



Defined Contribution Plans Advisory Committee (DCPAC) Meeting

1111 E. Main St., Richmond
Pavilion Building
Thursday, 12/5/2024
1:00 - 3:00 PM ET

1. Welcome & Introductions

2. Meeting Minutes

- Adoption of the Minutes from the September 12, 2024 Meeting
2024.9.12 DCPAC Minutes - Page 2

3. Investments

Final DCPAC Investments Slide Deck 12-5-24 - Page 6

- a. Global Equity Benchmarking**
- b. Performance Reports**
- c. CEM Defined Contribution Plans Survey**

4. Administration

2024Q3 Administrative Summary - Page 52

a. Administration Reports & Communications

i. DC Plans and Hybrid Plan Update

ii. ORPHE

- ORPHE Employer Update Report
Report on the ORPHE Annual Employer Update 9.25.2024 - Page 73

iii. DC Plans Recordkeeper Transition Update

b. Annual Administrative Expense Reports

DCPAC Annual Cost Update November 2024 - Page 75

5. Other Business

- a. Code of Ethics**
- b. Discussion of New Ideas**

6. 2025 Meetings

a. ORPHE Annual Employer Update (not a meeting of the DCPAC)

b. 2025 Meetings

- i. March 6, 2025 at 1:00 pm**
- ii. May 15, 2025 at 1:00 pm**
- iii. September 11, 2025 at 1:00 pm**
- iv. December 4, 2025 at 1:00 pm**

Minutes

A regular meeting of the Defined Contribution Plans Advisory Committee (DCPAC) of the VRS Board of Trustees convened on September 12, 2024, with the following members present:

Susan T. Gooden, Chair
Hon. Matthew James, Vice Chair
Monique Barnes
Ravindra Deo
C. Matt Harris
Brenda Madden
David Winter

Members of the Board of Trustees:
John M. Bennett

VRS Staff:

Trish Bishop, Ingrid Allen, Stephen Cerreto, Jeanne Chenault, Michael Cooper, David Cotter, Antonio Fisher, Josh Fox, Kelly Hiers, KC Howell, Robert Irving, Sandy Jack, Brian Lackey, Ryan LaRochelle, Joyce Monroe, Teresa Nyugen, Laura Pugliese, Kristy Scott, Michael Scott, Jennifer Schreck, Jacob Schwartz, Bridgette Watkins-Smith, Rachel Webb, and Leslie Weldon.

Guests:

Jamie Bitz, JLARC; Andrew Ness, Sageview; Lindsay Saienni, Financial Investment News; Amruta Binoy, Department of Planning and Budget; Erin Shell, Auditor of Public Accounts; Col. F. Neal Thompson, Financial Services Consultants Inc.

The meeting convened at 1:00 p.m.

Opening Remarks

Dr. Gooden welcomed Committee members, Board members, agency officials, representatives from stakeholder groups and other members of the public joining in person and through electronic means, to the DCPAC. Dr. Gooden welcomed new Committee members Monique Barnes and Kate Jonas.

Approval of Minutes

Upon a motion by Mr. Winter and a second by Mr. Deo, the minutes of the May 23, 2024, meeting were approved by the Committee.

DC Plans Investments Update

Annual Investment Review

Laura Pugliese, Portfolio Manager of Defined Contribution Plans, provided the Committee with its annual investments review as of June 30, 2024, which included investments for the unbundled DC plans and the TIAA ORPHE. Ms. Pugliese explained that VRS uses white label naming convention for the unbundled DC plans investments and formal investment names for the bundled TIAA ORPHE due to TIAA operational constraints. Ms. Pugliese highlighted the target date portfolios and explained the objective is to address the full life cycle of a member's career. Ms. Pugliese also reviewed upcoming changes to the portfolios. This included the Target Date 2025 Portfolio's assets moving into the Retirement Portfolio in October 2024 because it was reaching its target date, the addition of the Target Date 2070 Portfolio, and various BlackRock enhancements to improve inflation responsiveness as a result of their asset class research.

Dr. Gooden thanked Ms. Pugliese for her presentation.

DCPAC Charter Review

Sandy Jack, Director of Policy, Planning and Compliance, reviewed changes to the Charter to ensure it accurately recites proper duties and procedures and reflects current Board governance best practices. Most of the changes were for clarification purposes, as well as to accurately articulate duties of officers, the proper entities performing functions, and to match specific Code language. These changes will bring consistency across all committee charters.

Following a motion by Mr. Deo, with a second by Ms. Madden, the Committee recommended approval of the DCPAC Charter changes to the Administration, Finance, and Talent Management Committee and the full Board of Trustees.

Dr. Gooden thanked Ms. Jack for her presentation.

Administrative Reports and Communications Update

Administration Reports & Communications

Kelly Hiers, Defined Contribution Plans Administrator, provided an overview of the DC Plans and an update on administrative reports for the second quarter of 2024. An overview of assets and accounts across the various defined contribution plans, as well as account trends, was also provided.

Ms. Hiers advised the Committee that total assets across all plans have increased 3% from the previous quarter. Hybrid Retirement Plan assets and accounts continue to increase as new members are added to the hybrid plan, which is now the primary plan. Ms. Hiers spoke of the EVMS/ODU Merger, which was completed July 11, 2024, and the COV 457 SDBA de-commingling, where \$4.7M in Roth assets at Charles Schwab transferred to 180 new Roth SDBA accounts with MissionSquare. Further, Ms. Hiers provided updates on plan assets and accounts and hybrid voluntary contribution elections. ORPHE participation

rates for DCP showed an increase in DCP elections and a decrease in TIAA elections. Ms. Hiers also provided TIAA updates, which included an amendment to the record-keeping agreement and a targeted beneficiary campaign, as well upcoming DC Plans events.

DC Plans Recordkeeper Transition Update

Ms. Hiers provided a project status on the DC Plans Recordkeeper transition to Voya. VRS staff have been meeting with MissionSquare and Voya in preparation for the transition. Communications have started going out to key stakeholders with additional meetings to follow. Highlights of the overall project were provided, along with an update on contracts/agreements and forms, reporting and procedures, participant and employer support, and other areas pertaining to the transition.

Dr. Gooden thanked Ms. Hiers for her presentation.

Other Business

Advice and Managed Accounts

A presentation covering investment advice and managed accounts, including monitoring of these services, was provided by Andrew Ness with Sageview Consulting. Mr. Ness conducted outreach to other plans to learn about their experiences in providing a hybrid benefit including assets and participant usage, monitoring, and recommendations. He also presented a monitoring program for consideration, which includes reviewing and tracking demographics, engagement/personalization, asset allocation, performance, qualitative benchmarking, and fee benchmarking. VRS administration staff will be responsible for oversight and monitoring of Voya Retirement Advisors' investment advice and professional managed account program.

Dr. Gooden thanked Mr. Ness for his presentation.

Discussion of New Ideas

Mr. Winter raised for discussion the Hybrid Retirement Plan, specifically as it pertains to voluntary participation rates and active election rates in the defined contribution portion of the plan. He further inquired as to whether there is a common measure for comparison with other plans or if there is a generally accepted target or benchmark for voluntary contributions. While the committee is regularly provided with statistics concerning hybrid retirement plan members' voluntary contributions, Mr. Winter noted that a target or benchmark might be useful to know to help determine how the hybrid retirement plan is meeting its plan design goals. Trish Bishop, Director, mentioned that comparing voluntary contributions with other state hybrid plans is challenging, because plan designs vary considerably across different plans, notably with respect to employer matching contributions and automatic features. However, Ms. Bishop also noted that VRS has worked with its record keeper to develop award-winning campaigns to encourage savings. In addition, VRS has offered suggestions in formal legislative reports as well as at presentations to legislative and executive branch policy makers regarding various options that exist to improve outcomes for hybrid plan members, such as automatic enrollment, accelerated auto escalation, and increased employer defined contribution plan percentages.

Ms. Bishop further noted that JLARC will be looking at the Hybrid Retirement Plan and voluntary contributions later this year.

Upcoming DCPAC Meetings

Dr. Gooden confirmed the remaining DCPAC meeting date in 2024, at 1:00 p.m. on Thursday, December 5.

Additionally, the ORPHE Annual Employer Update is scheduled for September 25, 2024, at 10:00 a.m. This is not a DCPAC meeting; however, members may attend if interested.

Adjournment

There being no further business, Dr. Gooden adjourned the meeting at 2:53 p.m. upon a motion by Mr. James, with a second by Mr. Winter, and a vote of the Committee.

Chair

Date



Defined Contribution Plans Investment Program

December 5, 2024



Agenda

Global Equity Benchmarks

Performance

CEM DC Survey Highlights



Global Equity Benchmarks

Andrew Junkin

Chief Investment Officer

Code of Federal Regulations - Foreign Adversaries

- The Secretary of Commerce has defined a foreign adversary as “any foreign government or foreign non-government person determined by the Secretary to have engaged in a long-term pattern or serious instances of conduct significantly adverse to the national security of the United States or security and safety of United States persons”
- Currently, the Secretary has determined the following to be foreign adversaries:
 1. The People's Republic of China, including the Hong Kong Special Administrative Region (China);
 2. Republic of Cuba (Cuba);
 3. Islamic Republic of Iran (Iran);
 4. Democratic People's Republic of Korea (North Korea);
 5. Russian Federation (Russia); and
 6. Venezuelan politician Nicolás Maduro (Maduro Regime).

Existing Exposure: VRS DB Plan (VRSIP)

	Exposure as of June 30, 2024 (000s)			Notes
	Private Markets	Public Markets	Total	
China (including Hong Kong)	\$ 759,095	\$ 1,385,409	\$ 2,144,334	Adjusted in total due to \$170mm notional short in certain strategies
Russia	\$ -	\$ 1,912	\$ 1,912	Non liquid due to ongoing sanctions
Cuba	\$ -	\$ -	\$ -	
North Korea	\$ -	\$ -	\$ -	
Iran	\$ -	\$ -	\$ -	
Venezuela	\$ -	\$ 6,408	\$ 6,408	Not on foreign adversaries list, not Maduro regime
Total Exposure	\$ 759,095	\$ 1,393,729	\$ 2,152,654	
Percent of Total Fund			1.9%	

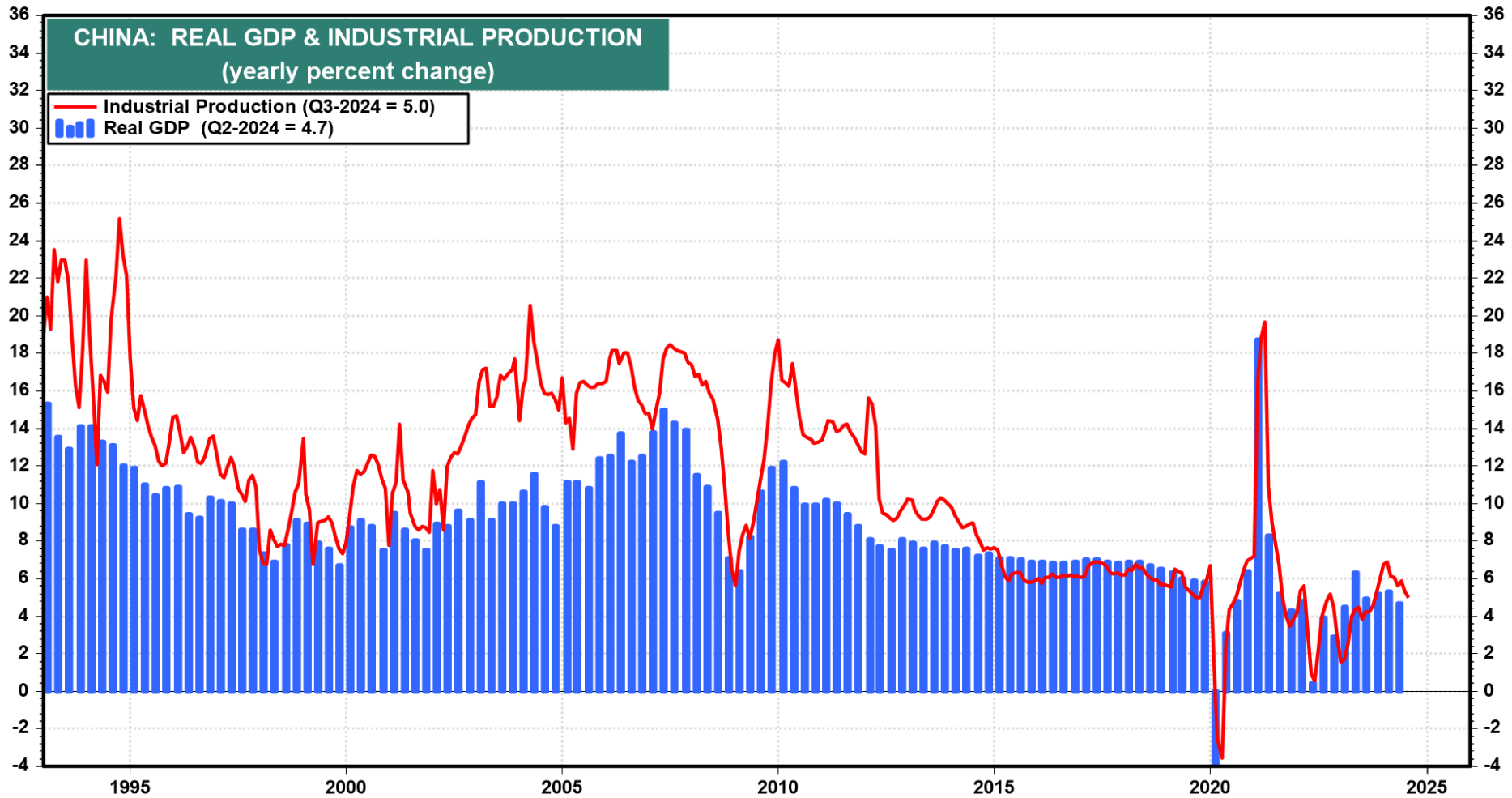
Existing Exposure: VRS DC Plans

Fund Name	Exposure as of October 31, 2024			
	China Exposure - Fund	China Exposure - Benchmark	Hong Kong Exposure - Fund	Hong Kong Exposure - Benchmark
BlackRock MSCI ACWI ex-U.S. IMI Index Funds F & M	7.42%	7.40%	1.23%	1.23%
BlackRock MSCI ACWI IMI Index NL Fund M	2.62%	2.67%	0.43%	0.44%
LifePath Index Retirement Fund N	0.93%	0.95%	0.13%	0.13%
LifePath Index 2030 Fund N	1.30%	1.34%	0.18%	0.18%
LifePath Index 2035 Fund N	1.60%	1.66%	0.22%	0.23%
LifePath Index 2040 Fund N	1.89%	1.96%	0.26%	0.27%
LifePath Index 2045 Fund N	2.14%	2.24%	0.29%	0.30%
LifePath Index 2050 Fund N	2.37%	2.47%	0.32%	0.33%
LifePath Index 2055 Fund N	2.46%	2.57%	0.33%	0.34%
LifePath Index 2060 Fund N	2.47%	2.40%	0.34%	0.64%
LifePath Index 2065 Fund N	2.46%	2.58%	0.34%	0.34%
LifePath Index 2070 Fund N	2.47%	2.58%	0.34%	0.34%

Existing Exposure

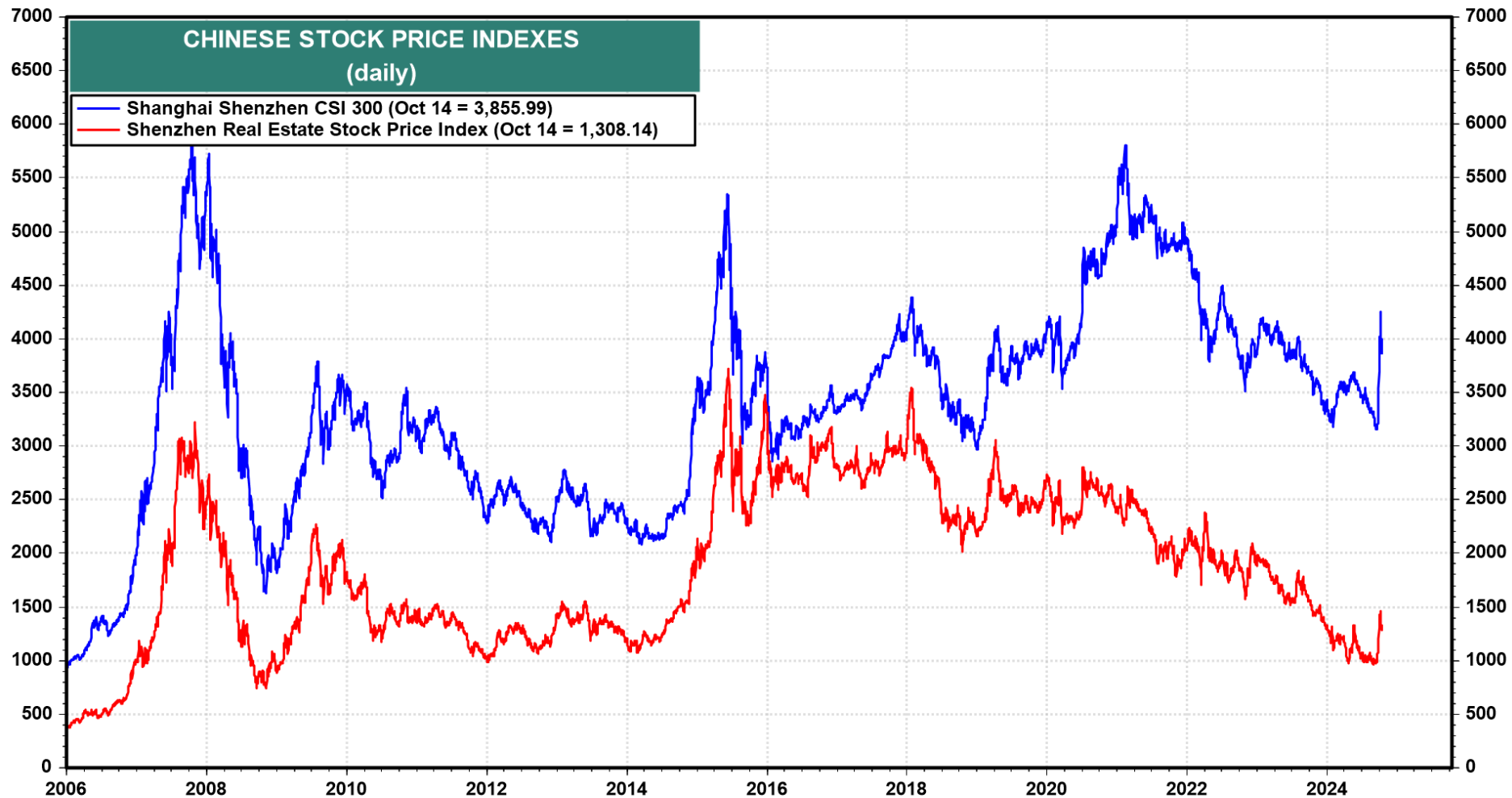
- Dominated by China
 - Two critical issues
 - Investment environment
 - Geopolitics

China – Economic Growth Slowing



Source: LSEG Datastream and © Yardeni Research.

Real Estate and Equity Market Performance



Source: LSEG Datastream and © Yardeni Research, and China Securities Index Company (CSI) and Shenzhen Stock Exchange.

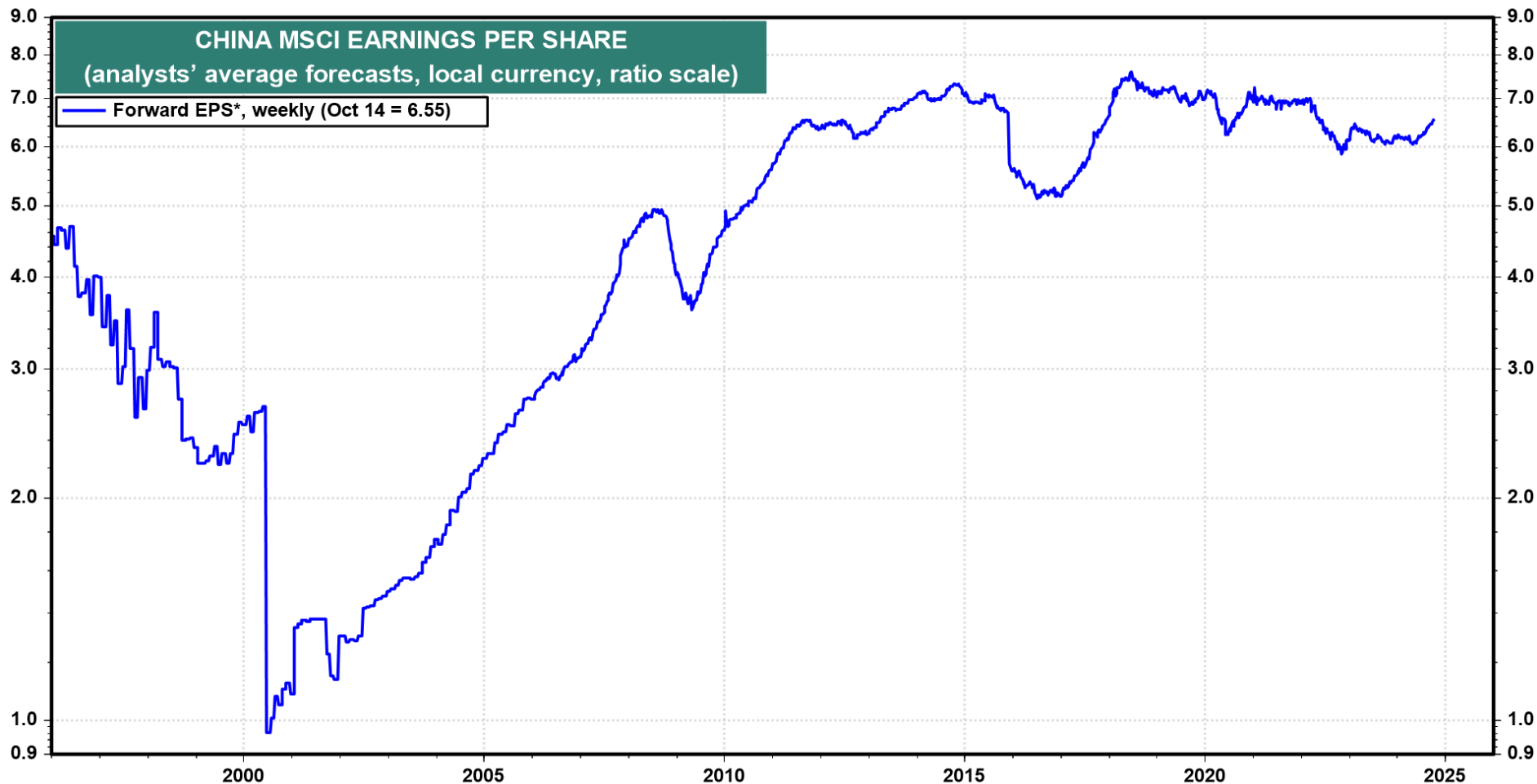
Value or Value Trap?



Source: LSEG Datastream and © Yardeni Research, and MSCI.

* Price divided by 12-month forward consensus expected operating earnings per share.

Earnings Stagnating



Source: LSEG Datastream and © Yardeni Research, and MSCI.

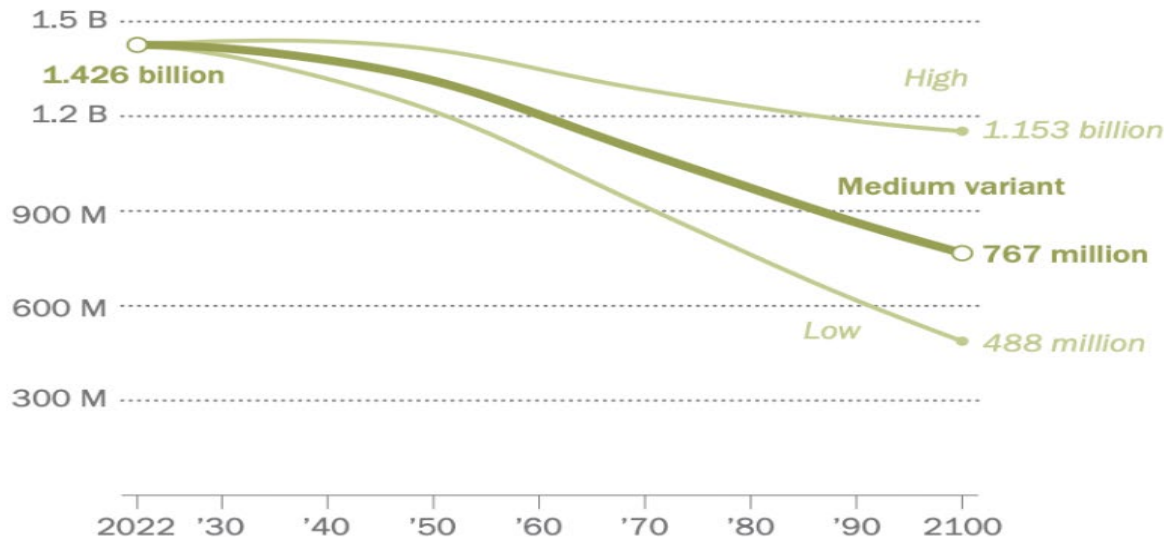
* Time-weighted average of consensus estimates for current year and next year.

Demographics

China's population is likely to fall below a billion people before 2100

China's population is likely to fall below a billion people before 2100

Number of people, by variant



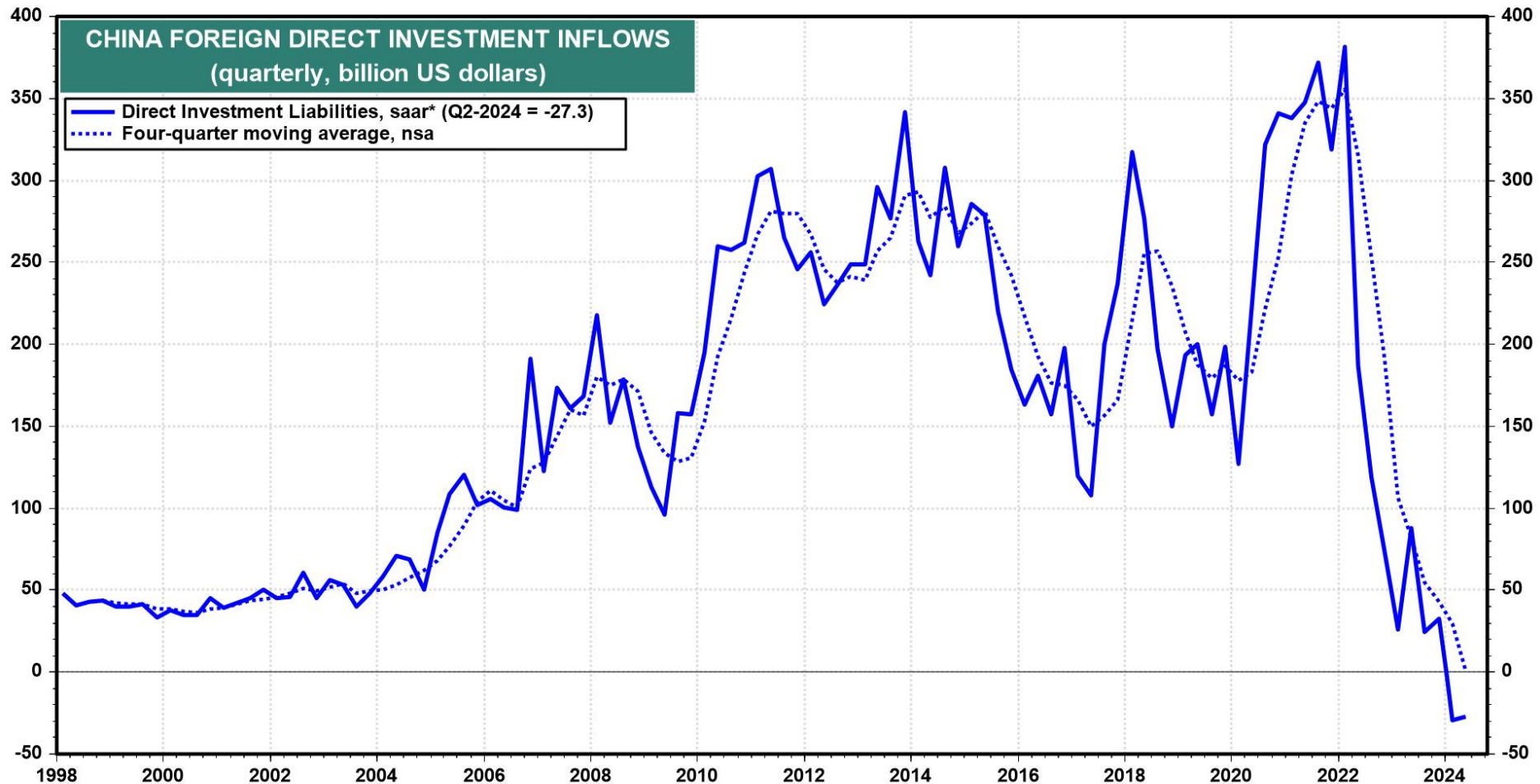
Note: May differ from national census figures. The medium variant is the middle-of-the-road estimate provided by the UN; high and low variant scenarios involve total fertility being 0.5 births above or below the medium scenario, respectively.

Source: UN Population Division's World Population Prospects: The 2022 Revision.

PEW RESEARCH CENTER

Source: <https://www.pewresearch.org/short-reads/2022/12/05/key-facts-about-chinas-declining-population>

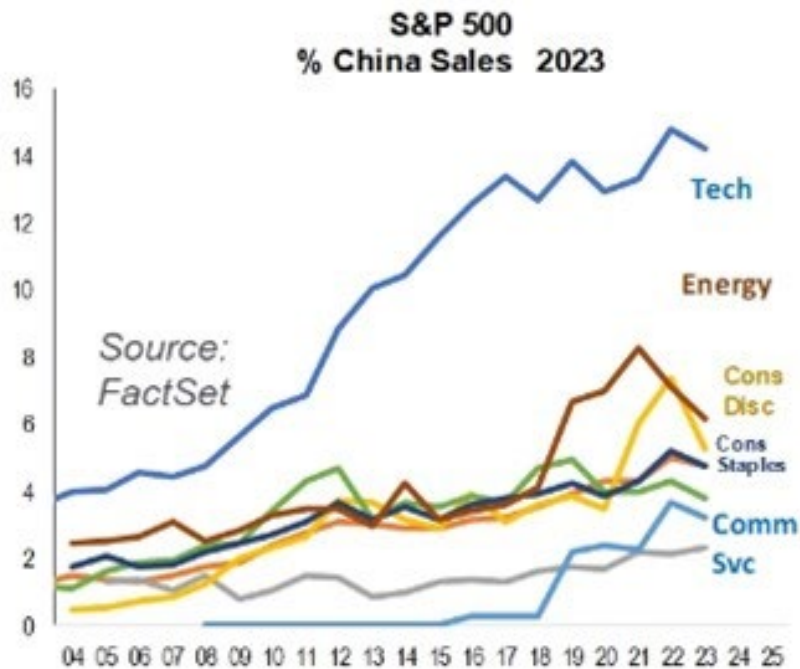
China – Foreign Investors Departing



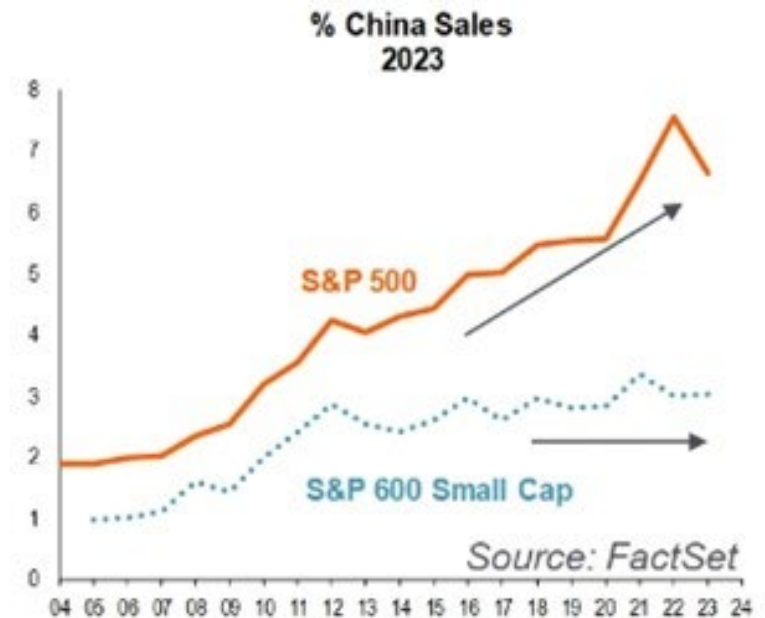
Source: LSEG Datastream and © Yardeni Research, and China State Administration of Foreign Exchange.

* Seasonally adjusted by Yardeni Research.

Economic Ties Persist



Source: Piper Sandler



China Exposure Analysis:

Index Exposure Revenue by Country

Country	MSCI AC	MSCI AC	MSCI	S&P 500
	World IMI	World ex CN IMI		
United States	45.0	46.2	48.8	58.5
Mainland China	8.4	6.7	7.2	7.5
Japan	4.9	5.0	4.7	2.6
United Kingdom	3.1	3.1	3.2	2.2
Canada	2.9	3.0	3.1	1.8
India	2.9	3.0	1.5	1.5
Germany	2.6	2.6	2.8	2.3
Taiwan	2.0	2.0	1.8	2.1
Australia	1.8	1.8	1.8	0.9
France	1.7	1.7	1.9	1.4
Memo: Hong Kong	0.5	0.5	0.5	0.2

Some reduction in exposure to China by excluding from index but meaningful exposure remains.

