

January 31, 2020



The North Carolina Supplemental Retirement Plans

**Investment Measurement Service
Monthly Review**

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Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of January 31, 2020, with the distribution as of December 31, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	January 31, 2020 Market Value	Net New Inv.	Inv. Return	December 31, 2019 Market Value
North Carolina SRP 401k & 457				
Tier II Passive	\$3,698,100,040	\$(5,172,729)	\$(5,720,840)	\$3,708,993,609
Fixed Income Passive	90,912,137	500,462	1,707,176	88,704,498
Treasury Inflation Protected	241,371,107	1,217,500	3,207,081	236,946,526
Large Cap Passive	2,962,278,500	(6,001,970)	(1,161,402)	2,969,441,872
SMID Cap Passive	322,948,448	(1,291,897)	(6,744,549)	330,984,894
International Passive	80,589,847	403,175	(2,729,146)	82,915,819
Tier II Active	\$9,205,555,621	\$(25,362,095)	\$(21,970,479)	\$9,252,888,195
Stable Value Fund	2,131,369,715	(10,910,309)	4,698,905	2,137,581,118
Fixed Income Fund	1,885,806,610	710,768	42,820,528	1,842,275,314
Inflation Responsive Fund	431,530,428	979,208	(1,551,577)	432,102,798
Large Cap Core Equity Fund	1,944,221,850	(17,593,866)	(8,264,026)	1,970,079,742
Small/Mid Cap Equity Fund	887,138,176	(1,917,119)	(9,136,658)	898,191,953
International Equity Fund	1,925,488,842	3,369,222	(50,537,651)	1,972,657,270
Total Fund	\$12,903,655,660	\$(30,534,825)	\$(27,691,319)	\$12,961,881,805

Investment Manager Returns

The table below details the rates of return for the fund's investment managers over various time periods ended January 31, 2020. 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 January 31, 2020

	Last Month	Last Year	Last 3 Years	Last 5 Years
Tier 2: Passive (Net of Fee)				
Fixed Income Passive	1.92%	9.60%	4.58%	2.95%
Blmbg Barclays Aggregate	1.92%	9.64%	4.62%	3.01%
Treasury Inflation Protected Securities	1.35%	7.08%	-	-
Blmbg US TIPS 1-10 Yr	1.30%	7.04%	2.98%	2.12%
Large Cap Passive	(0.04%)	21.72%	14.54%	12.33%
S&P 500 Index	(0.04%)	21.68%	14.54%	12.37%
SMID Cap Passive	(2.05%)	12.15%	8.98%	8.90%
Russell 2500 Index	(2.03%)	12.25%	9.08%	8.93%
International Passive	(3.27%)	9.36%	7.67%	5.05%
MSCI ACWI ex US	(2.69%)	9.94%	7.62%	4.96%

Investment Manager Returns

The table below details the rates of return for the fund's investment managers over various time periods ended January 31, 2020. 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 January 31, 2020

	Last Month	Last Year	Last 3 Years	Last 5 Years
Tier 2: Active (Net of Fee)				
Stable Value Fund	0.22%	2.62%	2.32%	2.15%
3 Yr Constant Maturity Yield	0.11%	1.78%	2.02%	1.62%
T-Bill + 1.5%	0.26%	3.72%	3.20%	2.60%
Fixed Income Fund	2.32%	11.32%	5.72%	3.98%
Blmbg Barclays Aggregate	1.92%	9.64%	4.62%	3.01%
TCW Core Plus	2.06%	10.29%	4.96%	-
Blmbg Barclays Aggregate	1.92%	9.64%	4.62%	3.01%
Prudential Core Plus	2.59%	12.40%	6.50%	4.67%
Blmbg Barclays Aggregate	1.92%	9.64%	4.62%	3.01%
Inflation Responsive Fund	(0.36%)	6.65%	4.64%	3.06%
Inflation Responsive Benchmark	(0.33%)	6.49%	3.51%	1.70%
BlackRock Strategic Completion	(0.36%)	6.67%	-	-
BlackRock Custom Benchmark	(0.33%)	6.49%	3.93%	-
Large Cap Core Equity Fund	(0.44%)	17.34%	-	-
Russell 1000 Index	0.11%	21.39%	14.33%	12.13%
Hotchkis & Wiley Large Cap Value	(4.56%)	10.46%	7.98%	8.46%
Russell 1000 Value Index	(2.15%)	14.88%	8.63%	8.70%
Macquarie Large Cap Value	(2.68%)	10.03%	9.39%	-
Russell 1000 Value Index	(2.15%)	14.88%	8.63%	8.70%
Sands Capital Large Cap Growth	3.91%	20.89%	22.72%	14.77%
Russell 1000 Growth Index	2.24%	27.94%	20.04%	15.49%
Loomis Sayles Large Cap Growth	0.81%	22.89%	19.21%	16.09%
Russell 1000 Growth Index	2.24%	27.94%	20.04%	15.49%
BlackRock Russell 1000 Index	0.15%	21.27%	-	-
Russell 1000 Index	0.11%	21.39%	14.33%	12.13%
Small/Mid Cap Equity Fund	(1.02%)	11.65%	-	-
Russell 2500 Index	(2.03%)	12.25%	9.08%	8.93%
Earnest Partners Small/Mid Cap Value	(1.62%)	14.94%	9.28%	9.75%
Russell 2500 Value Index	(3.64%)	7.10%	4.63%	6.93%
Wedge Small/Mid Cap Value	(2.56%)	7.47%	3.72%	5.86%
Russell 2500 Value Index	(3.64%)	7.10%	4.63%	6.93%
Brown Advisory Small/Mid Cap Growth	2.42%	24.32%	15.59%	14.37%
Russell 2500 Growth Index	0.11%	18.67%	14.32%	11.21%
BlackRock Russell 2500 Index	(2.04%)	12.01%	-	-
Russell 2500 Index	(2.03%)	12.25%	9.08%	8.93%
International Equity Fund	(2.56%)	14.27%	9.36%	6.37%
Mondrian ACWI ex-US Value	(3.92%)	7.59%	6.68%	3.96%
Baillie Gifford ACWI ex-US Growth	(1.20%)	21.17%	12.48%	9.15%
MSCI ACWI ex US	(2.69%)	9.94%	7.62%	4.96%

December 31, 2019



The North Carolina Supplemental Retirement Plans Executive Summary

Investment Measurement Service Quarterly Review

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U.S. EQUITY

The fourth quarter closed out a near-historic year for equity markets, in particular the S&P 500, which ended 2019 up 31.5%—enough to claim second place behind 2013 for the strongest year of the decade (during which large cap equities only saw one down year). Both Apple (+85%) and Microsoft (+54%) reached over \$1 trillion in market cap and accounted for 15% of the S&P 500’s advance for the year. For the recent quarter, investors globally were spurred by three interest rate cuts by the Fed, a potential U.S.-China trade armistice, continued low inflation, and some clarity around Brexit.

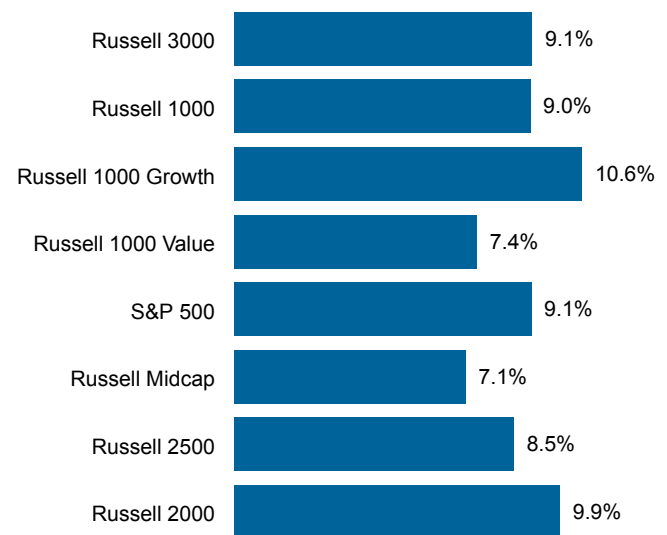
Large cap vs. small cap (Russell 2000: +9.9%; Russell 1000: +9.0%)

- Small cap trailed for most of 2019 but eclipsed large cap stocks in the fourth quarter due to notable contributions from the Health Care sector, where the biotech and pharmaceutical industries saw heightened new drug approvals and M&A activity during the quarter.
- Small growth outpaced small value for the quarter, the year, and the decade; the Russell 2000 Growth Index outpaced the Russell 2000 Value Index by 3% annualized over the past 10 years as the low interest rate environment favored growth stocks and challenged the Russell 2000 Value’s heavy exposure to Financials.
- While small cap outpaced large cap in the fourth quarter, large cap stocks led for the third straight year, owing much to Tech (+50.3%) and Communication Services (+32.7%).

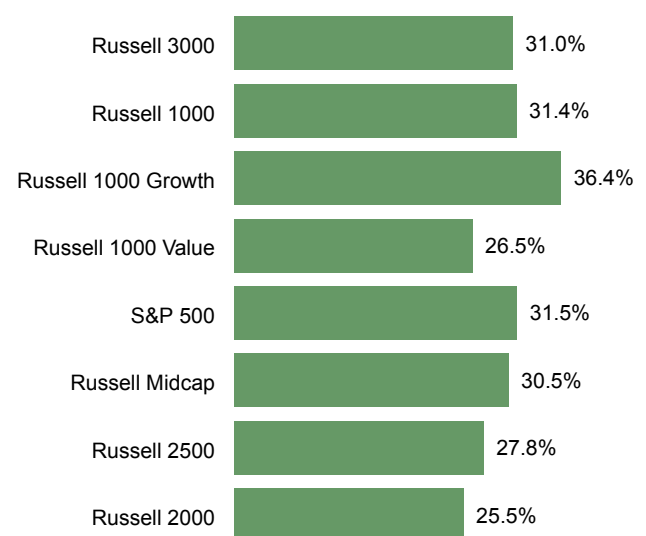
Growth vs. Value (Russell 1000 Growth: +10.6%; Russell 1000 Value: +7.4%)

- Growth continued its dominance over value during the quarter, closing out a decade-long trend.
- Tech giants Facebook, Apple, Microsoft, and Alphabet/Google remained meaningful contributors for the quarter although Health Care (+14.4%) was also among the top sector performers.
- The fourth quarter saw a rotation away from the more defensive sectors (e.g., Consumer Staples (+3.5%), Utilities (+0.8%), and Real Estate (-0.5%)) and into Cyclical, further supporting growth stocks.

U.S. Equity: Quarterly Returns

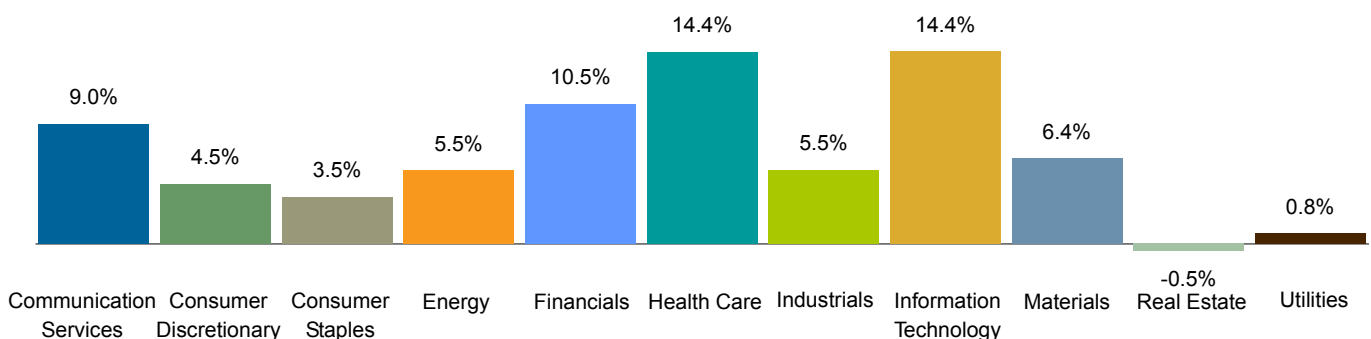


U.S. Equity: One-Year Returns



Sources: FTSE Russell, Standard & Poor’s

S&P Sector Returns, Quarter Ended December 31, 2019



Source: Standard & Poor’s

GLOBAL/GLOBAL EX-U.S. EQUITY

Global equity markets bounced back in the fourth quarter as uncertainties abated. De-escalation of the U.S.-China trade war coupled with some Brexit clarity boosted markets. With this backdrop, trade-related areas of the market led the rally.

Global/Developed ex-U.S. (MSCI EAFE: +8.2%; MSCI World ex USA: +7.9%; MSCI ACWI ex USA: +8.9%; MSCI Japan: +7.6%; MSCI Pacific ex Japan: +5.8%)

- Optimism catalyzed by easing tension between the U.S. and China and nearing conclusion of Brexit boosted the markets, and the U.S. dollar fell against most currencies within developed and emerging markets.
- British Prime Minister Boris Johnson gained command of the Parliament as a result of the Dec. 12 election, adding further clarity to Brexit and sparking the pound to its best quarterly results in a decade by rising 7.5% relative to the dollar.
- Accommodative policies such as a fiscal stimulus program and dovish monetary rhetoric continued to support the Japanese economy and its market.
- Despite GDP contraction of 3.2% and its first recession in a decade due to political protests, Hong Kong rose 7.3% as U.S.-China trade tensions improved.
- Every sector generated positive returns, led by Technology.

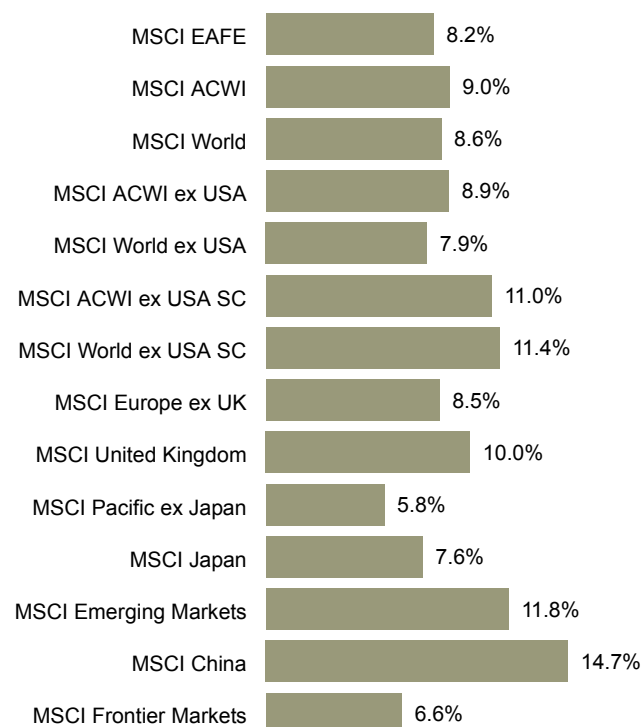
Emerging Markets (MSCI Emerging Markets Index: +11.8%)

- Emerging markets were the best-performing among the global ex-U.S. markets as trade war uncertainty receded.
- China soared 14.7% with easing trade tensions and expected fiscal and monetary stimulus packages in 2020.
- Brazil posted a 14.2% gain, its best quarter since late 2017, emboldened by President Jair Bolsonaro’s deregulation policies, the country’s 1.2% GDP growth, and pending pension reform.
- Russia was the best-performing country in 2019 (+50.9%) and a top five performer in the quarter (+16.8%) as rising oil prices over the past year helped fuel sentiment.
- Every sector generated positive returns, led by Asian technology companies, given the “phase one” trade deal, chip demands for 5G, and growth in China.

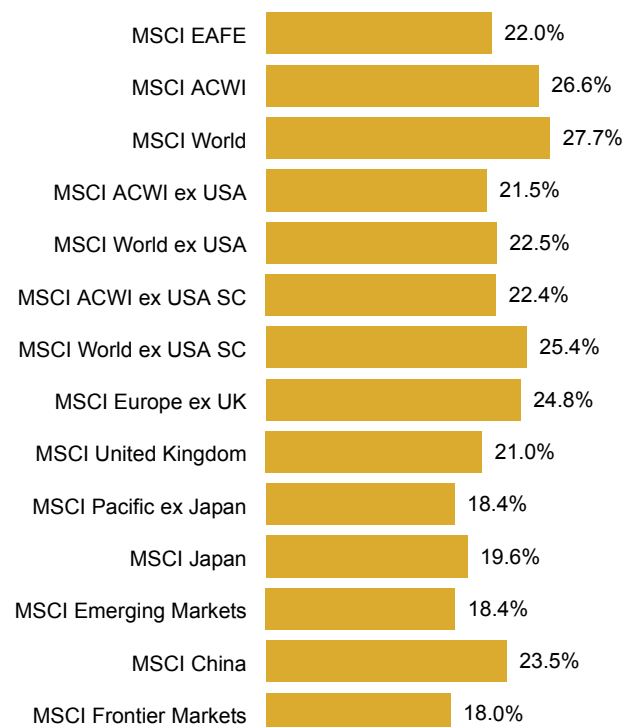
Global ex-U.S. Small Cap (MSCI World ex USA Small Cap: +11.4%; MSCI EM Small Cap: +9.5%; MSCI ACWI ex USA Small Cap: +11.0%)

- The “risk-on” market environment triggered by the U.S.-China trade war de-escalation enabled small caps to outperform large caps.
- Additional Brexit clarity drove the U.K. as the top country performer (+19.4%) within developed ex-U.S.
- Argentina (+33.5%) and Brazil (+24.8%) were two of the top EM country performers as key appointments in the Argentinian government, and deregulation and pension reform in Brazil, boosted market sentiment.

