



Defined Contribution Plans Advisory Committee (DCPAC) Meeting

1111 E. Main St.
Richmond, VA 23219
Thursday, 6/2/2022
1:00 - 3:00 PM ET

1. Welcome

2. Meeting Minutes

2022.3.24 Minutes - Page 2

3. Administration

2022Q1 Administrative Summary - Page 6

a. Administrative Reports & Communications

b. DC Plans Record Keeper Consultant RFP Update

4. Investments

6-2-22 Final DC Investments slide deck - Page 32

a. Performance Reports

b. Benchmark Review

c. 2022 PIMCO US DC Consulting Study

5. Other Business

6. 2022 Meetings

7. Appendix

2022 PIMCO US DC Consulting Study - Page 52

Q1 2022 Quarterly Review - VRS Copy - Page 113

Minutes

The Defined Contribution Plans Advisory Committee (DCPAC) of the VRS Board of Trustees convened on March 24, 2022, with the following members present:

Susan T. Gooden, Vice Chair
Shannon Irvin
Rick Larson
Brenda Madden
Arun Muralidhar
Ned Smither
David Winter

VRS Board of Trustees:

O'Kelly McWilliams III
John Bennett*

VRS Staff:

Kelvin Allen*, Cathy Baird, Trish Bishop, Steve Cerreto*, Jeanne Chenault, Michael Cooper*, Valerie Disanto, Josh Fox*, JT Grier, Kelly Hiers, KC Howell, Robert Irving, Ciara Lawson*, Ryan LaRochelle, Joyce Monroe*, Teresa Nguyen*, Rebecca Nicholas, Laura Pugliese, Kristy Scott*, Michael Scott, Jillian Sherman, Jennifer Schreck*, Virginia Sowers*, Ashley Spradley*, Rachel Webb* and Cindy Wilkinson.

Guests:

Alex Meyer*, Goldman Sachs; Andrew Ness*, SageView Advisors; Lindsay Saienni*, Financial Investment News; and Cynthia Williamson, Virginia Department of Behavioral Health and Developmental Services.

**Attended remotely*

The meeting convened at 1:00 p.m.

Opening Remarks

Susan Gooden welcomed Committee members, board members, VRS staff, representatives from other stakeholder groups and members of the public. She also provided introductory information for the newly appointed member of the Committee, Dr. Arun Muralidhar. Dr. Muralidhar is filling the investment seat on the Committee.

Approval of Minutes

Upon a motion by Dr. Gooden, with a second by Ms. Irvin, the Committee approved the minutes of the December 2, 2021 meeting of the Defined Contribution Plans Advisory Committee.

DC Plans Investments Update

KC Howell, Managing Director- Global Investments, provided a brief review of VRS DC plan positions in Russian markets.

Laura Pugliese, Portfolio Manager, Defined Contribution Plans, reviewed the February 28, 2022 performance reports, including the unbundled DC plans investment options and the bundled TIAA investment menu in the Retirement Choice (RC) contract for ORPHE.

Callan 2022 Defined Contribution Trends Survey Highlights

Ms. Pugliese provided an overview of highlights from the Callan 2022 DC Trends survey, which was included in the meeting materials Appendix for the Committee to review. The Callan 2022 DC Trends survey results represented 101 large DC plan sponsors that span a range of industries across corporate, tax-exempt, and government organizations.

CEM Survey Update

Ms. Pugliese advised that staff are still reviewing CEM's Dashboard benchmarking service and will provide an update at a future meeting.

Dr. Gooden thanked Ms. Pugliese for her presentation.

Administrative Reports and Communications Update

Kelly Hiers, DC Plans Administrator, provided an update on the VRS Defined Contribution Plans for the fourth quarter, ending December 31, 2021. Ms. Hiers shared the total assets under management across all DC plans, as well as an overview of unique participant counts for the unbundled plans.

DC Plans and Hybrid Plan Update

Ms. Hiers provided an update on total assets and accounts in the VRS Defined Contribution Plans through December 31, 2021. She also presented an overview of the number of unique participants in the unbundled DC Plans.

Ms. Hiers provided an overview of various notifications provided to plan participants each year. These included the annual fee disclosure, automatic enrollment notice and default investment notification.

Ms. Hiers provided an update on total assets and accounts in the COV 457 and Virginia Cash Match plans through December 31, 2021, as well as an update for a recent communications campaign to increase awareness of and encourage participation in the COV 457 Plan.

Ms. Hiers also provided a review of total assets and accounts in the Hybrid Retirement Plan for the fourth quarter of 2021. She further updated the Committee on the Hybrid 457 voluntary participation

and contribution election rates for the fourth quarter of 2021. An update on the Hybrid 457 voluntary participation and contribution election rates was also provided.

Ms. Hiers provided a brief overview of the Optional Retirement Plan for Political Appointees. This included a review of eligibility for the plan, as well current eligibility and election rates.

Ms. Hiers next reviewed the DC Plans focus on improving asset allocation across the plans for the fourth quarter of 2021. She shared the current breakdown of asset allocation across the plans, as well as a comparison for how the allocation varies across plans. She provided an analysis by age and gender for the COV 457 Plan. Ms. Hiers also provided an overview of investment-related communications and educational materials available to plan participants. She also provided an update on usage of the self-directed brokerage account option.

ORPHE Update

Ms. Hiers shared an overview by provider of total ORPHE assets, participants and average balances for the fourth quarter of 2021. She also gave an update on ORPHE provider selections for the fourth quarter of 2021.

DC Plans Consultant RFP Update

Ms. Hiers provided a brief update on the DC Plans consultant RFP. Interviews with finalists have been conducted and an award is expected next month.

Dr. Gooden thanked Ms. Hiers for her presentation.