Source: MSCI, S&P Global, FactSet

China Exposure Analysis:

Top 25 Contributors to China Revenue Exposure

Company	Country	ACWI IMI ex CN/HK Wgt	China Revenue Exposure	% Contribution to Total
Apple Inc.	United States	3.97	17.8	10.6
NVIDIA Corporation	United States	3.95	16.6	9.8
Microsoft Corporation	United States	3.45	11.2	5.8
Broadcom Inc.	United States	0.94	31.5	4.4
Tesla, Inc.	United States	0.74	22.0	2.4
Meta Platforms Inc Class A	United States	1.48	9.9	2.2
QUALCOMM Incorporated	United States	0.22	61.2	2.0
Taiwan Semiconductor Manufacturing Co., Ltd.	Taiwan	0.93	12.4	1.7
BHP Group Ltd	Australia	0.17	60.9	1.6
Amazon.com, Inc.	United States	2.06	4.1	1.3
ASML Holding NV	Netherlands	0.32	25.8	1.2
Chevron Corporation	United States	0.31	25.2	1.2
Visa Inc. Class A	United States	0.54	13.9	1.1
Rio Tinto plc	United Kingdom	0.09	56.1	0.7
Applied Materials, Inc.	United States	0.18	26.8	0.7
Lam Research Corporation	United States	0.11	41.2	0.7
KLA Corporation	United States	0.11	41.7	0.7
Advanced Micro Devices, Inc.	United States	0.30	14.7	0.7
Texas Instruments Incorporated	United States	0.21	18.8	0.6
Eli Lilly and Company	United States	0.87	4.4	0.6
Merck & Co., Inc.	United States	0.33	11.1	0.5
Tokyo Electron Ltd.	Japan	0.08	43.4	0.5
AstraZeneca PLC	United Kingdom	0.28	12.5	0.5
Alphabet Inc. Class A	United States	1.12	3.1	0.5
Marvell Technology, Inc.	United States	0.08	42.1	0.5
Totals		22.87	15.4	52.5
Memo: China Contribution to ACWI IMI		2.58	86.8	26.6

Top 4 contribute more than
China as a whole

China Exposure Analysis:

Top 25 Contributors to China Supply Chain Exposure

Company	Country	ACWI IMI ex CN/HK Wgt	China Supply Chain Exposure	% Contribution to Total
Apple Inc.	United States	3.97	15.8	9.0
Microsoft Corporation	United States	3.45	10.8	5.4
NVIDIA Corporation	United States	3.95	9.2	5.3
Tesla, Inc.	United States	0.74	46.8	5.0
Amazon.com, Inc.	United States	2.06	9.5	2.8
Meta Platforms Inc Class A	United States	1.48	11.4	2.5
Taiwan Semiconductor Manufacturing Co., Ltd.	Taiwan	0.93	11.3	1.5
Alphabet Inc. Class A	United States	1.12	9.3	1.5
Alphabet Inc. Class C	United States	1.00	9.3	1.3
Broadcom Inc.	United States	0.94	9.6	1.3
Eli Lilly and Company	United States	0.87	9.7	1.2
Procter & Gamble Company	United States	0.49	16.0	1.1
Johnson & Johnson	United States	0.47	15.6	1.0
Walmart Inc.	United States	0.43	14.8	0.9
Amphenol Corporation Class A	United States	0.10	57.9	0.8
Eaton Corp. Plc	United States	0.17	32.9	0.8
Home Depot, Inc.	United States	0.49	11.0	0.8
QUALCOMM Incorporated	United States	0.22	21.9	0.7
Caterpillar Inc.	United States	0.23	21.6	0.7
Hon Hai Precision Industry Co., Ltd.	Taiwan	0.10	49.5	0.7
Samsung Electronics Co., Ltd.	Korea	0.25	18.7	0.7
Coca-Cola Company	United States	0.34	13.3	0.6
Schneider Electric SE	France	0.18	25.8	0.6
Merck & Co., Inc.	United States	0.33	13.2	0.6
GE Aerospace	United States	0.25	17.2	0.6
Totals		24.57	13.4	47.5
Memo: China Contribution to ACWI IMI		2.58	65.5	19.9

Top 4 contribute more than
China as a whole

Changes in Country Weights

Grouping: Country Of Exposure	ACWI Weight (%)	ACWI Ex China Weight (%)	Diff. (%)
USA	63.5%	65.1%	1.6%
Japan	5.7%	5.8%	0.1%
United Kingdom	3.4%	3.5%	0.1%
Canada	2.7%	2.8%	0.1%
China	2.4%	0.0%	-2.4%
France	2.4%	2.4%	0.1%
India	2.2%	2.3%	0.1%
Taiwan	2.1%	2.2%	0.1%
Switzerland	2.1%	2.1%	0.1%
Germany	1.9%	1.9%	0.0%

Changes in Sector Weights

Grouping: GICS Sector	ACWI Weight (%)	ACWI Ex China Weight (%)	Diff. (%)
Total	100.0%	100.0%	0.00%
Information Technology	24.4%	24.9%	0.46%
Financials	15.4%	15.4%	-0.04%
Industrials	11.3%	11.4%	0.14%
Health Care	10.7%	10.9%	0.16%
Consumer Discretionary	10.7%	10.3%	-0.42%
Telecommunication Services	7.4%	7.0%	-0.36%
Consumer Staples	6.1%	6.1%	0.04%
Materials	4.4%	4.4%	0.01%
Energy	4.4%	4.4%	0.01%
Real Estate	2.6%	2.6%	0.00%
Utilities	2.5%	2.5%	-0.01%

Forward Looking Returns

10 Year Assumptions

	Global Equity	Global Equity ex-China	Emerging Markets	Emerging Markets ex- China
Expected Return	4.85%	4.83%	5.50%	5.50%
Expected Risk	17.05%	16.93%	26.00%	27.50%

Source: Wilshire Advisors

20 Year Assumptions

	Emerging Markets	Emerging Markets ex- China
Expected Return	8.90%	9.00%
Expected Risk	22.00%	22.00%

Source: Meketa

US/China Relations – Select Recent Events

- 2018
 - US institutes multiple rounds of new tariffs on China; China retaliates
- 2019
 - US increases tariffs from 10% to 25%; China retaliates
 - US labels China a “currency manipulator;” effectively adds additional taxes to imported Chinese goods; designation removed in 2020
- 2020
 - China and US both expel certain journalists; restrictions eased in 2021
 - US orders China to close its consulate in Houston; China retaliates by ordering the closure of the US consulate in Chungdu
- 2021
 - US (both Trump and Biden administrations) declares that China is committing genocide against Uyghurs
 - Biden administration maintains Trump administration tariffs
 - NATO declares China a “security challenge”
- 2022
 - US Commerce Department restricts certain exports to China related to advanced computing chips
- 2023
 - US shoots down suspected Chinese spy balloon over continental United States
- 2024
 - Executive Order prohibiting US investors from investing in certain technologies in China

US/China Relations – Ongoing Issues

- China/Russia “no limits friendship”
- Technology competition – AI, quantum computing
- Claims over sovereignty related to the South China Sea
- US/China/Taiwan relations
- Cyberattacks attributed to China – e.g., Volt Typhoon

Implementation and Next Steps

- On November 14, 2024, Board approved RBA restricting portfolio and benchmark exposures to foreign adversaries
- Open Implementation Questions
 - Public Markets
 - Will take time to research and implement
 - Exceptions for indirect ownership where exposure is limited?
 - Derivatives exposure?
 - Private Markets
 - Existing exposure will take time to roll off
 - Side letters for future commitments where possible?
 - Defined Contribution Plans
 - Will take time to research and implement
 - Voya (incoming recordkeeper) needs 6 months advance notice to make the investment change



Performance

Defined Contribution Plans Advisory Committee Report
Unbundled Plans Investment Performance

Below are the totals for the period ending October 31, 2024. Returns greater than one year are annualized.

Investment Options	1 Month	3 Months	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs / Since Inception ¹	Fund Expense Ratio ²	Inception Date	Market Value	% of Market Value ²⁵	% of Participants Selecting an Option ²⁶
Do-It-For-Me: Target Date Portfolios^{3,4}	%	%	%	%	%	%	%	%				%
Retirement Portfolio	-2.32	1.09	7.01	18.45	0.67	4.47	4.62	0.06	8/1/05	793,734,964	9.1	3.9
Custom Benchmark	-2.33	1.11	6.97	18.58	0.70	4.46	4.61					
Target Date 2030 Portfolio	-2.41	1.41	8.94	22.33	1.78	6.46	6.29	0.06	8/1/05	511,761,420	5.9	7.5
Custom Benchmark	-2.42	1.43	8.92	22.53	1.80	6.44	6.25					
Target Date 2035 Portfolio	-2.44	1.65	10.53	25.06	2.65	7.69	7.12	0.06	7/5/06	571,416,311 ²²	6.6	9.0
Custom Benchmark	-2.43	1.69	10.51	25.30	2.66	7.66	7.06					
Target Date 2040 Portfolio	-2.44	1.90	12.07	27.75	3.50	8.82	7.87	0.06	8/1/05	517,671,848	6.0	9.2
Custom Benchmark	-2.43	1.95	12.07	28.00	3.48	8.78	7.80					
Target Date 2045 Portfolio	-2.44	2.13	13.52	30.24	4.29	9.84	8.48	0.06	7/5/06	525,022,314	6.0	10.5
Custom Benchmark	-2.42	2.19	13.54	30.51	4.26	9.78	8.39					
Target Date 2050 Portfolio	-2.39	2.27	14.55	31.76	4.81	10.45	8.81	0.06	9/30/07	542,379,962	6.2	12.0
Custom Benchmark	-2.36	2.35	14.59	32.06	4.78	10.39	8.72					
Target Date 2055 Portfolio	-2.36	2.34	15.05	32.30	5.03	10.64	8.90	0.06	5/19/10	637,629,111	7.3	15.3
Custom Benchmark	-2.33	2.42	15.09	32.63	5.00	10.58	8.82					
Target Date 2060 Portfolio	-2.35	2.34	15.06	32.33	5.03	10.63	8.97	0.06	11/17/14	372,948,166	4.3	13.5
Custom Benchmark	-2.32	2.43	15.11	32.67	5.00	10.58	8.85					
Target Date 2065 Portfolio	-2.36	2.35	15.08	32.38	5.04	10.58	10.80	0.06	9/23/19	82,558,083	1.0	7.2
Custom Benchmark	-2.33	2.43	15.12	32.69	5.00	10.58	10.81					
Help-Me-Do-It: Individual Options												
Money Market Fund ^{5,6}	0.43	1.35	4.67	5.65	3.98	2.59	1.88	0.08	11/1/99	156,436,922	1.8	1.7
FTSE 3 Month Treasury Bill Index	0.43	1.34	4.62	5.59	3.78	2.44	1.71					
Yield as of 10/31/24: 5.05% ⁷												
Stable Value Fund ^{8,9}	0.29	0.87	2.80	3.33	2.46	2.27	2.09	0.24	2/1/95	606,807,478	7.0	5.1
Custom Benchmark ¹⁰	0.34	1.00	3.79	4.61	3.97	2.66	2.29					
Yield as of 10/31/24: 3.53% ¹¹												
Bond Fund ¹²	-2.47	0.25	1.97	10.56	-2.16	-0.18	1.54	0.03	11/1/99	160,607,659	1.9	2.5
Bloomberg U.S. Aggregate Bond Index	-2.48	0.25	1.86	10.55	-2.20	-0.23	1.49					
Inflation-Protected Bond Fund ¹³	-1.79	0.47	3.18	8.66	-1.49	2.27	2.35	0.03	7/30/02	52,026,495	0.6	1.1
Bloomberg U.S. TIPS Index	-1.79	0.46	2.97	8.61	-1.54	2.20	2.26					
High-Yield Bond Fund ¹⁴	-0.41	2.72	7.46	15.27	2.82	4.56	5.01	0.39	5/31/04	58,505,367	0.7	1.4
ICE BofA U.S. High-Yield BB-B Constrained Index	-0.72	1.94	6.26	14.94	2.58	3.98	4.62					
Stock Fund ¹⁵	-0.91	3.67	20.97	38.01	9.08	15.29	13.03	0.01	11/1/99	2,081,157,171	24.0	8.3
S&P 500 Index	-0.91	3.66	20.97	38.02	9.08	15.27	13.00					
Small/Mid-Cap Stock Fund ¹⁶	-0.93	0.32	10.34	33.19	1.62	9.88	9.01	0.02	11/1/99	480,166,300	5.5	4.5
Russell 2500 Index	-0.93	0.29	10.27	33.08	1.51	9.81	8.92					
International Stock Fund ¹⁷	-4.99	0.06	8.15	23.36	1.30	5.96	5.05	0.06	11/1/99	232,624,224	2.7	3.6
MSCI ACWI ex-U.S. IMI Index ¹⁸	-4.95	0.29	8.26	24.25	1.24	5.83	4.92					
Global Real Estate Fund ¹⁹	-4.97	4.02	6.94	29.42	-2.31	0.72	3.71	0.08	10/1/02	97,144,461	1.1	2.3
FTSE EPRA/NAREIT Developed Index	-5.08	3.90	6.09	28.46	-3.24	-0.15	2.86					
VR SIP ²⁰	1.26	3.54	8.70	14.03	5.78	9.14	7.98	0.63	7/1/08	67,139,153 ²³	0.8	0.4
VRS Custom Benchmark ²¹	1.33	4.27	11.15	16.94	4.88	7.83	7.23					

VR SIP and benchmark returns are reported with a one month lag. [Return information shown is as of September 31st, 2024.] [Market value as of September 31st, 2024 was \$69,367,256.]

Do-It-Myself: Self-Directed Brokerage Account												
Schwab PCRA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	143,153,235	1.7	0.2
Total										\$8,690,890,644 ²⁴		

- 1 If the fund was not in existence for 10 years, fund and corresponding benchmark returns shown represent performance from the since inception date.
- 2 Fund investment advisers may voluntarily agree to waive expenses. Expense waivers may be terminated at any time.
- 3 Effective February 2023, the Target Date Portfolios invest in units of BlackRock's LifePath Index Funds N. The LifePath Index Funds N invest in the master LifePath Index Funds F. The inception dates shown reflect that of the master LifePath Index Funds F. Prior to February 2023, the Target Date Portfolios invested in BlackRock's LifePath Index Funds O which also invested in the master LifePath Index Funds F. All performance returns are linked.
- 4 Benchmarks are calculated using blended returns of third-party indices that proportionately reflect the respective weightings of the Portfolios' asset classes. Weightings are adjusted quarterly to reflect the Portfolios' asset allocation shifts over time. Indices currently used to calculate the custom benchmarks are: Russell 1000 Index, Russell 2000 Index, MSCI ACWI ex-U.S. IMI Net Dividend Return Index, Bloomberg U.S. Long Credit Bond Index, Bloomberg U.S. Intermediate Credit Bond Index, Bloomberg U.S. Long Government Bond Index, Bloomberg U.S. Intermediate Government Bond Index, Bloomberg U.S. Securitized: MBS, ABS, and CMBS Index, Bloomberg U.S. TIPS Index, FTSE EPRA/NAREIT Developed Index and the Bloomberg Commodity Index Total Return.
- 5 The Money Market Fund invests in units of BlackRock's Short-Term Investment Fund W. The inception data shown reflects the VRS Defined Contribution Plan's investment strategy inception date. Returns of the Fund from July 2012 through July 2016 represent performance of other BlackRock funds. Performance returns are linked.
- 6 An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment it is possible to lose money by investing in the Fund.
- 7 The current yield more closely reflects the earnings of the Fund than the total net return information. There is no guarantee that the Fund will earn the current yield in the future.
- 8 The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date.
- 9 Direct transfers from the Stable Value Fund to the Money Market Fund (considered a "competing fund") are not permitted. Before transferring to the Money Market Fund, participants must first transfer to a "non-competing" fund for 90 days. Optional Retirement Plan for Higher Education (ORPHE) participants who want to make a direct exchange to another ORPHE provider, must first exchange to a "non-competing" fund on the MissionSquare Retirement investment platform for 90 days.
- 10 Effective August 2016, the benchmark represents a hypothetical return generated by the monthly yields of actively traded U.S. Treasuries based on [50% 2- year maturity + 50% 3- year maturity] plus an annualized spread of 0.25% and is representative of the Fund's expected return profile, given how the Fund is managed and book value accounting treatment. Prior to August 2016 the custom benchmark was based on the monthly yield of actively traded U.S Treasuries with a 3-year maturity plus an annualized spread of 0.50%. The benchmark returns are linked.
- 11 The current yield more closely reflects the earnings of the Fund than the total net return information. There is no guarantee that the Fund will earn the current yield in the future.
- 12 The Bond Fund invests in units of BlackRock's U.S. Debt Index Fund M. The U.S. Debt Index Fund M invests in the master Fund F. The inception date shown reflects the VRS Defined Contribution Plans strategy inception date.
- 13 The Inflation-Protected Bond Fund invests in units of BlackRock's U.S. Treasury-Inflation Protected Securities Fund M. The U.S. Treasury Inflation-Protected Securities Fund M invests in the master Fund F. The inception date shown reflects the inception date of the master Fund F.
- 14 The High-Yield Bond Fund invests in units of JPMorgan's Corporate High-Yield Fund-Investment Class. The inception date shown reflects the date the current investment team at JPMorgan commenced management responsibility of the Fund.
- 15 The Stock Fund invests in units of BlackRock's Equity Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date.
- 16 The Small/Mid-Cap Stock Fund invests in units of BlackRock's Russell 2500 Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans investment strategy date.
- 17 The International Stock Fund invests in units of BlackRock's MSCI ACWI ex-U.S. IMI Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plan's investment strategy inception date. Returns from July 2012 through July 2016 represent performance of another BlackRock Fund. Performance returns are linked.
- 18 Effective August 2016, the performance benchmark is the MSCI ACWI ex-U.S. IMI Index. It was the MSCI World ex-U.S Index from July 2012 through July 2016. The benchmark returns are linked.
- 19 The Global Real Estate Fund invests in units of BlackRock's Developed Real Estate Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date.
- 20 The inception date shown reflects the date the VRS Investment Portfolio (VRSIP) was unitized.
- 21 The VRS Custom Benchmark is a blend of the asset class benchmarks at policy weights.
- 22 Includes Pending Account VRSIP amount of \$159,719.
- 23 Includes Preliminary Investment Portfolio Account - PIP amount of \$0.
- 24 Includes \$9,497,697 held in the administrative Special Accounts.
- 25 May not equal 100% due to rounding.
- 26 The data reflects the percentage of participants who selected a particular investment option as of September 30, 2024. There were 631,244 participant accounts as of September 30, 2024 across all unbundled DC plans.

All fund performance returns shown reflect all fund management fees and expenses, but do not reflect the Plan administrative fee charged by MissionSquare Retirement which would further reduce the returns shown.

All calculations assume reinvestment of dividends and capital gains. All returns are calculated in U.S. dollars. Performance returns are provided by BlackRock, Galliard Capital Management, JPMorgan, Bank of New York Mellon, and MissionSquare Retirement. Benchmark returns are provided by BlackRock, Russell/Mellon Analytical Services, Galliard, and MissionSquare Retirement. Although data is gathered from sources believed to be reliable, we cannot guarantee completeness or accuracy.

Plan Administrative Fee: An annual record keeping and communication services fee of \$30.50 is deducted from participant accounts on a monthly basis (approximately \$2.54 per month). Only one annual fee of \$30.50 is deducted from participant accounts for those participants participating in more than one Commonwealth of Virginia defined contribution plan.

Below benchmark return by 10 bps or more for index funds and capital preservation funds. Reasonable expectations due to impact of typical sources of tracking including fair value pricing for index funds and the nature of book value accounting treatment for stable value funds as it relates to interest rates.

Underperformance for an actively managed fund.

Excess performance for an actively managed fund.

Excess over benchmark return by 10 bps or more for index funds and capital preservation funds. Reasonable expectations due to impact of typical sources of tracking including fair value pricing for index funds and the interest rate environment for capital preservation funds.

Defined Contribution Plans Advisory Committee Report

TIAA RC Contract Investment Performance

Below are the totals for the period ending October 31, 2024. Returns greater than one year are annualized.

Investment Options	1 Month	3 Months	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs / Since Inception ¹	Fund Expense Ratio ²	Inception Date	Market Value	% of Market Value ¹⁹	% of Participants Selecting an Option ²⁰
Target Date Portfolios ^{3,4}	%	%	%	%	%	%	%	%		\$	%	%
BlackRock LifePath Index Retirement Fund N	-2.32	1.09	7.01	18.45	0.67	4.49	4.64	0.06	8/1/05	45,852,178	9.7	6.9
Custom Benchmark	-2.33	1.11	6.97	18.58	0.70	4.46	4.61					
BlackRock LifePath Index 2030 Fund N	-2.41	1.41	8.94	22.33	1.79	6.47	6.31	0.06	8/1/05	38,672,706	8.2	8.7
Custom Benchmark	-2.42	1.43	8.92	22.53	1.80	6.44	6.25					
BlackRock LifePath Index 2035 Fund N	-2.44	1.65	10.53	25.06	2.66	7.70	7.14	0.06	7/5/06	31,448,888	6.7	8.8
Custom Benchmark	-2.43	1.69	10.51	25.30	2.66	7.66	7.06					
BlackRock LifePath Index 2040 Fund N	-2.44	1.90	12.07	27.75	3.51	8.84	7.89	0.06	8/1/05	37,526,076	7.9	9.6
Custom Benchmark	-2.43	1.95	12.07	28.00	3.48	8.78	7.80					
BlackRock LifePath Index 2045 Fund N	-2.44	2.13	13.52	30.24	4.30	9.86	8.50	0.06	7/5/06	33,144,531	7.0	10.7
Custom Benchmark	-2.42	2.19	13.54	30.51	4.26	9.78	8.39					
BlackRock LifePath Index 2050 Fund N	-2.39	2.27	14.55	31.76	4.82	10.46	8.83	0.06	9/30/07	21,357,921	4.5	8.7
Custom Benchmark	-2.36	2.35	14.59	32.06	4.78	10.39	8.72					
BlackRock LifePath Index 2055 Fund N	-2.36	2.34	15.05	32.30	5.04	10.65	8.92	0.06	5/19/10	12,183,477	2.6	7.7
Custom Benchmark	-2.33	2.42	15.09	32.63	5.00	10.58	8.82					
BlackRock LifePath Index 2060 Fund N	-2.35	2.34	15.06	32.33	5.04	10.65	8.97	0.06	11/17/14	3,648,834	0.8	4.4
Custom Benchmark	-2.32	2.43	15.11	32.67	5.00	10.58	8.85					
BlackRock LifePath Index 2065 Fund N	-2.36	2.35	15.08	32.38	5.05	10.59	10.82	0.06	9/23/19	8,634,000	1.8	2.9
Custom Benchmark	-2.33	2.43	15.12	32.69	5.00	10.58	10.81					
Individual Options												
BlackRock Short-Term Investment Fund W ⁵	0.43	1.35	4.67	5.65	3.98	2.59	1.92	0.08	7/1/03	8,145,255	1.7	6.8
FTSE 3 Month Treasury Bill Index	0.43	1.34	4.62	5.59	3.78	2.44	1.71					
Yield as of 10/31/24: 5.05% ⁶												
BlackRock U.S. Debt Index Fund M ⁷	-2.47	0.25	1.97	10.56	-2.16	-0.18	1.54	0.03	6/6/96	11,526,448	2.4	15.5
Bloomberg U.S. Aggregate Bond Index	-2.48	0.25	1.86	10.55	-2.20	-0.23	1.49					
BlackRock U.S. TIPS Fund M ⁸	-1.79	0.47	3.18	8.66	-1.49	2.27	2.35	0.03	7/30/02	5,808,723	1.2	10.8
Bloomberg U.S. TIPS Index	-1.79	0.46	2.97	8.61	-1.54	2.20	2.26					
BlackRock Equity Index Fund J ⁹	-0.91	3.67	20.97	38.02	9.08	15.29	13.03	0.01	3/5/97	63,284,991	13.4	23.0
S&P 500 Index	-0.91	3.66	20.97	38.02	9.08	15.27	13.00					
BlackRock Russell 2500 Index Fund J ¹⁰	-0.93	0.32	10.34	33.19	1.61	9.88	9.03	0.02	9/30/08	10,310,930	2.2	4.6
Russell 2500 Index	-0.93	0.29	10.27	33.08	1.51	9.81	8.92					
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M ¹¹	-4.99	0.06	8.12	23.33	1.26	5.91	5.01	0.07	2/28/11	17,988,201	3.8	15.2
MSCI ACWI ex-U.S. IMI Index	-4.95	0.29	8.26	24.25	1.24	5.83	4.92					
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M ¹²	-2.34	2.20	15.21	32.16	5.14	10.95	9.15	0.05	4/12/13	65,058,035	13.8	27.4
MSCI ACWI IMI Index	-2.32	2.27	15.10	32.33	4.93	10.74	8.86					
TIAA Real Estate Account ¹³	0.48	0.37	-4.32	-8.00	-2.38	1.03	3.43	1.02	10/2/95	11,603,959	2.5	23.2
Custom Composite Benchmark ¹⁴	n/a	n/a	n/a	n/a	n/a	n/a	n/a					
TIAA Traditional Annuity RC ^{15,16,17,18}	0.38	1.14	3.87	4.71	4.47	4.21	4.20	--- ²¹	8/1/05	39,331,061	8.3	25.3
Self-Directed Brokerage Account												
TIAA - Self-Directed Account	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7,262,868	1.5	0.8
Total										\$472,789,082		

Footnotes >

- 1 If the fund was not in existence for 10 years, fund and corresponding benchmark returns shown represent performance from the since inception date.
- 2 Fund investment advisers may voluntarily agree to waive expenses. Expense waivers may be terminated at any time.
- 3 The BlackRock LifePath Index Funds N invest in the master LifePath Index Funds F. The inception dates shown reflect the inception date of the master LifePath Funds F. The inception dates for most LifePath Funds N were 8/15/17. The 2065 Fund's N inception date was 11/15/19. Returns prior to Funds' N inception dates are those of Funds F with deductions taken for Funds N investment management fees.
- 4 Benchmarks are calculated using blended returns of third-party indices that proportionately reflect the respective weightings of the Portfolios' asset classes. Weightings are adjusted quarterly to reflect the Portfolios' asset allocation shifts over time. Indices currently used to calculate the custom benchmarks are: Russell 1000 Index, Russell 2000 Index, MSCI ACWI Ex-U.S. IMI Net Dividend Return Index, Bloomberg U.S. Long Credit Bond Index, Bloomberg U.S. Intermediate Credit Bond Index, Bloomberg U.S. Long Government Bond Index, Bloomberg U.S. Intermediate Government Bond Index, Bloomberg U.S. Securitized: MBS, ABS, and CMBS Index, Bloomberg U.S. TIPS Index, FTSE EPRA/NAREIT Developed Index and the Bloomberg Commodity Index Total Return.
- 5 An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment it is possible to lose money by investing in the Fund.
- 6 The current yield more closely reflects the earnings of the Fund than the total net return information.
- 7 The BlackRock U.S. Debt Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 7/20/12. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M's investment management fees.
- 8 The BlackRock U.S. Treasury Inflation-Protected Securities Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 7/20/12. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M' investment management fees.
- 9 The BlackRock Equity Index Fund J invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund J was 3/20/17. Returns prior to Fund J's inception date are those of Fund F with deductions taken for Fund J's investment management fees.
- 10 The BlackRock Russell 2500 Fund J invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund J was 10/15/21. Returns prior to Fund J's inception date are those of Fund F with deductions taken for Fund J's investment management fees.
- 11 The BlackRock MSCI ACWI ex-U.S. IMI Index Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 12/31/12. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M's investment management fees.
- 12 The BlackRock MSCI ACWI IMI Index Non-Lendable Fund M invests in the master Fund F. Inception dates for the master Fund F and Fund M are both 4/12/13.
- 13 Transfers out of the TIAA Real Estate Account (REA) are limited to one per quarter. Currently, these transfers do require a minimum transaction of at least \$1000 (except for systematic transfers, which must be at least \$100), or entire accumulation if less; however, this minimum may be reduced or eliminated in the future. Individual contract owners are limited from making transfers from making transfers into their account accumulation if, after giving effect to such transfer, the total value of such contract owner's Account accumulation (under all contracts issued to such contract owner) would exceed \$150,000.
- 14 Effective January 2014, the Custom Composite Index is 70% NCREIF Open End Diversified Core Equity (ODCE) Net Index, 20% Bloomberg 3-Month Treasury Bill Index, and 10% Dow Jones U.S. Select REIT Index. Prior periods include other representative indices. TIAA's investment management team does not manage its real estate portfolio to a specific published index benchmark. The Custom Composite Index represents a reasonable proxy of how TIAA allocates assets among real property, short-term investments, and REITs over time. The Virginia Retirement System anticipates that Fund returns may vary greatly from those of the Custom Composite Index. Benchmark returns are not available for months that do not end on a calendar quarter due to the fact that NCREIF ODCE Index returns are only published each calendar quarter.
- 15 Upon separation from service or retirement participants can convert their TIAA Traditional accumulation dollars amount to a lifetime income option or withdraw funds through a fixed period annuity ranging from five to 30 years or a Transfer Payout Annuity, which enables participants to move funds out of the TIAA Traditional Annuity in 7 annual installments for the Retirement Choice (RC) contract. Each installment includes a portion of principal and interest, based on the rate in effect when transfer or withdrawal funds are made. However, there are two exceptions to the payout installment. First, if the TIAA Traditional account balance is less than \$5,000, participants can transfer the total amount at any time following termination of employment, but only once during the life of the contract. Second, TIAA Traditional can be withdrawn or transferred to another company up to the full balance within 120 days following termination of employment, subject to 2.5% surrender charge. After the 120-day period, participants can withdraw funds only through a fixed period annuity ranging from five to 30 years or the Transfer Payout Annuity.
- 16 The TIAA Traditional Annuity RC contract has minimum guaranteed rate during the accumulation phase of 1% to 3% . The current minimum rate for the RC contract is 3%. Further, the TIAA Traditional Annuity RC contract applies to premiums deposited during the applicable calendar year and is guaranteed for 10 years, at which point the minimum rate for these premiums will be reset.
- 17 TIAA's annual credited rate on new money for the RC contract for the month of October was 5.00%.
- 18 The TIAA Traditional Annuity is not an investment for purposes of federal securities laws; it is a guaranteed insurance contract. Therefore, unlike a variable annuity or mutual fund, the TIAA Traditional Annuity does not include an identifiable expense ratio. Each premium allocated to the TIAA Traditional Annuity buys a definite amount of lifetime income for participants based on the rate schedule in effect at the time the premium is paid. In addition, the TIAA Traditional Annuity provides a guarantee of principle, a guaranteed minimum rate of interest and the potential for additional amounts of interest when declared by TIAA's Board of Trustees. Additional amounts, when declared, remain in effect for the "declaration year" that begins each March for the accumulating annuities and January for lifetime payout annuities. Additional amounts are not guaranteed for future years.
- 19 May not equal 100% due to rounding
- 20 The data reflects the percentage of participants who selected a particular investment option as of September 30, 2024. There were 5,806 (RC contract) participants as of September 30, 2024.
- 21 Effective July 2022, TIAA no longer provides an estimated expense ratio for its TIAA Traditional Annuity product.

Performance returns shown reflect all fund management fees and other investment related expenses, but do not reflect the TIAA annual administrative fee of \$28 (deducted at \$7.00 per quarter) which would further reduce the returns shown. Performance returns do not reflect redemption fees and/or surrender charges, if applicable.