Global Equity: Quarterly Returns



Global Equity: One-Year Returns



Source: MSCI

FIXED INCOME

The Federal Open Market Committee (FOMC) cut short-term interest rates by 25 basis points once in the fourth quarter to 1.50%-1.75%, citing weak business investment and export data, along with muted inflation. The overall economic backdrop remained strong supported by a solid labor market, which led to a pause in rate cuts at the most recent FOMC meeting. The FOMC indicated its current monetary policy stance is appropriate to sustain the economic expansion. The European Central Bank kept rates steady while continuing to purchase assets in the open market. Yield movement was mixed in the U.S. as short-term rates fell and long-term rates rose amid ongoing trade negotiations.

U.S. Fixed Income (Bloomberg Barclays US Aggregate Bond Index: +0.2%)

- Treasuries fell 0.8% as the Treasury yield curve steepened, with yields falling on the short end and rising modestly in the intermediate and long end of the curve on expectations of stronger economic growth.
- The spread between the 2-year and 10-year Treasury remained positive, ending the year at 34 bps.
- Long Treasuries fell 4.1% as the 30-year yield rose 27 bps to end the year at 2.39% as investors favored risk assets.
- TIPS outperformed nominal Treasuries as inflation expectations rose; the 10-year breakeven spread was 1.77% at quarter end, up from 1.53% as of Sept. 30.

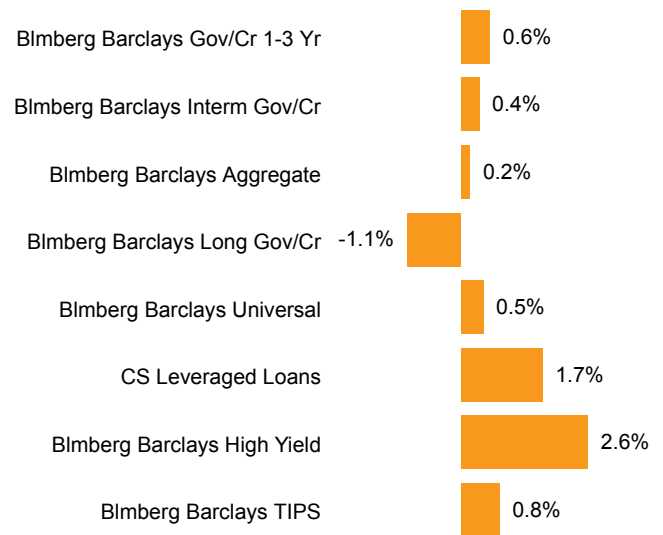
Investment Grade Corporates (Bloomberg Barclays Corporate: +1.2%)

- Investment grade corporate credit spreads narrowed in the fourth quarter and posted the best results within the Bloomberg Barclays US Aggregate Bond Index amid a risk-on market environment; BBB-rated corporates (+1.7%) outperformed single A-rated or higher corporates (+0.7%), indicating investors' willingness to extend risk down the credit spectrum.
- Issuance in the corporate bond market was \$200 billion in the fourth quarter, which was \$8 billion lower than that from a year ago. Issuance was \$140 billion lower compared to the third quarter, as is typical toward year-end; demand remained strong amid the risk-on market tone as global investors continued their hunt for positive-yielding assets.

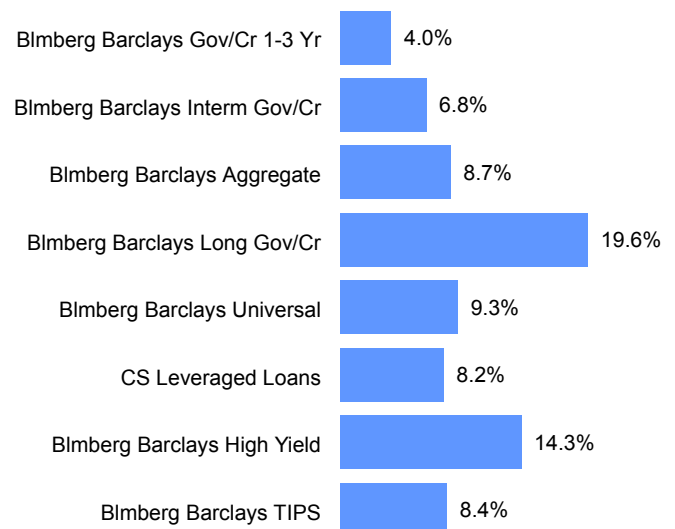
High Yield (Bloomberg Barclays Corporate High Yield: +2.6%)

- CCC-rated corporates (+3.7%) outperformed BB-rated corporates (+2.5%), as the risk-on market sentiment spurred demand for lower-rated securities.
- Spreads across credit quality buckets tightened in the fourth quarter, as the market anticipated improvements in credit fundamentals.

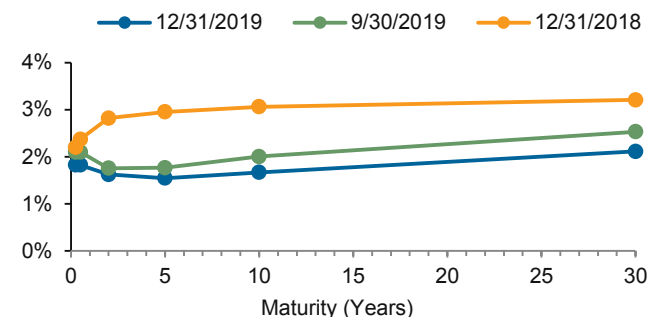
U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: One-Year Returns



U.S. Treasury Yield Curves



Sources: Bloomberg, Bloomberg Barclays, Credit Suisse

Leveraged Loans (CS Leveraged Loans: +1.7%)

- Bank loans, which have floating-rate coupons, underperformed high yield as investors shunned loans in favor of high yield bonds.
- CLO issuance remained consistent, providing technical support for the leveraged loan market.

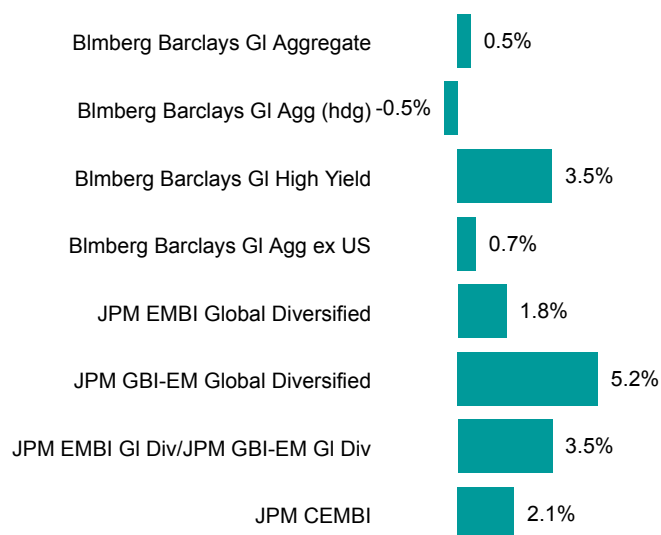
Global Fixed Income (Bloomberg Barclays Global Aggregate (unhedged): +0.5%; (hedged): -0.5%)

- Developed market sovereign bond yields rose modestly in the fourth quarter as global financial conditions improved, but ended lower on the year. The ECB kept the deposit rate steady at its December meeting; negative-yielding debt totaled less than \$12 trillion, down from \$17 trillion in the third quarter.
- The U.S. dollar declined in the fourth quarter versus the euro, Australian dollar, and British pound; however, it had a modest gain versus the Japanese yen.

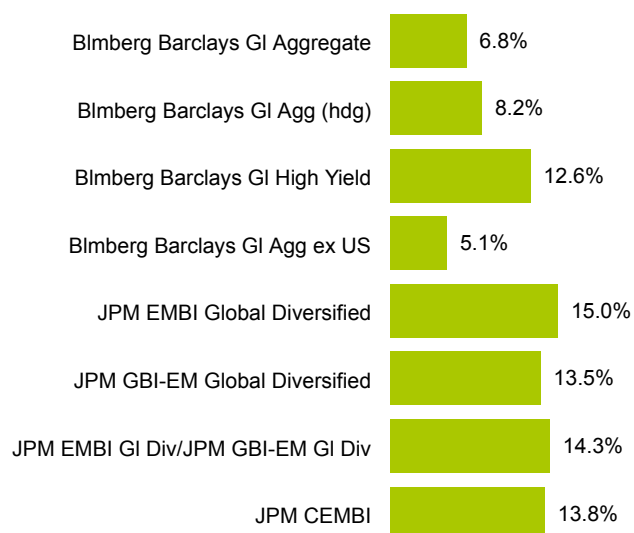
US\$ EMD (JPM EMBI Global Diversified: +1.8%), **Local Currency EMD** (JPM GBI-EM Global Diversified: +5.2%)

- Broadly, emerging market debt benefited from dovish global central banks and a risk-on environment.
- Within the dollar-denominated benchmark, which posted mixed results, Lebanon (-29.4%) was an outlier as the debt-to-GDP ratio continued to swell and anti-government protests persisted; Argentina rallied (+20.8%) to end the year down 23.6% as a new president was inaugurated. Returns in the local debt benchmark were largely positive, with only Chile (-6.2%) and the Dominican Republic (-0.7%) declining. South Africa (+10.2%) and Russia (+10.0%) were top performers.

Global Fixed Income: Quarterly Returns

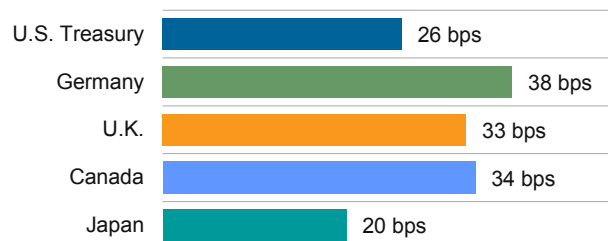


Global Fixed Income: One-Year Returns



Change in 10-Year Global Government Bond Yields

3Q19 to 4Q19



Sources: Bloomberg, Bloomberg Barclays, JP Morgan

A	B	C	D	E	F C+D+E	G B*F	H	I F-H
Funds and Sub-Advisors	Assets*	Inv. Mgmt. Fee	Custodial Expenses ¹	NC Budget ²	Total Estimated Expense (%)	Total Estimated Expenses (\$) ³	Callan Median Expense ⁴	Difference
North Carolina Stable Value Fund	\$2,137,581,118	0.296%	0.0018%	0.025%	0.32%	\$6,900,112	0.36%	-0.04%
Galliard	\$2,143,449,613	0.296%	0.0000%			\$6,344,611	0.29%	0.01%
North Carolina Fixed Income Passive Fund	\$88,704,498	0.020%	0.0255%	0.025%	0.07%	\$62,537	0.15%	-0.08%
Blackrock	\$86,328,656	0.020%	0.0100%			\$17,266	0.02%	0.00%
North Carolina Fixed Income Fund	\$1,842,275,314	0.127%	0.0103%	0.025%	0.16%	\$2,984,486	0.40%	-0.24%
50% TCW	\$920,797,735	0.110%	0.0000%			\$1,012,878	0.22%	-0.11%
50% Prudential	\$921,477,617	0.143%	0.0100%			\$1,321,399	0.22%	-0.08%
North Carolina Inflation Sensitive Fund	\$432,102,798	0.090%	0.0153%	0.025%	0.13%	\$563,030	0.85%	-0.72%
Blackrock	\$432,102,803	0.090%	0.0100%			\$388,893	0.75%	-0.66%
North Carolina Large Cap Passive Fund	\$2,969,441,872	0.005%	0.0115%	0.025%	0.04%	\$1,232,318	0.08%	-0.04%
Blackrock	\$2,743,702,618	0.005%	0.0100%			\$137,185	0.03%	-0.03%
North Carolina Large Cap Core Fund	\$1,970,079,742	0.284%	0.0081%	0.025%	0.32%	\$6,249,093	0.63%	-0.31%
18.75% Hotchkis & Wiley	\$368,052,144	0.400%	0.0000%			\$1,472,209	0.40%	0.00%
18.75% Macquarie Large Cap Value	\$368,891,422	0.275%	0.0000%			\$1,012,607	0.40%	-0.13%
18.75% Sands Capital Management	\$375,431,277	0.450%	0.0000%			\$1,689,441	0.43%	0.02%
18.75% Loomis Sayles	\$369,283,187	0.379%	0.0000%			\$1,397,737	0.43%	-0.05%
25% BlackRock Advisors Inc., Large Cap Index*	\$488,421,719	0.005%	0.0100%			\$24,421	0.02%	-0.02%
North Carolina SMID Cap Passive Fund	\$330,984,894	0.005%	0.0146%	0.025%	0.04%	\$147,619	0.20%	-0.16%
Blackrock	\$306,804,766	0.005%	0.0100%			\$15,340	0.03%	-0.03%
North Carolina SMID Cap Core Fund	\$898,191,953	0.346%	0.0154%	0.025%	0.39%	\$3,468,817	0.89%	-0.50%
23.75% Earnest Partners	\$212,587,527	0.470%	0.0000%			\$999,161	0.66%	-0.19%
23.75% Wedge	\$213,339,699	0.470%	0.0000%			\$1,003,337	0.66%	-0.19%
23.75% Brown Advisory	\$211,822,298	0.514%	0.0000%			\$1,088,131	0.74%	-0.23%
28.75% BlackRock Advisors Inc., SMID Index*	\$259,771,688	0.005%	0.0100%			\$12,989	0.03%	-0.03%
North Carolina International Passive Fund	\$82,915,819	0.021%	0.0359%	0.025%	0.08%	\$67,908	0.25%	-0.17%
Blackrock	\$76,922,142	0.021%	0.0200%			\$16,154	0.08%	-0.06%
North Carolina International Equity	\$1,972,657,270	0.332%	0.0258%	0.025%	0.38%	\$7,551,332	0.81%	-0.43%
50% Baillie Gifford Growth	\$986,116,211	0.278%	0.0000%			\$2,741,403	0.51%	-0.23%
50% Mondrian Investment Partners Value	\$985,310,908	0.386%	0.0000%			\$3,802,315	0.51%	-0.12%
North Carolina TIPS Fund	\$236,946,526	0.025%	0.0127%	0.025%	0.06%	\$148,565	0.26%	-0.20%
Blackrock	\$220,814,670	0.025%	0.0000%			\$55,204	0.12%	-0.10%
Total	\$12,961,881,804	0.189%	0.0161%	0.025%	0.23%	\$29,375,818	0.33%	

*Individual Manager Assets do not sum to Fund asset class totals due to residual/closing accounts.

¹ Based on annualized monthly fee accruals as of 12/31/2019

² The cost of the budget associated with the management of the Supplemental Retirement Plans, borne by each investment option in proportion to the pro-rate share of the applicable assets in that fund.

³ Manager fee estimates reflect investment management fee only, does not include \$31 per participant record-keeping fee.

⁴ The median expenses for White Label composites are compared against their respective Callan Mutual Fund Institutional Universe, while the individual managers are compared to peers with the same vehicle and strategy assets. The total fund median represents asset-weighted investment management fees for plans greater than \$1 billion in the Callan DC index.

