European Central Bank also announced plans to curb quantitative easing in January 2018.
- Japan (+8.6%) was the best performer on elections and improved inflation expectations.
- The U.S. dollar fell against the euro and British pound, boosting dollar returns, but was flat against the Japanese yen.
- Markets favored economically sensitive sectors: IT (+8.3%), Materials (+7.8%), and Discretionary (+7.6%). Energy was also positive (6.8%) as commodity prices were supported by distribution disruptions and high LNG usage with winter's arrival. Defensive sectors lagged as markets continued to rise: Utilities (-0.44%), Health Care (+0.9%), Telecom (+1.7%).
- It was another difficult quarter for Value (MSCI World Value: +4.6% 4Q / +17.1% 2017 vs. MSCI World Growth: +6.4% 4Q / +28.0% 2017). Factor performance favored strong growth (forecasted), earnings and price momentum, high quality, and beta. Valuation factors were mixed, with price-to-book and yield detracting from performance, while earnings-based multiples contributed.

Global Equity: Quarterly Returns



Global Equity: One-Year Returns



Source: MSCI



Emerging Markets

- China (+7.6%) performed in line with broader emerging markets (MSCI Emerging Markets: +7.4%), while local China A did better (MSCI China A 50: +13.7%). October's 19th National Congress of the Communist Party solidified power around Xi Jinping, reconfirming key policy objectives. Chinese technology continued to perform well but was less of a performance outlier than in previous quarters. China's growing and less-visible debt is an increasing concern, while expectations for stronger growth are buoying the market.
- South Africa (+21.4%) was the best performer as commodity prices firmed and Jacob Zuma was replaced by reform and anti-corruption minded Cyril Ramaphosa.
- Brazil (-2%) trailed as the real sold off and stocks paused following a stellar 3rd quarter. Risks increased with upcoming elections and a resurgence of Lula da Silva putting reforms at risk.
- Mexico was the worst-performing emerging market country where the peso sold off on NAFTA negotiation concerns.
 Economically sensitive sectors sold off (Discretionary: -23.6%, Financials: -21.2%).
- Emerging market Health Care (+16.6%) saw very good performance with outsized contribution from China and South Korea as changing demographics continued to drive demand.
- Value factors struggled in emerging markets while growth, earnings momentum, price momentum, volatility, and beta were positive. It remains a difficult environment for emerging market value strategies.

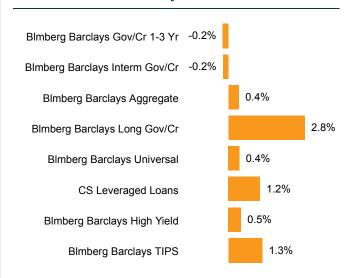
Non-U.S. Small Cap

- MSCI World ex USA Small Cap rose +5.8%; MSCI EM Small Cap jumped even more, up 9.2%.
- Developed non-U.S. small cap outperformed its large/mid counterpart modestly, led by Asia. Australian SC (+11.6%) and Japan SC (+8.7%) led the segment. Sectors were all positive for the quarter with only moderate dispersion.
- Emerging market small cap was the best-performing segment of the equity markets in the 4th quarter led by Health Care (+28%); Real Estate (-0.05%) was the laggard.

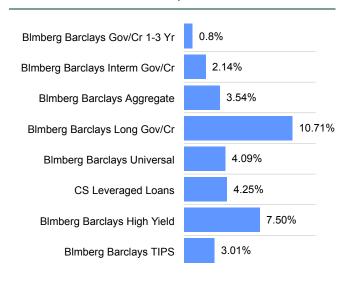
Fixed Income

The U.S. yield curve continued its flattening trend in the 4th quarter. The 2-year U.S. Treasury yield climbed 42 bps to close at 1.89%. At the long end of the yield curve, the 30-year U.S. Treasury yield fell 12 bps during the quarter, ending the year at 2.74%. This trend reflects the Fed's bias to be less accommodative through monetary policy, as well as benign inflation in the face of a strong labor market. Spread sectors again outperformed U.S. Treasuries. Increasing comfort with credit fundamentals across corporates, consumers, and commercial real estate drove spreads tighter.

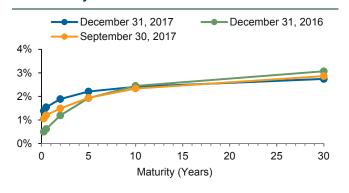
U.S. Fixed Income: Quarterly Returns



One Year ended December 31, 2017



U.S. Treasury Yield Curves

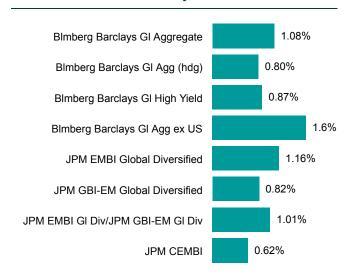


Sources: Bloomberg, Bloomberg Barclays, Credit Suisse

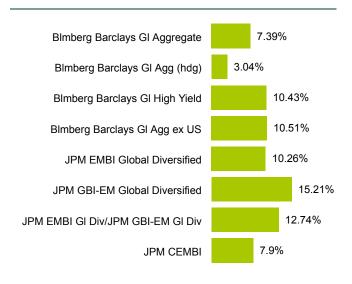


- The Bloomberg Barclays U.S. Aggregate Bond Index rose 0.4%.
- Volatility in fixed income markets (as well as equities) sits near historical lows.
- Overall risk appetite remains elevated driven in part by globally strong growth and loose monetary policy from central banks, as well as business and consumer confidence.
- The Fed is still struggling to estimate the size of the output gap, which is expected to indicate when growth translates into inflationary pressure. The market is pricing in three hikes for 2018, which would not be far from the Fed's own expectation of where rates will end up in the longer run. Yields on the 10-year Treasury rose modestly from 2.33% to 2.41%. The Fed's previously announced balance sheet normalization began without disruption in October.
- Corporate bonds outperformed for the quarter and the year, and yield spreads reached a post-crisis tight of 93 bps over Treasuries. Investment grade corporate credit was the strongest-performing fixed income sector; tax reform may improve profitability and negatively impact issuance, potentially supporting the sector going forward.
- High yield credit continued to perform well, aided by rising equity markets, but lagged investment grade bonds. Default rates remained benign, capping off the lowest annual default rate since 2013. A high share of the market trading "to call" relative to history indicates less potential upside from price appreciation because issuers are able to refinance at par. A significant number of high yield issuers are expected to be negatively impacted by the limit on interest deductions from tax reform, with the energy, leisure, materials, utilities, and financial services sectors being particularly affected. Issuance was robust in the fourth quarter at \$68 billion, but tax reform could negatively impact issuance.
- Within emerging market debt in hard currency sovereign, most issuers performed well, driving positive returns, with Venezuela a notable detractor. Higher commodity prices and global growth supported the asset class broadly. The local currency JPM GBI-EM Global Diversified Index rose 0.8% in the quarter. Asian countries (+5%) performed best while Latin America sank nearly 5%. Argentina (-7%), Brazil (-3%), and Mexico (-9%) lost the most. These returns were largely a function of currency depreciation rather than changes in interest rates.

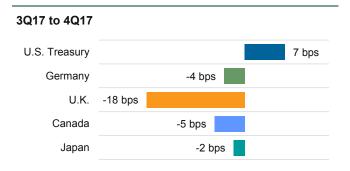
Global Fixed Income: Quarterly Returns



Global Fixed Income: One-Year Returns



Change in 10-Year Global Government Bond Yields



Sources: Bloomberg, Bloomberg Barclays, JP Morgan



Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2017, with the distribution as of September 30, 2017. 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