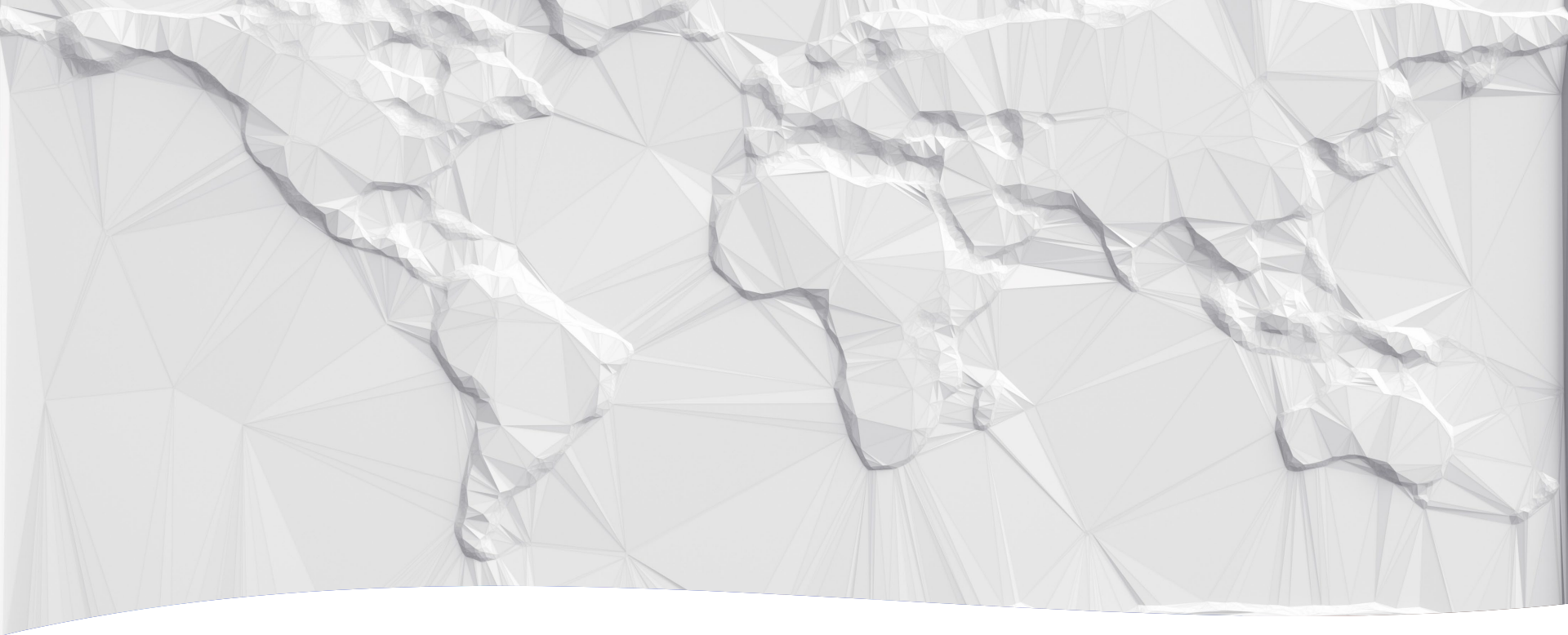
All calculations assume reinvestment of dividends and capital gains. All returns are calculated in U.S. dollars. Fund and benchmark returns are provided by TIAA and BlackRock. Although data is gathered from sources to be reliable, the Virginia Retirement System cannot guarantee completeness or accuracy.

Below benchmark return by 10 bps or more for index funds and capital preservation funds. Reasonable expectations due to impact of typical sources of tracking including fair value pricing for index funds.

Underperformance for an actively managed fund.

Excess performance for an actively managed fund.

Excess over benchmark return by 10 bps or more for index funds and capital preservation funds. Reasonable expectations due to impact of typical sources of tracking including fair value pricing for index funds and the interest rate environment for capital preservation funds.



CEM 2023 DC Survey Highlights

CEM 2023 DC Survey Highlights

- CEM has benchmarked DC plans since 1997
- 2023 survey: 104 corporate plans and 27 public plans for a total of 131 plans representing \$1.4 trillion in assets
- VRS participated in CEM's complimentary DC cost and performance report and subscribes to CEM's Dashboard
 - 457 Deferred Compensation Plan: supplemental (unbundled)
 - TIAA ORPHE*: primary (bundled)
- Complimentary survey reports are included in the Appendix

* Based on TIAA Retirement Choice (RC) contract.

CEM 2023 DC Survey Highlights

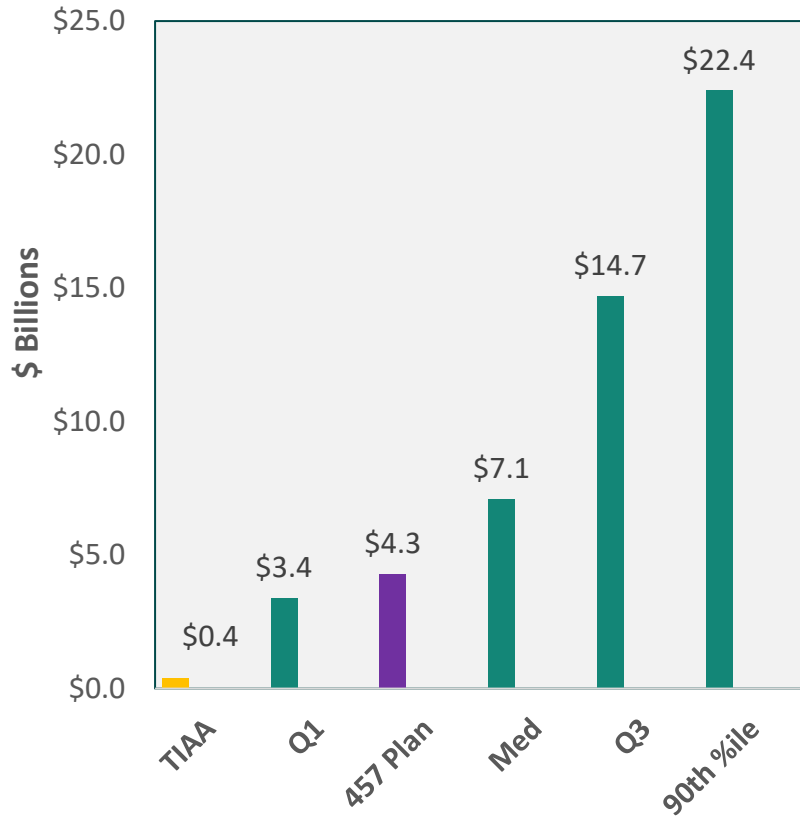
- Differences in plan size and participant account balances due to many factors including:
 - Whether a plan is a primary or supplemental plan, contribution and matching rates, participant demographics and plan design
- Comparing a plan's total plan cost to other plans provides limited insight because of differences in economies of scale and types of investments offered

VRS DC Plans - Comparison

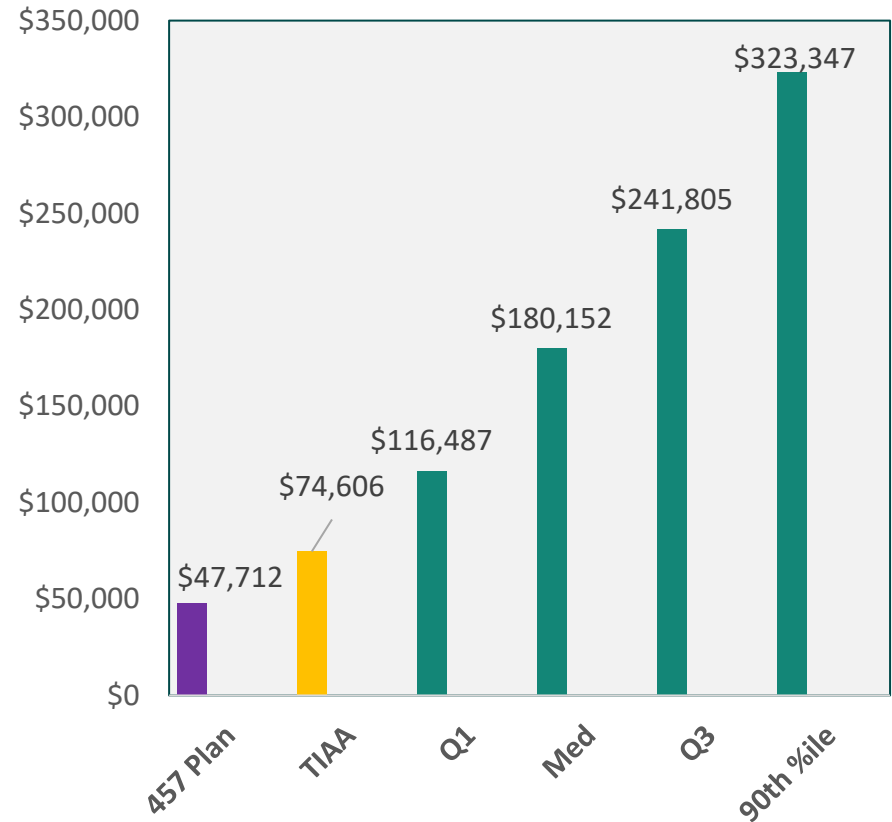
As of 12-31-2023	457 Plan Supplemental	TIAA ORPHE 1 & 2 (RC contract) Primary
Plan Assets	\$4.3 billion	\$402 million
Participants	90,634	5,391
Contribution Type	Minimum: \$10/pay Maximum: Annual limit of \$22,500 50+ Catch-up = \$7,500 Standard Catch-up	Plan 1: 10.4% employer contribution Plan 2: 5% pretax employee contribution plus 8.5% employer contribution. Employer may increase its maximum amount to 8.9%
Average Account Balance	\$47,712	\$74,606 (excludes legacy contracts)

CEM 2023 DC Survey Highlights

Plan Size

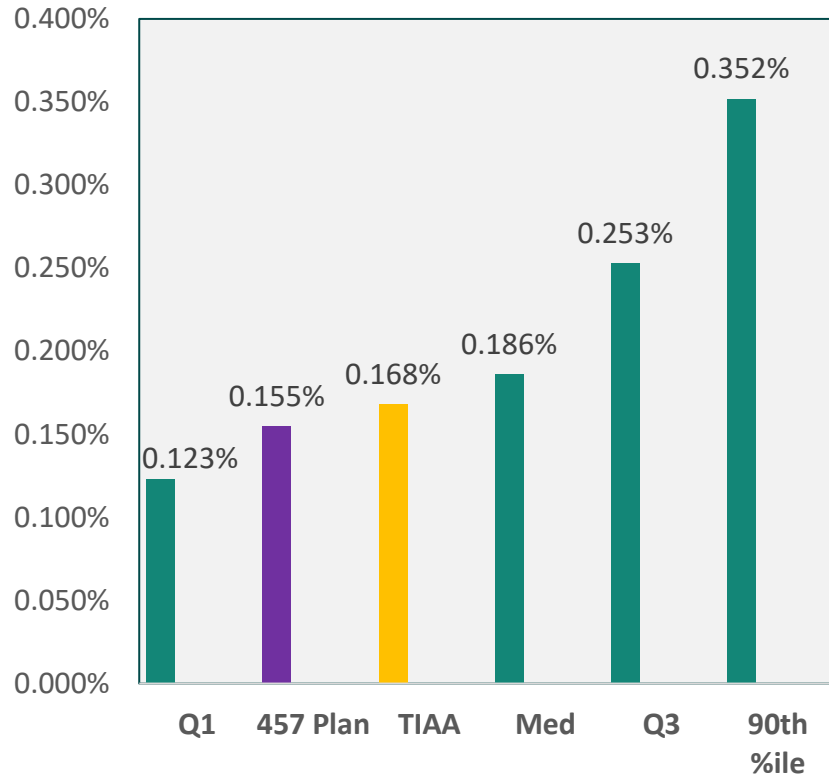


Average Account Balance



CEM 2023 DC Survey Highlights

Total Plan Cost (% of assets)



Total Cost Per Participant



CEM 2023 DC Survey Highlights

Costs	457 Plan	TIAA ORPHE RC Contract
Investment	7.3 bps or \$2.9 M	6.7 bps or \$243,000
Recordkeeping & Administration	5.9 bps or \$2.4 M	5.1 bps or \$186,000
Internal Oversight & Consulting (if applicable)	2.4 bps or \$0.9 M	7.1 bps or \$259,000
Less Recordkeeping Rebates to Participants	n/a	-2 bps or -\$75,000
Total Recordkeeping / Administration and Oversight After Rebates	8.3 bps or \$3.3 M	10.2 bps or \$371,000
Total Plan Costs Based on Assets	15.5 bps or \$6.3 M	16.8 bps or \$614,000
Cost Per Participant	\$69	\$114

Figures may not foot due to rounding.

CEM 2023 DC Survey Highlights

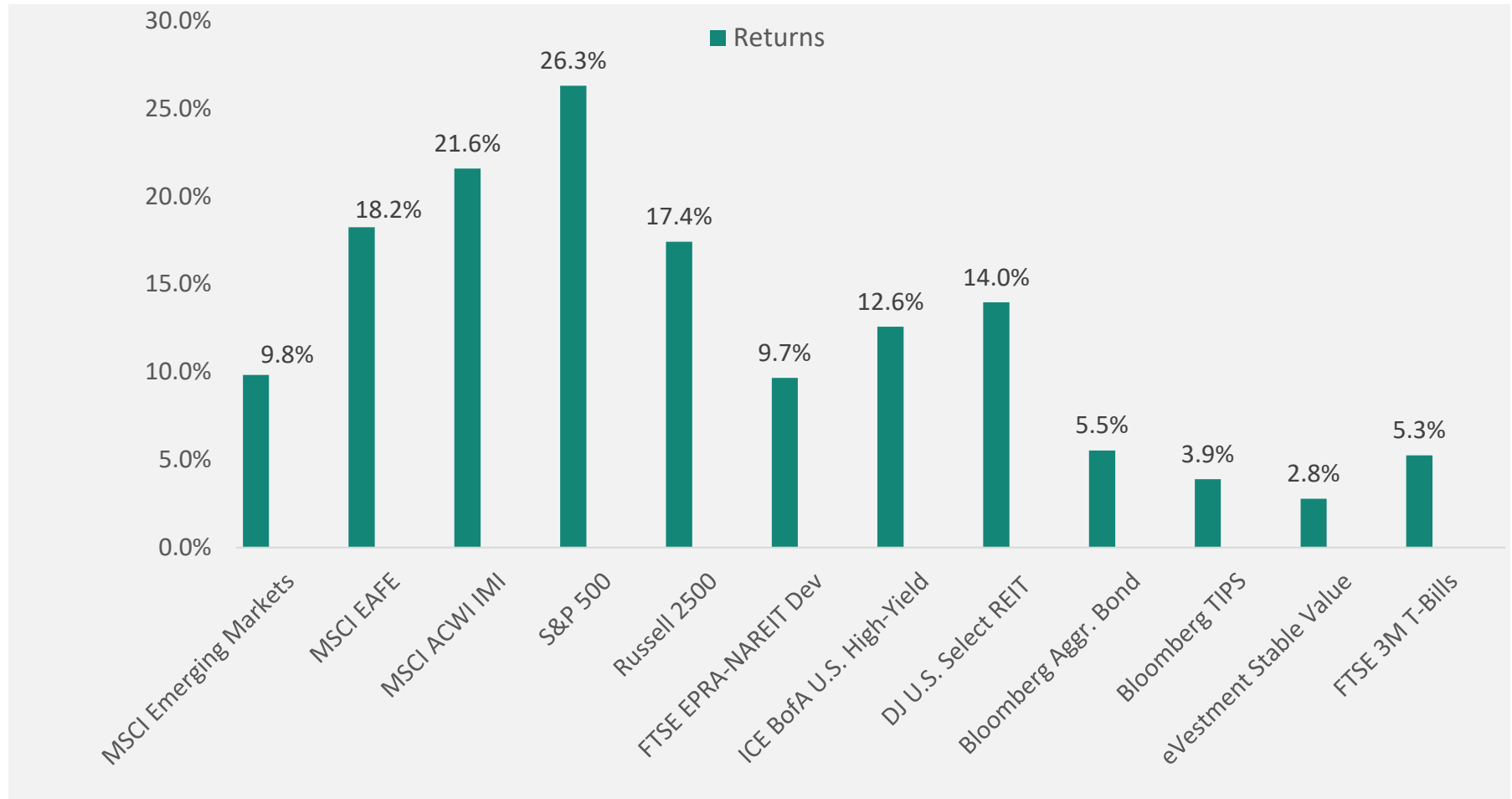
- CEM universe median investment options offered: 14
 - VRS 457 Plan: 12
 - TIAA ORPHE: 11

(Target date fund series and self-directed brokerage accounts counted as one option)
- A plan's asset mix is a function of investments offered and participants' investment option choices
- A plan's asset mix is often the biggest reason for differences in total returns of plan participants

CEM 2023 DC Survey Highlights

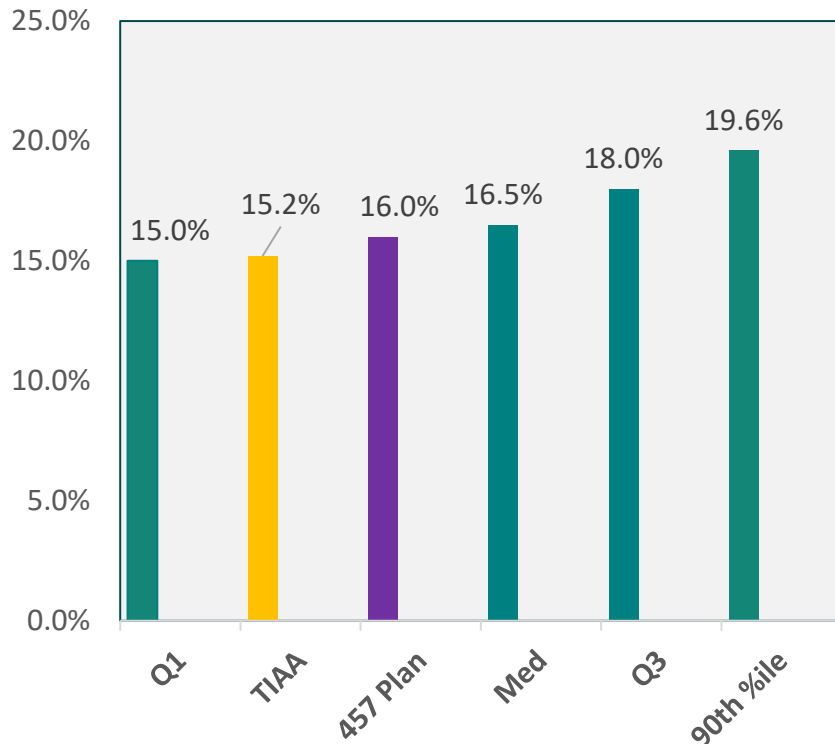
Asset Mix Category	457 Plan	TIAA ORPHE (RC)	Universe Average	Universe Median
Employer Stock	0%	0%	7%	1%
U.S. Stock	42%	14%	34%	35%
Non-U.S. & Global Stock	4%	18%	6%	6%
Bonds	5%	4%	6%	5%
Target Date & Balanced	29%	50%	34%	33%
Stable Value & GIC	12%	0%	8%	6%
Cash, Money Market	2%	2%	2%	0%
Real, Hedge, Other	3%	11%	1%	1%
Mutual Fund & Brokerage Windows	2%	1%	3%	1%

Asset Class Returns 1-Year Ending December 31, 2023



CEM 2023 DC Survey Highlights

Average Total Return of Plan Participants



Average net total return measures the change in the average participant's account balance as a result of net returns earned by their investments weighted by their holdings

Primary causes of differences in plan participants' average net total return:

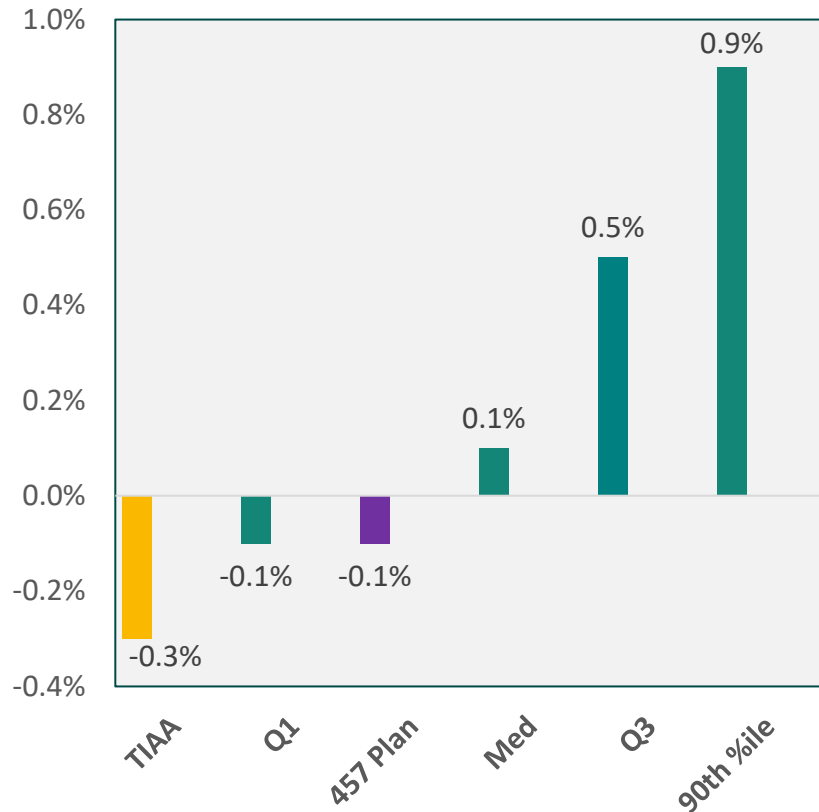
- Asset mixes selected by participants
- Value added performance (amount investment options outperform benchmark indices)

CEM 2023 DC Survey Highlights

- CEM's research has shown consistently there is no relationship between what plans spend and what they receive
- Low value added = on average, a plan's investment options are underperforming their benchmark indices (net of costs)
 - Where indexed investment options are offered, net value added is not expected to be significant since the goal of an indexed option is to track the return of the underlying performance benchmark index
- High value added = on average, a plan's investment options are outperforming their benchmark indices (net of costs)

CEM 2023 DC Survey Highlights

Average Total Plan Value Added



Average total plan value added = weighted net investment returns minus administration costs (after rebates) minus weighted benchmark returns

A positive figure indicates, on average, investments are outperforming benchmarks and a negative figure indicates underperformance

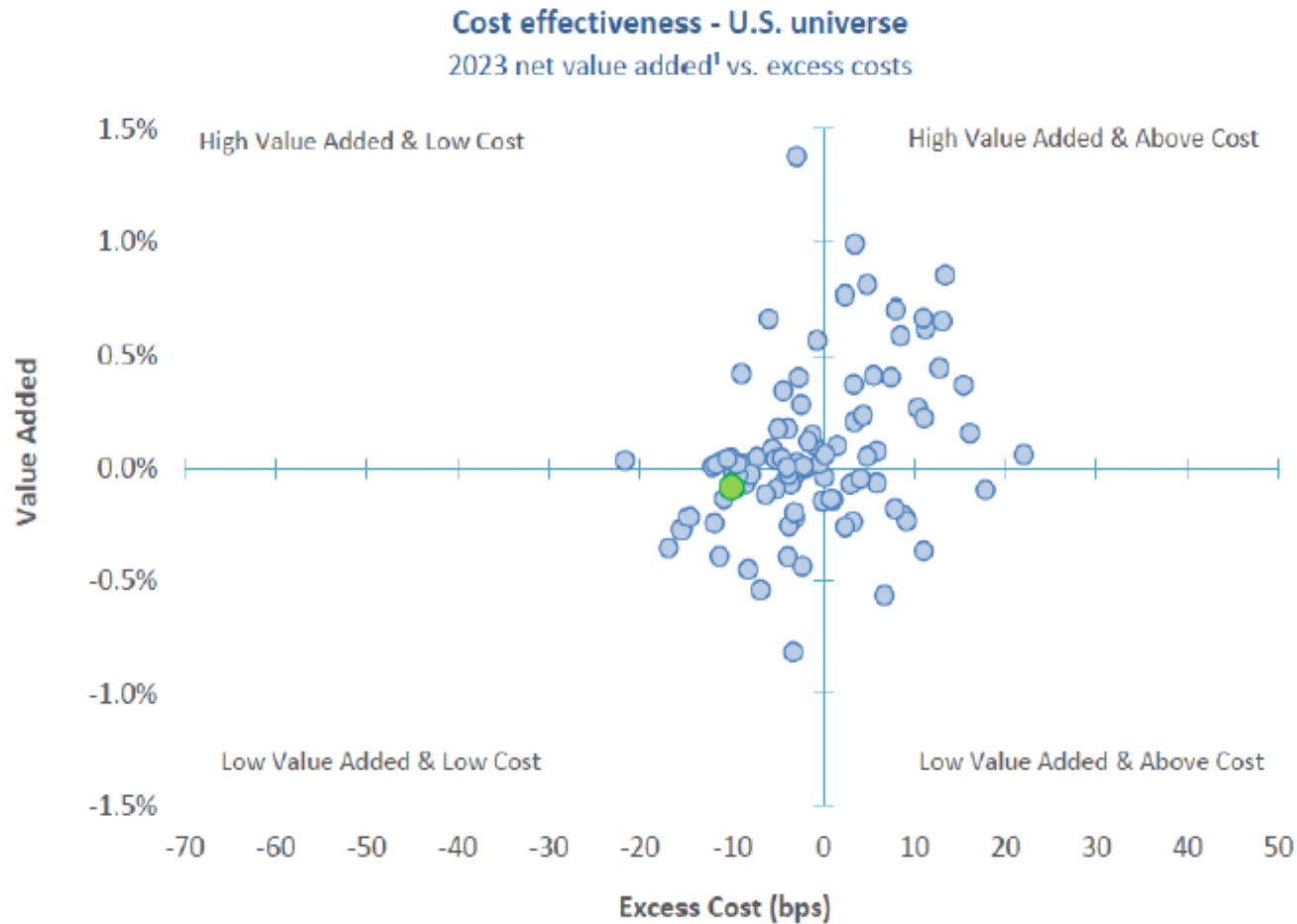
Net value added for funds that are indexed investment options (track benchmarks) typically are low value added (benchmark returns – fund expense ratios)

CEM DC Survey Highlights

457 Plan	2023	2022	2021
Plan Assets	\$4.3 billion	\$3.7 billion	\$4.4 billion
Investment Costs	7.3 bps	7.6 bps	7.6 bps
Administrative Costs	8.3 bps	8.3 bps	7.6 bps
Total Plan Costs	15.5 bps	15.9 bps	15.2 bps
Cost Per Participant	\$69	\$73	\$77
Average Total Return of Plan Participants	16.0%	-14.5%	15.2%
Average Total Plan Value Added	-0.1%	0.0%	0.0%
CEM Cost Effectiveness Ranking	Low value added, low cost	No value added, low cost	Not Available

Figures may not foot due to rounding.

CEM Cost Effectiveness – 457 Plan

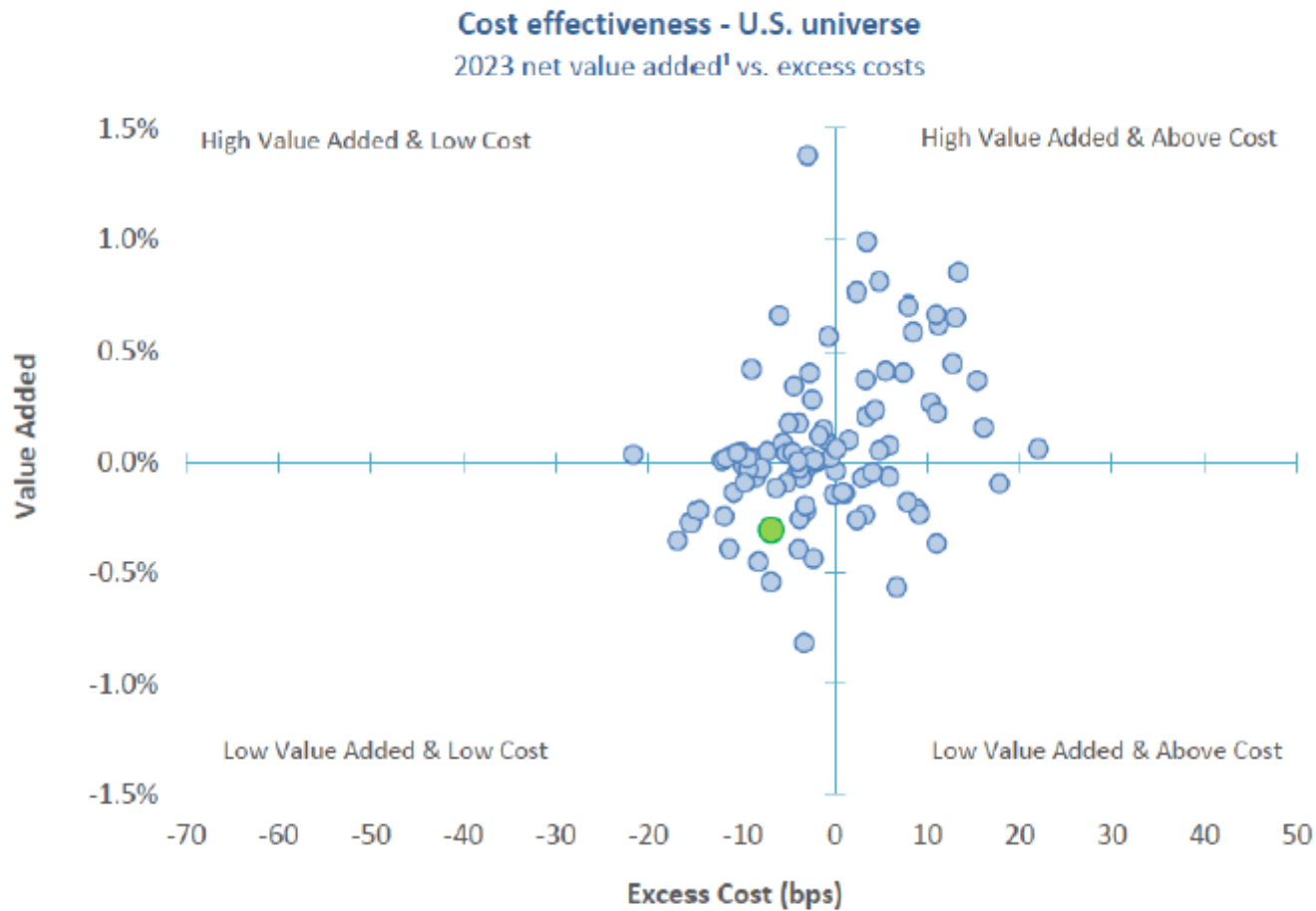


CEM DC Survey Highlights

TIAA ORPHE RC Contract	2023	2022	2021
Plan Assets	\$402 million	\$327 million	\$357 million
Investment Costs	6.7 bps	7.4 bps	9.5 bps
Administrative Costs	10.2 bps	13.4 bps	15.0 bps
Total Plan Costs	16.8 bps	20.9 bps	24.6 bps
Cost Per Participant	\$114	\$134	\$153
Average Total Return of Plan Participants	15.2%	-15.8%	14.2%
Average Total Plan Value Added	-0.3%	0.1%	-0.2%
CEM Cost Effectiveness Ranking	Low value added, low cost	High value added, low cost	Not available

Figures may not foot due to rounding.

CEM Cost Effectiveness – TIAA ORPHE



Thank you!



VRS Defined Contribution Plans

3rd Quarter 2024

(July 1 – September 30, 2024)

Administrative Summary

December 5, 2024

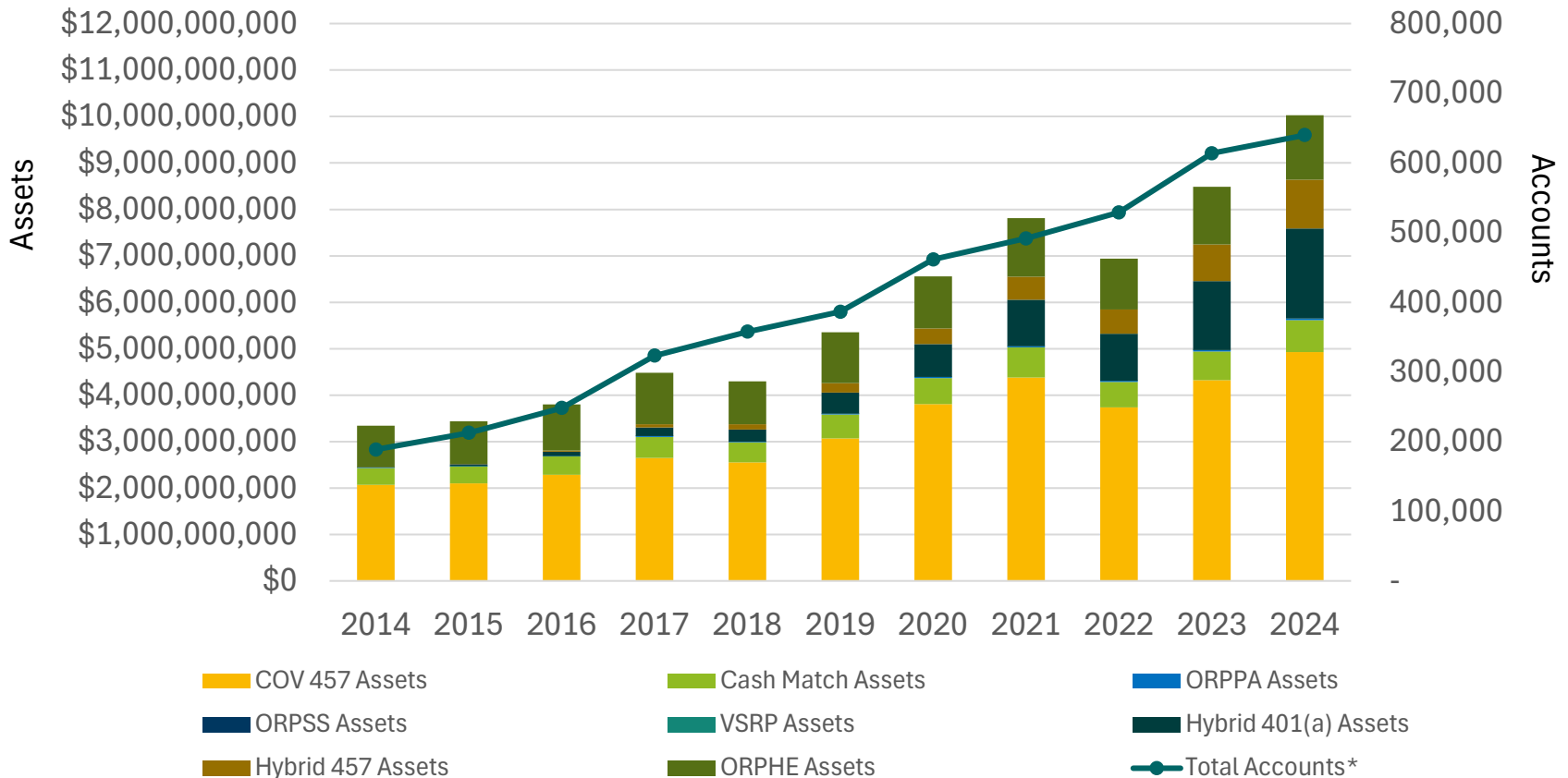
Agenda

- General Updates
- COV 457 & Cash Match Plans
- Hybrid Retirement Plan
- ORPHE
- Upcoming Events
- DC Plans Unbundled Record Keeper Transition Update



Total Assets and Accounts Over Time

Totals as of 9/30/2024	Assets	Accounts	Assets ↑ 7% Accounts ↑ 2% Since 6/30/2024
	\$10,029,012,089	639,924	



Note: All data except for the current year reflects totals as of calendar year-end and includes ORPHE selected providers and MissionSquare participant, beneficiary, forfeiture & reserve accounts. 2024 data is as of 9/30/2024.