North Carolina Supplemental Retirement Plans Active Management Scorecard

Large Cap Equity									
	3 Years to 12/31/2019		3 Years to 9/30/2019		3 Years to 06/30/2019		3 Years to 03/31/2019		5 Year Risk
	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	
Hotchkis & Wiley Large Cap Value									
Macquarie Large Cap Value									
Sands Capital Large Cap Growth									
Loomis Large Cap Growth									
Small/Mid Cap									
	3 Years to 12/31/2019		3 Years to 9/30/2019		3 Years to 06/30/2019		3 Years to 03/31/2019		5 Year Risk
	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	
EARNEST Partners SMID Cap Value									
WEDGE SMID Cap Value									
Brown Advisory									
International Equity									
	3 Years to 12/31/2019		3 Years to 9/30/2019		3 Years to 06/30/2019		3 Years to 03/31/2019		5 Year Risk
	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	
Baillie Gifford ACWI ex US Growth									
Mondrian ACWI ex US Value									
Fixed Income									
	3 Years to 12/31/2019		3 Years to 9/30/2019		3 Years to 06/30/2019		3 Years to 03/31/2019		5 Year Risk
	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	
TCW Core Plus*									
Prudential Core Plus									
Stable Value									
	3 Years to 12/31/2019		3 Years to 9/30/2019		3 Years to 06/30/2019		3 Years to 03/31/2019		5 Year Risk
	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	Above Benchmark	Above Peer Median	
Stable Value									

Manager Assessment

	Organization	People	Process and Philosophy	Product Dynamics	Short Term Performance	Long Term Performance	Overall	<u>OVERALL STATUS</u>	<u>NOTES</u>
LARGE CAP CORE									
BlackRock	●	●	●	●	●	●	●	Satisfactory	
LARGE CAP VALUE									
Hotchkis & Wiley Large Cap Fundamental Value	●	●	●	●	●	●	●	Satisfactory	
Macquarie Large Cap Value Focus	●	●	●	●	●	●	●	Cautionary	Concern over Lead PM Ty Nutt's retirement in July 2019; monitoring transition to Nik Lalvani closely and additional planned junior PM hire; performance in line with expectations
LARGE CAP GROWTH									
Loomis Sayles Large Cap Growth	●	●	●	●	●	●	●	Satisfactory	Three-year results trail benchmark but within expectations
Sands Capital Management Select Growth	●	●	●	●	●	●	●	Satisfactory	Trailed the Russell 1000 Growth Index for 2019 but three-year results remain competitive
SMID CAP CORE									
BlackRock	●	●	●	●	●	●	●	Satisfactory	
SMID CAP VALUE									
EARNEST Partners SMID Value	●	●	●	●	●	●	●	Satisfactory	
Hotchkis & Wiley Mid Cap Value	●	●	●	●	●	●	●	Cautionary <i>(terminated Jan 2020)</i>	Meaningful underperformance in recent time periods due to deep-value process; in September 2019, Hunter Doble was elevated to co-PM, joining the team of Stan Majche and George Davis
Wedge Capital US SMID Cap Value	●	●	●	●	●	●	●	Satisfactory <i>(on NC watch list)</i>	Trailed benchmark over three-year period but within expectations
SMID CAP GROWTH									
Brown Advisory US SMID Cap Growth	●	●	●	●	●	●	●	Satisfactory	AUM near \$4 billion; holdings at an all-time high of 75 - notable but not actionable

● Positive status; no issues ● Cautionary status; noteworthy item but no concerns ● Under Review status; noteworthy item with concerns

Product Dynamics: reflects noteworthy highlights of the portfolio and strategy including assets and portfolio characteristics.
Short-Term Performance: reflects periods of three years and under with a focus on whether or not the manager is performing within expectations.
Long-Term Performance: reflects periods of five years and longer with a focus on whether or not the manager is performing within expectations.

Manager Assessment

	Organization	People	Process and Philosophy	Product Dynamics	Short Term Performance	Long Term Performance	Overall	OVERALL STATUS	NOTES
INTERNATIONAL EQUITY									
Baillie Gifford ACWI Ex-US Alpha	●	●	●	●	●	●	●	Satisfactory	Depth and breadth of the team enable a seamless transition after the retirements of PMs Andrew Strathdee and Jonathan Bates in 2019
BlackRock	●	●	●	●	●	●	●	Satisfactory	
Mondrian Investment Partners Focused ACWI Ex-US	●	●	●	●	●	●	●	Satisfactory <i>(on NC watch list)</i>	Liz Desmond appointed Deputy CEO in 2018; Desmond's day-to-day responsibilities have not changed and she continues to manage the International Equity group and portfolios; process and its ability to protect in down markets are still intact, as witnessed by 2018 outperformance; performance in 2019 and over short-term time periods has lagged slightly as growth continues to outperform value
CORE & CORE PLUS FIXED INCOME									
BlackRock	●	●	●	●	●	●	●	Satisfactory	
PGIM Core Plus Bond	●	●	●	●	●	●	●	Satisfactory	
TCW Core Plus	●	●	●	●	●	●	●	Satisfactory	
INFLATION SENSITIVE									
BlackRock Strategic Completion Fund	●	●	●	●	●	●	●	Satisfactory	
STABLE VALUE									
Galliard Stable Value	●	●	●	●	●	●	●	Under Review	Concern over key executive turnover, however, Galliard has spent several years planning for succession; founding partners Richard Merriam and Karl Tourville have both officially retired and transitioned the firm to next gen of leadership, Michael Norman, Ajay Mirza, and Andrew Owen; monitoring integration with parent Wells Fargo; renegotiated long-term compensation arrangements for investment team which is a positive in regards to retaining talent and assets; two portfolio specialists departed the firm for a competitor in October 2019.

● Positive status; no issues ● Cautionary status; noteworthy item but no concerns ● Under Review status; noteworthy item with concerns

Product Dynamics: reflects noteworthy highlights of the portfolio and strategy including assets and portfolio characteristics.
Short-Term Performance: reflects periods of three years and under with a focus on whether or not the manager is performing within expectations.
Long-Term Performance: reflects periods of five years and longer with a focus on whether or not the manager is performing within expectations.

Wedge Smid Cap

WEDGE Capital Management was founded in 1984 and based in North Carolina. The organization is 100% employee owned by eight partners. WEDGE employs a well-resourced investment team with significant experience in the industry and at the firm. The Smid Value strategy is a 50/50 blend of WEDGE Small Cap Value and Mid Cap Value portfolio. The investment approach is a fundamentally based, value-oriented discipline, employing up front quantitative screens and qualitative analysis. Quantitative screens search for attractive value and quality characteristics to define a pool of candidates; fundamental research is then applied to identify attractive unrecognized value opportunities. WEDGE believes they can produce superior long term returns by employing rigorous quantitative research and independent qualitative analysis.

The WEDGE Smid Value strategy has produced competitive performance results, outperforming the Russell 2500 Value Index on a long-term basis. WEDGE significantly underperformed in fourth quarter 2016 when higher risk, lower quality securities performed very well post-election; this time period negatively impacts shorter term results. Underperformance over the last year is also influenced by an underweight to REITs as well as stock selection in consumer durables and utilities. A notable detractor within utilities was PG&E, which was sold in mid-January prior to the bankruptcy filing.

This strategy should not perform well in vertical up markets with narrow leadership and typically protects in down markets. Effective August 31, 2019, Wedge has agreed to a new fee schedule that will lower the investment management fee from 0.61% to 0.52%.

Mondrian International

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 fundamental approach employs a combination of top-down and bottom-up processes to identify quality businesses trading at favorable valuation defined by four-stage dividend discount model. The strategy offers defensive-value characteristics with an absolute-return performance pattern. As such, the strategy has delivered long-term outperformance relative to the index and peers by consistently compounding excess returns garnered from downside protection.

Outperformance in fourth quarter of 2018 relative to the MSCI ACWI ex-US index confirms the consistency of the process and ability to protect in down markets. However, the strategy continues to lag on a 3-year basis due to the underperformance in 2017. The strategy was challenged in 2017 given the narrow, growth market. Mondrian's value oriented and defensive style, understandably did not capture the upside in 2017. Markets have been remarkably strong since the global financial crisis in 2008, which tends to be a headwind for all of their strategies on a relative basis. Callan is cautionary in light of the recent performance and modest AUM decline. However, history has shown over the long term, and especially in periods of stress, Mondrian is able to beat their benchmark by playing superior defense.

Investment Fund Balances

The table below compares the fund's investment fund balances as of December 31, 2019 with that of September 30, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Funds

	December 31, 2019		Net New Invest.	Invest. Return	September 30, 2019	
	Market Value	Weight			Market Value	Weight
North Carolina SRP 401k & 457						
Tier II Passive	\$3,708,993,609	28.61%	\$(18,517,273)	\$292,938,029	\$3,434,572,852	28.14%
Fixed Income Passive	88,704,498	0.68%	3,400,608	(1,024,766)	86,328,656	0.71%
Treasury Inflation Protected	236,946,526	1.83%	14,241,979	1,889,877	220,814,670	1.81%
Large Cap Passive	2,969,441,872	22.91%	(30,937,277)	256,676,531	2,743,702,618	22.48%
International Passive	82,915,819	0.64%	(1,690,393)	7,684,069	76,922,142	0.63%
SMID Cap Passive	330,984,894	2.55%	(3,532,190)	27,712,319	306,804,766	2.51%
Tier II Active	\$9,252,888,195	71.39%	\$27,227,175	\$456,496,918	\$8,769,164,102	71.86%
Stable Value Fund	2,137,581,118	16.49%	17,496,741	1,104,673	2,118,979,704	17.36%
Fixed Income Fund	1,842,275,314	14.21%	73,661,500	9,580,412	1,759,033,402	14.41%
Inflation Responsive Fund	432,102,798	3.33%	15,416,501	11,009,422	405,676,874	3.32%
Large Cap Core Equity Fund	1,970,079,742	15.20%	(33,433,618)	161,168,462	1,842,344,898	15.10%
International Equity Fund	1,972,657,270	15.22%	(35,937,679)	207,418,501	1,801,176,448	14.76%
Small/Mid Cap Equity Fund	898,191,953	6.93%	(9,976,269)	66,215,447	841,952,775	6.90%
Total Fund	\$12,961,881,805	100.0%	\$8,709,903	\$749,434,947	\$12,203,736,955	100.0%

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Stable Value Fund	2,137,581,118	16.49%	17,496,741	1,104,673	2,118,979,704	17.36%
Fixed Income Fund	1,842,275,314	14.21%	73,661,500	9,580,412	1,759,033,402	14.41%
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Small/Mid Cap Equity Fund	898,191,953	6.93%	(9,976,269)	66,215,447	841,952,775	6.90%
Total Fund	\$12,961,881,805	100.0%	\$8,709,903	\$749,434,947	\$12,203,736,955	100.0%

Investment Fund Balances

The table below compares the fund's investment fund balances as of December 31, 2019 with that of September 30, 2019.

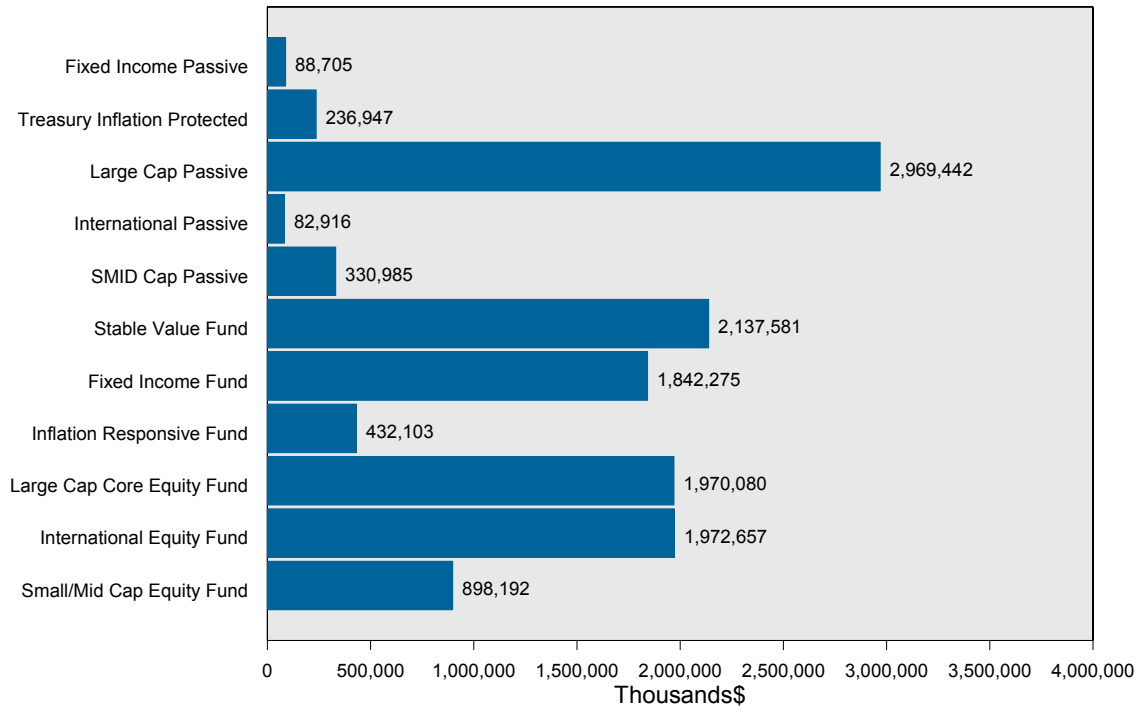
Asset Distribution Across Investment Funds

	December 31, 2019		September 30, 2019	
	Market Value	Weight	Market Value	Weight
North Carolina SRP 401k & 457				
Tier I: GoalMaker				
Post Retirement Conservative 11+	14,735,004	0.24%	12,859,817	0.22%
Post Retirement Conservative 6-10	82,171,712	1.32%	76,124,851	1.32%
Post Retirement Conservative 0-5	311,867,269	5.02%	295,909,611	5.11%
Pre Retirement Conservative 0-5	264,020,304	4.25%	258,305,918	4.46%
Pre Retirement Conservative 6-10	155,222,116	2.50%	151,059,352	2.61%
Pre Retirement Conservative 11-15	113,555,709	1.83%	105,813,406	1.83%
Pre Retirement Conservative 16-20	86,875,307	1.40%	83,343,092	1.44%
Pre Retirement Conservative 21-25	67,164,248	1.08%	62,129,665	1.07%
Pre Retirement Conservative 26+	88,341,241	1.42%	82,991,359	1.43%
Post Retirement Moderate 11+	17,499,401	0.28%	16,090,813	0.28%
Post Retirement Moderate 6-10	81,120,905	1.31%	75,564,264	1.31%
Post Retirement Moderate 0-5	350,729,126	5.65%	322,926,233	5.58%
Pre Retirement Moderate 0-5	562,312,800	9.06%	527,546,029	9.11%
Pre Retirement Moderate 6-10	557,303,287	8.98%	523,622,486	9.05%
Pre Retirement Moderate 11-15	432,876,626	6.97%	408,529,340	7.06%
Pre Retirement Moderate 16-20	354,025,144	5.70%	327,685,363	5.66%
Pre Retirement Moderate 21-25	247,219,731	3.98%	229,554,769	3.97%
Pre Retirement Moderate 26+	275,668,961	4.44%	253,853,732	4.39%
Post Retirement Aggressive 11+	9,122,085	0.15%	9,092,275	0.16%
Post Retirement Aggressive 6-10	28,217,778	0.45%	24,931,449	0.43%
Post Retirement Aggressive 0-5	133,517,782	2.15%	124,917,430	2.16%
Pre Retirement Aggressive 0-5	284,892,135	4.59%	260,239,408	4.50%
Pre Retirement Aggressive 6-10	398,840,636	6.42%	363,311,783	6.28%
Pre Retirement Aggressive 11-15	404,965,913	6.52%	370,379,156	6.40%
Pre Retirement Aggressive 16-20	386,942,597	6.23%	358,836,490	6.20%
Pre Retirement Aggressive 21-25	257,043,008	4.14%	237,191,699	4.10%
Pre Retirement Aggressive 26+	242,169,885	3.90%	225,750,539	3.90%
Tier I: GoalMaker Total	\$6,208,420,710	100.0%	\$5,788,560,329	100.0%

Changes in Investment Fund Balances Period Ended December 31, 2019

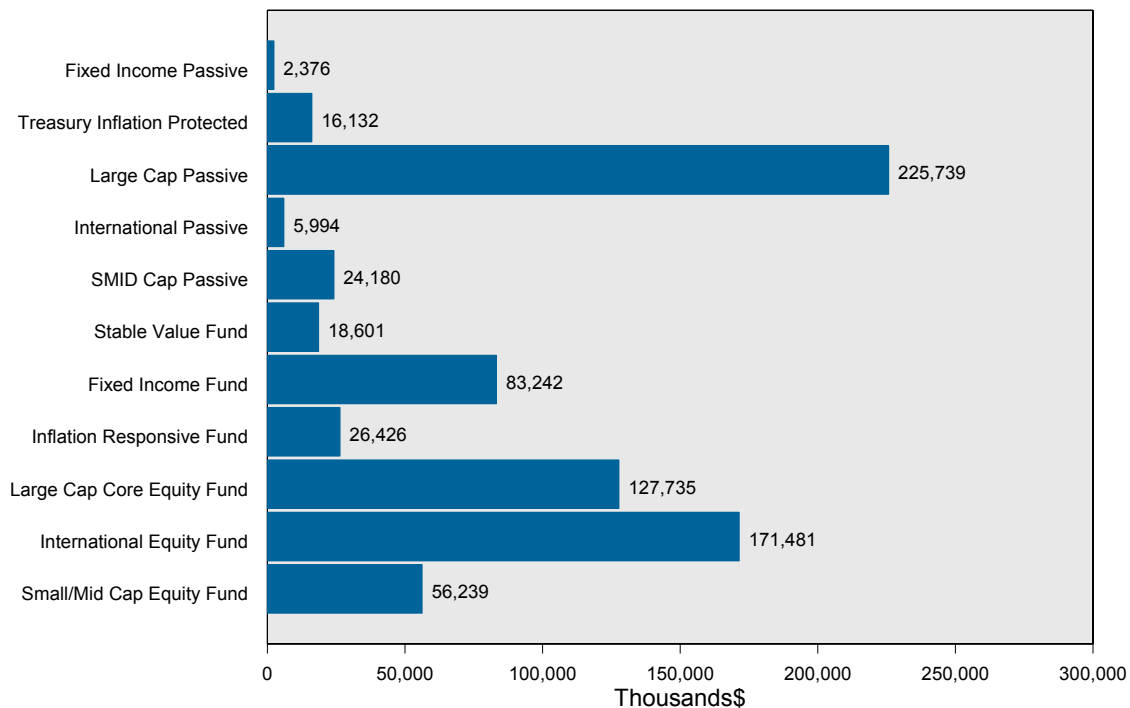
Allocation Across Investment Options

The chart below illustrates the allocation of the aggregate fund assets across the various investment options for the quarter ended December 31, 2019.