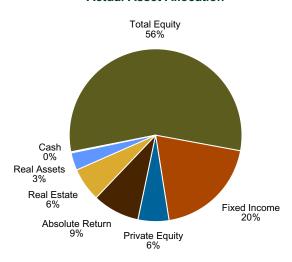
	December 3	1, 2017			September 3	0, 2017
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Total Domestic Equity	\$1,373,318,341	25.64%	\$(55,726,116)	\$79,652,814	\$1,349,391,643	25.69%
BlackRock Russell 1000 Value	177,316,306	3.31%	Ö	9,032,911	168,283,395	3.20%
DFA Large Cap Value	181,146,744	3.38%	169,273,884	11,872,860	-	-
Northern Trust Global	362,948,538	6.78%	(200,000,000)	28,190,451	534,758,087	10.18%
Polen Capital Management	178,495,236	3.33%	(7,000,000)	8,975,373	176,519,862	3.36%
Earnest Partners LLC	141,421,661	2.64%	(4,000,000)	10,322,867	135,098,794	2.57%
DFA Small Cap Value	218,938,514	4.09%	(10,000,000)	6,596,323	222,342,191	4.23%
CastleArk Management	113,051,341	2.11%	(4,000,000)	4,662,029	112,389,313	2.14%
Total Global Equity	\$547,076,404	10.21%	\$(31,000,000)	\$38,375,080	\$539,701,325	10.27%
BlackRock Global Alpha Tilts	325,157,434	6.07%	(26,000,000)	23,464,040	327,693,394	6.24%
MFS Investment Management	221,918,970	4.14%	(5,000,000)	14,911,040	212,007,931	4.04%
Total International Equity	\$1,081,690,707	20.19%	\$(27,000,000)	\$39,150,392	\$1,069,540,315	20.36%
AQR Emerging Markets	107,429,613	2.01%	(8,000,000)	4,837,266	110,592,347	2.11%
Brandes Investment Partners	431,995,366	8.07%	(5,000,000)	10,065,235	426,930,130	8.13%
William Blair & Company	325,532,122	6.08%	(8,000,000)	16,245,092	317,287,030	6.04%
DFA International Small Cap	216,733,607	4.05%	(6,000,000)	8,002,799	214,730,807	4.09%
Total Fixed Income	\$1,051,999,322	19.64%	\$0	\$6,327,485	\$1,045,671,837	19.91%
BlackRock US Debt ldx Fd	370,983,089	6.93%	0	1,504,721	369,478,368	7.03%
Reams Asset Management	317,669,182	5.93%	0	1,084,747	316,584,435	6.03%
Loomis, Sayles & Company, L.P.	363,347,051	6.78%	0	3,738,017	359,609,034	6.85%
Total Private Equity	\$308,438,285	5.76%	\$9,786,119	\$10,113,666	\$288,538,500	5.49%
Abbott Capital Management 2010	29,289,060	0.55%	(1,400,304)	1,455,317	29,234,047	0.56%
Abbott Capital Management 2011	47,786,091	0.89%	(1,650,146)	2,166,704	47,269,533	0.90%
Abbott Capital Management 2012	31,220,657	0.58%	1,200,000	1,359,940	28,660,717	0.55%
Abbott Capital Management 2013	25,864,549	0.48%	1,400,000	1,125,606	23,338,943	0.33%
Abbott Capital Management 2014	22,710,604	0.42%	1,575,000		20,354,015	0.44%
		0.42%		781,589		0.39%
Abbott Capital Management 2015	8,222,811		706,250	35,156	7,481,405	
Abbott Capital Management 2016 Mesirow V	2,914,212	0.05% 1.22%	572,500	(20,999)	2,362,711	0.04% 1.22%
	65,608,317		(744,036)	2,145,676	64,206,678	
Mesirow VI	36,482,048	0.68%	3,000,000	668,361	32,813,687	0.62%
Mesirow VII	2,276,003	0.04%	2,114,499	(129,856)	291,360	0.01%
NB Secondary Opp Fund III	18,386,880	0.34%	(1,106,000)	761,906	18,730,974	0.36%
NB Secondary Opp Fund IV	1,934,293	0.04%	1,673,899	(444,915)	705,309	0.01%
Private Advisors VI	13,094,330	0.24%	1,624,479	237,995	11,231,856	0.21%
Private Advisors VII	2,648,430	0.05%	819,979	(28,814)	1,857,265	0.04%
Absolute Return	\$469,617,821	8.77%	\$30,000,000	\$6,637,538	\$432,980,283	8.24%
Allianz SA 1000	119,527,075	2.23%	0	3,421,278	116,105,797	2.21%
Newton	117,009,927	2.18%	0	1,317,939	115,691,988	2.20%
UBS A & Q	233,080,819	4.35%	30,000,000	1,898,321	201,182,498	3.83%
Real Assets	\$174,774,579	3.26%	\$35,000,000	\$3,923,698	\$135,850,881	2.59%
Principal DRA	174,774,579	3.26%	35,000,000	3,923,698	135,850,881	2.59%
Total Real Estate	\$336,676,259	6.29%	\$(41,296,689)	\$9,748,169	\$368,224,779	7.01%
Real Estate	336,676,259	6.29%	(41,296,689)	9,748,169	368,224,779	7.01%
Total Cash	\$12,825,206	0.24%	\$(10,680,056)	\$325,711	\$23,179,551	0.44%
Cash	12,825,206	0.24%	(10,680,056)	325,711	23,179,551	0.44%
Total Fund	\$5,356,416,924	100.0%	\$(90,916,742)	\$194,254,552	\$5,253,079,114	100.0%



Actual vs Target Asset Allocation As of December 31, 2017

The first chart below shows the Fund's asset allocation as of December 31, 2017. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement. The last chart shows the average asset allocation for the Callan Public Fund Sponsor - Large (>1B).

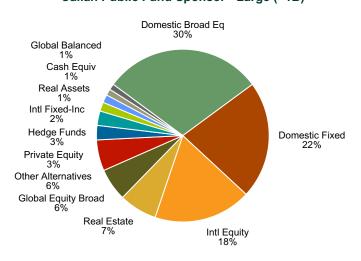
Actual Asset Allocation



Target Asset Allocation

Real Assets 3% Real Estate 7% Absolute Return 8% Private Equity 5%

Callan Public Fund Sponsor - Large (>1B)



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Total Equity	3,002,085	56.0%	55.0%	1.0%	56,056
Fixed Income	1,051,999	19.6%	22.0%	(2.4%)	(126,412)
Private Equity	308,438	5.8%	5.0%	`0.8%	40,617
Absolute Return	469,618	8.8%	8.0%	0.8%	41,104
Real Estate	336,676	6.3%	7.0%	(0.7%)	(38, <mark>273)</mark> 14,082
Real Assets	174,775	3.3%	3.0%	0.3%	14,082
Cash	12,825	0.2%	0.0%	0.2%	12,825
Total	5,356,417	100.0%	100.0%		

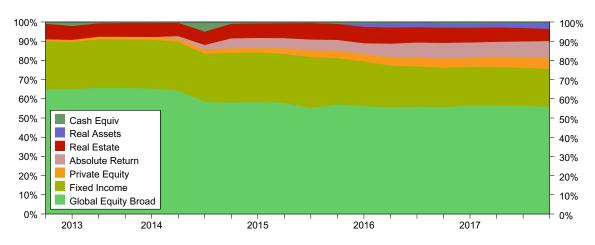
^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.



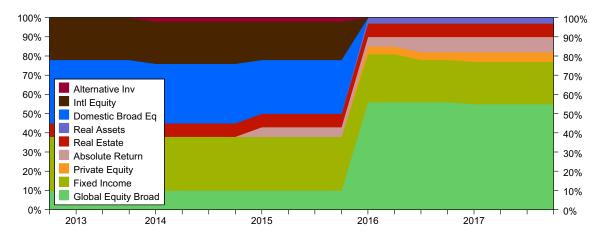
Actual vs Target Historical Asset Allocation

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.

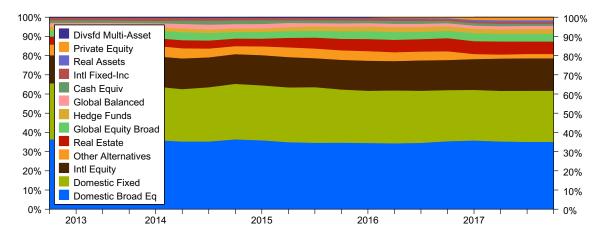
Actual Historical Asset Allocation



Target Historical Asset Allocation



Average Callan Public Fund Sponsor Database Historical Asset Allocation



^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.



Total Fund Period Ended December 31, 2017

Investment Philosophy

The Public Fund Sponsor Database consists of public employee pension total funds including both Callan Associates client and surveyed non-client funds. Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% BB Barclays Aggregate Idx, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.

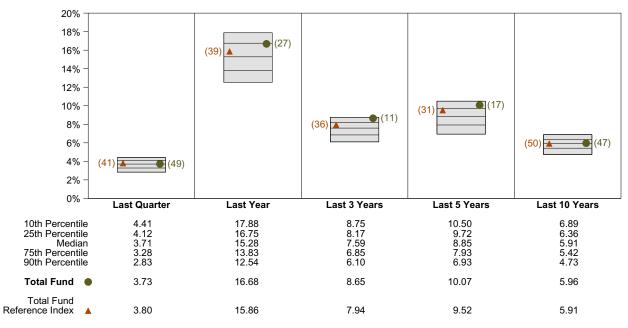
Quarterly Summary and Highlights

- Total Fund's portfolio posted a 3.73% return for the quarter placing it in the 49 percentile of the Callan Public Fund Sponsor Database group for the quarter and in the 27 percentile for the last year.
- Total Fund's portfolio underperformed the Total Fund Reference Index by 0.07% for the quarter and outperformed the Total Fund Reference Index for the year by 0.82%.

