

BenchmarkDC

Documents the plan success,
participant success and fiduciary success of

North Carolina Retirement Systems

(for the 5 years ending December 31, 2016)



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Executive Summary

Overview

The primary purpose of this report is to help plan fiduciaries assess, and document, their plan's cost reasonableness by comparing plan costs, performance and services received. In order to do this, your plan's costs and services are compared to a custom peer group. Your peer group is comprised of the 12 DC plans closest to your plan assets primarily and average account balance secondarily because these factors impact costs.

Peer group for North Carolina Retirement Systems

Peers

County of Los Angeles (457)
Federal Reserve OEB
Florida State Board of Administration
Indiana Public RS
Maryland Supplemental Retirement Plans
Michigan Office of Retirement Services
Minnesota State RS
North Carolina RS
Ohio Public Employees Def. Comp.
State of Tennessee
Utah RS
Virginia RS

Plan design

Plan design issues to monitor include:

- Number of investment options - Too many investment options can increase plan costs, increase participant confusion and decrease participation rates. There is no clear definition of 'too many', but if you have substantially more options than your peers, you should certainly document why you think it is better for your participants. Your plan has 13 investment options (target date families are counted as 1 option). This compares to a U.S. universe median of 15.
- Indexed options offered - They are a low cost alternative to actively-managed options. See page 54 for more information including cost savings and the extent of usage of indexed options by other plans.
- The default investment option - Your default option is similar to target retirement date funds. The default option for 83% of your peers and 84% of the universe are target-date-retirement funds.
- Your decumulation options - More and more plan sponsors are realizing decumulation is just as important as accumulation options.

Type and number of investment options

	Your Plan	Peer Average	Universe Average
Employer Stock		0.0	0.7
Stock U.S.	6	5.2	6.0
Stock Non U.S. & Global	3	2.0	2.7
Bonds	2	2.5	2.7
Stable Value	1	1.0	0.7
Cash, Money Market		0.6	0.6
Target Retirement Date*		0.8	0.9
Balanced		0.7	0.9
Mutual Fund Window		0.2	0.1
Participant Brokerage Account		0.4	0.4
Priv Eq, REIT, Other	1	0.5	0.9
Total	13	13.8	16.4

* North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential; it helps members allocate balances to 13 investment options that are best suited to their risk profile and time horizon. This service rebalances assets quarterly. 43% of member assets are invested through this program.

Average asset mix

Average asset mix

At December 31, 2016

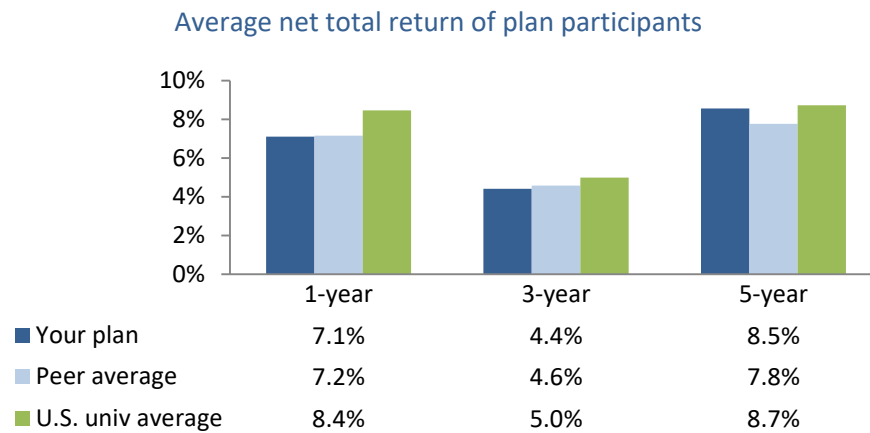
Asset category	You	Peers	U.S. Univ
Stock U.S.	44%	38%	32%
Stock Non U.S.	15%	6%	6%
Employer Stock	0%	0%	10%
Target & Balanced*	0%	20%	25%
Bonds	11%	9%	7%
Stable Value	25%	22%	12%
Cash, Money Market	0%	2%	3%
Self-dir. Windows	0%	1%	2%
Priv Eq, REIT, Other	4%	2%	2%
Total	100%	100%	100%

As fiduciaries you should monitor asset mix because it is often the biggest reason for differences in the total returns of plan participants. Asset mix red-flags that you should review from time-to-time include:

- Stable value and cash - on average your plan participants had a combined 25% of their assets in stable value and/or cash options. This was above the peer average of 24%. Professionally managed defined benefit plans typically have less than 1% of their assets in these options. Although these options are relatively low risk of loss, they also have relatively low long-term expected returns. Therefore, high holdings of cash and stable value, especially among younger participants, increases the risk that these participants will not achieve their retirement objectives. Mitigating arguments in favor of stable value and cash include: (i) they are low risk, (ii) participants can elect to switch into options with higher expected returns and risk, (iii) tools and education can help participants be more aware of risk return tradeoffs and make decisions that are appropriate to their circumstances.
- Employer stock - Employer stock can substantially increase the volatility of the average participant's returns (i.e., it increases risk). This is not an issue for your plan because it does not offer an employer stock option.

* North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential; it helps members allocate balances to 13 investment options that are best suited to their risk profile and time horizon. This service rebalances assets quarterly. 43% of member assets are invested through this program.

Average total return of plan participants



The average 5-year net total return of your plan's participants was 8.5%. This was above the peer average of 7.8%. Differences in participant returns are due to differences in the asset-mix of investment options held by participants and investment option performance.

The primary reasons for your participants' above average 5-year returns were:

- Higher asset mix returns (allocation). On average, your participants were in more of the higher, and fewer of the lower, performing asset categories.
- Higher asset category returns (selection). Asset category returns reflect investment option performance and the mix of option styles in the category.

Total plan cost versus benchmark cost

Your total plan cost was \$44.4 million or 0.47% of plan assets. This compares to a peer median of 0.36%. Comparisons of total cost must be interpreted with caution. Differences often reflect differences in plan size, average account balance and the mix of investment options. Therefore, to help you assess whether your plan costs are reasonable, CEM calculates a benchmark cost for your plan that adjusts for these differences.

Your peer-based benchmark cost is \$37.7 million. Your total plan cost is \$6.6 million higher than the benchmark. Being high or low cost is neither good nor bad in and of itself. As fiduciaries you should understand where and why you are paying more (or less) than peers and be comfortable that you are receiving value for what you are paying. Reasons for your plan's higher cost are summarized in the second table below.

Your total plan cost versus benchmark

	\$000s	%
Total plan cost	44,392	0.47%
Peer-based benchmark cost	37,746	0.40%
Excess cost	6,646	0.07%

Reasons for your plan's higher cost

Reason	+Excess/-Savings	
	\$000s	%
Paying similar for similar-style investment options	196	0.00%
Added cost from active versus indexed options	3,631	0.04%
Higher administrative expenses	356	0.00%
Less assets in mutual fund windows	-35	0.00%
Adjustment for economies of scale, advantage	2,497	0.03%
Total excess cost	6,646	0.07%

Investment option monitoring - outliers

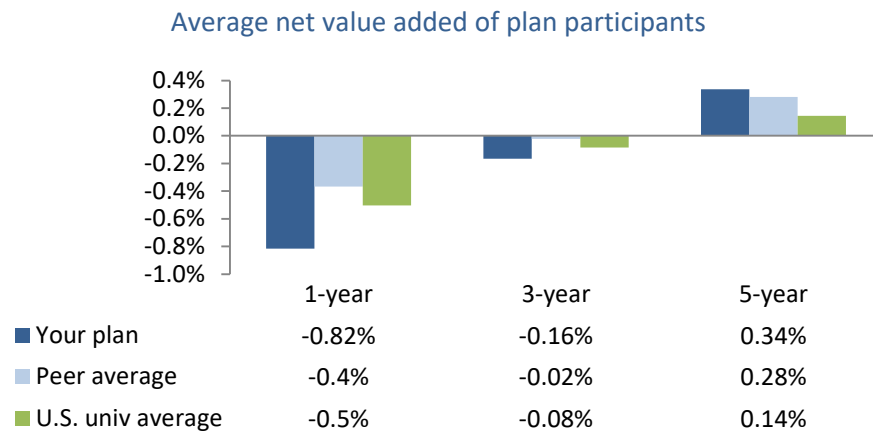
As fiduciaries you must ensure that each investment option you offer continues to be a prudent choice. The investment options that you should pay the closest attention to are those with 'outlier' returns or costs relative to similar style options and the default option. In the table below, outliers are highlighted in red. Refer to section 6 (Monitoring Investment Options & Admin) for detailed comparisons and description of the ranking methodology.

Investment option monitoring - summary

Investment Option	Cost, Invest. Mgr. 2016					Net Return 2016					Net Return 5-year				
	Peer		Rank vs. Peer			Univ		Rank vs. Univ			Univ		Rank vs. Univ		
	Your	Med	Low	Avg	High	Your	Med	Low	Avg	High	Your ¹	Med	Low	Avg	High
BlackRock - North Carolina Large Cap Passive Fund	0.01%	0.02%	■	■	■	11.9%	12.0%	■	■	■	14.5%	14.6%	■	■	■
Multi-Mgr - North Carolina Large Cap Growth Fund	0.42%	0.39%	■	■	■	0.4%	8.3%	■	■	■	13.6%	14.8%	■	■	■
Multi-Mgr - North Carolina Large Cap Value Fund	0.38%	0.39%	■	■	■	16.8%	8.3%	■	■	■	14.9%	14.8%	■	■	■
BlackRock - North Carolina SMID Cap Passive Fund	0.01%	0.05%	■	■	■	17.7%	16.2%	■	■	■	14.5%	15.0%	■	■	■
Multi-Mgr - North Carolina SMID Growth Fund	0.66%	0.64%	■	■	■	8.6%	11.1%	■	■	■	13.3%	14.0%	■	■	■
Multi-Mgr - North Carolina SMID Value Fund	0.61%	0.64%	■	■	■	20.6%	11.1%	■	■	■	16.1%	14.0%	■	■	■
Multi-Mgr - North Carolina International Equity Fund	0.45%	0.50%	■	■	■	5.5%	1.3%	■	■	■	6.0%	7.0%	■	■	■
BlackRock - North Carolina International Passive fund	0.03%	0.07%	■	■	■	5.1%	4.7%	■	■	■	4.9%	5.7%	■	■	■
Multi-Mgr - North Carolina Global Equity Fund	0.55%	0.52%	■	■	■	6.0%	2.9%	■	■	■	11.8%	11.2%	■	■	■
Multi-Mgr - North Carolina Fixed Income Fund	0.16%	0.25%	■	■	■	4.0%	3.4%	■	■	■	3.7%	3.0%	■	■	■
BlackRock - North Carolina Fixed Income Passive fund	0.02%	0.04%	■	■	■	2.6%	2.6%	■	■	■	2.9%	2.2%	■	■	■
Galliard - North Carolina Stable Value Fund	0.34%	0.29%	■	■	■	2.0%	1.8%	■	■	■	2.1%	2.0%	■	■	■
PIMCO - Inflation Responsive Fund	0.86%	0.58%	■	■	■	10.5%	9.3%	■	■	■	n/a	0.1%	■	■	■

1. 'n/a' for 5-year returns reflects options with less than 5 years of return data.

Investment Performance - average total net value added



Besides looking at individual investment performance we also look at total plan net value added.

The total net plan value added earned across all your plan's options, net of fees, was -0.8% in 2016 and averaged 0.3% for 5-years. This compares to the U.S. universe average of -0.5% for 2016 and 0.1% for 5-years. We also show your 3 year net value added and your peer average above.

Participation and Contributions

Only those employees that participate enjoy the benefits. More contributions mean a higher pension. Many factors impact participation and contribution rates including plan design. See section 7 of full report for discussion.

Participation and contribution rates

	Your Plan	Peer Median	Rank vs. Peers						
			Count	%ile	Low	Avg	High		
% of eligible employees that participate	33%	70%	11	30%					
% making voluntary contributions	54%	51%	6	60%					
% receiving maximum employer match	n/a	84%	2	n/a					
Average account balance per participant	\$32,738	\$48,135	12	36%					
Employer contributions per active participant *	\$747	\$1,118	11	30%					
Employee contributions per active participant	\$1,432	\$2,438	12	18%					

* Law Enforcement Officers receive employer contributions of 5% by state statute. Other state employers provide a match or contribution between 1% and 5%.

Services and Communication

Participants choose which investment options to invest in, but as fiduciaries you want to ensure you are providing the education and communication to ensure they can make sound investment decisions.

Education and communication provided

	Your Plan	Peer % Yes	Universe % Yes
Is individual financial counseling/investment advice available ?	No	50%	67%
If yes, is it provided via:			
a. A computer-based model only	n/a	0%	19%
b. Investment advisers only	n/a	0%	5%
c. Both computer and investment advisers	n/a	100%	76%
Does your plan offer financial education via:			
a. Group meetings	Yes	100%	79%
b. Individual meetings	Yes	100%	64%
Do participants receive projections of annual income in retirement:			
a. In their participant statements	No	42%	33%
b. Online	Yes	92%	86%
c. Via separate communication	Yes	33%	38%
Does your plan have marketing campaigns to:			
a. Increase employee deferral rates	Yes	92%	82%
b. Increase participation by eligible non-participants	Yes	58%	70%
c. Educate on savers tax credit	No	42%	19%
d. Improve diversification from Employer Stock	n/a	0%	34%

Fiduciary and Governance

- Good governance starts with the named fiduciaries because they control the plan's operation. Your named fiduciary is a committee. A committee is preferred to a specified person because: (i) it makes it easier for members of the committee to separate their fiduciary role from their settlor/plan sponsor roles, (ii) it makes it more likely that a best practice process of regularly scheduled meetings with documented minutes will occur.
- Documentation of processes and decisions clarifies responsibilities and can reduce fiduciary risk. You document the process for selection and monitoring of third-party fiduciaries and other plan service providers, investment policy, oversight of internal employees involved in operating the plan (i.e., internal fiduciaries, HR staff enrolling employees in the plan, posting deferrals, etc.) and fulfill administration responsibilities (regulatory filings, disclosures to participants).
- How administration fees are paid and allocated are emerging issues for plan fiduciaries. This is relevant to your plan because it pays some of its administrative expenses from the expense ratio of investment options. Refer to page 63 for more details.

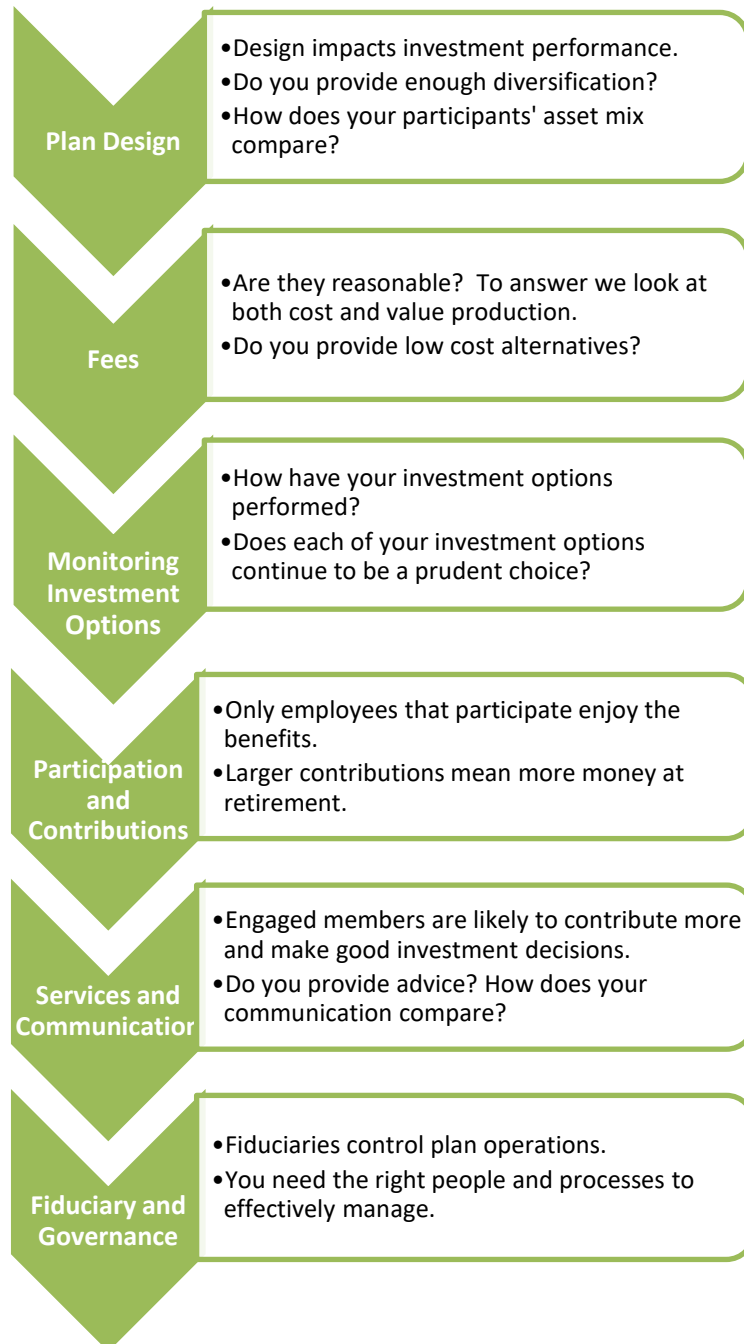
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Purpose of the Report

- 15 Demonstrate cost reasonableness
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Demonstrate cost reasonableness

This BenchmarkDC report enables plan sponsors to assess and document their plan's cost reasonableness by comparing plan costs, performance and services received. It is based on the following model of a successful DC plan.



Benefits of the report

This report compares:

- The effectiveness of the services being provided to the plan and participants
- The cost-effectiveness of the plan and its investment alternatives
- The investment value-add
- The fiduciary processes needed for continual plan improvement

The report also serves as a decision-support tool for:

- The negotiation of services and expenses
- Expanded education efforts and communication strategies
- The retention, addition or replacement of plan vendors
- The enhancement of plan features, supported by research on trends, education and plan design of other leading plan sponsors

The report documents evidence of fiduciary oversight

The U.S. Department of Labor issued the 408(b)(2) regulation outlining the requirements for retirement plan service providers to disclose information regarding their status as a fiduciary, the types of services they are offering and the compensation generated by offering those services. Upon receipt of these disclosures, it is imperative that the plan fiduciary review and decide if the services are necessary and the expenses are reasonable. Failure to ensure the reasonableness of expenses can create a prohibited transaction and cause a fiduciary breach. ERISA 406(a) stipulates that an arrangement between a service provider and a plan is prohibited unless the arrangement is reasonable, the compensation being paid is reasonable and the required disclosures by the service provider have been made.

How can a plan fiduciary (e.g. plan committee) evaluate the reasonableness of the total charges, credits and compensation for these services? There are two effective methods for performing an independent analysis: A plan sponsor can initiate an RFP process (request for proposal) or they can compare their retirement plan offering to a peer group utilizing the expertise of an independent benchmarking firm.

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Peer Group and Universe

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Peer group

Your peer group is comprised of 12 DC plans, with assets ranging from \$2.3 billion to \$11.8 billion versus your \$9.8 billion. Your peer group is used to benchmark your costs.

Peer group for North Carolina Retirement Systems

Peers

County of Los Angeles (457)	Utah RS
Federal Reserve OEB	Virginia RS
Florida State Board of Administration	
Indiana Public RS	
Maryland Supplemental Retirement Plans	
Michigan Office of Retirement Services	
Minnesota State RS	
North Carolina RS	
Ohio Public Employees Def. Comp.	
State of Tennessee	

The primary criteria used to select your peer group were plan assets and average account balance. These two criteria are key cost drivers so it is necessary to control for them when benchmarking costs.

Peer and universe characteristics

Characteristic	Your plan	Peers*	U.S. universe*
# of plan sponsors	1	12	138
Plan assets			
- Smallest to largest	\$9.8 BN	\$2.3 BN - \$11.8 BN	\$72 mil - \$49.6 BN
- Median	\$9.8 BN	\$6.7 BN	\$4.8 BN
- Median excluding employer stock	\$9.8 BN	\$6.7 BN	\$4.2 BN
Account balance of average participant			
- Median	\$33,000	\$48,000	\$135,000
- Median excluding employer stock	\$33,000	\$48,000	\$122,000
# of plan participants	298,337	154,084	58,743
% retired or separated with assets in plan	20%	28%	26%
% of plan assets in employer stock	0%	0%	10%
% of indexable assets indexed	31%	52%	59%
# of investment options	13	14	16
Corporate, Public	Public	0 Corp, 12 Public	110 Corp, 28 Public

* Peer and universe figures are averages if not specified otherwise.

Benchmarking universe

The universe of all CEM U.S. defined contribution survey participants is used to benchmark plan and participant success metrics such as total plan performance, investment option performance and plan design. It also provides research support for the cost benchmarking methodology. In 2016, the universe was comprised of 138 U.S. plans with aggregate assets of \$991 billion.

U.S. participants by year

Year	# of Plans			U.S. universe							Corporate			Public & Other			Your Assets \$BNs
	Univ	Corp	Public & Other	Total	Avg	Max	75%	Med	25%	Min	Total	Avg	Med	Total	Avg	Med	
2016	138	110	28	991	7.2	50	8.8	4.8	2.1	0.07	869	7.9	4.9	122	4.4	2.4	9.8
2015	142	118	24	904	6.4	46	7.7	4.1	1.9	0.06	821	7.0	4.5	84	3.5	2.0	9.0
2014	140	116	24	945	6.7	48	7.8	4.4	1.9	0.06	841	7.3	4.8	104	4.3	2.3	9.0
2013	151	126	25	911	6.0	46	7.0	3.6	1.6	0.05	814	6.5	3.7	97	3.9	2.3	8.4
2012	172	141	31	828	4.8	41	6.0	3.0	1.2	0.04	717	5.1	3.0	111	3.6	2.4	7.0
2011	173	140	33	1,048	6.1	297	5.4	2.6	1.1	0.03	644	4.6	2.6	404	12.2	2.5	6.1
2010	174	143	31	1,007	5.8	280	5.2	2.4	1.0	0.03	628	4.4	2.4	379	12.2	2.1	5.9
2009	175	150	25	899	5.1	244	4.6	2.2	0.8	0.02	595	4.0	2.2	305	12.2	1.4	5.0
2008	180	153	27	738	4.1	205	3.6	1.5	0.6	0.01	484	3.2	1.6	254	9.4	1.2	3.8
2007	190	154	36	960	5.1	230	4.5	2.0	1.0	0.01	642	4.2	2.2	319	8.9	1.3	
2006	120	92	28	626	5.2	201	4.5	2.0	0.8	0.01	358	3.9	2.0	268	9.6	1.2	
2005	92	65	27	518	5.6	166	5.1	2.3	1.0	0.01	307	4.7	3.2	211	7.8	0.9	
2004	87	69	18	334	3.8	25	4.9	2.5	0.9	0.00	293	4.2	2.7	41	2.3	1.1	
2003	90	72	18	303	3.4	23	4.1	1.6	0.5	0.01	275	3.8	2.0	27	1.5	0.8	
2002	75	60	15	249	3.3	18	4.1	1.6	0.7	0.14	229	3.8	2.3	20	1.3	0.7	
2001	86	69	17	270	3.1	21	3.7	1.9	0.9	0.05	241	3.5	2.5	29	1.7	1.1	
2000	67	60	7	238	3.6	21	4.2	2.1	1.0	0.07	220	3.7	2.0	18	2.6	3.0	
1999	65	61	4	259	4.0	27	4.3	2.3	1.0	0.07	250	4.1	2.3	9	2.3	2.1	
1998	71	65	6	244	3.4	18	3.7	2.0	0.8	0.07	236	3.6	2.1	9	1.4	0.8	
1997	60	58	2	136	2.3	14	2.8	1.2	0.6	0.07	135	2.3	1.3	1	0.6	0.6	

Trend analysis is based on participants that have participated for multiple consecutive years. 88 plans have participated for 5 or more consecutive years.

