

PEBASM
SC Retirement Systems
and State Health Plan

South Carolina Public Employee Benefit Authority

202 Arbor Lake Drive | Columbia, SC 29223

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www.peba.sc.gov

**Meeting Agenda | Finance, Administration, Audit and Compliance Committee |
Health Care Policy Committee | Retirement Policy Committee | Board of Directors**

Wednesday, March 4, 2020 | 202 Arbor Lake Dr., Columbia, SC 29223 | First Floor Conference Room

- I. Finance, Administration, Audit and Compliance (FAAC) Committee- 8:30 a.m.
 - A. Call to Order
 - B. Approval of Meeting Minutes- December 4, 2019
 - C. Internal Audit Reports
 - i. Internal Audit Report 2019-4 Document Management System
 - ii. The Internal Audit Plan Status Report
 - iii. The Internal Audit Plan 2020/2021
 - D. Executive Session for the Purpose of Discussing Information Technology Security Matters Pursuant to S.C. Code of § 30-4-70(a)(3)
 - E. Old Business/Director's Report
 - F. Adjournment

- II. Health Care Policy Committee Meeting- 10:30 a.m.
 - A. Call to Order
 - B. Approval of Meeting Minutes- December 4, 2019
 - C. Naturally Slim Update
 - D. Benchmark Review
 - E. Local Government Experience Rating
 - F. Old Business/Director's Report
 - G. Adjournment

LUNCH

III. Retirement Policy Committee Meeting- 1:00 p.m.

- A. Call to Order
- B. Approval of Meeting Minutes- December 4, 2019
- C. Defined Contribution Quarterly Reports
 - i. Deferred Compensation Program Investment Performance Report
 - ii. State ORP Investment Performance Report
 - a) Ivy Science and Technology Fund
- D. Deferred Compensation Program Plan Summary
- E. Administrative Fee Reduction for the Deferred Compensation Program
- F. Old Business/Director's Report
- G. Adjournment

IV. PEBA Board Meeting- 2:00 p.m.

- A. Call to Order
- B. Approval of Meeting Minutes- December 4, 2019
- C. 2020 Actuarial Experience Study
- D. Ethics Training
- E. Fiduciary Training
- F. Committee Reports
 - A. Finance, Administration, Audit and Compliance Committee
 - a) Internal Audit Plan 2020/2021
 - B. Health Care Policy Committee
 - b) Local Government Experience Rating
 - C. Retirement Policy Committee
 - a) Ivy Science and Technology Fund
 - b) Administrative Fee Reduction for the Deferred Compensation Program
- G. Old Business
 - i. Director's Report
 - ii. Roundtable Discussion
- H. Adjournment

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
Retirement Policy Committee

Meeting Date: March 4, 2020

1. Subject: Defined Contribution Quarterly Report

2. Summary: Mr. Mike Wright and Mr. Joe Ferguson from Segal Marco Advisors will present the Defined Contribution Quarterly Report for the quarter ending December 31, 2019.

3. What is Committee asked to do? Receive as information

4. Supporting Documents:

(a) Attached: 4th Quarter 2019 Investment Review

State of South Carolina Defined Contribution Plan

EXECUTIVE SUMMARY

Fourth Quarter 2019 Investment Review

March 2020

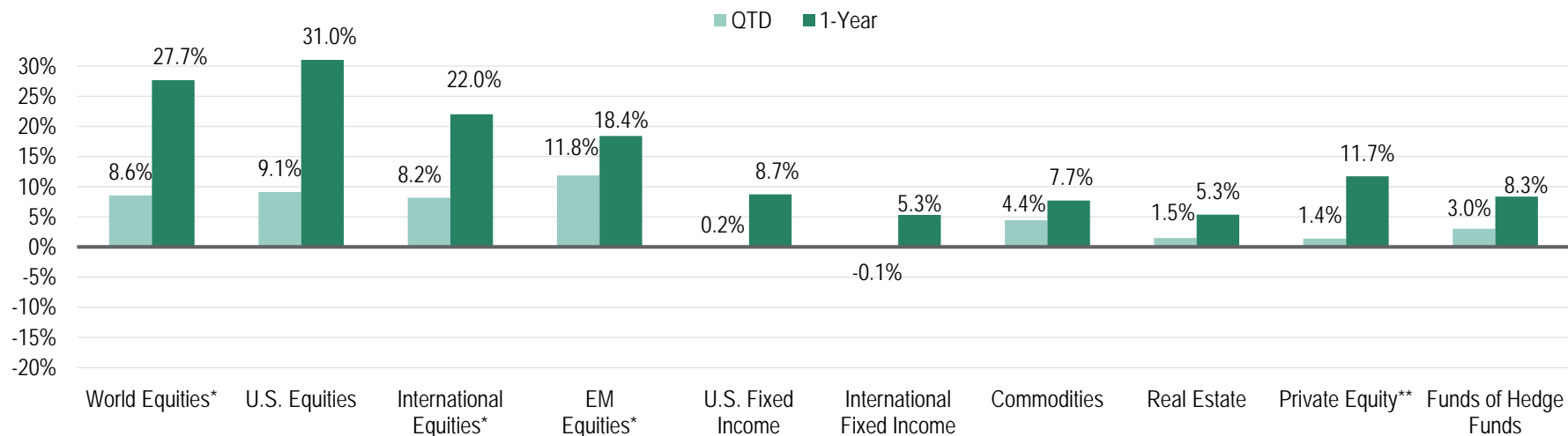
Michael C. Wright
Senior Vice President

Joe Ferguson
Consultant

Financial Market Conditions

Q4 2019 In Review

Summary of Investment Returns



Quarterly Synopsis

- World equity markets rose in Q4. Global trade tensions seemed to moderate and the Federal Reserve cut rates early in the quarter.
- U.S. equity was strongly positive. A more optimistic trade outlook and stable economic data boosted stocks.
- International equities also gained. Stronger economic data from Germany helped, as did the brighter trade picture.
- Emerging market equity surged. A weaker USD and a Federal Reserve rate cut boosted EM stocks.
- U.S. fixed income inched higher. The Treasury yield curve steepened as investors took a more optimistic view of the economy.
- Non-U.S. fixed income fell slightly. European yields rose with increasing political risk.
- Hedge funds rose. Equity hedge strategies were the top performers.

* Net Dividends Reinvested

** Performance as of Q3 2019 because Q4 2019 performance data is not yet available.

Sources: Investment Metrics, Thomson One, FactSet

Segal Marco Advisors Benchmark Report

As of December 31, 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Best	34.54	34.40	39.78	5.24	79.02	29.09	10.70	19.46	43.30	27.94	5.67	31.74	37.75	1.87	36.39
	14.02	32.59	11.81	2.10	58.21	27.27	7.84	18.64	38.82	13.45	3.30	21.31	30.21	1.28	31.43
	8.00	26.86	11.63	-2.47	37.21	26.85	6.60	18.05	34.52	13.24	2.38	17.34	25.62	0.01	28.48
	7.49	23.48	10.25	-21.37	34.47	24.50	4.98	17.90	33.48	13.05	0.92	17.13	22.17	-1.51	28.03
	7.05	22.25	7.05	-26.16	32.46	19.20	2.64	17.51	33.11	9.05	0.55	12.05	21.69	-2.08	26.54
	6.27	18.37	6.97	-28.92	28.43	16.71	1.50	16.42	32.53	5.97	0.03	11.60	14.65	-3.52	25.53
	5.26	15.46	5.77	-33.79	28.40	16.10	0.39	16.35	23.29	5.60	-0.27	11.32	13.66	-4.02	22.66
	4.71	13.35	4.91	-36.85	27.17	15.51	0.08	15.81	8.96	4.89	-0.39	8.44	9.41	-4.78	22.39
	4.55	11.86	3.36	-37.60	20.58	15.12	-2.91	15.26	7.44	4.22	-1.38	7.08	7.84	-8.27	18.90
	4.15	10.39	1.87	-38.07	19.69	8.21	-4.18	14.59	1.15	3.37	-3.83	2.65	7.77	-9.31	14.32
	3.53	9.07	-0.17	-38.44	12.91	6.54	-5.50	6.78	0.05	2.45	-4.41	1.51	7.50	-11.01	8.72
	2.88	4.84	-1.57	-38.54	11.47	5.70	-5.72	4.79	-2.02	0.04	-4.47	0.51	5.45	-12.86	8.34
	2.74	4.76	-9.78	-43.06	5.93	2.38	-11.73	4.21	-2.27	-1.82	-7.47	0.25	3.54	-13.36	7.54
Worst	2.43	4.34	-17.70	-53.18	0.17	0.13	-18.17	0.08	-2.55	-4.48	-14.60	0.25	0.86	-14.25	2.28
	R1000	R1000V	R1000G	R2000	R2000V	R2000G	MSCI EAFE	MSCI Emerging Markets	Blmbg. Barc. Municipal Bond	Barclays Agg.	Blmbg. Barc. U.S. Corp: High Yield	HFRI Fund of Funds Comp	Dow Jones Wilshire REIT	90 Day U.S. Treasury Bill	

Defined Contribution Update

Defined Contribution Update: Legislative

SECURE Act Became Law on December 20, 2019

Most significant piece of retirement legislation in years

➤ Overview of key provisions:

- Updated fiduciary safe harbor for the selection of an annuity provider.
- Provides rules for distributing an annuity where the plan has eliminated it as an investment option.
- Requires participant statements to estimate lifetime annuity payout value.
- Increases the required minimum distribution age from 70½ to 72.
- Limits “stretch” payments to DC plan beneficiaries.
- Eliminates early distribution tax/penalty for in-service withdrawals for birth or adoption.
- Prohibits plan loans made through credit cards.
- Increases the permissive auto-enrollment cap for certain safe harbor plans from 10% to 15%.
- Makes nonelective 401(k) safe harbor changes, including eliminating the nonelective safe harbor notice requirement.
- Requires expansion of 401(k) plan eligibility provisions to include long-term, part-time workers.
- Allows for consolidated Form 5500 reporting in certain circumstances.
- Allows for “pooled” multiple employer plans comprised of unrelated employers.
- Makes additional changes affecting DB, 529, 403(b) plans, and IRAs, and filing failure penalties.

Defined Contribution Update: Litigation

The Latest in 401(k) Plan Fee Cases

Large settlement, newly filed claims

- M&T Bank recently agreed to pay over \$20 million to resolve a lawsuit filed in 2010 alleging that 8 of its 23 investment alternatives were proprietary funds that cost significantly more – and performed worse – than similar funds.
 - Participants also claimed that the plan failed to use its bargaining power as a large institutional investor to obtain lower-cost class shares.
- On 12/31/19, former employees sued the Trader Joes 401(k) plan, alleging that it chose “inappropriately higher cost mutual funds share classes” and failed to leverage the plan’s size – \$1.62 billion in assets at the end of 2018 – to negotiate for lower fees.
- On 12/13/19, the Cintas 401(k) plan was sued for failing to review the plan’s investment portfolio to ensure that each investment option was prudent, in terms of cost, and maintaining certain funds in the plan despite the availability of similar investment options with lower costs and/or better performance histories.

Defined Contribution Update: Litigation

Cyber fraud and Fiduciary Liability

Data privacy and cybersecurity are emerging issues for plan fiduciaries

- On 5/1/19, a Pennsylvania federal court refused to dismiss claims against MandMarblestone Grp. LLP alleging that a plan's TPA and custodian breached fiduciary duties by permitting fraudulent distributions.
 - Plaintiffs alleged that “cyber criminals” obtained an electronic copy of her distribution form and used it to submit a series of requests for distributions of more than \$400,000, using an email account that appeared to come from the plan sponsor.
 - The court found that the fiduciaries sufficiently alleged that the defendants should have recognized the “peculiar nature and high frequency of the withdrawal requests.”
- Recently filed lawsuit claims breach of fiduciary duty against Estee Lauder, alleging that the plan, acting through its recordkeeper, processed three unauthorized withdrawals to different banks that resulted in a \$90,000+ account balance being reduced to \$3,800.
 - Plaintiff alleges that she immediately notified the recordkeeper's customer service center and the police about the unauthorized transactions, but was told that none of the missing funds could be recovered and that she would not be reimbursed; she claims no one from the company or the plan's benefits committee contacted her about the theft.
 - She seeks restoration of the amounts missing from her account, along with investment earnings and attorneys' fees.

Deferred Compensation Program

Deferred Compensation Program Summary

➤ Commentary

- Unlike the previous quarter, equity markets have large gains for the quarter. The Vanguard Institutional I Index S&P 500 fund returned +9.0% for the quarter and 31.5% year to date. Year to date equity returns are very strong versus historical averages.
 - Performance for the U.S. equity funds was strong for the most recent quarter. Only T. Rowe Price Growth Stock and Hartford Mid Cap lagged behind their respective indexes. Longer term performance was mixed, as the mid cap options placed in the bottom half of their respective peer groups for the three year period. International funds outperformed their respective benchmarks for the quarter as well as the three and five year periods.
 - Target Date funds for retirement after 2030 tracked their benchmarks for the quarter and year to date and consistently ranked in the top half of their peers. The shorter dated funds were positive but lagged versus their peers.
 - Bond funds continued to outperform expectations as US interest rates remained low. Baird's Fixed Income returned 0.3% for the quarter (+9.5% year to date). The fund placed in the top half of its peer group for all periods measured.
- Currently, there are no investment options in the Deferred Compensation Program that Segal Marco believes require further review.

State of South Carolina Deferred Compensation Program
Asset Allocation by Plan
December 31, 2019

Name		401(k) Market Value	% of Plan Assets	457 Market Value	% of Plan Assets	Total Market Value	Total % of Plan Assets
Domestic Equity Large Cap Funds		\$ 1,085,681,329	30%	\$ 258,468,849	25%	\$ 1,344,150,178	29%
Vanguard Institutional Index	VIIIX	\$ 597,463,371	16%	\$ 140,915,830	13%	\$ 738,379,201	16%
Dodge & Cox Stock	DODGX	\$ 240,902,693	7%	\$ 66,931,847	6%	\$ 307,834,540	7%
T. Rowe Price Growth Stock	PRGFX	\$ 247,315,265	7%	\$ 50,621,172	5%	\$ 297,936,437	6%
Domestic Equity Mid / Small Cap Funds		\$ 426,568,960	12%	\$ 113,788,921	11%	\$ 540,357,881	11%
T. Rowe Price Mid Cap Value	TRMIX	\$ 166,763,543	5%	\$ 47,438,229	5%	\$ 214,201,772	5%
Hartford Mid Cap	HFMVX	\$ 136,681,638	4%	\$ 29,476,042	3%	\$ 166,157,680	4%
TIAA CREF Small Cap Blend Index	TISBX	\$ 24,258,571	1%	\$ 9,164,656	1%	\$ 33,423,227	1%
American Beacon Small Cap Value	AVFIX	\$ 35,654,666	1%	\$ 10,056,845	1%	\$ 45,711,511	1%
AllianceBernstein Small Cap Growth	QUAIX	\$ 63,210,542	2%	\$ 17,653,149	2%	\$ 80,863,691	2%
Global/International Equity Funds		\$ 290,935,814	8%	\$ 74,953,839	7%	\$ 365,889,653	8%
American Funds New Perspective	RNPGX	\$ 54,143,327	1%	\$ 14,929,686	1%	\$ 69,073,013	1%
Fidelity Diversified International		\$ 119,240,352	3%	\$ 28,031,791	3%	\$ 147,272,143	3%
American Funds EuroPacific Growth	RERGX	\$ 117,552,135	3%	\$ 31,992,362	3%	\$ 149,544,497	3%
Hybrid Funds		\$ 517,576,865	14%	\$ 207,255,242	20%	\$ 724,832,107	15%
SSgA Target Retirement 2060 W		\$ 1,851,417	0%	\$ 742,353	0%	\$ 2,593,770	0%
SSgA Target Retirement 2055 W		\$ 1,479,277	0%	\$ 397,972	0%	\$ 1,877,249	0%
SSgA Target Retirement 2050 W		\$ 8,559,769	0%	\$ 3,503,129	0%	\$ 12,062,898	0%
SSgA Target Retirement 2045 W		\$ 3,960,414	0%	\$ 1,724,887	0%	\$ 5,685,301	0%
SSgA Target Retirement 2040 W		\$ 48,238,811	1%	\$ 14,136,517	1%	\$ 62,375,328	1%
SSgA Target Retirement 2035 W		\$ 6,844,871	0%	\$ 2,042,986	0%	\$ 8,887,857	0%
SSgA Target Retirement 2030 W		\$ 86,918,095	2%	\$ 26,145,461	2%	\$ 113,063,556	2%
SSgA Target Retirement 2025 W		\$ 20,571,847	1%	\$ 5,183,365	0%	\$ 25,755,212	1%
SSgA Target Retirement 2020 W		\$ 103,026,722	3%	\$ 32,275,130	3%	\$ 135,301,852	3%
SSgA Target Retirement 2015 W		\$ 2,344,915	0%	\$ 497,340	0%	\$ 2,842,255	0%
SSgA Target Retirement Income W		\$ 233,780,727	6%	\$ 120,606,102	11%	\$ 354,386,829	8%
Fixed Income Funds		\$ 220,673,676	6%	\$ 55,679,678	5%	\$ 276,353,354	6%
Baird Aggregate Bond	BAGIX	\$ 155,602,613	4%	\$ 40,841,149	4%	\$ 196,443,762	4%
Fidelity Inflation Protected Bond	FIPDX	\$ 65,071,063	2%	\$ 14,838,529	1%	\$ 79,909,592	2%
Stable Value/Guaranteed Certificates		\$ 1,093,729,530	30%	\$ 333,687,319	32%	\$ 1,427,416,849	30%
GW Stable Value		\$ 1,011,769,776	28%	\$ 296,504,708	28%	\$ 1,308,274,484	28%
84 Month Deposit		\$ 81,959,754	2%	\$ 37,182,611	4%	\$ 119,142,365	3%
Miscellaneous		\$ 14,613,561	0%	\$ 6,568,573	1%	\$ 21,182,134	0%
Self Directed Brokerage		\$ 13,871,624	0%	\$ 6,410,938	1%	\$ 20,282,562	0%
Self Directed Brokerage (ROTH)		\$ 741,937	0%	\$ 157,635	0%	\$ 899,572	0%
Total Plan \$		\$ 3,649,779,735	100%	\$ 1,050,402,421	100%	\$ 4,700,182,156	
% of Total Assets			78%		22%		