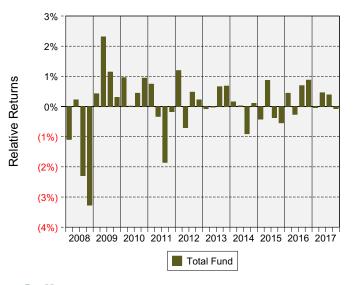
Quarterly Asset Growth

Beginning Market Value	\$5,253,079,114
Net New Investment	\$-90,916,742
Investment Gains/(Losses)	\$194,254,552
Ending Market Value	\$5,356,416,924

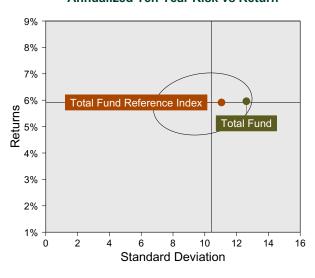
Performance vs Callan Public Fund Sponsor Database (Gross)



Relative Return vs Total Fund Reference Index



Callan Public Fund Sponsor Database (Gross) Annualized Ten Year Risk vs Return



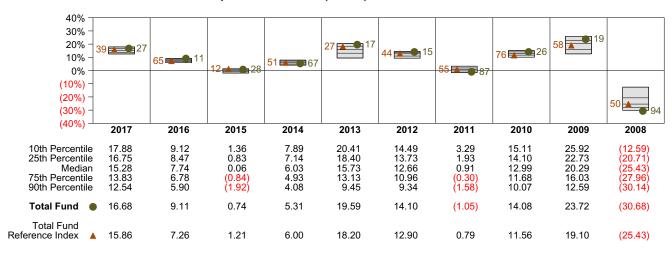


Total Fund Return Analysis Summary

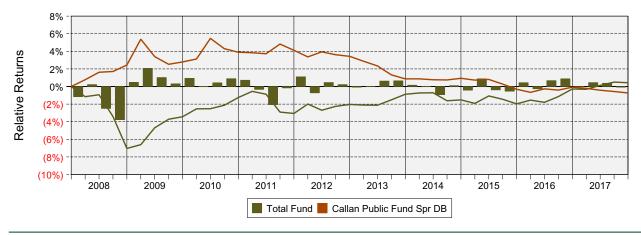
Return Analysis

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

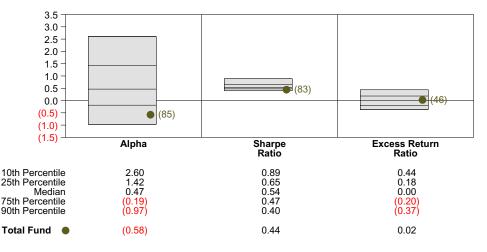
Performance vs Callan Public Fund Sponsor Database (Gross)



Cumulative and Quarterly Relative Return vs Total Fund Reference Index



Risk Adjusted Return Measures vs Total Fund Reference Index Rankings Against Callan Public Fund Sponsor Database (Gross) Ten Years Ended December 31, 2017



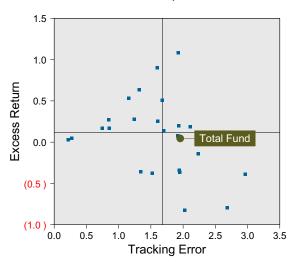


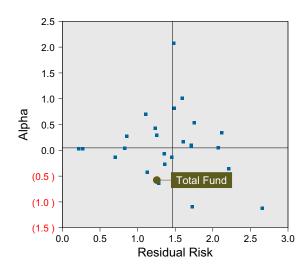
Total Fund Total Fund vs Target Risk Analysis

Risk Analysis

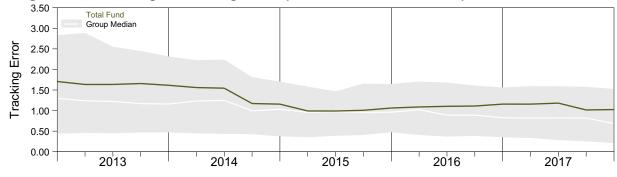
The graphs below analyze the performance and risk of the fund relative to the appropriate target mix. This relative performance is compared to a peer group of funds wherein each member fund is measured against its own target mix. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the target. The second scatter chart displays the relationship, sometimes called Information Ratio, between alpha (market-risk or "beta" adjusted return) and residual risk (non-market or "unsystematic" risk). The third chart shows tracking error patterns over time compared to the range of tracking error patterns for the peer group. The last two charts show the ranking of the fund's risk statistics versus the peer group.

Risk Analysis vs Callan Public Fund Sponsor Database Ten Years Ended December 31, 2017

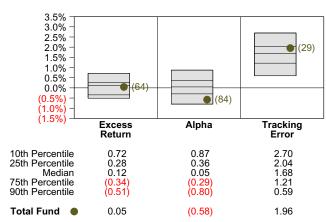


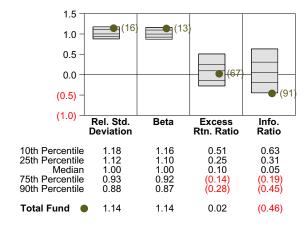


Rolling 12 Quarter Tracking Error vs Targets Compared to Callan Public Fund Sponsor Database



Risk Statistics Rankings vs Targets Rankings Against Callan Public Fund Sponsor Database Ten Years Ended December 31, 2017



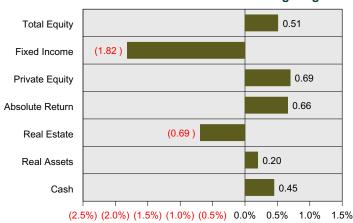




Quarterly Total Fund Relative Attribution - December 31, 2017

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.

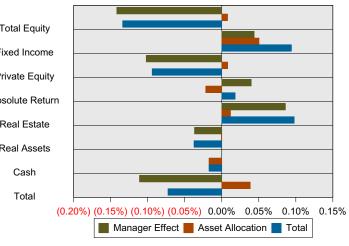




Actual vs Target Returns

5.47 5.72 **Total Equity** Fixed Income 3.43 5.22 Private Equity 1.48 1 02 Absolute Return 3.04 1.68 Real Estate 3.52 Real Assets 0.54 Cash Total 0% 1% 2% 3% 4% 5% 6% 7% 8% Actual Target

Relative Attribution by Asset Class



Relative Attribution Effects for Quarter ended December 31, 2017

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Total Equity	56%	55%	5.47%	5.72%	(0.14%)	0.01%	(0.13%)
Fixed Income	20%	22%	0.61%	0.39%	0.04%	0.05%	`0.09%´
Private Equity	6%	5%	3.43%	5.22%	(0.10%)	0.01%	(0.09%)
Absolute Return	9%	8%	1.48%	1.02%	`0.04%´	(0.02%)	`0.02%´
Real Estate	6%	7%	3.04%	1.68%	0.09%	0.01%	0.10%
Real Assets	3%	3%	2.37%	3.52%	(0.04%)	(0.00%)	(0.04%)
Cash	0%	0%	0.54%	0.54%	`0.00%´	(0.02%)	(0.02%)
Total			3.73% =	3.80%	+ (0.11%) +	0.04%	(0.07%)

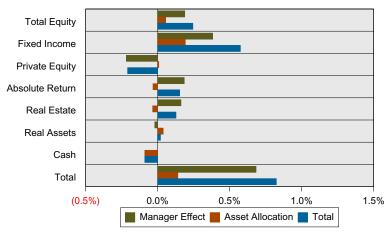
^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.



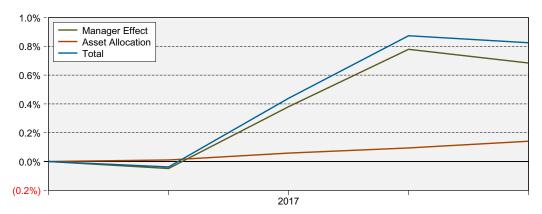
Cumulative Total Fund Relative Attribution - December 31, 2017

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 Total Equity Fixed Income Private Equity Absolute Return Real Estate Real Assets	Effective Actual Weight 56% 20% 5% 8% 7% 3%	Effective Target Weight 55% 22% 5% 8% 7% 3%	Actual Return 24.30% 5.28% 17.27% 5.96% 9.20% 10.15%	Target Return 23.95% 3.54% 21.71% 3.86% 6.93% 10.38%	Manager Effect 0.19% 0.38% (0.22%) 0.19% 0.16% (0.02%)	Asset Allocation 0.06% 0.19% 0.01% (0.03%) (0.03%) 0.04%	Total Relative Return 0.25% 0.58% (0.21%) 0.15% 0.13% 0.02%
Cash Total	1%	0%	1.85% 16.68% =	1.85% = 15.86%	+ 0.68% +	0.14%	(0.09%) 0.82%

^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.