*Does not indicate unique participants.

Honorable Mention, Strategic Marketing MarCom Awards



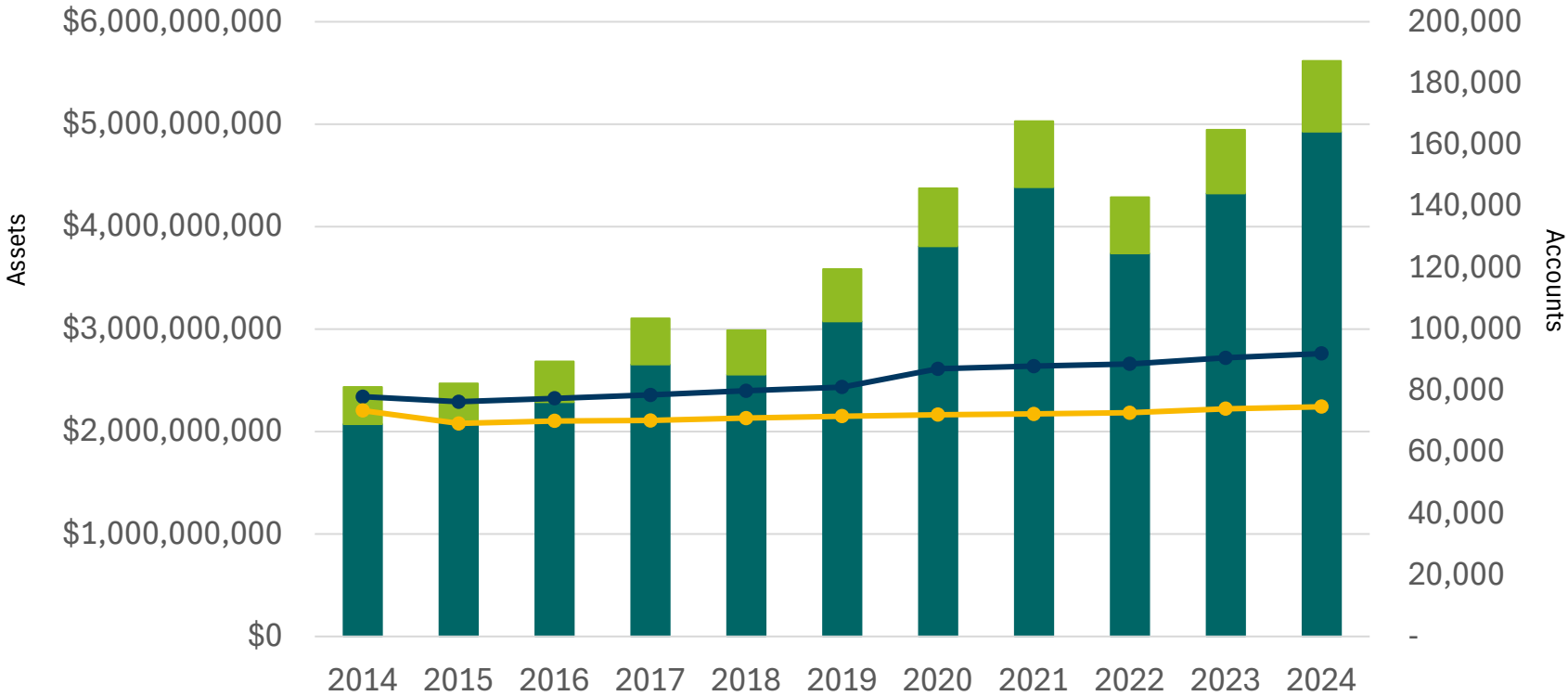
***MarCom Awards are administered
by The Association of Marketing
& Communication Professionals
(AMCP)***

- VRS received an Honorable Mention for our outstanding beneficiary campaign (with MissionSquare Retirement) in fiscal year 2024.
- The campaign engaged participants to designate a beneficiary using a targeted age group approach with a clear call to action and visuals that met participants where they are on their journey to retirement.

Campaign Result: 8% of the population added a beneficiary, exceeding the 2% to 5% industry standard for email conversion.

COV 457/Cash Match Plan Assets and Accounts

Totals as of 9/30/2024	Assets	Accounts	Assets ↑ 6.2% Since 6/30/2024
COV 457	\$4,926,235,717	92,010	
Cash Match	\$690,430,642	74,750	



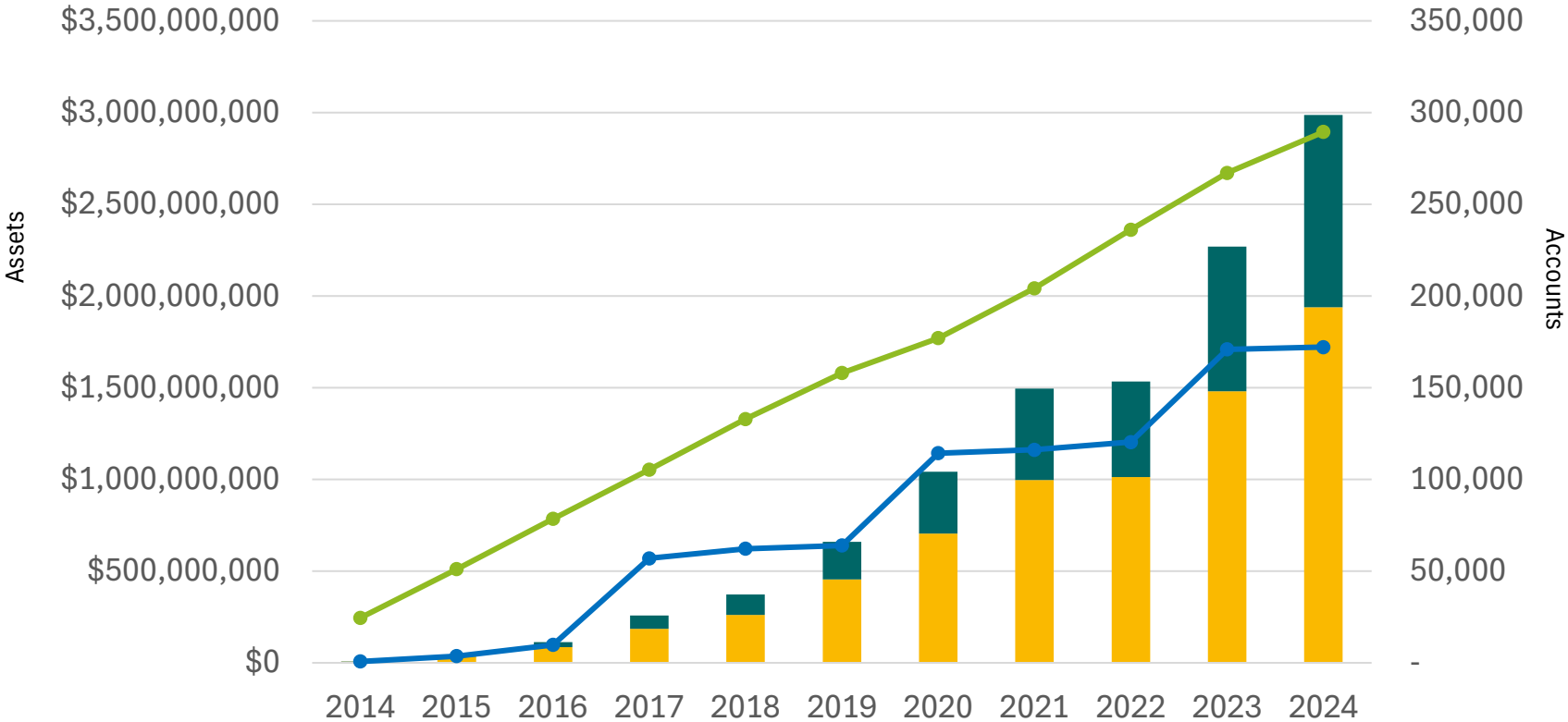
COV 457 Assets Cash Match Assets COV 457 Accounts Cash Match Accounts



Note: All data except for the current year reflects totals as of calendar year-end and includes MissionSquare participant, beneficiary & reserve accounts. 2024 data is as of 9/30/2024.

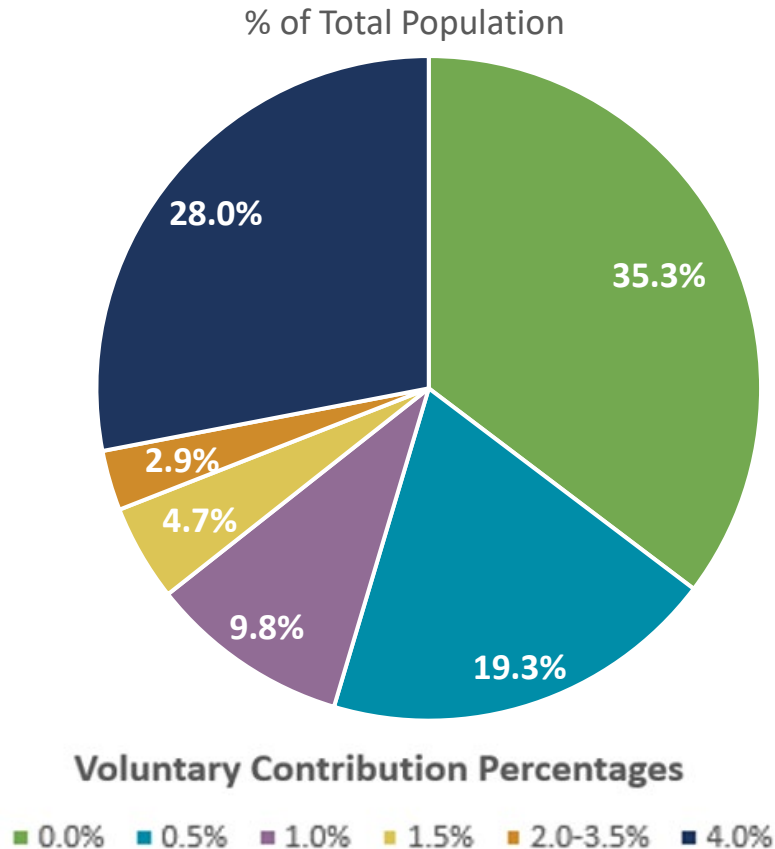
Hybrid Retirement Plan Assets and Accounts (DC only)

Totals as of 9/30/2024	Assets	Accounts	Assets ↑ 10.6% Accounts ↑ 2.6% Since 6/30/2024
Hybrid 401(a)	\$1,939,427,374	289,478	
Hybrid 457	\$1,047,358,999	172,149	



Note: All data except for the current year reflects totals as of calendar year-end and includes MissionSquare participant, beneficiary & reserve accounts. 2024 data is as of 9/30/2024.

Hybrid Retirement Plan Voluntary Contribution Elections



Overall Voluntary
Contribution
Participation Rate
64.7%

Active Election Rate
32.7%

ORPHE

Administrative Summary

ORPHE Totals*			
	6/30/2024	9/30/2024~	% Change
Assets	\$1,334,874,889	\$1,390,413,635	4%
Participants	10,561	11,031	4%
Average Balance	\$126,397	\$126,046	0%



DCP	
	9/30/2024
Assets	\$ 192,306,819
Participants	2,351
Average Balance	\$81,798

21% of new hires through Q3 2024 elected DCP as their provider.



TIAA**	
	9/30/2024
Assets	\$1,198,106,816
Participants	8,680
Average Balance	\$138,035

79% of new hires through Q3 2024 elected TIAA as their provider.

*Excludes deselected providers.

**Includes assets in GRA/RA and RC contracts.

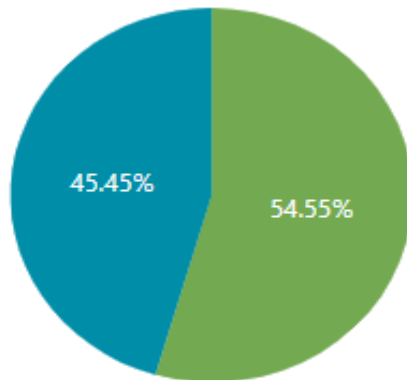
~Eastern Virginia Medical School / Old Dominion University Merger 7/1/2024
Data through 9/30/2024.

Update on ORPHE Activities

Open Enrollment: October

30 views of Open Enrollment webinar.

11 changes in provider; split between providers.



Provider Elected ● DCP ● TIAA

Annual Employer Update

Report provided by Rick Larson.

18 unique employers were represented, including all four-year universities.

Topics covered

- Overview of the VOYA record-keeper transition, plan assets, accounts, provider elections, annual fee disclosure.
- Administrative updates on open enrollment, compensation limits, employer reports and acknowledgements.

Majority of survey respondents agreed or strongly agreed that:

- **The information presented was important and useful.**
- **The webinar improved their knowledge of the topics presented.**

Upcoming Events



Ongoing

Content review and approval cycle for various items.

December

Voya Transition

- Participant meetings continue.
- Employer training sessions (Payroll and Human Resources focused).

January

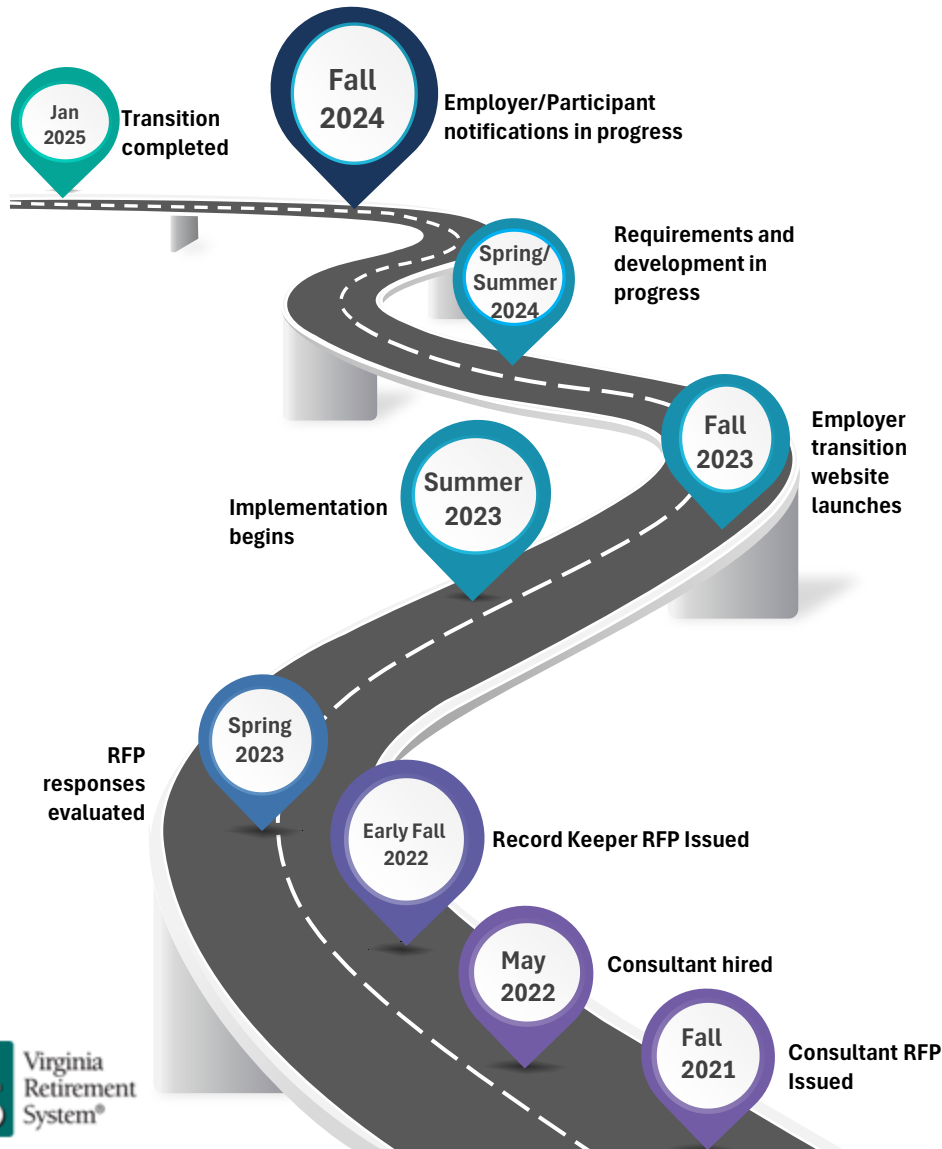
Voya Transition

- Participant meetings continue.
- Continued employer engagement.
- Reconciliation and go live.
- Participant notifications.
- Final statements from MissionSquare.

DC Plans Unbundled Record Keeper Project Status



Unbundled Record Keeper Contract



Project Status

- Overall status is **GREEN**.
- Although a few areas are slightly delayed including custom reporting/contracts.

Milestones

- **Contract** – Completed
- **Employer transition website** – Completed
- **Finalized conversion timeline** – Completed
- **Detailed project plan** – Completed
- **Initial requirements** – Completed
- **Participant transition website** – Completed
- **Participant transition notifications** – Completed
- **Integrated testing** – In progress

Contracts/Agreements



- Primary contract
- Ancillary agreements
 - Approved Domestic Relations Orders.
 - Advice/Managed Accounts.
 - Be Ready Financial Planning.
 - Custodial.
 - Schwab SDBA.

COMPLETED

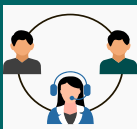
Forms/Reporting/Procedural



- Custom reporting in review.
- Form review is almost complete.
- VRS/Voya Administrative Guide in progress.
 - Procedures prioritized and review will occur into 2025.

Participant and Employer Support

Participant Call Center



- Temporary toll-free number opened on October 1 for transition-related calls.
 - Over 400 calls through November 19.
- Culture training scheduled December 13.
- Cutover scheduled December 31.

Employer Support Team



- ER Support Phone Line went live July 1.
- 2 of 3 dedicated employees have been hired, along with 1 non-dedicated employee.
- Approximately 200 calls and 240 emails handled by the team to date.
- Payroll training begins the week of December 2 and continues through January.

Employer Outreach Transition Communications



Over **1,600** employer contacts attended either a Voya webinar and/or a VRS Employer Roundtable!

- Employer Transition Website
- Participation in VRS Roundtables
- Employer Webinars
- Prepared employee materials
- Email reminders

Upcoming Training Sessions

Payroll functions

HR functions



Voya will become the record keeper for VRS defined contribution plans, starting January 1, 2025.

VRS has selected Voya Financial® to serve participants* in VRS Defined Contribution Plans (DCP).

Voya will succeed MissionSquare Retirement, whose contract ends in 2024. Voya is a leading health, wealth and investment company that helps its 14.7 million individual, workplace and institutional clients become well planned, well invested and well protected.

Beginning January 1, 2025, Voya will assume recordkeeping responsibilities for these VRS plans:

- Hybrid Retirement Plan (defined contribution component)
- Hybrid Cash Match Plan 401(a)
- Commonwealth of Virginia 457 Deferred Compensation Plan
- Virginia Cash Match 401(a)
- Optional Retirement Plan for Political Appointees
- Optional Retirement Plan for School Superintendents
- Optional Retirement Plan for Higher Education (gaining TAA as one of the provider choices)
- Virginia Supplemental Retirement Plan

Bookmark this page to stay informed throughout the transition to Voya. The transition should involve minimal reporting changes for employers.

* Participant refers to DCP participants and members of the Hybrid Retirement Plan, which has a defined contribution component.

Training

Register now for [Payroll System Training](#) with Voya Financial.

Support resources

Contact Employer Support

- 844-515-1432
- DCP@Support@voya.com

Learn more about the transition to Voya

- [Employer Transition Webinar Recording](#)

Visit the Participant Transition Website

- dc.varetire.org/transition

Request an onsite participant transition meeting

- Dillon.Johnson@voya.com



What you need to know and do

Participant Records

- Participant account details, investments, contribution elections and beneficiaries will automatically transition to Voya. Participants are not required to take any action at this time. However, as we prepare for the transition, retired employees to ensure their mailing address is up to date in myVRS.
- Participants' existing balances will remain invested as their accounts transition to Voya.
- Employers should continue deducting contributions automatically from each paycheck, which will be invested in employees' accounts.

Investment Options

- We do not anticipate that the investment lineup available to participants will change as a result of the transition. VRS will continue to select the investments, and Voya will provide administrative services, account management and participant education.



Key dates for the transition

The transfer of Plan records from MissionSquare to Voya will happen automatically. Participants' existing balances will remain invested, and their contributions will continue to be deducted automatically from their paycheck and invested in their account.

No participant action is needed at this time. Please be aware of the key dates below.

Date*	Activity
December 20, 2024 After 4 p.m., ET	Transition period starts at MissionSquare Participant account access is restricted, and plan accounts begin to transfer to Voya.
December 24, 2024 After 1 p.m., ET	Contribution Blackout Last day for MissionSquare to process contributions.
Week of January 6, 2025	Transition period ends. Participant accounts are live at Voya. Full account access and transaction capabilities will be available online and by phone.

* Dates may change

Participant Education

Virginia-based Field Team



Staffing

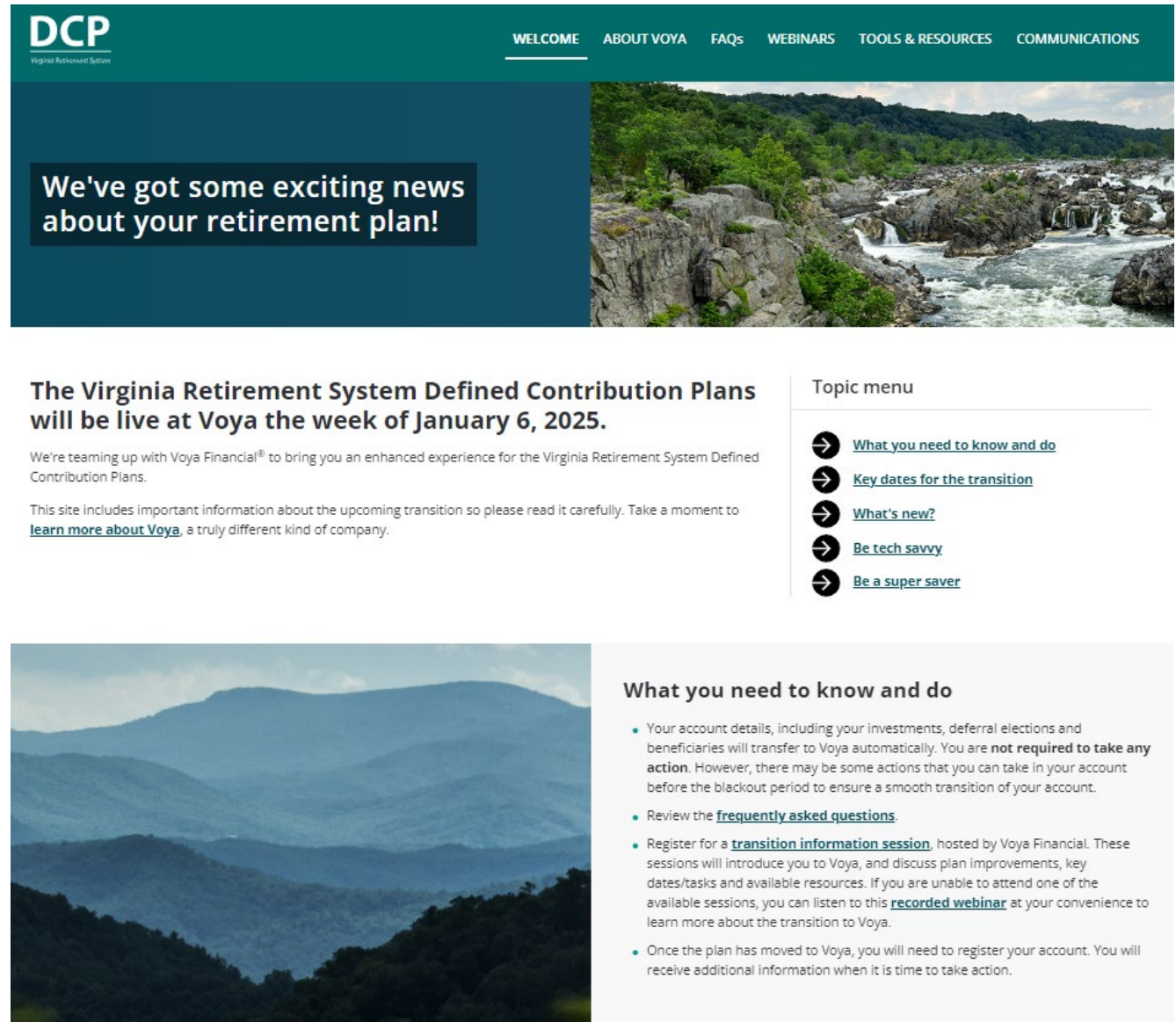
- Plan Manager, Plan Coordinator, and four of seven field representatives have started.
- Remaining field representatives start in January.

Transition Outreach

- 20 general webinars scheduled through December 20. Additional webinars will be scheduled for January.
- Over 30 employer-initiated sessions also scheduled, and more being added daily.

Communications/Websites

- Transition website launched 10/21.
- Close to **150K** site views, single day high!



The screenshot displays the DCP Virginia Retirement System website. The header features the DCP logo and navigation links: WELCOME, ABOUT VOYA, FAQs, WEBINARS, TOOLS & RESOURCES, and COMMUNICATIONS. A large banner on the left contains the text: "We've got some exciting news about your retirement plan!". To the right is a scenic image of a river flowing over rocks. Below the banner, a headline reads: "The Virginia Retirement System Defined Contribution Plans will be live at Voya the week of January 6, 2025." This is followed by a paragraph stating the partnership with Voya Financial and a link to "learn more about Voya". A "Topic menu" on the right lists five items with arrow icons: "What you need to know and do", "Key dates for the transition", "What's new?", "Be tech savvy", and "Be a super saver". At the bottom, a section titled "What you need to know and do" includes a list of four bullet points regarding account details, frequently asked questions, transition information sessions, and account registration after the move to Voya. A scenic image of mountains is visible on the left side of this section.

DCP
Virginia Retirement System

WELCOME ABOUT VOYA FAQs WEBINARS TOOLS & RESOURCES COMMUNICATIONS

We've got some exciting news about your retirement plan!

The Virginia Retirement System Defined Contribution Plans will be live at Voya the week of January 6, 2025.

We're teaming up with Voya Financial® to bring you an enhanced experience for the Virginia Retirement System Defined Contribution Plans.

This site includes important information about the upcoming transition so please read it carefully. Take a moment to [learn more about Voya](#), a truly different kind of company.

Topic menu

- ➔ [What you need to know and do](#)
- ➔ [Key dates for the transition](#)
- ➔ [What's new?](#)
- ➔ [Be tech savvy](#)
- ➔ [Be a super saver](#)

What you need to know and do

- Your account details, including your investments, deferral elections and beneficiaries will transfer to Voya automatically. You are **not required to take any action**. However, there may be some actions that you can take in your account before the blackout period to ensure a smooth transition of your account.
- Review the [frequently asked questions](#).
- Register for a [transition information session](#), hosted by Voya Financial. These sessions will introduce you to Voya, and discuss plan improvements, key dates/tasks and available resources. If you are unable to attend one of the available sessions, you can listen to this [recorded webinar](#) at your convenience to learn more about the transition to Voya.
- Once the plan has moved to Voya, you will need to register your account. You will receive additional information when it is time to take action.

Communications/Websites

- Transition notice:
 - Mailed to all unique participants...over **430K**.
 - Emailed to close to **198k** participants.
 - Open rate of 58%.
- Reminder:
 - U.S. mail reminder on December 2 to participants with no email address on file.
 - Multiple email reminders scheduled.



DCP
Defined Contribution Plan

Important News

about your Virginia Retirement System
Defined Contribution Plan (DCP)

October 2024

The Virginia Retirement System has selected **Voya Financial®** (Voya) as the record keeper for your **Defined Contribution Plan (DCP)**.

This notice contains important information regarding the transfer of your DCP accounts from MissionSquare Retirement® to Voya®. Please read this transition update carefully as it contains an important legal notice concerning the blackout period.

This transition notice applies to VRS Defined Contribution Plans that are moving to Voya. Decentralized employers who sponsor plans, record-kept by MissionSquare and not associated with VRS, will not transition to Voya.

What you need to know
Your account details, including your investments, deferral elections and beneficiaries will transfer to Voya automatically. You are **not required to take any action**. However, there may be some steps you can take before the blackout period to ensure a smooth transition, such as:

- Visit dcp.varetre.org/transition or scan the QR code for additional details about the plan transition, plan enhancements and learn more about Voya, including their innovative retirement readiness tools and resources.
- If you currently have installment payments in place at MissionSquare, your banking and tax withholding information will transfer automatically to Voya. The date of your installment payments may change. Please plan accordingly. You will receive a separate notice with additional details.

Plan Ahead
The transition from MissionSquare to Voya will begin on **December 20, 2024**, and is expected to conclude on or around **January 6, 2025**. During this time, there will be a brief period when you

- Once the plan has moved to Voya, you will need to register your account. You will receive additional information when it is time to take action.
- Banking information for installment payments **only** will transfer to Voya. After the transfer is complete in January, you can add or change your banking information for other types of distribution payments, by going to dcp.varetre.org/login, finding your name in the upper right corner, clicking on **Personal Information > Banking Information > Add/Edit**. You must arrange for the direct deposit option at least seven days before any future distribution/withdrawal.

For Transition Questions
Visit dcp.varetre.org/transition, scan the QR code or call **855-456-0555** now for general inquiries related to the transition. Following the completion of the transition in January 2025, you will use the same phone number (877-327-5451) you use today to access your DCP account and perform transactions.

Speak with a Voya customer service associate Monday – Friday, from **8 a.m. to 8 p.m. ET**, excluding stock market holidays.

These plan account details remain the same:

- Contribution rate
- Investments and investment elections, including the Schwab Personal Choice Retirement Account™ (Self-Directed Brokerage Account)
- Vesting (if applicable)
- Employer match (if applicable)
- SmartStep election (if applicable)
- Beneficiary designations
- Distribution options

Your existing account balance(s) will remain invested, and your contributions will automatically continue without interruption.

About Voya Financial®
Voya Financial is a retirement, investment and insurance company servicing the financial needs of millions of individual and institutional customers throughout the United States. Voya Institutional Plan Services, LLC, a member of the Voya® family of companies, is the plan's record keeper. Voya provides you with plan information, saving and investing education, transaction processing and more on your journey to retirement.

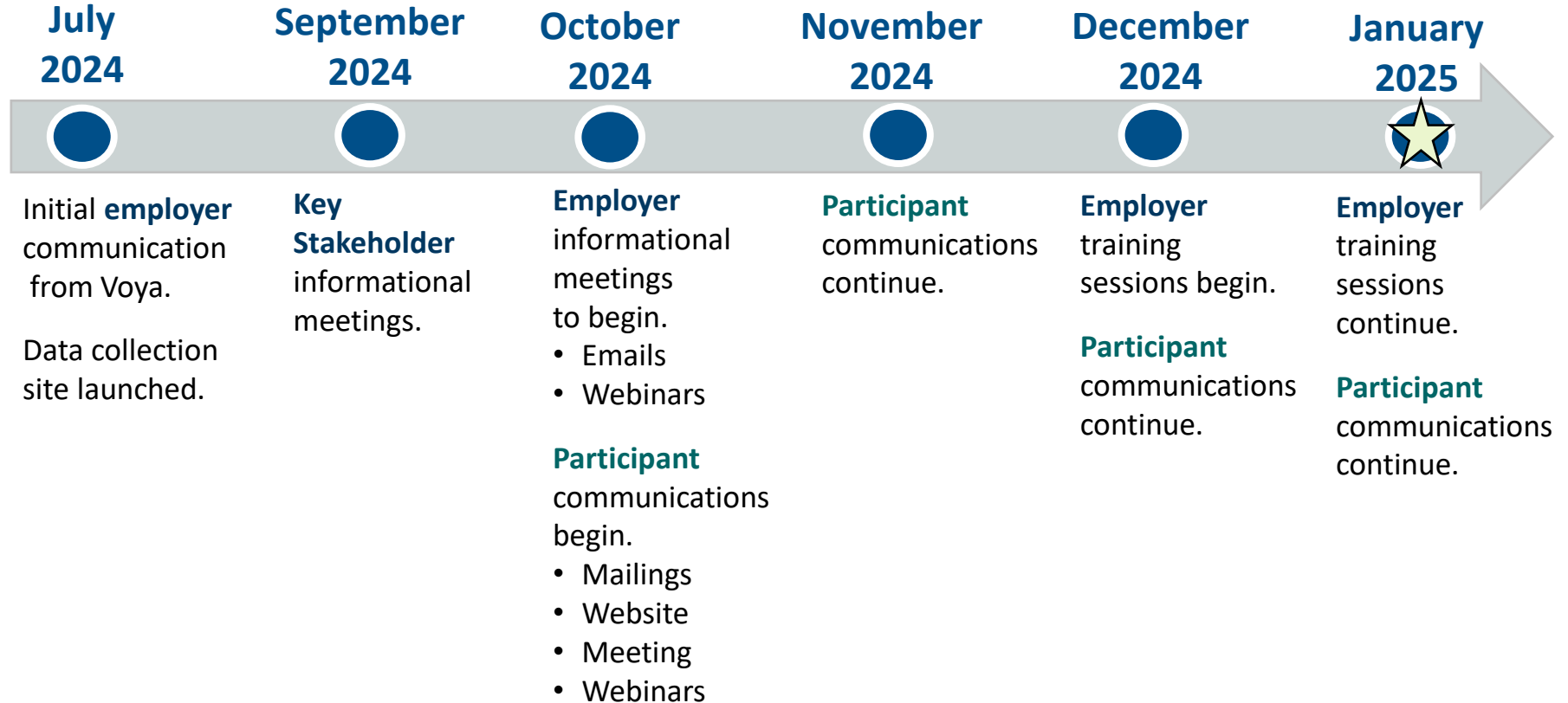
Key Dates During the Transition (Blackout Period)
The transfer of plan records to Voya will happen automatically. You don't have to take any action. Please be aware of the key dates.