Other Business

DCPAC Charter and Responsibilities Overview

Trish Bishop, VRS Director, reviewed the DCPAC Charter, focusing on the Duties and Responsibilities of the DCPAC, as described in the charter.

Legislative Update

Cindy Wilkinson, Director of Policy and Planning, reviewed DC plan-related legislation that passed during the 2022 regular session of the General Assembly, including the Board of Trustees-requested legislative proposal that will separate the Board-certified defined benefit employer contribution rates from the statutory estimated defined contribution employer contribution rates. She advised that the General Assembly adjourned but is expected to return for a special session to complete work on the budget and other bills that remained in conference committee at the end of the regular session.

DCPAC Appointments

Ms. Bishop informed the Committee of the request for reappointment of Ravindra Deo, Brenda Madden, and Edward N. (Ned) Smither, each to a two-year term ending June 20, 2024. Their current term expires June 20, 2022.

RBA: Request for Board Action Regarding Reappointment of DCPAC Members

The Committee recommends approval of the following action to the Administration and Personnel Committee and the full Board:

Request for Board Action: *The Board reappoints Ravindra Deo, Brenda Madden, and Edward N. (Ned) Smither to the Defined Contribution Plans Advisory Committee (DCPAC), for a two-year term ending June 20, 2024.*

Discussion of New Ideas

No additional business was brought before the Committee.

Upcoming Defined Contribution Plans Advisory Committee Meetings

Dr. Gooden confirmed the remaining DCPAC meeting dates for 2022. The next meeting of the DCPAC will take place on June 2, 2022, with remaining meetings on September 8th and December 1st. All meetings will be held at 1:00 p.m.

Additionally, the ORPHE Annual Employer Update will be scheduled and appear on the agenda as an upcoming event. This is not a DCPAC meeting; however, members may attend if interested.

Adjournment

There being no further business, Dr. Gooden adjourned the meeting at 2:51 p.m. upon a motion by Ms. Madden, with a second by Mr. Smither, upon a unanimous vote.

Vice Chair

Date



Virginia
Retirement
System

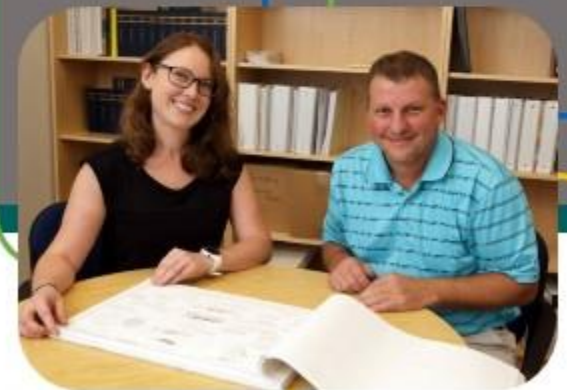
VRS Defined Contribution Plans

1st Quarter 2022

(January - March)