Percentages may not add to 100% due to rounding

State of South Carolina Deferred Compensation Program

Fund Monitor

December 31, 2019

Fund	Performance		Performance		Risk	Comment/Status
	3 Year vs Index	3 Year vs Peers	5 Year vs Index	5 Year vs Peers	Standard Deviation	
Vanguard Institutional Index	Pass	N/A	Pass	N/A	Pass	
Dodge & Cox Stock	Pass	Pass	Pass	Pass	Pass	
T. Rowe Price Growth Stock	Fail	Pass	Fail	Pass	Pass	
T. Rowe Price Mid Cap Value	Fail	Fail	Fail	Pass	Pass	
Hartford Mid Cap	Fail	Fail	Pass	Pass	Pass	
TIAA CREF Small Cap Blend Index	Pass	N/A	Pass	N/A	Pass	
American Beacon Small Cap Value	Fail	Pass	Fail	Pass	Pass	
AllianceBernstein Small Cap Growth	Pass	Pass	Pass	Pass	Pass	
American Funds New Perspective	Pass	Pass	Pass	Pass	Pass	
Fidelity Diversified International	Pass	Pass	Pass	Pass	Pass	
American Funds EuroPacific Growth	Pass	Pass	Pass	Pass	Pass	
SSgA Target Retirement 2060 W Index	Pass	N/A	N/A	N/A	N/A	
SSgA Target Retirement 2055 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2050 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2045 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2040 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2035 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2030 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2025 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2020 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement 2015 W Index	Pass	N/A	Pass	N/A	Pass	
SSgA Target Retirement Income W Index	Pass	N/A	Pass	N/A	Pass	
Baird Aggregate Bond	Pass	Pass	Pass	Pass	Pass	
Fidelity Inflation Protected Bond Index	Pass	N/A	Pass	N/A	Pass	
GW Stable Value	Pass	N/A	Pass	N/A	N/A	
84 Month Deposit	N/A	N/A	N/A	N/A	N/A	
Self Directed Brokerage	N/A	N/A	N/A	N/A	N/A	
Self Directed Brokerage (ROTH)	N/A	N/A	N/A	N/A	N/A	

Index funds must return within 30 basis points of their respective benchmarks

Actively managed funds must outperform respective benchmarks

Actively managed funds must rank in the top half of their respective peer universes

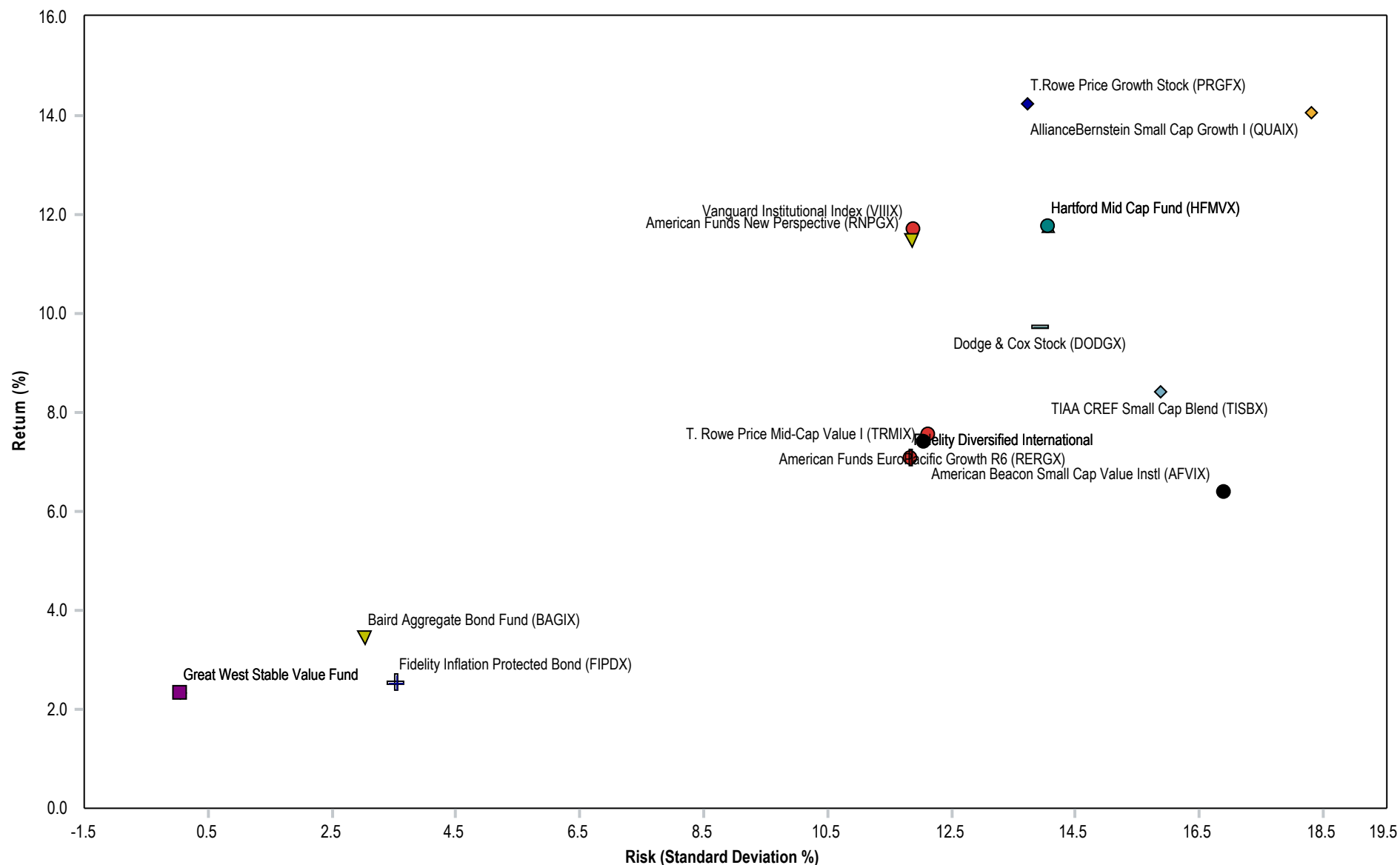
South Carolina Deferred Compensation Program

Fund Line-Up Statistics December 31, 2019

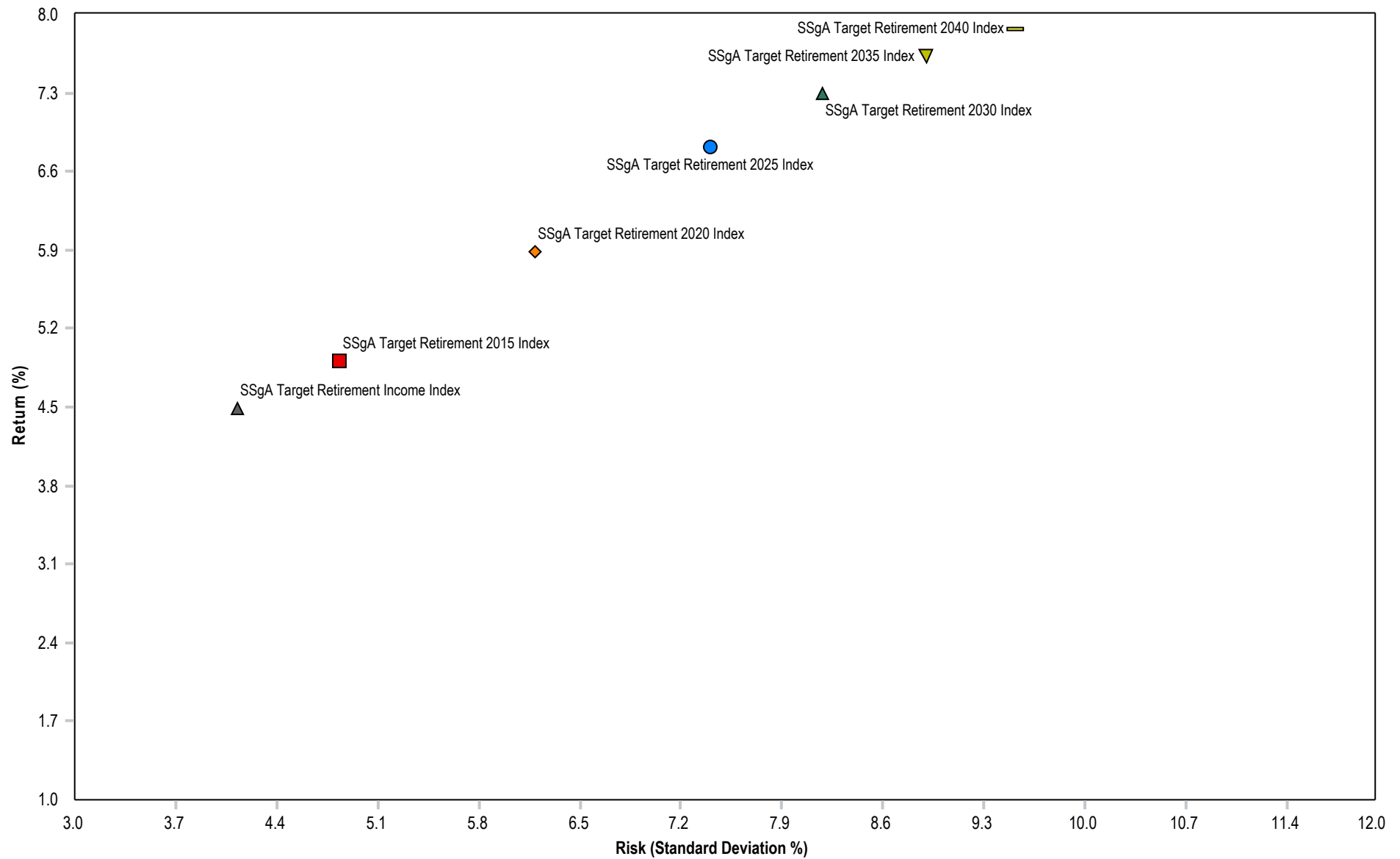
Fund	Ticker	Net Expense Ratio (%)	5-Year Standard Deviation (%)	Return (%) 1 Year	Return (%) 3 Years	Return (%) 5 Years
Domestic Equity						
Vanguard Institutional Index	VIIIX	0.02	11.85	31.48	15.26	11.69
Dodge & Cox Stock	DODGX	0.52	13.88	24.83	11.13	9.72
T. Rowe Price Growth Stock	PRGFX	0.66	13.84	30.82	20.05	14.23
T. Rowe Price Mid-Cap Value	TRMIX	0.65	12.35	19.75	6.21	7.55
Hartford MidCap R6	HFMVX	0.75	14.14	32.75	15.26	11.75
TIAA-CREF Small Cap Blend Index	TISBX	0.06	16.01	25.53	8.73	8.42
American Beacon Small Cap Value	AVFIX	0.81	17.12	23.51	4.23	6.39
AllianceBernstein Small Cap Growth	QUAIX	0.91	18.36	36.11	22.18	14.06
International Equity						
American Funds New Perspective	RNPGX	0.42	11.94	30.48	16.79	11.45
Fidelity Diversified International	N/A	0.58	11.82	29.75	11.72	7.06
American Funds EuroPacific Growth	RERGX	0.49	12.27	27.40	12.45	7.41
Hybrid Funds						
SSgA Target Retirement 2060 W	N/A	0.10	N/A	24.99	11.48	N/A
SSgA Target Retirement 2055 W	N/A	0.10	10.04	25.00	11.48	8.16
SSgA Target Retirement 2050 W	N/A	0.10	10.04	24.99	11.47	8.15
SSgA Target Retirement 2045 W	N/A	0.10	9.99	24.73	11.36	8.08
SSgA Target Retirement 2040 W	N/A	0.10	9.49	23.88	11.16	7.91
SSgA Target Retirement 2035 W	N/A	0.10	8.87	22.89	10.77	7.66
SSgA Target Retirement 2030 W	N/A	0.10	8.16	21.75	10.25	7.33
SSgA Target Retirement 2025 W	N/A	0.10	7.38	19.85	9.46	6.85
SSgA Target Retirement 2020 W	N/A	0.10	6.17	16.83	8.07	5.92
SSgA Target Retirement 2015 W	N/A	0.10	4.82	13.70	6.58	4.93
SSgA Target Retirement Income W	N/A	0.10	4.12	13.21	6.03	4.47
Fixed Income						
Baird Aggregate Bond Inst	BAGIX	0.30	3.03	9.48	4.38	3.43
Fidelity Inflation-Prot Bd Idx Instl	FIPDX	0.05	3.40	8.31	3.23	2.55
Stable Value/Guaranteed Certificates						
GW Stable Value Fund	N/A	0.16	0.04	2.48	2.31	2.34
84 Month Deposit Fund	N/A	N/A	N/A	N/A	N/A	N/A
Miscellaneous						
Self-Directed Brokerage	N/A	N/A	N/A	N/A	N/A	N/A
Self-Directed Brokerage (ROTH)	N/A	N/A	N/A	N/A	N/A	N/A

Expense Ratio and Standard Deviation: Lower is better

Return: Higher is better



Calculation based on monthly periodicity.



Calculation based on monthly periodicity.

Optional Retirement Program

Optional Retirement Program Summary

➤ MassMutual

➤ Commentary

➤ INVESCO Small Cap Discovery

- In the fourth quarter of 2019, INVESCO announced it was merging some of its mutual funds. The INVESCO Small Cap Discovery Fund will be merged into the INVESCO Small Cap Growth Fund. This change will take place May 15th, 2020.
 - As mentioned in a previous report, the portfolio management team for the Small Cap Growth strategy took over managing the Small Cap Discovery fund earlier in 2019.
 - With the merging of funds there will neither be a change in the investment team nor a change in the investment process.
 - The R6 share class of the Small Cap Discovery (VDSCX) currently resides in the MassMutual lineup. Once the merger of funds take place, participants will then be invested in the R6 share class of the INVESCO Small Cap Growth Fund (GTSFX).
 - The expense ratio of INVESCO Small Cap Growth (GTSFX) is 0.71% which is less than INVESCO Small Cap Discovery (expense ratio: 0.87%).
- Segal Marco notes this fund continues to meet standards regarding risk, fees, assets, management and style consistency.
- Segal Marco will continue to monitor this investment option as the changes occur and review it on an informal basis.

Optional Retirement Program Summary

➤ MassMutual

➤ Commentary

➤ Ivy Science and Technology

- The quarter and 1 year returns are very good, above benchmark and peers. 3, 5 and 10 years returns are below benchmark. The fund has consistently outperformed a broader small cap growth benchmark but not the tech benchmark that is its best measure.
 - Three Year Performance: The fund returned 24.18% versus 26.46% for its benchmark. This ranked above the median (36th percentile) in the peer universe.
 - Five Year Performance: The fund returned 13.72% versus 20.34% for its benchmark. This ranked at the bottom quartile (78th percentile) in the peer universe.
- Segal Marco recommends removing this fund from the investment lineup and mapping the assets to the Vanguard Small Cap Index Fund. The Vanguard Small Cap Index Fund has a high historical correlation (similar return patterns) with Ivy Science and Technology.
- The stock selection process and results of that stock selection along with the performance during the investment horizons stated in our policy are the basis for our concerns and recommendation. The considerations are:
 - Consistent underperformance versus index and peer group managers.
 - Sector fund that offers a substantially similar risk/return profile to the more broadly diversified Vanguard Small Cap Index and Invesco Small Cap Discovery Funds. The fund does not bring incremental diversification benefit to participants.
 - A historically high volatility approach, highest risk offering over 5 years. This is communicated and documented in participant materials.
 - Small participation and asset value in the fund.
 - Around \$1.47 million; 0.38% of total MassMutual ORP assets
 - Investment strategy held by 1.5% of MassMutual ORP participants
 - Second highest fee fund (0.82%) in the Mass Mutual Line up.