Consecutive year U.S. participants

Consec. Years	# of Consecutive Year Plans			U.S. universe							Corporate			Public & Other		
	Univ	Corp	Public & Other	Total	Avg	Max	75%	Med	25%	Min	Total	Avg	Med	Total	Avg	Med
2	112	92	20	882	7.9	50	9.3	5.2	2.4	0.07	798	8.7	5.8	83	4.2	2.4
3	100	84	16	838	8.4	50	9.9	5.7	2.7	0.07	768	9.1	6.2	71	4.4	2.4
4	90	76	14	799	8.9	50	10.3	6.2	3.0	0.07	733	9.6	6.3	66	4.7	3.6
5	88	74	14	788	9.0	50	10.5	6.2	3.2	0.07	722	9.8	6.3	66	4.7	3.6

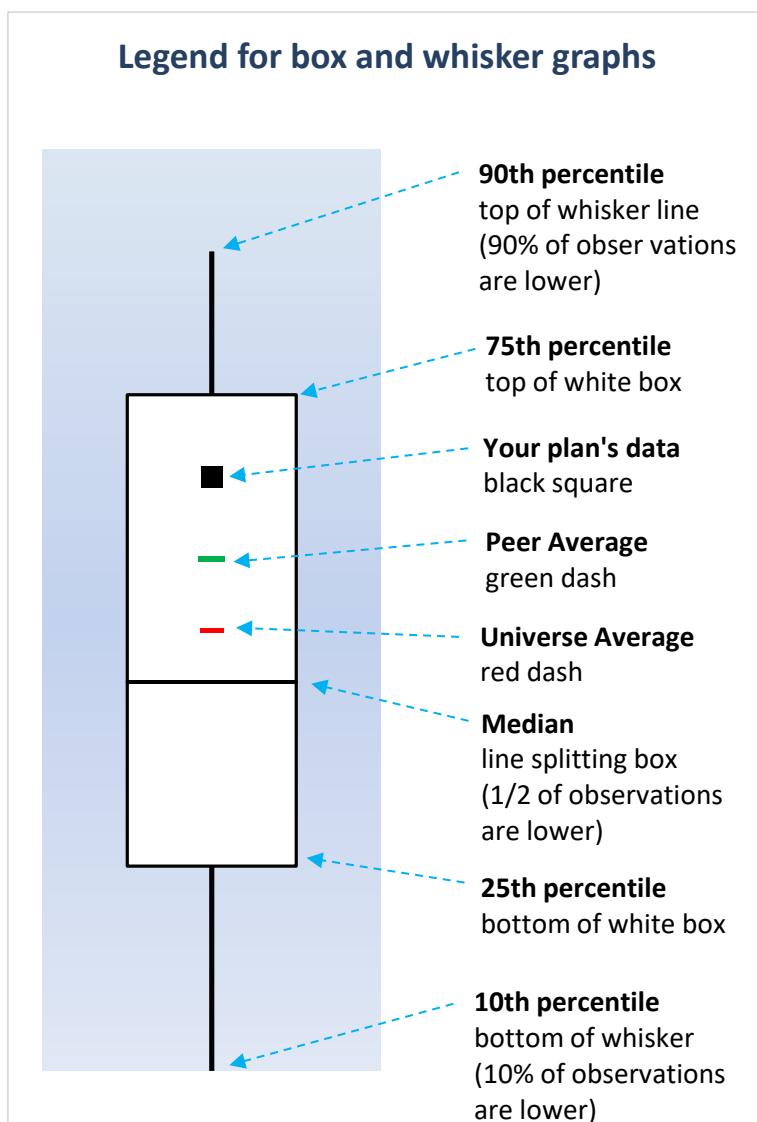
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Investment Performance

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Interpreting box and whisker graphs

Box and Whisker graphs are used extensively in this report because they show visually where you rank relative to all observations. At a glance you can see when your plan's data is an outlier versus normal. The more extreme your ranking, the more you should understand why your plan is an outlier. There is nothing wrong with being an outlier in and of itself, but as a fiduciary, you should understand why your plan is an outlier. Generally, if the black square that represents your data falls in the white 'box' on the graph, your ranking can be interpreted as 'normal' because it is in the middle 50% of observations. Your ranking becomes less normal as it moves away from the white 'box'. In this report, we define your performance as an 'outlier' if it is above the top of the top whisker line (i.e., in the highest 10% of observations) or below the bottom of the bottom whisker line (i.e., in the lowest 10% of observations).

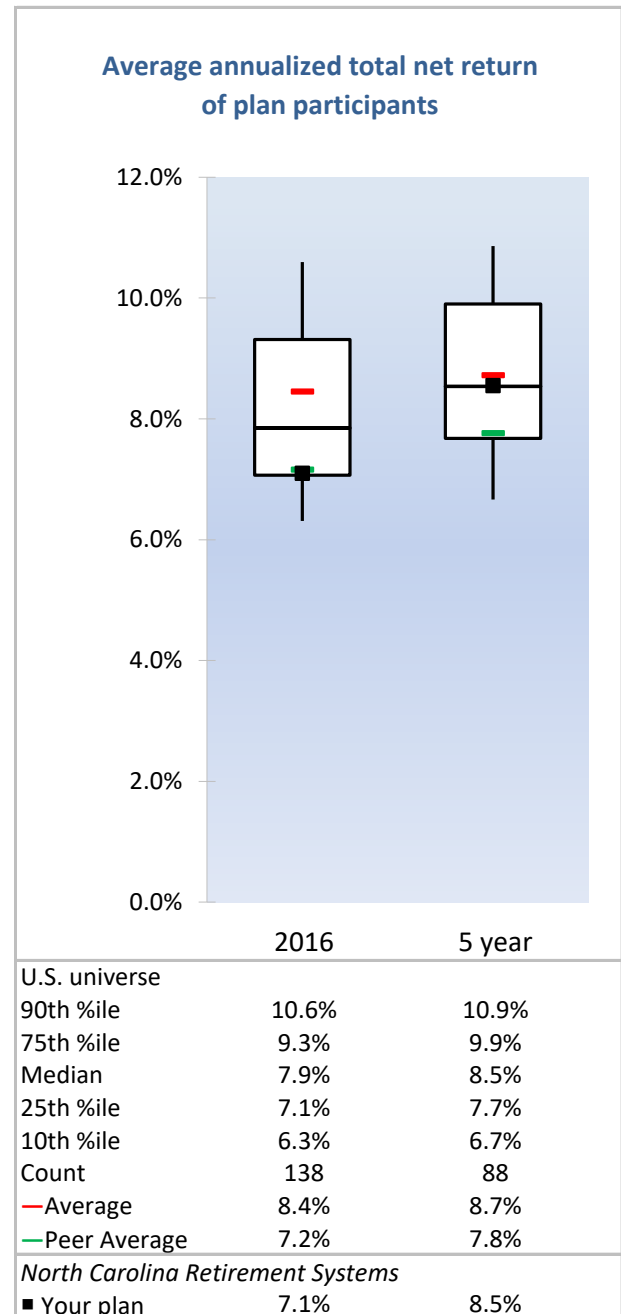


Average total net return of plan participants

Your plan participants' average 5-year annualized total net return was 8.5% for the 5 years ending 2016. This was below the U.S. average of 8.7%.

Average annualized total net return measures the change in the average participant's account balance as a result of their weighted investment returns. The calculation of average total net return for your plan is shown on page 29.

As a fiduciary, it is important to understand why the average total net return performance for your plan differs from other plans over time. Reasons why are summarized on the next two pages.



1. Annual history is available in Appendix B.

2. Returns excluding the impact of employer stock are shown on page 27.

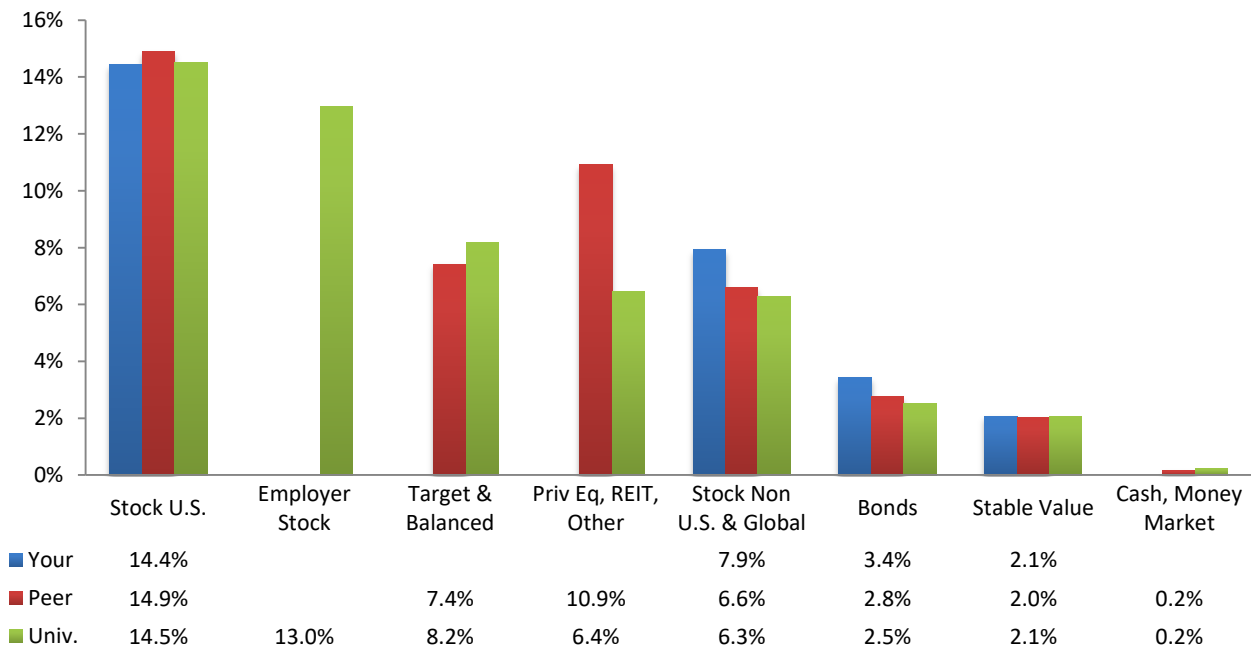
Reasons for differences in annualized total net return

There are two primary causes of differences in participants' average annualized net return:

- Asset mix differences. Asset mix differences are often the primary reason for differences in the average total return performance of plan participants because different asset categories can have very different returns. For example, as shown in the graph below, the best performing asset category of the past 5 years was stock U.S. It had a universe average 5-year return of 14.5%. This compares to a universe average of 0.2% for the poorest performing asset category, cash, money market.
- Investment option performance. The graph below shows how your weighted investment option performance compares to your peers and the universe by asset category (more detailed comparisons for each investment option are available beginning on page 40 of this report).

Average net returns by major asset category

(5-years ending Dec 2016, annualized)



Reasons why your 5-year total net return was above the peer average

Differences in participant returns are due to differences in asset mix and investment option performance. These differences are summarized by asset category in the table below.

Asset mix and returns by major asset category

Asset Category (Ranked by Univ. Returns)	5-yr avg Asset Mix ¹			5-yr Net Returns		
	Your	Peer	Univ.	Your*	Peer	Univ.
Stock U.S.	45%	36%	31%	14.4%	14.9%	14.5%
Employer Stock	0%	0%	13%	n/a	n/a	13.0%
Target & Balanced **	0%	19%	21%	n/a	7.4%	8.2%
Priv Eq, REIT, Other	2%	1%	1%	n/a	10.9%	6.4%
Stock Non U.S. & Global	14%	8%	7%	7.9%	6.6%	6.3%
Bonds	10%	13%	8%	3.4%	2.8%	2.5%
Stable Value	29%	21%	15%	2.1%	2.0%	2.1%
Cash, Money Market	0%	2%	4%	n/a	0.2%	0.2%
Weighted Average Total	100%	100%	100%	8.6%	7.8%	8.8%
- Net admin cost				0.02%	0.06%	0.05%
= Plan total ²				8.5%	7.8%	8.7%

1. Asset mix shown is the average of beginning of year (b.o.y.) holdings because annual returns are earned on b.o.y holdings. Thus b.o.y holdings are the most relevant for understanding why your total returns differ from peers and universe plans. Options discontinued during the year, loans and self-directed windows are excluded from b.o.y holdings because return data was unavailable for these options. End of year asset mix comparisons are shown on the next two pages.

2. See page 29 on how plan total return is calculated.

* n/a for 5-year returns reflects assets with less than 5 years of return data.

** North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential; it helps members allocate balances to 13 investment options that are best suited to their risk profile and time horizon. This service rebalances assets quarterly. 43% of member assets are invested through this program.

An approximate quantification of why your plan participants' average total 5-year return of 8.5% was 0.7% above the peer average return of 7.8% are summarized in the table below. A typical performance attribution technique was used to do the quantification.

Reasons why your plan participants' average 5-year total net return was above the peer average

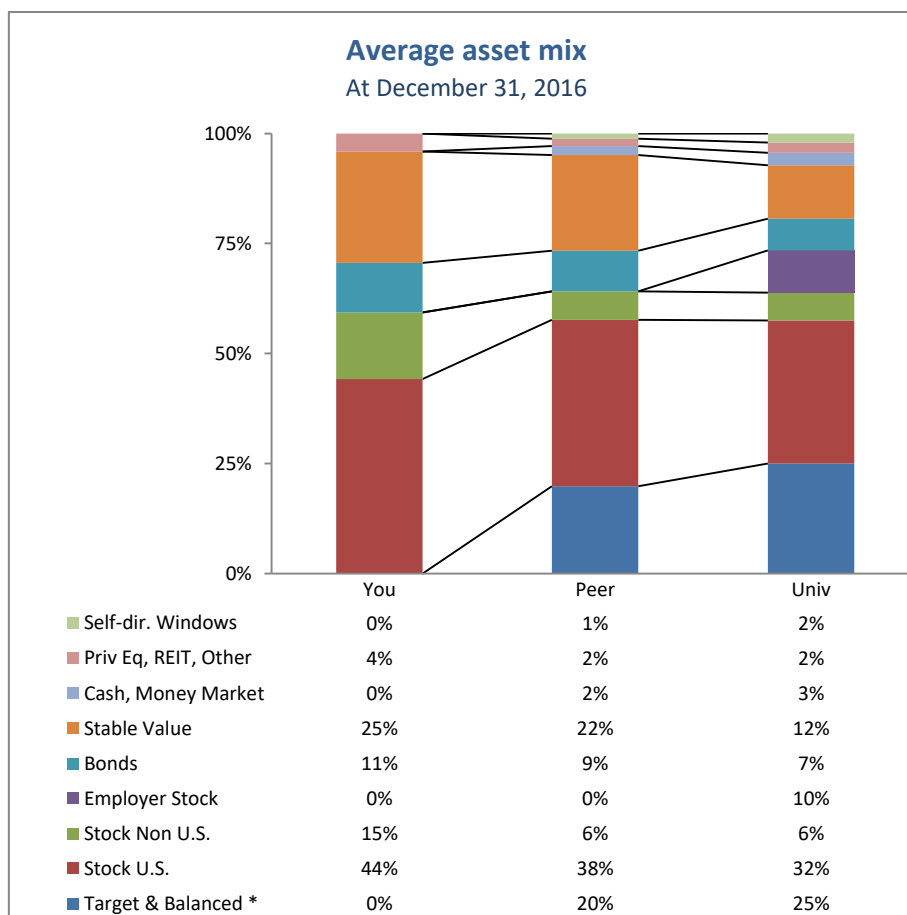
Reason	+Increased/ -Decreased Your Return
Higher asset mix returns (allocation). On average, your participants were in more of the higher, and fewer of the lower, performing asset categories.	0.6%
Higher asset category returns (selection). Asset category returns reflect investment option performance and the mix of option styles in the category.	0.1%
All other differences	0.1%
Total (equals your participants' return minus the peer average)	0.8%

Diversification - average asset mix

As fiduciaries you should monitor asset mix because it is often the biggest reason for differences in total returns of plan participants. Causes of differences in asset mix include:

- Types of plan options offered, particularly the default option (see page 53)
- Participant choices
- Education and communication efforts
- Plan history

Asset mix red-flags that you should review from time-to-time are the percentages in employer stock, cash and stable value.

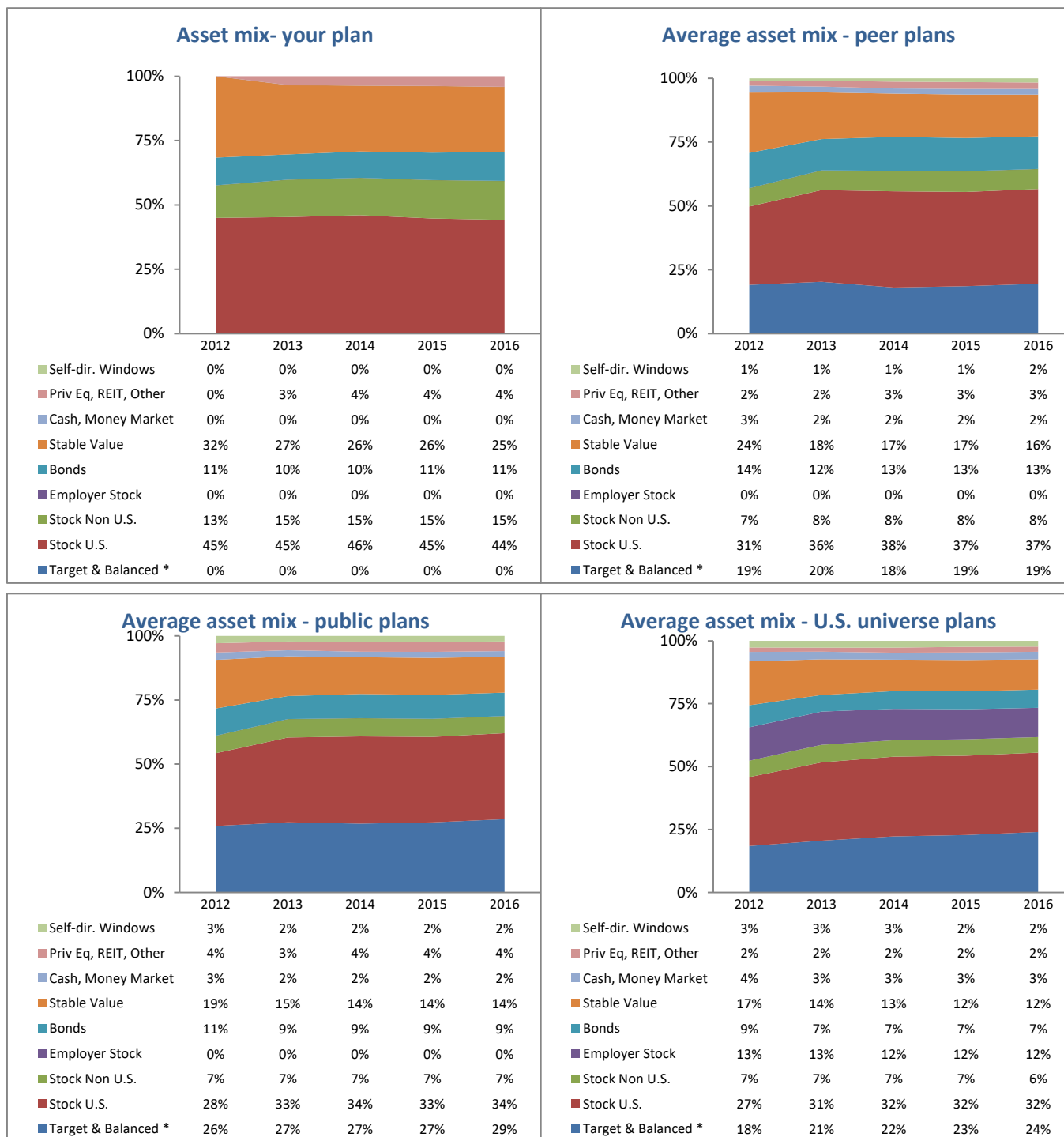


Average asset mix includes zero values (i.e. plans do not have these assets) so that the total adds up to 100%.

* North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential; it helps members allocate balances to 13 investment options that are best suited to their risk profile and time horizon. This service rebalances assets quarterly. 43% of member assets are invested through this program.

Asset mix - trends

For the average plan in the U.S. universe, stable value declined from 17% of assets in 2012 to 12% in 2016. Target and balanced funds increased from 18% to 24% during the same period.



1. Trend analysis is based on 7 peers, 14 public plans, and 88 U.S. plans that provided 5 or more consecutive years of data.

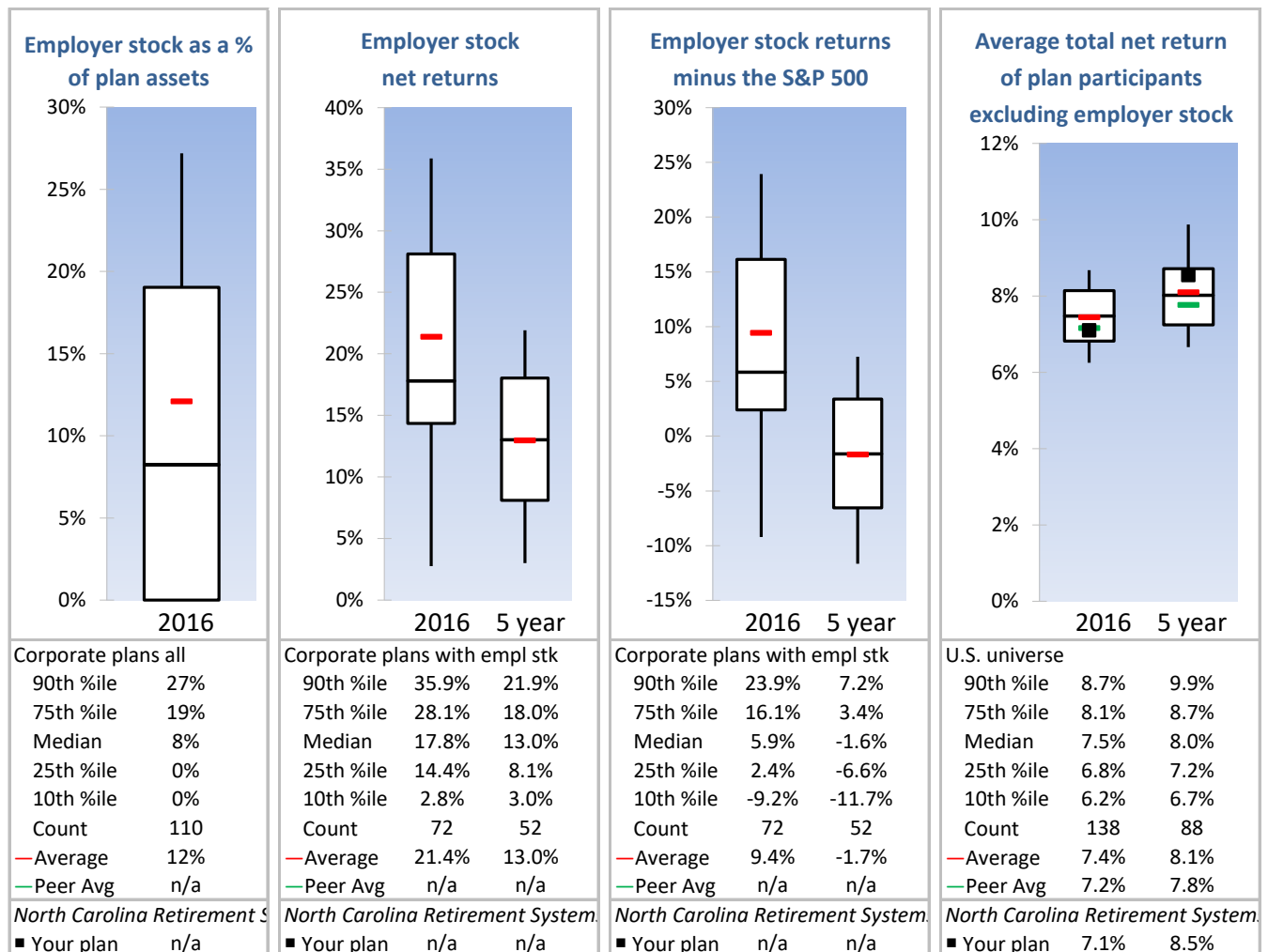
* 43% of North Carolina Supplemental Retirement Plans DC Assets are in GoalMaker. GoalMaker is an asset allocation service for no additional cost provided by Prudential, it helps members allocate balances to 13 investment options best suited to their risk profile and time horizon. This service rebalances assets quarterly.

Employer stock

The plans with the highest and lowest average annualized returns in the universe are often plans with relatively high proportions of employer stock. This is because the returns of a single stock can be extreme compared to a diversified portfolio of stock. For example, in 2016, employer stock returns ranged from a low of -11.8% to a high of 201.5%.