Administrative Summary

June 2, 2022

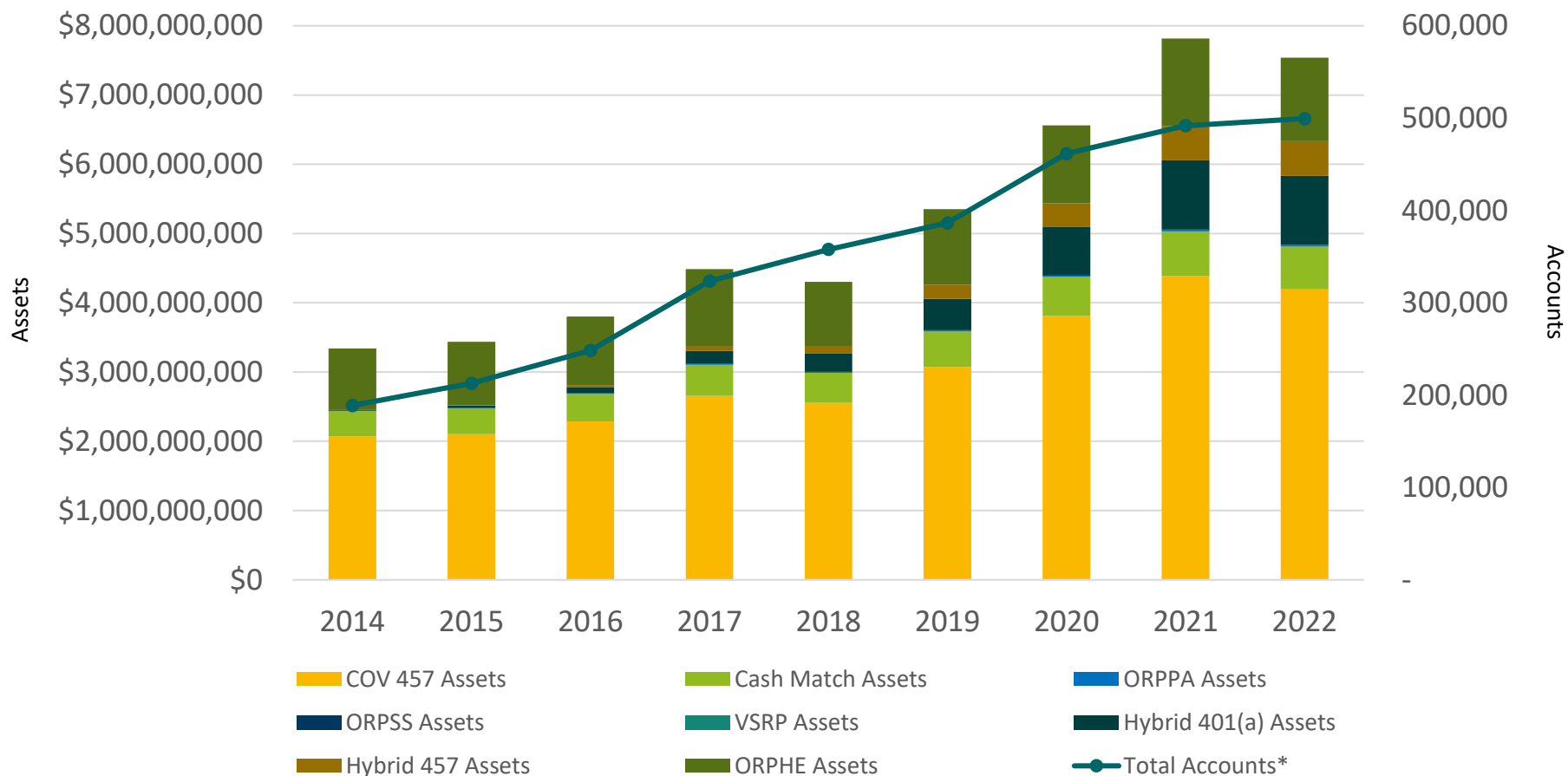


Topic	Slide Number(s)
Total Assets & Accounts	3-4
COV 457 & Cash Match Plans	5-6
Hybrid Retirement Plan	7-11
ORPHE	12
Focus: Asset Retention	13-22
Upcoming Events	23
DC Plans Unbundled Record Keeper Contract Update	24-25

Total Assets and Accounts Over Time



Totals as of 3/31/2022	Assets	Accounts	Assets ↓ 4% Accounts ↑ 4% since December 31, 2021
	\$7,538,807,967	499,342	



Note: Except for current quarter, data reflects totals as of calendar year end and includes ORPHE selected providers and MissionSquare participant, beneficiary, forfeiture & reserve accounts. 2022 data is as of 3/31/2022.

*Does not indicate unique participants.

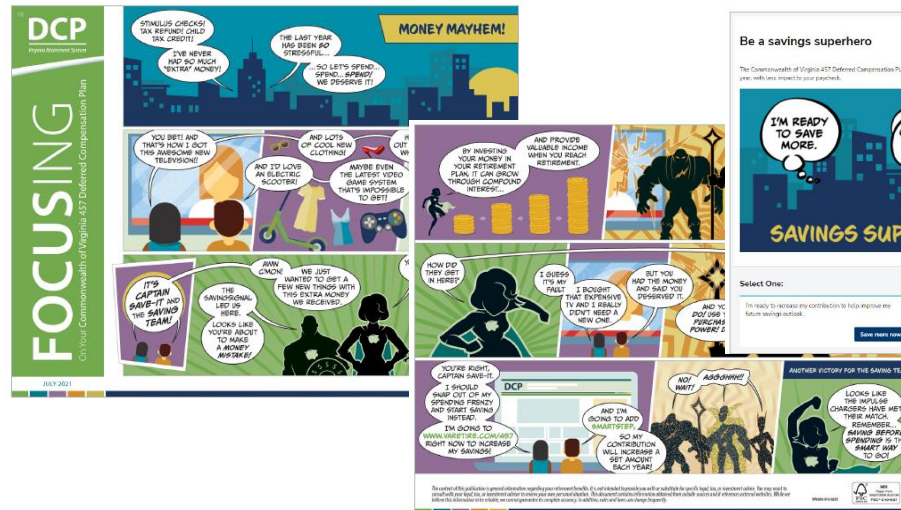


2022 Communicator Award of Distinction

- SmartStep Auto-Increase Awareness Campaign
- 30% increase in page views from same period in previous year

Academy of Interactive and Visual Arts (AVIA)