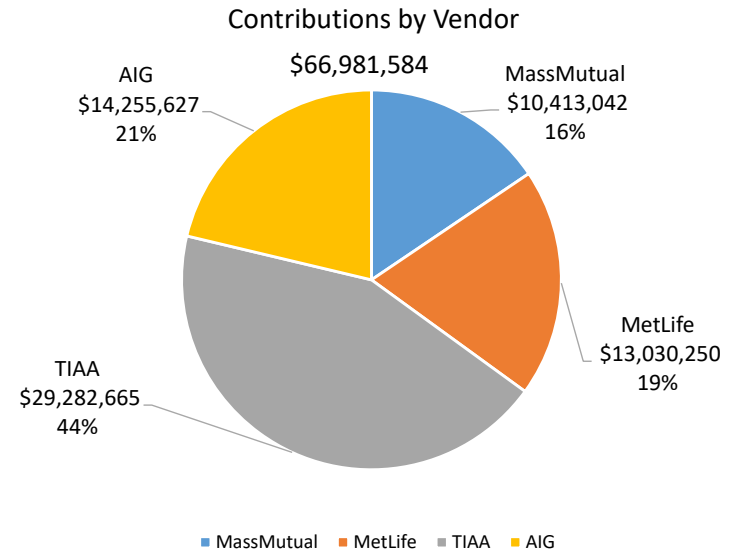
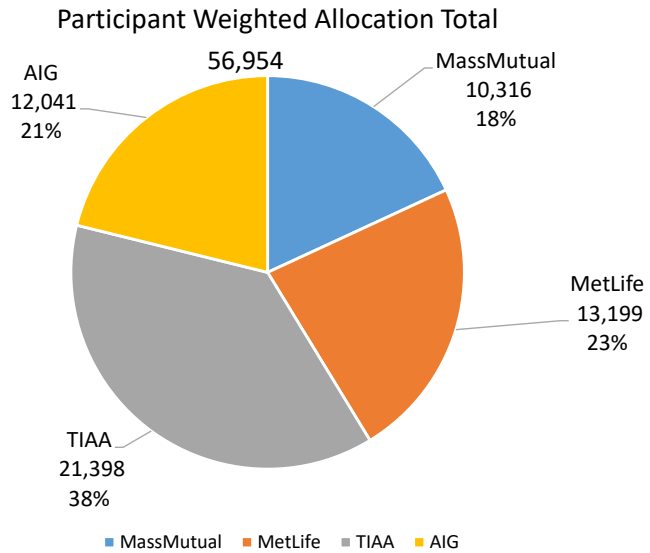
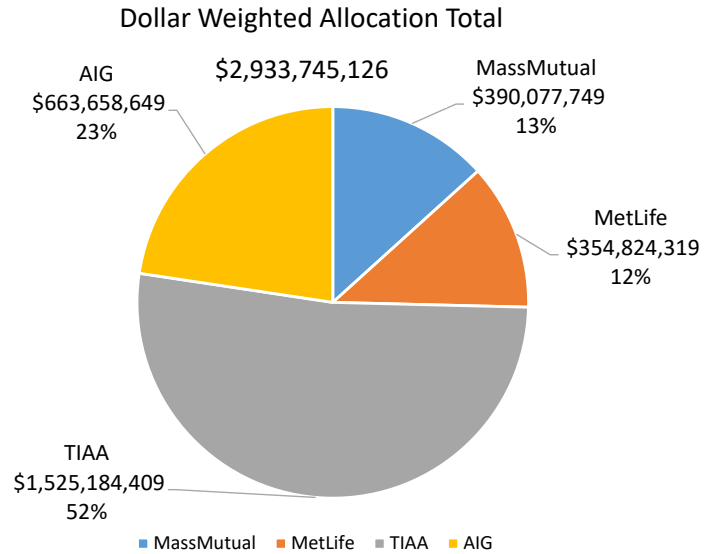
Optional Retirement Program Summary

➤ TIAA

➤ CREF Inflation Linked Bond

- For the three and five year periods, the strategy placed below its index and in the bottom half of its peer group universe. During this period, Inflation has been lower than expected and the spread between nominal and inflation protected Treasuries declined.
 - Three Year Performance: The fund returned 2.59% versus 3.32% for its benchmark. Over the same period it placed in the bottom half (53rd percentile) of the peer group universe
 - Five Year Performance: The fund returned 1.82% versus 2.62% for its benchmark. Over the same period it placed below the median (63rd percentile) compared to peer group universe
- Segal Marco notes this fund continues to meet standards regarding risk, fees, assets, management and style consistency.
- Segal Marco will continue to monitor this investment option on an informal basis.

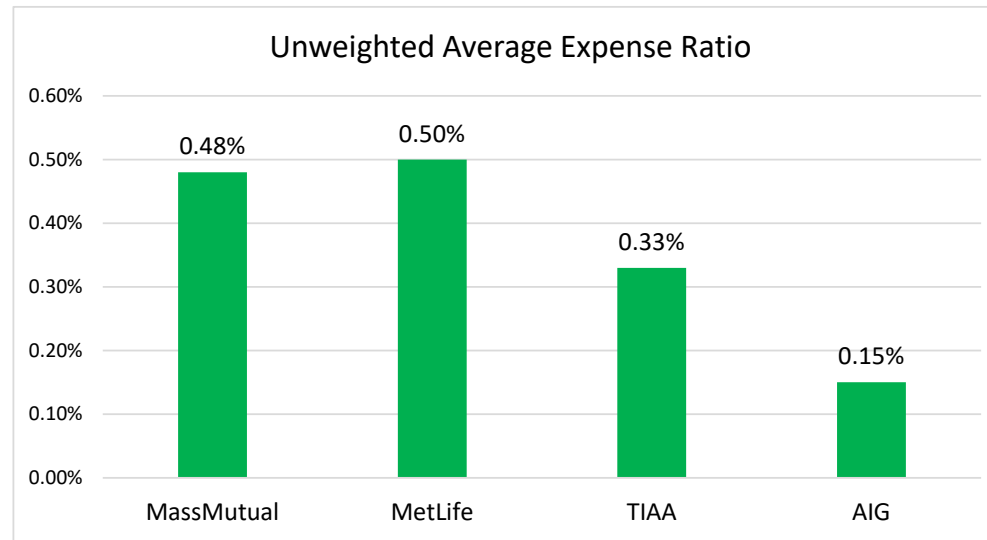
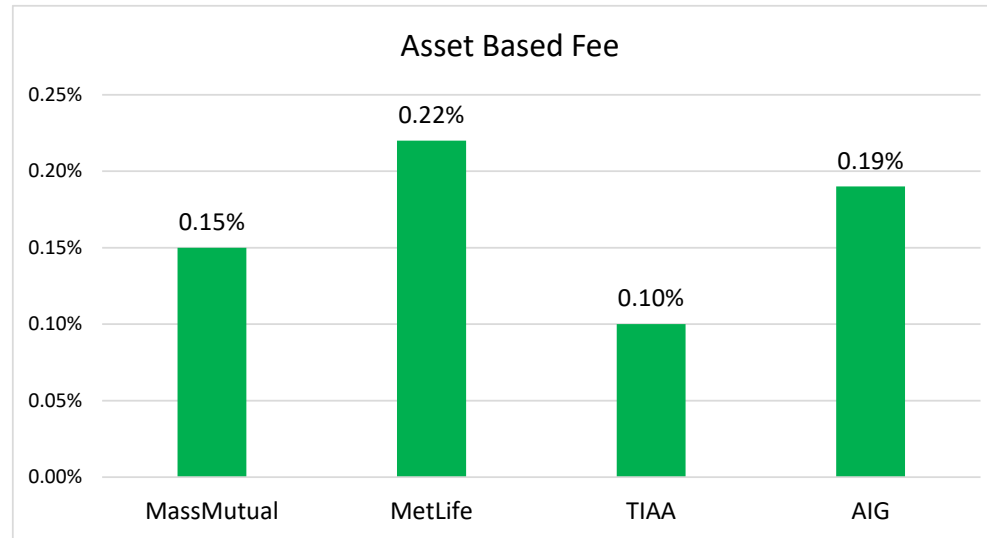
South Carolina ORP Total Plan Allocation December 31, 2019



South Carolina ORP Fund Line-Up Comparison December 31, 2019

Asset Class		MassMutual	MetLife	TIAA	AIG
Domestic Equity	Large Core	Vanguard Institutional Index (VINIX)	Vanguard Institutional Index (VINIX)	TIAA-CREF Equity Index I (TIEIX)	Vanguard Institutional Index (VINIX)
	Large Value	MFS Value R5 (MEIKX)	JP Morgan Equity Income R6 (OIEJX)	T. Rowe Price Inst Large Cap Value (TILCX)	Vanguard Value Index (VIVIX)
	Large Growth	MassMutual Select Blue Chip Growth I (MBCZX)	ClearBridge Large Cap Growth I (SBLYX)	-	T. Rowe Price Instl Large Cap Growth (TRLGX)
	Mid/SMID	Vanguard Mid Cap Index Inst (VMCIX)	Vanguard Mid Cap Index Inst (VMCIX)	Vanguard Mid Cap Index Inst (VMCIX)	Vanguard Mid Cap Index Inst (VMCIX)
	Small Core	Vanguard Small Cap Index Inst (VSCIX)	Delaware Small Cap Core (DCCIX)	TIAA-CREF Small Cap Index I (TISBX)	Vanguard Small Cap Index Inst (VSCIX)
	Small Value	American Beacon Small Cp Val Inst (AVFIX)	Victory Integrity Small-Cap Value R6 (MVSSX)	-	-
	Small Growth	INVESCO Small Cap Discovery R6 (VFSCX)	T. Rowe Price QM US Small-Cap Growth (PRDSX)	-	-
International Equity	Large Core	-	-	CREF Stock Annuity	-
	Large Value	-	Causeway International Value I (CIVIX)	-	-
	Large Growth	Oppenheimer International Growth I (OIGIX)	-	American Funds EuroPac Growth R6 (RERGX)	American Funds EuroPac Growth R6 (RERGX)
	Emerging	JP Morgan Emerging Markets (JEMWX)	Harding Loevner Instl EM I (HLMEX)	American Funds New World R6 (RNWGX)	Vanguard Emerging Market Stock Index Adm (VEMAX)
Fixed Income	Core	JP Morgan Core Bond R6 (JCBUX)	-	TIAA-CREF Bond Index I (TBIIX)	Vanguard Total Bond Market Index I (VBTIX)
	Core Plus	-	MetWest Total Return Bond (MWTSX)	-	-
Inflation Hedge	TIPS/Real Assets	Vanguard Inflation Protected Secs Adm (VAIPX)	PIMCO Real Return Inst (PRRIX)	CREF Inflation Linked Bond Annuity	DFA Inflation Protected Securities I (DIPSX)
Target Date/Balanced	Multi-Asset Class	T. Rowe Price Retirement / American Funds American Balanced R6 (RLBGX)	American Funds Target Date Retire R6 / Columbia Balanced Y (CBDYX)	TIAA-CREF Lifecycle Instl	Vanguard Target Retirement Inv
Cash & Equivalents	Money Market/Stable Value	General Fixed Interest Account	Vanguard Federal Money Market (VMFXX) / MetLife Gold Track Select	TIAA CREF Money Market Instl (TCIXX) TIAA Traditional Annuity	VALIC Fixed Interest
Other	Industry Sector/Socially Responsible	Ivy Science and Technology R6 (ISTNX)	Principal Real Estate Securities I (PIREX)	CREF Real Estate Securities Fund (TIREX) / CREF Social Choice Annuity	Vanguard Health Care Adm (VGHAX)

South Carolina ORP Vendor Fee Comparison December 31, 2019



Fund Monitor
December 31, 2019

Fund	Performance				Risk	Comment/Status
	3 Year vs Index	3 Year vs Peers	5 Year vs Index	5 Year vs Peers	Standard Deviation	
Vanguard Institutional Index	Pass	N/A	Pass	N/A	Pass	
MFS Value R5	Pass	Pass	Pass	Pass	Pass	
MassMutual Select Blue Chip Growth I	Pass	Pass	Pass	Pass	Pass	
Vanguard Mid Cap Index Inst	Pass	N/A	Pass	N/A	Pass	
Vanguard Small Cap Index Inst	Pass	N/A	Pass	N/A	Pass	
American Beacon Small Cp Val Inst	Fail	Pass	Fail	Pass	Pass	
INVESCO Small Cap Discovery R6	Pass	Pass	Pass	Fail	Pass	Informal Review
Oppenheimer International Growth I	Pass	Fail	Pass	Pass	Pass	
JP Morgan Emerging Markets R6	Pass	Pass	Pass	Pass	Pass	
American Funds American Balanced R6	Fail	Pass	Pass	Pass	Pass	
T. Rowe Price Retirement 2060	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2055	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2050	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2045	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2040	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2035	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2030	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2025	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2020	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2015	Pass	Pass	N/A	N/A	Pass	
T. Rowe Price Retirement 2010	Pass	Pass	N/A	N/A	Pass	
Ivy Science and Technology R6	Fail	Pass	Fail	Fail	Pass	Watch List
JP Morgan Core Bond R6	Pass	Pass	Pass	Pass	Pass	
Vanguard Inflation Protected Secs Adm	Fail	Pass	Fail	Pass	Pass	
General Fixed Interest Account	Pass	N/A	N/A	N/A	Pass	

Index funds must return within 30 basis points of their respective benchmarks

Actively managed funds must outperform respective benchmarks

Actively managed funds must rank in the top half of their respective peer universes

Fund Monitor

December 31, 2019

Fund	Performance				Risk	Comment/Status
	3 Year vs Index	3 Year vs Peers	5 Year vs Index	5 Year vs Peers	Standard Deviation	
Vanguard Institutional Index	Pass	N/A	Pass	N/A	Pass	
JP Morgan Equity Income	Pass	Pass	Pass	Pass	Pass	
ClearBridge Large Cap Growth	Fail	Fail	Fail	Pass	Pass	
Vanguard Mid Cap Index	Pass	N/A	Pass	N/A	Pass	
Delaware Small Cap Core	Fail	Pass	Pass	Pass	Pass	
Victory Integrity Small Cap Value	Fail	Pass	Fail	Pass	Pass	
TRP QM US Small Cap Growth	Pass	Pass	Pass	Pass	Pass	
Causeway International Value	Fail	Pass	Fail	Pass	Pass	
Harding Loevner Emerging Markets	Fail	Pass	Pass	Pass	Pass	
Columbia Balanced	Fail	Pass	Fail	Pass	Pass	
American Funds 2060 Target Date	Pass	Pass	N/A	N/A	N/A	
American Funds 2055 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2050 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2045 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2040 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2035 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2030 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2025 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2020 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2015 Target Date	Pass	Pass	Pass	Pass	Pass	
American Funds 2010 Target Date	Pass	Pass	Pass	Pass	Pass	
Principal Real Estate Securities	Pass	Pass	Pass	Pass	Pass	
MetWest Total Return Bond	Pass	Pass	Pass	Fail	Pass	
PIMCO Real Return	Pass	Pass	Fail	Pass	Pass	
Vanguard Federal Money Market	Fail	Pass	Fail	Pass	Pass	
Metlife Gold Track Select	Pass	N/A	Pass	N/A	Pass	

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Fund Monitor
December 31, 2019

Fund	Performance				Risk	Comment/Status
	3 Year vs Index	3 Year vs Peers	5 Year vs Index	5 Year vs Peers	Standard Deviation	
TIAA-CREF Equity Index	Pass	N/A	Pass	N/A	Pass	
TRP Instl Large Cap Value	Pass	Pass	Pass	Pass	Pass	
Vanguard Mid Cap Index	Pass	N/A	Pass	N/A	Pass	
TIAA-CREF Small Blend Index	Pass	N/A	Pass	N/A	Pass	
CREF Stock	Fail	Pass	Fail	Pass	Pass	
American Funds EuroPacific Growth	Pass	Pass	Pass	Pass	Pass	
American Funds New World	Pass	Pass	Pass	Pass	Pass	
CREF Social Choice	Pass	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2060	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2055	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2050	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2045	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2040	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2035	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2030	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2025	Fail	Pass	Fail	Pass	Pass	
TIAA-CREF Lifecycle 2020	Fail	Pass	Pass	Pass	Pass	
TIAA-CREF Lifecycle 2015	Pass	Pass	Pass	Pass	Pass	
TIAA-CREF Lifecycle 2010	Pass	Pass	Pass	Pass	Pass	
TIAA-CREF Lifecycle Retirement Income	Pass	Pass	Fail	Pass	Pass	
TIAA-CREF Real Estate Securities	Pass	Pass	Pass	Pass	Pass	
TIAA-CREF Bond Index	Pass	N/A	Pass	N/A	Pass	
CREF Inflation Linked Bond	Fail	Fail	Fail	Fail	Pass	Informal Review
TIAA-CREF Money Market	Fail	Pass	Fail	Pass	Pass	
TIAA Traditional	Pass	N/A	Pass	N/A	Pass	

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Fund Monitor
December 31, 2019