The 5-year average of all the employer stock return was 13.0%. But the average disguises the risk of employer stock because the extreme high and low employer stock returns mostly offset each other in the average.

Employer stock averaged 12% of plan assets for corporate plans in 2016. For the 74 corporate plans that have provided 5 consecutive years of data, employer stock holdings have declined from an average of 16% of plan assets in 2012 to 14% at the end of 2016.



Total plan value added

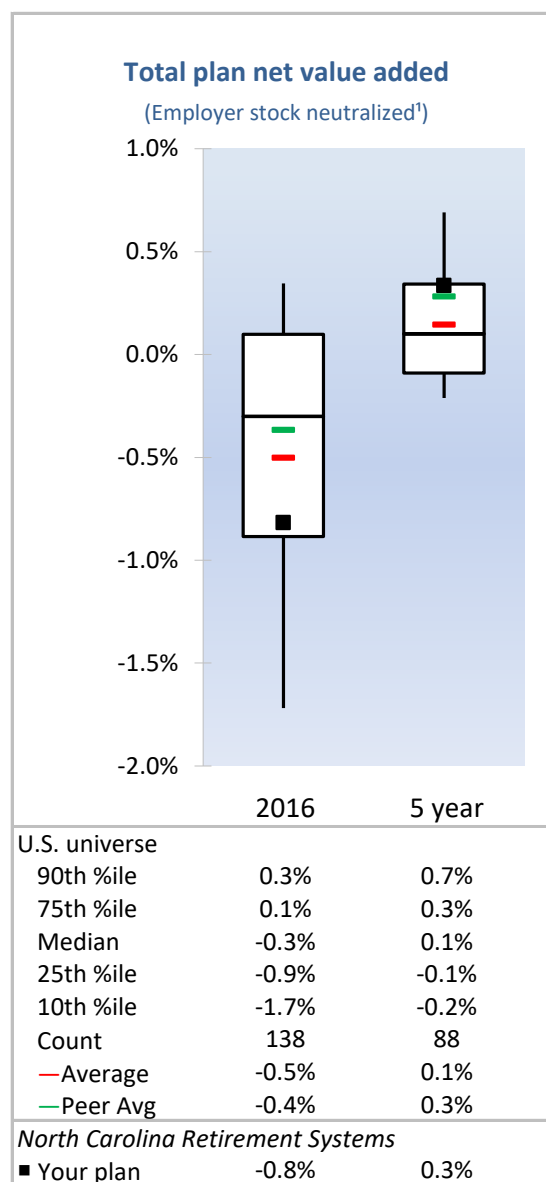
The total plan value added earned across all your plan's options, net of fees, was -0.8% in 2016 and averaged 0.3% for 5-years. This compares to the U.S. universe median of -0.3% for 2016 and 0.1% for 5-years.

Total plan net value added shows how your plan's investment options performed on an overall basis. Positive net value added indicates that, on average, your plan's investment options are outperforming their benchmark indices after fees, whereas negative net value added indicates that they are underperforming.

Total plan value added equals the holding weighted average of the net value added for all of the investment options in your plan. Net value added equals the total return for an investment option minus its benchmark return minus costs associated with managing and administering the investment option. The benchmark return is the return on a relevant market index, such as the S&P 500 for U.S. large capitalization stock mandates.

Value added for indexed options is expected to be slightly less than zero. This is because indexed options seek to replicate their benchmark index before costs. Thus, the total net plan value added of plans with primarily indexed holdings is also expected to be slightly less than zero.

Monitoring total plan value added serves a very different fiduciary purpose than monitoring the value added from individual investment options. Total plan value added shows you whether your process for adding and dropping investment options over time has been effective.



1. Employer stock's value added impact was neutralized by setting its benchmark return equal to its actual total return.

Calculation of plan total return and value added

For 2016, the net total return of participants in the North Carolina Retirement Systems plan was 7.10% and the total net value added was -0.82%.

2016 net total return and value added [returns provided are: net of investment fees]

Investment Option Name	Return Provided (A)	Cost Invest. Mgr. (B)	Cost Record. & Other (C)	Return Gross (D) = (A + B)	Return Net (E) = (A - C)	Return Benchm. (F)	Net Value Added (E - F)	Weight for Returns Assets boy ¹ \$mils
BlackRock - North Carolina Large Cap Passive Fu	11.90%	0.01%	0.03%	11.91%	11.87%	12.00%	-0.13%	1,280
Multi-Mgr - North Carolina Large Cap Growth Fu	0.40%	0.42%	0.04%	0.82%	0.36%	7.10%	-6.74%	906
Multi-Mgr - North Carolina Large Cap Value Fun	16.80%	0.38%	0.03%	17.18%	16.77%	17.30%	-0.53%	860
BlackRock - North Carolina SMID Cap Passive Fu	17.70%	0.01%	0.03%	17.71%	17.67%	17.60%	0.07%	216
Multi-Mgr - North Carolina SMID Growth Fund	8.60%	0.66%	0.04%	9.26%	8.56%	9.70%	-1.14%	343
Multi-Mgr - North Carolina SMID Value Fund	20.60%	0.61%	0.04%	21.21%	20.56%	25.20%	-4.64%	439
Multi-Mgr - North Carolina International Equity I	5.50%	0.45%	0.04%	5.95%	5.46%	5.00%	0.46%	540
BlackRock - North Carolina International Passive	5.20%	0.03%	0.06%	5.23%	5.14%	5.00%	0.14%	44
Multi-Mgr - North Carolina Global Equity Fund	6.00%	0.55%	0.03%	6.55%	5.97%	8.50%	-2.53%	768
Multi-Mgr - North Carolina Fixed Income Fund	4.00%	0.16%	0.03%	4.16%	3.97%	2.70%	1.27%	589
BlackRock - North Carolina Fixed Income Passive	2.60%	0.02%	0.03%	2.62%	2.57%	2.70%	-0.13%	373
Galliard - North Carolina Stable Value Fund	2.00%	0.34%	0.03%	2.34%	1.97%	1.00%	0.97%	2,344
PIMCO - Inflation Responsive Fund	10.50%	0.86%	0.03%	11.36%	10.47%	6.80%	3.67%	362
Weighted Average Total		0.34%	0.03%		7.19%	7.91%		
Net admin costs excl. expense ratio of options ²					0.10%			
Plan Total Cost, Net & Gross Return, Value Add ³	0.47%			7.57%	7.10%	7.91%	-0.82%	

Historic plan total costs, returns, and value added

Year	Cost Total	Cost Invest	Cost Admin	Return Gross	Return Net	Return Benchm.	Net Value Added
2016	0.47%	0.34%	0.13%	7.57%	7.10%	7.91%	-0.82%
2015	0.50%	0.33%	0.16%	0.56%	0.06%	-0.44%	0.50%
2014	0.50%	0.33%	0.15%	6.70%	6.21%	6.44%	-0.23%
2013	0.49%	0.31%	0.12%	19.31%	18.82%	17.80%	1.02%
2012	0.46%	0.28%	0.00%	11.90%	11.44%	10.15%	1.29%
5-Year Compound Average	0.48%	0.32%	0.11%	9.03%	8.55%	8.21%	0.34%

1. Beginning of year assets (b.o.y.) is the weight used for returns because annual returns are earned on beginning of year assets. Options discontinued during the year, loans and self-directed windows are excluded from weighted returns because return data was unavailable for these options.

2. Same as: admin costs charged to members or paid by the sponsor minus rebates. Admin costs paid from the option expense ratio: 0.035%.

3. Calculation of plan total cost is on page 32. Plan total: gross return = net return + total cost, net value added = net return - benchmark return.

5

Fees and Cost Effectiveness

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- 33 Benchmark cost analysis
 - Reason 1: Paying same for similar-style investment options
 - Reason 2: Added cost from active versus indexed options
 - Reason 3: Equal administrative expenses
 - Reason 4: Lower mutual fund window assets
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Total plan cost

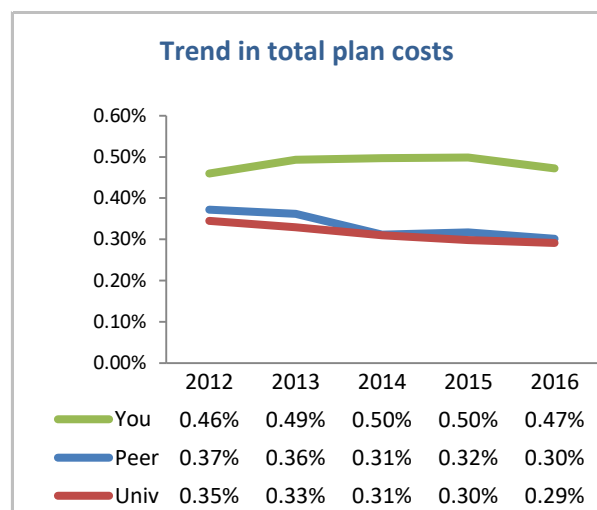
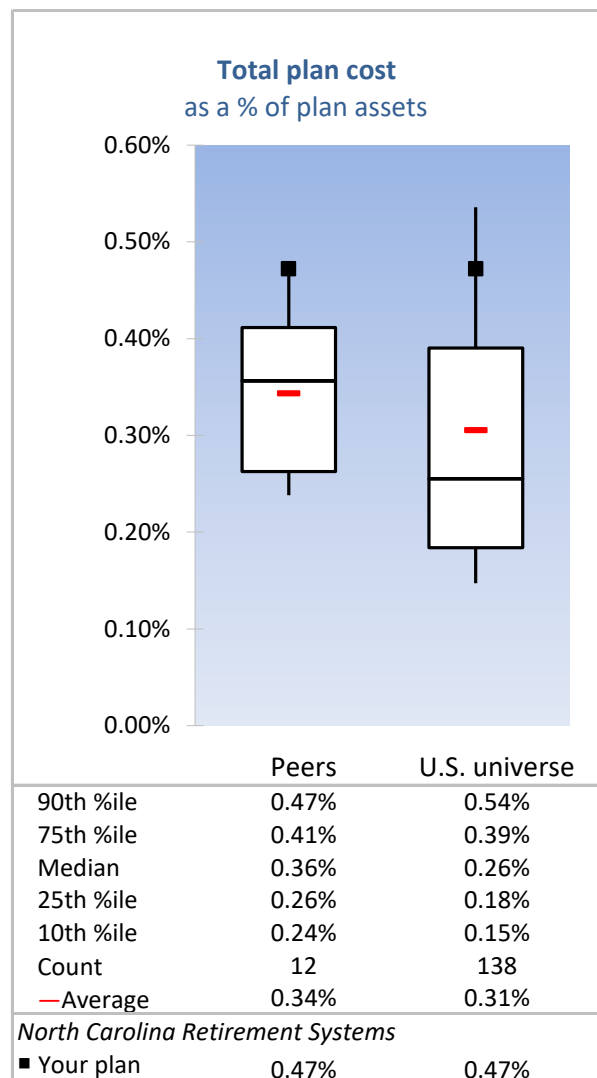
Your plan's total cost was 0.47% of total plan assets (or \$149 per participant) in 2016. This was above the peer median of 0.36%. A detailed breakdown of your total plan cost is shown on the next page.

As a fiduciary, it is very important that you assess whether your costs are reasonable. But comparing total plan cost provides only limited insight because differences in total cost primarily reflect differences in:

- Asset mix, particularly low cost options and options without an explicit cost such as employer stock and stable value.
- Plan size
- Average account balance

Therefore, to help you assess whether your plan costs are reasonable, CEM calculates a benchmark cost for your plan that adjusts for the above differences. Your performance versus benchmark cost is shown on the next page.

Trend: Total plan costs have decreased for the U.S. universe, from 0.35% of plan assets in 2012 to 0.29% in 2016. The primary reason for the decline is that indexed assets increased from 51% of total 'indexable assets' on average in 2012 for the U.S. universe, to 60% in 2016 (refer to page 54).



Trend analysis is based on 88 universe funds and 7 peers with 5 consecutive years of data.

Total plan cost - detailed breakdown

The Department of Labor regulations, ERISA 408(b)(2) and 404(a)(5), deem expenses into three main categories: investment option expenses, administrative expenses and individual participant expenses. Your plan's total cost, excluding individual expenses, was \$44.4 million (0.47% as a percentage of total assets or \$149 per participant) in 2016. Individual expenses are excluded from total plan cost because individuals can choose whether they incur these fees (which include fees for loan processing, transfers, redemptions, QDROs, brokerage windows, managed accounts and investment advice).

Your total plan cost

Investment options	Assets avg. \$mils	Cost, Invest. Mgr %	\$000s	\$ per Partic.
BlackRock - North Carolina Large Cap Passive Fund	1,332	0.01%	91	
Multi-Mgr - North Carolina Large Cap Growth Fund	888	0.42%	3,745	
Multi-Mgr - North Carolina Large Cap Value Fund	904	0.38%	3,415	
BlackRock - North Carolina SMID Cap Passive Fund	233	0.01%	16	
Multi-Mgr - North Carolina SMID Growth Fund	358	0.66%	2,374	
Multi-Mgr - North Carolina SMID Value Fund	467	0.61%	2,841	
Multi-Mgr - North Carolina International Equity Fund	563	0.45%	2,517	
BlackRock - North Carolina International Passive fund	46	0.03%	11	
Multi-Mgr - North Carolina Global Equity Fund	809	0.55%	4,414	
Multi-Mgr - North Carolina Fixed Income Fund	625	0.16%	1,018	
BlackRock - North Carolina Fixed Income Passive fund	406	0.02%	81	
Galliard - North Carolina Stable Value Fund	2,407	0.34%	8,134	
PIMCO - Inflation Responsive Fund	382	0.86%	3,289	
Total expense ratio, investment manager ¹	9,406	0.34%	31,914	107
Administrative expenses		% of Assets	\$000s	\$ per Partic.
Recordkeeping and administration		0.10%	9,142	31
Custodial and trustee		0.01%	1,018	3
Internal oversight		0.02%	1,718	6
Consulting		0.00%	350	1
Other plan costs (legal, audit, etc)		0.00%	250	1
Total administrative expenses		0.13%	12,478	42
Total plan cost		0.47%	44,392	149
Individual participant expenses		% of Assets	\$000s	\$ per Partic.
Participant advice				
Managed account fees				
Other participant expenses (for loans, QDROs, etc.)		0.01%	1,080	4
Total individual participant expenses		0.01%	1,080	4

1. Plan total average assets (9,406) = (total assets eoy 2016 (9,767) + total assets eoy 2015 (9,045)) / 2.

Total % expense ratio (0.34%) = average of option % expense ratios weighted by option assets avg.

Total \$ expense ratio (31,914) = plan total avg. assets (9,406) x % expense ratio (0.34%).

Benchmark cost analysis

To help you assess whether your costs are high or low, and why, CEM calculates a benchmark cost for your plan based on what your peers pay. Your total plan cost was 0.47% of total plan assets. This was 0.07% above your benchmark cost of 0.40%. Reasons for your plan's 0.07% higher cost are summarized in the second table below, and quantified in detail on the following 5 pages.

Total plan cost versus benchmark

Your plan	\$000s	%
Total plan cost	\$44,392	0.47%
Peer-based benchmark cost	\$37,746	0.40%
Excess Cost/-Savings	\$6,646	0.07%

Reasons for your plan's higher cost

Reason	Excess/-Savings	
Paying similar for similar-style investment options	\$196	0.00%
Added cost from active versus indexed options	\$3,631	0.04%
Higher administrative expenses	\$356	0.00%
Less assets in mutual fund windows	-\$35	0.00%
Adjustment for economies of scale, advantage	\$2,497	0.03%
Total excess cost	\$6,646	0.07%

Benchmark cost methodology

Your benchmark cost equals your plan's asset mix multiplied by the size-adjusted peer median cost for each asset category. This methodology neutralizes the following two reasons for differences in plan costs:

- **Asset mix.** Often the biggest reason for differences in total plan costs is differences in asset mix, particularly differences in low cost and uncoded options such as employer stock and stable value. CEM adjusts for asset mix differences by basing your benchmark cost on your plan's unique asset mix.
- **Size.** There are economies of scale in asset management and DC plan administration. CEM adjusts for size primarily by using a peer group of similar sized plans. CEM then uses regression analysis to adjust for residual economies of scale, if any, relative to your peer group. Your benchmark includes a 'Size versus peers adjustment' of 0.03%, which implies that you have a net scale cost advantage relative to your peers. It reflects (rounded to 2 decimals):
 - 0.03% for your plan's scale advantage because its total assets (excluding employer stock and no fee assets) of \$9.8 billion was above the peer average of \$5.5 billion.

Reason 1: Paying same for similar-style investment options

Your plan paid \$196 thousand more (or 0.00% of plan assets), on average, than the peer median cost for similar asset class and implementation style (i.e., active or indexed) investment options.

Cost impact of paying more/-less for your plan's investment options

Provider - Option Name	Asset Class ¹ & Implementation Style	Your Plan	Cost Peer Median	More/-Less (A)	Average Assets \$mills (B)	Cost/-Savings in \$000s (A X B X 1000)
BlackRock - North Carolina Large Cap Passive	Stock U.S. Large Cap - indexed	0.01%	0.02%	-0.01%	1,332	-176
Multi-Mgr - North Carolina Large Cap Growth	Stock U.S. Large Cap	0.42%	0.39%	0.03%	888	281
Multi-Mgr - North Carolina Large Cap Value F	Stock U.S. Large Cap	0.38%	0.39%	-0.01%	904	-112
BlackRock - North Carolina SMID Cap Passive	Stock U.S. Mid Cap - indexed	0.01%	0.05%	-0.04%	233	-100
Multi-Mgr - North Carolina SMID Growth Fun	Stock U.S. Mid Cap	0.66%	0.64%	0.02%	358	70
Multi-Mgr - North Carolina SMID Value Fund	Stock U.S. Mid Cap	0.61%	0.64%	-0.04%	467	-165
Multi-Mgr - North Carolina International Equi	Stock Non U.S.	0.45%	0.50%	-0.05%	563	-298
BlackRock - North Carolina International Pass	Stock Non U.S. - indexed	0.03%	0.07%	-0.05%	46	-20
Multi-Mgr - North Carolina Global Equity Fun	Stock Global	0.55%	0.52%	0.02%	809	186
Multi-Mgr - North Carolina Fixed Income Fun	Bonds Broad	0.16%	0.25%	-0.09%	625	-543
BlackRock - North Carolina Fixed Income Pass	Bonds Broad - indexed	0.02%	0.04%	-0.02%	406	-81
Galliard - North Carolina Stable Value Fund	Stable Value (ex GIC)	0.34%	0.29%	0.05%	2,407	1,155
PIMCO - Inflation Responsive Fund*	Other	0.86%	0.86%	0.00%	382	0
Total				0.00%	9,415	196

1. The stock asset classes combine the styles: growth, value, broad. Therefore, one reason costs may be higher or lower is differences in proportions of these styles. Starting on page 40 costs are compared on an uncombined basis by style.

* The PIMCO - Inflation Responsive Fund has been neutralized in the benchmark cost because a good comparison does not exist for this option.

Reason 2: Added cost from active versus indexed options

In 2016, 69% of your plan's assets (excluding employer stock and stable value) were invested in actively managed options versus an average of 56% for your peers. Actively managed options attempt to outperform a benchmark index, such as the S&P 500, whereas indexed options (aka passive) are designed to replicate a benchmark index.

Management fees for actively managed options tend to be much higher than for indexed options. For example, within your peer group, management fees for actively managed options ranged from 0.21% to 0.59% higher than management fees for similar-type, indexed options. Therefore, plans with more actively managed assets tend to have higher overall costs.

Your plan's higher proportion of assets in actively managed options increased your costs by \$3,631 thousand (or 0.04% of plan assets), on average, relative to your peers.

Cost impact of investment options being more/-less actively managed

Indexable Option Types ¹	Active Premium ²	% Actively Managed		Average Assets \$mills (D)	Cost/-Savings in \$000s ⁴ A x (B-C) x D
		Your Plan (B)	Peer Average ³ (C)		
Stock U.S. Broad or Large Cap	0.37%	57%	45%	3,123	1,329
Stock U.S. Mid Cap	0.59%	78%	61%	1,057	1,069
Stock Non U.S.	0.43%	93%	56%	609	964
Stock Global	0.52%	100%	100%	809	0
Bonds Broad	0.21%	60%	48%	1,031	270
Total		69%	56%	6,627	3,631
Total as a % of plan assets					0.04%

1. Only option types where both indexed and active management styles are relevant are shown. Thus employer stock, stable value funds and loans are excluded from assets for the purpose of this comparison.

2. The active premium is the additional cost of external active management relative to passive management for each asset class (based on the peer group).

3. The total peer average is weighted by your plan's assets in indexable options. The total peer average is 48% when weighted by each peer's assets in indexable options.

4. Cost/-Savings for each option type equals the amount by which you are more/-less actively managed than the peer average, multiplied by the active premium multiplied by your plan's average assets in the option type.

Reason 3: Equal administrative expenses

Your plan's total administrative expenses were 0.13% of total plan assets. This was the same as the comparable peer median cost of 0.13%.

Administrative expenses

	Cost as a % of plan assets		Cost/ -Savings	
	Your Plan	Peer Benchmark ¹	%	\$000s
Administrative Service	(A)	(B)	(A - B)	
Total administrative expenses after rebates	0.13%	0.13%	0.00%	\$356

1. Peer Benchmark = Peer median admin cost per member (\$41) x Total number of your fund's members (298,337) / Your fund's average holdings (\$9.41 bln)

The components of administrative expenses are compared in more detail on page 43.

Reason 4: Lower mutual fund window assets

Mutual fund windows (MFWs) are a self-directed supplement to a plan's core investment option menu. MFWs give plan participants access to a variety of additional mutual fund options. Participants may or may not have to pay additional fees for access to the mutual fund window. 17% of peer plans offer MFWs.

Your plan does not offer a mutual fund window, and peer assets in mutual fund windows averaged close to zero. So mutual fund windows had almost no impact on your relative cost performance.

Cost impact of mutual fund windows (MFW)

MFW Assets as a % of Total Assets			MFW Premium ¹	Cost/ -Savings	
Your Plan	Peer Average	More/ -Less		%	\$000s
		(A)	(B)	(A X B)	
0.0%	0.1%	-0.1%	0.61%	0.00%	-\$35

1. The MFW premium is the difference between the estimated universe median cost of funds in mutual fund windows of 0.88% versus the weighted average peer cost of 'managed' assets of 0.27%.

Are your total plan costs reasonable?

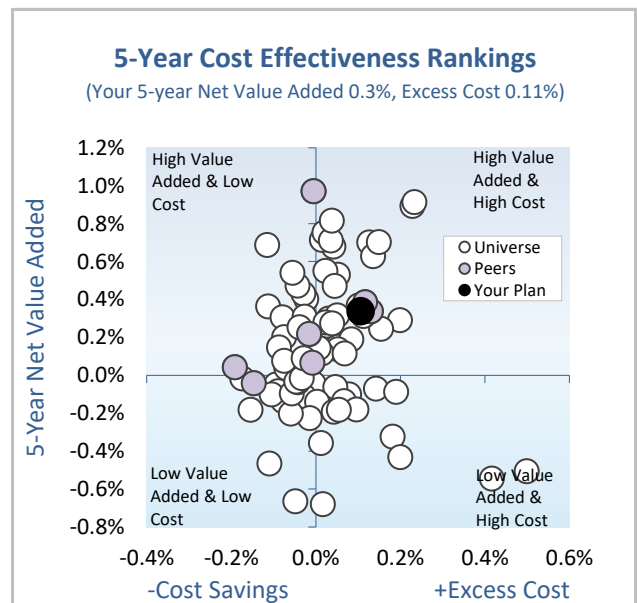
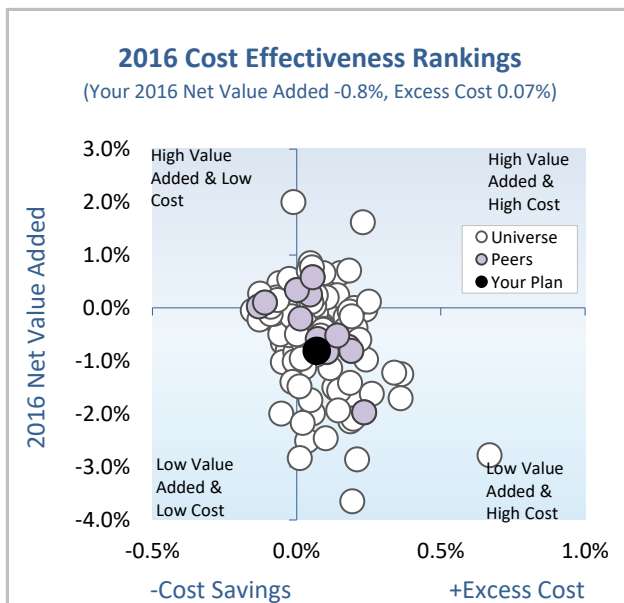
As a plan fiduciary, it is important to assess whether your costs are reasonable. To make this assessment, some things to consider are:

- Are your plan costs high or low relative to your benchmark and why? Even if you are low cost you should understand why.
- Participant choices impact costs. For example, if your plan offers both an indexed and actively managed alternative for an asset class and the costs are transparent, if participants actively choose the higher cost active alternative, the choice itself implies that participants feel the added cost is reasonable.
- Services received and quality of those services
- Reputation of the service provider and their commitment to the retirement industry
- Cost effectiveness - If you pay more, you should expect your plan options, on average, to earn more value added (relative to indexed alternatives) in the future over a multi-year period.
- Materiality of cost differences, especially relative to the cost of changing service providers or investment options.