The table below details the rates of return and peer group rankings for the Fund's investment managers over various time periods ended December 31, 2017. 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 and Rankings for Periods Ended December 31, 2017

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Since Inception
Total Domestic Equity	6.07%		20.91%		11.23%		15.51%		7.33% (7/98)
Russell 3000 Index	6.34%		21.13%		11.12%		15.58%		6.83% (7/98)
BlackRock Russell 1000 Value	5.37%	77	-		-		-		11.00% (3/17)
Russell 1000 Value Index	5.33%	78	13.66%	89	8.65%	79	14.04%	76	8.95% (3/17)
Callan Large Cap Value	6.52%		17.09%		9.74%		14.80%		-
Northern Trust Global	6.65%	57	21.87%	50	11.48%	29	15.86%	47	10.54% (8/88)
S&P 500 Index	6.64%	57	21.83%	50	11.41%	32	15.79%	49	10.48% (8/88)
Callan Large Cap Core	6.83%		21.86%		10.90%		15.74%		-
Polen Capital Management	5.15%	86	27.67%	65	14.47%	16	16.84%	44	16.09% (7/12)
S&P 500 Index	6.64%	63	21.83%	98	11.41%	77	15.79%	72	15.46% (7/12)
Callan Large Cap Growth	6.99%		28.84%		12.50%		16.62%		-
Earnest Partners LLC	7.78%	12	26.16%	23	14.18%	5	16.62%	19	11.23% (5/05)
Russell MidCap Index	6.07%	45	18.52%	56	9.58%	54	14.96%	49	10.13% (5/05)
Callan Mid Capitalization	5.92%		20.19%		9.87%		14.92%		-
DFA Small Cap Value	3.03%	59	7.68%	66	9.38%	75	14.42%	65	12.58% (11/96)
Russell 2000 Value Index	2.05%	74	7.84%	65	9.55%	73	13.01%	86	9.98% (11/96)
Callan Small Cap Value	3.33%		9.18%		10.71%		14.83%		-
CastleArk Management	4.22%	79	23.93%	59	7.71%	83	-		11.23% (9/13)
Russell 2000 Growth Index	4.59%	75	22.17%	70	10.28%	53	15.21%	57	12.07% (9/13)
Callan Small Cap Growth	5.29%		25.83%		10.59%		15.66%		-
Total Global Equity	7.36%		31.31%		11.79%		12.27%		9.43% (4/10)
MSCI World	5.51%		22.40%		9.26%		11.64%		9.73% (4/10)
BlackRock Global Alpha Tilts	7.51%	7	30.12%	22	-		-		24.93% (3/16)
MSCI ACWI Gross	5.84%	41	24.62%	56	9.89%	56	11.40%	71	22.35% (3/16)
Callan Global Equity	5.58%		25.21%		10.21%		12.40%		-
MFS Investment Management	7.14%	12	33.16%	12	12.01%	18	12.80%	41	13.07% (12/12)
MSCI ACWI Gross	5.84%	41	24.62%	56	9.89%	56	11.40%	71	11.70% (12/12)
Callan Global Equity	5.58%		25.21%		10.21%		12.40%		-



The table below details the rates of return and peer group rankings for the Fund's investment managers over various time periods ended December 31, 2017. 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 and Rankings for Periods Ended December 31, 2017

	and Nankings				Last	,	Last			
	Last		Last		3		5		Since	
	Quarter		Year		Years		Years		Inception	<u>n</u>
Total International Equity MSCI EAFE Index	3.75% 4.23%		25.03% 25.03%		9.61% 7.80%		9.89% 7.90%		7.64% 4.93%	(5/96) (5/96)
AQR Emerging Markets MSCI EM Gross Callan Emerging Broad	4.71% 7.50% 6.84%	94 38	35.53% 37.75% 39.25%	70 57	9.50% 10.14%	67	- 4.73% 5.70%	78	25.54% 25.04% -	(8/16) (8/16)
Brandes Investment Partners MSCI EAFE Index Callan NonUS Eq	2.39% 4.23% 4.40%	97 60	16.53% 25.03% 28.16%	99 75	7.68% 7.80% 9.19%	79 78	9.08% 7.90% 9.06%	49 77	8.55% 5.03% -	(2/98) (2/98)
William Blair & Company MSCI ACWI ex-US Index Callan NonUS Eq	5.20% 5.06% 4.40%	27 31	31.45% 27.77% 28.16%	22 56	9.08% 8.33% 9.19%	51 67	9.22% 7.28% 9.06%	44 88	8.48% 7.75% -	(12/03) (12/03)
DFA International Small Cap Blended Benchmark Callan Intl Small Cap	3.83% 6.05% 6.07%	89 52	27.98% 33.01% 35.25%	93 74	12.86% 14.20% 14.57%	69 53	12.61% 12.85% 13.80%	66 63	6.35% 4.46% -	(5/06) (5/06)
Total Fixed Income Blmbg Aggregate	0.61% 0.39%		5.28% 3.54%		3.31% 2.24%		2.66% 2.10%		7.67% 6.39%	(12/87) (12/87)
BlackRock US Debt ldx Fd Blmbg Aggregate Callan Core Bond Fl	0.41% 0.39% 0.49%	73 73	3.68% 3.54% 3.96%	76 86	2.24% 2.65%	96	- 2.10% 2.48%	91	1.04% 1.72% -	(6/16) (6/16)
Reams Asset Management Blmbg Aggregate Callan Core Plus FI	0.34% 0.39% 0.59%	84 77	3.62% 3.54% 4.90%	94 95	2.78% 2.24% 3.26%	83 100	2.25% 2.10% 3.03%	100 100	5.63% 4.74% -	(1/01) (1/01)
Loomis, Sayles & Company, L.P. Blmbg Aggregate Callan Core Plus Fl	1.04% 0.39% 0.59%	3 77	8.50% 3.54% 4.90%	1 95	5.11% 2.24% 3.26%	2 100	4.73% 2.10% 3.03%	2 100	9.25% 6.39% -	(12/87) (12/87)
Total Private Equity Abbott Capital Management 2010 Abbott Capital Management 2011 Abbott Capital Management 2012 Abbott Capital Management 2013 Abbott Capital Management 2014 Abbott Capital Management 2015 Abbott Capital Management 2016 Mesirow V Mesirow VI	3.43% 5.24% 4.75% 4.58% 4.59% 3.60% 0.44% (0.82%) 3.38% 1.92%		17.27% 19.98% 19.24% 17.97% 18.71% 13.50% 6.87% (1.13%) 21.00% 12.50%		12.85% 14.38% 13.19% 9.76% 8.50% 5.43% - 17.41% 3.73%		12.50% 12.53% 9.88% 6.24% - - - 17.48%		7.89% (9.08%) (6.28%) 3.98% 3.65% 0.25% 4.48% (0.72%) 13.27% 2.95%	(6/11) (7/12) (5/13) (4/14) (4/15)
Mesirow VII NB Secondary Opp Fund III NB Secondary Opp Fund IV Private Advisors VI Private Advisors VII Russell 3000 (1 Qtr in Arrears) + 3% Absolute Return	(7.25%) 4.07% (32.75%) 1.99% (1.08%) 5.22%		20.63% - 13.15% (3.33%) 21.71% 5.96%		21.99% - - - 13.77% 5.35%		- - - - 17.26%		11.57% (5.14%) (2.63%) (3.33%) 21.71% 5.43%	(4/15)
Allianz SA 1000 T-Bills + 10% Callan Abs Rtn Hedge FoF	2.95% 2.68% 1.47%	6 7	9.67% 10.86% 5.11%	12 6	10.19% 10.41% 3.20%	1	- 10.27% 4.59%	1	10.20% 10.35%	(6/14) (6/14)
Newton 1-month LIBOR + 4% Callan Abs Rtn Hedge FoF	1.14% 1.31% 1.47%	64 58	5.59% 5.11% 5.11%	42 50	3.45% 4.60% 3.20%	42 17	- 4.43% 4.59%	54	3.40% 4.54% -	(8/14) (8/14)
UBS A & Q 1-month LIBOR + 4% Callan Abs Rtn Hedge FoF	0.86% 1.31% 1.47%	78 58	4.16% 5.11% 5.11%	67 50	3.55% 4.60% 3.20%	40 17	- 4.43% 4.59%	54	3.46% 4.59% -	(12/14) (12/14)
Real Assets	2.37%		10.15%		-		-		8.56%	(1/16)
Principal DRA Principal Blended Benchmark (1) Callan Alterntive Inv DB Total Real Estate	2.37% 3.52% 3.18% 3.04%	53 48	10.15% 10.38% 4.75% 9.20%	16 15	- 0.56% 11.33%		- 2.49% 12.28%		8.56% 8.56% - 6.63%	(1/16) (1/16) (7/86)
		-		00		2.4		20		
Real Estate Blended Benchmark (2) Callan Total Real Est DB	3.04% 1.68% 1.76%	7 55	9.20% 6.93% 7.14%	28 54	11.33% 10.11% 10.18%	34 51	12.28% 10.52% 10.70%	30 56	6.63% - -	(7/86)
Total Fund Total Fund Reference Index*	3.73% 3.80%		16.68% 15.86%		8.65% 7.94%		10.07% 9.52%		9.70% -	(1/79)

⁽¹⁾ Current Principal Blended Benchmark = 35% Barclays US Treasury US TIPS Idx, 15% Bloomberg Commodity Idx, 20% S&P Global Infrastructure Idx, 20% S&P Global Natural Resources Idx and 10% FTSE EPRA/NAREIT Developed Market Idx. (2) Blended Benchmark = NCREIF (NPI) through 6/30/06, NCREIF (NPI 1 Qtr Arrears) through 12/31/13 and NFI-ODCE (1 Qtr Arrears) thereafter.