Key Dates	What's happening?
12/16/2024 Until 4 p.m. ET	Last day to do the following until the transition period is complete: • Change your future contribution rate in the Hybrid 457 Deferred Compensation Plan.
12/20/2024 Until 4 p.m. ET	Last day to do the following until the transition period is complete: • Request a withdrawal or distribution. • Submit paperwork for any withdrawals that require paperwork. • Submit rollover forms and checks through the existing MissionSquare website, call center or mailing address. • Enroll in a defined contribution plan. • Change your future contribution rate in the COV 457 Deferred Compensation Plan. • Make an investment change for future contributions. • Transfer existing balances to other funds.
1/1/2025	• Account records are transferred to Voya. • Accounts remain invested and continue to receive any earnings during this time.
On or around 1/6/2025	Transition ends with full account access restored. Make sure to visit the DCP website and register your account: • dcp.varetre.org • 877-327-5451 • TDD: 800-579-5708

You will have access to your Historical Plan Information on the MissionSquare Retirement website at <https://accountaccess.missionsq.org> for six months.

MissionSquare Retirement is a separate entity and not a corporate affiliate of Voya Financial. Schwab Personal Choice Retirement Account® (PCRA) is offered through Charles Schwab & Co., Inc. (Member SIPC), a registered broker-dealer which also provides other brokerage and custody services to its customers. ©2024 Charles Schwab & Co., Inc. All rights reserved. Used with permission. Charles Schwab and Voya Financial are separate and unaffiliated and are not responsible for each other's policies or services. Plan administrative services are provided by Voya Institutional Plan Services, LLC (VIPS). VIPS is a member of the Voya® family of companies. ©2024 Voya Services Company. All rights reserved. CN394967, 2025

Transition Communications Timeline



Key Dates

December 16
December 20

December 16 –
Last day to start or change voluntary contributions for January.

December 20 –
Last day for most transactional activity (COV 457 enrollments/changes, investment changes, new distribution requests, etc.).

Blackout

December 24
December 31

December 24 –
Last day for employers to remit contribution files.

December 31 –
Last day for contribution processing (payroll contributions, rollovers, etc.).

Blackout

December 31

Assets transfer to Voya after close of business.

Cell center transfers to Voya.

Last day for MissionSquare to host website.

Transfer

January 2

Voya's contract becomes effective.

Assets re-registered with Voya.

Asset reconciliation begins.

Reconcile

Week of
January 6

Reconciliation complete.

Full transactional functionality restored to phone and website.

Participant and employer notifications distributed.

Live

Thank you!



The VRS Defined Contribution Plans team hosted the Optional Retirement Plan for Higher Education (ORPHE) Annual Employer Update on Wednesday, September 25, 2024.

The following agenda items were covered:

- Kelly Hiers, DC Plans Administrator, served as moderator for this year's meeting.
- Dr. Susan Gooden, VRS Board of Trustees member and DCPAC Chair, welcomed participants and offered opening remarks.
- Kelly Hiers, DC Plans Administrator provided an overview of assets and accounts under management in the ORPHE in comparison to total plan assets and accounts across all of the unbundled plans. She also shared total assets and number of participants for the period ending June 30, 2024, including an overview of changes in asset size and number of participant accounts for the period 2014 through June 30, 2024. Mrs. Hiers provided an update of ORPHE election data for DCP and TIAA, including the percentage of elections across all VRS ORPHE participating employers, current participants and recent new hires for the second quarter of 2024. She also shared information related to ORPHE assets with deselected providers as of June 30, 2024.

Mrs. Hiers shared with employers an update on the distribution of the annual fee disclosure for ORPHE participants. She also provided an overview of the upcoming record keeper transition impacting the Plan.

- Steve Cerreto, Lead DC Plans Analyst for the VRS Defined Contribution Plans, presented an administrative update, including an overview of the open enrollment process in myVRS for participants, the application of the 401(a)(17) compensation limits, contribution remittance and review of employer acknowledgement reports.
- Rick Larson, Defined Contribution Plans Advisory Committee Member, provided closing remarks and adjourned the session.

Attendance

Representatives from 18 unique institutions from across the Commonwealth participated via webinar. A survey sent to participants following the webinar indicated that a majority of respondents either agreed or strongly agreed that the information presented was important and useful. Those who attended also received plan-related information via email following the webinar.

That concludes my report on the ORPHE Annual Employer Update.

Rick Larson, SPHR, SHRM-SCP
Member, VRS Defined Contribution Plans Advisory
Committee



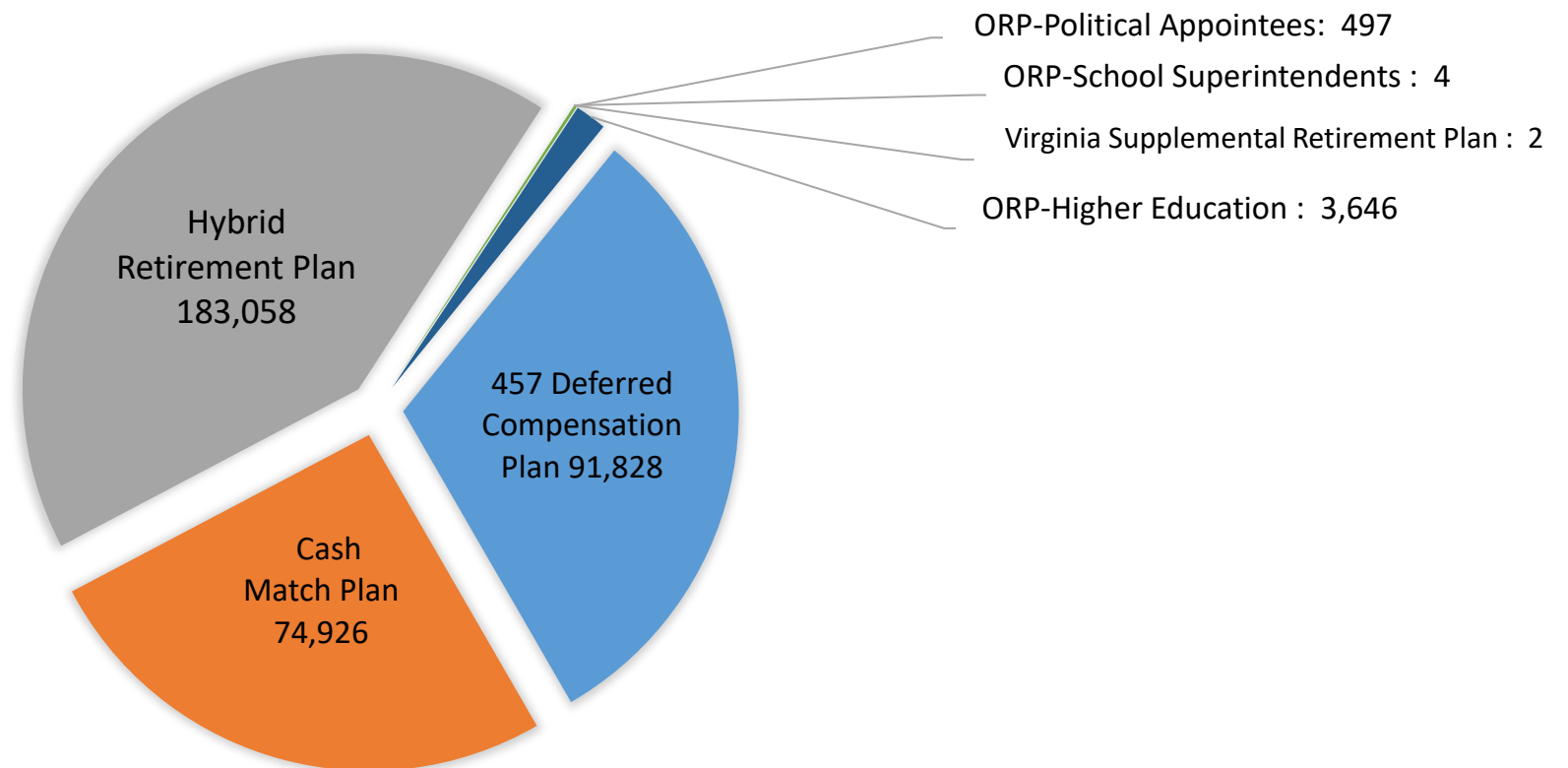
Defined Contributions Plans Annual Cost Update

Defined Contributions Plans Advisory Committee (DCPAC)

December 5, 2024

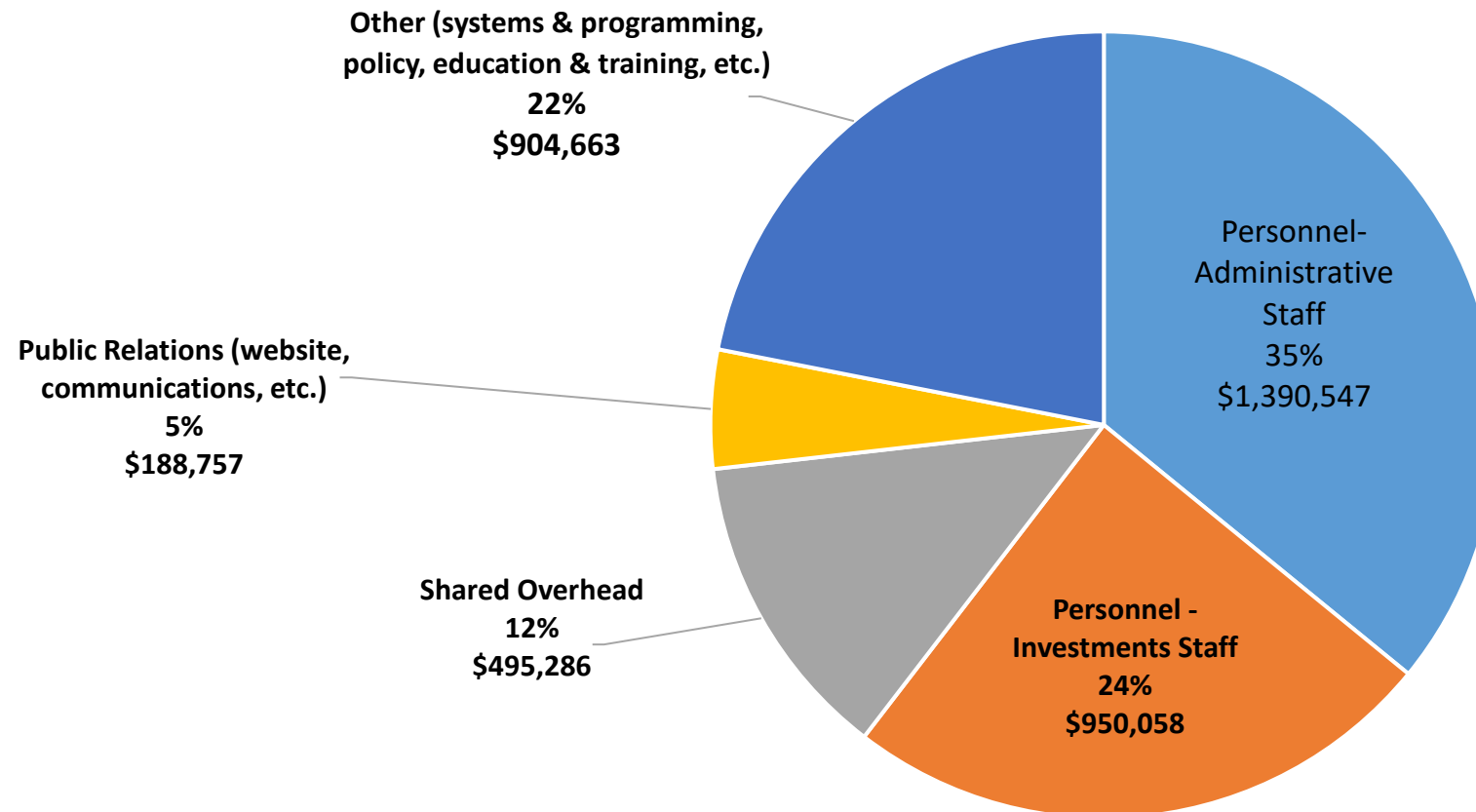
FY 2024 DC Plan Participant Counts

Summary of Participant Plan Counts: 353,961



FY 2024 Expenditures

Total administrative expenses of \$3.9 million; detailed as follows:



Cost Trends: FY 2020 - FY 2024

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
COV 457	\$834,892	\$697,822	\$626,698	\$970,936	\$1,023,326
Participants	87,033	87,570	88,146	89,672	91,828
Annual Cost per Participant	\$9.59	\$7.97	\$7.11	\$10.83	\$11.14
Cash Match	\$472,760	\$569,290	\$569,271	\$907,116	\$914,452
Participants	72,351	72,512	72,110	73,408	74,926
Annual Cost per Participant	\$6.53	\$7.85	\$7.89	\$12.36	\$12.20
Hybrid	\$1,320,393	\$1,574,048	\$1,450,372	\$1,470,372	\$1,636,999
Participants	118,279	126,518	142,651	174,659	183,058
Annual Cost per Participant	\$11.16	\$12.44	\$10.17	\$8.42	\$8.94
VSRP	\$0	\$0	\$0	\$4,898	\$0
Participants	2	2	2	2	2
Annual Cost per Participant	-	-	-	-	-
ORPSS	\$14,332	\$8,598	\$7,624	\$3,427	\$69
Participants	2	2	2	4	4
Annual Cost per Participant	-	-	-	-	-
ORPPA	\$38,364	\$30,825	\$33,009	\$122,088	\$24,916
Participants	383	381	457	479	497
Annual Cost per Participant	\$100.17	\$80.90	\$72.23	\$254.88	\$50.13
ORPHE	\$435,678	\$449,629	\$428,119	\$371,348	\$329,549
Participants	4,273	3,904	3,725	3,637	3,646
Annual Cost per Participant	\$101.96	\$115.17	\$114.93	\$102.10	\$90.39
Summary:					
Total Costs	\$3,116,419	\$3,330,212	\$3,115,093	\$3,850,185	\$3,929,311
Total Participants	282,323	290,889	307,093	341,861	353,961

CEM Defined Contribution Survey Results

2023 Investment Benchmarking Analysis for Virginia Retirement System

Thank you for participating in CEM's annual Defined Contribution survey. Your results are only provided to you. Confidentiality of your data is strictly maintained.



CEM presents your 2023 benchmarking results!

This is the 27th edition of CEM's Defined Contribution (DC) benchmarking report.

Inside this complimentary DC report, you will find a simplified review of insights against CEM's universe of over 100 U.S. DC plans. It includes a comparison of your plan's 2023 investment options, value-added return, and costs relative to all other participating plans.

If you are looking for deeper insights, I will remind you that the CEM Dashboard, our exclusive self-service digital benchmarking tool, is also available. It includes:

- **Curated peer group** analyses where your plan is assessed against a small group of similar-sized plans, providing the most relevant benchmarking available. Find your suggested group on page 4 of the attached report.
- **Performance versus cost** analyses to assess whether your plan receives value for money at all fiduciary touchpoints.
- **Option-level metrics** including realized returns, cost, and value add to drive manager assessment.
- **TDF glide path** benchmarking which assesses target date option performance bottom-up, by underlying asset class.

If you would like to learn more, please email me at chrisd@cembenchmarking.com. I will then find a short window for us to speak.

We look forward to working with you again this year. Please reach out if you have any questions, comments or wish to discuss your results.

Best Regards,

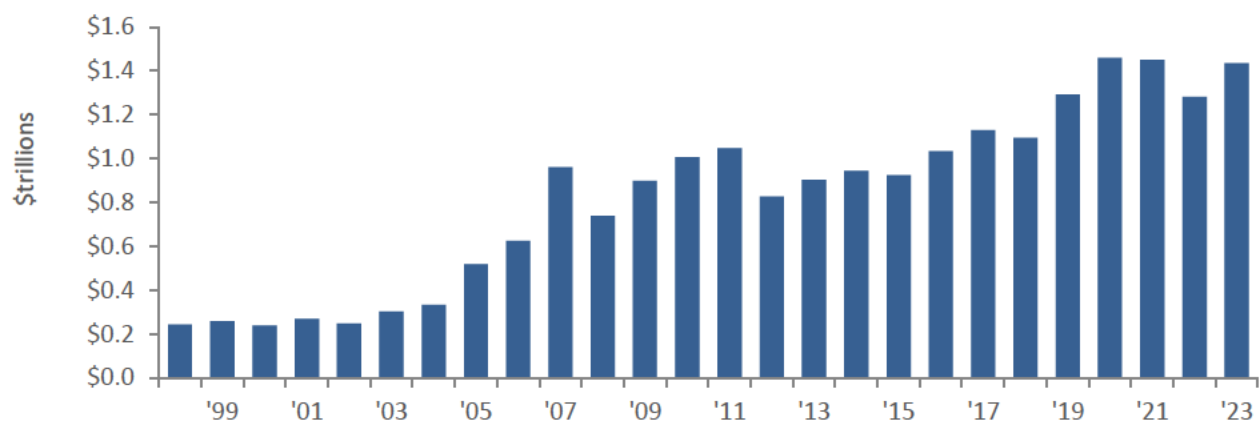
Chris Doll
Quentin Spehner

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CEM U.S. defined contribution database

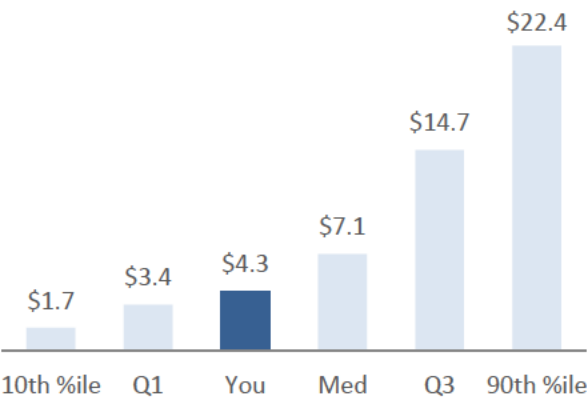
CEM has been benchmarking the costs and performance of U.S. defined contribution plans since 1997. In this report, your plan is compared to the 2023 CEM universe, which consists of 131 defined contribution plans, of which 104 are corporate and 27 are public, with a total AUM of \$1.4 trillion.

Total AUM of U.S. DC plans in the 2023 CEM universe



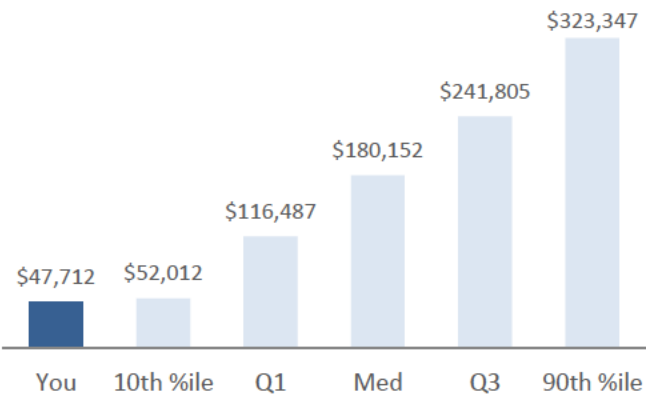
Plan size

Your plan had \$4.3 billion in total assets (measured as the sum of option holdings) at the end of 2023. This was below the U.S. universe median of \$7.1 billion.



Average account balance

The average account balance of your plan participants was \$47,712 in 2023. This compares to the U.S. universe median of \$180,152.



Would you like a custom peer group?

The complimentary report you're holding compares your plan versus all other plans that respond to the CEM survey, regardless of their size: It includes 131 plans from \$137 million to \$72 billion. As size impacts your fee negotiations, in an ideal world you would compare your plan to a custom peer group that is close to you in size. This comparison is available through CEM's dashboard, here is how you compare:

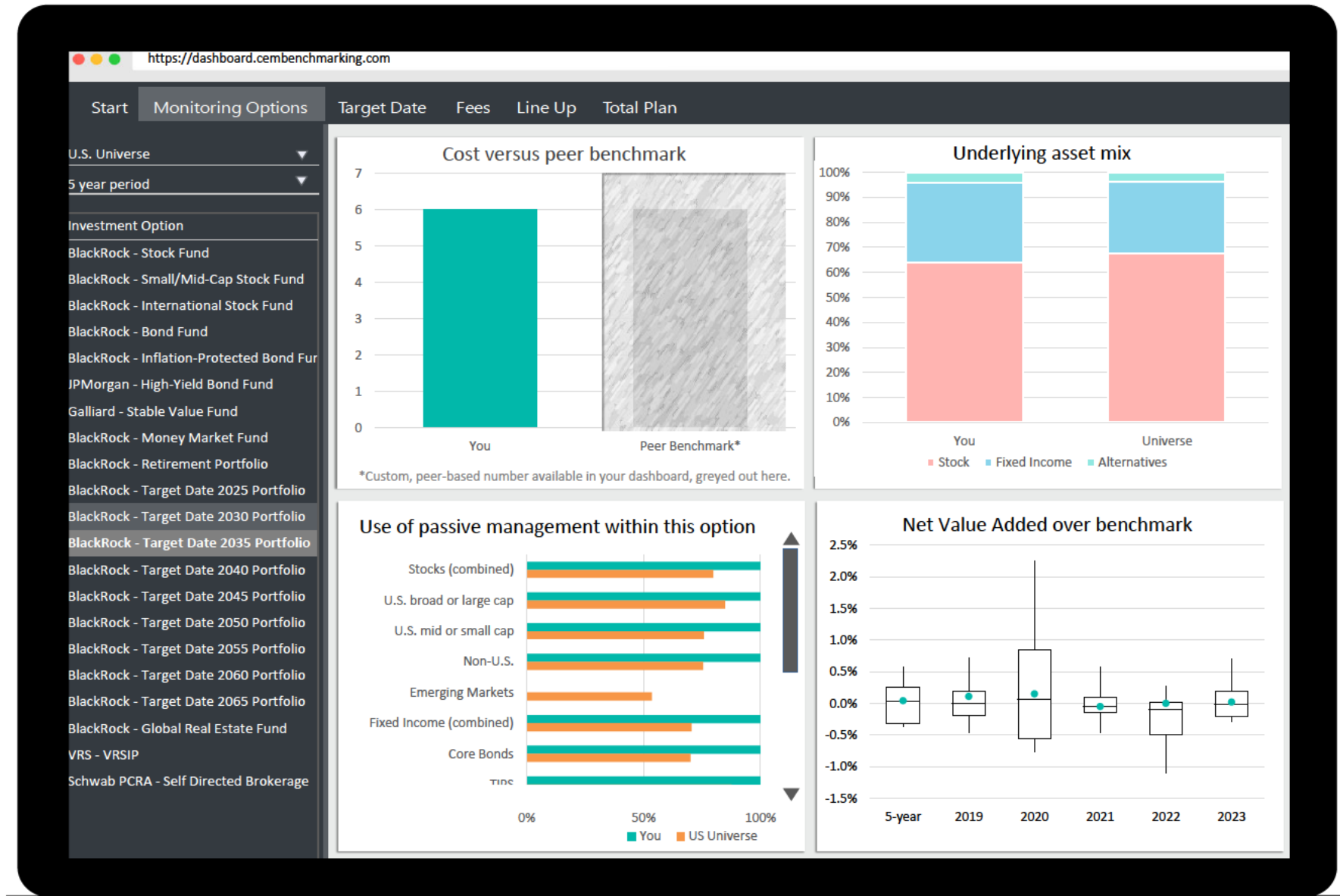
	This report	Peer-based dashboard	Your Proposed Custom Peer Group
# of plans	131	17	
Type of plan	104 corporate, 27 public/other plans	Subset of all plans	
Median plan size	\$7.1Bn (vs. your \$4.3Bn)	\$4.3Bn (vs. your \$4.3Bn)	
Size band	\$137 million - \$72 Bn	\$3.3Bn - \$5.2 Bn	
Insights in:			
1-year net returns	✓	✓	
5-year returns and net value added	Sample*	✓	
Active vs passive management	Sample*	✓	
Target Date suite deep dive	X	✓	
Line-up details	X	✓	
Benchmarking of:			
Your options (passive, active, and a combination of both)	X	✓	
Mixed active/passive options	X	✓	
Target date options	X	✓	
Recordkeeping fees	X	✓	
Internal (sponsor) costs	X	✓	

The names of the above fund sponsors in your proposed peer group are confidential and may not be disclosed to third parties.

*The next page shows you a sample of the analyses available in the dashboard.

Example of the analyses available in the dashboard for your 2035 target date option

[To see a video demo please click the image below:](#)



Your 2023 total plan costs

Calculating your costs

Your plan's total cost in 2023, excluding individual participant expenses, was \$6.3 million which equals 15.5 bps on total assets or \$69 per participant.

1. Costs in dollars were estimated as 'basis point cost provided' x 'option average holdings', where [average holdings=(beginning of year + end of year)/2]. If beginning of year holdings were not available (you did not participate last year), then we estimated it as [beginning of year holdings=end of year holdings / (1 + return on holdings)].

2. Total expense ratio (7.3 bps) = average of option expense ratios weighted by option assets avg. Total \$ expense ratio (2,932) = plan total avg. assets (4,032) x expense ratio (7.3 bps). Plan total average assets (4,032) = (total assets eoy 2023 (4,324) + total assets eoy 2022 (3,739)) / 2.

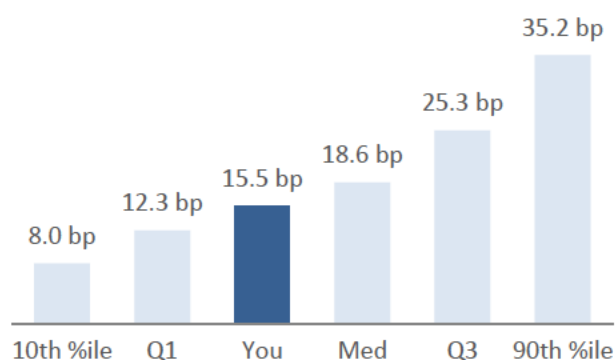
3. Defaults were applied if you were unable to provide cost for recordkeeping or internal oversight.

Investment options	Expense ratio in bp	Assets Avg	Inv. Costs \$000s ¹
BlackRock - Stock Fund	1.0 bp	1,289	
BlackRock - Small/Mid-Cap Stock Fund	2.0 bp	347	
BlackRock - International Stock Fund	6.0 bp	173	
BlackRock - Bond Fund	3.0 bp	132	
BlackRock - Inflation-Protected Bond Fund	3.0 bp	45	
JPMorgan - High-Yield Bond Fund	39.0 bp	40	
Galliard - Stable Value Fund	24.0 bp	530	
BlackRock - Money Market Fund	8.0 bp	97	
BlackRock - Retirement Portfolio	6.0 bp	256	
BlackRock - Target Date 2025 Portfolio	6.0 bp	202	
BlackRock - Target Date 2030 Portfolio	6.0 bp	187	
BlackRock - Target Date 2035 Portfolio	6.0 bp	172	
BlackRock - Target Date 2040 Portfolio	6.0 bp	124	
BlackRock - Target Date 2045 Portfolio	6.0 bp	96	
BlackRock - Target Date 2050 Portfolio	6.0 bp	70	
BlackRock - Target Date 2055 Portfolio	6.0 bp	41	
BlackRock - Target Date 2060 Portfolio	6.0 bp	13	
BlackRock - Target Date 2065 Portfolio	6.0 bp	5	
BlackRock - Global Real Estate Fund	8.0 bp	75	
VRS - VRSIP	63.0 bp	49	
Schwab PCRA - Self Directed Brokerage	n/a	n/a	
Total expense ratio, investment manager (A) ²	7.3 bp	\$4,032	\$2,932
Administrative expenses³			
Recordkeeping and administration	5.9 bp		\$2,366
Custodial and trustee	0.0 bp		\$0
Internal oversight	2.4 bp		\$952
Consulting	0.0 bp		\$12
Other plan costs (legal, audit, etc)	0.0 bp		\$1
Administrative costs (B)	8.3 bp		\$3,330
Total plan costs (A + B)	15.5 bp		\$6,262
Individual participant expenses			
Participant advice	0.0 bp		\$0
Managed account fees	0.0 bp		\$0
Other participant expenses (for loans, etc.)	0.0 bp		\$0
Individual participant expenses	0.0 bp		\$0

Total plan cost comparisons

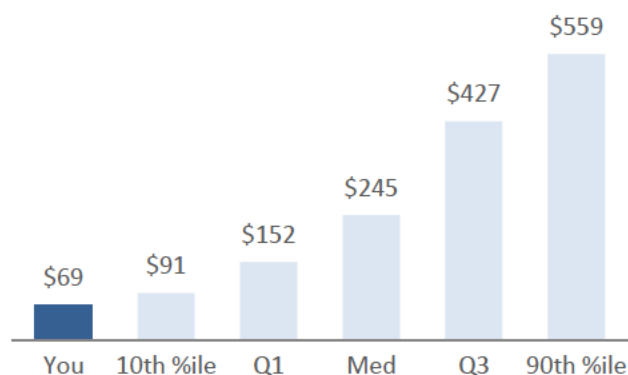
Total plan cost as a percentage of assets

Your total plan cost, excluding individual expenses, of 15.5 bps was below the U.S. universe median of 18.6 bps.



Total plan cost per participant

On a per participant basis, your total cost of \$69 was lower than the U.S. universe median of \$245.



As a fiduciary, it is very important that you assess whether your costs are reasonable. Comparing total plan cost, however, provides limited insight because differences in total cost often reflect differences in the type of investment options offered.

On the next few pages we compare costs and performance of each of the options your plan offers your participants against that of the total U.S. universe.

Option monitoring - Cost

In the table below, investment costs of your options are shown side by side with the median costs reported by the U.S. universe for similar options, e.g. your indexed Stock U.S. SMID Cap option (Small/Mid-Cap Stock Fund) is compared to indexed Stock U.S. SMID Cap options reported by others.

Though the universe comparison is provided, it is inferior to peer-based analysis. Please refer to page 4 for more information.

Costs by investment option - 2023

Investment option		Cost Invest. Mgr. ¹		Option type	
Provider	Option name	You	Univ med	Category	Indexed ²
BlackRock	Stock Fund	1.0 bp	1.1 bp	Stock U.S. Broad or Large Cap	✓
BlackRock	Small/Mid-Cap Stock Fund	2.0 bp	2.0 bp	Stock U.S. SMID Cap	✓
BlackRock	International Stock Fund	6.0 bp	5.0 bp	Stock Non U.S.	✓
BlackRock	Bond Fund	3.0 bp	3.0 bp	Bonds Broad	✓
BlackRock	Inflation-Protected Bond Fund	3.0 bp	3.0 bp	Bonds TIPS	✓
JPMorgan	High-Yield Bond Fund	39.0 bp	47.4 bp	Bonds High Yield	
Galliard	Stable Value Fund	24.0 bp	26.0 bp	Stable Value	
BlackRock	Money Market Fund	8.0 bp	10.0 bp	Cash, Money Market	
BlackRock	Retirement Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2025 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2030 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2035 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2040 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2045 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2050 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2055 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2060 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Target Date 2065 Portfolio	6.0 bp	6.0 bp	Target Date	✓
BlackRock	Global Real Estate Fund	8.0 bp	8.0 bp	REIT	✓
VRS	VRSIP	63.0 bp	48.0 bp	Other	

1. Cost is the investment manager expense ratio of each investment option.

2. An option is indexed when the percent of passive management is greater than or equal to 80%.

Option monitoring - Performance

In the table below, similar to costs on the previous page, your performance is compared to the performance reported for similar options by the U.S. universe.