Fund	Performance				Risk	Comment/Status
	3 Year vs Index	3 Year vs Peers	5 Year vs Index	5 Year vs Peers	Standard Deviation	
Vanguard Institutional Index	Pass	N/A	Pass	N/A	Pass	
Vanguard Value Index	Pass	N/A	Pass	N/A	Pass	
T Rowe Price Large Cap Growth	Pass	Pass	Pass	Pass	Pass	
Vanguard Mid Cap Index	Pass	N/A	Pass	N/A	Pass	
Vanguard Small Cap Index	Pass	N/A	Pass	N/A	Pass	
American Funds EuroPacific Growth	Pass	Pass	Pass	Pass	Pass	
Vanguard Emerging Market Index	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2060	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2055	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2050	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2045	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2040	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2035	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2030	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2025	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2020	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire 2015	Pass	N/A	Pass	N/A	Pass	
Vanguard Target Retire Income	Pass	N/A	Pass	N/A	Pass	
Vanguard Healthcare	Fail	Fail	Fail	Pass	Pass	
Vanguard Total Bond Market Index	Fail	N/A	Fail	N/A	Pass	
DFA Inflation Protected Securities	Fail	Pass	Pass	Pass	Pass	
Fixed Interest	Pass	N/A	Pass	N/A	Pass	

Index funds must return within 30 basis points of their respective benchmarks

Actively managed funds must outperform respective benchmarks

Actively managed funds must rank in the top half of their respective peer universes

South Carolina State ORP (MassMutual)

Fund Line-Up Statistics December 31, 2019

Fund	Ticker	Net Expense Ratio (%)	5-Year Standard Deviation (%)	Return (%) 1 Year	Return (%) 3 Years	Return (%) 5 Years
Domestic Equity						
Vanguard Institutional Index I	VINIX	0.04	11.85	31.46	15.24	11.67
MFS Value R6	MEIKX	0.47	11.87	30.18	11.45	9.51
MassMutual Select Blue Chip Growth I	MBCZX	0.64	13.90	30.89	21.13	15.09
Vanguard Mid Cap Index I	VMCIX	0.04	12.70	31.04	12.37	9.26
Vanguard Small Cap Index I	VSCIX	0.04	14.65	27.40	10.33	8.90
American Beacon Small Cap Value Instl	AVFIX	0.81	17.12	23.51	4.23	6.39
Invesco Small Cap Discovery R6	VFSCX	0.87	15.98	29.01	15.29	9.70
International Equity						
Oppenheimer International Growth I	OIGIX	0.67	13.09	29.16	9.88	6.17
JP Morgan Emerging Markets R6	JEMWX	0.79	15.45	32.20	16.71	8.72
Balanced						
American Funds American Balanced R6	RLBGX	0.28	7.17	19.55	10.56	8.47
Target Date						
T. Rowe Price Retirement I 2060 I	TRPLX	0.59	N/A	25.48	12.48	N/A
T. Rowe Price Retirement I 2055 I	TRPNX	0.59	N/A	25.52	12.48	N/A
T. Rowe Price Retirement I 2050 I	TRPMX	0.59	N/A	25.57	12.49	N/A
T. Rowe Price Retirement I 2045 I	TRPKX	0.59	N/A	25.52	12.47	N/A
T. Rowe Price Retirement I 2040 I	TRPDX	0.58	N/A	24.89	12.29	N/A
T. Rowe Price Retirement I 2035 I	TRPJX	0.56	N/A	23.90	11.80	N/A
T. Rowe Price Retirement I 2030 I	TRPCX	0.53	N/A	22.68	11.23	N/A
T. Rowe Price Retirement I 2025 I	TRPHX	0.50	N/A	21.15	10.48	N/A
T. Rowe Price Retirement I 2020 I	TRBRX	0.46	N/A	19.45	9.63	N/A
T. Rowe Price Retirement I 2015 I	TRFGX	0.43	N/A	17.55	8.75	N/A
T. Rowe Price Retirement I 2010 I	TRPAX	0.40	N/A	16.31	7.84	N/A
Specialty						
Ivy Science & Technology R6	ISTNX	0.82	17.16	50.77	24.18	13.72
Fixed Income						
JPMorgan Core Bond R6	JCBUX	0.35	3.06	8.59	4.21	3.22
Vanguard Inflation-Protected Securities Adm	VAIPX	0.10	3.35	8.16	3.15	2.45
Stable Value						
General Fixed Interest	N/A	0.16	N/A	2.54	2.76	N/A

Expense Ratio and Standard Deviation: Lower is better

Return: Higher is better

South Carolina State ORP (MetLife)

Fund Line-Up Statistics December 31, 2019

Fund	Ticker	Net Expense Ratio (%)	5-Year Standard Deviation (%)	Return (%) 1 Year	Return (%) 3 Years	Return (%) 5 Years
Domestic Equity						
Vanguard Institutional Index I	VINIX	0.04	11.85	31.46	15.24	11.67
JPMorgan Equity Income R63	OIEJX	0.49	10.79	26.60	12.63	10.04
ClearBridge Large Cap Growth I	SBLYX	0.76	12.54	32.08	18.31	14.21
Vanguard Mid Cap Index I	VMCIX	0.04	12.70	31.04	12.37	9.26
Delaware Small Cap Core I	DCCIX	0.87	15.93	26.02	8.36	8.34
Victory Integrity Small-Cap Value R63	MVSSX	0.96	16.96	23.28	4.23	5.68
T. Rowe Price Diversified Small Cap Growth	PRDSX	0.80	14.56	32.76	14.72	11.46
International Equity						
Causeway International Value Instl	CIVIX	0.88	13.06	20.10	7.53	3.91
Harding Loevner Instl Emerging Markets I	HMEX	1.27	15.54	25.76	11.46	6.30
Balanced						
Columbia Balanced Y3	CBDYX	0.61	7.63	23.15	9.97	7.66
Target Date						
American Funds 2060 Trgt Date Retire R6	RFUTX	0.41	N/A	25.01	13.05	N/A
American Funds 2055 Trgt Date Retire R6	RFKTX	0.40	10.12	25.09	13.11	9.54
American Funds 2050 Trgt Date Retire R6	RFITX	0.39	10.10	25.04	13.11	9.55
American Funds 2045 Trgt Date Retire R6	RFHTX	0.38	10.00	24.68	12.96	9.45
American Funds 2040 Trgt Date Retire R6	RFGTX	0.38	9.80	24.40	12.76	9.30
American Funds 2035 Trgt Date Retire R6	RFFTX	0.37	9.38	23.29	12.28	8.99
American Funds 2030 Trgt Date Retire R6	RFETX	0.35	8.22	20.06	10.86	8.07
American Funds 2025 Trgt Date Retire R6	RFDTX	0.33	6.86	17.85	9.47	7.12
American Funds 2020 Trgt Date Retire R6	RRCTX	0.31	5.80	15.59	8.28	6.37
American Funds 2015 Trgt Date Retire R6	RFJTX	0.31	5.24	14.94	7.53	5.85
American Funds 2010 Trgt Date Retire R6	RFTTX	0.31	4.94	13.88	7.03	5.49
Specialty						
Principal Real Estate Securities Instl	PIREX	0.91	12.84	31.13	11.01	8.60
Fixed Income						
Metropolitan West Total Return Bond Plan	MWTSX	0.37	2.88	9.23	4.27	3.11
PIMCO Real Return Instl	PRRIX	0.98	3.49	8.51	3.40	2.44
MMF/Stable Value						
Vanguard Federal Money Market Inv	VMFXX	0.11	0.24	2.14	1.58	1.01
Gold Track Select	N/A	0.00	0.16	1.50	2.00	2.40

Expense Ratio and Standard Deviation: Lower is better

Return: Higher is better

South Carolina State ORP (TIAA)

Fund Line-Up Statistics December 31, 2019

Fund	Ticker	Net Expense Ratio (%)	5-Year Standard Deviation (%)	Return (%) 1 Year	Return (%) 3 Years	Return (%) 5 Years
Domestic Equity						
TIAA-CREF Equity Index Instl	TIEIX	0.05	12.11	30.87	14.52	11.21
T. Rowe Large Cap Value I	TILCX	0.57	12.23	26.69	10.30	8.55
Vanguard Mid Cap Index I	VMCIX	0.04	12.70	31.04	12.37	9.26
TIAA-CREF Small-Cap Blend Index Instl	TISBX	0.06	16.01	25.53	8.73	8.33
International Equity						
CREF Stock R3	QCSTIX	0.21	11.90	27.46	12.44	8.26
American Funds Europacific Growth R6	RERGX	0.49	12.27	27.40	12.45	7.40
American Funds New World R6	RNWXG	0.60	11.81	28.03	14.46	8.10
Balanced						
CREF Social Choice R3	QCSCIX	0.17	6.82	20.77	9.72	6.73
Target Date						
TIAA-CREF Lifecycle 2060 Instl	TLXNX	0.45	11.56	26.70	12.34	8.94
TIAA-CREF Lifecycle 2055 Instl	TTRIX	0.45	11.45	26.36	12.27	8.86
TIAA-CREF Lifecycle 2050 Instl	TFTIX	0.45	11.35	26.19	12.18	8.81
TIAA-CREF Lifecycle 2045 Instl	TTFIX	0.45	11.23	25.87	12.05	8.71
TIAA-CREF Lifecycle 2040 Instl	TCOIX	0.44	10.72	24.56	11.72	8.45
TIAA-CREF Lifecycle 2035 Instl	TCIIX	0.43	9.73	23.04	11.07	8.03
TIAA-CREF Lifecycle 2030 Instl	TCRIX	0.42	8.74	21.27	10.34	7.58
TIAA-CREF Lifecycle 2025 Instl	TCYIX	0.41	7.70	19.44	9.63	7.10
TIAA-CREF Lifecycle 2020 Instl	TCWIX	0.39	6.70	17.79	8.88	6.64
TIAA-CREF Lifecycle 2015 Instl	TCNIX	0.38	5.94	16.51	8.24	6.19
TIAA-CREF Lifecycle 2010 Instl	TCTIX	0.37	5.36	15.43	7.74	5.84
TIAA-CREF Lifecycle Retirement Inc Instl	TLRIX	0.37	5.07	15.30	7.52	5.67
Specialty						
TIAA-CREF Real Estate Sec Instl	TIREX	0.51	12.59	31.09	12.21	9.06
Fixed Income						
TIAA-CREF Bond Index Instl	TBIIX	0.11	3.11	8.37	3.87	2.90
CREF Inflation Linked Bond R3	QCILIX	0.22	2.91	6.54	2.59	1.87
MMF/Stable Value						
TIAA-CREF Money Market Instl	TCIXX	0.14	0.24	2.11	1.53	0.98
TIAA Traditional	N/A	0.00	0.08	3.69	4.06	4.05

Expense Ratio and Standard Deviation: Lower is better

Return: Higher is better

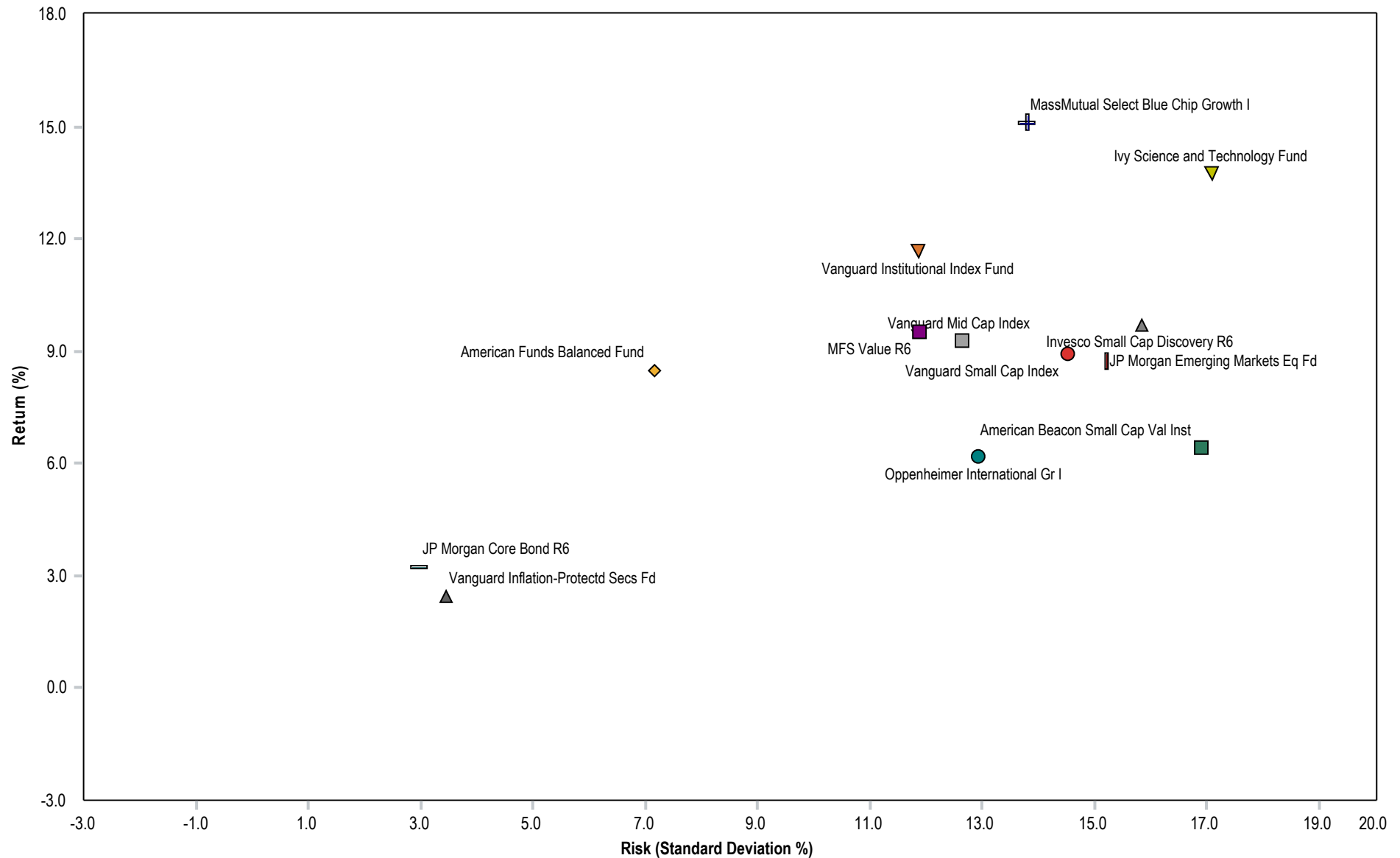
South Carolina State ORP (AIG)