Marketing Effectiveness category

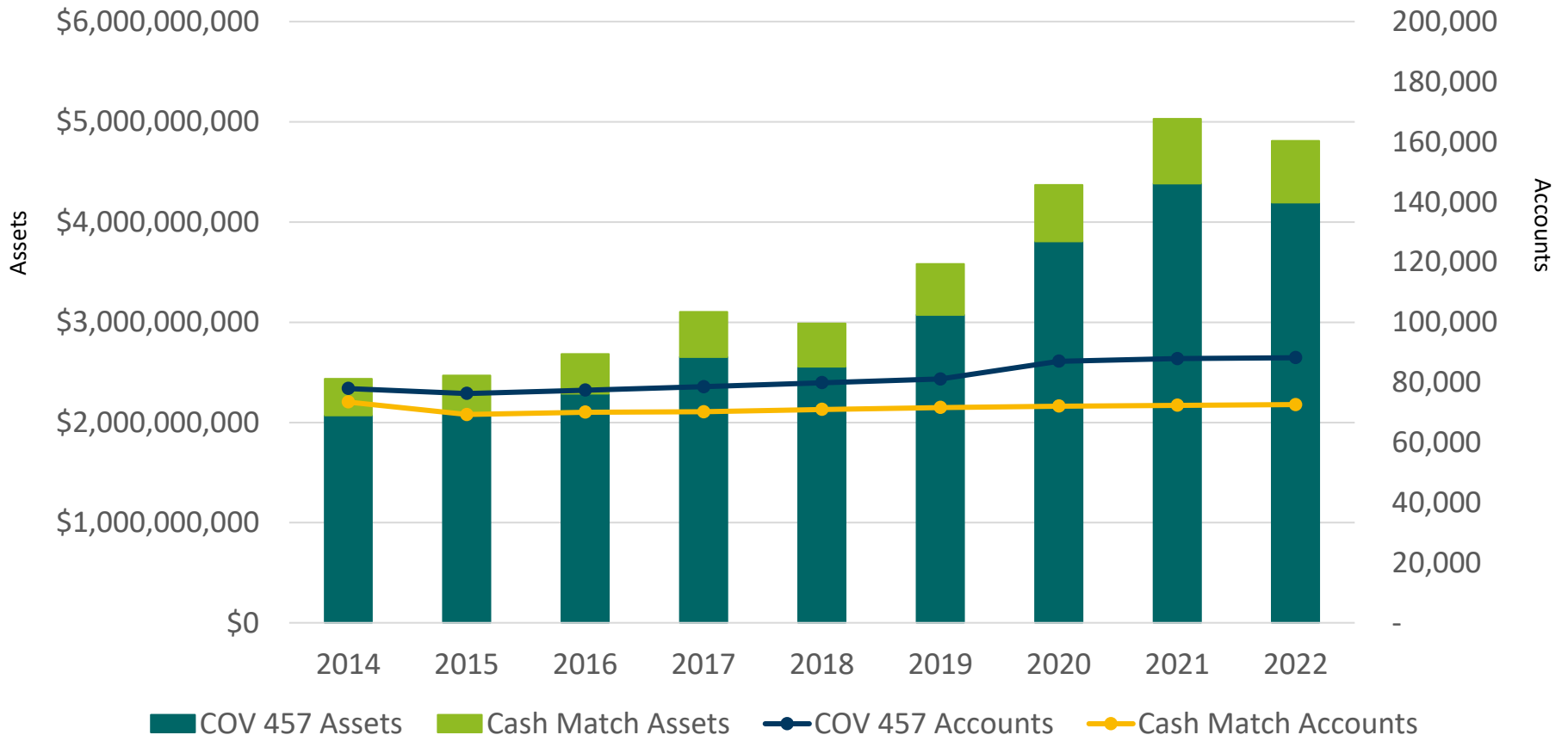


COV 457/Cash Match Plan Assets and Accounts



Totals as of 3/31/2022	Assets	Accounts
COV 457	\$4,194,200,928	88,234
Cash Match	\$615,867,853	72,585

Assets ↓ 4% since December 31, 2021



Note: Except for current quarter, data reflects totals as of calendar year end and includes MissionSquare participant, beneficiary & reserve accounts. 2022 data is as of 3/31/2022.

Finalized and Pending Adoptions

7/1/2021

- New River Valley Regional Commission

10/1/21

- Lee County

2/1/2022

- Greene County Public Schools

5/1/2022

- Town of Marion

6/1/2022

- Blue Ridge Juvenile Detention Center
- Albemarle County
- Albemarle County Public Schools
- Charlottesville Albemarle Technical Education Center

9/1/2022

- Fredericksburg City Schools

Historical Adoption Totals

2018 –

10

2019 –

6

2020 –

1

2021 –

3

2022 –

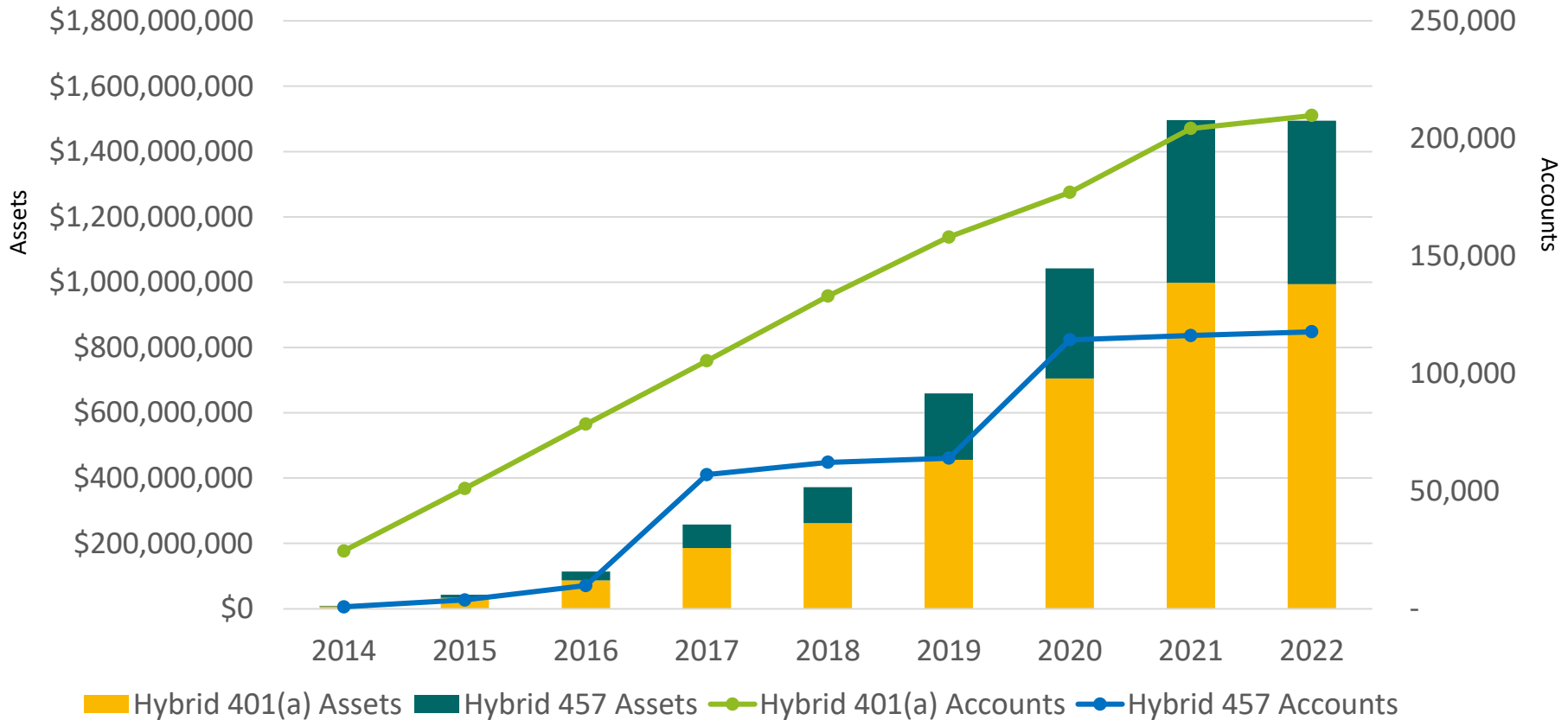
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Hybrid Retirement Plan Assets and Accounts (DC only)



Totals as of 3/31/2022	Assets	Accounts
Hybrid 401(a)	\$994,178,664	209,783
Hybrid 457	\$500,508,831	117,768

Accounts ↑ 2% since December 31, 2022



Note: Except for current quarter, data reflects totals as of calendar year end and includes MissionSquare participant, beneficiary & for future accounts 2022 data is as of 3/31/2022.