Changes in Fund Values

The chart below shows the net change in fund values across the various investment options for the quarter ended December 31, 2019. The change in value for each fund is the result of a combination of 3 factors: 1) market movements; 2) contributions or disbursements into or out of the funds by the participants (and any matching done by the company); and 3) transfers between funds by the participants.



Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns and Rankings for Periods Ended December 31, 2019

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Since Inception
Tier 2: Passive (Net of Fee)									
Fixed Income Passive	0.16%	45	8.69%	61	3.99%	70	2.99%	71	3.10% <small>(10/10)</small>
Blmbg Barclays Aggregate	0.18%	43	8.72%	60	4.03%	64	3.05%	56	3.20% <small>(10/10)</small>
Callan Core Bond MFs	0.15%		9.17%		4.17%		3.12%		-
Treasury Inflation Protected Securities	1.00%	49	6.94%	65	-		-		4.19% <small>(7/18)</small>
Blmbg US TIPS 1-10 Yr	1.00%	49	6.85%	70	2.79%	69	2.36%	46	4.19% <small>(7/18)</small>
Callan TIPS MFs	0.91%		8.26%		3.13%		2.32%		-
Large Cap Passive	9.07%	42	31.53%	28	15.28%	20	11.66%	15	16.21% <small>(4/09)</small>
S&P 500 Index	9.07%	42	31.49%	28	15.27%	20	11.70%	15	16.30% <small>(4/09)</small>
Callan Large Cap Core MFs	8.60%		29.58%		13.63%		10.24%		-
International Passive	8.95%	54	21.79%	62	10.18%	49	5.85%	43	9.25% <small>(4/09)</small>
MSCI ACWI ex US	8.92%	54	21.51%	67	9.87%	50	5.51%	53	9.19% <small>(4/09)</small>
Callan Non US Equity MFs	9.02%		22.83%		9.96%		5.60%		-
SMID Cap Passive	8.51%	23	27.66%	40	10.23%	25	8.90%	33	16.01% <small>(4/09)</small>
Russell 2500 Index	8.54%	22	27.77%	39	10.33%	24	8.93%	32	16.07% <small>(4/09)</small>
Callan SMID Core MFs	7.49%		26.68%		8.56%		8.11%		-

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns and Rankings for Periods Ended December 31, 2019

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Since Inception
Tier 2: Active (Net of Fee)									
Stable Value Fund	0.67%	1	2.60%	1	2.29%	7	2.14%	7	2.53% (7/09)
3 Yr US Treas Rolling	0.39%	100	1.88%	82	2.03%	21	1.61%	54	1.18% (7/09)
T-Bill + 1.5%	0.83%	1	3.78%	1	3.17%	1	2.57%	1	2.06% (7/09)
Callan Stable Value CT	0.53%		2.12%		1.84%		1.66%		-
Fixed Income Fund	0.34%	53	10.34%	21	5.03%	13	3.96%	15	4.91% (4/09)
Blmbg Barclays Aggregate	0.18%	71	8.72%	81	4.03%	81	3.05%	85	4.03% (4/09)
Callan Core Plus MFs	0.38%		9.50%		4.39%		3.41%		-
TCW Core Plus	0.32%	55	9.31%	66	4.29%	59	-		4.29% (1/17)
Blmbg Barclays Aggregate	0.18%	71	8.72%	81	4.03%	81	3.05%	85	4.03% (1/17)
Callan Core Plus MFs	0.38%		9.50%		4.39%		3.41%		-
Prudential Core Plus	0.37%	51	11.42%	7	5.79%	4	4.63%	5	4.63% (1/15)
Blmbg Barclays Aggregate	0.18%	71	8.72%	81	4.03%	81	3.05%	85	3.05% (1/15)
Callan Core Plus MFs	0.38%		9.50%		4.39%		3.41%		-
Inflation Responsive Fund	2.04%	73	13.09%	56	5.45%	43	3.84%	24	2.02% (9/11)
Inflation Responsive Benchmark	1.99%	74	12.88%	57	3.99%	67	2.13%	58	0.35% (9/11)
Callan Real Assets MFs	2.99%		15.10%		4.98%		2.32%		-
BlackRock Strategic Completion	2.05%	73	13.12%	56	-		-		8.92% (12/18)
BlackRock Custom Benchmark	1.99%	74	12.88%	57	4.31%	62	2.52%	44	8.69% (12/18)
Callan Real Assets MFs	2.99%		15.10%		4.98%		2.32%		-
Large Cap Core Equity Fund	8.88%	47	29.72%	53	-	-	-	42	13.42% (10/17)
Russell 1000 Index	9.04%	43	31.43%	41	15.05%	46	11.48%	42	13.66% (10/17)
Callan Lg Cap Broad MF	8.76%		30.14%		14.69%		10.58%		-
Hotchkis & Wiley Large Cap Value	8.72%	31	30.12%	17	10.22%	47	8.40%	48	16.47% (4/09)
Russell 1000 Value Index	7.41%	52	26.54%	45	9.68%	57	8.29%	49	14.74% (4/09)
Callan Lg Cap Value MF	7.46%		26.01%		10.14%		8.21%		-
Macquarie Large Cap Value	6.18%	80	20.59%	89	10.33%	46	-		8.85% (6/15)
Russell 1000 Value Index	7.41%	52	26.54%	45	9.68%	57	8.29%	49	8.74% (6/15)
Callan Lg Cap Value MF	7.46%		26.01%		10.14%		8.21%		-
Sands Capital Large Cap Growth	10.52%	25	33.62%	44	24.52%	3	13.04%	62	20.70% (4/09)
Russell 1000 Growth Index	10.62%	23	36.39%	27	20.49%	50	14.63%	27	17.95% (4/09)
Callan Large Cap Grwth MF	9.42%		33.54%		20.50%		13.69%		-
Loomis Sayles Large Cap Growth	9.86%	40	32.38%	67	20.17%	57	15.47%	8	16.02% (8/14)
Russell 1000 Growth Index	10.62%	23	36.39%	27	20.49%	50	14.63%	27	15.05% (8/14)
Callan Large Cap Grwth MF	9.42%		33.54%		20.50%		13.69%		-
BlackRock Russell 1000 Index	9.04%	42	31.22%	30	-		-		12.88% (11/17)
Russell 1000 Index	9.04%	42	31.43%	28	15.05%	22	11.48%	20	13.03% (11/17)
Callan Large Cap Core MFs	8.60%		29.58%		13.63%		10.24%		-

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns and Rankings for Periods Ended December 31, 2019

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Since Inception
Tier 2: Active (Net of Fee)									
International Equity Fund	10.94%	17	26.26%	31	11.57%	34	7.15%	27	10.26% ^(4/09)
MSCI ACWI ex US	8.92%	54	21.51%	67	9.87%	50	5.51%	53	9.19% ^(4/09)
Callan Non US Equity MFs	9.02%		22.83%		9.96%		5.60%		-
Mondrian ACWI ex-US Value	9.59%	41	19.71%	80	8.91%	62	5.18%	60	8.44% ^(4/09)
MSCI ACWI ex US	8.92%	54	21.51%	67	9.87%	50	5.51%	53	9.19% ^(4/09)
Callan Non US Equity MFs	9.02%		22.83%		9.96%		5.60%		-
Baillie Gifford ACWI ex-US Growth	12.29%	6	33.01%	1	14.68%	4	9.46%	4	12.63% ^(4/09)
MSCI ACWI ex US	8.92%	54	21.51%	67	9.87%	50	5.51%	53	9.19% ^(4/09)
Callan Non US Equity MFs	9.02%		22.83%		9.96%		5.60%		-
Small/Mid Cap Equity Fund	7.59%	53	26.78%	66	-		-		7.45% ^(10/17)
Russell 2500 Index	8.54%	36	27.77%	62	10.33%	56	8.93%	51	8.85% ^(10/17)
Callan SMID Broad MFs	7.68%		29.40%		12.48%		9.18%		-
Earnest Partners Small/Mid Cap Value	6.95%	56	31.26%	16	10.97%	3	9.48%	10	15.62% ^(4/09)
Russell 2500 Value Index	7.07%	55	23.56%	81	6.12%	55	7.18%	32	14.85% ^(4/09)
Callan SMID Value MFs	7.39%		26.01%		6.63%		6.47%		-
Wedge Small/Mid Cap Value	5.74%	87	22.49%	83	5.13%	64	5.90%	74	11.81% ^(1/12)
Russell 2500 Value Index	7.07%	55	23.56%	81	6.12%	55	7.18%	32	11.61% ^(1/12)
Callan SMID Value MFs	7.39%		26.01%		6.63%		6.47%		-
Brown Advisory Small/Mid Cap Growth	7.91%	72	35.38%	27	15.63%	50	13.19%	13	17.56% ^(4/09)
Russell 2500 Growth Index	10.57%	23	32.65%	43	15.17%	62	10.84%	48	17.36% ^(4/09)
Callan SMID Growth MFs	8.62%		31.78%		15.64%		10.79%		-
BlackRock Russell 2500 Index	8.49%	23	27.48%	41	-		-		8.33% ^(11/17)
Russell 2500 Index	8.54%	22	27.77%	39	10.33%	24	8.93%	32	8.43% ^(11/17)
Callan SMID Core MFs	7.49%		26.68%		8.56%		8.11%		-

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019		3 Years Ended 9/2019		3 Years Ended 6/2019		3 Years Ended 3/2019	
Tier 2: Passive (Net of Fee)								
Fixed Income Passive	3.99%	70	2.87%	72	2.26%	80	1.98%	86
Blmbg Barclays Aggregate	4.03%	64	2.92%	70	2.31%	77	2.03%	85
Callan Core Bond MFs	4.17%		3.12%		2.53%		2.33%	
Large Cap Passive	15.28%	20	13.40%	22	14.18%	26	13.50%	21
S&P 500 Index	15.27%	20	13.39%	22	14.19%	26	13.51%	21
Callan Large Cap Core MFs	13.63%		12.11%		13.33%		12.50%	
International Passive	10.18%	49	6.60%	40	9.67%	31	8.36%	24
MSCI ACWI ex US	9.87%	50	6.33%	45	9.39%	33	8.09%	29
Callan Non US Equity MFs	9.96%		5.94%		8.51%		6.50%	
SMID Cap Passive	10.23%	25	9.44%	35	12.24%	29	12.47%	13
Russell 2500 Index	10.33%	24	9.51%	35	12.34%	28	12.56%	13
Callan SMID Core MFs	8.56%		8.59%		10.54%		10.16%	

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019		3 Years Ended 9/2019		3 Years Ended 6/2019		3 Years Ended 3/2019	
Tier 2: Active (Net of Fee)								
Stable Value Fund	2.29%	7	2.24%	7	2.19%	7	2.13%	8
3 Yr US Treas Rolling	2.03%	21	2.00%	14	1.94%	17	1.85%	20
T-Bill + 1.5%	3.17%	1	3.04%	1	2.88%	1	2.69%	1
Callan Stable Value CT	1.84%		1.81%		1.73%		1.65%	
Fixed Income Fund	5.03%	13	3.90%	18	3.38%	30	3.12%	43
Blmbg Barclays Aggregate	4.03%	81	2.92%	85	2.31%	95	2.03%	95
Callan Core Plus MFs	4.39%		3.45%		3.25%		2.99%	
Prudential Core Plus	5.79%	4	4.65%	4	4.24%	11	4.11%	13
Blmbg Barclays Aggregate	4.03%	81	2.92%	85	2.31%	95	2.03%	95
Callan Core Plus MFs	4.39%		3.45%		3.25%		2.99%	
Inflation Responsive Fund	5.45%	43	4.27%	21	4.22%	31	5.54%	35
Inflation Responsive Benchmark	3.99%	67	2.39%	71	1.72%	84	2.99%	78
Callan Real Assets MFs	4.98%		3.15%		3.85%		4.85%	
Large Cap Core Equity Fund								
Hotchkis & Wiley Large Cap Value	10.22%	47	10.83%	37	13.20%	13	12.22%	19
Russell 1000 Value Index	9.68%	57	9.43%	69	10.19%	73	10.45%	61
Callan Lg Cap Value MF	10.14%		10.12%		11.17%		11.08%	
Macquarie Large Cap Value	10.33%	46	9.39%	69	8.63%	89	11.56%	33
Russell 1000 Value Index	9.68%	57	9.43%	69	10.19%	73	10.45%	61
Callan Lg Cap Value MF	10.14%		10.12%		11.17%		11.08%	
Sands Capital Large Cap Growth	24.52%	3	17.41%	30	23.82%	1	21.95%	2
Russell 1000 Growth Index	20.49%	50	16.89%	35	18.07%	59	16.53%	52
Callan Large Cap Grwth MF	20.50%		16.24%		18.85%		16.80%	
Loomis Sayles Large Cap Growth	20.17%	57	14.76%	73	18.47%	53	17.63%	37
Russell 1000 Growth Index	20.49%	50	16.89%	35	18.07%	59	16.53%	52
Callan Large Cap Grwth MF	20.50%		16.24%		18.85%		16.80%	
International Equity Fund	11.57%	34	6.77%	37	9.99%	26	8.55%	21
MSCI ACWI ex US	9.87%	50	6.33%	45	9.39%	33	8.09%	29
Callan Non US Equity MFs	9.96%		5.94%		8.51%		6.50%	
Mondrian ACWI ex-US Value	8.91%	62	5.06%	66	7.23%	68	6.80%	43
MSCI ACWI ex US	9.87%	50	6.33%	45	9.39%	33	8.09%	29
Callan Non US Equity MFs	9.96%		5.94%		8.51%		6.50%	
Baillie Gifford ACWI ex-US Growth	14.68%	4	8.87%	7	13.23%	3	10.76%	3
MSCI ACWI ex US	9.87%	50	6.33%	45	9.39%	33	8.09%	29
Callan Non US Equity MFs	9.96%		5.94%		8.51%		6.50%	
Small/Mid Cap Equity Fund								
Earnest Partners Small/Mid Cap Value	10.97%	3	11.01%	6	13.08%	1	12.71%	5
Russell 2500 Value Index	6.12%	55	6.87%	54	8.98%	46	9.85%	39
Callan SMID Value MFs	6.63%		7.18%		8.83%		9.12%	
Wedge Small/Mid Cap Value	5.13%	64	5.99%	62	7.80%	77	8.07%	59
Russell 2500 Value Index	6.12%	55	6.87%	54	8.98%	46	9.85%	39
Callan SMID Value MFs	6.63%		7.18%		8.83%		9.12%	
Brown Advisory Small/Mid Cap Growth	15.63%	50	12.28%	69	17.53%	33	17.04%	34
Russell 2500 Growth Index	15.17%	62	12.33%	67	16.14%	59	15.60%	55
Callan SMID Growth MFs	15.64%		13.13%		16.44%		16.11%	

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns and Rankings for Periods Ended December 31, 2019