Cost effectiveness

The charts below show your plan's cost effectiveness ranking for 2016 and for the 5-year cost period ending 2016. Longer-time periods are preferable for assessing cost effectiveness because net value added performance is very volatile. Your plan ranked on the high value added/ high cost quadrant on the 5-year cost effectiveness chart.

In an ideal world, the more you pay (i.e., the larger your excess cost) the more you get (i.e., the higher your net value add). If this were true, the graph would depict an upward sloping relationship. Clearly, this is not the case. CEM's research has shown consistently that there is no relationship between what plans spend and what they receive.



6

Monitoring Investment Options & Admin

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- 43 Administrative services
- 44 Individual participant expenses
- 45 Managed accounts
- 46 Internal staff overseeing the plan

Monitoring investment options

As a fiduciary, you must monitor your plan's investment options to ensure that they continue to be prudent choices given their investment performance, costs and fees. They should also be monitored to ensure that they continue to fulfill the style niche for which they were selected.

In the remaining pages of this section we help you do this by comparing the return, value added and cost performance of each of your investment options to peers and the U.S. universe with similarly styled mandates (i.e., actively managed large capitalization U.S. stock, actively managed small capitalization U.S. stock, etc.) . Each of these measures is defined below:

- Net return is the return earned after deduction of costs associated with managing and administering the investment option. If available, the return on the option is provided for 1 and 5 year timeframes, but only if the option was offered in your plan during that time frame.
- Net value added equals net return minus benchmark return associated with the investment option. The benchmark return is the return on a relevant market index, such as the S&P500 for U.S. large capitalization stock mandates. For indexed options, the goal is to replicate the index and value added should be slightly less than zero after costs. For actively managed options the goal is to outperform the benchmark index. If available, the net value added is provided for 1 and 5 year time frames, but only if the option was offered in your plan during that time frame.
- Cost is the expense ratio of investment management of each investment option.

Ranking methodology

In the "Rank" charts on the next pages of this section, the ranking scale has 5 buckets:

- lowest and highest buckets: bottom 10% (Low), top 10% (High),
- mid buckets are divided into 3 approximately equal segments: 10%-36% (Below Average), 36%-63% (Average), 63%-90% (Above Average).

Performance is highlighted in red if costs are higher than 90% of the peers' costs, or if returns or value added are in the bottom 10% relative to the universe. This highlight is not applied when the differences between the option value and those of the peers or the universe are immaterial, or there is not enough peer or universe data. Material differences are defined as: option cost is at least 5 bps higher than the peer median; option return is at least 0.5% lower than the universe median. In addition, a minimum of 5 peer or universe data points are required to apply the outlier highlight.

Monitoring investment options

page 1 of 2

Investment Option	Your	Rank vs. peers				Rank vs. universe				Peers							U.S. universe						
	plan	%ile	Low	Avg	High	%ile	Low	Avg	High	Avg	10th	25th	Med	75th	90th	#	Avg	10th	25th	Med	75th	90th	#
BlackRock - North Carolina Large Cap Passive Fund		Stock U.S. Broad or Large Cap Indexed																					
2016 Cost, Invest. Mgr.	0.01%	0%		5%		0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	11	0.03%	0.01%	0.01%	0.02%	0.03%	0.04%	134				
2016 Net Return	11.9%	10%		14%		12.1%	11.9%	11.9%	12.0%	12.0%	12.8%	11	12.0%	11.8%	11.9%	12.0%	12.0%	12.5%	132				
2016 Net Value Added	-0.1%	10%		8%		0.0%	-0.1%	0.0%	0.0%	0.0%	0.1%	11	0.0%	-0.1%	-0.1%	0.0%	0.0%	0.0%	132				
5-yr Net Return	14.5%	17%		15%		14.6%	14.5%	14.5%	14.7%	14.7%	14.7%	7	14.6%	14.5%	14.6%	14.6%	14.7%	14.7%	83				
5-yr Net Value Added	-0.2%	17%		10%		0.0%	-0.2%	-0.1%	0.0%	0.0%	0.1%	7	0.0%	-0.2%	-0.1%	0.0%	0.0%	0.0%	83				
Multi-Mgr - North Carolina Large Cap Growth Fund		Stock U.S. Broad or Large Cap Active																					
2016 Cost, Invest. Mgr.	0.42%	86%		54%		0.41%	0.33%	0.35%	0.39%	0.42%	0.49%	8	0.42%	0.27%	0.33%	0.41%	0.51%	0.61%	113				
2016 Net Return	0.4%	0%		1%		9.2%	6.5%	8.1%	9.2%	10.3%	12.1%	8	8.2%	3.5%	6.1%	8.3%	10.7%	11.9%	112				
2016 Net Value Added	-6.7%	0%		12%		-2.1%	-3.9%	-3.6%	-2.7%	-2.3%	0.1%	8	-3.0%	-7.2%	-4.8%	-2.7%	-1.2%	0.3%	112				
5-yr Net Return	13.6%	0%		13%		15.2%	14.5%	14.9%	15.3%	15.4%	15.7%	5	14.7%	13.3%	14.0%	14.8%	15.3%	15.9%	61				
5-yr Net Value Added	-0.9%	0%		10%		0.5%	-0.1%	0.2%	0.4%	0.8%	1.1%	5	0.1%	-0.9%	-0.6%	0.1%	0.8%	1.1%	61				
Multi-Mgr - North Carolina Large Cap Value Fund		Stock U.S. Broad or Large Cap Active																					
2016 Cost, Invest. Mgr.	0.38%	41%		36%		0.41%	0.33%	0.35%	0.39%	0.42%	0.49%	8	0.42%	0.27%	0.33%	0.41%	0.51%	0.61%	113				
2016 Net Return	16.8%	100%		100%		9.2%	6.5%	8.1%	9.2%	10.3%	12.1%	8	8.2%	3.5%	6.1%	8.3%	10.7%	11.9%	112				
2016 Net Value Added	-0.5%	88%		83%		-2.1%	-3.9%	-3.6%	-2.7%	-2.3%	0.1%	8	-3.0%	-7.2%	-4.8%	-2.7%	-1.2%	0.3%	112				
5-yr Net Return	14.9%	25%		58%		15.2%	14.5%	14.9%	15.3%	15.4%	15.7%	5	14.7%	13.3%	14.0%	14.8%	15.3%	15.9%	61				
5-yr Net Value Added	0.1%	21%		50%		0.5%	-0.1%	0.2%	0.4%	0.8%	1.1%	5	0.1%	-0.9%	-0.6%	0.1%	0.8%	1.1%	61				
BlackRock - North Carolina SMID Cap Passive Fund		Stock U.S. Mid Cap Indexed																					
2016 Cost, Invest. Mgr.	0.01%	0%		0%		0.04%	0.02%	0.04%	0.05%	0.05%	0.06%	4	0.05%	0.02%	0.03%	0.05%	0.07%	0.07%	59				
2016 Net Return	17.7%	67%		63%		15.2%	11.2%	11.3%	14.5%	18.4%	19.8%	4	16.6%	11.2%	15.9%	16.2%	20.6%	20.7%	57				
2016 Net Value Added	0.1%	100%		59%		0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	4	0.7%	-0.2%	-0.1%	0.0%	0.2%	0.4%	57				
5-yr Net Return	14.5%	0%		17%		14.9%	14.6%	14.7%	14.9%	15.0%	15.2%	2	14.9%	14.4%	14.5%	15.0%	15.3%	15.3%	24				
5-yr Net Value Added	0.1%	100%		78%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0.1%	-0.3%	-0.1%	0.0%	0.1%	0.2%	24				
Multi-Mgr - North Carolina SMID Growth Fund		Stock U.S. Mid Cap Active																					
2016 Cost, Invest. Mgr.	0.66%	64%		61%		0.61%	0.43%	0.51%	0.64%	0.69%	0.76%	6	0.63%	0.42%	0.53%	0.63%	0.71%	0.82%	56				
2016 Net Return	8.6%	3%		35%		13.5%	9.4%	11.2%	13.0%	14.8%	18.0%	6	11.2%	6.1%	7.6%	11.1%	13.5%	17.4%	56				
2016 Net Value Added	-1.1%	60%		64%		-0.6%	-4.4%	-2.6%	-1.2%	2.2%	3.9%	6	-3.1%	-8.4%	-6.5%	-2.5%	-0.4%	3.3%	56				
5-yr Net Return	13.3%	0%		24%		15.8%	14.5%	14.6%	14.9%	16.5%	17.4%	3	14.1%	11.9%	13.4%	14.0%	15.0%	16.9%	29				
5-yr Net Value Added	-0.6%	0%		37%		1.5%	-0.2%	0.0%	0.4%	2.4%	3.7%	3	-0.4%	-2.6%	-1.7%	-0.2%	0.7%	1.1%	29				
Multi-Mgr - North Carolina SMID Value Fund		Stock U.S. Mid Cap Active																					
2016 Cost, Invest. Mgr.	0.61%	37%		40%		0.61%	0.43%	0.51%	0.64%	0.69%	0.76%	6	0.63%	0.42%	0.53%	0.63%	0.71%	0.82%	56				
2016 Net Return	20.6%	100%		96%		13.5%	9.4%	11.2%	13.0%	14.8%	18.0%	6	11.2%	6.1%	7.6%	11.1%	13.5%	17.4%	56				
2016 Net Value Added	-4.6%	8%		39%		-0.6%	-4.4%	-2.6%	-1.2%	2.2%	3.9%	6	-3.1%	-8.4%	-6.5%	-2.5%	-0.4%	3.3%	56				
5-yr Net Return	16.1%	68%		83%		15.8%	14.5%	14.6%	14.9%	16.5%	17.4%	3	14.1%	11.9%	13.4%	14.0%	15.0%	16.9%	29				
5-yr Net Value Added	1.0%	58%		88%		1.5%	-0.2%	0.0%	0.4%	2.4%	3.7%	3	-0.4%	-2.6%	-1.7%	-0.2%	0.7%	1.1%	29				
Multi-Mgr - North Carolina International Equity Fund		Stock Non U.S. Active																					
2016 Cost, Invest. Mgr.	0.45%	13%		14%		0.51%	0.40%	0.45%	0.50%	0.52%	0.65%	9	0.58%	0.42%	0.49%	0.55%	0.69%	0.83%	103				
2016 Net Return	5.5%	75%		86%		1.7%	-3.1%	1.0%	1.0%	5.5%	5.9%	9	1.7%	-3.6%	0.0%	1.3%	3.9%	5.9%	100				
2016 Net Value Added	0.5%	63%		71%		-1.5%	-3.9%	-3.5%	-2.5%	0.6%	1.4%	9	-1.0%	-4.6%	-3.5%	-1.0%	0.8%	3.8%	100				
5-yr Net Return	6.0%	0%		24%		6.9%	6.3%	6.9%	7.2%	7.2%	7.2%	4	6.9%	5.6%	6.1%	7.0%	7.5%	8.0%	60				
5-yr Net Value Added	0.5%	33%		44%		0.6%	0.1%	0.4%	0.8%	1.0%	1.1%	4	0.7%	-0.4%	0.1%	0.6%	1.2%	2.1%	60				
BlackRock - North Carolina International Passive fund		Stock Non U.S. Indexed																					
2016 Cost, Invest. Mgr.	0.03%	0%		1%		0.07%	0.03%	0.06%	0.07%	0.09%	0.10%	9	0.08%	0.05%	0.06%	0.08%	0.10%	0.11%	97				
2016 Net Return	5.1%	75%		79%		4.5%	3.2%	4.4%	4.7%	5.1%	5.2%	9	3.9%	1.4%	2.5%	4.7%	4.8%	5.2%	95				
2016 Net Value Added	0.1%	50%		34%		0.3%	0.0%	0.0%	0.1%	0.8%	0.9%	9	0.5%	-0.1%	0.0%	0.4%	0.8%	1.0%	95				
5-yr Net Return	4.9%	0%		5%		5.7%	5.1%	5.4%	5.5%	6.2%	6.4%	6	6.0%	5.1%	5.5%	5.7%	6.7%	6.8%	56				
5-yr Net Value Added	-0.5%	0%		5%		0.1%	-0.3%	0.0%	0.1%	0.3%	0.4%	6	0.0%	-0.2%	-0.1%	0.1%	0.2%	0.3%	56				

Monitoring investment options

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Investment Option	Your plan	Rank vs. peers				Rank vs. universe				Peers								U.S. universe							
		%ile	Low	Avg	High	%ile	Low	Avg	High	Avg	10th	25th	Med	75th	90th	#	Avg	10th	25th	Med	75th	90th	#		
Multi-Mgr - North Carolina Global Equity Fund										Stock Global Active															
2016 Cost, Invest. Mgr.	0.55%	100%	■	■	■	■	■	■	■	54%	■	■	■	■	■	2	0.54%	0.28%	0.45%	0.51%	0.65%	0.84%	27		
2016 Net Return	6.0%	100%	■	■	■	■	■	■	■	80%	■	■	■	■	■	2	3.4%	-2.1%	1.0%	2.9%	5.6%	7.3%	26		
2016 Net Value Added	-2.5%	100%	■	■	■	■	■	■	■	52%	■	■	■	■	■	2	-3.2%	-5.7%	-5.3%	-2.6%	-1.4%	-0.4%	26		
5-yr Net Return	11.8%	100%	■	■	■	■	■	■	■	100%	■	■	■	■	■	2	10.8%	9.5%	10.4%	11.2%	11.5%	11.6%	8		
5-yr Net Value Added	1.9%	100%	■	■	■	■	■	■	■	100%	■	■	■	■	■	2	0.5%	-0.5%	-0.4%	0.4%	1.1%	1.7%	8		
Multi-Mgr - North Carolina Fixed Income Fund										Bonds Broad Active															
2016 Cost, Invest. Mgr.	0.16%	38%	■	■	■	■	■	■	■	15%	■	■	■	■	■	9	0.31%	0.14%	0.19%	0.33%	0.44%	0.46%	82		
2016 Net Return	4.0%	38%	■	■	■	■	■	■	■	63%	■	■	■	■	■	9	3.7%	2.6%	2.6%	3.4%	4.5%	5.6%	81		
2016 Net Value Added	1.3%	38%	■	■	■	■	■	■	■	61%	■	■	■	■	■	9	1.1%	-0.1%	0.0%	0.7%	1.7%	3.0%	81		
5-yr Net Return	3.7%	89%	■	■	■	■	■	■	■	86%	■	■	■	■	■	4	3.0%	2.3%	2.5%	3.0%	3.3%	3.9%	43		
5-yr Net Value Added	0.6%	19%	■	■	■	■	■	■	■	34%	■	■	■	■	■	4	0.8%	0.0%	0.3%	0.8%	1.2%	1.7%	43		
BlackRock - North Carolina Fixed Income Passive fund										Bonds Broad Indexed															
2016 Cost, Invest. Mgr.	0.02%	0%	■	■	■	■	■	■	■	3%	■	■	■	■	■	8	0.04%	0.02%	0.03%	0.04%	0.05%	0.06%	93		
2016 Net Return	2.6%	14%	■	■	■	■	■	■	■	27%	■	■	■	■	■	8	2.6%	2.5%	2.6%	2.6%	2.6%	2.7%	92		
2016 Net Value Added	-0.1%	43%	■	■	■	■	■	■	■	44%	■	■	■	■	■	8	-0.1%	-0.2%	-0.2%	-0.1%	0.0%	0.0%	92		
5-yr Net Return	2.9%	100%	■	■	■	■	■	■	■	98%	■	■	■	■	■	4	2.2%	2.1%	2.1%	2.2%	2.2%	2.3%	54		
5-yr Net Value Added	-0.1%	0%	■	■	■	■	■	■	■	8%	■	■	■	■	■	4	-0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%	54		
Galliard - North Carolina Stable Value Fund										Stable Value (ex GIC)															
2016 Cost, Invest. Mgr.	0.34%	67%	■	■	■	■	■	■	■	68%	■	■	■	■	■	10	0.32%	0.19%	0.27%	0.31%	0.35%	0.44%	93		
2016 Net Return	2.0%	56%	■	■	■	■	■	■	■	65%	■	■	■	■	■	10	1.9%	1.5%	1.7%	1.8%	2.1%	2.5%	92		
2016 Net Value Added	1.0%	67%	■	■	■	■	■	■	■	48%	■	■	■	■	■	10	0.9%	0.1%	0.3%	1.0%	1.4%	1.7%	92		
5-yr Net Return	2.1%	50%	■	■	■	■	■	■	■	56%	■	■	■	■	■	5	2.0%	1.3%	1.6%	2.0%	2.3%	2.8%	55		
5-yr Net Value Added	1.0%	75%	■	■	■	■	■	■	■	46%	■	■	■	■	■	5	1.0%	0.0%	0.4%	1.1%	1.6%	2.0%	55		
PIMCO - Inflation Responsive Fund										Other															
2016 Cost, Invest. Mgr.	0.86%	100%	■	■	■	■	■	■	■	83%	■	■	■	■	■	3	0.50%	0.11%	0.18%	0.53%	0.71%	0.91%	36		
2016 Net Return	10.5%	100%	■	■	■	■	■	■	■	51%	■	■	■	■	■	3	10.2%	6.1%	7.1%	9.3%	13.5%	14.9%	36		
2016 Net Value Added	3.7%	100%	■	■	■	■	■	■	■	80%	■	■	■	■	■	3	1.3%	-1.4%	-0.2%	0.3%	2.9%	4.5%	36		
5-yr Net Return	n/a	n/a	■	■	■	■	■	■	■	n/a	■	■	■	■	■	1	-0.4%	-7.7%	-2.1%	0.1%	0.9%	6.1%	13		
5-yr Net Value Added	n/a	n/a	■	■	■	■	■	■	■	n/a	■	■	■	■	■	1	-0.9%	-2.8%	-1.3%	-0.6%	0.1%	1.3%	13		

Administrative services

When assessing the reasonableness of costs for administrative services it is critical to consider the services provided and the quality of those services. Quality is particularly difficult to benchmark for this cost category. Also, special projects can cause spikes in your plan's costs that need to be considered. Judgment is required.

The administration cost comparisons are shown on both a 'per participant' basis as a percentage of plan assets. The largest cost, Recordkeeping, is typically priced on a per participant basis.

The 'Rank' charts below and on the next page follow the ranking methodology described on page 40, 'Monitoring investment options', except for the comparisons with peer medians to mark outliers. The 'Rank' charts are highlighted in red when: '\$ Cost per participant' is at least 50% higher than the peer median, 'Cost as a % of plan assets' is at least 0.5 bps higher than the peer median.

Administrative service	Your plan	Rank vs peers				Peers							U.S. universe						
		%ile	Low	Avg	High	Avg	10th	25th	Med	75th	90th	#	Avg	10th	25th	Med	75th	90th	#
\$ Cost per participant ¹																			
Recordkeeping & admin.	\$31	36%			\$40	\$24	\$30	\$35	\$51	\$56	12	\$60	\$28	\$35	\$46	\$60	\$81	138	
Custody, trustee	\$3	67%			\$3	\$0	\$1	\$2	\$4	\$6	7	\$17	\$2	\$4	\$10	\$18	\$31	92	
Internal oversight	\$6	55%			\$6	\$1	\$3	\$6	\$8	\$13	12	\$14	\$2	\$5	\$8	\$15	\$30	138	
Consulting	\$1	43%			\$3	\$0	\$1	\$1	\$3	\$6	8	\$7	\$1	\$2	\$4	\$9	\$16	97	
Other plan costs	\$1	38%			\$5	\$0	\$1	\$2	\$4	\$10	9	\$7	\$1	\$2	\$4	\$9	\$20	110	
Total	\$42	36%			\$54	\$37	\$39	\$46	\$62	\$82	12	\$95	\$40	\$52	\$75	\$103	\$143	138	
Total, after rebates	\$42	55%			\$47	\$33	\$33	\$41	\$50	\$80	12	\$90	\$36	\$48	\$73	\$102	\$134	138	
Cost as a % of plan assets ¹																			
Recordkeeping & admin.	0.10%	55%			0.10%	0.04%	0.07%	0.09%	0.12%	0.12%	12	0.06%	0.02%	0.03%	0.03%	0.06%	0.12%	138	
Custody, trustee	0.01%	100%			0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	7	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	92	
Internal oversight	0.02%	73%			0.02%	0.00%	0.00%	0.01%	0.02%	0.03%	12	0.01%	0.00%	0.00%	0.01%	0.01%	0.03%	138	
Consulting	0.00%	71%			0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	8	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	97	
Other plan costs	0.00%	38%			0.01%	0.00%	0.00%	0.00%	0.00%	0.02%	9	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	110	
Total	0.13%	64%			0.13%	0.07%	0.09%	0.12%	0.14%	0.19%	12	0.09%	0.03%	0.04%	0.06%	0.09%	0.19%	138	
Total, after rebates	0.13%	73%			0.11%	0.06%	0.08%	0.09%	0.13%	0.15%	12	0.09%	0.03%	0.04%	0.06%	0.09%	0.17%	138	

1. Administration costs are compared gross before reductions due to revenue sharing. 8% of your peers, and 23% of the U.S. universe used revenue sharing to reduce administrative expenses.

Individual participant expenses

Individual participant expenses are costs that are usually charged to individual participants using a service, such as fees for managed accounts, excessive switches/transfers, loan administration, hardship withdrawals, investment advice, QDROS, etc. As fiduciaries, you are required to ensure that these costs are reasonable as well.

Individual expenses are excluded from total plan cost because at most plans individuals can choose whether they incur these fees.

Individual expenses rounded to 0.00% of plan assets for both your plan and its peers. But, individual expenses need to be considered by service category and service levels and quality within each category. Comparisons by service category are summarized in the table below. Managed account fees tend to be the biggest individual expense if the service is offered.

Individual participant service	Your plan	Rank vs. peers				Peers							U.S. universe						
		%ile	Low	Avg	High	Avg	10th	25th	Med	75th	90th	#	Avg	10th	25th	Med	75th	90th	#
Managed account fees																			
• per managed acct.	n/a	n/a				\$112	\$112	\$112	\$112	\$112	\$112	1	\$446	\$142	\$248	\$426	\$605	\$801	49
• % of man. acct. assets	n/a	n/a				0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	1	0.28%	0.14%	0.18%	0.29%	0.35%	0.43%	49
Participant advice fees																			
• per plan participant	n/a	n/a				\$16	\$3	\$8	\$16	\$25	\$30	2	\$9	\$3	\$4	\$6	\$10	\$16	28
• % of plan assets	n/a	n/a				0.03%	0.01%	0.02%	0.03%	0.05%	0.06%	2	0.01%	0.00%	0.00%	0.00%	0.01%	0.03%	28
Other Indiv. Expenses ¹																			
• per plan participant	\$4	33%				\$6	\$2	\$3	\$4	\$9	\$13	7	\$9	\$2	\$4	\$7	\$11	\$19	91
• % of plan assets	0.01%	0%				0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	7	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	91
Total Participant Expenses																			
• per plan participant	\$4	29%				\$12	\$2	\$3	\$5	\$18	\$34	8	\$33	\$3	\$6	\$16	\$45	\$85	105
• % of plan assets	0.01%	0%				0.03%	0.01%	0.01%	0.01%	0.03%	0.07%	8	0.03%	0.00%	0.01%	0.01%	0.03%	0.07%	105

1. Other individual expenses include costs for transactions such as QDROS or loans or switches/transfers or hardship withdrawals. These costs tend to be relatively immaterial, so only their aggregate costs are shown in the table above. Differences in other individual expenses may reflect differences in service volumes. For example, your plan may have higher volumes of loans, or higher volumes of QDROs, etc.