Returns and value added by investment option - 2023

Investment option		Net total return ¹		Net value added		Option type	
Provider	Option name	You	Univ med	You	Univ med	Category	Indexed
BlackRock	Stock Fund	26.3%	26.3%	0.0%	0.0%	Stock U.S. Broad or Large Cap	✓
BlackRock	Small/Mid-Cap Stock Fund	17.6%	25.1%	0.2%	0.3%	Stock U.S. SMID Cap	✓
BlackRock	International Stock Fund	15.5%	15.6%	-0.1%	-0.1%	Stock Non U.S.	✓
BlackRock	Bond Fund	5.7%	5.7%	0.1%	0.1%	Bonds Broad	✓
BlackRock	Inflation-Protected Bond Fund	4.0%	4.0%	0.1%	0.0%	Bonds TIPS	✓
JPMorgan	High-Yield Bond Fund	11.1%	12.4%	-1.5%	-0.9%	Bonds High Yield	
Galliard	Stable Value Fund	2.9%	2.6%	-1.8%	-2.2%	Stable Value	
BlackRock	Money Market Fund	5.4%	5.1%	0.1%	0.0%	Cash, Money Market	
BlackRock	Retirement Portfolio	11.2%	12.0%	0.0%	0.0%	Target Date	✓
BlackRock	Target Date 2025 Portfolio	12.0%	12.0%	0.1%	0.0%	Target Date	✓
BlackRock	Target Date 2030 Portfolio	14.3%	16.1%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2035 Portfolio	16.3%	16.1%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2040 Portfolio	18.3%	18.7%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2045 Portfolio	20.2%	18.7%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2050 Portfolio	21.3%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2055 Portfolio	21.6%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2060 Portfolio	21.6%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	Target Date 2065 Portfolio	21.6%	20.3%	0.1%	-0.1%	Target Date	✓
BlackRock	Global Real Estate Fund	10.7%	11.8%	1.0%	0.3%	REIT	✓
VRS	VRSIP	10.2%	6.7%	-3.2%	0.4%	Other	

1. Option net return = Option net return = option provided return [returns provided are: net of investment and record keeping fees (if applicable) incurred within the option].

2. An option is indexed when the percent of passive management is greater than or equal to 80%.

Investment options and average total return

Number of investment options

Your plan offered 12 investment options in 2023. This was below the universe median of 14.

Offering more investment options to participants is not necessarily better - if there are too many choices, the process can be overwhelming to participants.

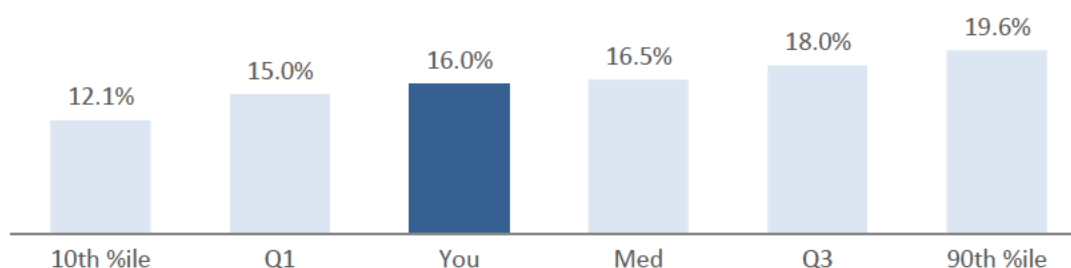
Option category	You	Universe	
		Average	Median
Stock Employer Discretionary	0	0.5	0
Stock U.S.	2	4.9	4
Stock Non U.S. & Global	1	2.4	2
Bonds	3	2.6	2
Balanced	0	0.4	0
Target Date ¹	1	1.0	1
Stable Value & GIC	1	0.8	1
Cash, Money Market	1	0.7	1
Mutual Fund Window	0	0.1	0
Participant Brokerage Account	1	0.5	1
Real, Hedge, Other ex. Loans	2	0.7	0
Total (excl. Loans)	12	14.6	14

1. Target Date funds in one family are counted as one option.

Average total return of plan participants - 2023

Average net total return measures the change in the average participant's account balance as a result of the net returns earned by their investment options weighted by their holdings. Your plan participants' average net total return was 16.0% in 2023. This was below the U.S. universe median of 16.5%.

There are two primary causes of differences in participants' average net total return: asset mix differences and value added performance. These are shown on the next page.



Asset mix and value added

Asset mix

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 include high holdings of employer stock, cash, and stable value.

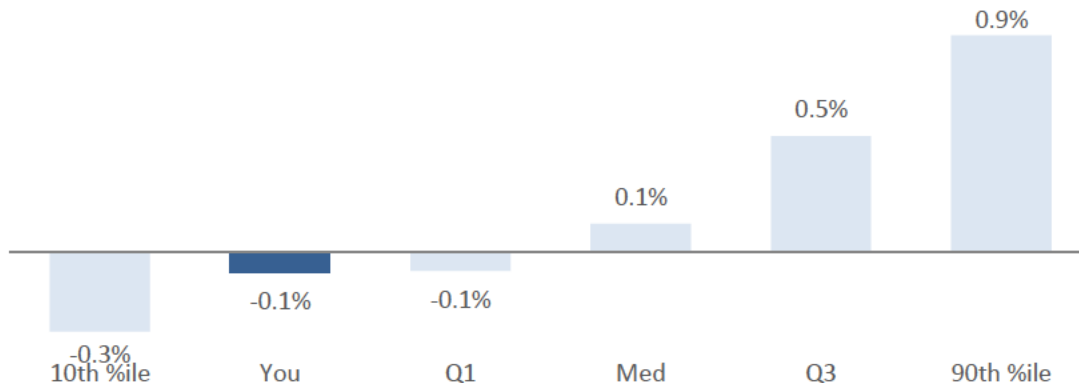
Asset mix is a function of the investment options offered and members' choices.

Option category	Your plan	Univ Average	Univ Median
Stock Employer	0%	7%	1%
Stock U.S.	42%	34%	35%
Stock Non U.S. & Global	4%	6%	6%
Bonds	5%	6%	5%
Target Date & Balanced	29%	34%	33%
Stable Value & GIC	12%	8%	6%
Cash, Money Market	2%	2%	0%
MF & Brokerage Windows	2%	3%	1%
Real, Hedge, Other	3%	1%	1%
Total	100%	100%	

Average total plan value added

The weighted average net value added¹ earned across all of your plan's options was -0.1% in 2023. This was below the U.S. universe median of 0.1%.

Positive value added indicates that, on average, your plan's investment options are outperforming their benchmark indices, whereas negative value added indicates that they are underperforming.

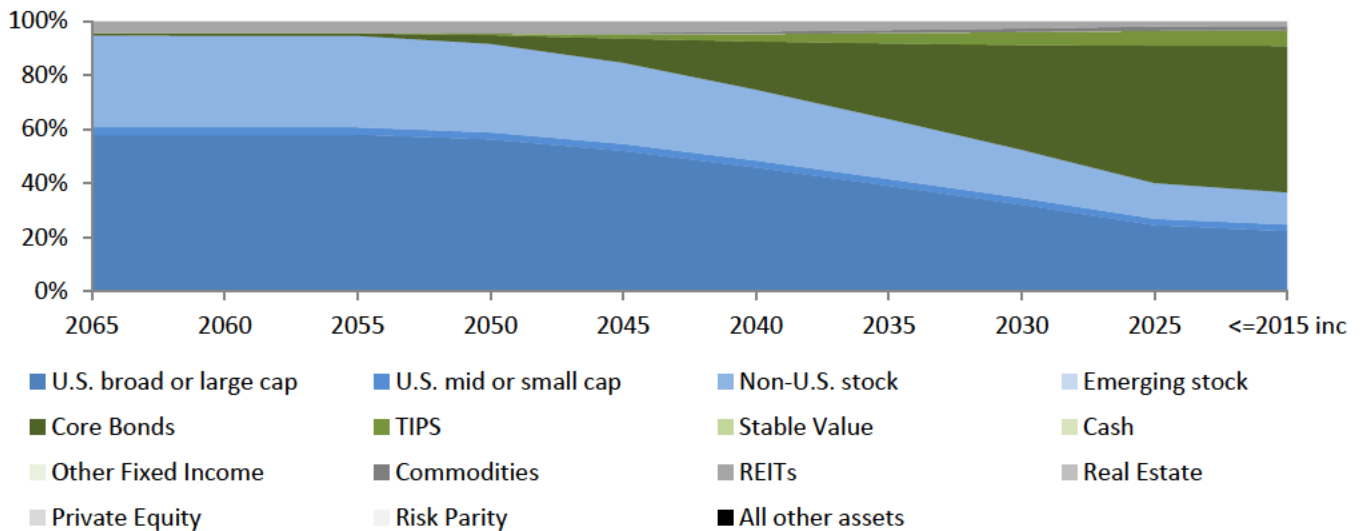


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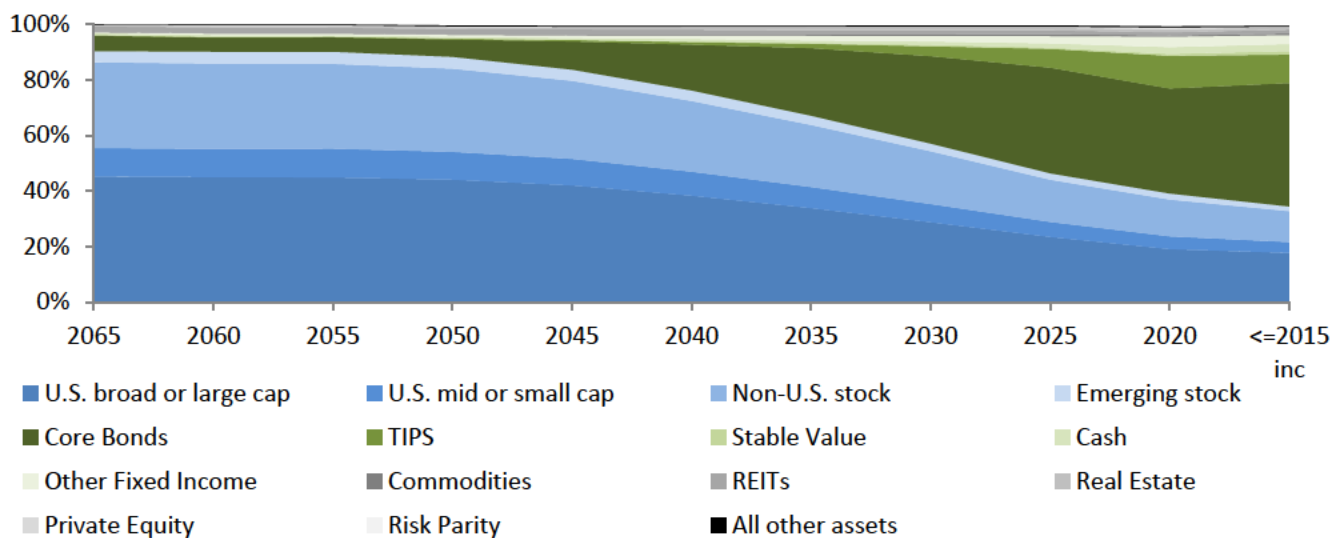
Asset mix of target date funds

The first graph is your target date asset allocation glide path. The one below is the average U.S. plan's glide path. On the next page, this data is shown in percentages. Your plan offers a target date family and it is your default option.

Your Plan
Target date asset mix - 2023



U.S. Universe
Target date asset mix - 2023



Asset mix of target date funds

Your Plan Target date asset mix - 2023

Asset class	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	<=2015 inc
U.S. broad or large cap	58%	58%	58%	56%	52%	46%	39%	32%	24%	--	22%
U.S. mid or small cap	3%	3%	3%	3%	3%	3%	3%	2%	2%	--	2%
Non-U.S. stock	34%	34%	34%	33%	30%	26%	22%	18%	13%	--	12%
Emerging stock	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Core Bonds	1%	1%	1%	3%	9%	18%	28%	39%	51%	--	54%
TIPS	0%	0%	0%	1%	2%	3%	4%	5%	6%	--	6%
Stable Value	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Cash	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Other Fixed Income	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Commodities	0%	0%	0%	0%	0%	1%	1%	1%	2%	--	2%
REITs	4%	4%	4%	4%	4%	4%	3%	3%	2%	--	2%
Real Estate	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Private Equity	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Risk Parity	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
All other assets	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%

U.S. Universe Target date asset mix - 2023

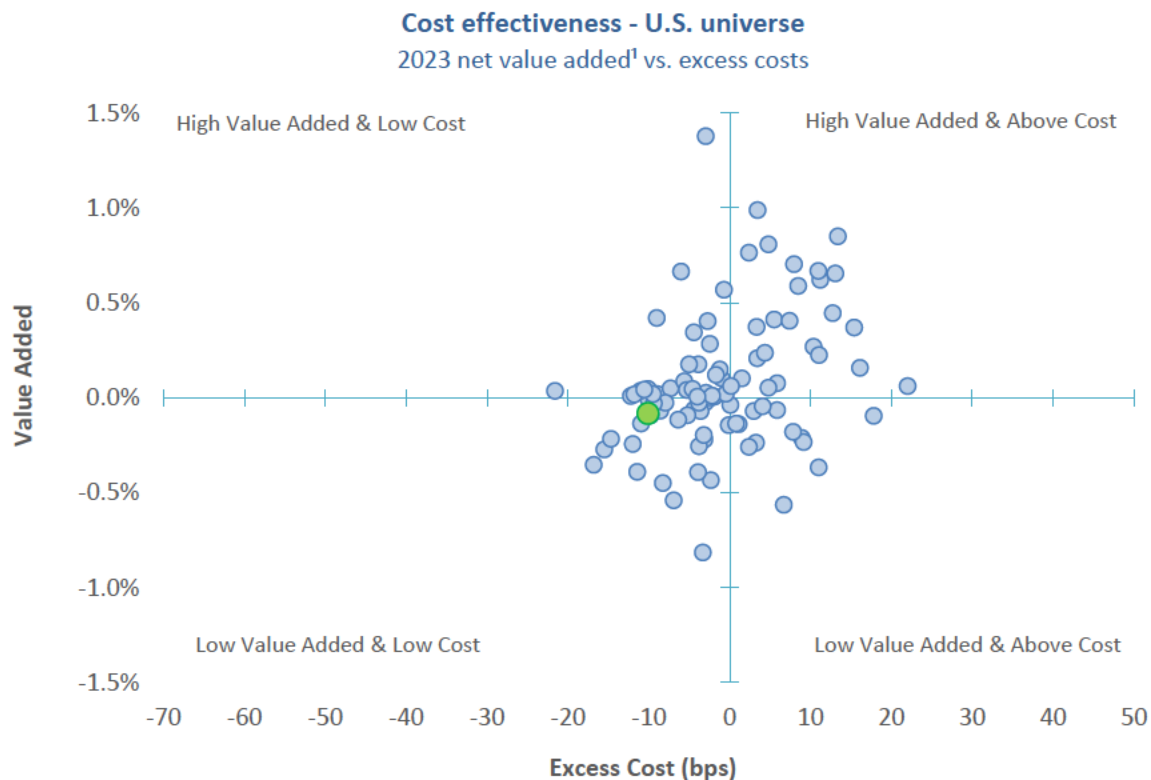
Asset class	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	<=2015 inc
U.S. broad or large cap	45%	45%	45%	44%	42%	38%	34%	29%	23%	19%	18%
U.S. mid or small cap	10%	10%	10%	10%	10%	9%	8%	7%	5%	5%	4%
Non-U.S. stock	31%	31%	30%	30%	28%	25%	22%	19%	15%	13%	11%
Emerging stock	4%	4%	4%	4%	4%	4%	3%	3%	2%	2%	2%
Core Bonds	6%	5%	5%	6%	10%	17%	24%	31%	38%	38%	44%
TIPS	0%	0%	0%	0%	1%	1%	2%	3%	7%	12%	10%
Stable Value	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%
Cash	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	3%
Other Fixed Income	0%	1%	1%	1%	1%	1%	2%	2%	3%	4%	3%
Commodities	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%
REITs	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Real Estate	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Private Equity	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Risk Parity	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
All other assets	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Cost effectiveness

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

It is, however, good to know where your plan places on the graph and, even more important, to understand the reasons why.

This report provides you with high-level insights of how your plan compared to the U.S. universe in 2023. CEM's interactive online Dashboard provides much more insight, through a cost-effective, self-service channel. Please reach out if you like to learn more, or book a live demo with our team. See page 4 for more details.



Note that where indexed investment options are offered, net value added is not expected to be significant since the goal of an indexed option is to match the return of the underlying index.

1. Value added = net return - benchmark return. In this chart the value added from employer stock is neutralized by setting its benchmark return equal to its actual return. It is neutralized in this report so we can show the value added from diversified plan options. Similarly, value added for stable value options is neutralized because of concerns over the benchmarks used for these options. If your fund has either, employer stocks or a stable value option, its effect on net value added is none and, its assumed benchmark cost is your own cost, effectively neutralizing its effect on excess cost.

Appendix: Your survey responses

Data quality

We recognize that the value of information contained in our reports is only as good as the quality of data we receive. Therefore, we have procedures in place for checking and improving the data that include:

- Automatic validation - all survey responses are compared to the plan sponsor's prior year responses and universe norms to ensure consistency.
- Manual verification - our analysts review each survey individually and follow-up with the survey responder with any questions regarding their data.
- Improving survey clarity - we have 27 years of feedback from participants incorporated into the survey that has led to improved definitions and clarity around data.

Your survey responses

Your data is summarized on the following pages. Note that if your original survey responses appear slightly different, it may be for any of the following reasons:

- 1. Gross versus Net Returns** - We ask participants to report returns on either a net or gross basis but in order to ensure 'apples-to-apples' comparisons, we compare returns net of all costs, including administration costs.
- 2. Returns not available** - We request that you leave the return blank if a full year return was unavailable for an investment option. The default for an unavailable return is to exclude this investment option from the net value added calculations.
- 3. Costs not provided** - As important as it is to report accurate costs, we recognize that some, such as fiduciary oversight costs, can be difficult to obtain. Therefore, if you were unable to provide us with your costs, we applied a default figure using industry data.

Your survey responses

Virginia Retirement System

General	2023	2022	2021	2020	2019
Contact	Laura Pugliese	Laura Pugliese	Laura Pugliese	Laura Pugliese	Laura Pugliese
Data provided by:	Michael Scott	Michael Scott	Michael Scott	Michael Scott	Michael Scott
Corporate, public, other?	Public	Public	Public	Public	Public
Market value of plan assets (\$ millions)	\$4,324	\$3,739	\$4,383	\$3,807	\$3,074
Number of plan participants	90,634	88,647	87,898	86,683	80,954
% of eligible employees participating	25%	26%	28%	28%	27%
Are some DC participants covered by a DB plan?	Yes Some	Yes Some	Yes Some	Yes Some	Yes Some
Administrative costs, plan expenses (\$000s)	2023	2022	2021	2020	2019
Recordkeeping ¹					
paid from expense ratio of invest. options					
charged to individuals or participant accounts	2,366	2,385	2,395	2,433	2,291
paid by plan sponsor					
Custodial & trustee					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
Oversight internal ²					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor	952	984	701	781	835
Consulting					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor	12	16			
Other					
paid from expense ratio of invest. options					
charged to individuals or participant accounts	1				
paid by plan sponsor					
less rebates to participants from reimburse. accounts					
Total Plan Expenses	3,330	3,385	3,096	3,214	3,126
Participant Expenses (\$000s)	2023	2022	2021	2020	2019
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		16	1	12	7
paid by plan sponsor					
Total Participant Expenses		16	1	12	7

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 & fiduciary costs.

2. If you were unable to provide costs for Fiduciary oversight internal, 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

Virginia Retirement System

About your options	2023	2022	2021	2020	2019
Do you have a default investment option?	Yes	Yes	Yes	Yes	Yes
If yes, what is the default option?	Target / lifecycle	Target / lifecycle	Target / lifecycle	Target / lifecycle	Target / lifecycle
Option returns are:	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt fees	Net mgmt fees
Cost drivers and allocation	2023	2022	2021	2020	2019
FTE fulfilling fiduciary/oversight functions	7.0	7.0	7.0	7.0	7.0
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 admin. or fiduciary costs?					
How are the recordkeeping or admin costs allocated to participants (asset based, flat fee, both, or other)?	flat fee	flat fee	flat fee	flat fee	flat fee
If other, describe					
Contributions	2023	2022	2021	2020	2019
Employer contributions (\$ millions)	0	0		0	0
Participant contributions (\$ millions)	195	185	177	167	150
% of participants making voluntary contributions?	100%	100%		100%	100%
Stable Value Funds	2023	2022	2021	2020	2019
What percentage of stable value assets are wrapped?					
What are your total wrap fees (in bps over wrapped amount)					
Loan features	2023	2022	2021	2020	2019
Does your plan allow loans?	No	No	No	No	No
Total number of outstanding loans					
Average loan balance, (\$)					
Does your plan allow for hardship withdrawals	Yes	Yes	Yes	Yes	Yes
Who pays the loan initiation fee?	N/A				
Is the fee a flat dollar amount or % of assets?					
Participant transaction rules and restrictions	2023	2022	2021	2020	2019
Limits on the number of transactions?	No	No	No	No	No
Limits on international funds?	No	No	No	No	No
Limits on any other funds (excl. international)?					
Excessive trading penalties?					
Describe other limits if any	90 day equity wash for	90 day equity wash for	90 day equity wash for	90 day equity wash for	90 day equity wash for
Assumed retirement age for your target date funds	65	65	65	65	65
Do you customize or use an off shelf target date fund?	Off shelf	Off shelf	Off shelf	Off shelf	Off shelf
Age at which target date retirement funds stop de-risking	65	65	65	65	65

Your survey responses

Virginia Retirement System

Services Offered to Separated Employees	2023	2022	2021	2020	2019
Lump sum payouts	Yes	Yes	Yes	Yes	Yes
Required Minimum Distribution (RMD) payouts	Yes	Yes	Yes	Yes	Yes
Partial payouts	Yes	Yes	Yes	Yes	Yes
Installment payouts (e.g., monthly, quarterly, etc.)	Yes	Yes	Yes	Yes	Yes
Loan initiation	No	No	No	No	No
Loan maintenance (for loans made prior to separation)	No	No	No	No	No
Online advice service	No	No	No	No	No
Managed account advice service	No	No	No	No	No
One-on-one advice service with an advisor	No	No	No	No	No
Annuity platform (whether in-plan or out-of-plan)	Yes	Yes	Yes	Yes	Yes
Employee contributions (DC is primary, no DB)	2023	2022	2021	2020	2019
Can participants make:					
a. After-tax Roth 401(k) contributions?	Yes	Yes	Yes	Yes	Yes
b. After-tax non-Roth 401(k) contributions?	No	No	No	No	No
Is investment in employer stock required to some extent?	No	No	No	No	
Is there a mandatory fixed or minimum contribution rate for full-time employees?	No	No	No	No	No
If yes, what is the mandatory contribution rate as a % of salary ?					
Does the plan have automatic enrolment?	Yes	Yes	Yes	Yes	Yes
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?	Yes	Yes	Yes	Yes	Yes
Employee contributions (DC is suppl. to DB)	2023	2022	2021	2020	2019
Can participants make:					
a. After-tax Roth 401(k) contributions?	Yes	Yes	Yes	Yes	Yes
b. After-tax non-Roth 401(k) contributions?	No	No	No	No	No
Is investment in employer stock required to some extent?	No	No	No	No	
Is there a mandatory fixed or minimum contribution rate for full-time employees?	No	No	No	No	No
If yes, what is the mandatory contribution rate as a % of salary ?					
Does the plan have automatic enrolment?	Yes	Yes	Yes	Yes	Yes
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?	Yes	Yes	Yes	Yes	Yes

Your survey responses

Virginia Retirement System

Employer contributions (if DC is primary, no DB)	2023	2022	2021	2020	2019
Are employer contributions made in employer stock, cash or both?	Cash	Cash			
Is there a profit sharing component to employer contributions?	No	No	No	No	No
Is there an automatic fixed employer contribution rate? If yes, what is the automatic fixed employer contribution rate?	No	No	No	No	No
Is there an after-tax employer match?	No	No			
Is there a before-tax employer match?	Yes	Yes			
% 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:	50% of the participant's contribution amount or \$2	50% of the participant's contribution amount or \$2			

Employer contributions (if DC is suppl. to DB)	2023	2022	2021	2020	2019
Are employer contributions made in employer stock, cash or both?	Cash	Cash			
Is there a profit sharing component to employer contributions?	No	No	No	No	No
Is there an automatic fixed employer contribution rate? If yes, what is the automatic fixed employer contribution rate?	No	No	No	No	No
Is there an after-tax employer match?	No	No			
Is there a before-tax employer match?	Yes	Yes			
% 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:	50% of the participant's contribution amount or \$20 per pay period, whichever is less	50% of the participant's contribution amount or \$20 per pay period, whichever is less			

Your survey responses

Virginia Retirement System

Fiduciary	2023	2022	2021	2020	2019
Named fiduciary?	Board	Board	Board	Board	Board
If named fiduciary is a committee:					
Number of committee members?					
Number of meetings in the past year?					
Are the meeting minutes documented?					
Are the named fiduciaries:					
Provided formal training?	Yes	Yes	Yes	Yes	Yes
Required to sign an acknowledgement form?	Yes	Yes	Yes	Yes	Yes
Have third parties been appointed as:					
• Investment manager with full discretionary powers for selecting, monitoring, replacing investment options	No	No	No	No	No
• Investment advisor to provide advice regarding the selection and retention of investment options?	No	No	No	No	No
• 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	Yes	Yes
• 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	2023	2022	2021	2020	2019
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?	Yes	Yes	Yes	Yes	Yes
• Online?	Yes	Yes	Yes	Yes	Yes
• Via separate communication?	No	No	No	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?	Yes	Yes	Yes	Yes	
• Improve diversification from Employer Stock?	No	No	No	No	No
Does your plan offer:					
• Out-of-plan guaranteed lifetime income product?	Yes	Yes	Yes	Yes	Yes
• In-plan guaranteed lifetime income product?	No	No	No	No	No
Does your plan offer automatic rebalancing?	Yes	Yes	Yes	Yes	Yes

Your survey responses

Virginia Retirement System

Your plan's 2023 investment options

Provider & Option name	Type	%	\$ mils at	Annual	Benchmark	Return	Invest	Cost	
		Indxd	12/31/23	Return				Admin	Total
BlackRock - Stock Fund	Stk U.S. Broad or LC	100%	1,430	26.3%	S&P 500	26.3%	1.0 bp	0.0 bp	1.0 bp
BlackRock - Small/Mid-Cap Stock Fund	Stk U.S. SMID Cap	100%	371	17.6%	Russell 2500	17.4%	2.0 bp	0.0 bp	2.0 bp
BlackRock - International Stock Fund	Stk Non U.S.	100%	183	15.5%	MSCI ACWI ex-U.S Index IMI Index Linked	15.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Bond Fund	Bonds Broad	100%	136	5.7%	Bloomberg U.S. Aggregate Bond Index	5.5%	3.0 bp	0.0 bp	3.0 bp
BlackRock - Inflation-Protected Bond Fund	Bonds TIPS	100%	45	4.0%	Bloomberg U.S. Treasury Inflation-Protec	3.9%	3.0 bp	0.0 bp	3.0 bp
JPMorgan - High-Yield Bond Fund	Bonds High Yield	0%	42	11.1%	ICE BofA Merrill Lynch U.S. High-Yield B	12.6%	39.0 bp	0.0 bp	39.0 bp
Galliard - Stable Value Fund	Stable Value	0%	515	2.9%	[50% 2-Year CMT/50% 3-Year CMT] + 0.25%*	4.7%	24.0 bp	0.0 bp	24.0 bp
BlackRock - Money Market Fund	Cash, Money Mrkt	0%	106	5.4%	Your Cash, Money Market benchmark	5.3%	8.0 bp	0.0 bp	8.0 bp
BlackRock - Retirement Portfolio	Target Date Short	100%	260	11.2%	Custom	11.1%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2025 Portfolio	Target Date Short	100%	213	12.0%	Custom	11.9%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2030 Portfolio	Target Date Medium	100%	206	14.3%	Custom	14.2%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2035 Portfolio	Target Date Medium	100%	192	16.3%	Custom	16.3%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2040 Portfolio	Target Date Long	100%	140	18.3%	Custom	18.3%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2045 Portfolio	Target Date Long	100%	109	20.2%	Custom	20.1%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2050 Portfolio	Target Date Very Long	100%	81	21.3%	Custom	21.2%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2055 Portfolio	Target Date Very Long	100%	48	21.6%	Custom	21.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2060 Portfolio	Target Date Very Long	100%	15	21.6%	Custom	21.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Target Date 2065 Portfolio	Target Date Very Long	100%	6	21.6%	Custom	21.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - Global Real Estate Fund	REIT	100%	76	10.7%	Your REIT benchmark	9.7%	8.0 bp	0.0 bp	8.0 bp
VRS - VRSIP	Other	1%	53	10.2%	CUSTOM	13.4%	63.0 bp	0.0 bp	63.0 bp
Schwab PCRA - Self Directed Brokerage	Participant Broker Account	0%	99				0.0 bp	0.0 bp	0.0 bp
Total			4,324				7.3 bp	0.0 bp	7.3 bp

CEM Defined Contribution Survey Results

2023 Investment Benchmarking Analysis for VA ORPHE – TIAA

Thank you for participating in CEM's annual Defined Contribution survey. Your results are only provided to you. Confidentiality of your data is strictly maintained.



CEM presents your 2023 benchmarking results!

This is the 27th edition of CEM's Defined Contribution (DC) benchmarking report.

Inside this complimentary DC report, you will find a simplified review of insights against CEM's universe of over 100 U.S. DC plans. It includes a comparison of your plan's 2023 investment options, value-added return, and costs relative to all other participating plans.

If you are looking for deeper insights, I will remind you that the CEM Dashboard, our exclusive self-service digital benchmarking tool, is also available. It includes:

- **Curated peer group** analyses where your plan is assessed against a small group of similar-sized plans, providing the most relevant benchmarking available. Find your suggested group on page 4 of the attached report.
- **Performance versus cost** analyses to assess whether your plan receives value for money at all fiduciary touchpoints.
- **Option-level metrics** including realized returns, cost, and value add to drive manager assessment.
- **TDF glide path** benchmarking which assesses target date option performance bottom-up, by underlying asset class.

If you would like to learn more, please email me at chrisd@cembenchmarking.com. I will then find a short window for us to speak.

We look forward to working with you again this year. Please reach out if you have any questions, comments or wish to discuss your results.

Best Regards,

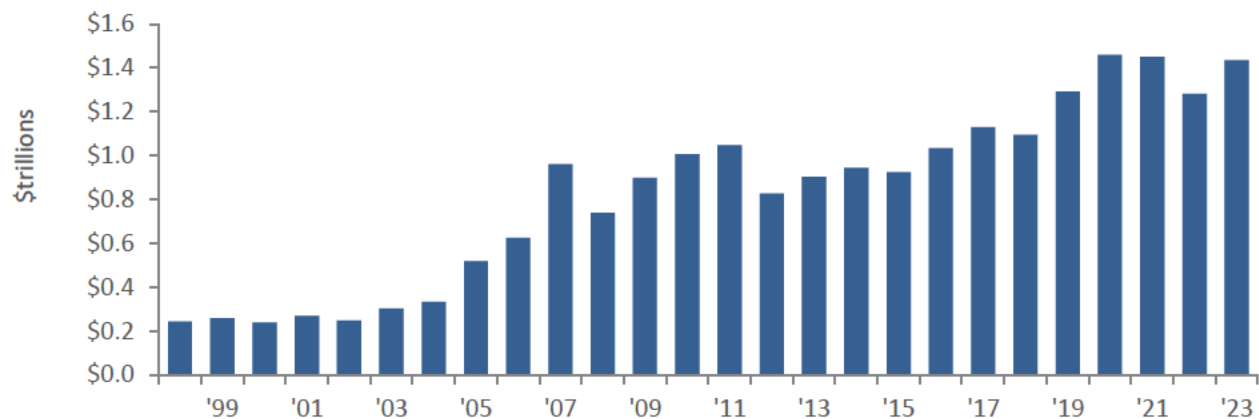
Chris Doll
Reuben Blaff

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CEM U.S. defined contribution database

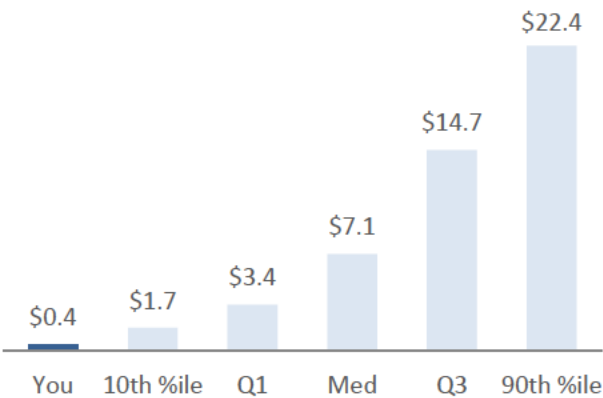
CEM has been benchmarking the costs and performance of U.S. defined contribution plans since 1997. In this report, your plan is compared to the 2023 CEM universe, which consists of 131 defined contribution plans, of which 104 are corporate and 27 are public, with a total AUM of \$1.4 trillion.