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Since Inception	
Tier 2: Active (Gross of Fee) Stable Value Fund										
Galliard Stable Value	0.70%	2	2.74%	12	2.45%	18	2.32%	13	2.52%	(1/11)
3 Yr US Treas Rolling T-Bill + 1.5%	0.39%	99	1.88%	95	2.03%	85	1.61%	91	1.17%	(1/11)
Callan Stable Value SA	0.83%	1	3.78%	1	3.17%	1	2.57%	1	2.13%	(1/11)
	0.66%		2.56%		2.35%		2.27%		-	
Fixed Income Fund										
TCW Core Plus	0.35%	15	9.44%	33	4.45%	38	-		4.45%	(1/17)
Blmbg Barclays Aggregate	0.18%	64	8.72%	83	4.03%	89	3.05%	95	4.03%	(1/17)
Callan Core Bond FI	0.22%		9.17%		4.39%		3.40%		-	
Prudential Core Plus	0.37%	14	11.42%	2	5.96%	1	4.83%	1	4.83%	(1/15)
Blmbg Barclays Aggregate	0.18%	64	8.72%	83	4.03%	89	3.05%	95	3.05%	(1/15)
Callan Core Bond FI	0.22%		9.17%		4.39%		3.40%		-	
Inflation Responsive Fund										
BlackRock Strategic Completion	2.07%	89	13.22%	68	-		-		9.49%	(11/18)
BlackRock Custom Benchmark	1.99%	89	12.88%	73	4.31%	75	2.52%	68	9.15%	(11/18)
Callan Real Assets	3.64%		14.11%		5.85%		3.34%		-	
Large Cap Core Equity Fund										
Hotchkis & Wiley Large Cap Value	8.82%	30	30.61%	16	10.67%	35	8.88%	39	17.02%	(4/09)
Russell 1000 Value Index	7.41%	65	26.54%	48	9.68%	67	8.29%	60	14.74%	(4/09)
Callan Large Cap Value	7.92%		26.42%		10.28%		8.57%		-	
Macquarie Large Cap Value	6.25%	87	20.92%	96	10.63%	37	-		9.16%	(6/15)
Russell 1000 Value Index	7.41%	65	26.54%	48	9.68%	67	8.29%	60	8.74%	(6/15)
Callan Large Cap Value	7.92%		26.42%		10.28%		8.57%		-	
Sands Capital Large Cap Growth	10.63%	25	34.17%	54	25.08%	6	13.58%	59	21.30%	(4/09)
Russell 1000 Growth Index	10.62%	25	36.39%	33	20.49%	52	14.63%	35	17.95%	(4/09)
Callan Large Cap Growth	9.73%		34.54%		20.62%		13.90%		-	
Loomis Sayles Large Cap Growth	9.96%	44	32.85%	73	20.62%	51	15.91%	14	16.46%	(8/14)
Russell 1000 Growth Index	10.62%	25	36.39%	33	20.49%	52	14.63%	35	15.05%	(8/14)
Callan Large Cap Growth	9.73%		34.54%		20.62%		13.90%		-	
BlackRock Russell 1000 Index	9.04%	42	31.23%	39	-		-		12.89%	(11/17)
Russell 1000 Index	9.04%	42	31.43%	39	15.05%	39	11.48%	33	13.03%	(11/17)
Callan Large Cap Core	8.66%		30.59%		14.71%		11.10%		-	
International Equity Fund										
Mondrian ACWI ex-US Value	9.69%	50	20.15%	45	9.33%	45	5.62%	41	8.94%	(4/09)
MSCI ACWI ex US	8.92%	66	21.51%	26	9.87%	29	5.51%	49	9.19%	(4/09)
Callan NonUS AC Value Eq	9.69%		19.56%		9.22%		5.50%		-	
Baillie Gifford ACWI ex-US Growth	12.36%	9	33.36%	11	15.03%	27	9.86%	22	13.11%	(4/09)
MSCI ACWI ex US	8.92%	80	21.51%	97	9.87%	100	5.51%	96	9.19%	(4/09)
Callan NonUS AC Gr Eq	10.56%		29.02%		13.03%		7.98%		-	
Small/Mid Cap Equity Fund										
Earnest Partners Small/Mid Cap Value	7.03%	63	31.79%	12	11.48%	9	10.00%	12	16.22%	(4/09)
Russell 2500 Value Index	7.07%	62	23.56%	64	6.12%	51	7.18%	54	14.85%	(4/09)
Callan Small/MidCap Value	7.75%		26.59%		6.25%		7.26%		-	
Wedge Small/Mid Cap Value	5.82%	85	23.12%	76	5.75%	53	6.60%	72	12.57%	(1/12)
Russell 2500 Value Index	7.07%	62	23.56%	64	6.12%	51	7.18%	54	11.61%	(1/12)
Callan Small/MidCap Value	7.75%		26.59%		6.25%		7.26%		-	
Brown Advisory Small/Mid Cap Growth	8.03%	73	36.04%	30	16.22%	58	13.79%	19	18.20%	(4/09)
Russell 2500 Growth Index	10.57%	27	32.65%	49	15.17%	70	10.84%	66	17.36%	(4/09)
Callan Sm/MidCap Growth	9.24%		32.55%		18.22%		11.98%		-	
BlackRock Russell 2500 Index	8.49%	28	27.49%	60	-		-		8.34%	(11/17)
Russell 2500 Index	8.54%	28	27.77%	58	10.33%	54	8.93%	64	8.43%	(11/17)
Callan Small/MidCap Core	7.78%		28.74%		10.39%		9.63%		-	

Investment Fund Returns and Peer Group Rankings

The table below details the rates of return and peer group rankings for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019		3 Years Ended 9/2019		3 Years Ended 6/2019		3 Years Ended 3/2019	
Tier 2: Active (Gross of Fee)								
Stable Value Fund								
Galliard Stable Value	2.45%	18	2.40%	25	2.35%	34	2.30%	25
3 Yr US Treas Rolling	2.03%	85	2.00%	82	1.94%	89	1.85%	88
T-Bill + 1.5%	3.17%	1	3.04%	11	2.88%	19	2.69%	16
Callan Stable Value SA	2.35%		2.31%		2.30%		2.24%	
Fixed Income Fund								
Prudential Core Plus	5.96%	1	4.84%	1	4.45%	1	4.34%	1
Blmbg Barclays Aggregate	4.03%	89	2.92%	94	2.31%	92	2.03%	90
Callan Core Bond FI	4.39%		3.32%		2.73%		2.49%	
Large Cap Core Equity Fund								
Hotchkis & Wiley Large Cap Value	10.67%	35	11.30%	24	13.69%	10	12.71%	11
Russell 1000 Value Index	9.68%	67	9.43%	70	10.19%	76	10.45%	68
Callan Large Cap Value	10.28%		10.02%		11.16%		11.18%	
Macquarie Large Cap Value	10.63%	37	9.70%	60	8.93%	92	11.88%	31
Russell 1000 Value Index	9.68%	67	9.43%	70	10.19%	76	10.45%	68
Callan Large Cap Value	10.28%		10.02%		11.16%		11.18%	
Sands Capital Large Cap Growth	25.08%	6	17.94%	34	24.39%	3	22.53%	4
Russell 1000 Growth Index	20.49%	52	16.89%	48	18.07%	56	16.53%	56
Callan Large Cap Growth	20.62%		16.62%		18.34%		16.73%	
Loomis Sayles Large Cap Growth	20.62%	51	15.19%	67	18.91%	45	18.08%	34
Russell 1000 Growth Index	20.49%	52	16.89%	48	18.07%	56	16.53%	56
Callan Large Cap Growth	20.62%		16.62%		18.34%		16.73%	
International Equity Fund								
Mondrian ACWI ex-US Value	9.33%	45	5.48%	50	7.66%	65	7.24%	55
MSCI ACWI ex US	9.87%	29	6.33%	33	9.39%	45	8.09%	40
Callan NonUS AC Value Eq	9.22%		5.45%		8.67%		7.58%	
Baillie Gifford ACWI ex-US Growth	15.03%	27	9.22%	27	13.62%	18	11.15%	22
MSCI ACWI ex US	9.87%	100	6.33%	79	9.39%	75	8.09%	60
Callan NonUS AC Gr Eq	13.03%		7.81%		10.86%		9.14%	
Small/Mid Cap Equity Fund								
Earnest Partners Small/Mid Cap Value	11.48%	9	11.53%	10	13.62%	19	13.25%	21
Russell 2500 Value Index	6.12%	51	6.87%	60	8.98%	72	9.85%	39
Callan Small/MidCap Value	6.25%		7.39%		10.08%		9.32%	
Wedge Small/Mid Cap Value	5.75%	53	6.66%	63	8.49%	77	8.77%	70
Russell 2500 Value Index	6.12%	51	6.87%	60	8.98%	72	9.85%	39
Callan Small/MidCap Value	6.25%		7.39%		10.08%		9.32%	
Brown Advisory Small/Mid Cap Growth	16.22%	58	12.86%	63	18.15%	41	17.66%	40
Russell 2500 Growth Index	15.17%	70	12.33%	77	16.14%	70	15.60%	63
Callan Sm/MidCap Growth	18.22%		14.25%		17.23%		17.26%	

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception
Tier 1: GoalMaker Funds (Net of Fee)					
Post Retirement Conservative 11+	2.39%	10.91%	-	-	6.26% ^(7/18)
Post Ret Conservative 11+ Index	2.13%	9.86%	-	-	5.71% ^(7/18)
Post Retirement Conservative 6-10	2.55%	11.52%	-	-	6.58% ^(7/18)
Post Ret Conservative 6-10 Index	2.27%	10.37%	-	-	5.97% ^(7/18)
Post Retirement Conservative 0-5	2.76%	12.46%	-	-	6.89% ^(7/18)
Post Ret Conservative 0-5 Index	2.50%	11.29%	-	-	6.29% ^(7/18)
Pre Retirement Conservative 0-5	3.21%	13.93%	6.41%	4.86%	6.11% ^(7/09)
Pre Ret Conservative 0-5 Index	2.89%	12.56%	5.85%	4.34%	5.12% ^(7/09)
Pre Retirement Conservative 6-10	3.84%	15.68%	7.39%	5.52%	7.12% ^(7/09)
Pre Ret Conservative 6-10 Index	3.47%	14.16%	6.70%	4.94%	6.03% ^(7/09)
Pre Retirement Conservative 11-15	4.44%	17.40%	8.85%	6.55%	8.54% ^(7/09)
Pre Ret Conservative 11-15 Index	4.07%	15.85%	8.05%	5.97%	7.82% ^(7/09)
Pre Retirement Conservative 16-20	5.43%	19.63%	10.49%	7.65%	10.08% ^(7/09)
Pre Ret Conservative 16-20 Index	4.93%	17.83%	9.53%	7.02%	9.47% ^(7/09)
Pre Retirement Conservative 21-25	6.24%	21.64%	-	-	9.35% ^(7/18)
Pre Ret Conservative 21-25 Index	5.72%	19.84%	-	-	8.37% ^(7/18)
Pre Retirement Conservative 26+	7.09%	23.29%	-	-	9.46% ^(7/18)
Pre Ret Conservative 26+ Index	6.53%	21.47%	-	-	8.44% ^(7/18)

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception
Tier 1: GoalMaker Funds (Net of Fee)					
Post Retirement Moderate 11+	3.39%	13.29%	-	-	6.88% ^(7/18)
Post Ret Moderate 11+ Index	3.09%	12.19%	-	-	6.31% ^(7/18)
Post Retirement Moderate 6-10	3.74%	14.49%	-	-	7.38% ^(7/18)
Post Ret Moderate 6-10 Index	4.54%	14.92%	-	-	6.55% ^(7/18)
Post Retirement Moderate 0-5	4.11%	16.06%	-	-	8.01% ^(7/18)
Post Ret Moderate 0-5 Index	3.77%	14.70%	-	-	7.31% ^(7/18)
Pre Retirement Moderate 0-5	4.60%	17.40%	8.02%	5.96%	7.56% ^(7/09)
Pre Ret Moderate 0-5 Index	4.18%	15.86%	7.32%	5.38%	6.66% ^(7/09)
Pre Retirement Moderate 6-10	5.43%	19.43%	9.06%	6.67%	8.48% ^(7/09)
Pre Ret Moderate 6-10 Index	4.95%	17.73%	8.21%	6.06%	7.86% ^(7/09)
Pre Retirement Moderate 11-15	6.25%	21.39%	10.26%	7.46%	9.72% ^(7/09)
Pre Ret Moderate 11-15 Index	5.73%	19.62%	9.31%	6.82%	9.03% ^(7/09)
Pre Retirement Moderate 16-20	7.09%	23.29%	11.83%	8.49%	11.19% ^(7/09)
Pre Ret Moderate 16-20 Index	6.53%	21.47%	10.78%	7.85%	10.66% ^(7/09)
Pre Retirement Moderate 21-25	7.80%	24.61%	-	-	9.61% ^(7/18)
Pre Ret Moderate 21-25 Index	7.16%	22.72%	-	-	8.52% ^(7/18)
Pre Retirement Moderate 26+	8.41%	25.89%	-	-	9.70% ^(7/18)
Pre Ret Moderate 26+ Index	7.77%	24.05%	-	-	8.63% ^(7/18)

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended December 31, 2019

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception
Tier 1: GoalMaker Funds (Net of Fee)					
Post Retirement Aggressive 11+	4.63%	16.43%	-	-	7.79% ^(7/18)
Post Ret Aggressive 11+ Index	4.26%	15.20%	-	-	7.17% ^(7/18)
Post Retirement Aggressive 6-10	5.18%	17.88%	-	-	8.28% ^(7/18)
Post Ret Aggressive 6-10 Index	4.76%	16.53%	-	-	7.58% ^(7/18)
Post Retirement Aggressive 0-5	5.47%	19.34%	-	-	8.82% ^(7/18)
Post Ret Aggressive 0-5 Index	5.06%	17.88%	-	-	8.06% ^(7/18)
Pre Retirement Aggressive 0-5	6.10%	21.24%	9.52%	6.96%	8.99% ^(7/09)
Pre Ret Aggressive 0-5 Index	5.65%	19.67%	8.68%	6.37%	8.20% ^(7/09)
Pre Retirement Aggressive 6-10	7.03%	23.02%	10.43%	7.56%	9.87% ^(7/09)
Pre Ret Aggressive 6-10 Index	6.44%	21.17%	9.44%	6.90%	9.06% ^(7/09)
Pre Retirement Aggressive 11-15	7.80%	24.61%	11.56%	8.33%	10.88% ^(7/09)
Pre Ret Aggressive 11-15 Index	7.16%	22.72%	10.48%	7.66%	10.36% ^(7/09)
Pre Retirement Aggressive 16-20	8.33%	25.69%	12.99%	9.27%	12.30% ^(7/09)
Pre Ret Aggressive 16-20 Index	7.68%	23.83%	11.87%	8.63%	11.93% ^(7/09)
Pre Retirement Aggressive 21-25	8.73%	26.47%	-	-	9.73% ^(7/18)
Pre Ret Aggressive 21-25 Index	8.05%	24.59%	-	-	8.60% ^(7/18)
Pre Retirement Aggressive 26+	8.73%	26.47%	-	-	9.73% ^(7/18)
Pre Ret Aggressive 26+ Index	8.05%	24.59%	-	-	8.60% ^(7/18)

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019	3 Years Ended 9/2019	3 Years Ended 6/2019	3 Years Ended 3/2019
Tier 1: GoalMaker Funds (Net of Fee)				
Pre Retirement Conservative 0-5	6.41%	5.20%	5.45%	4.92%
Pre Ret Conservative 0-5 Index	5.85%	4.79%	4.99%	4.51%
Pre Retirement Conservative 6-10	7.39%	6.04%	6.53%	5.93%
Pre Ret Conservative 6-10 Index	6.70%	5.56%	5.97%	5.45%
Pre Retirement Conservative 11-15	8.85%	7.38%	8.23%	7.65%
Pre Ret Conservative 11-15 Index	8.05%	6.86%	7.59%	7.11%
Pre Retirement Conservative 16-20	10.49%	8.87%	10.15%	9.51%
Pre Ret Conservative 16-20 Index	9.53%	8.29%	9.44%	8.91%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019	3 Years Ended 9/2019	3 Years Ended 6/2019	3 Years Ended 3/2019
Tier 1: GoalMaker Funds (Net of Fee)				
Pre Retirement Moderate 0-5	8.02%	6.48%	7.12%	6.51%
Pre Ret Moderate 0-5 Index	7.32%	6.01%	6.57%	6.03%
Pre Retirement Moderate 6-10	9.06%	7.25%	8.18%	7.58%
Pre Ret Moderate 6-10 Index	8.21%	6.71%	7.52%	7.00%
Pre Retirement Moderate 11-15	10.26%	8.28%	9.56%	8.90%
Pre Ret Moderate 11-15 Index	9.31%	7.69%	8.83%	8.27%
Pre Retirement Moderate 16-20	11.83%	9.76%	11.54%	10.84%
Pre Ret Moderate 16-20 Index	10.78%	9.15%	10.76%	10.18%