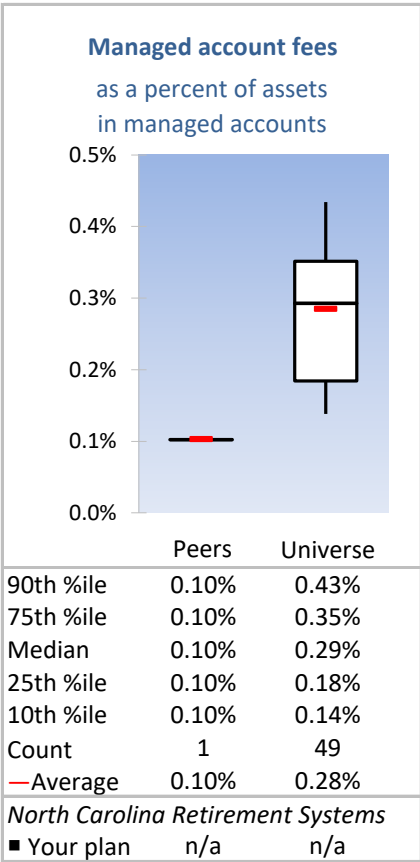
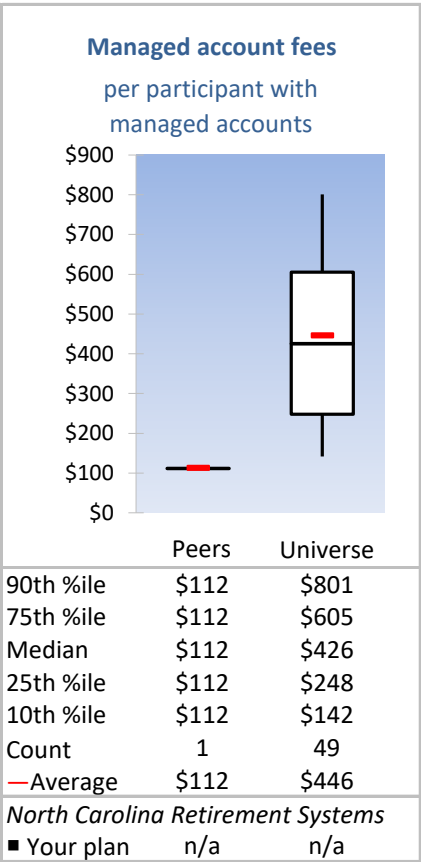
Managed accounts

In a managed account, an independent investment manager selects plan options on behalf of participants. The manager makes portfolio changes as needed based on each participant’s specific needs and risk tolerance, and rebalances the portfolio at predetermined intervals.

Managed account costs are not included in total plan costs for benchmarking purposes because they are considered to be 'individual expenses'. Individual expenses are fees that are typically charged only to the participants using the service. They include fees for loan processing, transfers, redemptions, QDROs, brokerage windows and investment advice. Individual participants can choose whether they buy the service and incur the cost.

Your plan does not offer a managed account service. The graphs below show how managed account costs compare for the 25% of peers and 44% of the U.S. universe that offer managed accounts.

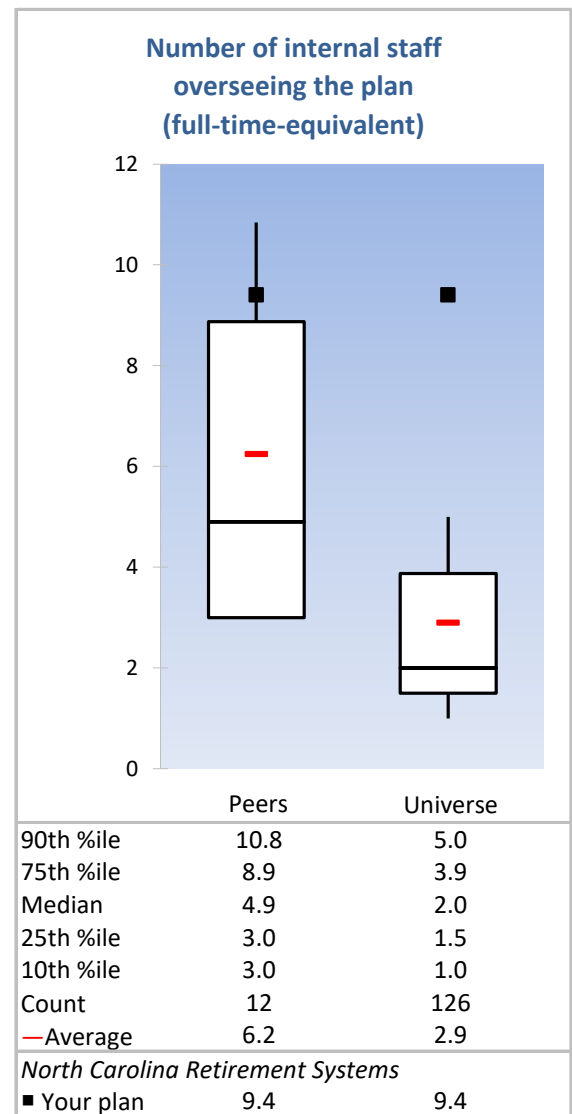
	Your plan	Peer	Universe
Does your plan offer a managed account service?	No	25% Yes	44% Yes
If yes:			
% of plan assets in managed accounts	n/a	20%	11%
% of participants using managed accounts	n/a	11%	11%
Is managed accounts the default option?	n/a	0% Yes	1% Yes



Internal staff overseeing the plan

You had 9.4 internal FTE staff overseeing the plan. This was above the peer average of 6.2.

There is no visible relationship between the number of internal FTE and total plan assets or the number of investment options. Interestingly, the universe average number of internal FTEs has not changed much over the past 5 years when during the same time period there was a 30%-50% increase in total assets per FTE.



7

Participant Success and Plan Design

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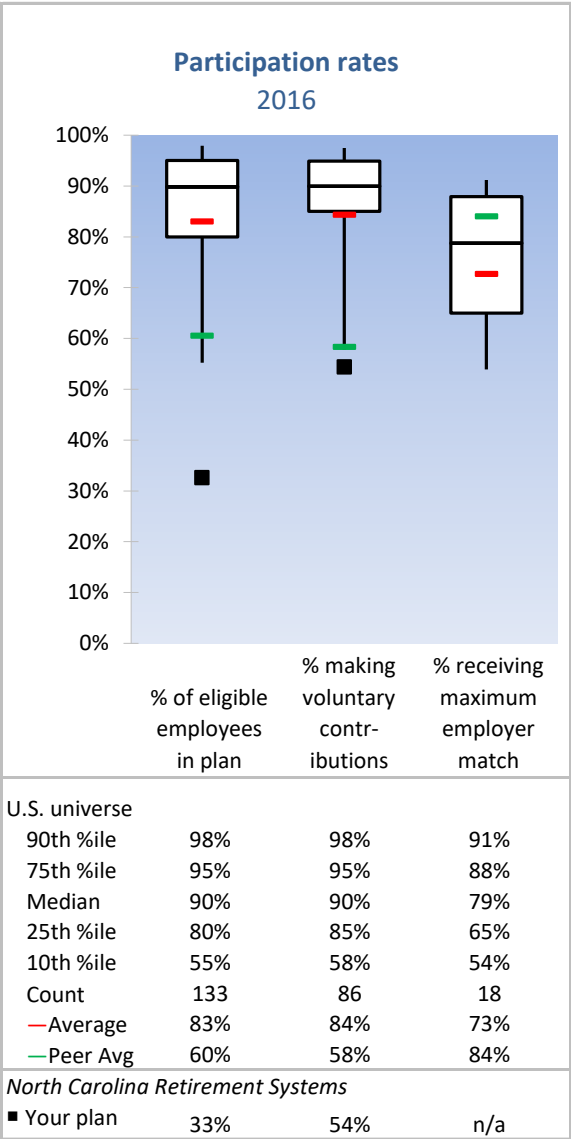
Participation rates

We compare three different participation rates:

- Percent of eligible employees in the plan. Clearly, this is a critical success factor because non-participants are much less likely to achieve their financial goals for retirement.
- Percent of plan participants making voluntary contributions (including auto enrollment contributions if participants can opt out). 54% of your plan's participants, and an average of 58% of peers' participants, made voluntary contributions.
- Percent receiving the maximum employer match. An average of 84% of peers' participants, receive the maximum employer match.

Differences in participation rates reflect:

- Whether participation is mandatory. Participation is mandatory for 10% of your peers.
- Auto enrollment. Your plan does not have auto enrollment. 36% of peer plans have auto enrollment.
- Whether auto enrollment was applied to all non-participating employees when it was first introduced, or only to future employees.
- Education and communication.
- Participant demographics.
- Whether the DC plan is the primary or supplemental retirement savings vehicle for participants. Your plan is considered supplemental because its participants also participate in an accruing defined benefit plan.



of primary vs. supplemental plans

Type	You	Peers	Universe
Primary		1	33
Supplemental	Yes	9	64
Both ¹		2	40
		12	137

1. Some sponsors have both a primary and a supplementary DC plan. This can occur, for example, if (i) the DB plan is closed to new members and new employees participate in a primary DC, or (ii) new members must choose between a primary DB and primary DC.

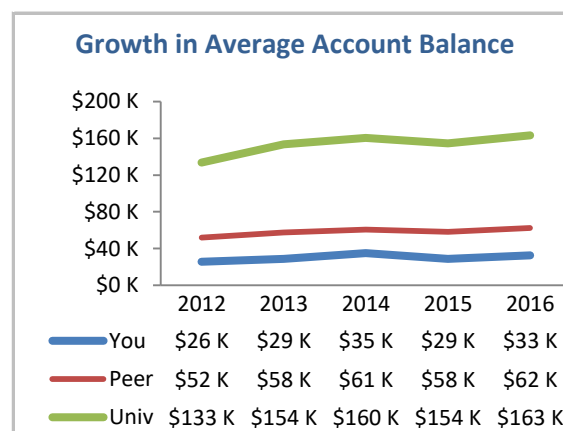
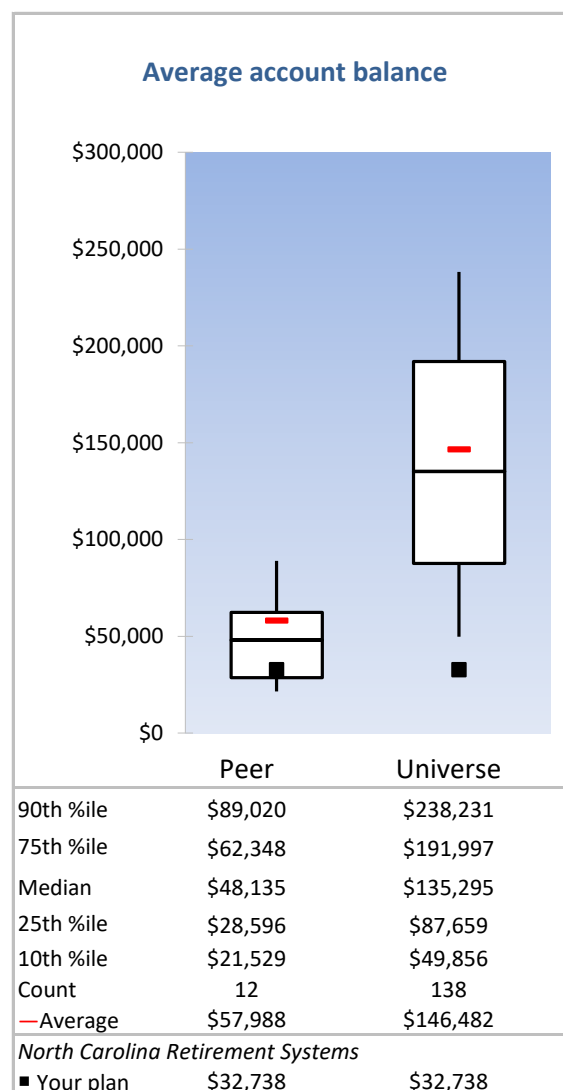
Average account balance

The size of, and growth in, participant account balances are critical success measures. Many participants monitor their account balances regularly.

The average account balance of participants in your plan was \$32,738 in 2016. This was below the peer median of \$48,135. Differences in average account balance reflect differences in:

- Employer and employee contribution rates.
- Long-term plan success (returns, cost effectiveness, investment option asset mix).
- Plan design and participant education because they impact both of the above.
- Education and communication.
- Participant demographics.
- Whether the DC plan is the primary or supplemental retirement savings vehicle for participants. Your plan is considered supplemental because its participants also participate in an accruing defined benefit plan.
- Participant demographics including age, education levels, compensation and time in plan.

The size of account balances also impacts costs. Plans with higher average account balances tend to have lower administrative expenses as a percentage of plan assets because administrative expenses, such as record keeping, tend to be priced on a per participant basis (even if they are hidden in bundled arrangements).

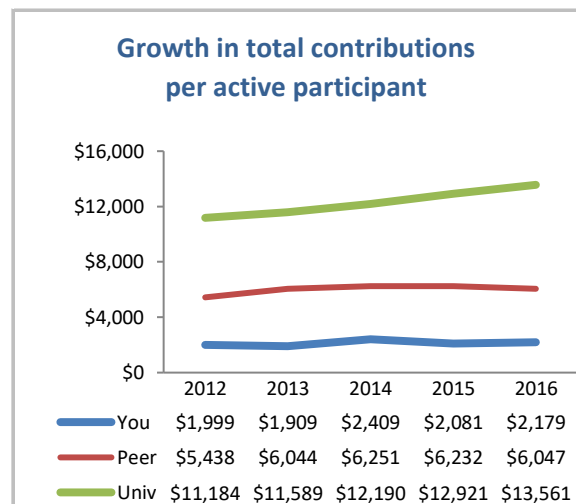
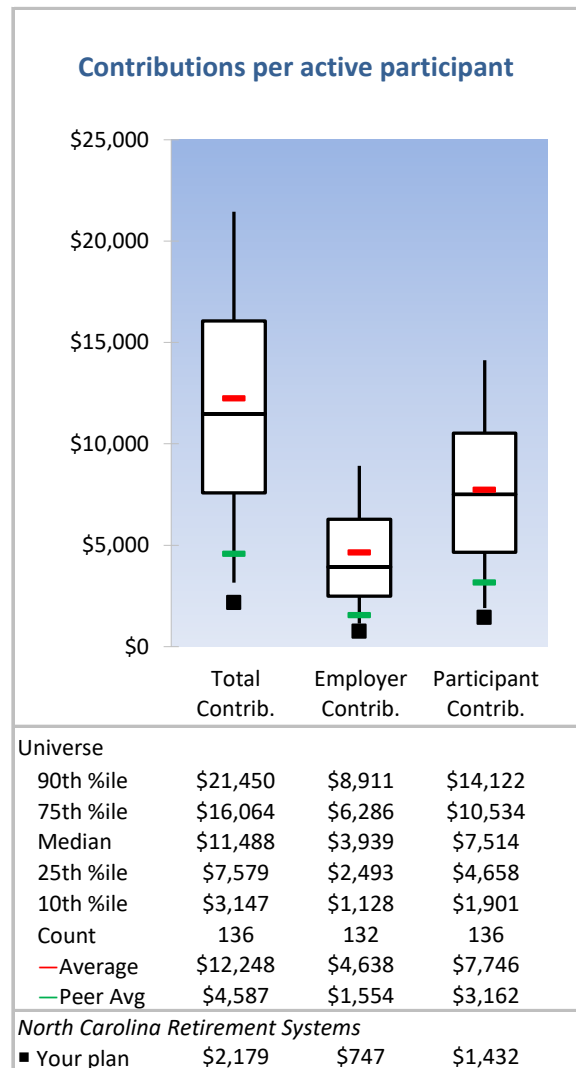


Trend analysis is based on 88 universe funds and 7 peers with 5 consecutive years of data.

Contributions per participant

Higher contribution rates result in faster growth of participant account balances. The average total contributions from both employers and participants were \$2,179 per active participant in your plan in 2016. This was below the peer average of \$4,587. Differences in contributions per participant reflect differences in:

- Employer and employee contribution rates,
- Plan type and design,
- Whether the DC plan is the primary or supplemental retirement savings vehicle,
- Proportion of participants taking advantage of catch up provisions,
- Participant demographics including age, education levels, compensation and time in plan.



Trend analysis is based on 80 universe funds and 5 peers with 5 consecutive years of data.

Participant contributions/deferrals

Your participants' contributions averaged \$1,432 per active plan participant. This was below the peer average of \$3,162 (refer to the previous page). Differences in participant contributions reflect differences in:

- Education and communication.
- Participant demographics.
- Whether the DC plan is the primary or supplemental retirement savings vehicle for participants. Your plan is considered supplemental because its participants also participate in an accruing defined benefit plan.
- Mandatory employee deferrals. Your plan did not have a mandatory employee deferral. 7% of the U.S. universe has a mandatory employee deferral.
- Incentives such as employer match. Your plan had an employer match. 82% of the U.S. universe has an employer match.
- Automatic increases in deferrals. Of the 68% of plans with auto enrollment, 35% had automatic increases. Your plan did not answer the questions about automatic increases.
- Other factors include compensation levels, education and the ability to make catch up contributions.

Participant contributions/deferrals

	Primary Plans ¹		Supplemental Plans ¹		
	Peer Average	Universe Average	Your Plan	Peer Average	Universe Average
Is there a mandatory minimum deferral rate for full-time employees?	25% Yes	9% Yes	No	10% Yes	7% Yes
a. If yes, what is the mandatory minimum deferral as a percentage of salary?	3.0%	5.4%		3.0%	4.9%
Does your plan have automatic enrolment?	40% Yes	80% Yes	No	36% Yes	68% Yes
If yes,					
a. What is the initial default participant deferral rate?	5.0%	4.4%		2.7%	4.2%
b. Is there an automatic increase?					
• If yes, what is the annual increase?	1.0%	0.7%		1.0%	0.7%
• If yes, what is the maximum deferral rate achieved via automatic increases?	10.0%	10.6%		6.0%	11.6%
Can participants make:					
a. After-tax Roth 401(k) contributions	60% Yes	74% Yes	Yes	64% Yes	74% Yes
b. After-tax non-Roth 401(k) contributions	0% Yes	72% Yes	Yes	18% Yes	68% Yes

1. A DC plan is treated as supplemental if participants also participate in an accruing DB plan, and primary if they do not. Your plan is considered supplemental because its participants also participate in an accruing defined benefit plan.

Employer contributions

Employer contributions are a form of compensation that increases participant success. Differences in employer contributions reflect differences in employer philosophies about the optimal mix of cash compensation versus benefits necessary to attract and retain employees. Differences also reflect the regulatory rules of different plan types. Your fund's employer contributions averaged \$747 per active plan participant. This was below the U.S. universe median of \$3,939 (refer to page 50).

The table below compares select details of employer contribution design.

Employer contribution design

	Primary Plans ¹		Supplemental Plans ¹		
	Peer Average	Universe Average	Your Plan	Peer Average	Universe Average
Does your plan have a non-elective fixed employer contribution?	75% Yes	59% Yes	Yes*	40% Yes	22% Yes
a. If yes, what is the fixed contribution percentage?	5.8%	4.8%	5.0%	2.5%	6.4%
Is there a profit sharing component to employer contributions?	0% Yes	18% Yes	No	0% Yes	13% Yes
Does your plan have an employer match?	75% Yes	89% Yes	Yes	60% Yes	82% Yes
If yes:					
a. • Employer match rate up to first cap	100%	84%		75%	88%
• First cap as a percent of salary	3.0%	7.9%		3.0%	6.5%
Is there a second cap?					
• Employer match rate up to second cap	100%	32%		25%	40%
• Second cap as a percent of salary	2.0%	5.0%		1.0%	5.1%
b. What percentage of participants are receiving the maximum possible employer match?	84%	73%		37%	69%
Are employer contributions made in:		<u>Public Average</u>			<u>Public Average</u>
a. Employer stock	0%	0%		0%	0%
b. Cash (i.e., participant directed or default option)	100%	100%	Yes	100%	100%
c. Employer stock and cash	<u>0%</u>	<u>0%</u>		<u>0%</u>	<u>0%</u>
	100%	100%		100%	100%

1. A DC plan is treated as supplemental if participants also participate in an accruing DB plan, and primary if they do not. Your plan is considered supplemental because its participants also participate in an accruing defined benefit plan.

* Law Enforcement Officers receive employer contributions of 5% by state statute. Other state employers provide a match or contribution between 1% and 5%

Plan investment options

Asset mix is the primary driver of long-term returns. Therefore, participant success depends in large part on the asset mix that results from the investment options they select (refer to page 25 for comparisons of average asset mix). The investment options they select depend on the options offered, particularly the default option.

Your default option is similar to target retirement date funds. North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential, it helps members allocate balances to thirteen investment options that are best suited to their risk profile. This service rebalances assets quarterly. Behavioral research shows that participants will often opt for the default investment option. Therefore, the default option is an important investment option. If you have automatic enrollment, to satisfy safe harbor provisions, the default investment option must be either balanced, target-retirement-date or lifecycle, or a managed account.

Your plan had 13 investment options in 2016. The average plan in the CEM universe had an average of 16.4 investment options.

The number of investment options offered by the 88 U.S. plans that have participated in the CEM database for 5 or more consecutive years declined from an average of 16.4 in 2012 to 16.1 in 2016. (Target date options from the same family of funds were counted as one option.)

Type and number of investment options

Type of Investment Option	Your Plan	Peer Average	Universe Average
Employer Stock		0.0	0.7
Stock U.S.	6	5.2	6.0
Stock Non U.S. & Global	3	2.0	2.7
Bonds	2	2.5	2.7
Stable Value	1	1.0	0.7
Cash, Money Market		0.6	0.6
Target Retirement Date		0.8	0.9
Balanced		0.7	0.9
Mutual Fund Window		0.2	0.1
Participant Brokerage Account		0.4	0.4
Priv Eq, REIT, Other	1	0.5	0.9
Total	13	13.8	16.4

Default option

Default Option Type	You	Peer	Universe
Balanced		8%	7%
Target Retirement Date	Yes	83%	84%
Managed accounts		0%	1%
Stable Value		0%	1%
Money Market		0%	0%
Other		0%	1%
No default option		<u>8%</u>	<u>7%</u>
Total		100%	100%

Automatic rebalancing

	You	Peer	Universe
Does your plan offer automatic rebalancing?	Yes	67% yes	59% yes

If you want your plan to qualify for ERISA section 404(c) you must offer at least three separate investment alternatives that have materially different risk and return characteristics. Your plan does.

Indexed options

Indexed options (often called passive options) seek to replicate market returns. They are a low cost alternative to actively-managed options. Offering indexed options reduces fiduciary risk because they provide participants with a low cost, market neutral alternative to higher-cost, actively-managed options that seek to beat the market. Your plan offers indexed options for stock U.S. broad or large cap, stock non U.S. & global, and bonds.

Trends. Indexed options usage increased as a percentage of 'indexable' assets, from 51% of the U.S. universe³ in 2012 to 60% in 2016. Only 'indexable' option types where both indexed and active management styles are relevant are included. Thus employer stock, stable value funds and loans, are excluded from indexable assets for the purpose of this comparison.

1. An option is considered indexed when the percent of passive management is greater than or equal to 80%.
2. Costs include investment management fees only.
3. Includes only funds with 10 consecutive years of data for each asset class.
4. Trend analysis is based on the 88 universe funds and 7 peers with 5 consecutive years of data.