Local Employers

7/1/2021

- Northern Virginia Soil and Water Conservation District
- Orange County Broadband Authority

9/1/2021

- Town of Farmville

1/1/2022

- City of Norfolk

State Employers*

7/1/2021

- Behavioral Health Commission
- Virginia Cannabis Control Authority
- Virginia Opioid Abatement Authority

Hybrid Retirement Plan Participation Highlights

Overall participation in
Hybrid Voluntary
Contributions – 61%

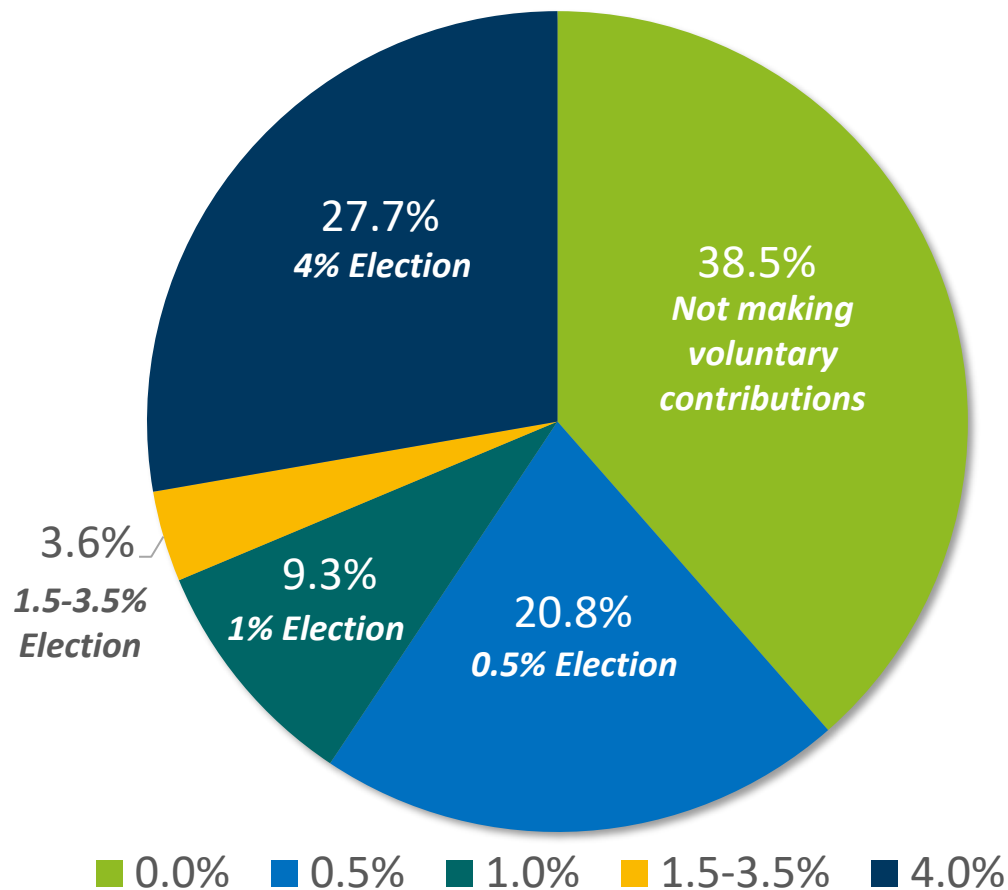
**Active Election
Participation – 32%**

Of members
making voluntary
contributions

**45% are maximizing at 4%
49% are at 1% or less**

Hybrid Retirement Plan Voluntary Contribution Elections

Voluntary contribution percentages for active hybrid plan members effective April 1, 2022



Hybrid Retirement Plan Automatic Escalation

Keep Your Savings
Rolling With
Auto-Escalation



Employer communications

- Targeted email sent to school divisions in May
- Targeted emails continue this summer and fall
- Employer Update articles started in May

104,952
Estimated eligible* population
for 2023

Member communications

- Newsletter articles this summer and fall
- Postcard mailing in October
- Splash screen in Account Access

79,751
Auto-escalated in 2020

*Eligible hybrid plan members hired on or before September 1, 2022 and have a voluntary contribution of less than 4%.