The table below details the rates of return and peer group rankings for the Fund's investment managers over various time periods. 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.

	2017		2016		2015		2014		2013	
Total Domestic Equity Russell 3000 Index	20.91% 21.13%		13.91% 12.74%		(0.07%) 0.48%		11.63% 12.56%		33.86% 33.55%	
Northern Trust Global	21.87%	50	12.01%	21	1.49%	46	13.77%	47	32.46%	77
S&P 500 Index Callan Large Cap Core	21.83% 21.86%	50	11.96% 10.42%	21	1.38% 1.40%	51	13.69% 13.63%	48	32.39% 34.49%	77
Polen Capital Management	27.67%	65	1.70%	72	15.51%	3	17.60%	6	23.45%	99
S&P 500 Index Callan Large Cap Growth	21.83% 28.84%	98	11.96% 3.39%	2	1.38% 6.43%	93	13.69% 11.82%	25	32.39% 35.60%	79
Earnest Partners LLC	26.16%	23	16.52%	29	1.25%	27	10.38%	46	31.29%	90
Russell MidCap Index Callan Mid Capitalization	18.52% 20.19%	56	13.80% 12.23%	42	(2.44%) (0.80%)	67	13.22% 9.88%	23	34.76% 35.85%	63
DFA Small Cap Value	7.68%	66	29.36%	32	(6.06%)	76	5.04%	67	42.70%	23
Russell 2000 Value Index Callan Small Cap Value	7.84% 9.18%	65	31.74% 27.86%	14	(7.47%) (3.73%)	83	4.22% 5.81%	82	34.52% 38.72%	81
CastleArk Management	23.93%	59	6.01%	68	(4.90%)	78	6.15%	31	-	
Russell 2000 Growth Index Callan Small Cap Growth	22.17% 25.83%	70	11.32% 8.62%	36	(1.38%) (1.29%)	50	5.60% 3.40%	32	43.30% 46.83%	74
Total Global Equity	31.31%		8.65%		(2.08%)		2.32%		24.81%	
MSCI World	22.40%		7.51%		(0.87%)		4.94%		26.68%	
BlackRock Global Alpha Tilts	30.12%	22	-		-		-		-	
MSCI ACWI Gross Callan Global Equity	24.62% 25.21%	56	8.48% 6.21%	27	(1. <mark>84%)</mark> 0.17%	71	4.71% 4.57%	47	23.44% 27.96%	78
MFS Investment Management MSCI ACWI Gross Callan Global Equity	33.16% 24.62% 25.21%	12 56	6.06% 8.48% 6.21%	52 27	(0.49%) (1.84%) 0.17%	60 71	5.59% 4.71% 4.57%	34 47	23.08% 23.44% 27.96%	79 78



The table below details the rates of return and peer group rankings for the Fund's investment managers over various time periods. 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.

	2017		2016		2015		2014		2013	
Total International Equity MSCI EAFE Index	25.03% 25.03%		5.78% 1.00%		(0.41%) (0.81%)		(3.63%) (4.90%)		26.26% 22.78%	
AQR Emerging Markets MSCI EM Gross Callan Emerging Broad	35.53% 37.75% 39.25%	70 57	- 11.60% 11.55%	49	(14.60%) (13.71%)	63	(1.82%) (1.09%)	62	(<mark>2.27%)</mark> 0.25%	69
Brandes Investment Partners MSCI EAFE Index Callan NonUS Eq	16.53% 25.03% 28.16%	99 75	8.50% 1.00% 1.50%	4 57	(1.25%) (0.81%) 0.47%	67 62	(4.45%) (4.90%) (3.88%)	56 61	29.45% 22.78% 22.49%	8 47
William Blair & Company MSCI ACWI ex-US Index Callan NonUS Eq	31.45% 27.77% 28.16%	22 56	(1.45%) 5.01% 1.50%	82 16	0.18% (5.25%) 0.47%	53 92	(1.77%) (3.44%) (3.88%)	23 47	21.92% 15.78% 22.49%	53 89
DFA International Small Cap Blended Benchmark Callan Intl Small Cap	27.98% 33.01% 35.25%	93 74	8.00% 2.18% 0.14%	8 34	3.99% 9.59% 10.09%	86 56	(4.99%) (4.95%) (3.42%)	67 67	32.60% 29.30% 31.13%	35 67
Total Fixed Income Blmbg Aggregate	5.28% 3.54%		7.40% 2.65%		(2.49%) 0.55%		4.00% 5.97%		(0.53%) (2.02%)	
BlackRock US Debt ldx Fd Blmbg Aggregate Callan Core Bond Fl	3.68% 3.54% 3.96%	76 86	2.65% 3.14%	86	0.55% 0.84%	72	5.97% 6.19%	69	(2.02%) (1.47%)	85
Reams Asset Management Blmbg Aggregate Callan Core Plus Fl	3.62% 3.54% 4.90%	94 95	4.38% 2.65% 4.67%	63 100	0.38% 0.55% 0.34%	49 38	4.09% 5.97% 6.18%	97 61	(1.08%) (2.02%) (0.67%)	75 96
Loomis, Sayles & Company, L.P. Blmbg Aggregate Callan Core Plus Fl	8.50% 3.54% 4.90%	1 95	13.97% 2.65% 4.67%	1 100	(6.10%) 0.55% 0.34%	100 38	5.94% 5.97% 6.18%	62 61	2.41% (2.02%) (0.67%)	4 96
Total Private Equity Abbott Capital Management 2010 Abbott Capital Management 2011 Abbott Capital Management 2012 Abbott Capital Management 2013 Abbott Capital Management 2014 Abbott Capital Management 2015 Abbott Capital Management 2016	17.27% 19.98% 19.24% 17.97% 18.71% 13.50% 6.87% (1.13%)		9.09% 11.03% 10.43% 9.42% 5.25% 2.86% (5.11%)		12.34% 12.32% 10.12% 2.45% 2.23% 0.39%		15.40% 12.36% 9.17% 4.97% (2.17%)		8.66% 7.33% 1.20% (2.50%) - -	
Mesirow V Mesirow VI NB Secondary Opp Fund III Private Advisors VI Russell 3000 (1 Qtr in Arrears) + 3%	21.00% 12.50% 20.63% 13.15% 21.71%		12.03% 3.32% 12.83% (1.34%) 17.97%		19.41% (3.99%) 33.37% - 2.56%		21.07% 2.22% 19.77% - 20.79%		14.22% - - - 24.63%	
Absolute Return	5.96%		5.16%		4.92%		•		-	
Allianz SA 1000 T-Bills + 10% Callan Abs Rtn Hedge FoF	9.67% 10.86% 5.11%	12 6	11.15% 10.33% 3.35%	1	9.76% 10.05% (0.75%)	1	- 10.03% 3.78%	1	- 10.07% 8.92%	34
Newton 1-month LIBOR + 4% Callan Abs Rtn Hedge FoF	5.59% 5.11% 5.11%	42 50	3.31% 4.49% 3.35%	52 23	1.50% 4.19% (0.75%)	29 8	- 4.16% 3.78%	39	- 4.19% 8.92%	89
UBS A & Q 1-month LIBOR + 4% Callan Abs Rtn Hedge FoF	4.16% 5.11% 5.11%	67 50	2.42% 4.49% 3.35%	71 23	4.09% 4.19% (0.75%)	9 8	- 4.16% 3.78%	39	- 4.19% 8.92%	89
Real Assets	10.15%		7.00%		-		-		-	
Principal DRA Principal Blended Benchmark (1) Callan Alterntive Inv DB	10.15% 10.38% 4.75%	16 15	7.00% 6.77% 10.65%	69 71	- (20.31%)		- (2.44%)		- (0.19%)	
Total Real Estate	9.20%		11.38%		13.44%		13.87%		13.58%	
Real Estate Blended Benchmark (1) Callan Total Real Est DB	9.20% 6.93% 7.14%	28 54	11.38% 9.69% 8.92%	29 43	13.44% 13.82% 14.26%	54 52	13.87% 11.26% 13.27%	46 62	13.58% 10.99% 11.85%	42 59
Total Fund Total Fund Reference Index*	16.68% 15.86%		9.11% 7.26%		0.74% 1.21%		5.31% 6.00%		19.59% 18.20%	

^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark. (1) Current Principal Blended Benchmark = 35% Barclays US Treasury US TIPS Idx, 15% Bloomberg Commodity Idx, 20% S&P Global Infrastructure Idx, 20% S&P Global Natural Resources Idx and 10% FTSE EPRA/NAREIT Developed Market Idx. (2) Blended Benchmark = NCREIF (NPI) through 6/30/06, NCREIF (NPI 1 Qtr Arrears) through 12/31/13 and NFI-ODCE (1 Qtr Arrears) thereafter.



Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2017. 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 December 31, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception
Net of Fee Returns	Quarter	i eai	Tears	Tears	псериоп
Total Domestic Equity Russell 3000 Index BlackRock Russell 1000 Value Russell 1000 Value Index Northern Trust Global S&P 500 Index	5.99% 6.34% 5.36% 5.33% 6.65% 6.64%	20.53% 21.13% - 13.66% 21.84% 21.83%	10.88% 11.12% - 8.65% 11.45% 11.41%	15.15% 15.58% - 14.04% 15.84% 15.79%	6.99% (7/98) 6.83% (7/98) 10.99% (3/17) 8.95% (3/17) 9.76% (9/94) 9.79% (9/94)
Polen Capital Management S&P 500 Index Earnest Partners LLC Russell MidCap Index DFA Small Cap Value Russell 2000 Value Index CastleArk Management Russell 2000 Growth Index	5.02% 6.64% 7.63% 6.07% 2.89% 2.05% 4.05% 4.59%	27.05% 21.83% 25.50% 18.52% 7.10% 7.84% 23.12% 22.17%	13.90% 11.41% 13.57% 9.58% 8.79% 9.55% 6.99% 10.28%	16.26% 15.79% 16.00% 14.96% 13.81% 13.01%	15.51% (7/12) 15.46% (7/12) 10.40% (5/05) 10.13% (5/05) 11.90% (11/96) 9.98% (11/96) 10.50% (9/13) 12.07% (9/13)
Total Global Equity MSCI World BlackRock Global Alpha Tilts MSCI ACWI Gross MFS Investment Management MSCI ACWI Gross	7.27% 5.51% 7.50% 5.84% 7.03% 5.84%	30.85% 22.40% 30.06% 24.62% 32.62% 24.62%	11.39% 9.26% - 9.89% 11.55% 9.89%	11.87% 11.64% - 11.40% 12.33% 11.40%	8.97% (4/10) 9.73% (4/10) 24.87% (3/16) 22.35% (3/16) 12.62% (12/12) 11.70% (12/12)
Total International Equity MSCI EAFE Index AQR Emerging Markets MSCI EM Gross Brandes Investment Partners MSCI EAFE Index William Blair & Company MSCI ACWI ex-US Index DFA International Small Cap Blended Benchmark	3.62% 4.23% 4.52% 7.50% 2.29% 4.23% 5.10% 5.06% 3.83% 6.05%	24.44% 25.03% 34.55% 37.75% 16.06% 25.03% 30.94% 27.77% 27.98% 33.01%	9.09% 7.80% - 9.50% 7.24% 7.80% 8.65% 8.33% 12.86% 14.20%	9.36% 7.90% - 4.73% 8.63% 7.90% 8.77% 7.28% 12.57% 12.85%	6.86% (5/96) 4.93% (5/96) 24.62% (8/16) 25.04% (8/16) 7.80% (2/98) 5.03% (2/98) 8.03% (12/03) 7.75% (12/03) 5.94% (5/06) 4.46% (5/06)
Total Fixed Income Blmbg Aggregate BlackRock US Debt Idx Fd Blmbg Aggregate Reams Asset Management Blmbg Aggregate Loomis, Sayles & Company, L.P. Blmbg Aggregate	0.56% 0.39% 0.39% 0.39% 0.31% 0.39% 1.01% 0.39%	5.10% 3.54% 3.63% 3.54% 3.46% 3.54% 8.36% 3.54%	3.14% 2.24% - 2.24% 2.63% 2.24% 4.98% 2.24%	2.50% 2.10% - 2.10% 2.10% 2.10% 4.60% 2.10%	6.75% (9/94) 5.54% (9/94) 0.97% (6/16) 1.72% (6/16) 5.39% (1/01) 4.74% (1/01) 8.46% (9/94) 5.54% (9/94)
Total Private Equity Abbott Capital Management 2010 Abbott Capital Management 2011 Abbott Capital Management 2012 Abbott Capital Management 2013 Abbott Capital Management 2014 Abbott Capital Management 2015 Abbott Capital Management 2016 Mesirow V Mesirow IV	3.43% 5.24% 4.75% 4.58% 4.59% 3.60% 0.44% (0.82%) 3.38% 1.92%	17.27% 19.98% 19.24% 17.97% 18.71% 13.50% 6.87% (1.13%) 21.00% 12.50%	12.85% 14.38% 13.19% 9.76% 8.50% 5.43% - - 17.41% 3.73%	12.50% 12.53% 9.88% 6.24% - - - 17.48%	7.89% (6/10) (9.08%) (6/10) (6.28%) (6/11) (6.28%) (6/11) (6.28%) (6/11) (6.28%) (6/13) (6.12%) (6/13) (6.13%) (6/10) (6/
Mesirow VII NB Secondary Opp Fund III NB Secondary Opp Fund IV Private Advisors VI Private Advisors VII Russell 3000 (1 Qtr in Arrears) + 3%	(7.25%) 4.07% (32.75%) 1.99% (1.08%) 5.22%	20.63% - 13.15% (3.33%) 21.71%	21.99% - - - 13.77%	- - - - 17.26%	11.57% (12/13) (5.14%) (4/17) (2.63%) (4/15) (3.33%) (1/17) 21.71% (1/17)
Absolute Return Allianz SA 1000 T-Bills + 10% Newton 1-month LIBOR + 4% UBS A & Q 1-month LIBOR + 4%	1.48% 2.95% 2.68% 1.14% 1.31% 0.86% 1.31%	5.96% 9.67% 10.86% 5.59% 5.11% 4.16% 5.11%	5.35% 10.19% 10.41% 3.45% 4.60% 3.55% 4.60%	- 10.27% 4.43% 4.43%	5.43% (6/14) 10.20% (6/14) 10.35% (6/14) 3.40% (8/14) 4.54% (8/14) 3.46% (12/14) 4.59% (12/14)
Real Assets Principal DRA Principal Blended Benchmark (1)	2.37% 2.37% 3.52%	10.15% 10.15% 10.38%	- - -	- - -	8.56% (1/16) 8.56% (1/16) 8.56% (1/16)
Total Real Estate Real Estate Blended Benchmark (2)	2.96% 2.96% 1.68%	8.89% 8.89% 6.93%	11.03% 11.03% 10.11%	11.95% 11.95% 10.52%	5.47% (7/86) 5.47% (7/86)
Total Fund Total Fund Reference Index*	3.65% 3.80%	16.36% 15.86%	8.35% 7.94%	9.76% 9.52%	9.32% (1/79)

(2) Blended Benchmark = 35% Barclays US Treasury US TIPS Idx, 15% Bloomberg Commodity Idx, 20% S&P Global Infrastructure Idx, 20% S&P Global Natural Resources Idx and 10% FTSE EPRA/NAREIT Developed Market Idx. (2) Blended Benchmark = NCREIF (NPI) through 6/30/06, NCREIF (NPI 1 Qtr Arrears) through 12/31/13 and NFI-ODCE (1 Qtr Arrears) thereafter.



Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods. 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.