Indexed options by asset class¹

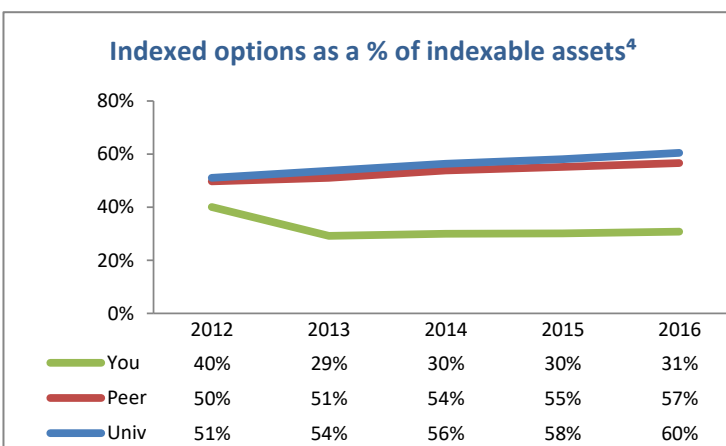
Does your plan offer an indexed option for:	Your plan	Peer	Universe
Stock U.S. Broad or Large Cap	Yes	92% Yes	97% Yes
Stock U.S. Small Cap		50% Yes	55% Yes
Stock U.S. Mid Cap	Yes	33% Yes	43% Yes
Stock Non U.S. & Global	Yes	75% Yes	79% Yes
Bonds	Yes	67% Yes	78% Yes
Target & Balanced		50% Yes	66% Yes

Cost savings from indexed options

Asset Class	Universe Average Cost ²		
	Indexed	Active	Savings
Stock U.S. Broad or Large Cap	0.03%	0.42%	0.40%
Stock U.S. Small Cap	0.05%	0.65%	0.60%
Stock U.S. Mid Cap	0.05%	0.63%	0.58%
Stock Non U.S. & Global	0.09%	0.58%	0.50%
Bonds	0.05%	0.30%	0.26%
Target & Balanced	0.09%	0.36%	0.28%

Performance of indexed vs. active options

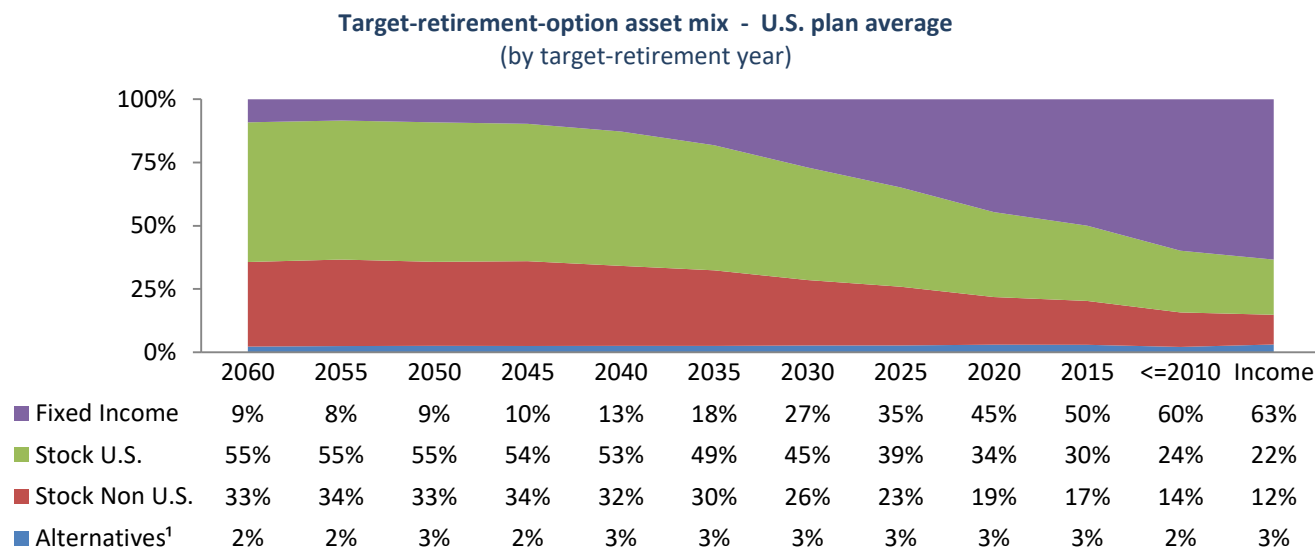
Asset Class	10-year Net Value Added ³ U.S. Universe Average	
	Indexed	Active
Stock U.S. Broad or Large Cap	-0.06%	-0.28%
Stock U.S. Small Cap	0.03%	0.51%
Stock U.S. Mid Cap	0.05%	0.32%
Stock Non U.S. & Global	0.11%	0.32%
Bonds	-0.18%	0.25%
Target & Balanced	-0.15%	-0.05%



Target-retirement-date options - glide path

Target-retirement-date options are offered by 83% of peer plans and 87% of universe plans. Your plan does not have target-retirement options.

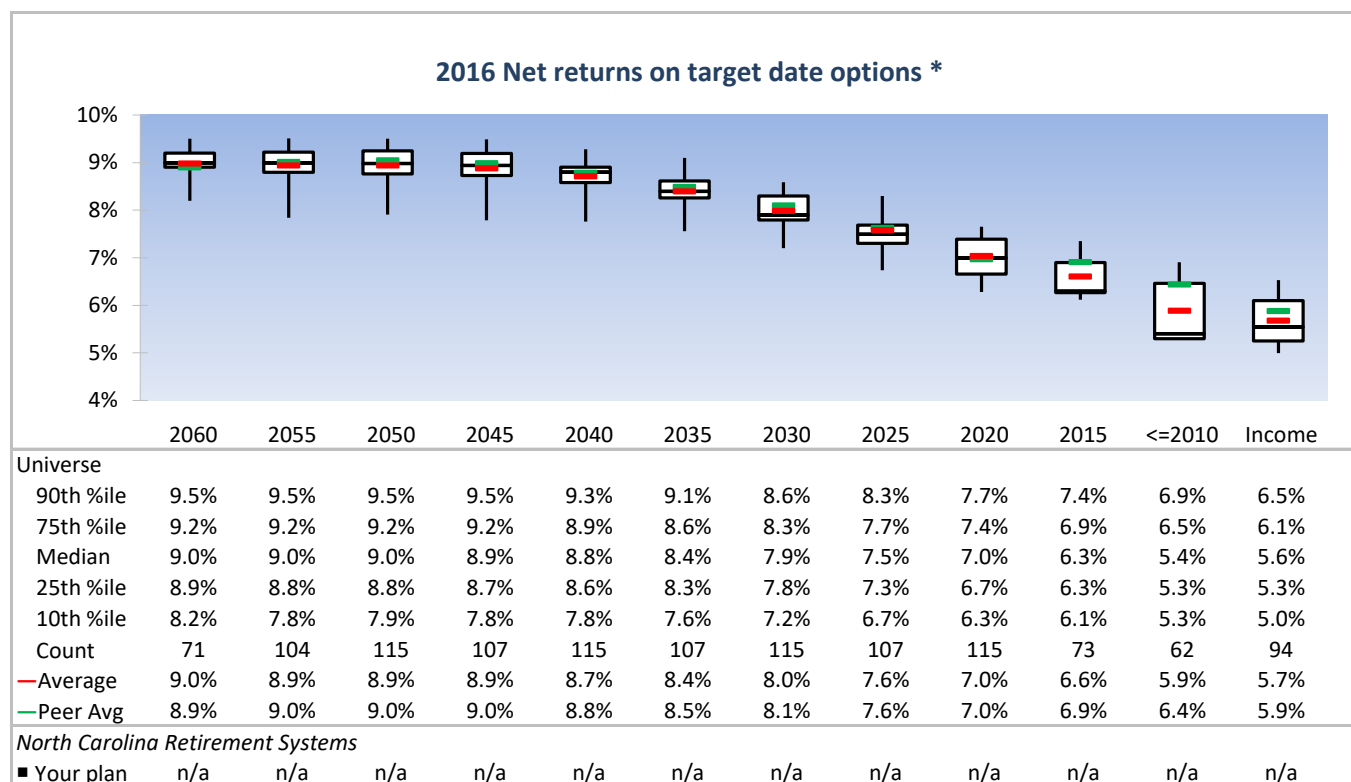
Target-retirement options have a 'glide-path' that reduces more volatile stock holdings and increases fixed income holdings as the target retirement date approaches. But the rate at which they shift from stock to fixed income can vary substantially depending on the provider. The chart below shows the U.S. universe average glide path.



1. Alternatives include real estate and private equity.

Target-retirement-date options - returns

Differences in the asset mix of target-retirement-date options results can cause large differences in returns for the same target date. Below is a comparison of returns for the year ended 2016.



* North Carolina Supplemental Retirement Plans offer GoalMaker as an asset allocation service for no additional cost provided by Prudential, it helps members allocate balances to 13 investment options that are best suited to their risk profile and time horizon. This service rebalances assets quarterly. The returns on these portfolios could not be estimated to fit into the categories above.

Target-retirement-date options - asset mix ranges

The asset-mix and risk of funds with the same target-retirement-date can vary widely. For example, the percentage of fixed income in funds with a 2015 target date varies from 10% to 69% for the U.S. universe.

	Your mix	Rank vs peers				Rank vs universe				Peers								U.S. universe							
		%ile	Low	Avg	High	%ile	Low	Avg	High	Avg	10th	25th	Med	75th	90th	#		Avg	10th	25th	Med	75th	90th	#	
Target Date 2015																									
% Fixed Income	n/a	n/a				n/a				53%	41%	49%	56%	59%	62%	6		50%	42%	46%	52%	55%	57%	73	
% Stock U.S.	n/a	n/a				n/a				26%	20%	21%	25%	30%	33%	6		30%	22%	27%	29%	34%	37%	73	
% Stock Non U.S.	n/a	n/a				n/a				17%	10%	14%	17%	18%	23%	6		17%	13%	16%	18%	19%	20%	73	
% Alternatives	n/a	n/a				n/a				5%	0%	0%	4%	8%	10%	6		3%	0%	0%	0%	4%	9%	73	
Target Date 2020																									
% Fixed Income	n/a	n/a				n/a				49%	36%	44%	48%	53%	60%	10		45%	36%	41%	44%	50%	54%	116	
% Stock U.S.	n/a	n/a				n/a				29%	20%	25%	30%	35%	39%	10		34%	27%	31%	34%	36%	41%	116	
% Stock Non U.S.	n/a	n/a				n/a				18%	12%	13%	17%	22%	23%	10		19%	14%	16%	19%	22%	23%	116	
% Alternatives	n/a	n/a				n/a				4%	0%	0%	2%	7%	9%	10		3%	0%	0%	1%	4%	7%	116	
Target Date 2025																									
% Fixed Income	n/a	n/a				n/a				38%	28%	32%	37%	41%	48%	10		35%	29%	30%	34%	38%	43%	107	
% Stock U.S.	n/a	n/a				n/a				36%	27%	32%	38%	42%	45%	10		39%	34%	38%	40%	42%	45%	107	
% Stock Non U.S.	n/a	n/a				n/a				23%	18%	18%	22%	25%	29%	10		23%	18%	20%	25%	26%	26%	107	
% Alternatives	n/a	n/a				n/a				3%	0%	0%	2%	4%	8%	10		3%	0%	0%	0%	4%	6%	107	
Target Date 2030																									
% Fixed Income	n/a	n/a				n/a				29%	16%	24%	28%	32%	36%	10		27%	17%	24%	27%	29%	33%	116	
% Stock U.S.	n/a	n/a				n/a				42%	33%	39%	44%	49%	50%	10		45%	39%	42%	44%	47%	53%	116	
% Stock Non U.S.	n/a	n/a				n/a				27%	21%	22%	26%	28%	33%	10		26%	22%	24%	26%	29%	29%	116	
% Alternatives	n/a	n/a				n/a				3%	0%	0%	2%	4%	5%	10		3%	0%	0%	1%	4%	6%	116	
Target Date 2035																									
% Fixed Income	n/a	n/a				n/a				20%	8%	18%	18%	24%	28%	10		18%	10%	14%	18%	20%	24%	107	
% Stock U.S.	n/a	n/a				n/a				47%	38%	43%	49%	53%	54%	10		49%	43%	47%	49%	53%	57%	107	
% Stock Non U.S.	n/a	n/a				n/a				30%	25%	28%	30%	31%	36%	10		30%	25%	28%	31%	32%	33%	107	
% Alternatives	n/a	n/a				n/a				3%	0%	0%	2%	4%	5%	10		3%	0%	0%	0%	4%	5%	107	
Target Date 2040																									
% Fixed Income	n/a	n/a				n/a				14%	5%	8%	13%	17%	20%	10		13%	6%	9%	11%	13%	18%	116	
% Stock U.S.	n/a	n/a				n/a				51%	42%	47%	53%	56%	60%	10		53%	45%	50%	53%	57%	63%	116	
% Stock Non U.S.	n/a	n/a				n/a				33%	28%	31%	33%	35%	39%	10		32%	27%	28%	33%	35%	36%	116	
% Alternatives	n/a	n/a				n/a				2%	0%	0%	2%	4%	5%	10		3%	0%	0%	1%	4%	6%	116	
Target Date 2045																									
% Fixed Income	n/a	n/a				n/a				11%	3%	5%	11%	14%	16%	10		10%	3%	5%	10%	11%	14%	107	
% Stock U.S.	n/a	n/a				n/a				53%	44%	50%	53%	56%	63%	10		54%	47%	52%	54%	57%	63%	107	
% Stock Non U.S.	n/a	n/a				n/a				34%	30%	31%	34%	36%	39%	10		34%	28%	30%	35%	36%	37%	107	
% Alternatives	n/a	n/a				n/a				2%	0%	0%	2%	4%	5%	10		2%	0%	0%	0%	4%	5%	107	
Target Date 2050																									
% Fixed Income	n/a	n/a				n/a				10%	1%	5%	10%	12%	16%	10		9%	1%	5%	10%	10%	12%	116	
% Stock U.S.	n/a	n/a				n/a				53%	44%	52%	53%	56%	64%	10		55%	47%	52%	54%	59%	64%	116	
% Stock Non U.S.	n/a	n/a				n/a				34%	31%	31%	34%	36%	39%	10		33%	28%	31%	35%	36%	39%	116	
% Alternatives	n/a	n/a				n/a				2%	0%	0%	2%	4%	5%	10		3%	0%	0%	1%	4%	6%	116	
Target Date 2055																									
% Fixed Income	n/a	n/a				n/a				10%	1%	5%	10%	12%	16%	10		8%	1%	5%	10%	10%	12%	104	
% Stock U.S.	n/a	n/a				n/a				53%	44%	52%	53%	56%	64%	10		55%	50%	52%	54%	57%	64%	104	
% Stock Non U.S.	n/a	n/a				n/a				34%	31%	31%	34%	36%	39%	10		34%	28%	31%	35%	36%	39%	104	
% Alternatives	n/a	n/a				n/a				2%	0%	0%	2%	4%	5%	10		2%	0%	0%	0%	4%	5%	104	

Plan investment options - style detail and trends

The table below summarizes the type of investment option by asset class and style. It also shows trends in the type of options offered in the rightmost columns of the table. Some of the more interesting trends are:

- Target-retirement-date is the option type that has grown the most.
- Indexed option usage has grown in every 'indexable' asset class.
- The average number of plan options in the universe has decreased from 16.4 in 2012 to 16.1 in 2016.

Plan options - style detail and trends

Option type	% of Plans offering				Average # of options				End of year % of plan assets in option type				Trend ¹ in universe average # of options			
	You	Peer	Public	Univ	You	Peer	Public	Univ	You	Peer	Public	Univ	2012	2016	Chg #	Chg %
Employer Stock		0%	0%	56%		0.0	0.0	0.7		0%	0%	10%	0.8	0.8	0.0	-4%
• Discretionary		0%	0%	48%		0.0	0.0	0.6		0%	0%	8%	0.7	0.6	0.0	-7%
• Mandated		0%	0%	10%		0.0	0.0	0.1		0%	0%	2%	0.1	0.1	0.0	9%
Stock U.S.	Yes	100%	100%	100%	6	5.2	6.2	6.0	44%	38%	34%	32%	6.3	5.7	-0.6	-10%
• Indexed	Yes	92%	96%	99%	2	1.8	2.3	2.5	17%	19%	17%	17%	2.4	2.5	0.0	1%
• Active	Yes	75%	89%	86%	4	3.4	3.9	3.5	27%	18%	16%	15%	3.9	3.3	-0.6	-16%
• Broad or Large Cap	Yes	100%	100%	100%	3	2.6	3.3	3.3	33%	26%	24%	23%	3.6	3.3	-0.4	-10%
• Mid Cap	Yes	58%	79%	64%	3	1.2	1.3	1.1	11%	5%	4%	4%	1.0	0.9	0.0	-5%
• Small Cap		92%	89%	89%		1.4	1.5	1.6		7%	6%	5%	1.7	1.5	-0.2	-12%
Stock Non U.S. & Global	Yes	100%	100%	100%	3	2.0	2.4	2.7	15%	6%	7%	6%	2.4	2.5	0.1	3%
• Indexed	Yes	75%	71%	79%	1	0.9	0.9	1.1	0%	3%	3%	3%	1.0	1.1	0.1	15%
• Active	Yes	75%	86%	85%	2	1.1	1.6	1.6	15%	4%	4%	4%	1.4	1.3	-0.1	-5%
Bonds	Yes	100%	100%	100%	2	2.5	2.8	2.7	11%	9%	8%	7%	2.5	2.7	0.2	7%
• Indexed	Yes	67%	71%	78%	1	0.9	1.0	1.2	4%	4%	4%	4%	1.2	1.2	0.0	2%
• Active	Yes	100%	89%	81%	1	1.6	1.8	1.6	7%	5%	5%	4%	1.3	1.5	0.1	11%
• Bonds Broad	Yes	100%	100%	90%	2	1.6	1.6	1.4	11%	6%	5%	5%	1.4	1.5	0.1	7%
• Bonds Short		8%	18%	24%		0.3	0.3	0.3		2%	2%	1%	0.3	0.3	0.0	4%
• Bonds Long		0%	4%	9%		0.0	0.0	0.1		0%	0%	0%	0.1	0.1	0.0	10%
• Bonds High Yield		17%	14%	20%		0.2	0.1	0.2		0%	0%	0%	0.2	0.2	0.0	7%
• Bonds TIPS		33%	54%	34%		0.3	0.6	0.3		1%	1%	0%	0.4	0.3	0.0	-13%
• Bonds Other		8%	11%	13%		0.1	0.1	0.2		0%	0%	0%	0.1	0.1	0.0	33%
Target & Balanced		83%	93%	96%		9.7	11.3	10.2		20%	28%	25%	8.3	10.0	1.7	21%
• Indexed		50%	54%	66%		4.8	5.7	6.4		8%	10%	14%	4.6	6.2	1.6	34%
• Active		58%	68%	51%		4.8	5.6	3.9		12%	18%	11%	3.7	3.8	0.1	4%
• Balanced		50%	57%	44%		0.7	1.2	0.9		4%	4%	4%	1.2	1.0	-0.2	-17%
• Indexed		8%	21%	18%		0.1	0.4	0.3		1%	1%	1%	0.4	0.3	-0.1	-18%
• Active		42%	46%	33%		0.6	0.8	0.6		3%	3%	3%	0.8	0.7	-0.1	-16%
• Target date families ²		83%	89%	87%		0.8	1.0	0.9		16%	24%	21%	0.8	0.9	0.1	18%
• Target Date		83%	89%	87%		9.0	10.1	9.3		16%	24%	21%	7.1	9.1	1.9	27%
• Indexed		50%	50%	59%		4.8	5.3	6.1		7%	9%	13%	4.2	5.9	1.7	39%
• Active		42%	46%	33%		4.3	4.9	3.2		9%	15%	9%	2.9	3.2	0.3	9%
Cash, Money Market		58%	57%	55%		0.6	0.6	0.6		2%	2%	3%	0.6	0.6	0.0	0%
Stable Value	Yes	83%	79%	69%	1	1.0	0.9	0.7	25%	22%	16%	12%	0.8	0.7	-0.1	-11%
Participant Brokerage Acct		42%	46%	41%		0.4	0.5	0.4		1%	2%	2%	0.4	0.4	0.0	12%
Mutual Fund Window		17%	11%	11%		0.2	0.1	0.1		0%	0%	1%	0.1	0.1	0.0	-9%
Priv Eq, REIT, Other	Yes	42%	57%	50%	1	0.5	0.9	0.9	4%	1%	3%	2%	0.6	0.8	0.2	30%
Loans		25%	25%	33%		0.3	0.3	0.3		0%	0%	0%	0.4	0.4	0.0	-6%
Total ²					13	22.3	25.8	25.3	100%	100%	100%	100%	23.3	24.7	1.5	0.063
Total (TD family =1, excl. loans) ²					13	13.8	16.5	16.4					16.4	16.1	-0.3	-0.02
Number of plans	1	12	28	138	1	12	28	138	1	12	28	138	88	88		

1. Trend analysis is based on the 88 universe plans that have provided 5 or more consecutive years of data.

2. To avoid double counting, the total is the sum of the non-indented items (i.e., Employer Stock, Stock U.S., etc). Indented items (such as 'Indexed') reflect various subsets, some of which overlap. The second total excludes loans and counts each target date family as one regardless of the number of options in the family.

Miscellaneous plan features

Options at retirement

Participants that exit the plan at retirement can incur large costs because they lose the benefits of the plan's design and economies of scale. Therefore, plans are starting to provide distribution options for retiring, and post-retirement, participants.

	Your Plan	Peer % Yes	Universe % Yes
Does your plan offer a guaranteed lifetime income product (i.e., annuity, deferred annuity, etc):			
a. Out of plan?	Yes	58%	18%
b. In-plan?	No	8%	8%

Loans

Question	Your Plan	Peer Average	Universe Average
Does your plan allow for loans?	Yes	67% yes	91% yes
If yes:			
What is the average loan balance?	\$6,256	\$9,079	\$9,721
Loans as a percentage of total plan assets	3.3%	1.9%	1.6%
Total number of loans as a % of total participants	17%	17%	24%

Transaction rules and restrictions

Question	Your Plan	Peer % Yes	Universe % Yes
Limits on the number of transactions?	Yes	33%	48%
Limits on international funds?	Yes	33%	35%
Limits on any other funds (excl. international)?	Yes	44%	44%
Excessive trading penalties?	No	30%	29%

Target date retirement funds

Question	Your Plan	Peer Average	Universe Average
What age do your target date retirement funds assume a participant will retire at?	62	64.5	64.6
Do you customize or use an off the shelf target date fund?			
Customize	Yes	50% yes	29% yes
Use off the shelf		42% yes	60% yes
Not applicable		8% yes	11% yes

Financial advice and education

Financial advice and education can impact several participant success measures including participation rates, employee deferral rates and asset mix (i.e., investment option selection). Financial advice is also highly valued by some participants.

	Your Plan	Peer Average % Yes	Universe Average % Yes
Is individual financial counseling/investment advice made available to your plan participants?	No	50%	67%
If yes, is it provided via:			
a. A computer-based model?	n/a	0%	19%
b. Investment advisers?	n/a	0%	5%
c. Both computer and investment advisers	n/a	100%	76%
Does your plan offer financial education via:			
a. Group meetings to communicate/educate?	Yes	100%	79%
b. Individual meetings to communicate/educate?	Yes	100%	64%
Do participants receive projections of annual income in retirement:			
a. In their participant statements?	No	42%	33%
b. Online	Yes	92%	86%
c. Via separate communication	Yes	33%	38%
Does your plan have marketing campaigns targeted at segments of participants to:			
a. Increase employee deferral rates?	Yes	92%	82%
b. Increase participation by eligible non-participants?	Yes	58%	70%
c. Education on the savers tax credit for lower income participants?	No	42%	19%
d. Improve diversification from Employer Stock?	n/a	0%	34%

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Fiduciary Success

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Fiduciary structure, process and documentation

Fiduciary structure impacts DC plan success and fiduciary risk in multiple ways:

- Good governance starts with the named fiduciaries because they control the plan's operation. A named fiduciary that is a committee is preferred to a specified person because: (i) it makes it easier for members of the committee to separate their fiduciary role from their settlor/plan sponsor roles, (ii) it makes it more likely that a best practice process of regularly scheduled meetings with documented minutes will occur.
- Appointing expert third parties as fiduciaries can reduce the fiduciary risk of the named fiduciaries and the plan sponsor. But the named fiduciaries are still responsible for oversight of the appointed fiduciaries.
- Documentation. ERISA counsel will tell you that the three keys to winning in court are documentation, documentation, documentation. Documenting roles clarifies responsibilities and help ensure that critical function do not slip through the cracks. Documenting processes and decisions, *provided that the processes are followed*, demonstrates procedural prudence.