ORPHE Totals*			
	12/31/2021	3/31/2022	% Change
Assets	\$1,260,585,736	\$1,207,570,890	-4%
Participants	10,596	10,525	-1%
Average Balance	\$118,968	\$114,734	-4%



DCP	
	3/31/2022
Assets	\$154,181,197
Participants	2,315
Average Balance	\$66,601

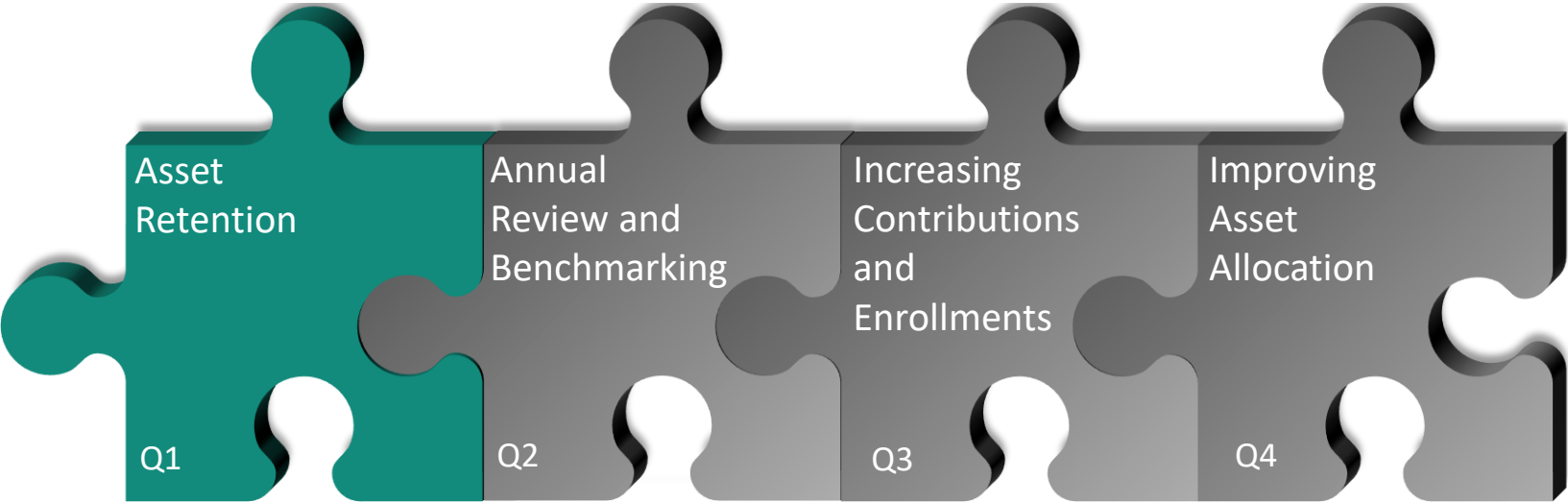
20% of new hires YTD have elected DCP as their provider.

TIAA**	
	3/31/2022
Assets	\$1,053,389,692
Participants	8,210
Average Balance	\$128,306

80% of new hires YTD have elected TIAA as their provider.

*Excludes deselected providers. Fidelity became a deselected provider effective 1/1/2020.

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

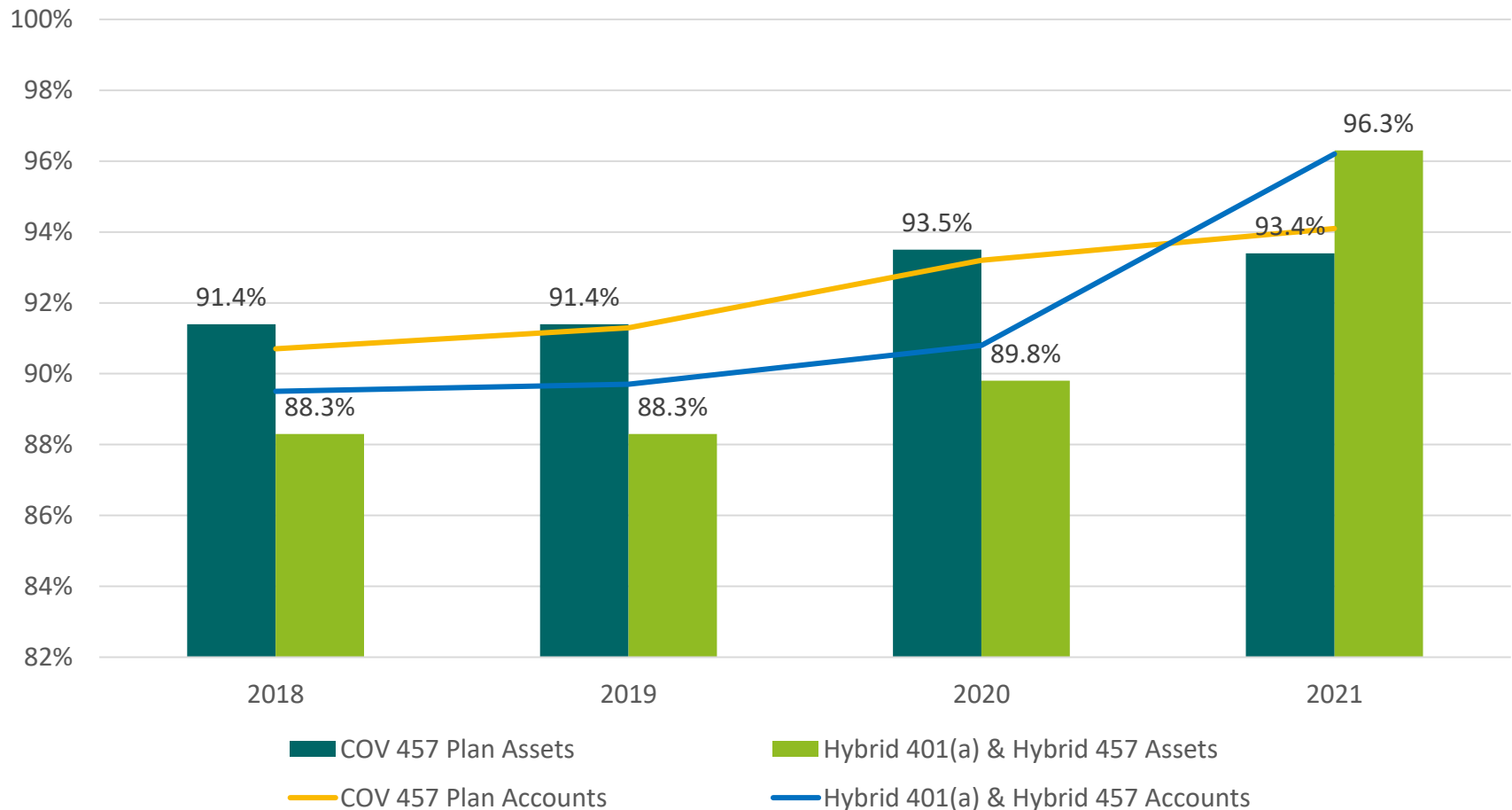


Asset Retention Metrics (unbundled plans only)