Investment Fund Returns

The table below details the rates of return for the Fund's investment funds over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

	3 Years Ended 12/2019	3 Years Ended 9/2019	3 Years Ended 6/2019	3 Years Ended 3/2019
Tier 1: GoalMaker Funds (Net of Fee)				
Pre Retirement Aggressive 0-5	9.52%	7.50%	8.53%	7.88%
Pre Ret Aggressive 0-5 Index	8.68%	6.97%	7.85%	7.29%
Pre Retirement Aggressive 6-10	10.43%	8.18%	9.53%	8.84%
Pre Ret Aggressive 6-10 Index	9.44%	7.59%	8.78%	8.19%
Pre Retirement Aggressive 11-15	11.56%	9.22%	10.98%	10.29%
Pre Ret Aggressive 11-15 Index	10.48%	8.60%	10.17%	9.61%
Pre Retirement Aggressive 16-20	12.99%	10.66%	12.92%	12.22%
Pre Ret Aggressive 16-20 Index	11.87%	10.07%	12.12%	11.55%

**The North Carolina Supplemental Retirement Plans
Investment Manager Performance Monitoring Summary Report
December 31, 2019**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	3 Year Return Consistency	5 Year Sharpe Ratio	5 Year Excess Rtn Ratio	5 Year Tracking Error
Tier 2: Passive vs. Net of Fee Groups								
Fixed Income Passive (i) Callan Core Bond MFs Blmbg Barclays Aggregate	0.2 45 0.2 43	8.7 61 8.7 60	4.0 70 4.0 64	3.0 71 3.0 56	 	0.6 77 0.6 66	-1.1 95	0.1 99
Treasury Inflation Protected (i) Callan TIPS MFs Blmbg US TIPS 1-10 Yr	1.0 49 1.0 49	6.9 65 6.9 70	3.3 30 2.8 69	2.7 19 2.4 46	 	0.5 18 0.5 11	0.3 8	1.0 86
Large Cap Passive (i) Callan Large Cap Core MFs S&P 500 Index	9.1 42 9.1 42	31.5 28 31.5 28	15.3 20 15.3 20	11.7 15 11.7 15	 	0.9 14 0.9 14	-0.9 74	0.0 99
International Passive (i) Callan Non US Equity MFs MSCI ACWI ex US	8.9 54 8.9 54	21.8 62 21.5 67	10.2 49 9.9 50	5.8 43 5.5 53	 	0.4 36 0.4 46	0.6 14	0.6 99
SMID Cap Passive (i) Callan SMID Core MFs Russell 2500 Index	8.5 23 8.5 22	27.7 40 27.8 39	10.2 25 10.3 24	8.9 33 8.9 32	 	0.6 30 0.6 30	-0.4 57	0.1 99
Tier 2: Active vs. Net of Fee Groups								
Stable Value Fund Callan Stable Value CT T-Bill + 1.5%	0.7 1 0.8 1	2.6 1 3.8 1	2.3 7 3.2 1	2.1 7 2.6 1	 	7.4 42 3.3 99	-1.4 40	0.3 46
Fixed Income Fund Callan Core Plus MFs Blmbg Barclays Aggregate	0.3 53 0.2 71	10.3 21 8.7 81	5.0 13 4.0 81	4.0 15 3.0 85	 	0.8 16 0.6 84	1.8 1	0.5 98
TCW Core Plus Callan Core Plus MFs Blmbg Barclays Aggregate	0.3 55 0.2 71	9.3 66 8.7 81	4.3 59 4.0 81	 3.0 85	 	0.6 84		
Prudential Core Plus Callan Core Plus MFs Blmbg Barclays Aggregate	0.4 51 0.2 71	11.4 7 8.7 81	5.8 4 4.0 81	4.6 5 3.0 85	 	0.9 10 0.6 84	1.5 1	1.1 48

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Sharpe Ratio:
■ above median
■ third quartile
■ fourth quartile

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

Tracking Error:
■ below median
■ second quartile
■ first quartile

(i) - Indexed scoring method used. Green: manager & index ranking differ by <= +/- 10%tile. Yellow: manager & index ranking differ by <= +/- 20%tile. Red: manager & index ranking differ by > +/- 20%tile.

**The North Carolina Supplemental Retirement Plans
Investment Manager Performance Monitoring Summary Report
December 31, 2019**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	3 Year Return Consistency	5 Year Sharpe Ratio	5 Year Excess Rtn Ratio	5 Year Tracking Error
Inflation Responsive Fund Callan Real Assets MFs Inflation Responsive Benchmark	2.0 73	13.1 56	5.4 43	3.8 24		0.4 36	1.0 7	1.8 97
BlackRock Strategic Completion Callan Real Assets MFs BlackRock Custom Benchmark	2.0 73	13.1 56				0.2 39		
Large Cap Core Equity Fund Callan Lg Cap Broad MF Russell 1000 Index	8.9 47	29.7 53				0.9 26		
Hotchkis & Wiley Large Cap Value Callan Lg Cap Value MF Russell 1000 Value Index	8.7 31	30.1 17	10.2 47	8.4 48		0.5 80	0.0 48	4.9 9
Macquarie Large Cap Value Callan Lg Cap Value MF Russell 1000 Value Index	6.2 80	20.6 89	10.3 46			0.7 38		
Sands Capital Large Cap Growth Callan Large Cap Grwth MF Russell 1000 Growth Index	10.5 25	33.6 44	24.5 3	13.0 62		0.6 93	-0.2 39	10.1 2
Loomis Sayles Large Cap Growth Callan Large Cap Grwth MF Russell 1000 Growth Index	9.9 40	32.4 67	20.2 57	15.5 8		1.2 8	0.2 10	5.2 17
BlackRock Russell 1000 Index Callan Large Cap Core MFs Russell 1000 Index	9.0 42	31.2 30				0.9 21		
International Equity Fund Callan Non US Equity MFs MSCI ACWI ex US	10.9 17	26.3 31	11.6 34	7.1 27		0.5 23	1.0 1	1.6 97
Mondrian ACWI ex-US Value Callan Non US Equity MFs MSCI ACWI ex US	9.6 41	19.7 80	8.9 62	5.2 60		0.4 40	-0.1 62	2.9 80
	8.9 54	21.5 67	9.9 50	5.5 53		0.4 46		

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Sharpe Ratio:
■ above median
■ third quartile
■ fourth quartile

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

Tracking Error:
■ below median
■ second quartile
■ first quartile

**The North Carolina Supplemental Retirement Plans
Investment Manager Performance Monitoring Summary Report
December 31, 2019**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	3 Year Return Consistency	5 Year Sharpe Ratio	5 Year Excess Rtn Ratio	5 Year Tracking Error
Baillie Gifford ACWI ex-US Growth Callan Non US Equity MFs MSCI ACWI ex US	12.3 6	33.0 1	14.7 4	9.5 4		0.6 13	1.1 1	3.6 62
Small/Mid Cap Equity Fund Callan SMID Broad MFs Russell 2500 Index	7.6 53	26.8 66				0.6 48		
Earnest Partners Small/Mid Cap Value Callan SMID Value MFs Russell 2500 Value Index	7.0 56	31.3 16	11.0 3	9.5 10		0.6 13	0.5 16	4.8 29
Wedge Small/Mid Cap Value Callan SMID Value MFs Russell 2500 Value Index	5.7 87	22.5 83	5.1 64	5.9 74		0.4 49	-0.7 81	1.9 98
Brown Advisory Small/Mid Cap Growth Callan SMID Growth MFs Russell 2500 Growth Index	7.9 72	35.4 27	15.6 50	13.2 13		0.7 13	0.4 9	5.3 9
BlackRock Russell 2500 Index Callan SMID Core MFs Russell 2500 Index	8.5 23	27.5 41				0.6 30		

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Sharpe Ratio:
■ above median
■ third quartile
■ fourth quartile

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

Tracking Error:
■ below median
■ second quartile
■ first quartile

The North Carolina Supplemental Retirement Plans
Investment Manager Performance Monitoring Summary Report
December 31, 2019

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	3 Year Return Consistency	5 Year Sharpe Ratio	5 Year Excess Rtn Ratio	5 Year Tracking Error
Tier 2: Active vs. Gross of Fee Groups								
Stable Value Fund								
Galliard Stable Value Callan Stable Value SA T-Bill + 1.5%	0.7 ²	2.7 ¹²	2.5 ¹⁸	2.3 ¹³		9.8 ³³	-0.7 ²⁶	0.3 ³⁴
	0.8 ¹	3.8 ¹	3.2 ¹	2.6 ¹		3.3 ⁹²		
Fixed Income Fund								
TCW Core Plus Callan Core Bond FI Blmbg Aggregate	0.4 ¹⁵	9.4 ³³	4.5 ³⁸	3.5 ⁴¹		0.8 ²²	0.8 ⁴⁹	0.5 ³⁵
	0.2 ⁶⁴	8.7 ⁸³	4.0 ⁸⁹	3.0 ⁹⁵		0.6 ⁹⁵		
Prudential Core Plus Callan Core Bond FI Blmbg Aggregate	0.4 ¹⁴	11.4 ²	6.0 ¹	4.8 ¹		1.0 ¹	1.7 ¹⁰	1.1 ⁴
	0.2 ⁶⁴	8.7 ⁸³	4.0 ⁸⁹	3.0 ⁹⁵		0.6 ⁹⁵		
Inflation Responsive Fund								
BlackRock Strategic Completion Callan Real Assets BlackRock Custom Benchmark	2.1 ⁸⁹	13.2 ⁶⁸	4.6 ⁷³	2.8 ⁵⁴		0.3 ⁴⁶	2.7 ⁴	0.1 ⁹⁶
	2.0 ⁸⁹	12.9 ⁷³	4.3 ⁷⁵	2.5 ⁶⁸		0.2 ⁵⁴		
Large Cap Core Equity Fund								
Hotchkis & Wiley Large Cap Value Callan Large Cap Value Russell 1000 Value Index	8.8 ³⁰	30.6 ¹⁶	10.7 ³⁵	8.9 ³⁹		0.5 ⁷⁴	0.1 ⁴⁹	4.9 ⁹
	7.4 ⁶⁵	26.5 ⁴⁸	9.7 ⁶⁷	8.3 ⁶⁰		0.7 ⁴⁰		
Macquarie Large Cap Value Callan Large Cap Value Russell 1000 Value Index	6.2 ⁸⁷	20.9 ⁹⁶	10.6 ³⁷	9.4 ²⁴		0.8 ¹⁶	0.3 ²⁹	4.3 ²³
	7.4 ⁶⁵	26.5 ⁴⁸	9.7 ⁶⁷	8.3 ⁶⁰		0.7 ⁴⁰		
Sands Capital Large Cap Growth Callan Large Cap Growth Russell 1000 Growth Index	10.6 ²⁵	34.2 ⁵⁴	25.1 ⁶	13.6 ⁵⁹		0.7 ⁹⁵	-0.1 ⁴⁴	10.2 ³
	10.6 ²⁵	36.4 ³³	20.5 ⁵²	14.6 ³⁵		1.0 ³⁶		
Loomis Sayles Large Cap Growth Callan Large Cap Growth Russell 1000 Growth Index	10.0 ⁴⁴	32.9 ⁷³	20.6 ⁵¹	15.9 ¹⁴		1.2 ¹⁰	0.2 ¹⁹	5.2 ²⁰
	10.6 ²⁵	36.4 ³³	20.5 ⁵²	14.6 ³⁵		1.0 ³⁶		

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Sharpe Ratio:
■ above median
■ third quartile
■ fourth quartile

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

Tracking Error:
■ below median
■ second quartile
■ first quartile

**The North Carolina Supplemental Retirement Plans
Investment Manager Performance Monitoring Summary Report
December 31, 2019**

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	3 Year Return Consistency	5 Year Sharpe Ratio	5 Year Excess Rtn Ratio	5 Year Tracking Error
BlackRock Russell 1000 Index Callan Large Cap Core Russell 1000 Index	9.0 42	31.2 39	15.1 37	11.5 32		0.9 25	2.4 1	0.0 99
International Fund								
Mondrian ACWI ex-US Value Callan NonUS AC Value Eq MSCI ACWI ex US	9.7 50	20.1 45	9.3 45	5.6 41		0.4 17	0.0 39	2.9 67
Baillie Gifford ACWI ex-US Growth Callan NonUS AC Gr Eq MSCI ACWI ex US	12.4 9	33.4 11	15.0 27	9.9 22		0.6 22	1.2 5	3.6 64
Small/Mid Cap Equity Fund								
Earnest Partners Small/Mid Cap Value Callan Small/MidCap Value Russell 2500 Value Index	7.0 63	31.8 12	11.5 9	10.0 12		0.6 16	0.6 18	4.8 33
Wedge Small/Mid Cap Value Callan Small/MidCap Value Russell 2500 Value Index	5.8 85	23.1 76	5.8 53	6.6 72		0.4 52	-0.3 81	1.9 96
Brown Advisory Small/Mid Cap Growth Callan Sm/MidCap Growth Russell 2500 Growth Index	8.0 73	36.0 30	16.2 58	13.8 19		0.8 21	0.6 21	5.3 27
BlackRock Russell 2500 Index Callan Small/MidCap Core Russell 2500 Index	8.5 28	27.5 60	10.3 58	8.9 65		0.6 64	-0.6 93	0.1 100

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Sharpe Ratio:
■ above median
■ third quartile
■ fourth quartile

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

Tracking Error:
■ below median
■ second quartile
■ first quartile

Galliard Stable Value Period Ended December 31, 2019

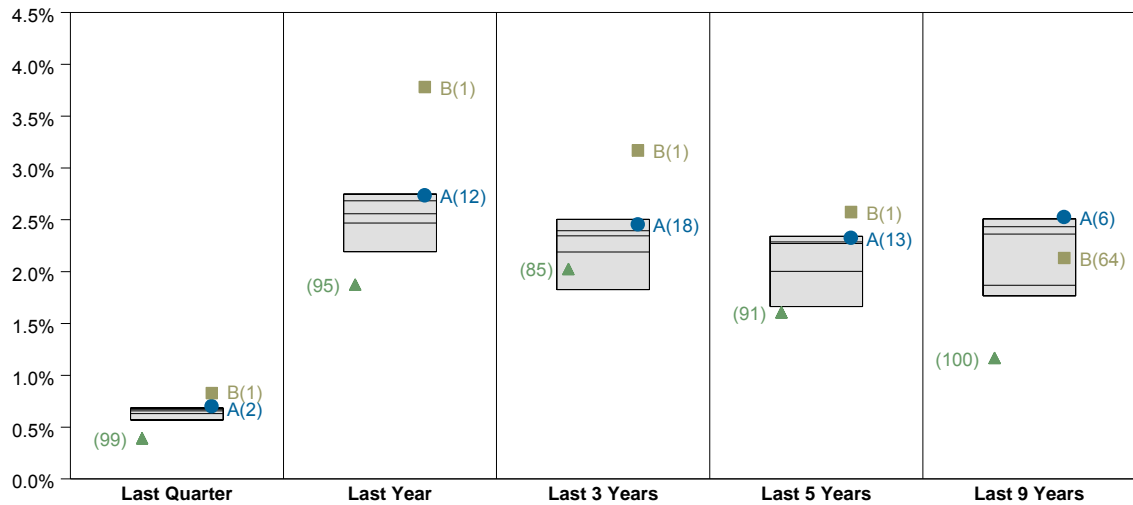
Investment Philosophy

Galliard's primary emphasis in managing the stable value is safety of principal. Investment strategies and security selection are designed and implemented with this primary objective in mind. Liquidity is another key concern, for it must be sufficient to accommodate participant changes and provide plan sponsor flexibility.

Quarterly Summary and Highlights

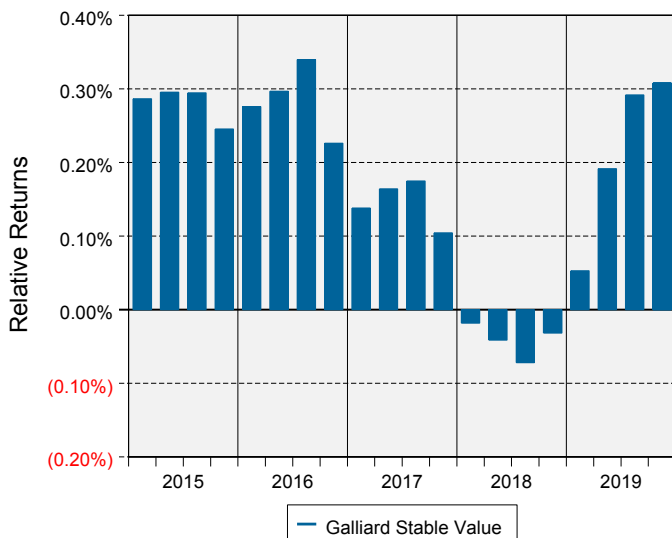
- Galliard Stable Value's portfolio posted a 0.70% return for the quarter placing it in the 2 percentile of the Callan Stable Value SA group for the quarter and in the 12 percentile for the last year.
- Galliard Stable Value's portfolio outperformed the 3 Yr Constant Maturity Yield by 0.31% for the quarter and outperformed the 3 Yr Constant Maturity Yield for the year by 0.86%.