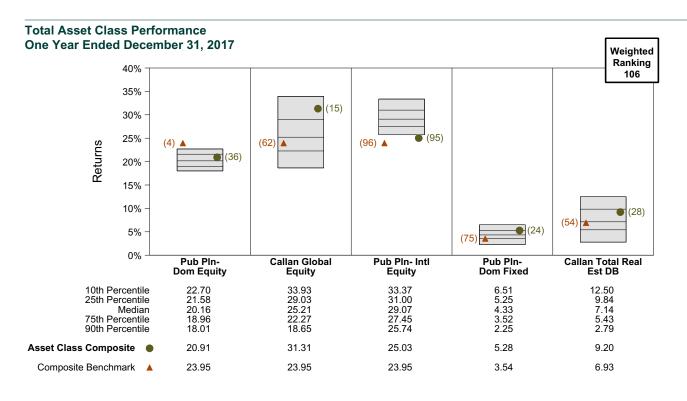
	2017	2016	2015	2014	2013
of Fee Returns					
Total Domestic Equity	20.53%	13.55%	(0.39%)	11.28%	33.44%
Russell 3000 Index	21.13%	12.74%	0.48%	12.56%	33.55%
Northern Trust Global	21.84%	11.99%	1.47%	13.75%	32.43%
S&P 500 Index	21.83%	11.96%	1.38%	13.69%	32.39%
Polen Capital Management	27.05%	1.19%	14.94%	17.02%	22.84%
S&P 500 Index	21.83%	11.96%	1.38%	13.69%	32.39%
Earnest Partners LLC	25.50%	15.90%	0.71%	9.79%	30.60%
Russell MidCap Index	18.52%	13.80%	(2.44%)	13.22%	34.76%
DFA Small Cap Value	7.10%	28.68%	(6.57%)	4.47%	41.95%
Russell 2000 Value Index	7.84%	31.74%	(7.47%)	4.22%	34.52%
CastleArk Management	23.12%	5.30%	(5.54%)	5.45%	-
Russell 2000 Growth Index	22.17%	11.32%	(1.38%)	5.60%	43.30%
Total Global Equity	30.85%	8.26%	(2.44%)	1.95%	24.37%
MSCI World	22.40%	7.51%	(0.87%)	4.94%	26.68%
BlackRock Global Alpha Tilts	30.06%	-	` - ′	-	-
MSCI ACWI Gross	24.62%	8.48%	(1.84%)	4.71%	23.44%
MFS Investment Management	32.62%	5.62%	(0.89%)	5.17%	22.47%
MSCI ACWI Gross	24.62%	8.48%	(1.84%)	4.71%	23.44%
Total International Equity	24.44%	5.27%	(0.89%)	(4.09%)	25.66%
MSCI EAFE Index	25.03%	1.00%	(0.81%)	(4.90%)	22.78%
AQR Emerging Markets	34.55%	-	(0.0 . 70)	(1.0070)	-
MSCI EM Gross	37.75%	11.60%	(14.60%)	(1.82%)	(2.27%)
Brandes Investment Partners	16.06%	8.05%	(1.66%)	(4.84%)	28.93%
MSCI EAFE Index	25.03%	1.00%	(0.81%)	(4.90%)	22.78%
William Blair & Company	30.94%	(1.84%)	(0.22%)	(2.17%)	21.36%
MSCI ACWI ex-US Index	27.77%	5.01%	(5.25%)	(3.44%)	15.78%
DFA International Small Cap	27.98%	8.00%	3.99%	(4.99%)	32.39%
Blended Benchmark	33.01%	2.18%	9.59%	(4.95%)	29.30%
Total Fixed Income	5.10%	7.21%	(2.63%)	3.85%	(0.69%)
Blmbq Aggregate	3.54%	2.65%	0.55%	5.97%	(2.02%)
BlackRock US Debt Idx Fd	3.63%	2.0370	0.5576	3.51 /0	(2.02 /0)
Reams Asset Management	3.46%	4.22%	0.23%	3.94%	(1.23%)
Blmbg Aggregate	3.54%	2.65%	0.55%	5.97%	(2.02%)
	8.36%	13.82%		5.82%	
Loomis, Sayles & Company, L.P. Blmbg Aggregate	3.54%	2.65%	(<mark>6.20%)</mark> 0.55%	5.97%	2.29% (<mark>2.02%</mark>)
Total Private Equity	17.27%	9.09%	12.34%	15.40%	8.66%
Abbott Capital Management 2010	19.98%	11.03%	12.32%	12.36%	7.33%
	19.24%	10.43%	10.12%	9.17%	1.20%
Abbott Capital Management 2011 Abbott Capital Management 2012	17.97%	9.42%	2.45%	4.97%	
	18.71%	5.25%	2.43%		(2.50%)
Abbott Capital Management 2013				(2.17%)	-
Abbott Capital Management 2014	13.50%	2.86%	0.39%	-	-
Abbott Capital Management 2015	6.87%	(5.11%)	-	-	-
Abbott Capital Management 2016	(1.13%)	-	-	- 04.070/	44.000/
Mesirow V	21.00%	12.03%	19.41%	21.07%	14.22%
Mesirow VI	12.50%	3.32%	(3.99%)	2.22%	-
NB Secondary Opp Fund III	20.63%	12.83%	33.37%	19.77%	-
Private Advisors VI Russell 3000 (1 Qtr in Arrears) + 3%	13.15% 21.71%	(1. <mark>34%)</mark> 17.97%	2.56%	- 20.79%	24.63%
,					
Absolute Return	5.96%	5.16%	4.92%	-	-
Allianz SA 1000	9.67%	11.15%	9.76%		
T-Bills + 10%	10.86%	10.33%	10.05%	10.03%	10.07%
Newton	5.59%	3.31%	1.50%	=	-
1-month LIBOR + 4%	5.11%	4.49%	4.19%	4.16%	4.19%
UBS A & Q 1-month LIBOR + 4%	4.16% 5.11%	2.42% 4.49%	4.09% 4.19%	- 4.16%	- 4.19%
			1.1070	1.1070	
Real Assets	10.15%	7.00%	-	-	-
Principal DRA Principal Blended Benchmark (1)	10.15% 10.38%	7.00% 6.77%	-	- -	-
				40.510	
Total Real Estate	8.89%	11.09%	13.15%	13.54%	13.15%
Real Estate	8.89%	11.09%	13.15%	13.54%	13.15%
Blended Benchmark (2)	6.93%	9.69%	13.82%	11.26%	10.99%
	10.000/	0.000/	0.46%	5.02%	19.26%
Total Fund Total Fund Reference Index*	16.36% 15.86%	8.80% 7.26%	1.21%	6.00%	18.20%

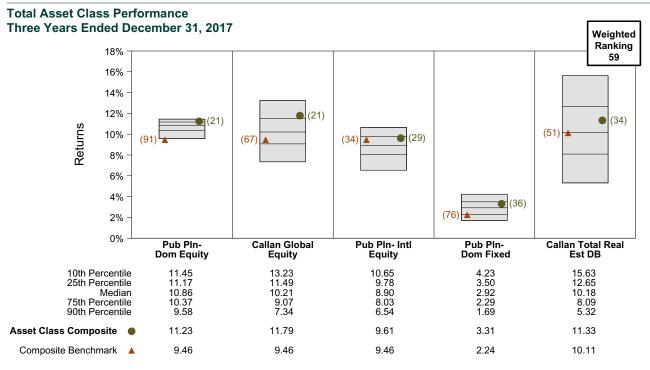
^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark. (1) Current Principal Blended Benchmark = 35% Barclays US Treasury US TIPS Idx, 15% Bloomberg Commodity Idx, 20% S&P Global Infrastructure Idx, 20% S&P Global Natural Resources Idx and 10% FTSE EPRA/NAREIT Developed Market Idx. (2) Blended Benchmark = NCREIF (NPI) through 6/30/06, NCREIF (NPI 1 Qtr Arrears) through 12/31/13 and NFI-ODCE (1 Qtr Arrears) thereafter.



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.



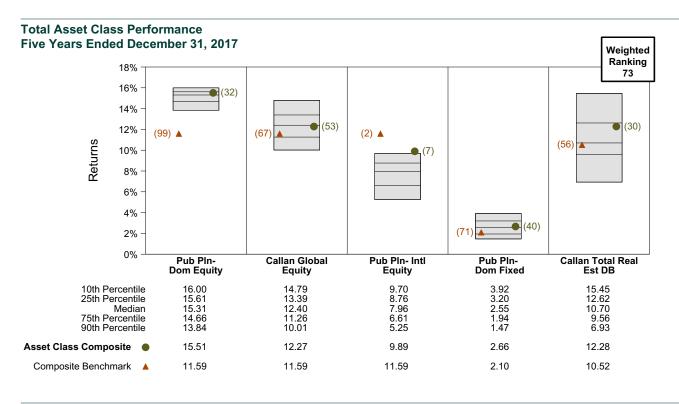


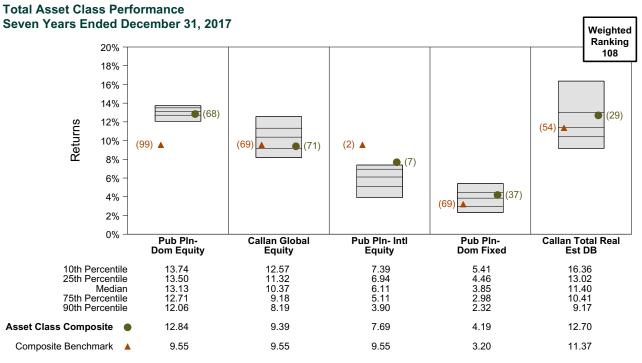
^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.