Total AUM of U.S. DC plans in the 2023 CEM universe



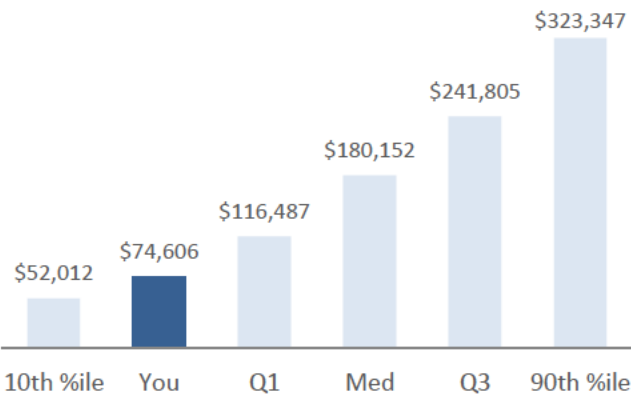
Plan size

Your plan had \$0.4 billion in total assets (measured as the sum of option holdings) at the end of 2023. This was below the U.S. universe median of \$7.1 billion.



Average account balance

The average account balance of your plan participants was \$74,606 in 2023. This compares to the U.S. universe median of \$180,152.



Would you like a custom peer group?

The complimentary report you're holding compares your plan versus all other plans that respond to the CEM survey, regardless of their size: It includes 131 plans from \$137 million to \$72 billion. As size impacts your fee negotiations, in an ideal world you would compare your plan to a custom peer group that is close to you in size. This comparison is available through CEM's dashboard, here is how you compare:

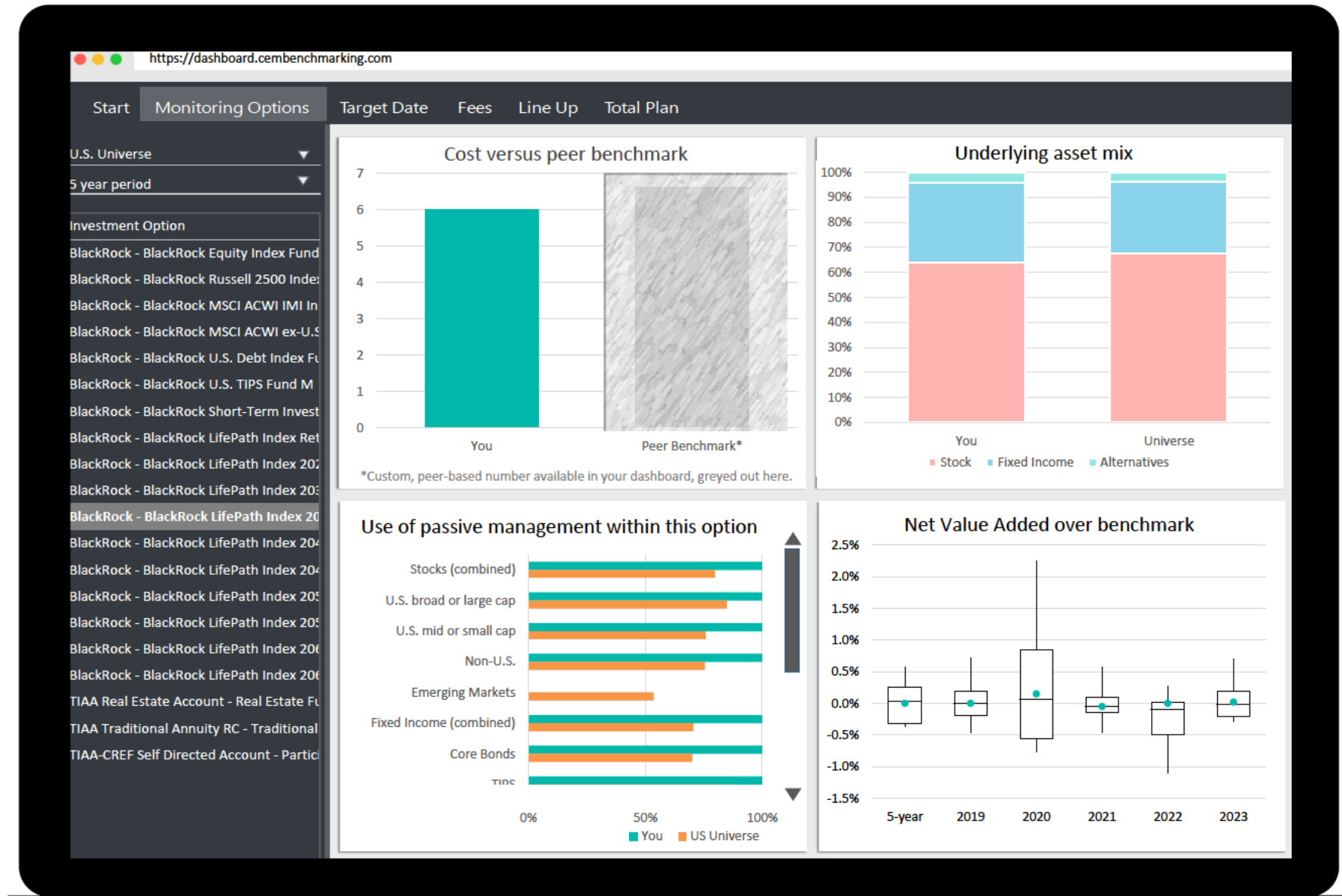
	This report	Peer-based dashboard	Your Proposed Custom Peer Group
# of plans	131	17	
Type of plan	104 corporate, 27 public/other plans	Subset of all plans	
Median plan size	\$7.1Bn (vs. your \$0.4Bn)	\$0.9Bn (vs. your \$0.4Bn)	
Size band	\$137 million - \$72 Bn	\$0.1Bn - \$1.9 Bn	
Insights in:			
1-year net returns	✓	✓	
5-year returns and net value added	Sample*	✓	
Active vs passive management	Sample*	✓	
Target Date suite deep dive	X	✓	
Line-up details	X	✓	
Benchmarking of:			
Your options (passive, active, and a combination of both)	X	✓	
Mixed active/passive options	X	✓	
Target date options	X	✓	
Recordkeeping fees	X	✓	
Internal (sponsor) costs	X	✓	

The names of the above fund sponsors in your proposed peer group are confidential and may not be disclosed to third parties.

*The next page shows you a sample of the analyses available in the dashboard.

Example of the analyses available in the dashboard for your 2035 target date option

[To see a video demo please click the image below:](#)



Your 2023 total plan costs

Calculating your costs

Your plan's total cost in 2023, excluding individual participant expenses, was \$0.6 million which equals 16.8 bps on total assets or \$114 per participant.

1. Costs in dollars were estimated as 'basis point cost provided' x 'option average holdings', where [average holdings=(beginning of year + end of year)/2]. If beginning of year holdings were not available (you did not participate last year), then we estimated it as [beginning of year holdings=end of year holdings / (1 + return on holdings)].

2. Total expense ratio (6.7 bps) = average of option expense ratios weighted by option assets avg. Total \$ expense ratio (243) = plan total avg. assets (365) x expense ratio (6.7 bps). Plan total average assets (365) = (total assets eoy 2023 (402) + total assets eoy 2022 (327)) / 2.

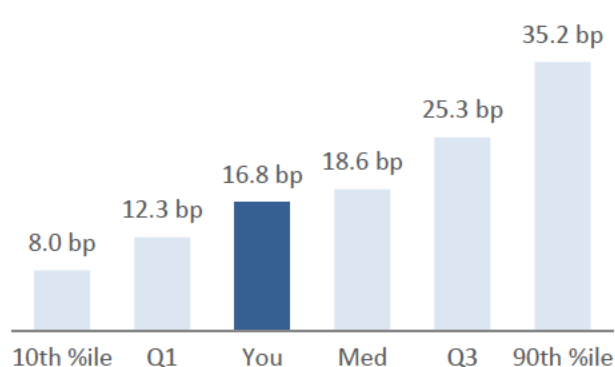
3. Defaults were applied if you were unable to provide cost for recordkeeping or internal oversight.

Investment options	Expense ratio in bp	Assets Avg	Inv. Costs \$000s ¹
BlackRock - BlackRock Equity Index Fund J	2.0 bp	42	
BlackRock - BlackRock Russell 2500 Index Fund M	2.0 bp	9	
BlackRock - BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	5.0 bp	49	
BlackRock - BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	11.0 bp	16	
BlackRock - BlackRock U.S. Debt Index Fund M	3.0 bp	10	
BlackRock - BlackRock U.S. TIPS Fund M	3.0 bp	5	
BlackRock - BlackRock Short-Term Investment Fund W	8.0 bp	6	
BlackRock - BlackRock LifePath Index Retirement N	6.0 bp	23	
BlackRock - BlackRock LifePath Index 2025 Fund N	6.0 bp	20	
BlackRock - BlackRock LifePath Index 2030 Fund N	6.0 bp	31	
BlackRock - BlackRock LifePath Index 2035 Fund N	6.0 bp	25	
BlackRock - BlackRock LifePath Index 2040 Fund O	6.0 bp	29	
BlackRock - BlackRock LifePath Index 2045 Fund N	6.0 bp	25	
BlackRock - BlackRock LifePath Index 2050 Fund N	6.0 bp	15	
BlackRock - BlackRock LifePath Index 2055 Index Fund N	6.0 bp	8	
BlackRock - BlackRock LifePath Index 2060 Index Fund N	6.0 bp	2	
BlackRock - BlackRock LifePath Index 2065 Fund N	6.0 bp	4	
TIAA Real Estate Account - Real Estate Fund	63.0 bp	12	
TIAA Traditional Annuity RC - Traditional Annuity Fund	0.0 bp	30	
TIAA-CREF Self Directed Account - Participant Brokerage Account	n/a	n/a	
Total expense ratio, investment manager (A)²	6.7 bp	\$365	\$243
Administrative expenses³			
Recordkeeping and administration	5.1 bp		\$186
Custodial and trustee	0.0 bp		\$0
Internal oversight	7.1 bp		\$259
Consulting	0.0 bp		\$0
Other plan costs (legal, audit, etc)	0.0 bp		\$0
less rebates to participants	2.0 bp		\$75
Administrative costs after rebates (B)	10.2 bp		\$371
Total plan costs (A + B)	16.8 bp		\$614
Individual participant expenses			
Participant advice	0.0 bp		\$0
Managed account fees	0.0 bp		\$0
Other participant expenses (for loans, etc.)	0.0 bp		\$0
Individual participant expenses	0.0 bp		\$0

Total plan cost comparisons

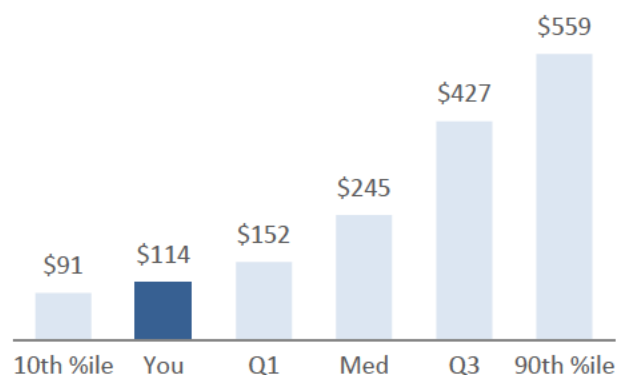
Total plan cost as a percentage of assets

Your total plan cost, excluding individual expenses, of 16.8 bps was below the U.S. universe median of 18.6 bps.



Total plan cost per participant

On a per participant basis, your total cost of \$114 was lower than the U.S. universe median of \$245.



As a fiduciary, it is very important that you assess whether your costs are reasonable. Comparing total plan cost, however, provides limited insight because differences in total cost often reflect differences in the type of investment options offered.

On the next few pages we compare costs and performance of each of the options your plan offers your participants against that of the total U.S. universe.

Option monitoring - Cost

In the table below, investment costs of your options are shown side by side with the median costs reported by the U.S. universe for similar options, e.g. your indexed Stock U.S. SMID Cap option (BlackRock Russell 2500 Index Fund M) is compared to indexed Stock U.S. SMID Cap options reported by others.

Though the universe comparison is provided, it is inferior to peer-based analysis. Please refer to page 4 for more information.

Costs by investment option - 2023

Investment option		Cost Invest. Mgr. ¹		Option type	
Provider	Option name	You	Univ med	Category	Indexed ²
BlackRock	BlackRock Equity Index Fund J	2.0 bp	1.1 bp	Stock U.S. Broad or Large Cap	✓
BlackRock	BlackRock Russell 2500 Index Fund M	2.0 bp	2.0 bp	Stock U.S. SMID Cap	✓
BlackRock	BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	5.0 bp	4.5 bp	Stock Global	✓
BlackRock	BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	11.0 bp	5.0 bp	Stock Non U.S.	✓
BlackRock	BlackRock U.S. Debt Index Fund M	3.0 bp	3.0 bp	Bonds Broad	✓
BlackRock	BlackRock U.S. TIPS Fund M	3.0 bp	3.0 bp	Bonds TIPS	✓
BlackRock	BlackRock Short-Term Investment Fund W	8.0 bp	10.0 bp	Cash, Money Market	
BlackRock	BlackRock LifePath Index Retirement N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2025 Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2030 Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2035 Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2040 Fund O	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2045 Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2050 Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2055 Index Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2060 Index Fund N	6.0 bp	6.0 bp	Target Date	✓
BlackRock	BlackRock LifePath Index 2065 Fund N	6.0 bp	6.0 bp	Target Date	✓
TIAA Real Estate Account	Real Estate Fund	63.0 bp	77.6 bp	Real Estate	
TIAA Traditional Annuity RC	Traditional Annuity Fund	0.0 bp	0.0 bp	Annuity	

1. Cost is the investment manager expense ratio of each investment option.

2. An option is indexed when the percent of passive management is greater than or equal to 80%.

Option monitoring - Performance

In the table below, similar to costs on the previous page, your performance is compared to the performance reported for similar options by the U.S. universe.

Returns and value added by investment option - 2023

Investment option		Net total return ¹		Net value added		Option type	
Provider	Option name	You	Univ med	You	Univ med	Category	Indexed
BlackRock	BlackRock Equity Index Fund J	26.3%	26.3%	0.0%	0.0%	Stock U.S. Broad or Large Cap	✓
BlackRock	BlackRock Russell 2500 Index Fund M	17.6%	25.1%	0.2%	0.3%	Stock U.S. SMID Cap	✓
BlackRock	BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	21.7%	20.7%	0.1%	0.1%	Stock Global	✓
BlackRock	BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	15.5%	15.6%	-0.2%	-0.1%	Stock Non U.S.	✓
BlackRock	BlackRock U.S. Debt Index Fund M	5.7%	5.7%	0.1%	0.1%	Bonds Broad	✓
BlackRock	BlackRock U.S. TIPS Fund M	4.0%	4.0%	0.1%	0.0%	Bonds TIPS	✓
BlackRock	BlackRock Short-Term Investment Fund W	5.4%	5.1%	0.1%	0.0%	Cash, Money Market	
BlackRock	BlackRock LifePath Index Retirement N	11.2%	12.0%	0.1%	0.0%	Target Date	✓
BlackRock	BlackRock LifePath Index 2025 Fund N	12.0%	12.0%	0.1%	0.0%	Target Date	✓
BlackRock	BlackRock LifePath Index 2030 Fund N	14.3%	16.1%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2035 Fund N	16.3%	16.1%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2040 Fund O	18.3%	18.7%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2045 Fund N	20.2%	18.7%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2050 Fund N	21.3%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2055 Index Fund N	21.6%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2060 Index Fund N	21.6%	20.3%	0.0%	-0.1%	Target Date	✓
BlackRock	BlackRock LifePath Index 2065 Fund N	21.6%	20.3%	0.1%	-0.1%	Target Date	✓
TIAA Real Estate Account	Real Estate Fund	-13.6%	-6.8%	-6.9%	-0.2%	Real Estate	
TIAA Traditional Annuity RC	Traditional Annuity Fund	4.8%	4.8%	-0.2%	-0.2%	Annuity	

1. Option net return = Option net return = option provided return [returns provided are: net of investment and record keeping fees (if applicable) incurred within the option].

2. An option is indexed when the percent of passive management is greater than or equal to 80%.

Investment options and average total return

Number of investment options

Your plan offered 11 investment options in 2023. This was below the universe median of 14.

Offering more investment options to participants is not necessarily better - if there are too many choices, the process can be overwhelming to participants.

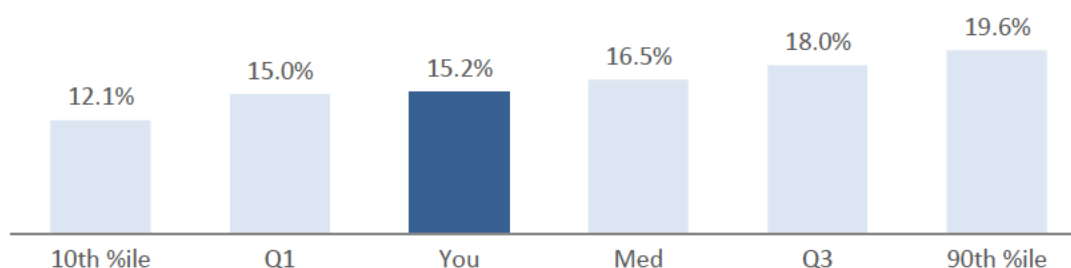
Option category	You	Universe	
		Average	Median
Stock Employer Discretionary	0	0.5	0
Stock U.S.	2	4.9	4
Stock Non U.S. & Global	2	2.4	2
Bonds	2	2.6	2
Balanced	0	0.4	0
Target Date ¹	1	1.0	1
Stable Value & GIC	0	0.8	1
Cash, Money Market	1	0.7	1
Mutual Fund Window	0	0.1	0
Participant Brokerage Account	1	0.5	1
Real, Hedge, Other ex. Loans	2	0.7	0
Total (excl. Loans)	11	14.6	14

1. Target Date funds in one family are counted as one option.

Average total return of plan participants - 2023

Average net total return measures the change in the average participant's account balance as a result of the net returns earned by their investment options weighted by their holdings. Your plan participants' average net total return was 15.2% in 2023. This was below the U.S. universe median of 16.5%.

There are two primary causes of differences in participants' average net total return: asset mix differences and value added performance. These are shown on the next page.



Asset mix and value added

Asset mix

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 include high holdings of employer stock, cash, and stable value.

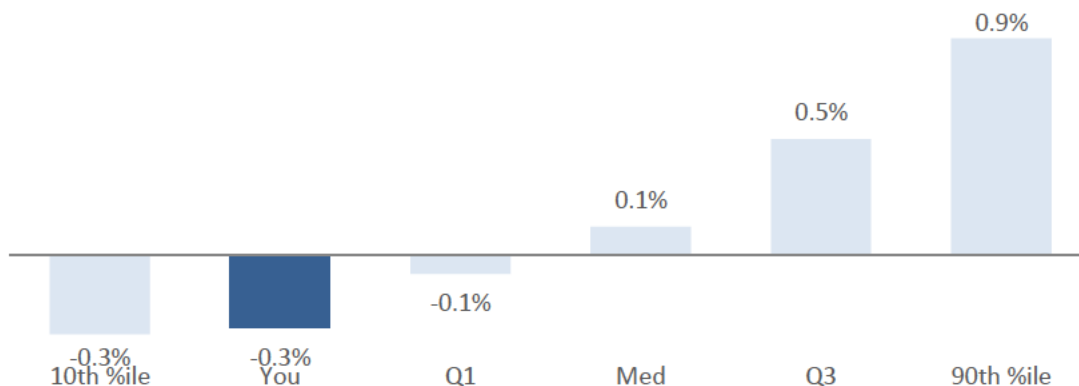
Asset mix is a function of the investment options offered and members' choices.

Option category	Your plan	Univ Average	Univ Median
Stock Employer	0%	7%	1%
Stock U.S.	14%	34%	35%
Stock Non U.S. & Global	18%	6%	6%
Bonds	4%	6%	5%
Target Date & Balanced	50%	34%	33%
Stable Value & GIC	0%	8%	6%
Cash, Money Market	2%	2%	0%
MF & Brokerage Windows	1%	3%	1%
Real, Hedge, Other	11%	1%	1%
Total	100%	100%	

Average total plan value added

The weighted average net value added¹ earned across all of your plan's options was -0.3% in 2023. This was below the U.S. universe median of 0.1%.

Positive value added indicates that, on average, your plan's investment options are outperforming their benchmark indices, whereas negative value added indicates that they are underperforming.

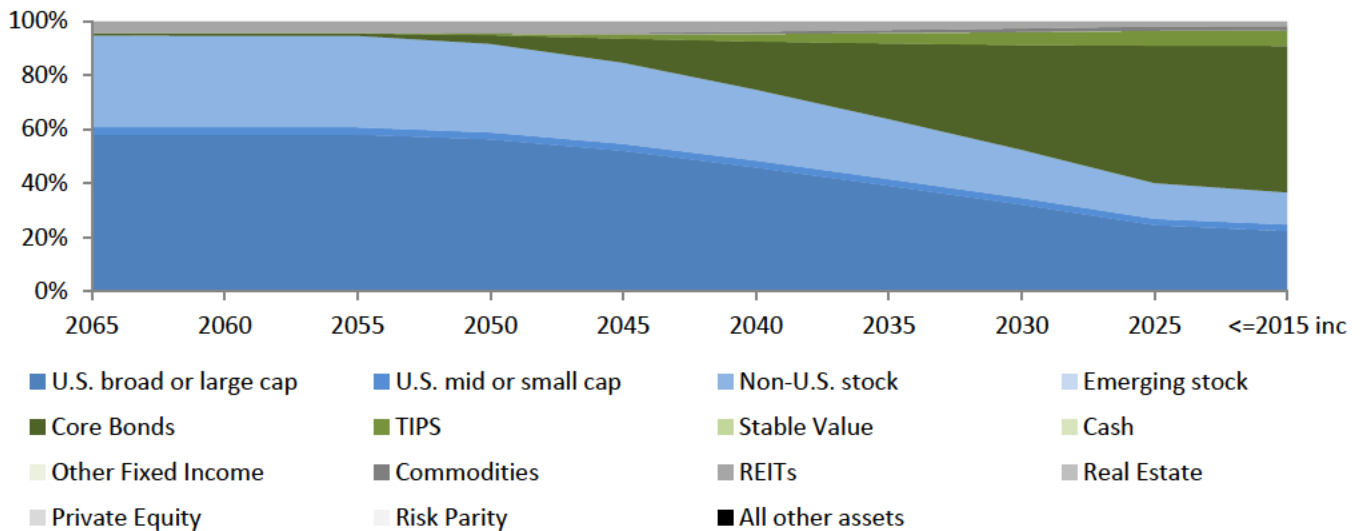


0

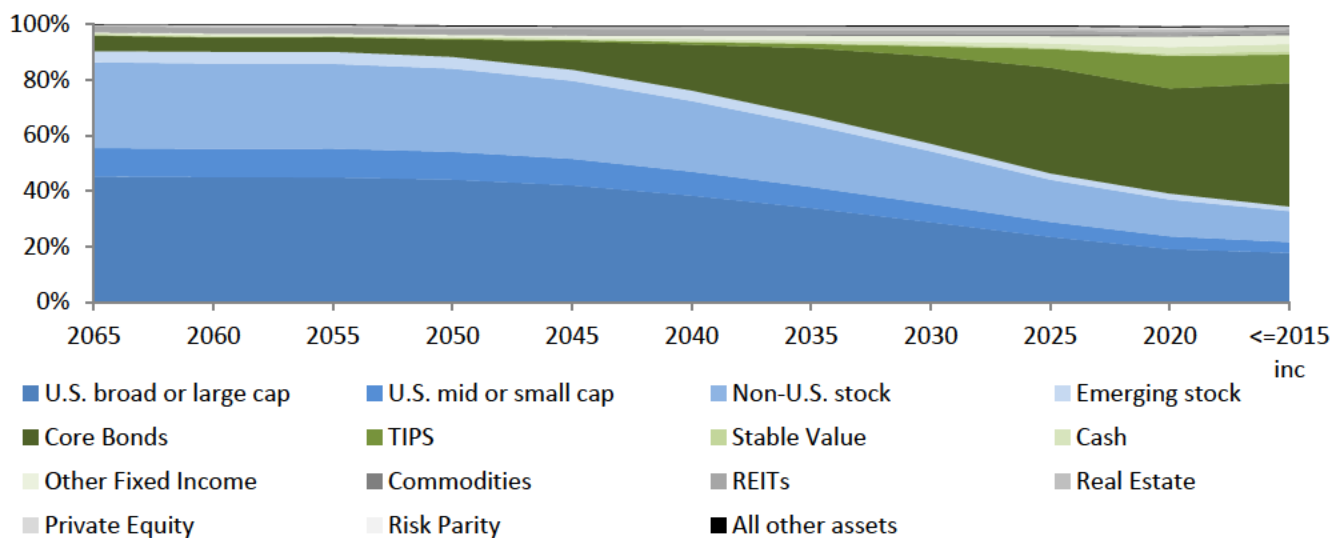
Asset mix of target date funds

The first graph is your target date asset allocation glide path. The one below is the average U.S. plan's glide path. On the next page, this data is shown in percentages. Your plan offers a target date family and it is your default option.

Your Plan
Target date asset mix - 2023



U.S. Universe
Target date asset mix - 2023



Asset mix of target date funds

Your Plan Target date asset mix - 2023

Asset class	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	<=2015 inc
U.S. broad or large cap	58%	58%	58%	56%	52%	46%	39%	32%	24%	--	22%
U.S. mid or small cap	3%	3%	3%	3%	3%	3%	3%	2%	2%	--	2%
Non-U.S. stock	34%	34%	34%	33%	30%	26%	22%	18%	13%	--	12%
Emerging stock	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Core Bonds	1%	1%	1%	3%	9%	18%	28%	39%	51%	--	54%
TIPS	0%	0%	0%	1%	2%	3%	4%	5%	6%	--	6%
Stable Value	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Cash	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Other Fixed Income	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Commodities	0%	0%	0%	0%	0%	1%	1%	1%	2%	--	2%
REITs	4%	4%	4%	4%	4%	4%	3%	3%	2%	--	2%
Real Estate	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Private Equity	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
Risk Parity	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%
All other assets	0%	0%	0%	0%	0%	0%	0%	0%	0%	--	0%

U.S. Universe Target date asset mix - 2023

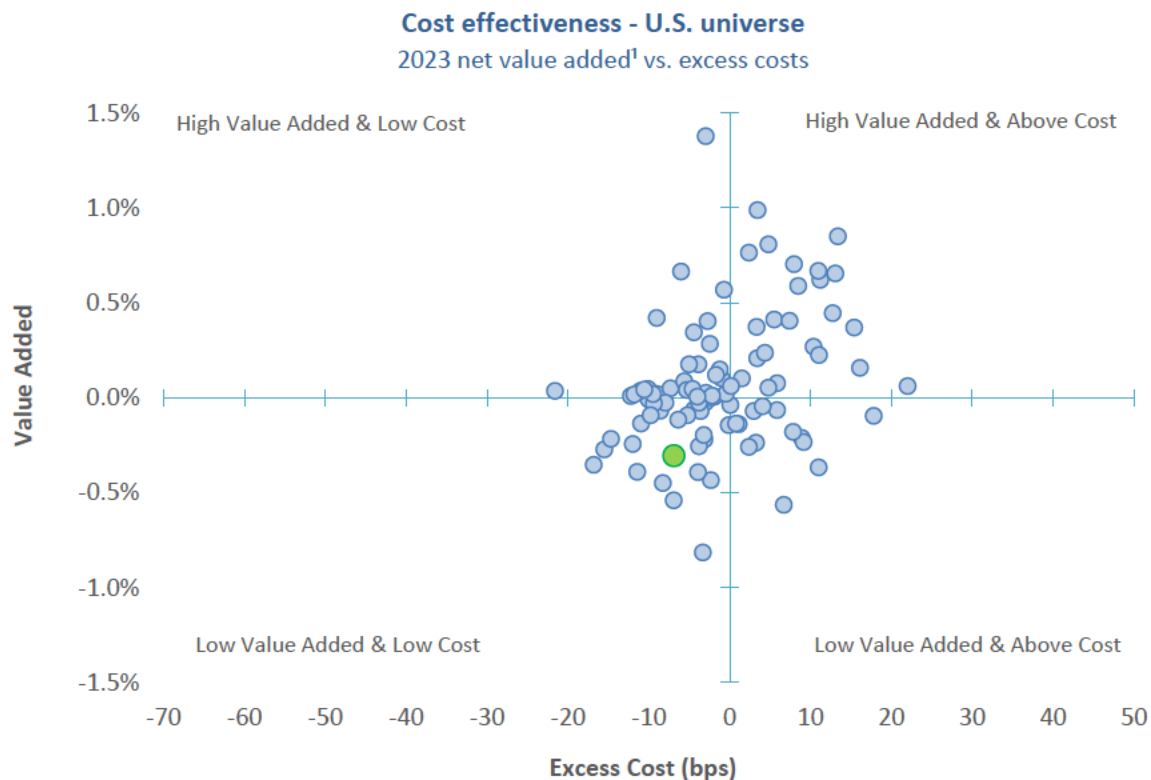
Asset class	2065	2060	2055	2050	2045	2040	2035	2030	2025	2020	<=2015 inc
U.S. broad or large cap	45%	45%	45%	44%	42%	38%	34%	29%	23%	19%	18%
U.S. mid or small cap	10%	10%	10%	10%	10%	9%	8%	7%	5%	5%	4%
Non-U.S. stock	31%	31%	30%	30%	28%	25%	22%	19%	15%	13%	11%
Emerging stock	4%	4%	4%	4%	4%	4%	3%	3%	2%	2%	2%
Core Bonds	6%	5%	5%	6%	10%	17%	24%	31%	38%	38%	44%
TIPS	0%	0%	0%	0%	1%	1%	2%	3%	7%	12%	10%
Stable Value	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%
Cash	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	3%
Other Fixed Income	0%	1%	1%	1%	1%	1%	2%	2%	3%	4%	3%
Commodities	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%
REITs	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Real Estate	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Private Equity	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Risk Parity	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
All other assets	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Cost effectiveness

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

It is, however, good to know where your plan places on the graph and, even more important, to understand the reasons why.

This report provides you with high-level insights of how your plan compared to the U.S. universe in 2023. CEM's interactive online Dashboard provides much more insight, through a cost-effective, self-service channel. Please reach out if you like to learn more, or book a live demo with our team. See page 4 for more details.



1. Value added = net return - benchmark return. In this chart the value added from employer stock is neutralized by setting its benchmark return equal to its actual return. It is neutralized in this report so we can show the value added from diversified plan options. Similarly, value added for stable value options is neutralized because of concerns over the benchmarks used for these options. If your fund has either, employer stocks or a stable value option, its effect on net value added is none and, its assumed benchmark cost is your own cost, effectively neutralizing its effect on excess cost.

Appendix: Your survey responses

Data quality

We recognize that the value of information contained in our reports is only as good as the quality of data we receive. Therefore, we have procedures in place for checking and improving the data that include:

- Automatic validation - all survey responses are compared to the plan sponsor's prior year responses and universe norms to ensure consistency.
- Manual verification - our analysts review each survey individually and follow-up with the survey responder with any questions regarding their data.
- Improving survey clarity - we have 27 years of feedback from participants incorporated into the survey that has led to improved definitions and clarity around data.

Your survey responses

Your data is summarized on the following pages. Note that if your original survey responses appear slightly different, it may be for any of the following reasons:

- 1. Gross versus Net Returns** - We ask participants to report returns on either a net or gross basis but in order to ensure 'apples-to-apples' comparisons, we compare returns net of all costs, including administration costs.
- 2. Returns not available** - We request that you leave the return blank if a full year return was unavailable for an investment option. The default for an unavailable return is to exclude this investment option from the net value added calculations.
- 3. Costs not provided** - As important as it is to report accurate costs, we recognize that some, such as fiduciary oversight costs, can be difficult to obtain. Therefore, if you were unable to provide us with your costs, we applied a default figure using industry data.

Your survey responses

VA ORPHE – TIAA

General	2023	2022	2021	2020	2019
Contact	Laura Pugliese Laura Pugliese Laura Pugliese Laura Pugliese				
Data provided by:	Michael Scott Michael Scott Michael Scott Michael Scott				
Corporate, public, other?	Public	Public	Public	Public	
Market value of plan assets (\$ millions)	\$402	\$327	\$357	\$294	
Number of plan participants	5,391	5,340	5,215	5,147	
% of eligible employees participating	80%	76%	75%	75%	
Are some DC participants covered by a DB plan?	No	No	No	No	
	None	None	None	None	
Administrative costs, plan expenses (\$000s)	2023	2022	2021	2020	2019
Recordkeeping ¹					
paid from expense ratio of invest. options	73	65			
charged to individuals or participant accounts	113	149	363	378	
paid by plan sponsor					
Custodial & trustee					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
Oversight internal ²					
paid from expense ratio of invest. options					
charged to individuals or participant accounts			180		
paid by plan sponsor	259	313		235	
Consulting					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
Other					
paid from expense ratio of invest. options					
charged to individuals or participant accounts					
paid by plan sponsor					
less rebates to participants from reimburse. accounts	75	67	53	42	
Total Plan Expenses	371	460	490	571	
Participant Expenses (\$000s)	2023	2022	2021	2020	2019
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					
paid by plan sponsor					
Total Participant Expenses					

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 & fiduciary costs.