	You	Peers	Universe
Who are the fiduciaries named in the plan document as having control over the plan's operation (If the employer sponsoring the plan is named, indicate who currently acts as the internal fiduciary on behalf of the employer):			
a. The Board of Directors of the plan sponsor		55% yes	13% yes
b. A specified title or person such as the CEO or CFO		9% yes	3% yes
c. A committee	Yes	27% yes	79% yes
d. Other		9% yes	5% yes
If a committee is the named fiduciary:			
a. Number of committee members	9	7.3	6.0
b. Number of committee meetings in the past year	10	9.7	5.4
c. Are the minutes of each meeting documented	Yes	100% yes	99% yes
Are the 'named' fiduciaries:			
a. Provided with formal training as to their role and responsibilities	Yes	83% yes	86% yes
b. Required to sign an 'acknowledgement of responsibility' form	Yes	73% yes	29% yes
Have third-parties been appointed as fiduciaries to serve as:			
a. Investment manager with full discretionary powers for selecting, monitoring and replacing the plan's investment options	Yes	25% yes	8% yes
b. Investment advisor to provide advice regarding the selection and retention of plan investment options	Yes	83% yes	56% yes
c. Plan administrator responsible for regulatory filings, disclosures to participants and hiring plan service providers if no other fiduciary has that responsibility	Yes	58% yes	32% yes
Is there documentation that identifies the process for:			
a. Selection and monitoring of third-party fiduciaries and other plan service providers	Yes	100% yes	82% yes
b. Investment policy	Yes	100% yes	95% yes
c. Oversight of internal employees involved in operating the plan (i.e., internal fiduciaries, HR staff enrolling employees in the plan, posting deferrals, etc.)	Yes	83% yes	76% yes
d. Fulfilling administration responsibilities (regulatory filings, disclosures to participants)	Yes	92% yes	79% yes

Administration fee allocation disparity

An emerging issue for plan fiduciaries to be aware of is the potential risk of administration fee allocation disparity. Administration fee allocation disparity can occur with:

- 1. Paying administration expenses from the expense ratio of investment options via revenue sharing, bundled arrangements, etc. These arrangement can lead to fee allocation disparity because:
 - Some investment options pay more as a percent of assets towards administration expenses than others. Thus they are subsidizing the cost of participants in investment options paying less.
 - Participants with larger balances usually pay a higher dollar cost for administration even though the largest administration cost, recordkeeping, tends to be priced on a per participant basis.This is a potential issue for your plan because it pays some of its administrative fees from the expense ratio of investment options.

Paying administration expenses from the expense ratio of investment options

	You	Peer	Universe
Plans that pay all or part of administrative expenses from the expense ratio of investment options	Yes	33% Yes	53% Yes

- 2. Account-balance-based versus participant-based allocation. The largest administration cost, recordkeeping, is typically priced on a per participant basis (even when it is embedded in bundled arrangements). Yet it is often allocated to participants as a percent of assets. Therefore, participants with larger account balances pay more.

Allocating expenses

	You	Peer % Yes	Universe % Yes
How are the recordkeeping or administration costs allocated to participants?			
a. An asset based fee		29%	26%
b. A flat fee per participant	Yes	57%	61%
c. A combination of asset based fee and flat fee		14%	14%
d. Other (describe)		0%	0%

Who pays total plan costs?

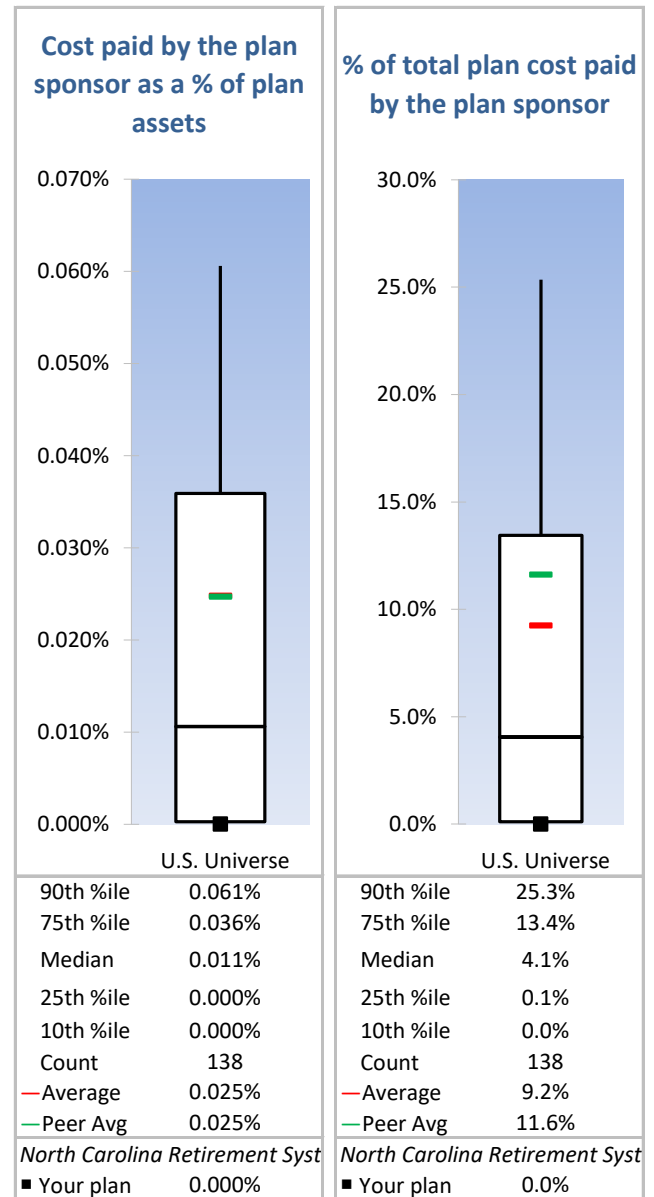
At your plan, participants paid 100% of the total plan cost. At some plans, the plan sponsor subsidizes the plan by paying part of the administrative expenses. The administration cost most likely to be subsidized was "Internal oversight".

% of Administrative expenses paid by plan sponsor

	Your Plan	Peer Avg	Univ Avg
Recordkeeping, admin.	0%	25%	21%
Custodial and trustee	0%	29%	28%
Internal oversight	0%	42%	71%
Consulting	0%	13%	46%
Other plan costs	0%	22%	42%
Total administrative	0%	27%	32%

% of participant expenses paid by plan sponsor

	Your Plan	Peer Avg	Univ Avg
Participant advice	n/a	50%	33%
Managed account fees	n/a	0%	0%
Other participant expenses	0%	0%	3%
Total participant	0%	13%	5%



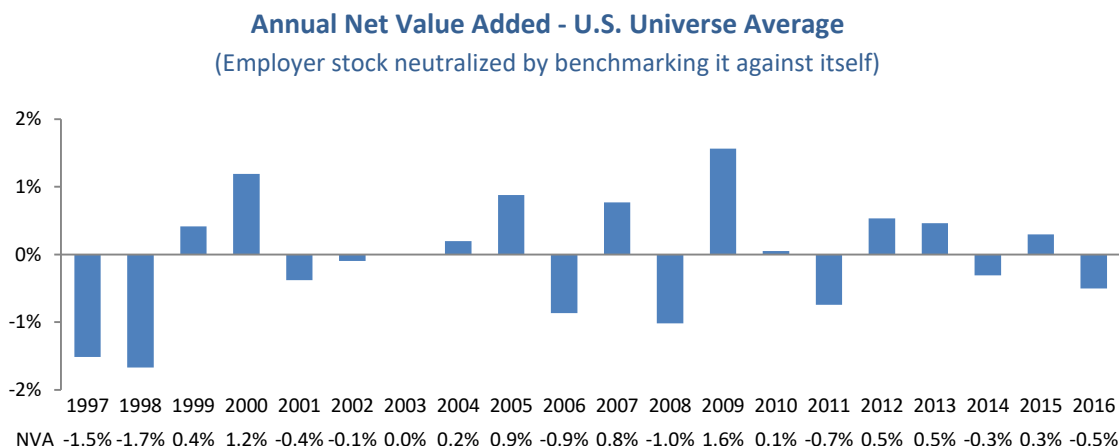
9

Research Findings

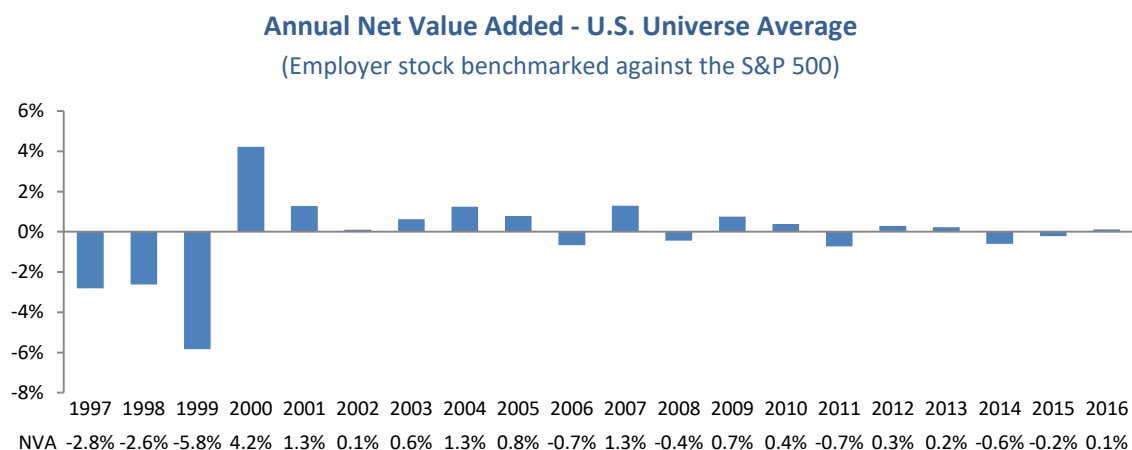
- 66 Net value added - 20 year history
- 67 Gross value added by major asset class
- 68 Most popular managers by asset class

Net value added - 20 year history

On average over the past 20 years ending 2016, the U.S. survey universe had annual weighted total plan net value added of -0.05%, excluding the impact of employer stock.

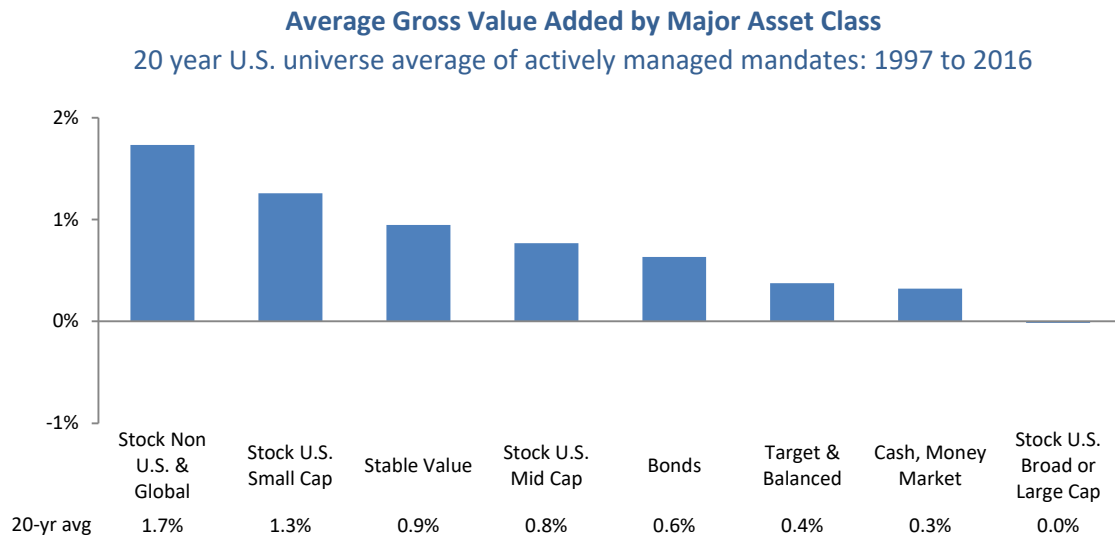


On average over the past 20 years ending 2016, the U.S. survey universe had annual weighted total plan net value added of -0.06%, including the impact of employer stock by benchmarking it against the S&P 500.



Gross value added by major asset class

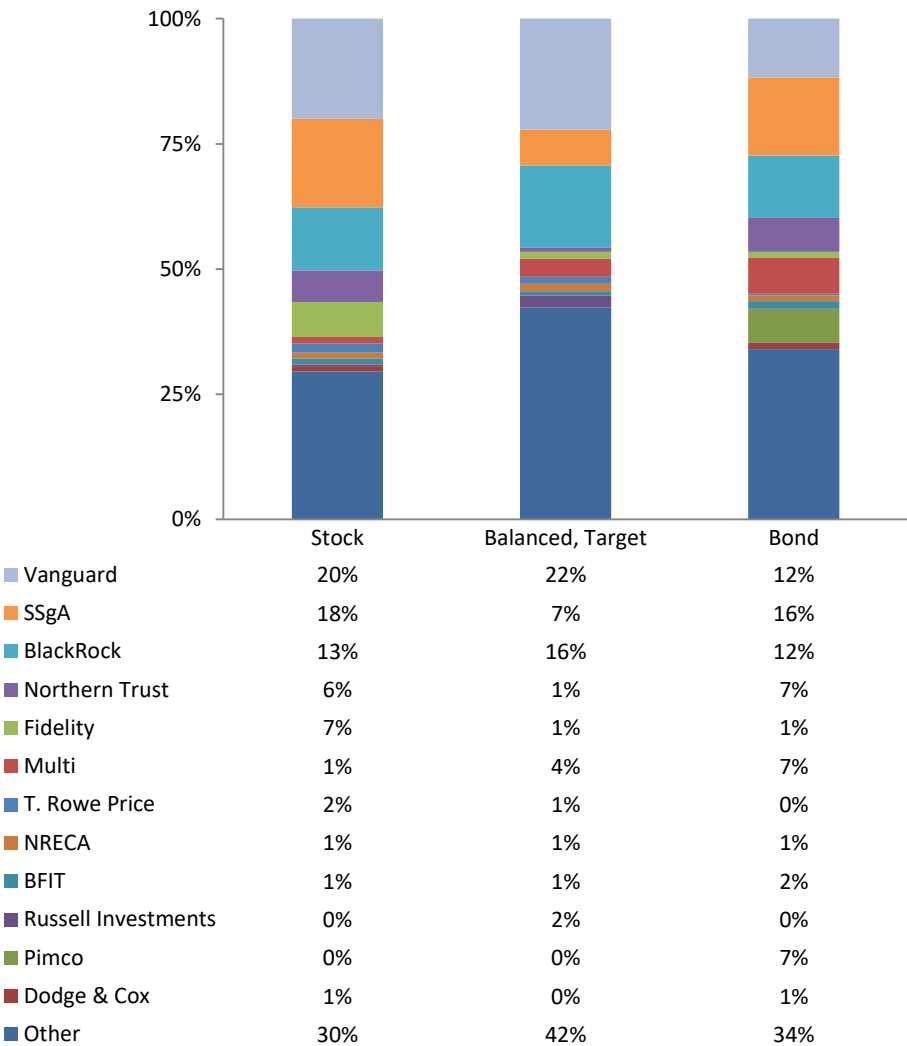
The asset class that had the best value added performance before costs over the past 20 years ending 2016 was Stock Non U.S. & Global.



Small and mid cap value added was combined from 1997 to 2003. So this period reflects the same data for both categories

Most popular managers by asset class

12 Most Popular Asset Managers in 2016
(by % Assets Managed by Asset Class)



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Appendices

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Your survey responses

North Carolina Retirement Systems

General	2016	2015	2014	2013	2012
Contact	Mary	Mary	Mary	Mary	Mary
	Buonfiglio	Buonfiglio	Buonfiglio	Buonfiglio	Buonfiglio
Data provided by:	Rekha	Rekha	Rekha	Rekha	Rekha
	Krishnan	Krishnan	Krishnan	Krishnan	Krishnan
Corporate, public, other?	Public	Public	Public	Public	Public
Market value of plan assets (\$ millions)	\$9,767	\$9,045	\$8,984	\$8,388	\$7,000
Number of plan participants	298,337	312,038	255,000	291,394	272,206
% of eligible employees participating	33%	44%	46%		27%
Are some DC participants covered by a DB plan?	Yes	Yes	Yes	Yes	Yes
Administrative Expenses (\$000s)	2016	2015	2014	2013	2012
Recordkeeping ¹					
paid from expense ratio of invest. options		7,121	6,862	7,462	
charged to individuals or participant accounts	9,142				6,363
paid by plan sponsor					
Custodial & trustee					
paid from expense ratio of invest. options	1,018	4,958	3,726		
charged to individuals or participant accounts					
paid by plan sponsor					
Oversight internal ²					
paid from expense ratio of invest. options	1,718	2,254	1,647	1,923	
charged to individuals or participant accounts					1,657
paid by plan sponsor					
Consulting					
paid from expense ratio of invest. options	350	251	275		
charged to individuals or participant accounts					
paid by plan sponsor					
Other plan expenses					
paid from expense ratio of invest. options	250	239	250		
charged to individuals or participant accounts					
paid by plan sponsor					
Total administration expenses	12,478	14,822	12,760	9,385	8,020
less rebates to participants from reimburse. accounts					
less revenue sharing used to reduce admin costs (<dy2013)					8,020
Admin expenses after rebates and revenue sharing	12,478	14,822	12,760	9,385	0
Individual Participant Expenses (\$000s)	2016	2015	2014	2013	2012
Participant advice					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
Managed account fees					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
Other participant expenses (for loans, QDROs, etc.)					
paid from expense ratio of invest. options					
charged to individuals or participant accounts	1,080	100	3,212		1,267
paid by plan sponsor					
Total Participant Expenses	1,080	100	3,212		1,267

1. If you were unable to provide a breakdown of your administrative & fiduciary costs, the total was included in recordkeeping because it usually represents the bulk of administrative expenses.

2. If you were unable to provide costs for internal oversight, we applied a default value. If the number of internal FTEs is available, default equals \$100,000 x FTE. Otherwise, it is 0.0001 x Market value of plan assets.

Your survey responses

North Carolina Retirement Systems

About Your Options	2016	2015	2014	2013	2012
Do you have a default investment option?	Yes	Yes	Yes	No	Yes
If yes, what is the default option?	Target / lifecycle	Other	Target / lifecycle		Target / lifecycle
Option returns are:	Net mgmt fees	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt fees
Cost Drivers and Allocation	2016	2015	2014	2013	2012
FTE fulfilling fiduciary/oversight functions	9.4	7.0	9.4	4.0	2.5
Does the plan offer a managed account service?	No	No	No	No	No
Number with managed accounts					
Market value in managed accounts					
Do you receive revenue sharing from your providers?	No	No	No	No	No
Is it used to reduce management fee?					
Is it used to reduce administrative expenses?					
How are the recordkeeping or administration costs allocated to participants (asset based, flat fee, both, or other)?	flat fee	asset based	asset based	asset based	asset based
If other, describe					
Contributions	2016	2015	2014	2013	2012
Employer contributions (\$ millions)	179	182	173	167	57
Participant contributions (\$ millions)	343	320	304	298	263
% of participants making voluntary contributions?	54%		74%	28%	
Loan Features	2016	2015	2014	2013	2012
Does your plan allow loans?	Yes	Yes	Yes	Yes	Yes
Total number of outstanding loans	51,693	52,782	53,540	53,411	52,301
Average loan balance, (\$)	6,256	401	5,691	5,692	5,519
Does your plan allow for hardship withdrawals	Yes	Yes	Yes	Yes	Yes
Participant Transaction Rules and Restrictions	2016	2015	2014	2013	2012
Limits on the number of transactions?	Yes	Yes	Yes	Yes	No
Limits on international funds?	Yes	Yes	Yes	Yes	Yes
Limits on any other funds (excl. international)?	Yes		Yes	Yes	No
Excessive trading penalties?	No		No		No
Describe other limits if any	Allocation of funds no limit,	Allocation of funds no limit,	Allocation of funds no limit,	Trades should be made	Trades should be made
Assumed retirement age for your target date funds?	62				
Do you customize or use an off shelf target date fund?	Customize	Customize	Customize		

Your survey responses

North Carolina Retirement Systems

Participant Deferrals (DC is primary, no DB)	2016	2015	2014	2013	2012
--	------	------	------	------	------

Can participants make:

- a. After-tax Roth 401(k) contributions?
- b. After-tax non-Roth 401(k) contributions?

Is investment in employer stock required to some extent?

Is there a mandatory fixed or minimum contribution rate for full-time employees?

If yes, what is the mandatory contribution rate as a % of salary ?

Does the plan have automatic enrolment?

If yes:

- a. Initial automatic contribution as a % of salary
- b. What (if any) is the automatic annual increase in the contribution rate?
- c. Maximum rate achieved via automatic increases?

Applied to all/new employees only when introduced?

Participant Deferrals (DC is suppl. to DB)	2016	2015	2014	2013	2012
--	------	------	------	------	------

Can participants make:

- a. After-tax Roth 401(k) contributions?
- b. After-tax non-Roth 401(k) contributions?

Is investment in employer stock required to some extent?

Is there a mandatory fixed or minimum contribution rate for full-time employees?

If yes, what is the mandatory contribution rate as a % of salary ?

Does the plan have automatic enrolment?

If yes:

- a. Initial automatic contribution as a % of salary
- b. What (if any) is the automatic annual increase in the contribution rate?
- c. Maximum rate achieved via automatic increases?

Applied to all employees or new only when introduced?

Your survey responses

North Carolina Retirement Systems

Employer Contributions (if DC is primary, no DB)

Are employer contributions made in employer stock, cash or both?

Is there a profit sharing component to employer contributions?

Is there an automatic fixed employer contribution rate?

If yes, what is the automatic fixed employer contribution rate?

Is there an after-tax employer match?

Is there a before-tax employer match?

% of participants earning the maximum match

Indicate the match terms below:

Percentage match on the first:

Percentage of salary contributed:

Percentage on the next:

Percentage of salary contributed:

Or describe:

Employer Contributions (if DC is suppl. to DB)

Are employer contributions made in employer stock, cash or both?

Is there a profit sharing component to employer contributions?

Is there an automatic fixed employer contribution rate?

If yes, what is the automatic fixed employer contribution rate?

Is there an after-tax employer match?

Is there a before-tax employer match?