Fund Line-Up Statistics December 31, 2019

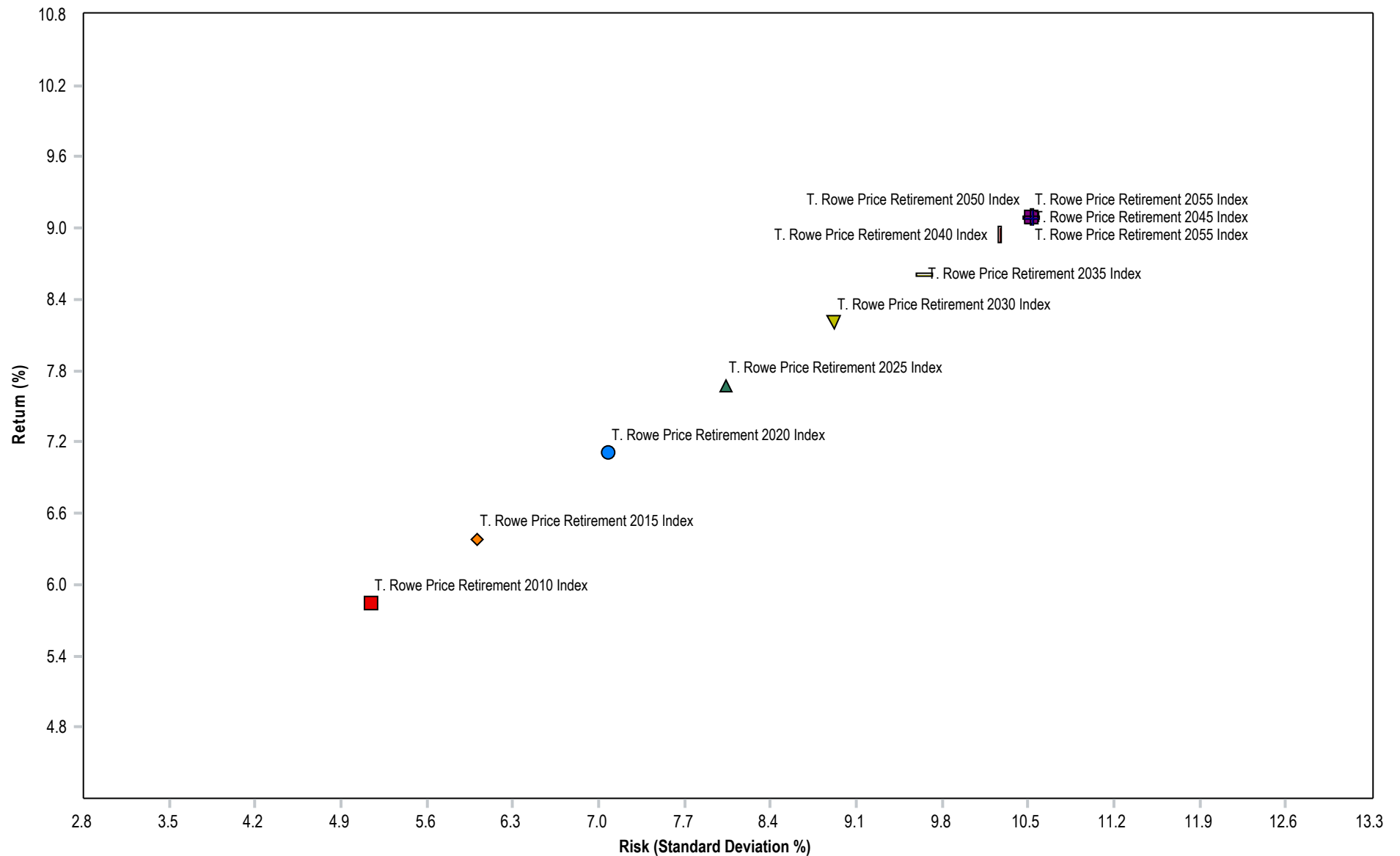
Fund	Ticker	Net Expense Ratio (%)	5-Year Standard Deviation (%)	Return (%) 1 Year	Return (%) 3 Years	Return (%) 5 Years
Domestic Equity						
Vanguard Institutional Index I	VINIX	0.04	11.85	31.46	15.24	11.67
Vanguard Value Index I	VIVIX	0.04	11.68	25.83	11.71	10.07
T. Rowe Price Instl Large Cap Growth	TRLGX	0.56	13.88	28.49	22.70	15.90
Vanguard Mid Cap Index I	VMCIX	0.04	12.70	31.04	12.37	9.26
Vanguard Small Cap Index I	VSCIX	0.04	14.65	27.40	10.33	8.90
International Equity						
American Funds Europacific Growth R6	RERGX	0.49	12.27	27.40	12.45	7.41
Vanguard Emerging Markets	VEMAX	0.14	15.39	20.31	10.53	5.01
Target Date						
Vanguard Target Retirement 2060 Inv	VTTSX	0.15	10.43	24.96	11.79	8.38
Vanguard Target Retirement 2055 Inv	VFFVX	0.15	10.41	24.98	11.80	8.38
Vanguard Target Retirement 2050 Inv	VFIFX	0.15	10.43	24.98	11.80	8.41
Vanguard Target Retirement 2045 Inv	VTIVX	0.15	10.41	24.94	11.80	8.41
Vanguard Target Retirement 2040 Inv	VFORX	0.14	10.00	23.86	11.48	8.20
Vanguard Target Retirement 2035 Inv	VTTHX	0.14	9.12	22.44	10.86	7.81
Vanguard Target Retirement 2030 Inv	VTHRX	0.14	8.22	21.07	10.24	7.41
Vanguard Target Retirement 2025 Inv	VTTVX	0.13	7.36	19.63	9.57	6.99
Vanguard Target Retirement 2020 Inv	VTWNX	0.13	6.40	17.63	8.72	6.42
Vanguard Target Retirement 2015 Inv	VTXVX	0.13	5.09	14.81	7.50	5.59
Vanguard Target Retirement Income Inv	VTINX	0.12	3.70	13.16	6.36	4.80
Specialty						
Vanguard Health Care Adm	VGHAX	0.28	13.92	22.98	14.20	8.86
Fixed Income						
Vanguard Total Bond Market Index I	VBPIX	0.04	3.18	10.49	4.66	3.90
DFA Inflation-Protected Securities I	DIPSX	0.12	3.62	8.46	3.40	2.71
MMF/Stable Value						
Fixed Interest Option	N/A	0.00	0.03	2.23	2.10	2.15

Expense Ratio and Standard Deviation: Lower is better

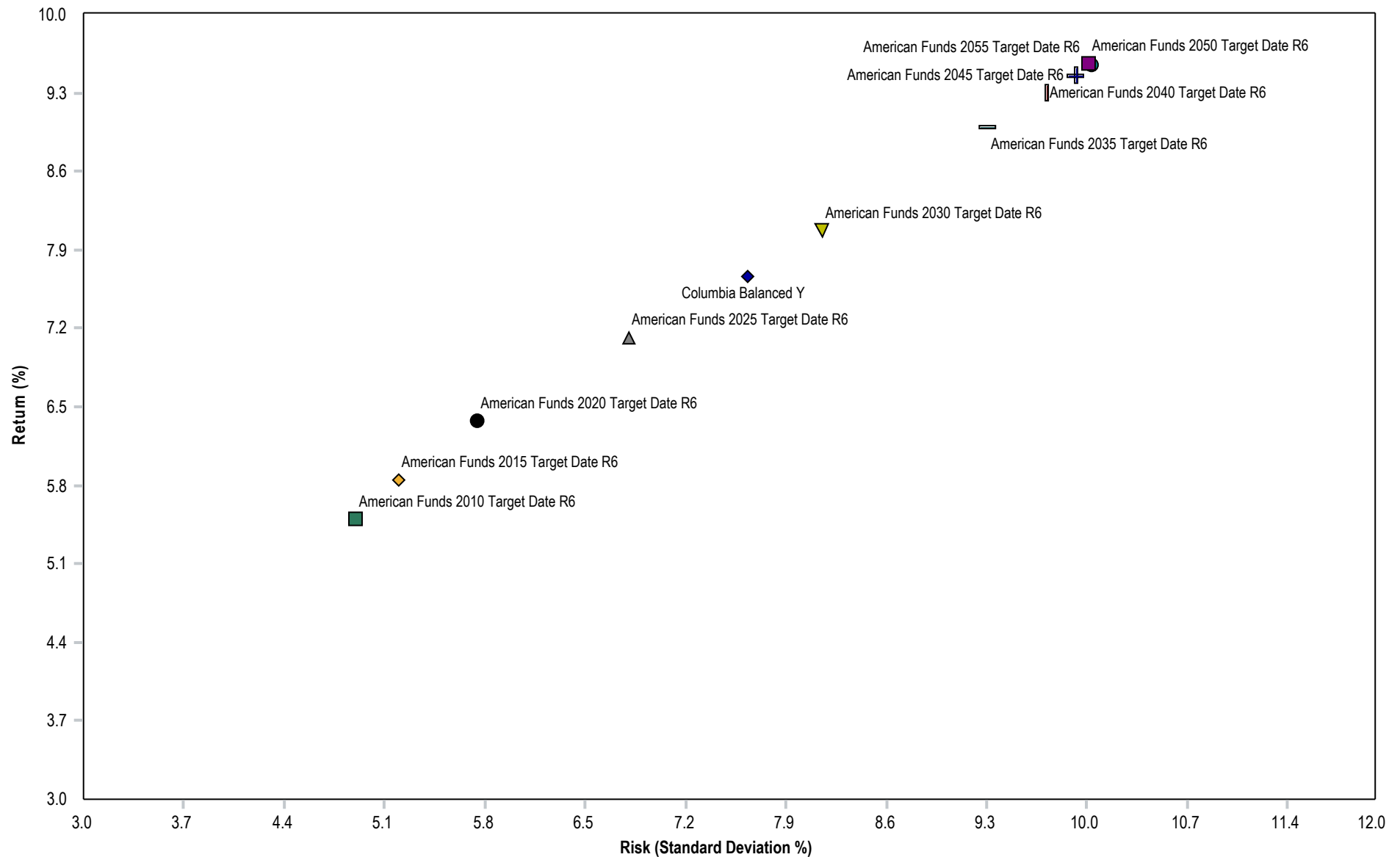
Return: Higher is better



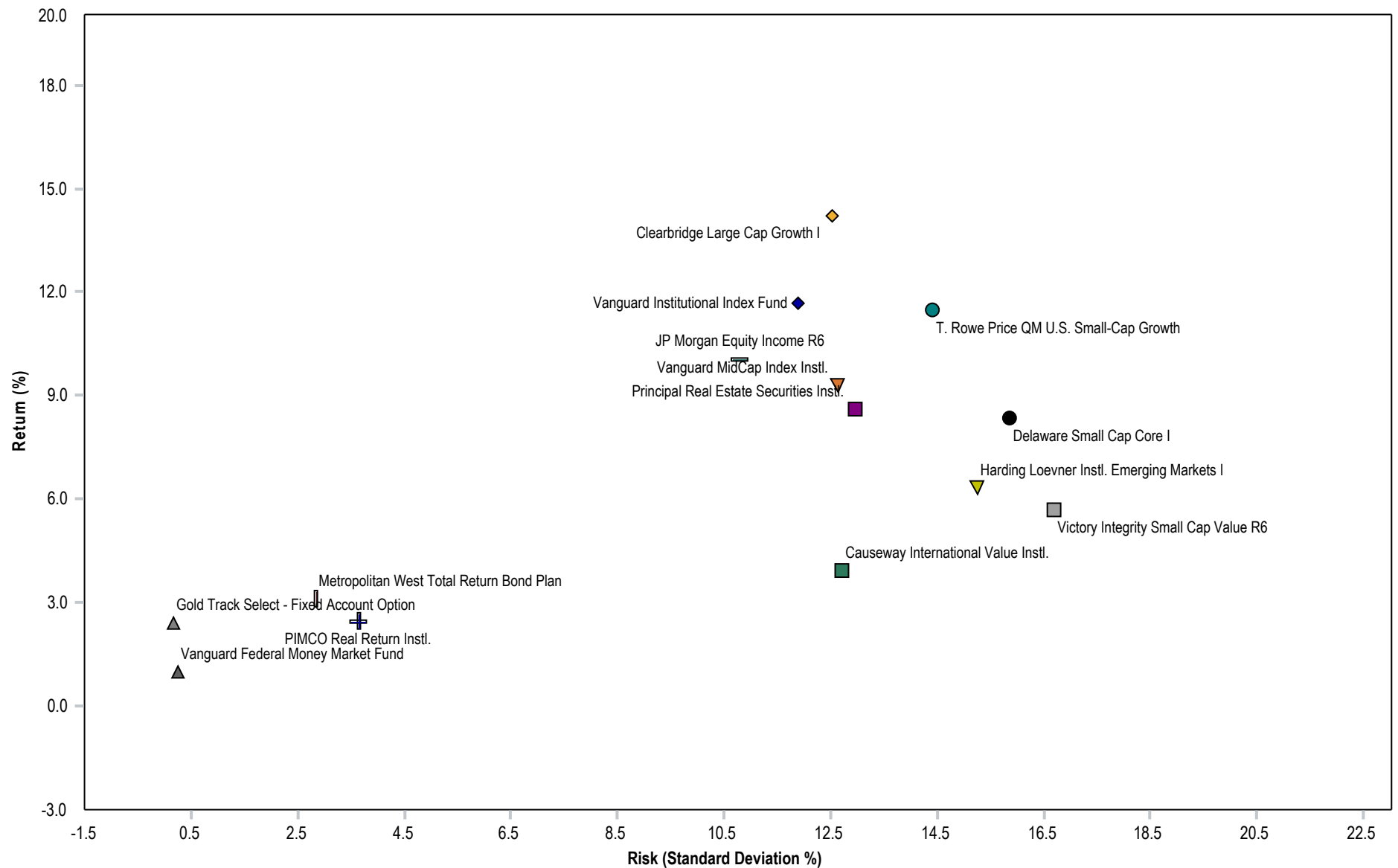
Calculation based on monthly periodicity.



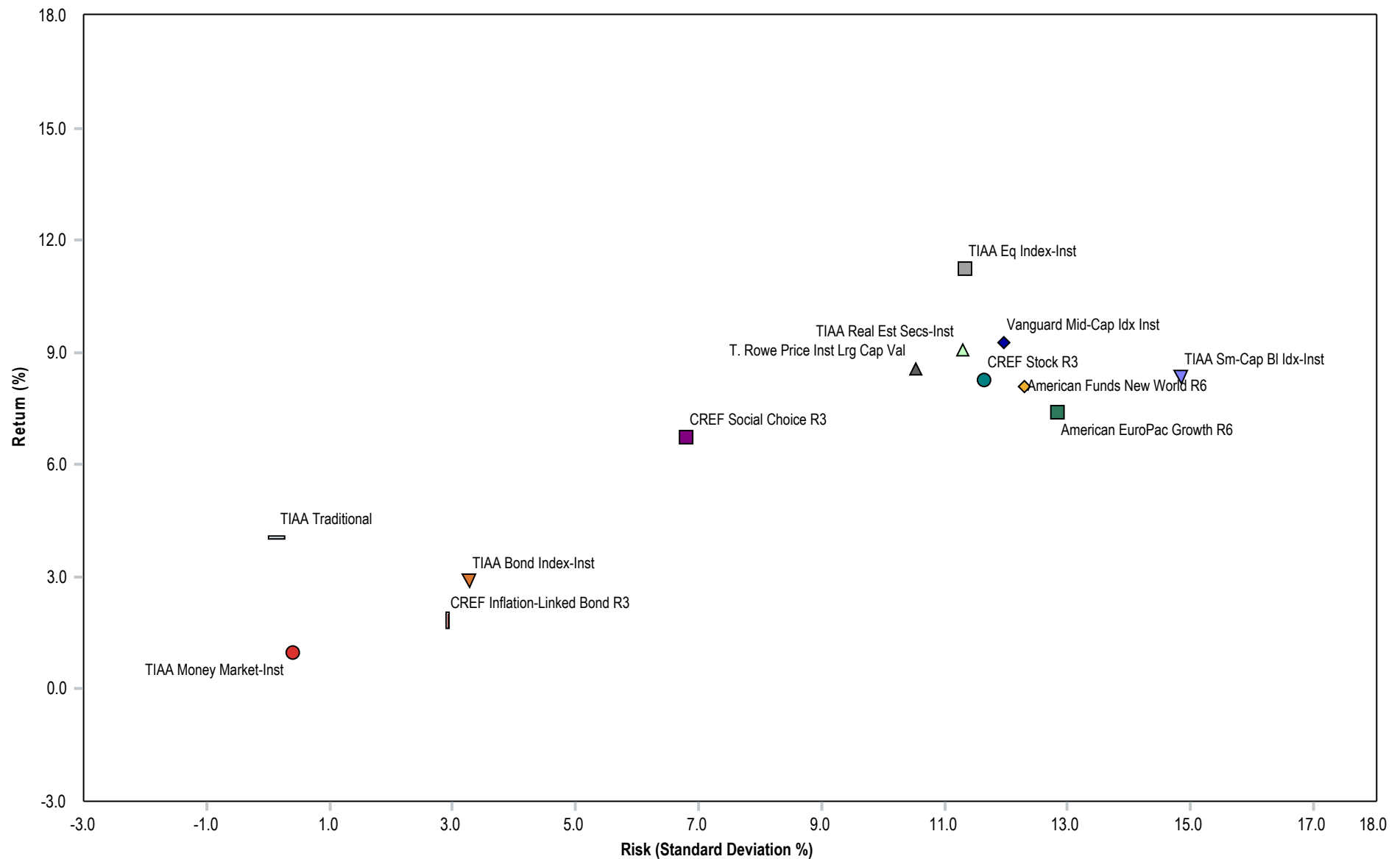
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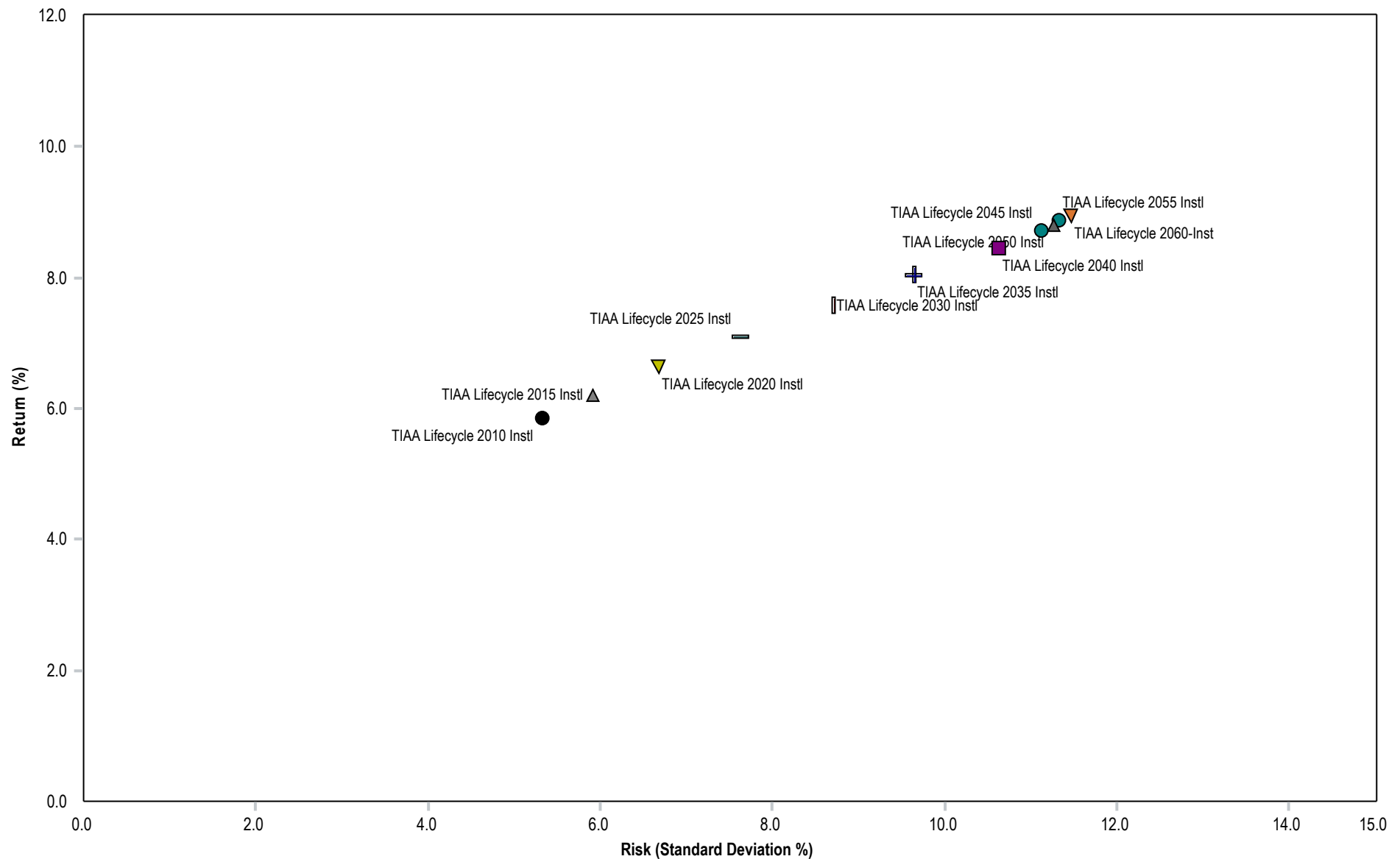
Calculation based on monthly periodicity.