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^{*} Current Quarter Target = 55.0% MSCI ACWI IMI, 22.0% Blmbg Aggregate, 8.0% 3-month Treasury Bill+3.0%, 7.0% NFI-ODCE (1 Qtr in Arrears), 5.0% Russell 3000 (1 Qtr in Arrears)+3.0% and 3.0% Principal Blended Benchmark.





Research and Educational Programs

The Callan Institute provides both 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 Anna West at 415.974.5060 / institute@callan.com.

New Research from Callan's Experts



The 401(k) Plan Turns 40 | In 1978, a section of the Internal Revenue Code was enacted into law that made 401(k) plans possible. For the most part, plan sponsors have taken advantage of DC plan improvements that have transpired since 1978. Yet some aspects of plan management may still be stuck in the era of bell bottom

pants. Lori Lucas, Callan's DC practice leader, offers lessons sponsors can apply to their DC plans in 2018.

The Cost of Returns | This paper summarizes Callan's October 2017 Workshop, "The Cost of Returns: An In-Depth Look at Institutional Investment Fees."

2017 ESG Survey | Callan's fifth annual survey on the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market reveals more than a third of inves-



Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle? | Callan's Real Assets Consulting Group has identified seven indicators—based on spreads in real estate and fixed income markets-that, combined with an understanding of prevailing market dynamics, help signal when the institutional real estate market is overheated or cooled.

2017 Investment Management Fee Survey | This survey—the seventh we have produced in 30 years-reports on institutional investment management fee payment practices and trends. The data in this report were gleaned from electronic questionnaires sent to a broad sample of U.S.-based institutional fund sponsors and investment management organizations, as well as from information in Callan's proprietary database.

TDFs, FYI I Jimmy Veneruso, CFA, CAIA, a DC consultant in our Fund Sponsor Consulting Group, discusses target date funds (TDFs) and considerations for fund sponsors in this video.

Periodicals

Active vs. Passive Charts, 3rd Quarter 2017 | This series of charts maps active managers alongside relevant benchmarks.

Market Pulse Flipbook, 3rd Quarter 2017 | A quarterly market reference guide covering investment and fund sponsor trends in the U.S. economy, U.S. and non-U.S. equities and fixed income, alternatives, and defined contribution.

Capital Market Review, 3rd Quarter 2017 | The Review provides analysis and an overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Real Assets Reporter, Summer/Fall 2017 | In this edition, Jan Mende of Callan's Real Assets Consulting Group discusses the merits of infrastructure debt for institutional investors' portfolios.

DC Observer, 3rd Quarter 2017 | This edition highlights our "DC Plan Governance Survey," which helps sponsors better understand good governance practices, including how their peers are structuring oversight committees. With: DC Plan Governance Survey Key Findings | This infographic displays the survey's highlights.

Hedge Fund Monitor, 3rd Quarter 2017 | Callan's Jim McKee analyzes four major secular forces that may alter our perception of the financial market's now-healthy glow and explores how investors can prepare for today's uncertainty surrounding risk assets and the divergent paths that they may take when the next financial eclipse occurs.

Events

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

Callan's **National Conference** will be held January 29–31, 2018, at the Palace Hotel in San Francisco.

For more information about events, please contact Barb Gerraty: 415.274.3093 / gerraty@callan.com

The Center for Investment Training Educational Sessions

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

Introduction to Investments

Boise, April 4-5, 2018 San Francisco, April 10-11, 2018 San Francisco, July 24-25, 2018 Chicago, October 2-3, 2018

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

Customized Sessions

The "Callan College" is equipped to customize a curriculum to meet the training and educational needs of a specific organization. These tailored sessions range from basic to advanced and can take place anywhere—even at your office.

Learn more at www.callan.com/events/callan-college-intro or contact Kathleen Cunnie: 415.274.3029 / cunnie@callan.com

Education: By the Numbers

525

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

50+

Unique pieces of research the Institute generates each year

3,700

Total attendees of the "Callan College" since 1994

1980

Year the Callan Institute was founded



"We think the best way to learn something is to teach it.

Entrusting client education to our consultants and specialists ensures that they have a total command of their subject matter. This is one reason why education and research have been cornerstones of our firm for more than 40 years."

Ron Peyton, Executive Chairman

@CallanLLC



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 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.

by Callait's Compilance Department.
Manager Name
1607 Capital Partners, LLC
Aberdeen Asset Management PLC
Acadian Asset Management LLC
AEGON USA Investment Management
AEW Capital Management
Affiliated Managers Group, Inc.
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
Amundi Smith Breeden LLC
Angelo, Gordon & Co.
Apollo Global Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Aristotle Capital Management, LLC
Artisan Holdings
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford Overseas Limited
Baird Advisors
Bank of America
Barings LLC
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Investment Partners
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC
Brown Brothers Harriman & Company

Manager Name
Cambiar Investors, LLC
Capital Group
CastleArk Management, LLC
Causeway Capital Management
Chartwell Investment Partners
Citi US Pension Investments
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Management Investment Advisers, LLC
Columbus Circle Investors
Corbin Capital Partners, L.P.
Cornerstone Capital Management
Cramer Rosenthal McGlynn, LLC
Credit Suisse Asset Management
Crestline Investors, Inc.
D.E. Shaw Investment Management, L.L.C.
DePrince, Race & Zollo, Inc.
Deutsche Asset Management
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Mgmt. Co.
Eagle Asset Management, Inc.
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
First Eagle Investment Management, LLC
First Hawaiian Bank Wealth Management Division
Fisher Investments
Franklin Templeton
Franklin Templeton Institutional
Fred Alger Management, Inc.

Manager Name Manager Name Fuller & Thaler Asset Management, Inc. Pacific Investment Management Company GAM (USA) Inc. Pax World Management LLC GlobeFlex Capital, L.P. Peregrine Capital Management, Inc. **GMO PGIM** Goldman Sachs Asset Management **PGIM Fixed Income** Guggenheim Investments **PGIM Real Estate** PineBridge Investments Guggenheim Partners Asset Management **GW&K Investment Management** Pioneer Investments PNC Capital Advisors, LLC Harbor Capital Group Trust Hartford Funds PPM America Hartford Investment Management Co. Principal Global Investors Heitman LLC Private Advisors, LLC Henderson Global Investors Putnam Investments, LLC Hotchkis & Wiley Capital Management, LLC Pzena Investment Management, LLC **HSBC Global Asset Management** QMA (Quantitative Management Associates) **IMCA** Retirement Corporation **RBC Global Asset Management** Income Research + Management, Inc. Regions Financial Corporation Insight Investment Management Limited RidgeWorth Capital Management, Inc. INTECH Investment Management, LLC Rockefeller & Co., Inc. Invesco Rothschild Asset Management, Inc. Investec Asset Management Russell Investments Ivy Investments S&P Global, Inc. Janus Capital Management, LLC Santander Global Facilities Janus Henderson Investors Schroder Investment Management North America Inc. Jensen Investment Management Sit Investment Associates, Inc. Jobs Peak Advisors Smith, Graham & Co. Investment Advisors, L.P. J.P. Morgan Asset Management Smith Group Asset Management J.P. Morgan Chase & Company South Texas Money Management Ltd. KeyCorp Standard Life Investments Limited Lazard Asset Management Standish Legal & General Investment Management America State Street Global Advisors **Lincoln National Corporation** Stone Harbor Investment Partners, L.P. LMCG Investments, LLC T. Rowe Price Associates. Inc. **Longview Partners** Taplin, Canida & Habacht Loomis, Sayles & Company, L.P. Teachers Insurance & Annuity Association of America Lord Abbett & Company The Boston Company Asset Management, LLC Los Angeles Capital Management The Guardian Life Insurance Company of America LSV Asset Management The Hartford MacKay Shields LLC The London Company Macquarie Investment Management (fka Delaware Investments) The TCW Group, Inc. Man Investments Inc. Thompson, Siegel & Walmsley LLC Manulife Asset Management Thornburg Investment Management, Inc. McKinley Capital Management, LLC Tri-Star Trust Bank MFS Investment Management **UBS** Asset Management MidFirst Bank Van Eck Global Mondrian Investment Partners Limited Versus Capital Group Montag & Caldwell, LLC Victory Capital Management Inc. Morgan Stanley Investment Management Vontobel Asset Management, Inc. Mountain Lake Investment Management LLC Voya Financial MUFG Union Bank, N.A. Voya Investment Management (fka ING) Neuberger Berman WCM Investment Management Newton Investment Management (fka Newton Capital Mgmt) WEDGE Capital Management Nikko Asset Management Co., Ltd. Wellington Management Company, LLP Northern Trust Asset Management Wells Capital Management Nuveen Investments, Inc. Western Asset Management Company OFI Global Asset Management William Blair & Company Old Mutual Asset Management

O'Shaughnessy Asset Management, LLC