Data calculated at the end of each calendar year



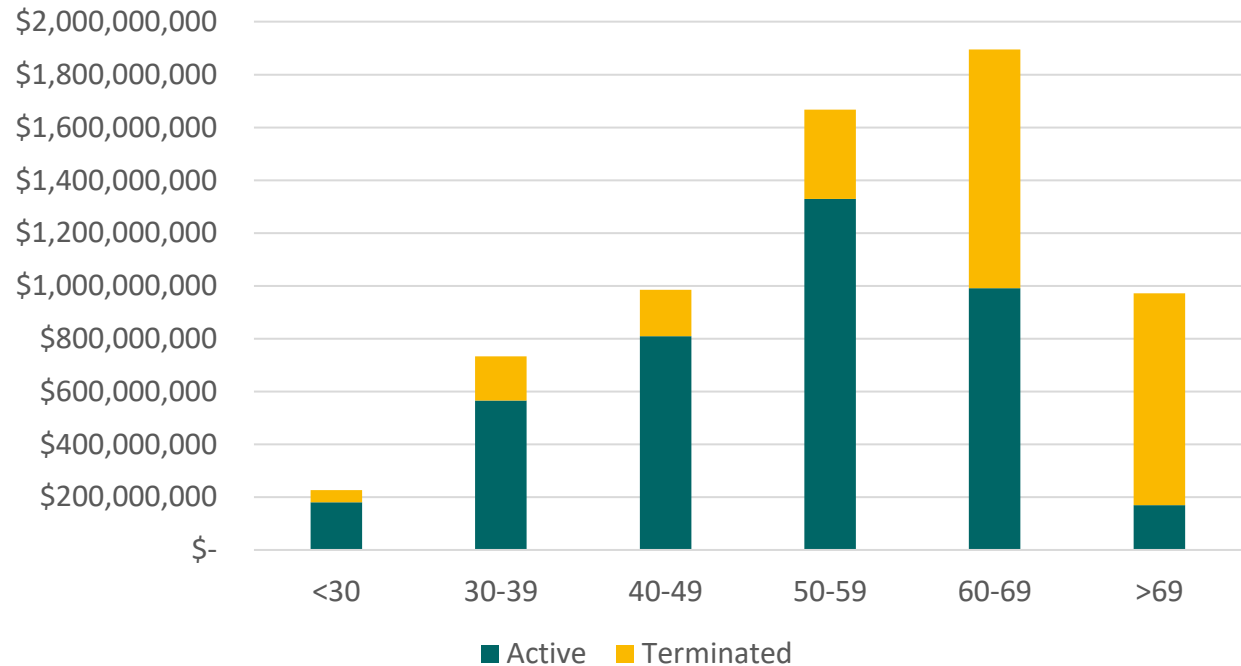
Retention Results



Assets by Employment Status

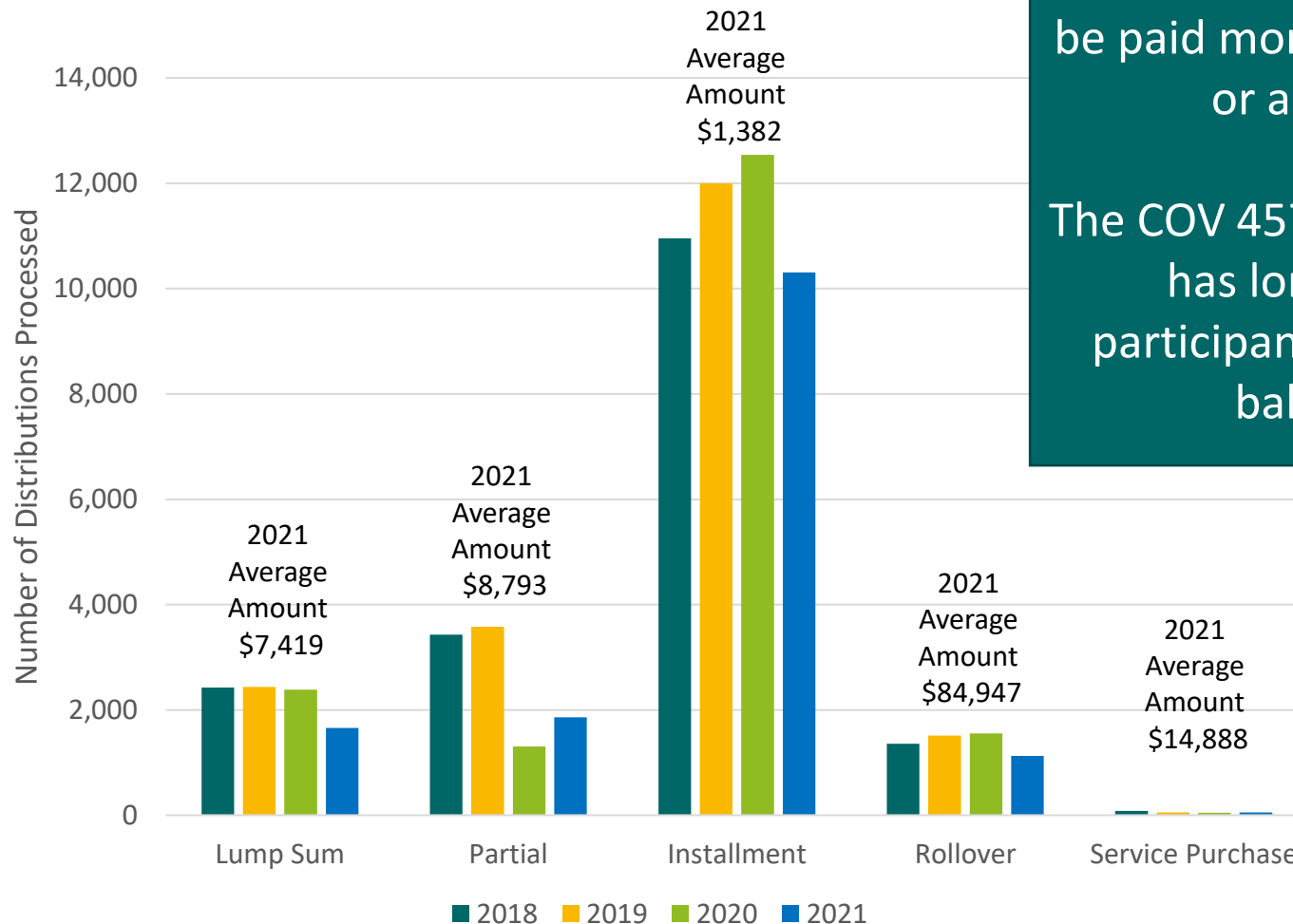
Participants who terminate employment are most likely to withdraw assets from the plan.