Performance vs Callan Stable Value SA (Gross)

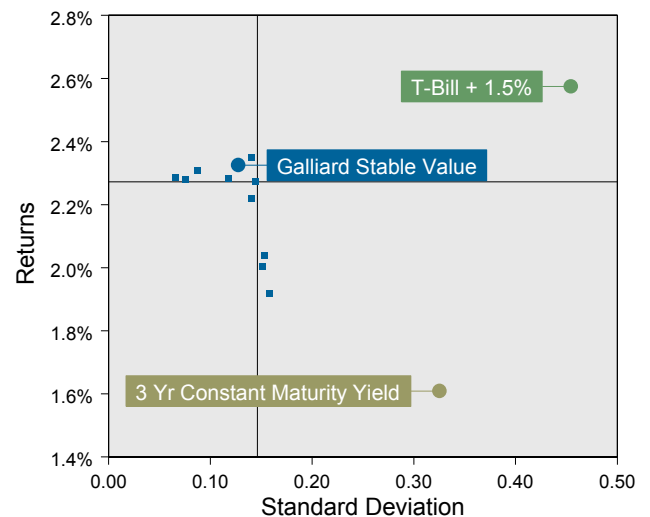


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 9 Years
10th Percentile	0.68	2.75	2.50	2.34	2.51
25th Percentile	0.67	2.68	2.40	2.29	2.43
Median	0.66	2.56	2.35	2.27	2.36
75th Percentile	0.63	2.47	2.19	2.00	1.87
90th Percentile	0.57	2.19	1.83	1.66	1.77
Galliard Stable Value	● A 0.70	2.74	2.45	2.32	2.52
T-Bill + 1.5%	■ B 0.83	3.78	3.17	2.57	2.13
3 Yr Constant Maturity Yield	▲ 0.39	1.88	2.03	1.61	1.17

Relative Returns vs
3 Yr Constant Maturity Yield



Callan Stable Value SA (Gross)
Annualized Five Year Risk vs Return

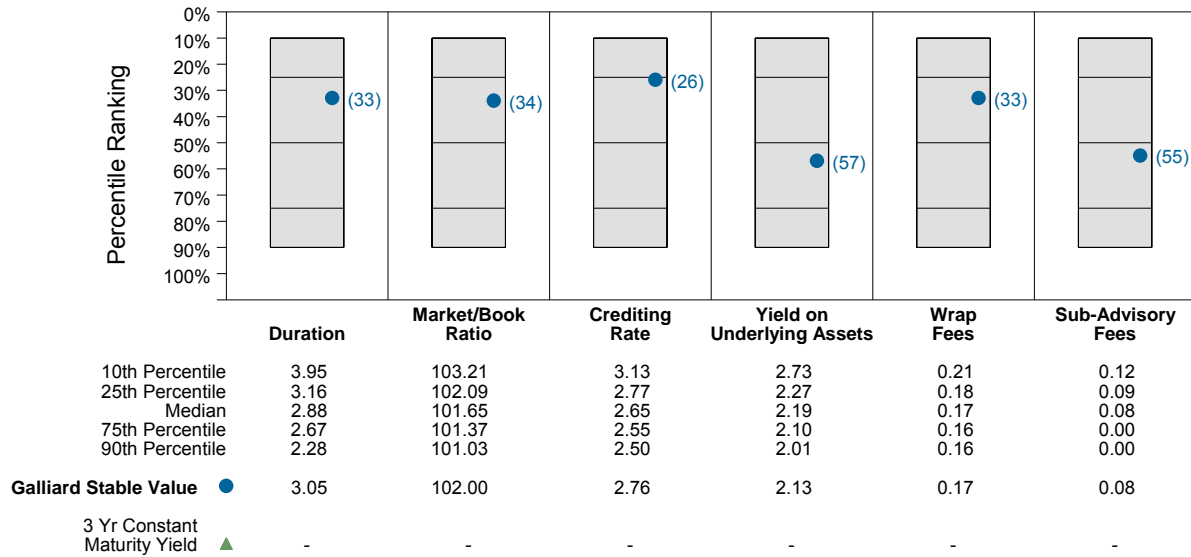


Galliard Stable Value Stable Value Characteristics Analysis Summary

Portfolio Characteristics

This graph compares the stable value fund's portfolio characteristics with the range of characteristics for the portfolios which make up the fund's style group. This analysis illustrates whether the fund's current structure is consistent with other funds employing the same style.

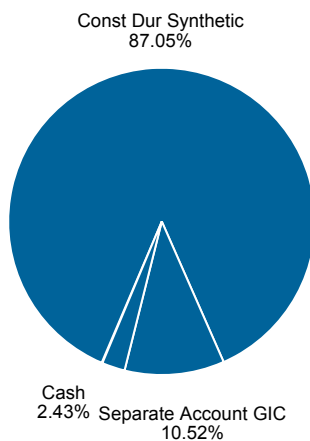
Portfolio Characteristics Percentile Rankings Rankings Against Callan Stable Value SA as of December 31, 2019



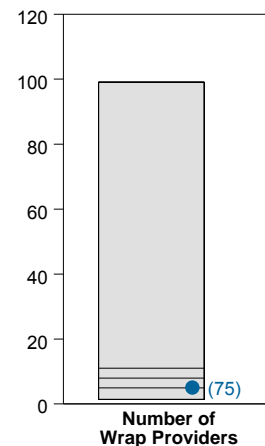
Wrap Structure and Diversification

The graph below represents the stable value fund's wrap contract structure as of the most recent reporting period. The fund's overall wrap structure may include exposure to constant duration or maturing synthetic GIC contracts, traditional GIC contracts, cash, or other exposures. These contracts allow stable value portfolios to maintain book value accounting practices and a stable net asset value.

Portfolio Wrap Exposure December 31, 2019



Wrap Contract Diversification December 31, 2019



10th Percentile	99.1
25th Percentile	11.0
Median	8.0
75th Percentile	5.0
90th Percentile	1.4

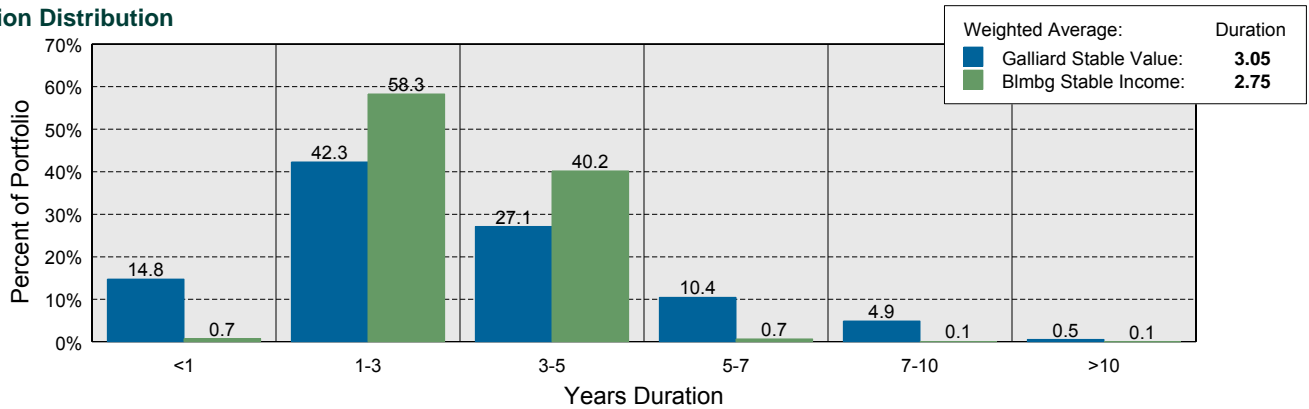
Galliard Stable Value ● 5.0

Galliard Stable Value Stable Value Portfolio Characteristics Summary As of December 31, 2019

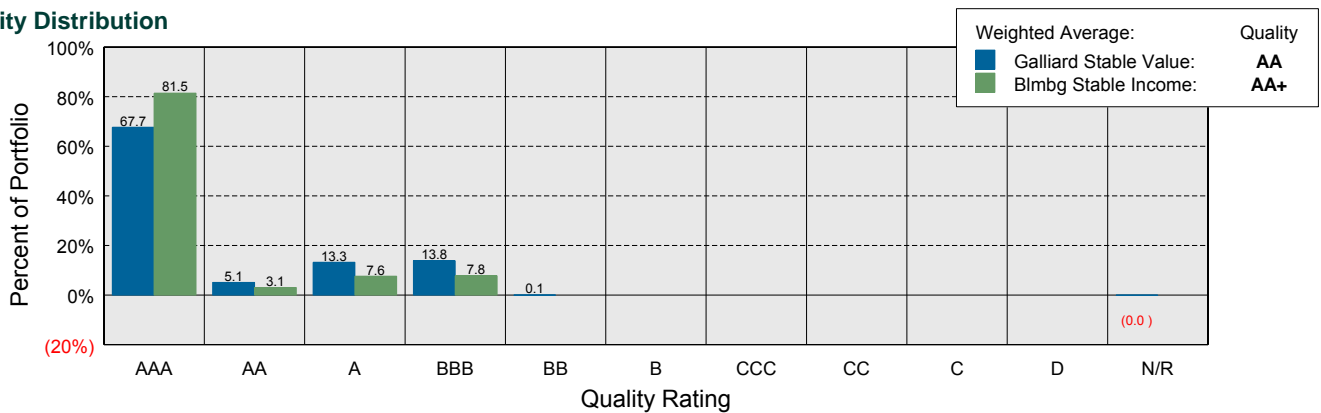
Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from two perspectives that have the greatest influence on return. The first chart compares the portfolio's duration distribution versus the benchmark, and the second chart compares the distributions across quality ratings.

Duration Distribution



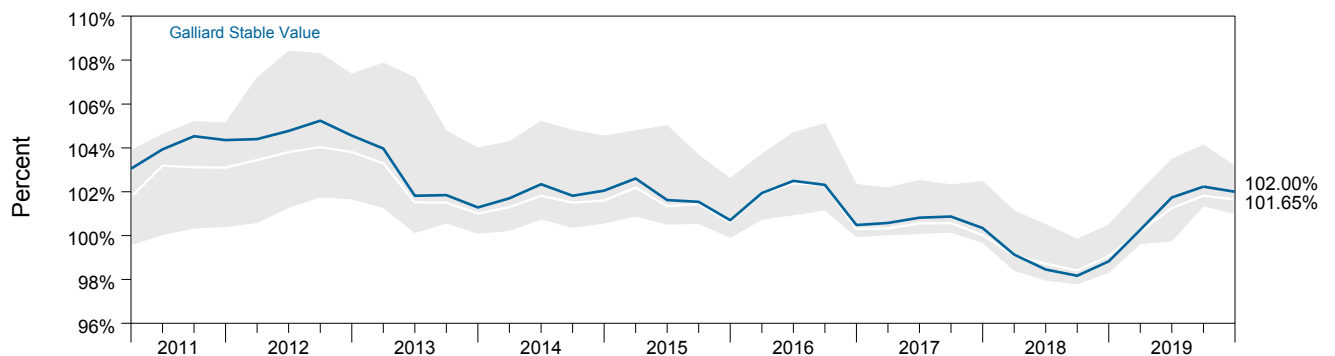
Quality Distribution



Market-to-Book Ratio Over Time

The chart below depicts the historical movement of the stable value portfolio's market-to-book ratio over time. This statistic measures the overall "health" of the underlying portfolio. Portfolios with market-to-book ratios closer to 100% will be better positioned to absorb flows and should offer greater return stability over time. As a backdrop the range (from 10th to 90th percentile) is shown along with a white median line for the Callan Stable Value SA Universe.

Market-to-Book Ratio



DC Plans Speed Read – October 1, 2019

There are a number of topics percolating on the defined contribution (DC) plan horizon. The summary below provides high-level information on legislation, regulation, and litigation that may impact DC plans.

Legislative update: The SECURE Act passed with overwhelming support in the House but has stalled in the Senate. The Senate has limited number of hours available for floor debate, and the Senate leadership considers approving judiciary nominees the top priority. Practically speaking, the SECURE Act will likely not be scheduled for debate and would only be brought to Senate vote under “unanimous consent” rules. A handful of senators have objected to certain provisions, which hinders the unanimous consent option.

Regulatory update: The Employee Benefits Security Administration (EBSA), which exercises interpretive and enforcement authority over DC plans, is undergoing a significant restructuring that will impact the development and implementation of regulation. Historically, there have been two deputy assistant secretaries—a political appointee who provides advice and directs policy and research and a member of the career staff who is responsible for enforcement, exemption determinations, and regulations. The regional offices have had autonomy to open investigations and determine ERISA violations. Beginning October 1, there will be three deputy assistant secretaries and the responsibilities will be reapportioned. The political appointee will expand their role to oversee regulation and exemption determinations. The career staff deputy assistant secretary will now manage enforcement, technology, and education outreach. A new deputy assistant secretary will be appointed to oversee the regional offices.

Litigation update: The litigation around arbitration in DC plans has created a flurry of questions from plan sponsors. The Ninth Circuit Court ruled in *Dorman v. Charles Schwab* that the plan sponsor can force a proposed class action into individual arbitration. There are a number of complicated legal and practical issues that should be explored prior to implementing a similar structure with other plans. Among those are whether plan-wide relief, as required by ERISA, is available under individual arbitration; whether the plan sponsor is comfortable relying on arbitration, which cannot be appealed and which does not create precedence, as the appropriate road to resolution for all claims; and how plan-level outcomes of individual arbitration may be enforced on the plan. Additionally, this ruling is only applicable in some geographies and is based on a panel review, not the full court.

Arbitration may not be the right option for all plan sponsors and may not be appropriate under ERISA. This specific ruling is limited in scope, confirming that the DC plan was subject to arbitration—not if it was appropriate under ERISA or practical.

Plan sponsors and fiduciaries should consider the practical application of these and other trends on their own DC plans and review these topics regularly.

Brokerage Windows: Get the Full View – October 8, 2019

Several brokerage providers eliminated commission fees on stock, ETF, and various other trades last week, a move that highlights a “race to zero” within the brokerage industry.

Brokerage firms have historically charged commission fees on various types of trades. The amounts charged, however, have generally declined over the past few years as smaller robo-firms have entered the market with either no fees or those significantly below the industry norm.

While the elimination of commission fees certainly affects retail investors, it also has important implications for participants within defined contribution (DC) plans that offer a brokerage window.

As DC plan sponsors have sought to offer additional choice and diversification opportunities to participants, brokerage windows have become more commonplace in large DC plans, according to data from Callan's DC Index™. As of June 30, 2019, approximately 42% of DC plans within the Index offered a brokerage window, an increase of 9% from five years ago.

Despite growing prevalence, the percentage of assets allocated to brokerage windows in plans that offer one has not increased as rapidly. In 2014, the share of assets allocated to brokerage windows among such plans was approximately 2.3%. Today, that figure is 2.5%.

Plan sponsors offering a brokerage window should be aware of how any changes by their provider may affect participants. Importantly, the elimination of commission fees does not apply to all types of trades. Standard fees will still apply to both mutual fund trades and call center-supported trades.

Those offering a brokerage window from a provider that has slashed fees may need to amend service agreements to reflect the change, review updated 408(b)(2) disclosures, and distribute an announcement to inform participants.

Additionally, plan sponsors with a provider that has not made changes should monitor developments and be prepared to take similar actions should a change occur.

Participant Notices: Boring but Important – October 28, 2019

The U.S. Department of Labor (DOL) announced a proposed rule on October 22, 2019 that would allow certain retirement plan disclosures to be posted online. This would result in reduced printing and mailing costs, make disclosures more readily accessible, and diminish the environmental impact of distributing physical notices.

Fourth Quarter 2019 DC Trends

Defined contribution (DC) plans must provide a myriad of ongoing notices and communications to participants. The timing, frequency, and rules for distribution vary based on the supervising agency, creating additional complexity for plan sponsors.