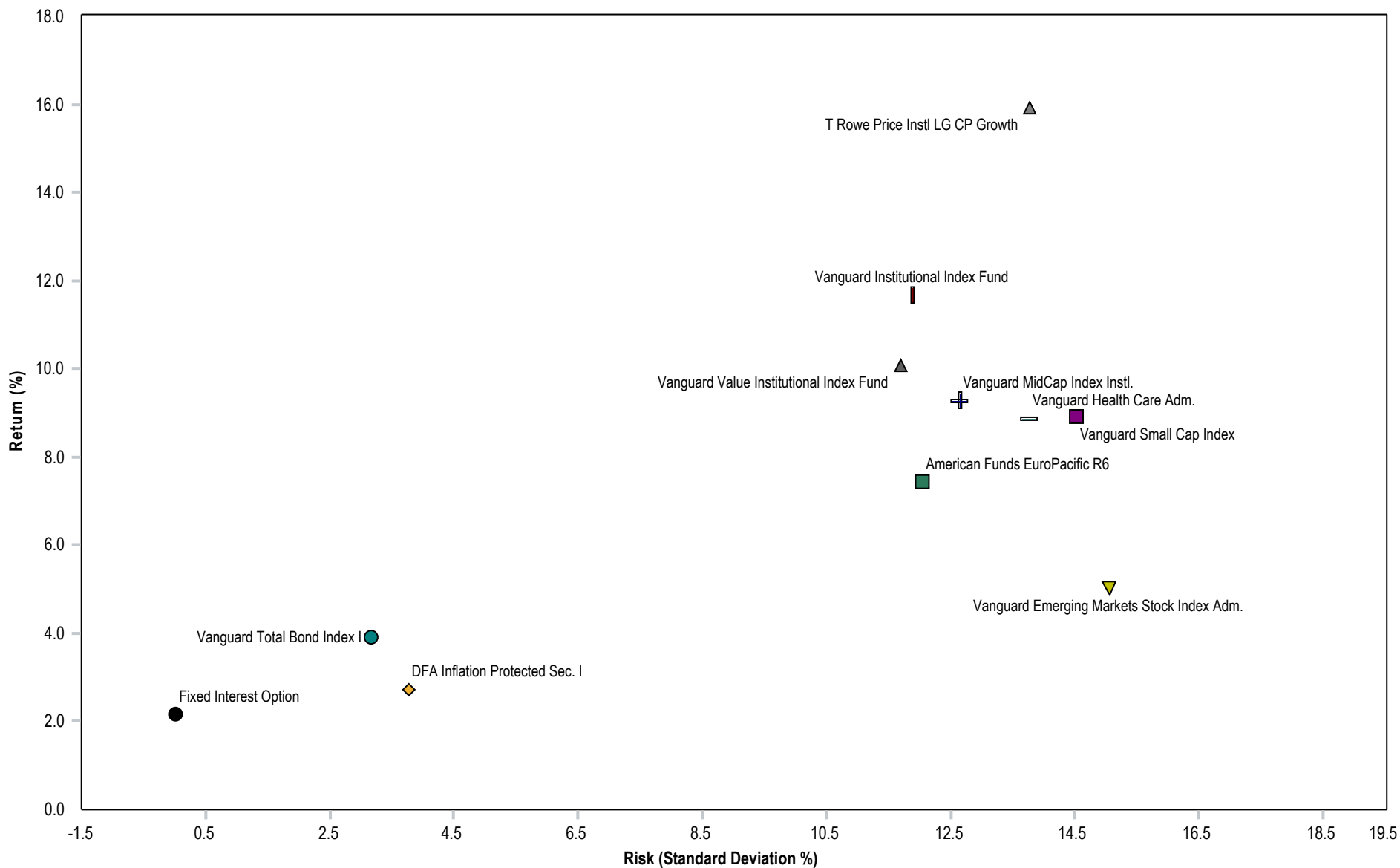
Calculation based on monthly periodicity.



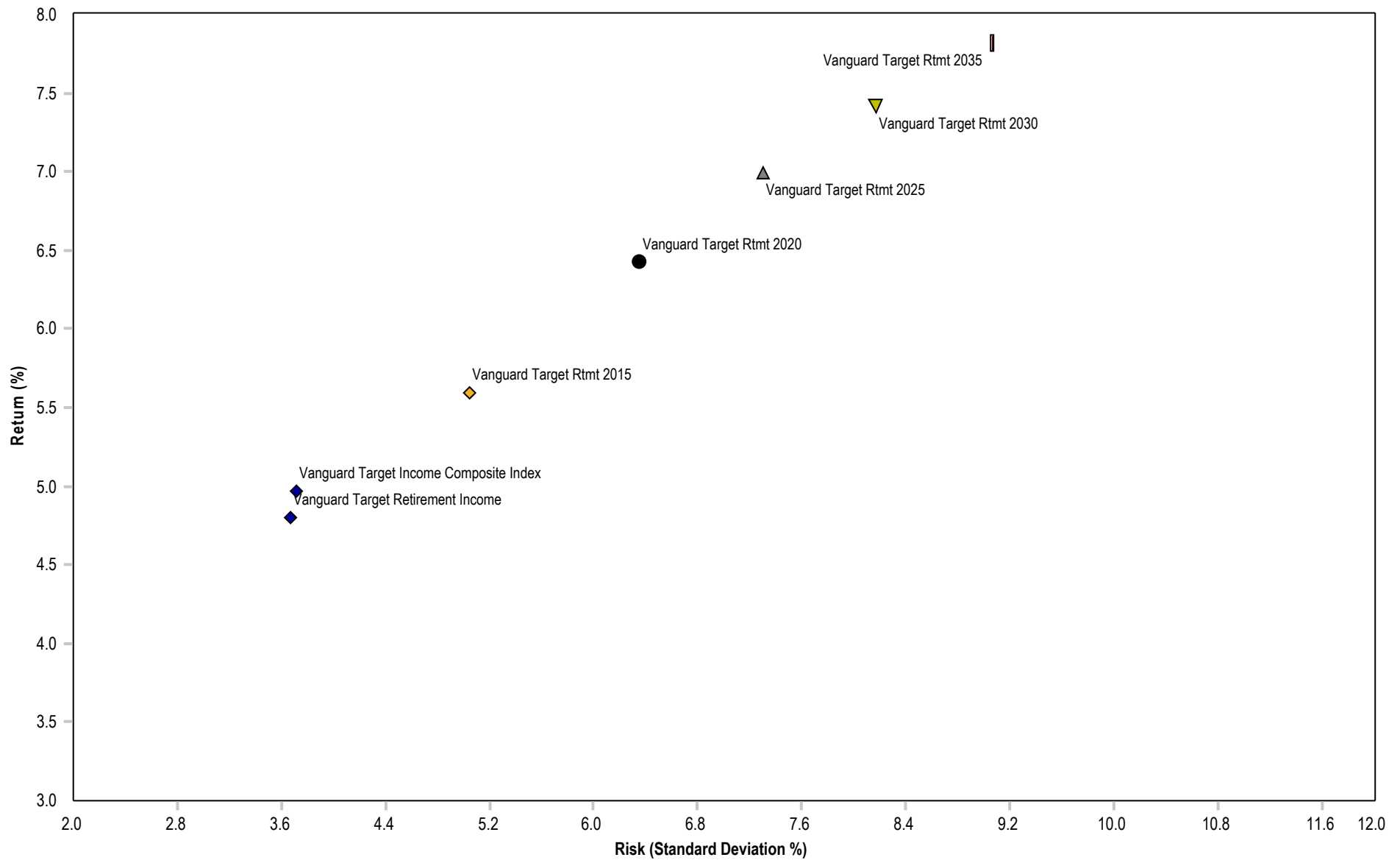
Calculation based on quarterly periodicity.



Calculation based on monthly periodicity.



Calculation based on monthly periodicity.



Calculation based on monthly periodicity.

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
RETIREMENT POLICY COMMITTEE**

Meeting Date: March 4, 2020

1. Subject: Removal of Ivy Science and Technology Fund from the State ORP

2. Summary: PEBA's co-fiduciary investment advisor for the State Optional Retirement Program (State ORP), Segal Marco Advisors (Segal), has recommended that PEBA remove the Ivy Science and Technology Fund from the investment lineup offered by MassMutual in the State ORP. Among other concerns, Segal found that the Ivy Science and Technology Fund had consistent underperformance versus index and peer group managers, did not bring a material diversification benefit to participants, had a historically high volatility approach, and had small numbers of plan participants and assets in the fund. Segal further recommends that the State ORP assets in the Ivy Science and Technology Fund be mapped to the Vanguard Small Cap Index Fund in MassMutual's State ORP investment lineup.

3. What is the Committee asked to do? Recommend that the PEBA Board remove the Ivy Science and Technology Fund from the MassMutual State ORP investment lineup and map the plan assets from that fund to the Vanguard Small Cap Index Fund.

4. Supporting Documents:

(a) List those attached:

1. Memorandum from Segal regarding its recommendation related to the Ivy Science and Technology Fund

333 West 34th Street New York, NY 10001-2402
212.251.5900 www.segalmarco.com

February 28, 2020

Ms. Ashley Brindle, CPA
South Carolina PEBA
Defined Contribution Manager
202 Arbor Lake Drive
Columbia, SC 29223

***Recommendation:** Terminate the Ivy Science and Technology fund (ISTNX) as an investment alternative in the MassMutual administered segment of the State Optional Retirement Program (State ORP). Map any remaining assets to the Vanguard Small Cap Index fund (VSCIX) after the participants have been notified of the change and given the opportunity to redirect their account balances.*

Dear Ashley:

Segal Marco Advisors is an independent fiduciary retained by PEBA as an advisor to the State ORP. Our role is:

1. To develop and maintain the Investment Policy Statement (IPS) which provides guidance and metrics for reviewing the investment alternative investment structure and fund selection,
2. To monitor the investment alternatives in the plan, and
3. To recommend changes to the investment lineup when appropriate.

The investment funds are continually monitored using qualitative and quantitative metrics of:

1. Investment style and philosophy,
2. Staff consistency of portfolio managers, research analysts and other people responsible for the fund and,
3. Performance and risk characteristics.

The Segal Marco Advisors quarterly monitoring report has a report card which tracks the performance of all funds versus the IPS benchmarks and versus peer groups of similar funds. We also access the Morningstar database and research to supplement our internal analyst team.

Fiduciary Considerations

There are US Department of Labor guidelines and market best practices to look to when considering an investment change. Specifically a “safe harbor” consideration for a fund change is accessible by following specific notification procedures (e.g. Notify participants 30 - 90 days prior to the change) and provide the opportunity for the participants to make their own, daily available, decision on how to allocate. The market best practice is to map a terminated fund’s residual assets to a substantially similar risk and return fund based on the recommendation of the plan’s independent advisor.

Basis for Recommendation

Segal Marco placed the Ivy Science and Technology fund (Ivy) on a Watch List after several quarters of informal review after reviewing the following factors consistent with the State ORP IPS guidelines:

Philosophy: This is a niche investment sector fund that was not broadly diversified among the holdings in the fund.

People: The team was consistent and the application of their strategy had been consistent.

Performance and Risk: One year performance was very good (up 50.7%) on an absolute and relative to peer comparison. Performance was so good it raised the relative underperformance of the longer-term averages. It also exemplifies the performance volatility of such a fund in a retirement plan account. In 2008 this fund was down 43%, in 2009 it was up 63%. Our data page shows it has averaged capturing 129% of down market moves. Year to date 2020 it has a - 6.9% return. The index is -2%. The 3, 5 & 10 year performance was below benchmark index and consistently below a peer group median. The fund is the highest risk offering in the MassMutual Line up and did not provide a high return per unit of risk taken.

Attached are the internal rating sheets for the Ivy fund and the Vanguard Small Cap Index fund (Vanguard). Ivy is C – rated with a D for Performance and an F Risk score. Vanguard is rated a B overall with an A for Performance and Risk. Morningstar rates Ivy a 2 star (out of 5). Vanguard is rated 5 star.

In addition the following considerations were important to the Segal recommendation.

- The fund is not very popular among participants. It has the least assets of any fund in the MassMutual segment with 1.5% of the participant count and \$ 1.4 million of assets (.38%)
- The MassMutual segment has 2 very good other funds in substantially similar risk and return investment space: the Vanguard Small Cap Index fund and the Invesco Small Cap Discovery space. The Ivy fund overlaps them and brings minimal diversification benefit to the plan.
- The fees were the second highest in the plan at .82%. Vanguard is .04%, which is tied for lowest fee.
- Segal Marco's view was that there were potentially other better replacements to enhance the risk/return line up of the plan than to add another Tech Sector fund to directly replace Ivy.

Safe Harbor Mapping

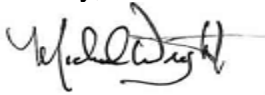
The poor long-term return and high risk of the Ivy fund make a direct comparison to the superior risk/return performing Vanguard fund less compelling among the factors for the safe harbor mapping. The participants in the Ivy were informed of the risk characteristics of the fund. The factors in favor:

- Participants in Ivy had selected an equity risk alternative and these 2 funds have substantially similar equity risk characteristics.
- Segal Marco reviewed the absolute standard deviation level of 16.3% for Ivy versus 15.9% for Vanguard and concluded that they were substantially similar over the long term. A related characteristic was the better poor market performance and higher risk adjusted return characteristics of the Vanguard fund.
- The Vanguard fund was better diversified across sectors, with 18% in Technology vs 60% and better met the DOL guidance on internal fund diversification.

Conclusion

Segal Marco Advisors believes these facts support our recommendation that the Ivy Science and Technology fund (ISTNX) be terminated and the assets mapped using the safe harbor guidelines to the Vanguard Small Cap Index I fund (VSCIX).

Sincerely,

A handwritten signature in black ink, appearing to read "Michael C. Wright", with a stylized, cursive script.