% of participants earning the maximum match

Indicate the match terms below:

Percentage match on the first:

Percentage of salary contributed:

Percentage on the next:

Percentage of salary contributed:

Or describe:

varies across
our multi-

varies across
our multi-

Your survey responses

North Carolina Retirement Systems

Fiduciary	2016	2015	2014	2013	2012
Named fiduciary?	committee	committee	committee	committee	committee
If named fiduciary is a committee:					
Number of committee members?	9	9	9	9	9
Number of meetings in the past year?	10	19	10	10	8
Are the meeting minutes documented?	Yes	Yes	Yes	Yes	Yes
Are the named fiduciaries:					
Provided formal training?	Yes	Yes	Yes	Yes	Yes
Required to sign an acknowledgement form?	Yes	Yes	Yes	Yes	No
Have third parties been appointed as:					
• Investment manager with full discretionary powers for selecting, monitoring, replacing investment options?	Yes	Yes	Yes	No	No
• Investment advisor to provide advice regarding the selection and retention of investment options?	Yes	Yes	Yes	Yes	Yes
• Plan administrator responsible for regulatory filings, disclosures to participants and hiring plan service providers if no other fiduciary has that responsibility?	Yes	Yes	Yes	Yes	Yes
Is there documentation that identifies the process for:					
• Selection and monitoring of third-party fiduciaries and other plan service providers?	Yes	Yes	Yes	No	No
• Investment policy	Yes	Yes	Yes	Yes	Yes
• Oversight of internal employees involved in operating the plan (i.e., internal fiduciaries, HR staff enrolling employees in the plan, posting deferrals, etc)	Yes	Yes	Yes	Yes	Yes
• Fulfilling administration responsibilities (regulatory filings, disclosures to participants)	Yes	Yes	Yes	Yes	Yes
Education and Other	2016	2015	2014	2013	2012
Is individual investment counseling/advice offered to plan participants?	No	No	No	No	No
• Is it provided by advisor, computer, both?					
Does your plan offer financial education via:					
• Group meetings?	Yes	Yes	Yes	Yes	Yes
• One-on-one meetings?	Yes	Yes	Yes	Yes	Yes
Do plan participants receive projections of annual income in retirement:					
• In their participant statements?	No	Yes	Yes	Yes	Yes
• Online?	Yes	Yes	Yes	Yes	Yes
• Via separate communication?	Yes	Yes	Yes	No	No
Does your plan have marketing campaigns to:					
• Increase employee contribution/deferral rates?	Yes	Yes	Yes	Yes	Yes
• Increase participation by eligible non-participants?	Yes	Yes	Yes	Yes	Yes
• Educate on the savers tax credit for lower income participants?	No	No	Yes	No	No
• Improve diversification from Employer Stock?		No	No		
Does your plan offer:					
• Out-of-plan guaranteed lifetime income product (i.e, annuity, etc)?	Yes	Yes	Yes	Yes	Yes
• In-plan guaranteed lifetime income product? (i.e., deferred annuity, etc)	No	No	No	No	No
Does your plan offer automatic rebalancing?	Yes	Yes	Yes	Yes	Yes

Your survey responses

North Carolina Retirement Systems

Your plan's 2016 investment options

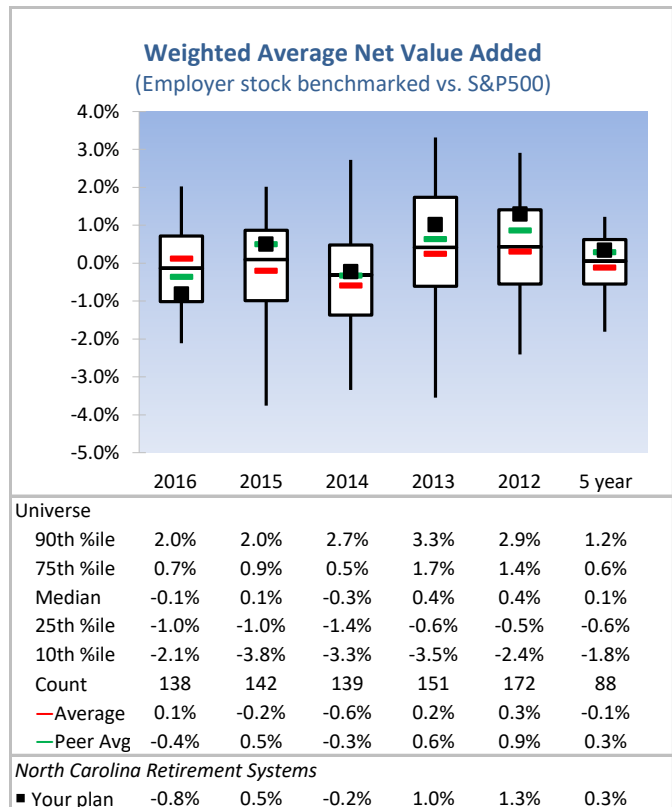
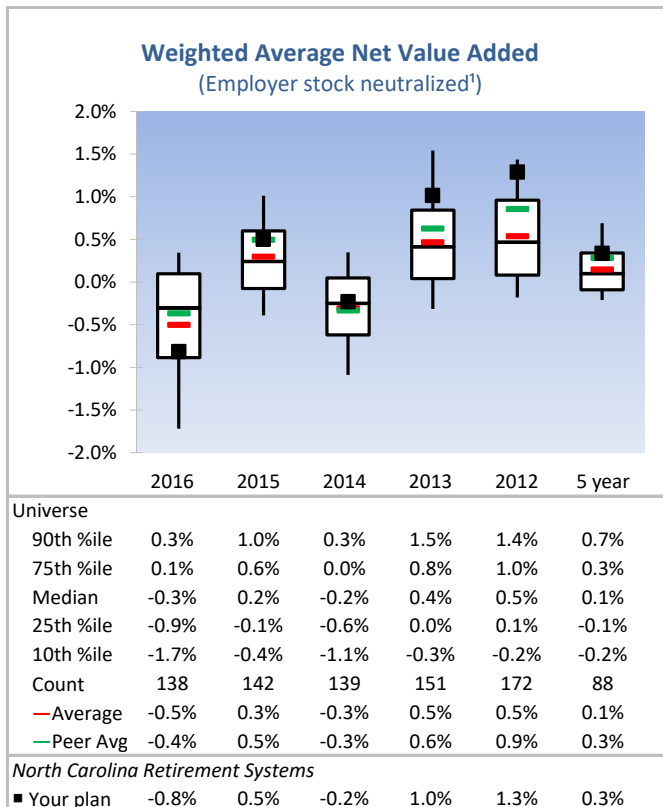
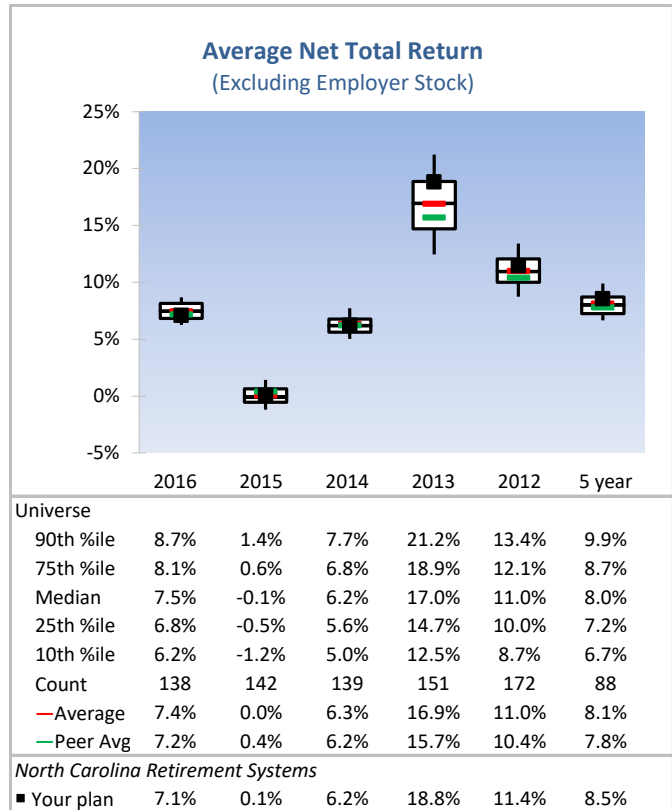
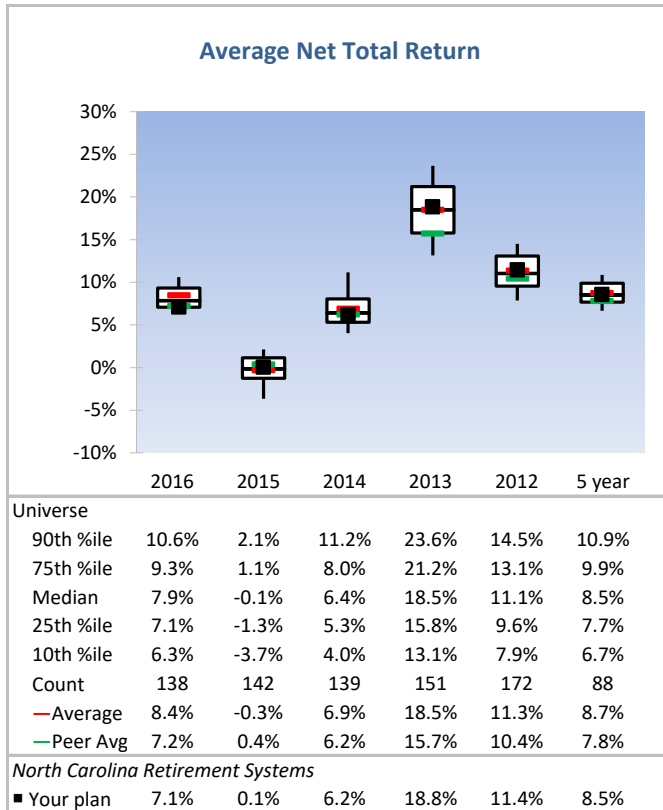
Provider & Option name	Type	% Indexed	\$ mils at 12/31/16	Annual Return	Benchmark	Cost, bp		
						Invest.	Admin	Total
BlackRock - North Carolina Large Cap Passive f	Stk U.S. Broad or LC Broad	100%	1,383.0	11.9%	S&P 500	12.0%	0.7	2.7
Multi-Mgr - North Carolina Large Cap Growth	Stk U.S. Broad or LC Growth		869.0	0.4%	Russell 1000 Growth	7.1%	42.2	3.8
Multi-Mgr - North Carolina Large Cap Value F	Stk U.S. Broad or LC Value		947.0	16.8%	Russell 1000 Value	17.3%	37.8	3.4
BlackRock - North Carolina SMID Cap Passive F	Stk U.S. MC Broad	100%	249.0	17.7%	Russell 2500	17.6%	0.7	3.2
Multi-Mgr - North Carolina SMID Growth Func	Stk U.S. MC Growth		372.0	8.6%	Russell 2500 Growth	9.7%	66.4	4.3
Multi-Mgr - North Carolina SMID Value Fund	Stk U.S. MC Value		494.0	20.6%	Russell 2500 Value	25.2%	60.9	4.3
Multi-Mgr - North Carolina International Equit	Stk Non U.S.		586.0	5.5%	MSCI ACWI exUS gross	5.0%	44.7	3.7
BlackRock - North Carolina International Passi	Stk Non U.S.	100%	47.0	5.2%	MSCI ACWI exUS gross	5.0%	2.5	5.8
Multi-Mgr - North Carolina Global Equity Fund	Stk Global		849.0	6.0%	MSCI ACWI gross	8.5%	54.6	3.3
Multi-Mgr - North Carolina Fixed Income Fund	Bonds Broad		660.0	4.0%	Barclays US Aggregate	2.7%	16.3	3.3
BlackRock - North Carolina Fixed Income Passi	Bonds Broad	100%	439.0	2.6%	Barclays US Aggregate	2.7%	2.0	2.9
Galliard - North Carolina Stable Value Fund	Stable Value		2,469.0	2.0%	3 year Constant Maturity Yeld	1.0%	33.8	2.6
PIMCO - Inflation Responsive Fund	Other		403.0	10.5%	PIMCO Inflation Responsive Index	6.8%	86.0	3.0
Total			9,767.0				33.9	3.2

Your plan's 2015 investment options

Provider & Option name	Type	% Indexed	\$ mils at 12/31/15	Annual Return	Benchmark	Cost, bp		
						Invest.	Admin	Total
BlackRock - North Carolina Large Cap Passive f	Stk U.S. Broad or LC Broad	100%	1,280.0	1.2%	S&P 500	1.4%	0.7	15.9
Multi-Mgr - North Carolina Large Cap Growth	Stk U.S. Broad or LC Growth		906.0	6.6%	Russell 1000 Growth	5.7%	41.9	17.2
Multi-Mgr - North Carolina Large Cap Value F	Stk U.S. Broad or LC Value		860.0	-4.5%	Russell 1000 Value	-3.8%	38.2	17.2
BlackRock - North Carolina SMID Cap Passive F	Stk U.S. MC Broad	100%	216.0	-2.9%	Russell 2500	-2.9%	1.0	15.9
Multi-Mgr - North Carolina SMID Growth Func	Stk U.S. MC Growth		343.0	1.9%	Russell 2500 Growth	-0.2%	66.7	17.2
Multi-Mgr - North Carolina SMID Value Fund	Stk U.S. MC Value		439.0	-7.1%	Russell 2500 Value	-5.5%	61.9	17.2
Multi-Mgr - North Carolina International Equit	Stk Non U.S.		540.0	-3.6%	MSCI ACWI exUS gross	-5.3%	45.1	18.7
BlackRock - North Carolina International Passi	Stk Non U.S.	100%	44.0	-5.6%	MSCI ACWI exUS gross	-5.3%	2.5	15.9
Multi-Mgr - North Carolina Global Equity Fund	Stk Global		768.0	0.0%	MSCI ACWI gross	-1.8%	54.9	17.7
Multi-Mgr - North Carolina Fixed Income Fund	Bonds Broad		589.0	0.8%	Barclays US Aggregate	0.6%	16.3	17.3
BlackRock - North Carolina Fixed Income Passi	Bonds Broad	100%	373.0	0.4%	Barclays US Aggregate	0.6%	2.0	15.9
Galliard - North Carolina Stable Value Fund	Stable Value		2,344.0	1.9%	30 days T-Bills + 100 bps	1.0%	34.0	10.4
PIMCO - North Carolina Inflation Responsive F	Other		343.0	-6.6%	45% Barclays U.S. TIPS Index,20%	-7.5%	69.0	17.5
Total			9,045.0				33.4	15.3

Appendix B

Total fund performance - annual history



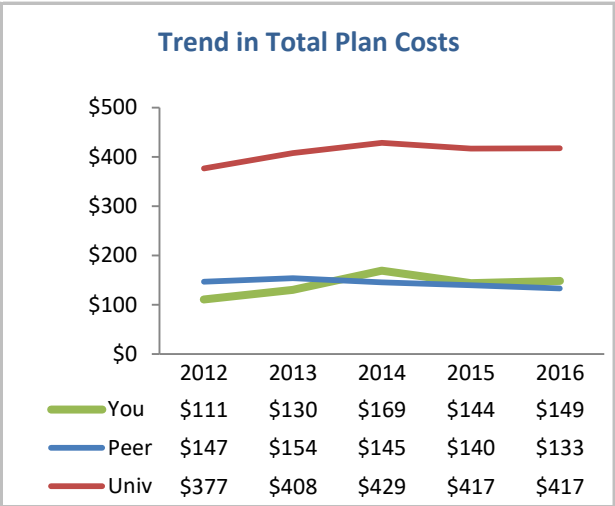
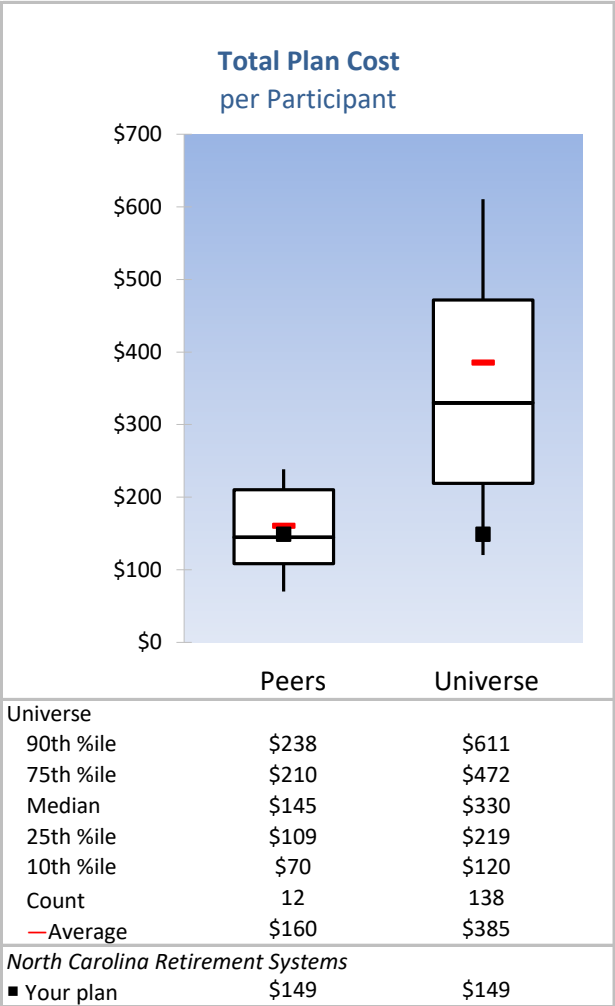
1. Employer stock's value added impact was neutralized by setting its benchmark return equal to its actual total return.

Appendix C

Total plan cost per participant

Your plan's total cost was \$149 per participant in 2016. This was above the peer median of \$145.

The body of this report focuses on costs as a percentage of assets because the largest plan cost, investment management fees, is usually quoted and charged as a percentage of assets. But this focus can cause fiduciaries to overlook the magnitude of plan costs. Therefore, it is also useful to compare costs on a 'per participant' basis.



Trend analysis is based on the 88 universe funds and 7 peers with 5 consecutive years of data.

Appendix D

Investment manager cost by option type and style

Option Type and Mandate Style	Peers							U.S. universe						
	Avg	10th	25th	Med	75th	90th	#	Avg	10th	25th	Med	75th	90th	#
Employer Stock	n/a	n/a	n/a	n/a	n/a	n/a	0	0.01%	0.00%	0.00%	0.00%	0.01%	0.03%	77
Stock U.S. Broad or Large Cap Active	0.41%	0.33%	0.35%	0.39%	0.42%	0.49%	8	0.42%	0.27%	0.33%	0.41%	0.51%	0.61%	113
Stock U.S. Broad or Large Cap Indexed	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	11	0.03%	0.01%	0.01%	0.02%	0.03%	0.04%	134
Stock U.S. Mid Cap Active	0.61%	0.43%	0.51%	0.64%	0.69%	0.76%	6	0.63%	0.42%	0.53%	0.63%	0.71%	0.82%	56
Stock U.S. Mid Cap Indexed	0.04%	0.02%	0.04%	0.05%	0.05%	0.06%	4	0.05%	0.02%	0.03%	0.05%	0.07%	0.07%	59
Stock U.S. Small Cap Active	0.66%	0.48%	0.60%	0.67%	0.68%	0.81%	8	0.65%	0.37%	0.53%	0.67%	0.79%	0.88%	91
Stock U.S. Small Cap Indexed	0.05%	0.02%	0.04%	0.05%	0.07%	0.09%	6	0.05%	0.03%	0.03%	0.05%	0.06%	0.07%	76
Stock Non U.S. Active	0.51%	0.40%	0.45%	0.50%	0.52%	0.65%	9	0.58%	0.42%	0.49%	0.55%	0.69%	0.83%	103
Stock Non U.S. Indexed	0.07%	0.03%	0.06%	0.07%	0.09%	0.10%	9	0.08%	0.05%	0.06%	0.08%	0.10%	0.11%	97
Stock Global Active	0.52%	0.50%	0.51%	0.52%	0.53%	0.54%	2	0.54%	0.28%	0.45%	0.51%	0.65%	0.84%	27
Stock Global Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.10%	0.06%	0.08%	0.09%	0.11%	0.12%	19
Stock Emerging Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.88%	0.61%	0.66%	0.90%	1.08%	1.19%	38
Stock Emerging Indexed	0.12%	0.10%	0.11%	0.12%	0.13%	0.14%	2	0.13%	0.10%	0.11%	0.12%	0.14%	0.18%	22
Bonds Non U.S Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.64%	0.41%	0.52%	0.58%	0.83%	0.88%	9
Bonds Non U.S Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.08%	0.06%	0.07%	0.07%	0.08%	0.11%	4
Bonds Broad Active	0.27%	0.12%	0.15%	0.25%	0.42%	0.44%	9	0.31%	0.14%	0.19%	0.33%	0.44%	0.46%	82
Bonds Broad Indexed	0.04%	0.03%	0.04%	0.04%	0.05%	0.05%	8	0.04%	0.02%	0.03%	0.04%	0.05%	0.06%	93
Bonds Short Active	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	1	0.24%	0.05%	0.09%	0.24%	0.40%	0.45%	20
Bonds Short Indexed	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	1	0.05%	0.03%	0.04%	0.05%	0.06%	0.07%	15
Bonds Long Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.27%	0.04%	0.04%	0.10%	0.59%	0.59%	5
Bonds Long Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.06%	0.03%	0.04%	0.06%	0.07%	0.08%	7
Bonds Other Active	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	1	0.40%	0.18%	0.28%	0.47%	0.54%	0.59%	15
Bonds Other Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.03%	0.01%	0.02%	0.04%	0.05%	0.05%	5
Bonds Global Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.49%	0.28%	0.39%	0.53%	0.60%	0.69%	11
Bonds Global Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.31%	0.11%	0.18%	0.31%	0.43%	0.50%	2
Bonds High Yield Active	0.39%	0.38%	0.38%	0.39%	0.39%	0.39%	2	0.50%	0.34%	0.39%	0.51%	0.60%	0.66%	26
Bonds High Yield Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	1
Bonds TIPS Active	0.16%	0.15%	0.16%	0.16%	0.17%	0.17%	2	0.17%	0.07%	0.07%	0.15%	0.24%	0.35%	23
Bonds TIPS Indexed	0.05%	0.04%	0.05%	0.05%	0.06%	0.06%	2	0.06%	0.02%	0.03%	0.05%	0.07%	0.09%	24
Target & Balanced Short Active	0.31%	0.17%	0.19%	0.24%	0.44%	0.48%	5	0.32%	0.14%	0.21%	0.32%	0.44%	0.52%	49
Target & Balanced Short Indexed	0.10%	0.08%	0.09%	0.10%	0.11%	0.11%	4	0.08%	0.05%	0.06%	0.08%	0.10%	0.11%	72
Target & Balanced Medium Active	0.28%	0.13%	0.15%	0.22%	0.42%	0.49%	6	0.35%	0.14%	0.21%	0.35%	0.47%	0.53%	63
Target & Balanced Medium Indexed	0.09%	0.08%	0.08%	0.09%	0.10%	0.11%	5	0.08%	0.05%	0.07%	0.08%	0.10%	0.12%	84
Target & Balanced Long Active	0.33%	0.13%	0.18%	0.41%	0.43%	0.49%	7	0.38%	0.16%	0.23%	0.41%	0.49%	0.56%	58
Target & Balanced Long Indexed	0.10%	0.08%	0.09%	0.10%	0.10%	0.11%	5	0.08%	0.05%	0.06%	0.08%	0.10%	0.12%	83
Target & Balanced Very Long Active	0.34%	0.15%	0.19%	0.31%	0.46%	0.54%	4	0.39%	0.10%	0.24%	0.41%	0.52%	0.60%	43
Target & Balanced Very Long Indexed	0.09%	0.08%	0.08%	0.10%	0.10%	0.11%	6	0.09%	0.06%	0.07%	0.08%	0.10%	0.12%	82
Balanced Global Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.82%	0.61%	0.69%	0.82%	0.95%	1.03%	2
Balanced Global Indexed	n/a	n/a	n/a	n/a	n/a	n/a	0	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	1
GIC Traditional	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5
Stable Value (ex GIC)	0.30%	0.25%	0.28%	0.29%	0.34%	0.36%	10	0.32%	0.19%	0.27%	0.31%	0.35%	0.44%	93
Cash, Money Market	0.04%	0.00%	0.01%	0.05%	0.07%	0.09%	7	0.10%	0.00%	0.06%	0.09%	0.11%	0.18%	76
Mutual Fund Window	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	2	0.77%	0.48%	0.88%	0.88%	0.88%	0.88%	15
Participant Brokerage Account	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	57
Private Equity	n/a	n/a	n/a	n/a	n/a	n/a	0	0.33%	0.07%	0.17%	0.33%	0.49%	0.59%	3
Annuity	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1	0.65%	0.22%	0.41%	0.52%	0.99%	1.13%	7
Hedge Fund	n/a	n/a	n/a	n/a	n/a	n/a	0	1.23%	0.62%	0.90%	1.24%	1.57%	1.83%	4
Real Estate	n/a	n/a	n/a	n/a	n/a	n/a	0	0.60%	0.30%	0.43%	0.65%	0.79%	0.84%	17
Single Stock	n/a	n/a	n/a	n/a	n/a	n/a	0	0.01%	0.00%	0.01%	0.01%	0.02%	0.02%	2
REIT Active	n/a	n/a	n/a	n/a	n/a	n/a	0	0.65%	0.43%	0.53%	0.59%	0.80%	0.92%	14
REIT Indexed	0.10%	0.08%	0.09%	0.10%	0.10%	0.11%	2	0.10%	0.08%	0.09%	0.10%	0.10%	0.13%	16
Loans	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46
Other	0.63%	0.48%	0.52%	0.58%	0.72%	0.80%	3	0.50%	0.11%	0.18%	0.53%	0.71%	0.91%	36

Report revision history by data year

2016

- All option and plan level returns, unless stated otherwise, are net of both investment and admin fees. For more details, see page 'Calculation of plan total return and value added'.
- Plan total average holdings are calculated from the plan total end of year holdings vs aggregating up from option average holdings as was done previously.
- Defaults are not applied to option returns if they are not provided to avoid biasing peer and universe return data in favor of benchmark returns.
- Highlighting of outliers in ranking charts is slightly revised to avoid cases when differences are immaterial or there is insufficient peer or universe data. Refer to section 6 Monitoring Investment Options & Admin for details.