Historically, the rules on providing notices covered by the Internal Revenue Service (IRS) have been more liberal than the DOL's. The IRS rules permit e-delivery if the recipient has reasonable access to the delivery system, the information is as understandable as a paper document, and the plan advises the recipient of the ability to request a free paper copy.

The DOL rules currently require that the participant have access to the plan sponsor's electronic information system as an integral part of her duties or has affirmatively consented to electronic receipt. Additionally, participants must receive an annual notice explaining the availability of the information and how to access it, and advise them of their right to receive a free paper version of the information. (Note: The plan may use the DOL or the IRS e-delivery rules to provide this annual notice.)

The proposed rule more closely aligns the DOL rules with the IRS rules. Under the new rule, required communications may be posted to a website, so long as the affected participants receive a notice at their "electronic address" (i.e., an email address or smartphone number), and have the right to request a paper copy or opt out of the electronic communications program.

However, the rule still requires some proactive outreach to participants—for each document that is provided online, the administrator must send a separate, electronic notice of internet availability. The administrator may send a combined notice with respect to certain documents: summary plan descriptions, summary annual report, investment related portion of fee disclosure, QDIA notice, etc.

The new rule also requires that when an employee receiving electronic communications terminates, the administrator must "take measures reasonably calculated to ensure the continued accuracy of the covered individual's electronic address... or to obtain a new electronic address that enables receipt of covered documents."

Communicating relevant information to participants in an efficient fashion without overwhelming them is a chief concern for plan sponsors. Simplifying the distribution rules, coupled with a review of the varying deadlines, supports communication needs and can lower plan administration costs.

IRS Announces Updated Retirement Plan Limits for 2020 – November 6, 2019

On November 6, 2019, the Internal Revenue Service (IRS) announced the updated retirement plan limits for 2020. Below, we highlight the notable defined contribution plan limits:

- The annual contribution limit will increase from \$19,000 to \$19,500.
- The age 50 annual catch-up contribution limit will increase from \$6,000 to \$6,500, the first increase since 2015.

Fourth Quarter 2019 DC Trends

- The annual compensation limit will increase from \$280,000 to \$285,000.
- The Section 415(c) limit will increase from \$56,000 to \$57,000.
- The highly compensated employee threshold will increase from \$125,000 to \$130,000.

Visit the [IRS website](#) to learn more.

The SECURE Act Edges Closer to the Finish Line – December 17, 2019

The Setting Every Community Up for Retirement Enhancement (SECURE) Act was attached at the last minute to the government appropriations bills for fiscal year 2020, making passage all but a fait accompli. The House will vote on the bill today at which point it will go to the Senate with President Trump expected to sign it by the end of the week.

The SECURE Act originally passed Congress by a 417-3 margin in May 2019. It stalled, though, in the Senate when three senators placed a hold on the bill (Pat Toomey of Pennsylvania, Ted Cruz of Texas, and Mike Lee of Utah), preventing its passage under unanimous consent. Major provisions of the bill include:

- Increasing the age for required minimum distributions from 70½ to 72
- Requiring disclosures for how a participant's balance would translate into a future income stream
- Modifying the safe harbor around the selection of a lifetime income provider, so fiduciaries can rely on the assurances of state insurance regulators that providers are adequately capitalized
- Allowing 529 distributions to be used to repay student loans (up to \$10,000 annually)
- Increasing the limit on auto-escalation from 10% to 15%

The bill also paves the way for open multi-employer plans (open MEPs) by removing the need for employers in a MEP to share a “common nexus” (common affiliation) and removing the so-called “bad apple rule.” The implication of this rule is that if one plan in the pool is no longer a qualified plan, the entire pool loses its qualified status.

The SECURE Act marks the most substantial legislation affecting retirement since the Pension Protection Act (2006). The impact on policy cannot be underestimated within the retirement industry as major changes (target date funds, auto features, etc.) were largely driven by regulatory and legislative catalysts.

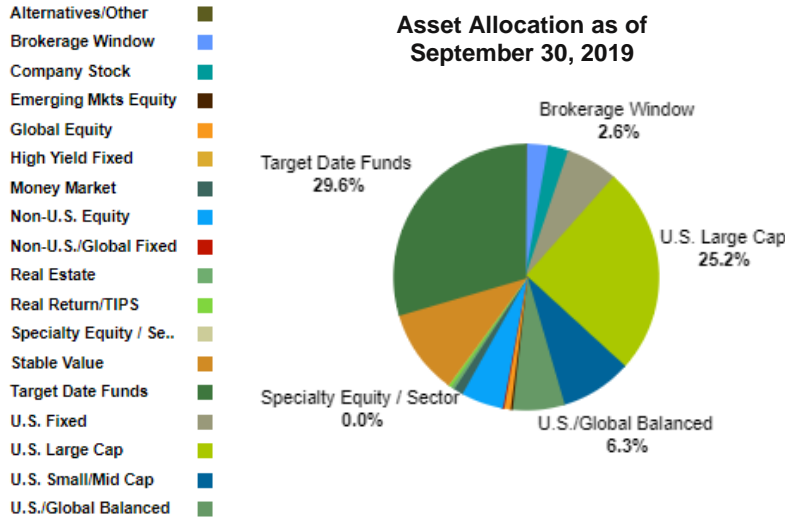
Structure Utilization

Asset Allocation

U.S. Fixed Income and Stable Value Gain Assets

The percentage of assets allocated to U.S. fixed income increased by 0.5%, bringing the overall allocation to 6.3%. Similarly, the allocation to stable value increased by 0.3%, resulting in an overall allocation of 10.4%. Both asset classes had positive flows as well as positive investment gains.

On the other hand, target date funds experienced the largest decrease in asset allocation (-0.6%). A much smaller percentage of inflows compared to previous quarters was the main driver behind this result. With this decrease, 29.6% of assets are allocated to target date funds, the lowest this figure has been since the first quarter of 2017.



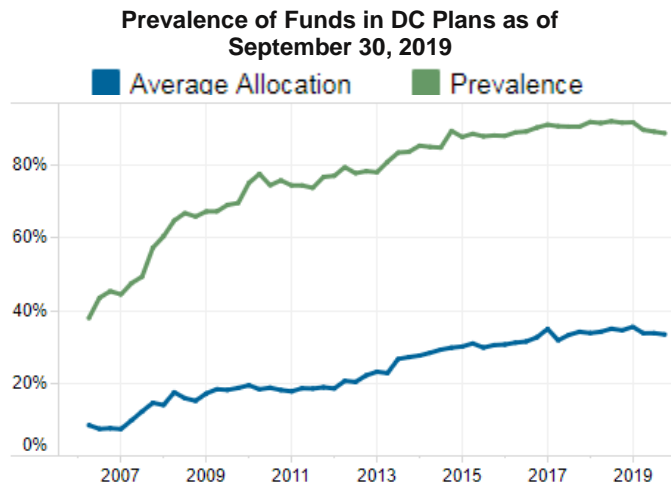
Prevalence

Stable Value Slightly Declines

In the prevalence of funds table, the green bars indicate the prevalence of asset classes within DC plans, while the blue bars show the average allocation to that particular asset class when offered as an option.

Stable value's prevalence within DC plans decreased for the first time in eight quarters and now sits at 76%, but this figure is still up nearly 3 percentage points from a year ago.

The presence of company stock (22.7%) increased slightly but remains near historic lows. Additionally, the percentage of plans offering a brokerage window (42.3%) continued to climb.



Glossary

Total Pure Equity - The sum of “pure” equity across the glide path. Pure equity is composed of large-cap domestic equity, small/mid-cap domestic equity, international equity, emerging market equity and global equity. Excluded are REIT exposures.

Total Target Date Family Performance - The weighted performance across all of the underlying target date vintages. Family performance can be weighted equally, according to client assets within each vintage or according to manager assets within each vintage.

Callan Consensus - An equally weighted index of the universe of available TDF “series” or “families” (currently 44) – including both mutual funds and collective trusts. The funds’ glidepaths are mapped into 26 asset classes. The CAI Consensus Glidepath Index is created as an equal-weighted average of all the provider glidepaths, and will change dynamically over time as provider glidepaths evolve and/or the provider universe expands.

Equity Market Indicators

The market indicators included in this report are regarded as measures of equity or fixed income performance results. The returns shown reflect both income and capital appreciation.

Russell 1000 Growth measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Value contains those Russell 2000 securities with a less than average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earning ratios, higher dividend yields and lower forecasted growth values than the Growth universe.

Russell 2500 Growth Index measures the performance of those Russell 2500 companies with higher price-to-book ratios and higher forecasted growth values.

Russell Mid Cap Growth measures the performance of those Russell Mid Cap Companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth Index.

Standard & Poor's 500 Index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index is capitalization-weighted, with each stock weighted by its proportion of the total market value of all 500 issues. Thus, larger companies have a greater effect on the index.

Fixed Income Market Indicators

90-Day U.S. Treasury Bills provide a measure of riskless return. The rate of return is the average interest rate available on the beginning of each month for a Treasury Bill maturing in ninety days.

Bloomberg Barclays Aggregate Bond Index is a combination of the Mortgage Backed Securities Index and the intermediate and long-term components of the Government/Credit Bond Index.

International Equity Market Indicators

Morgan Stanley Capital International (MSCI) EAFE Index is composed of approximately 1000 equity securities representing the stock exchanges of Europe, Australia, New Zealand and the Far East. The index is capitalization-weighted and is expressed in terms of U.S. dollars.

Callan Databases

In order to provide comparative investment results for use in evaluating a fund's performance, Callan gathers rate of return data from investment managers. These data are then grouped by type of assets managed and by the type of investment manager. Except for mutual funds, the results are for tax-exempt fund assets. The databases, excluding mutual funds, represent investment managers who handle over 80% of all tax-exempt fund assets.

Equity Funds

Equity funds concentrate their investments in common stocks and convertible securities. The funds included maintain well-diversified portfolios.

Core Equity - Mutual funds whose portfolio holdings and characteristics are similar to that of the broader market as represented by the Standard & Poor's 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection. The core portfolio exhibits similar risk characteristics to the broad market as measured by low residual risk with Beta and R-Squared close to 1.00.

Large Cap Growth - Mutual Funds that invest mainly in large companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, Return-on-Assets values, Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broader market as measured by the securities' Beta and Standard Deviation.

Large Cap Value - Mutual funds that invest in predominantly large capitalization companies believed to be currently undervalued in the general market. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Valuation issues take precedence over near-term earnings prospects in the stock selection process. Invests in companies with P/E ratios and Price-to-Book values below the broader market. Usually exhibits lower risk than the broader market as measured by the Beta and Standard Deviation.

Non-U.S. Equity Style Mutual Funds - Mutual funds that invest their assets only in non-U.S. equity securities but exclude regional and index funds.

Small Capitalization (Value) - Mutual funds that invest in small capitalization companies that are believed to be currently undervalued in the general market. Valuation issues take precedence over near-term earnings prospects in the stock selection process. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Invests in companies with P/E ratios, Return-on-Equity values, and Price-to-Book values below the broader market as well as the small capitalization market segment. The companies typically have dividend yields in the high range for the small capitalization market. Invests in securities with risk/reward profiles in the lower risk range of the small capitalization market.

Small/Middle Capitalization - Managers who invest primarily in small to middle capitalization range companies with market capitalization below core equity companies. The market capitalization is about the upper quartile of the Small Cap group and the lower decile of the Mid Cap group. The Small/Mid Cap Broad style invests in securities with greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. This style consists of the Small/Mid Cap Growth and the Small/Mid Cap Value Style Groups and other funds classified strictly as Small/Mid Cap Broad.

Callan Databases

In order to provide comparative investment results for use in evaluating a fund's performance, Callan gathers rate of return data from investment managers. These data are then grouped by type of assets managed and by the type of investment manager. Except for mutual funds, the results are for tax-exempt fund assets. The databases, excluding mutual funds, represent investment managers who handle over 80% of all tax-exempt fund assets.

Fixed Income Funds

Fixed Income funds concentrate their investments in bonds, preferred stocks, and money market securities. The funds included maintain well-diversified portfolios.

Core Bond - Mutual Funds that construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

Stable Value - The Stable Value database group is comprised of funds that invest primarily in Guaranteed Investment Contracts (GICs) and Synthetic Investment Contracts (SICs) to provide principal protection, stable book value and a guaranteed rate of return over a contractually specified time period. Common benchmarks for the universe include but not limited to, are the Ryan Labs GIC Master indices and the Hueler Stable Value Index.

Risk/Reward Statistics

The risk statistics used in this report examine performance characteristics of a manager or a portfolio relative to a benchmark (market indicator) which assumes to represent overall movements in the asset class being considered. The main unit of analysis is the excess return, which is the portfolio return minus the return on a risk free asset (3 month T-Bill).

Alpha measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

Beta measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

Downside Risk stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

Excess Return Ratio is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

Information Ratio measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

R-Squared indicates the extent to which the variability of the portfolio returns are explained by market action. It can also be thought of as measuring the diversification relative to the appropriate benchmark. An r-squared value of .75 indicates that 75% of the fluctuation in a portfolio return is explained by market action. An r-squared of 1.0 indicates that a portfolio's returns are entirely related to the market and it is not influenced by other factors. An r-squared of zero indicates that no relationship exists between the portfolio's return and the market.

Relative Standard Deviation is a simple measure of a manager's risk (volatility) relative to a benchmark. It is calculated by dividing the manager's standard deviation of returns by the benchmark's standard deviation of returns. A relative standard deviation of 1.20, for example, means the manager has exhibited 20% more risk than the benchmark over that time period. A ratio of .80 would imply 20% less risk. This ratio is especially useful when analyzing the risk of investment grade fixed-income products where actual historical durations are not available. By using this relative risk measure over rolling time periods one can illustrate the "implied" historical duration patterns of the portfolio versus the benchmark.

Residual Portfolio Risk is the unsystematic risk of a fund, the portion of the total risk unique to the fund (manager) itself and not related to the overall market. This reflects the "bets" which the manager places in that particular asset market. These bets may reflect emphasis in particular sectors, maturities (for bonds), or other issue specific factors which the manager considers a good investment opportunity. Diversification of the portfolio will reduce or eliminate the residual risk of that portfolio.

Risk/Reward Statistics

Rising Declining Periods refer to the sub-asset class cycles vis-a-vis the broader asset class. This is determined by evaluating the cumulative relative sub-asset class index performance to that of the broader asset class index. For example, to determine the Growth Style cycle, the S&P 500 Growth Index (sub-asset class) performance is compared to that of the S&P 500 Index (broader asset class).

Sharpe Ratio is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

Sortino Ratio is a downside risk-adjusted measure of value-added. It measures excess return over a benchmark divided by downside risk. The natural appeal is that it identifies value-added per unit of truly bad risk. The danger of interpretation, however, lies in these two areas: (1) the statistical significance of the denominator, and (2) its reliance on the persistence of skewness in return distributions.

Standard Deviation is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (ie. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

Total Portfolio Risk is a measure of the volatility of the quarterly excess returns of an asset. Total risk is composed of two measures of risk: market (non-diversifiable or systematic) risk and residual (diversifiable or unsystematic) risk. The purpose of portfolio diversification is to reduce the residual risk of the portfolio.

Tracking Error is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

Treynor Ratio represents the portfolio's average excess return over a specified period divided by the beta relative to its benchmark over that same period. This measure reflects the reward over the risk-free rate relative to the systematic risk assumed.

Note: Alpha, Total Risk, and Residual Risk are annualized.

List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

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

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

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

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

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

Manager Name
Guggenheim Investments
GW&K Investment Management
Harbor Capital Group Trust
Hartford Investment Management Co.
Heitman LLC
Hotchkis & Wiley Capital Management, LLC
HSBC Global Asset Management
Impax Asset Management Limited
Income Research + Management, Inc.
Insight Investment Management Limited
Intech Investment Management, LLC
Intercontinental Real Estate Corporation
Invesco
Investec Asset Management North America, Inc.
Iridian Asset Management LLC
Ivy Investments
J.P. Morgan
Janus
Jennison Associates LLC
Jenson Investment Management
JO Hambro Capital Management Limited
Jobs Peak Advisors
John Hancock Investment Management Services, LLC
Kayne Anderson Rudnick Investment Management, LLC
KeyCorp
Lazard Asset Management
L & B Realty Advisors LLP
Legal & General Investment Management America
Lincoln Advisors
Lincoln National Corporation
Logan Circle Partners, L.P.
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
MacKay Shields LLC
MacKenzie Investments
Macquarie Investment Management (MIM)
Manulife Investment Management
Marathon Asset Management, L.P.
McKinley Capital Management, LLC
Mellon
MFS Investment Management
MidFirst Bank
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
Mountain Pacific Advisors, LLC
MUFG Union Bank, N.A.
Natixis Investment Managers
Neuberger Berman
Newton Investment Management
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management

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