Michael C. Wright

Ivy Science And Technology N

Segal Score

C

Ticker: ISTNX

Category: Technology

Subcategory: Technology

Expense Ratio: 0.82

Benchmark: S&P 500

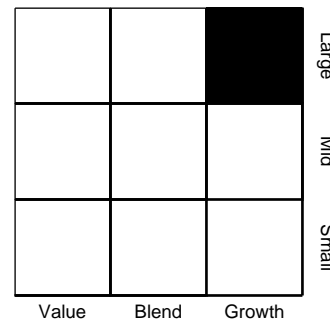
Inception Date: 7/31/1997

S³ Scores Organization: B Fees: B Style/Portfolio Characteristics: C Performance: D Risk: F

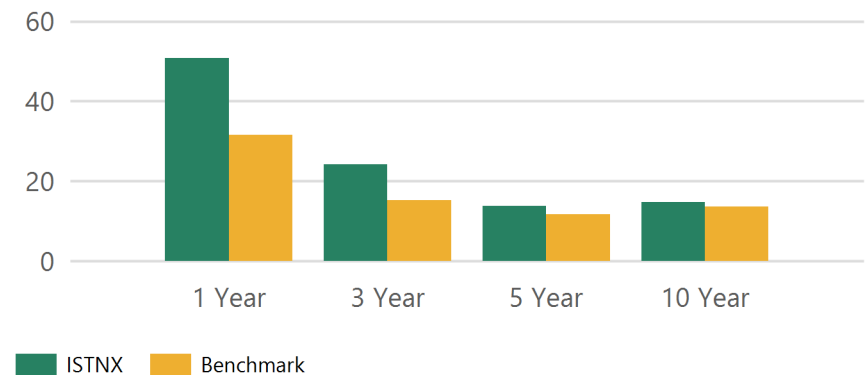
Portfolio Characteristics

Fund AUM (\$mil):	8,150
No. of Stocks:	40
% Assets in Top 10:	54.11
Avg Market Cap (\$mil):	70,773.65
P/E Ratio (TTM)(Long):	30.01
P/B Ratio (TTM)(Long):	5.54
Turnover Ratio %:	14.00
Portfolio Date:	12/31/2019

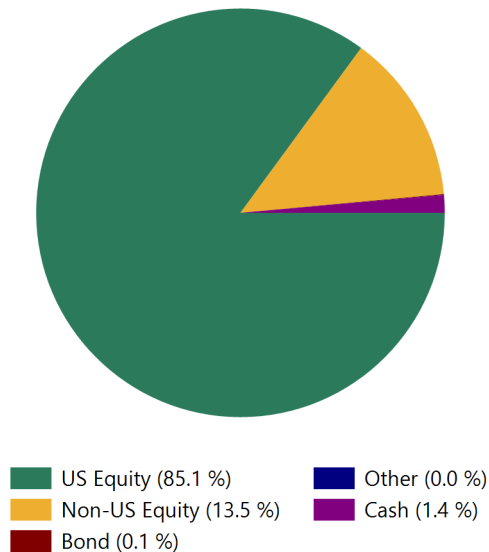
Style



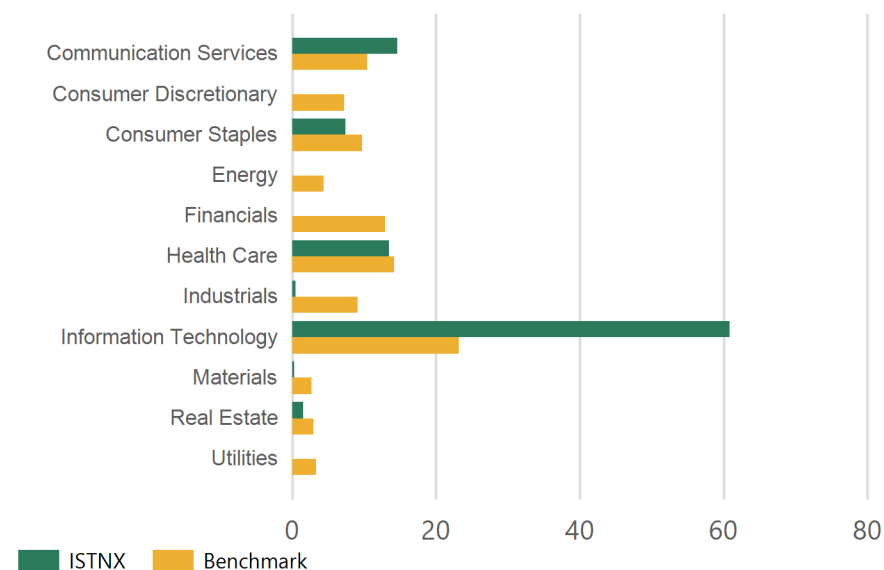
Returns



Asset Allocation



Sector Allocation



Risk Metrics

	Actual	Median
Standard Deviation		
3 Year:	16.94	16.83
5 Year:	17.25	16.64
10 Year:	16.33	16.83
Information Ratio		
3 Year:	0.89	0.78
5 Year:	0.18	0.57
10 Year:	0.11	0.23
Downside Capture		
3 Year:	110.84	110.12
5 Year:	140.39	113.36
10 Year:	129.11	118.48

Vanguard Small Cap Index I

Segal Score

B

Ticker: VSCIX

Category: Small Blend

Subcategory: Small Core

Expense Ratio: 0.04

Benchmark: Russell 2000

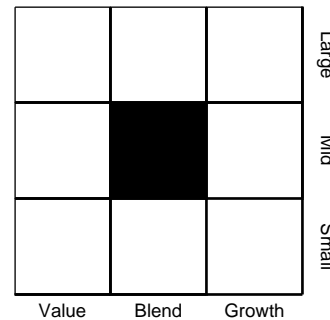
Inception Date: 10/3/1960

S³ Scores Organization: F Fees: A Style/Portfolio Characteristics: D Performance: A Risk: A

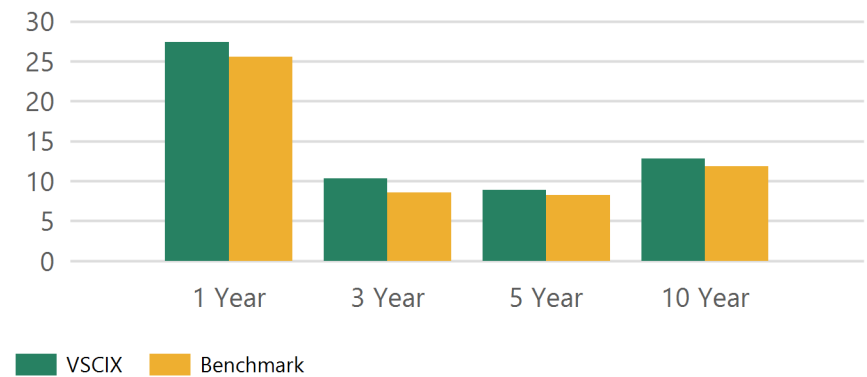
Portfolio Characteristics

Fund AUM (\$mil):	96,752
No. of Stocks:	1,361
% Assets in Top 10:	3.22
Avg Market Cap (\$mil):	4,384.27
P/E Ratio (TTM)(Long):	19.50
P/B Ratio (TTM)(Long):	2.26
Turnover Ratio %:	15.00
Portfolio Date:	12/31/2019

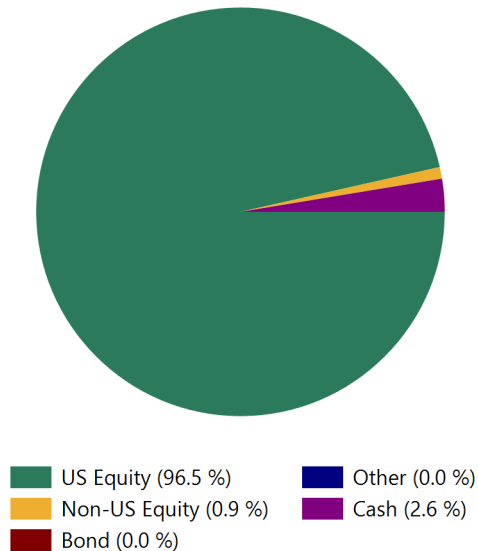
Style



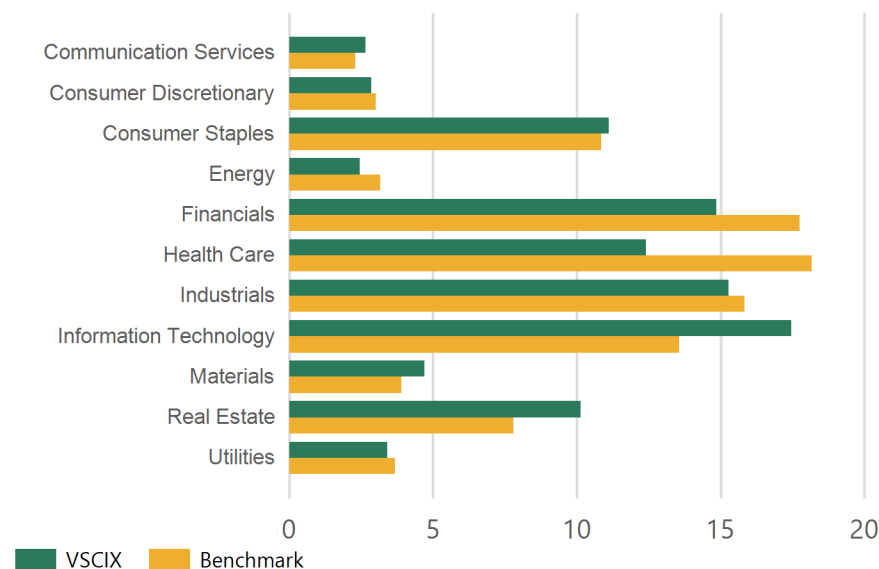
Returns



Asset Allocation



Sector Allocation



Risk Metrics

	Actual	Median
Standard Deviation		
3 Year:	14.94	15.89
5 Year:	14.65	15.60
10 Year:	15.96	16.50
Information Ratio		
3 Year:	0.60	-0.39
5 Year:	0.20	-0.23
10 Year:	0.34	-0.13
Downside Capture		
3 Year:	85.69	100.29
5 Year:	83.07	94.87
10 Year:	86.55	93.18

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
Retirement Policy Committee

Meeting Date: March 4, 2020

1. Subject: Deferred Compensation Program Plan Summary Report

2. Summary: Nancy Ornduff from Empower will present the SC Deferred Compensation Program (SCDCP) Plan Summary Report for the quarter ending December 31, 2019.

3. What is Committee asked to do? Receive as information

4. Supporting Documents:

(a) Attached: 4th Quarter 2019 Plan Review Summary

South Carolina Deferred Compensation Program



State of South Carolina

For the Period From October 1, 2019 to December 31, 2019

Administered by:



Plan Review Summary

South Carolina Deferred Compensation Program
Empower Retirement
Fourth Quarter 2019

Executive Summary

The attached reports detail the progress we have experience during the fourth quarter of 2019. A few of the items to note in the report include:

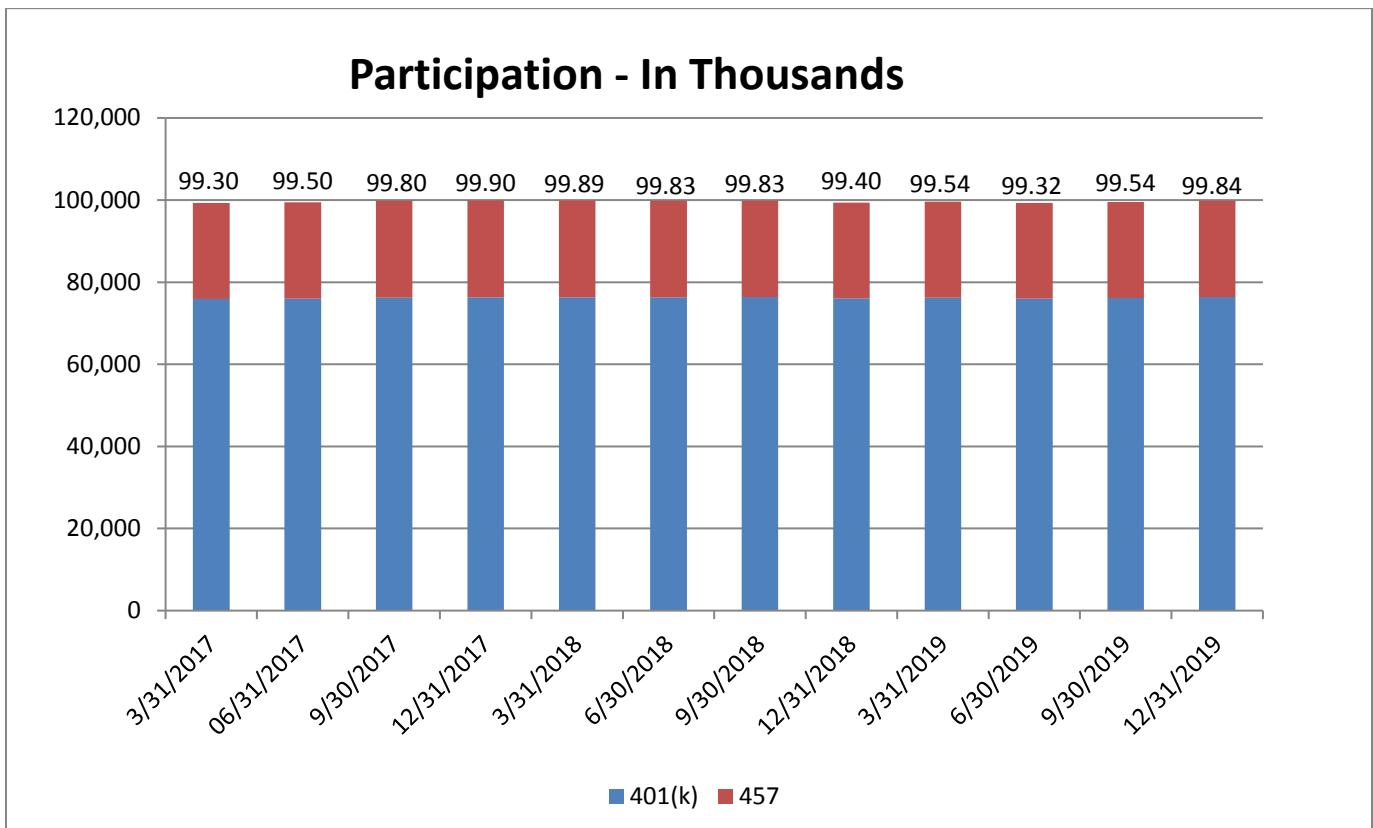
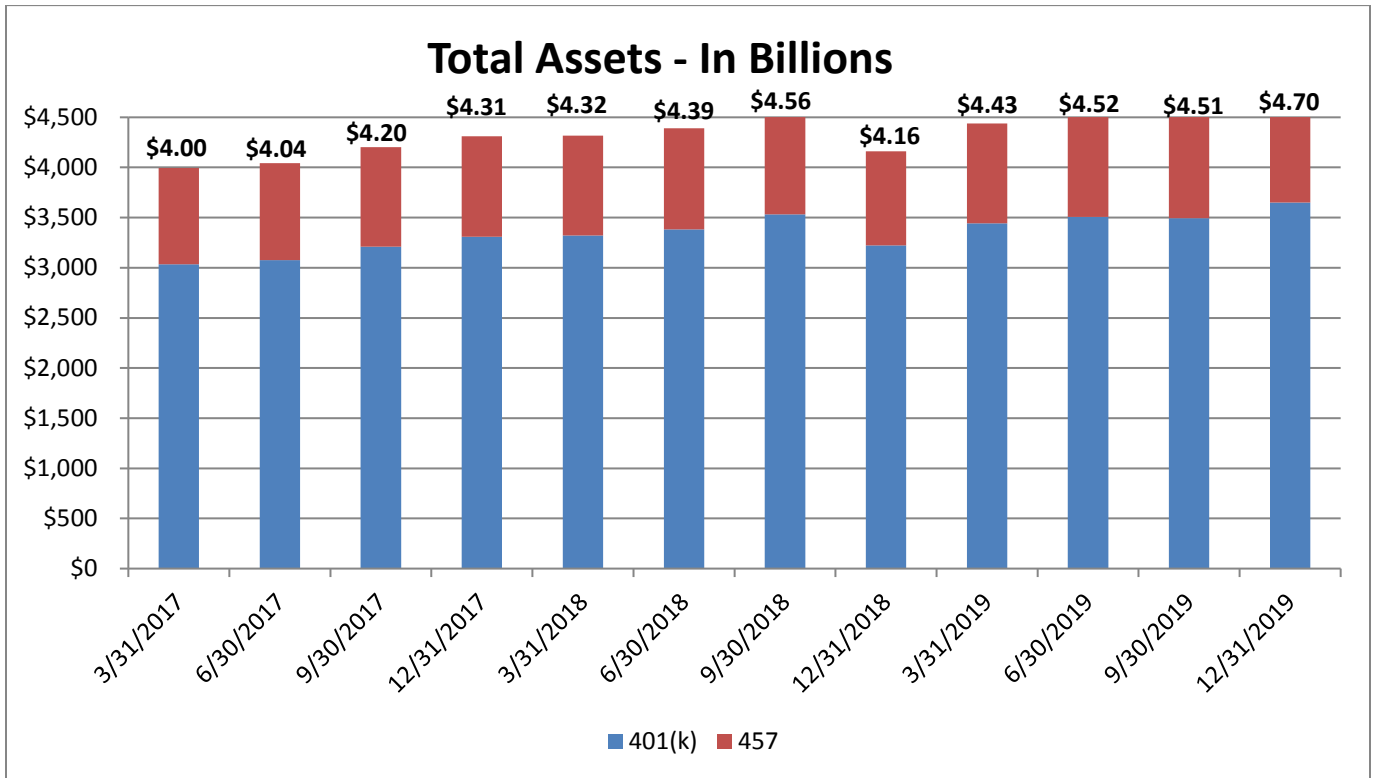
- Plan assets grew by \$190.17 M (4.2 percent) to \$4.70 B during the fourth quarter of 2019.
- Incoming rollovers decreased from \$7.99 M (3Q2019) to \$6.61 M (4Q2019).
- Outgoing rollovers decreased from \$36.86 M (3Q2019) to \$30.23 M (4Q2019).
- Contributions increased from \$47.23 M (3Q2019) to \$49.22 M (4Q2019).
- South Carolina Stable Value Fund remains healthy with a market-to-book ratio of 101.3 percent (Market Value \$1.32 B/Book Value \$1.31 B).
- Increase in diversification: number of participants utilizing Managed Accounts or Advice Services increased from 24,326 in 3Q2019 to 25,121 in 4Q2019 (total increase of 795 users).
- Total numbers of participants invested 100 percent in Target Date Funds increased from 8,445 in 3Q2019 to 8,762 in 4Q2019 (total increase of 317 participants).
- Two new employers joined the plan; Town of Briarcliffe Acres and Braisher Middle College Charter High School
- 742 total participating employers as of 12/31/2019 — 88 state agencies, 654 non-state agencies