2. If you were unable to provide costs for Fiduciary oversight internal, 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

VA ORPHE – TIAA

About your options	2023	2022	2021	2020	2019
Do you have a default investment option?	Yes	Yes	Yes	Yes	
If yes, what is the default option?	Target / lifecycle	Target / lifecycle	Target / lifecycle	Target / lifecycle	
Option returns are:	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt & admin fees	Net mgmt & admin fees	
Cost drivers and allocation	2023	2022	2021	2020	2019
FTE fulfilling fiduciary/oversight functions	7.0		2.0	2.0	
Does the plan offer a managed account service?	No	No	No	No	
Number with managed accounts					
Market value in managed accounts					
Do you receive revenue sharing from your providers?	Yes	Yes	No	No	
Is it used to reduce management fee?		No			
Is it used to reduce admin. or fiduciary costs?	Yes				
How are the recordkeeping or admin costs allocated to participants (asset based, flat fee, both, or other)?	flat fee	flat fee	flat fee	flat fee	
If other, describe					
Contributions	2023	2022	2021	2020	2019
Employer contributions (\$ millions)	27	27	26	27	
Participant contributions (\$ millions)	7	6	6	6	
% of participants making voluntary contributions?				0%	
Stable Value Funds	2023	2022	2021	2020	2019
What percentage of stable value assets are wrapped?					
What are your total wrap fees (in bps over wrapped amount)					
Loan features	2023	2022	2021	2020	2019
Does your plan allow loans?	No	No	No	No	
Total number of outstanding loans					
Average loan balance, (\$)					
Does your plan allow for hardship withdrawals	No	No	No	No	
Who pays the loan initiation fee?					
Is the fee a flat dollar amount or % of assets?					
Participant transaction rules and restrictions	2023	2022	2021	2020	2019
Limits on the number of transactions?	No	No	No	No	
Limits on international funds?	No	No	No	No	
Limits on any other funds (excl. international)?				Yes	
Excessive trading penalties?				No	
Describe other limits if any	1) Transfers out the TIAA	1) Transfers out the TIAA	1) Transfers out the TIAA	1) Transfers out the TIAA	
Assumed retirement age for your target date funds	65	65	65	65	
Do you customize or use an off shelf target date fund?	Off shelf	Off shelf	Off shelf	Off shelf	
Age at which target date retirement funds stop de-risking	65	65	65	65	

Your survey responses

VA ORPHE – TIAA

Services Offered to Separated Employees	2023	2022	2021	2020	2019
Lump sum payouts	Yes	Yes	Yes	Yes	
Required Minimum Distribution (RMD) payouts	Yes	Yes	Yes	Yes	
Partial payouts	Yes	Yes	Yes	Yes	
Installment payouts (e.g., monthly, quarterly, etc.)	Yes	Yes	Yes	Yes	
Loan initiation	No	No	No	No	
Loan maintenance (for loans made prior to separation)	No	No	No	No	
Online advice service	No	No	No	No	
Managed account advice service	No	No	No	No	
One-on-one advice service with an advisor	No	No	No	No	
Annuity platform (whether in-plan or out-of-plan)	Yes	Yes	Yes	Yes	
Employee contributions (DC is primary, no DB)	2023	2022	2021	2020	2019
Can participants make:					
a. After-tax Roth 401(k) contributions?	No	No	No	No	
b. After-tax non-Roth 401(k) contributions?	No	No	No	No	
Is investment in employer stock required to some extent?	No	No	No	No	
Is there a mandatory fixed or minimum contribution rate for full-time employees?	Yes	Yes	Yes	Yes	
If yes, what is the mandatory contribution rate as a % of salary ?	5.0%	5.0%	5.0%	5.0%	
Does the plan have automatic enrolment?	No	No	No	No	
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?	No	No	No	No	
Employee contributions (DC is suppl. to DB)	2023	2022	2021	2020	2019
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

VA ORPHE – TIAA

Employer contributions (if DC is primary, no DB)	2023	2022	2021	2020	2019
Are employer contributions made in employer stock, cash or both?	Cash	Cash	Cash	Cash	
Is there a profit sharing component to employer contributions?	No	No	No	No	
Is there an automatic fixed employer contribution rate?	Yes	Yes	Yes	Yes	
If yes, what is the automatic fixed employer contribution rate?	8.5%	8.5%	8.5%	8.5%	
Is there an after-tax employer match?	No	No	No	No	
Is there a before-tax employer match?	No	No	No	No	
% 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)	2023	2022	2021	2020	2019
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:					

Your survey responses

VA ORPHE – TIAA

Fiduciary	2023	2022	2021	2020	2019
Named fiduciary?	Board	Board	Board	Board	
If named fiduciary is a committee:					
Number of committee members?					
Number of meetings in the past year?					
Are the meeting minutes documented?					
Are the named fiduciaries:					
Provided formal training?	Yes	Yes	Yes	Yes	
Required to sign an acknowledgement form?	Yes	Yes	Yes	Yes	
Have third parties been appointed as:					
• Investment manager with full discretionary powers for selecting, monitoring, replacing investment options	No	No	No	No	
• Investment advisor to provide advice regarding the selection and retention of investment options?	No	No	No	No	
• 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	
Is there documentation that identifies the process for:					
• Selection and monitoring of third-party fiduciaries and other plan service providers?	Yes	Yes	Yes	Yes	
• Investment policy	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	
• Fulfilling administration responsibilities (regulatory filings, disclosures to participants)	Yes	Yes	Yes	Yes	
Education and other	2023	2022	2021	2020	2019
Is individual investment counseling/advice offered to plan participants?	No	No	No	No	
• Is it provided by advisor, computer, both?					
Does your plan offer financial education via:					
• Group meetings?	Yes	Yes	Yes	Yes	
• One-on-one meetings?	Yes	Yes	Yes	Yes	
Do plan participants receive projections of annual income in retirement:					
• In their participant statements?	Yes	Yes	Yes	Yes	
• Online?	Yes	Yes	Yes	Yes	
• Via separate communication?	No	No	No	No	
Does your plan have marketing campaigns to:					
• Increase employee contribution/deferral rates?	No	No	Yes	No	
• Increase participation by eligible non-participants?	No	No	Yes	No	
• Educate on the savers tax credit for lower income participants?	No	No	Yes	No	
• Improve diversification from Employer Stock?	No	No	No	No	
Does your plan offer:					
• Out-of-plan guaranteed lifetime income product?	No	No	No	No	
• In-plan guaranteed lifetime income product?	Yes	Yes	Yes	Yes	
Does your plan offer automatic rebalancing?	Yes	Yes	Yes	Yes	

Your survey responses

VA ORPHE – TIAA

Your plan's 2023 investment options

Provider & Option name	Type	%	\$ mils at	Annual	Benchmark	Return	Invest	Cost	
		Indxd	12/31/23	Return				Admin	Total
BlackRock - BlackRock Equity Index Fund J	Stk U.S. Broad or LC	100%	49	26.3%	S&P 500	26.3%	2.0 bp	0.0 bp	2.0 bp
BlackRock - BlackRock Russell 2500 Index Fund M	Stk U.S. SMID Cap	100%	9	17.6%	Russell 2500	17.4%	2.0 bp	0.0 bp	2.0 bp
BlackRock - BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	Stk Global	100%	55	21.7%	MSCI ACWI IMI Index	21.6%	5.0 bp	0.0 bp	5.0 bp
BlackRock - BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	Stk Non U.S.	100%	17	15.5%	MSCI ACWI ex-U.S. IMI Index	15.6%	11.0 bp	0.0 bp	11.0 bp
BlackRock - BlackRock U.S. Debt Index Fund M	Bonds Broad	100%	10	5.7%	Bloomberg Barclays U.S. Aggregate Bond I	5.5%	3.0 bp	0.0 bp	3.0 bp
BlackRock - BlackRock U.S. TIPS Fund M	Bonds TIPS	100%	5	4.0%	Bloomberg Barclays U.S. TIPS Index	3.9%	3.0 bp	0.0 bp	3.0 bp
BlackRock - BlackRock Short-Term Investment Fund W	Cash, Money Mkt	0%	6	5.4%	Your Cash, Money Market benchmark	5.3%	8.0 bp	0.0 bp	8.0 bp
BlackRock - BlackRock LifePath Index Retirement N	Target Date Short	100%	23	11.2%	Custom Benchmark	11.1%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2025 Fund N	Target Date Short	100%	21	12.0%	Custom Benchmark	11.9%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2030 Fund N	Target Date Medium	100%	34	14.3%	Custom Benchmark	14.2%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2035 Fund N	Target Date Medium	100%	28	16.3%	Custom Benchmark	16.3%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2040 Fund O	Target Date Long	100%	32	18.3%	Custom Benchmark	18.3%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2045 Fund N	Target Date Long	100%	28	20.2%	Custom Benchmark	20.1%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2050 Fund N	Target Date Very Long	100%	18	21.3%	Custom Benchmark	21.2%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2055 Index Fund N	Target Date Very Long	100%	9	21.6%	Custom Benchmark	21.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2060 Index Fund N	Target Date Very Long	100%	3	21.6%	Custom Benchmark	21.6%	6.0 bp	0.0 bp	6.0 bp
BlackRock - BlackRock LifePath Index 2065 Fund N	Target Date Very Long	100%	5	21.6%	Custom Benchmark	21.6%	6.0 bp	0.0 bp	6.0 bp
TIAA Real Estate Account - Real Estate Fund	Real Estate	0%	11	-13.6%	Custom Composite Index	-6.7%	63.0 bp	24.0 bp	87.0 bp
TIAA Traditional Annuity RC - Traditional Annuity Fund	Annuity	0%	34	4.8%	Neutralized		0.0 bp	15.0 bp	15.0 bp
TIAA-CREF Self Directed Account - Participant Brokerage Account	Participant Broker Account	0%	6				0.0 bp	0.0 bp	0.0 bp
Total			402				6.7 bp	2.0 bp	8.7 bp

Quarterly Review

VRS Defined Contribution Plans

July 1, 2024 – September 30, 2024

DCP
Virginia Retirement System

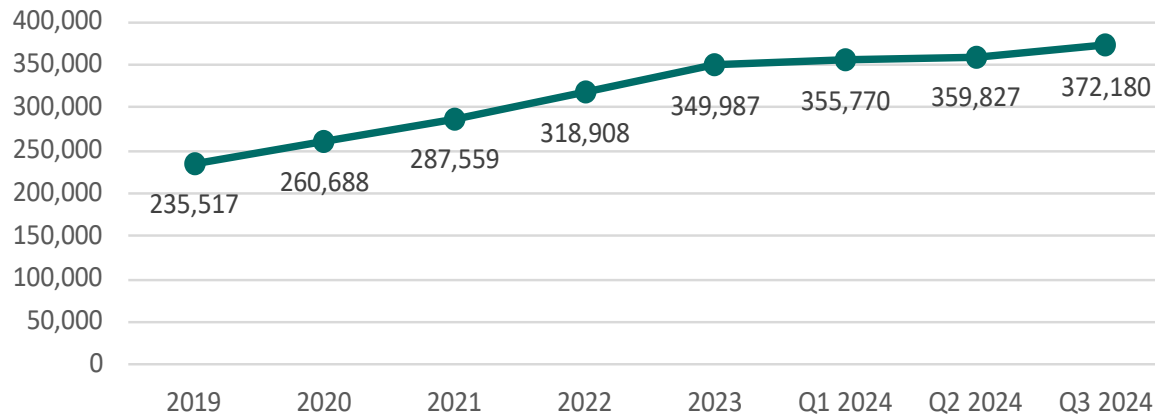


VRS Defined Contribution Plans¹

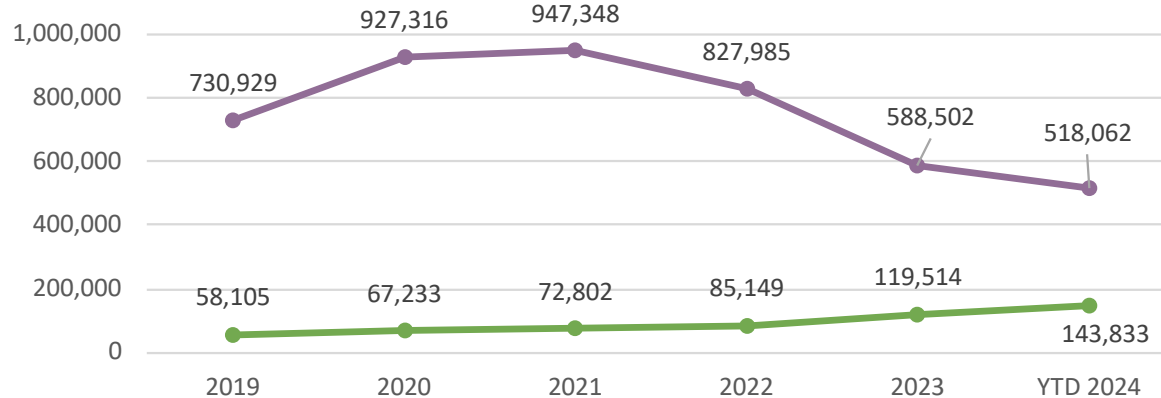
3rd Quarter 2024 – DC Plans Metrics

Total Assets²: \$8,820,680,883.37 Total Accounts²: 630,399

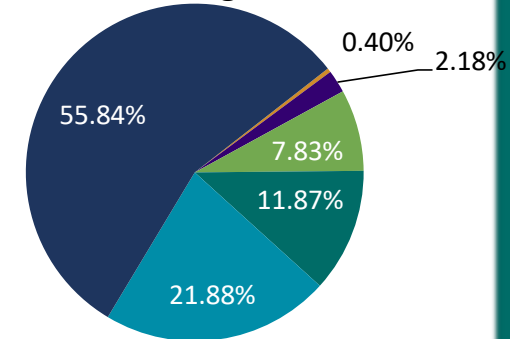
Unique Participants



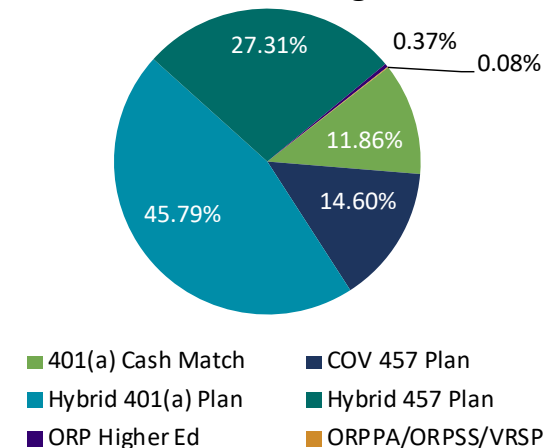
Account Access Registrations & Logins



Assets Under Management



Accounts Under Management



Top 10 Visited Pages³

1. Hybrid Retirement Plan Landing Page
2. COV 457 Retirement Plan Landing Page
3. Hybrid 457 Voluntary Contributions
4. Hybrid Plan Group Life Insurance
5. Hybrid Plan Education
6. Virginia Cash Match Landing Page
7. COV 457 Overview
8. COV 457 Contributions
9. VRS Hybrid Plan Learning Channel
10. COV 457 Plan Info

VRS Defined Contribution Plans

3rd Quarter 2024 – DC Plans Participant Engagement

Call Center – Participant Services

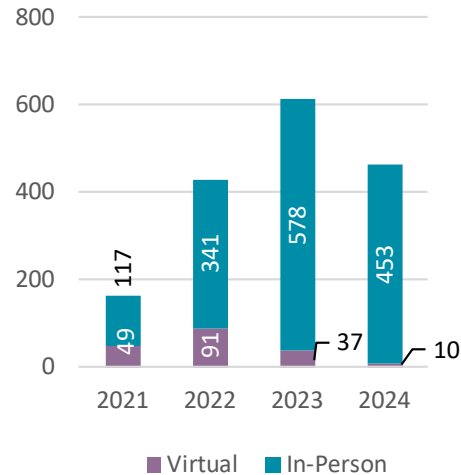
- 51,225 calls received YTD in 2024
- 60,397 calls received in 2023
- 55,471 calls received in 2022
- 55,311 calls received in 2021

Current call trends:

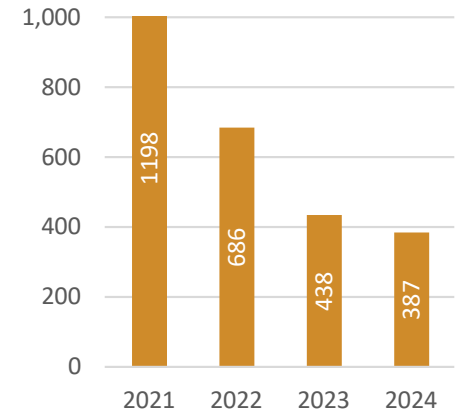
1. Withdrawals
2. General inquiries
3. Internet assistance
4. Deferrals
5. Indicative data

Participant Sessions

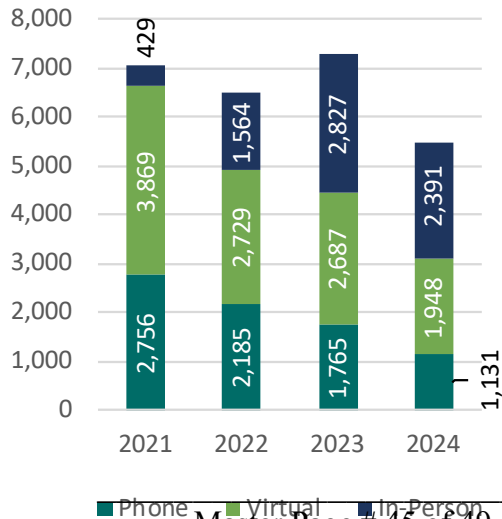
Group Meetings



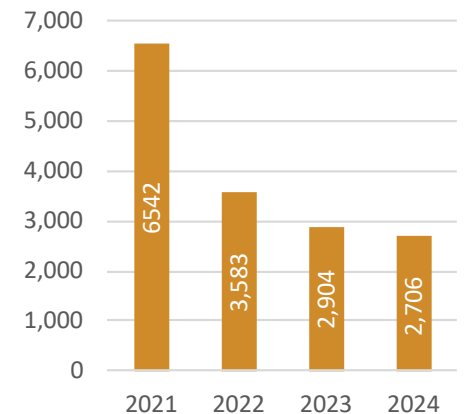
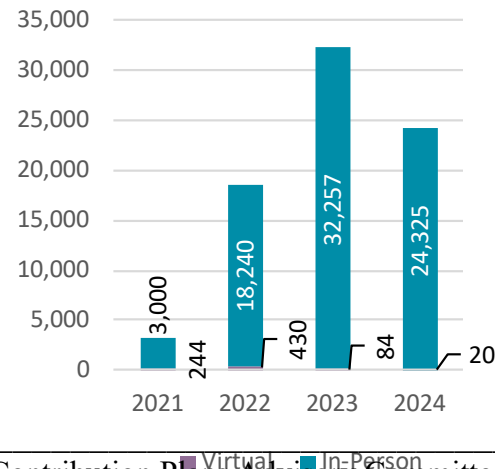
Webinars



Individual Account Reviews



Participant Attendance



VRS Defined Contribution Plans

3rd Quarter 2024 – COV 457 Plan, Virginia Cash Match Plan

Deferral Type

Pre-tax & Roth

14%

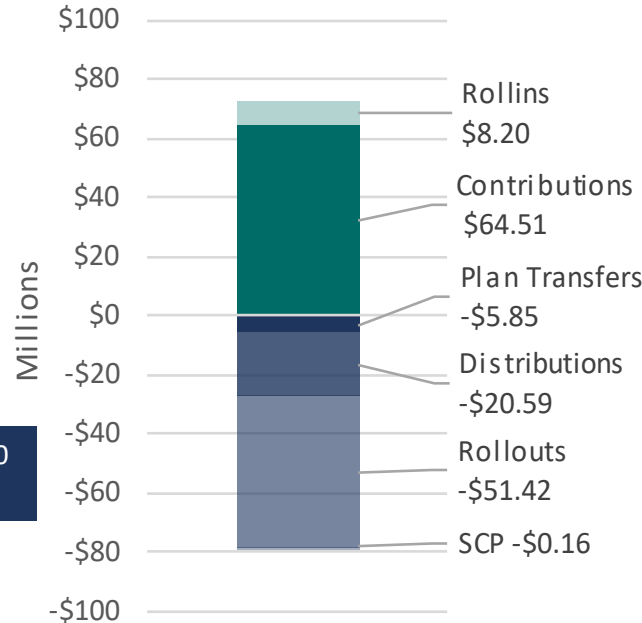
Roth

9%

Pre-tax
77%

Average pre-tax deferral per pay = \$193.60
Average Roth deferral per pay = \$180.88

Contributions/Distributions⁵



COV 457 Participation Rates

- State⁴ 32.87%
- Non-state 9.29%

Top 10 Fund Holdings

1. Stock	\$1,923,228,102
2. Target Date Portfolios	\$1,707,359,093
3. Stable Value	\$582,942,511
4. Small/Mid-Cap Stock	\$443,991,796
5. International Stock	\$229,052,857
6. Bond	\$157,775,134
7. Money Market	\$129,167,849
8. Schwab PCRA	\$123,127,136
9. Global Real Estate	\$92,908,768
10. VRS Investment Portfolio	\$66,014,501

Auto Enrollment

4.85%,
403(b)

12.78%, Opted-Out

82.38%, Auto-
enrolled/Active
control

12.78% Opt-Out rate for quarter
8.87% opt-out rate since inception⁹

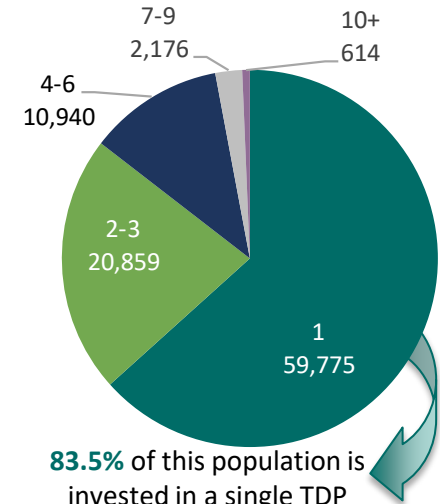
Participant Status Overview⁶

165,988 total accounts

56% Active
44% Separated

\$2,503m assets at-risk

of Funds Held by Participants

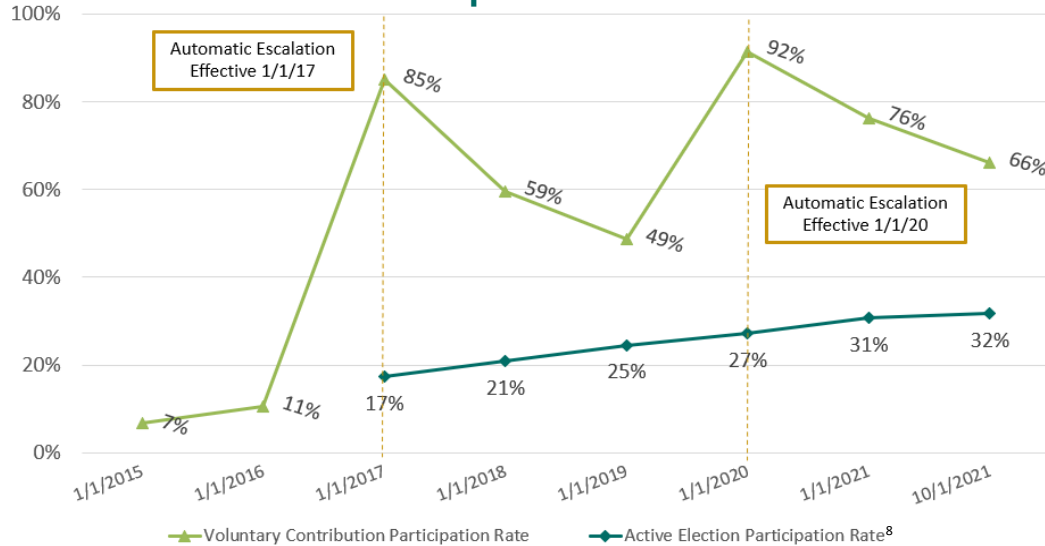


83.5% of this population is
invested in a single TDP

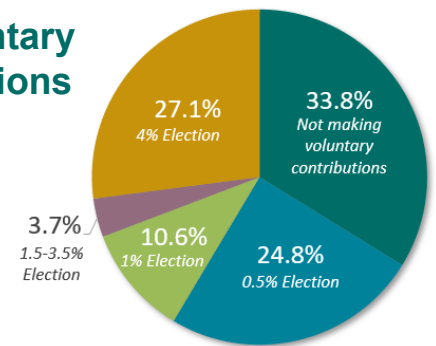
VRS Defined Contribution Plans

3rd Quarter 2024 – Hybrid Retirement Plan – 401(a) & 457(b)

Participation Rates⁷



Voluntary Elections



Top 10 Fund Holdings

1. Target Date Portfolios	\$2,764,408,620
2. Stock	\$122,662,417
3. Small/Mid-Cap Stock	\$28,176,300
4. Money Market	\$17,526,117
5. International Stock	\$14,860,233
6. Stable Value	\$10,529,392
7. Schwab PCRA	\$6,418,604
8. Global Real Estate	\$6,358,267
9. High-Yield Bond	\$6,044,179
10. Bond	\$5,199,693

Participant Status Overview³

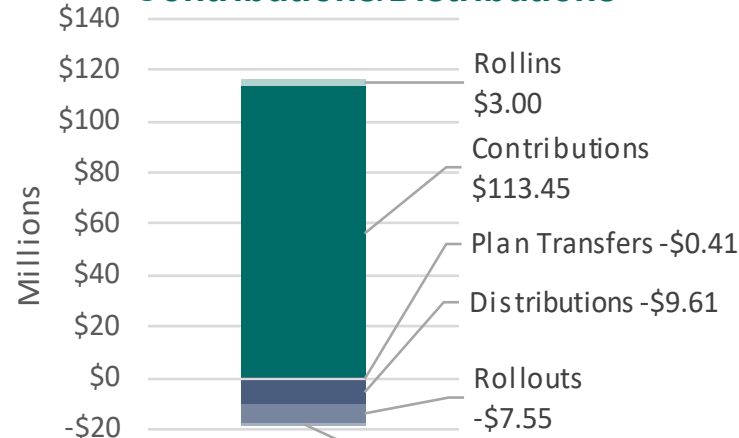
460,718 total accounts

70% Active

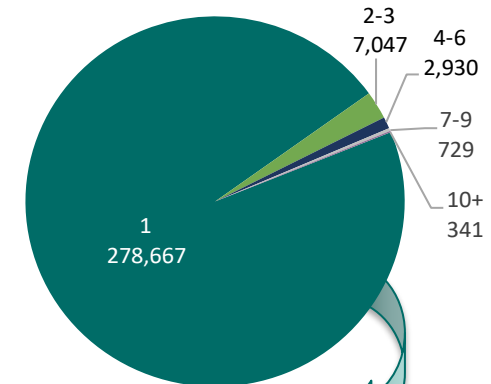
30% Separated

\$572m assets at-risk

Contributions/Distributions



of Funds Held by Participants



99.4% of this population is invested in a single TDP

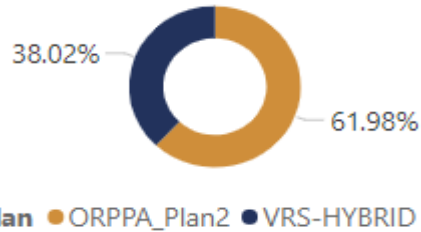
VRS Defined Contribution Plans

3rd Quarter 2024 – ORPHE* and ORPPA

ORPPA Participation

Participant Accounts: 500
Assets: \$34,431,828
Provider: MissionSquare

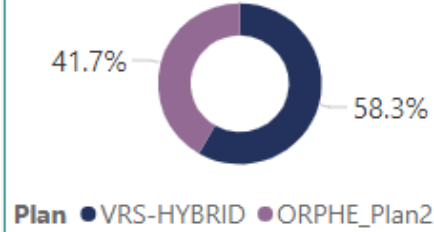
ORPPA-Eligible Plan Coverage



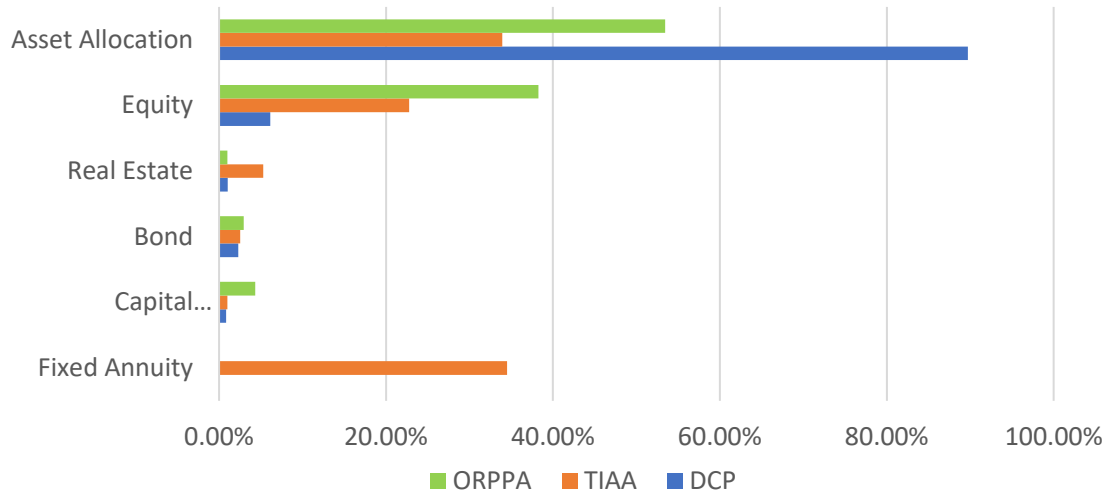
ORPHE Participation

Participant Accounts: 11,031
Assets: \$1,390,413,635
Providers: MissionSquare, TIAA

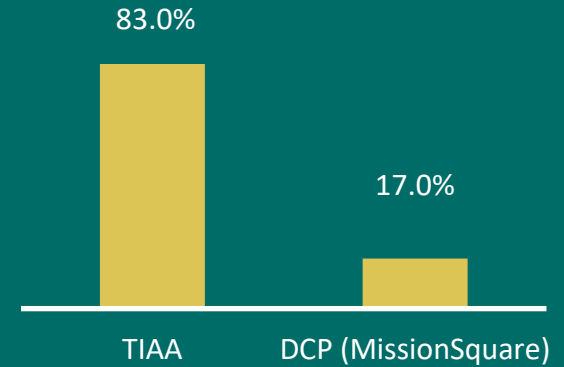
ORPHE-Eligible Plan Coverage



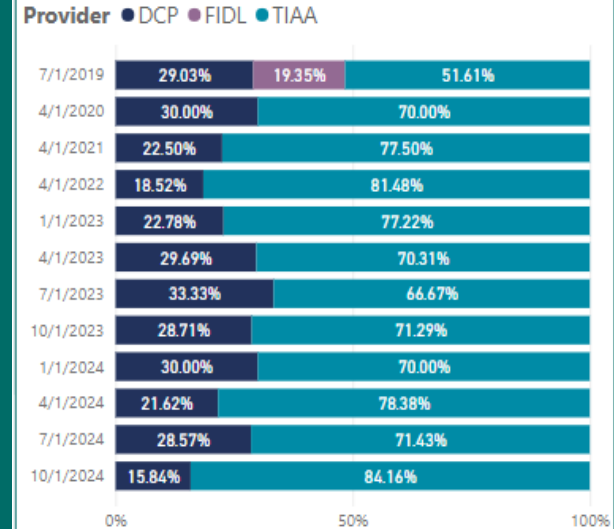
Participant Holdings by Plan and Assets



ORPHE YTD Provider Election



ORPHE Provider Election Rates Over Time



ORPHE Deselected Providers:

Fidelity, T. Rowe Price, Empower, AIG-VALIC, MetLife

Participants: 1,227

Assets: \$160,368,080

*Excludes opt-out higher ed institutions. ^Excludes deselected investments. Some currently selected funds on the TIAA platform may include assets across the RC, BA, and GRA contracts. ^Includes both international and domestic equity.

VRS Defined Contribution Plans

3rd Quarter 2024 – DC Plans Metrics

Source Information/Additional Footnotes

All data unless noted otherwise was provided by MissionSquare Retirement and is as of 9/30/2024.

1. Includes DC plans record kept by MissionSquare Retirement.
2. Total assets and accounts include beneficiaries and excludes forfeiture and reserve accounts.
3. Web statistics provided by Google Analytics.
4. Includes employees at higher education institutions who are also eligible for a 403(b).
5. Cash Flow Definitions
 - Rollins – Contributions into a participant's account from a retirement plan or IRA.
 - Contributions – Payroll contributions from a participant's paycheck.
 - Plan Transfers – Transfer of funds between VRS retirement plans.
 - Distributions – Consists of auto enrollment refunds, required minimum distributions (RMDs) unforeseen emergency withdrawals and full, partial, installment and de minimis requests
 - Rollouts – Withdrawal request sent to another retirement plan or IRA
 - SCP – A request to transfer employee contribution funds from the plan to VRS to purchase service credit. Please note, SCP is not permitted from the H401 plan.
6. Active Participants do not have a termination date on file and may not have made a contribution during the quarter. Terminated Participants have a termination date on file.
7. Source: 10/1/21 Active Hybrid Member Demographics Report.
8. Active Election participation rate includes members who had a self-selected voluntary election on file prior to the automatic escalation that occurred on 12/16/19.
9. Chart shows current status of active participants set up as auto-enroll eligible after plan conversion, January 6, 2014; excludes terminated participants.