Plan Statistics Summary

	401(k) Plan (pre-tax)	401(k) Plan (Roth)	457(b) Plan (pre-tax)	457(b) Plan (Roth)	Totals
Participant Accounts	69,478	6,920	21,117	2,324	99,839
Plan Assets ¹	\$3,574.05	\$75.73	\$1,033.41	\$16.99	\$4,700.18
Contributions ¹ (including rollovers)	\$34.36	\$3.17	\$10.46	\$1.24	\$49.22
Distributions ¹ (including outgoing rollovers)	\$68.82	-	\$26.83	-	\$95.64
Active Employers	599		444		
Inactive Employers	143		298		
Total Employers	742		742		

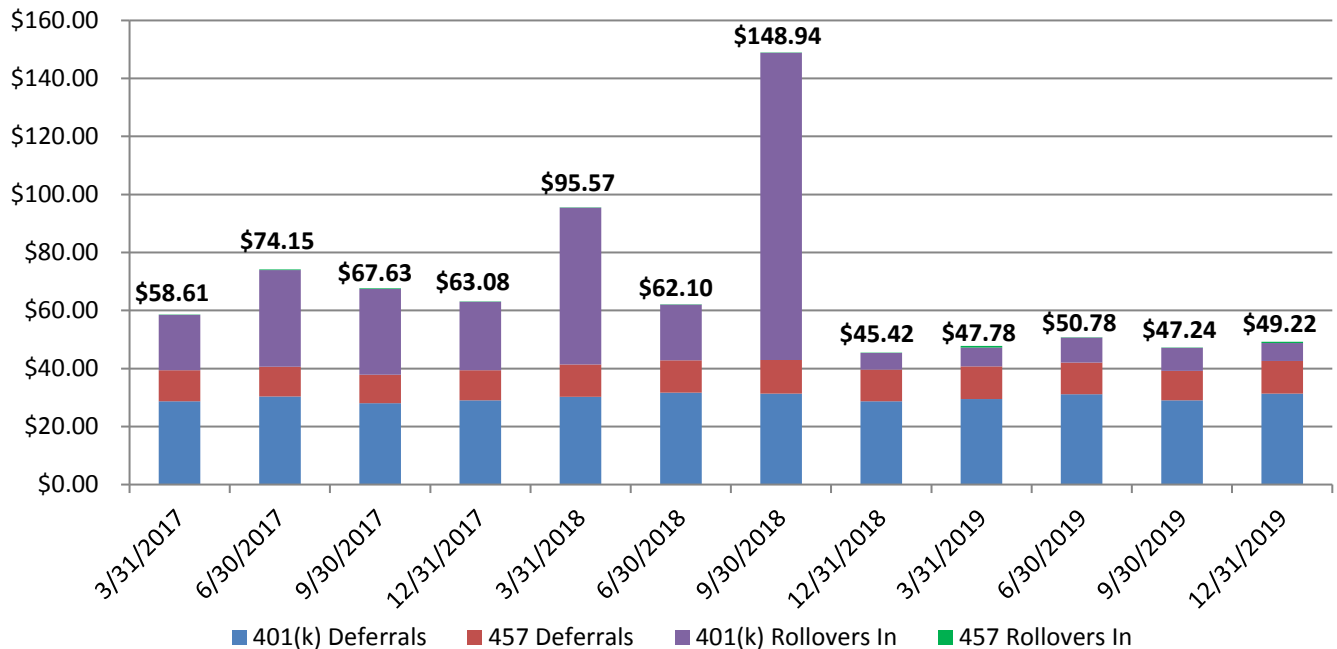
¹ Dollars (in millions)

Historical Trends Analysis



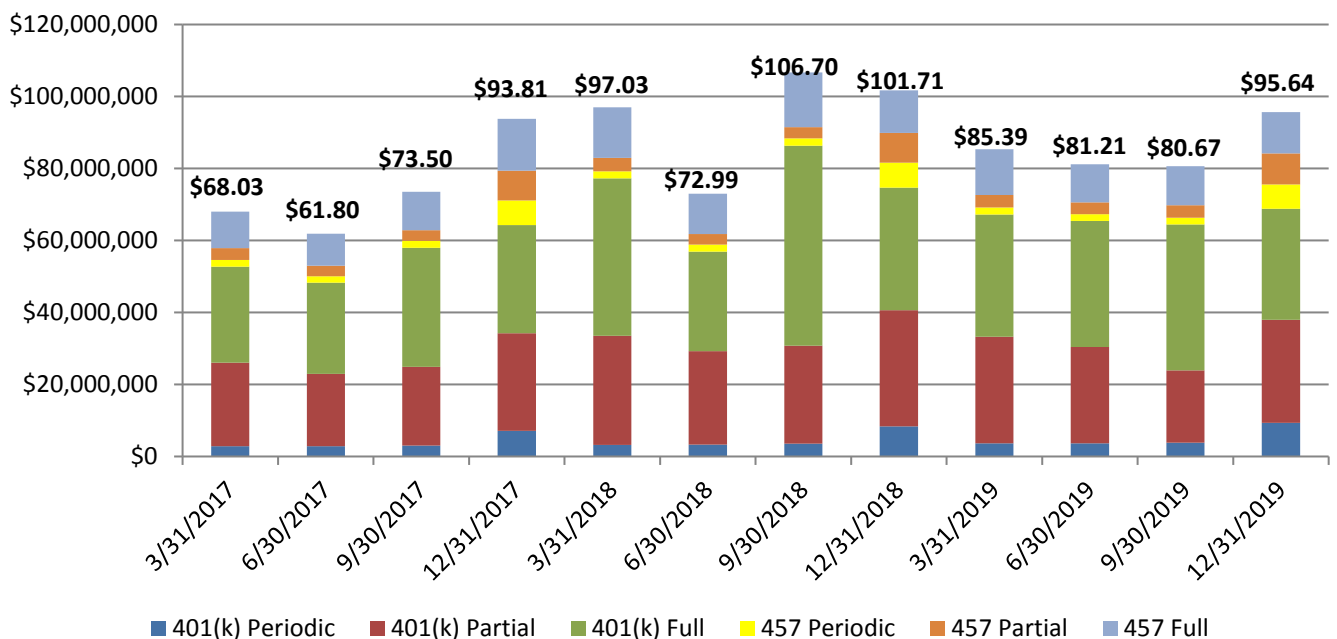
Historical Trends Analysis (continued)

Contributions - In Millions



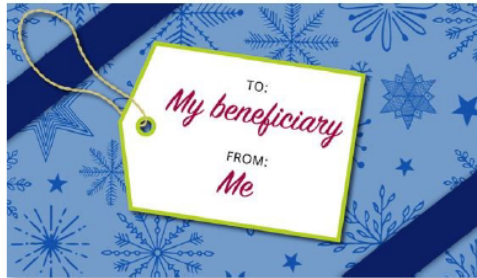
Distributions- In Millions

(includes outgoing rollovers)



Communications Review

Beneficiary campaign



- Sent email/mailed to all participants without a beneficiary
- Animated GIF as email banner to grab attention
- Email delivered Dec. 3; mailer distributed Nov. 27
- 6,459 emails and 14,019 mailers sent
- Email open rate of 30.5 percent; industry standard is 21 percent
- Measuring results

Quarterly enrollment email



- Sent to 17,807 eligible employees not in Deferred Comp
- Delivered Dec. 4, 2019
- Email open rate of 39.1 percent; industry standard is 21 percent
- Hyperlink click rate of 13.1 percent; industry standard is 11.9 percent
- 68.5 percent of clicks on the *Enroll Now* link
- Measuring results

Investment options flier development

Your investment options

chart illustrates the investment options available to you through the South Carolina Deferred Compensation Program (Deferred Compensation Program). The chart is designed to help you understand the relative risk and potential return of each investment option.

	Bonds	Large cap	Mid cap	Small cap	International
Investment risk	Low	Low to Moderate	Moderate	High	Very High
Investment description	Funds invest in bonds issued by governments and corporations. In general, bond prices rise when stock prices fall and vice versa.	Funds invest in stock of companies worth more than \$10 billion. Generally lower risk/ lower returns.	Funds invest in stock of companies worth \$2 billion to \$10 billion. Potentially higher risk and higher returns than large cap funds.	Funds invest in stock of companies worth less than \$2 billion. These funds may involve higher risk and greater price volatility.	Funds invest in non-U.S. companies. These funds are subject to currency and foreign risk.

- Shows investment options in Deferred Comp by their relative risk
- Target Date Fund series on the back
- Flier completed on December 11, 2019
- Posted on the website and available for RPAs to hand out

Other deliverables

- **Loan FAQ flier development**
- **New administrative fee update—all fliers**
- **IRS contribution limits web bulletin**

Completed on Oct. 22, 2019

Completed on Dec. 31, 2019

Completed on Dec. 20, 2019

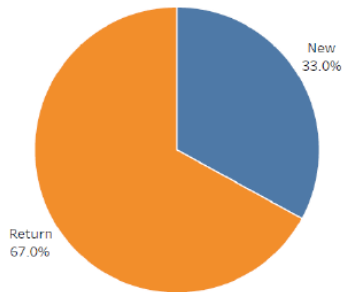
In progress

Investing Together flier development

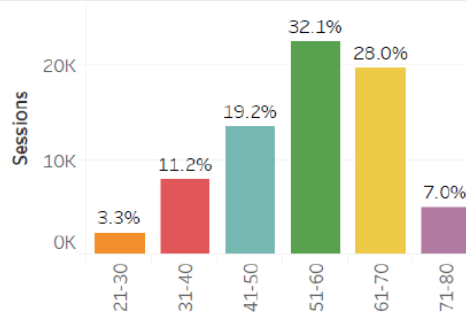
SECURE Act changes on all communications

4Q 2019 Website Statistics

User Type (Sessions)



Age Bracket (Sessions)

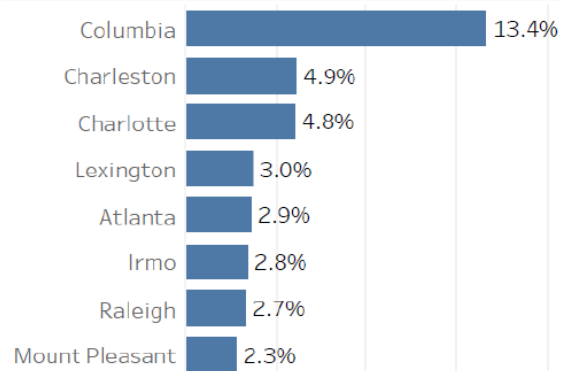


Overall Performance

3Q statistics

Unique Users	52,564	50,200
Sessions	131,412	125,610
Pageviews	816,178	752,052
Pages/Session	6.21	5.99
Users who logged In	20,852	20,229
Avg. Session Duration	00:05:45	00:05:32 minutes
Sessions Per User	2.50	2.50
Bounce Rate	14.60%	15.87%

City (Sessions)



Gender by session

Male 56.8 percent
Female 43.2 percent

Devices per session

Desktop 71.8 percent
Mobile 21.6 percent
Tablet 6.6 percent

Top 3 pre-login pages

Stick with Deferred Comp	2,424
Program resources	1,759
Enroll now	1,392

Top 3 post-login pages*

Account details	74,230
Account overview	32,327
Plan balances	21,614

*After main landing page

Educational Campaigns

Retirement Awareness Seminars: Approaching Retirement, Fundamentals of Investing, Enrollment and Investment Advisory Services

Fourth Quarter Local Office Activity

Local Office	1 st Quarter 2019	2 nd Quarter 2019	3 rd Quarter 2019	4 th Quarter 2019	Year-to-Date
Group Meetings	169	89	145	283	686
Individual Appointments	1,142	1,073	952	1,699	4,866
New Employers	0	1	0	2	3
New Enrollments	1,065	1,072	1,397	1,746	5,280
Managed Accounts	729	730	1,002	898	3,359
100% Stable Value Fund	36	48	58	58	200
100% Target Date Fund	102	101	109	176	488
Walk-In Center Phone Volume	2,802	2,902	2,442	1,734	9,880
Walk-In Center Visitors	323	334	387	356	1,400

Field Campaigns:

- Allow more efficiency by utilizing online scheduling.
- Market Retirement awareness reviews using financial hot topics.
- Offer Financial Fitness seminars as a value add for employer contacts.
- Focus on speaking at new employee orientations and retirement seminars to discuss the importance of a comprehensive retirement plan.

Employer Outreach Program:

Meetings with Employers: 101

Demonstrate Retirement Awareness Review, discuss Deferred Comp rules and administrative responsibilities.

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
RETIREMENT POLICY COMMITTEE**

Meeting Date: March 4, 2020

1. Subject: Deferred Compensation Program Plan Administration Fee

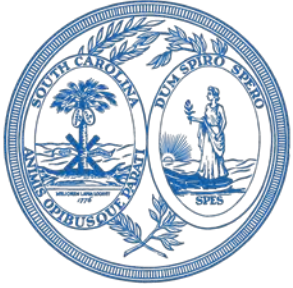
2. Summary: Pursuant to Section 8-23-90 of the South Carolina Code of Laws, the South Carolina Deferred Compensation Program is required to operate without cost or liability to the State or other participating employers in the Program. Instead, Section 8-23-20 of the Code of Laws authorizes the costs of administration for the Program to be paid from interest earnings on the assets in the Program or as an assessment on each account. In February 2012, the Deferred Compensation Commission adopted an account-based plan administration fee of \$1 per quarter per account, effective January 1, 2013, to replace the prior use of accumulated revenue sharing reserves to pay the administrative costs of the Program.

Staff has determined that the accumulated cash balances held in each plan for administrative costs are at a level that warrants a reduction in the plan administration fee at this time.

3. What is the Committee asked to do? Recommend that the PEBA Board reduce the plan administration fee charged by the South Carolina Deferred Compensation Program from the current fee of \$1 per quarter per account to a fee of \$1 per year per account, effective January 1, 2020.

4. Supporting Documents:

1. South Carolina Deferred Compensation Administrative Fee Overview



PEBASM
SC Retirement Systems
and State Health Plan

Serving those who serve South Carolina

South Carolina Deferred Compensation Program (Deferred Comp)

Administrative Fee Overview

Governance requirements

- **SECTION 8-23-90.** No cost or liability to State or political subdivisions other than incidental expenses.
 - *The Deferred Compensation Plan shall operate without cost or liability to the State, any of its departments, agencies, boards, commissions, institutions or political subdivisions except for the incidental expense of administering the deduction of the deferred funds and the remittance thereof.*
- **SECTION 8-23-20.** Deferred Compensation Program
 - *Costs of administration may be paid from the interest earnings of the funds accrued as a result of deposits or as an assessment against each account.*

Background

- In February 2012, the Deferred Compensation Commission adopted an account-based plan administration fee of \$1 per quarter per account, effective January 1, 2013, to replace the prior use of accumulated revenue sharing reserves to pay the administrative costs of Deferred Comp.

Deferred Comp administrative budget

- Revenue received from -
 - Administrative fee collected from participants
 - Interest on operating account balance and unclaimed property account balances
- Expenses related to -
 - Payroll fees to Comptroller General
 - Investment consulting services
 - Staff salary reimbursements to PEBA
 - Annual financial statement audit
 - Legal consulting services
 - Board and staff training, including travel
 - Organization memberships
 - Postage

Recommendation

- Staff has determined that the accumulated cash balances held in each plan for administrative costs are at a level that warrants a reduction in the plan administration fee at this time.
 - Recommend reduction to \$1 per year per plan account.
 - For a participant with an account in both the 457(b) and 401(k) plans, this would be a reduction from \$8 per year to \$2 per year.

Disclaimer

This presentation does not constitute a comprehensive or binding representation of the employee benefit programs PEBA administers. The terms and conditions of the employee benefit programs PEBA administers are set out in the applicable statutes and plan documents and are subject to change. Benefits administrators and others chosen by your employer to assist you with your participation in these employee benefit programs are not agents or employees of PEBA and are not authorized to bind PEBA or make representations on behalf of PEBA. Please contact PEBA for the most current information. The language used in this presentation does not create any contractual rights or entitlements for any person.