Assets Across All Unbundled Plans
By Age and Employment Status



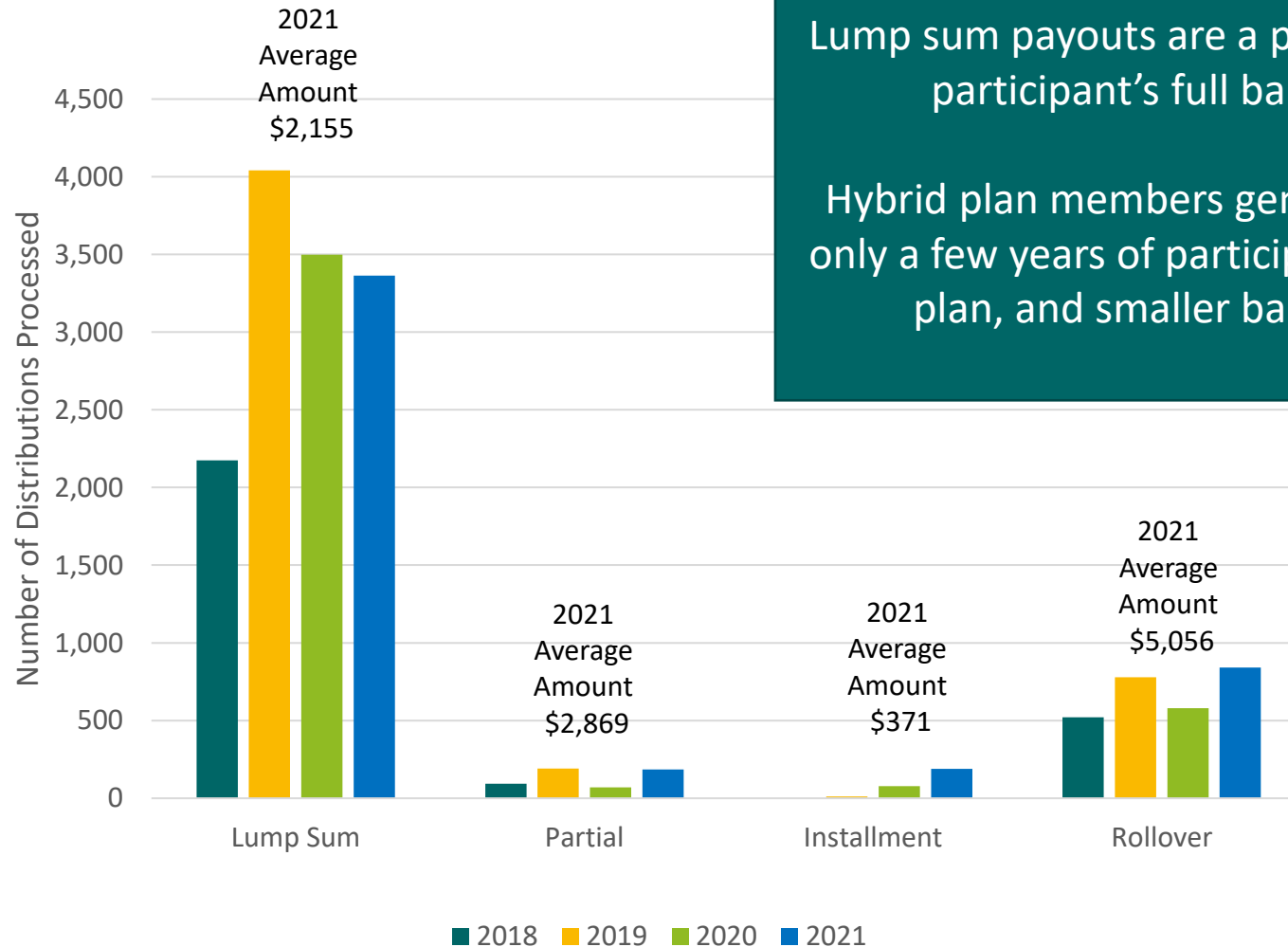
Participants	Assets
Active	62%
Terminated	38%

Asset Retention Distribution Types – COV 457 Plan



Installment payments can be paid monthly, quarterly, or annually.

The COV 457 Plan generally has longer-term participants with larger balances.



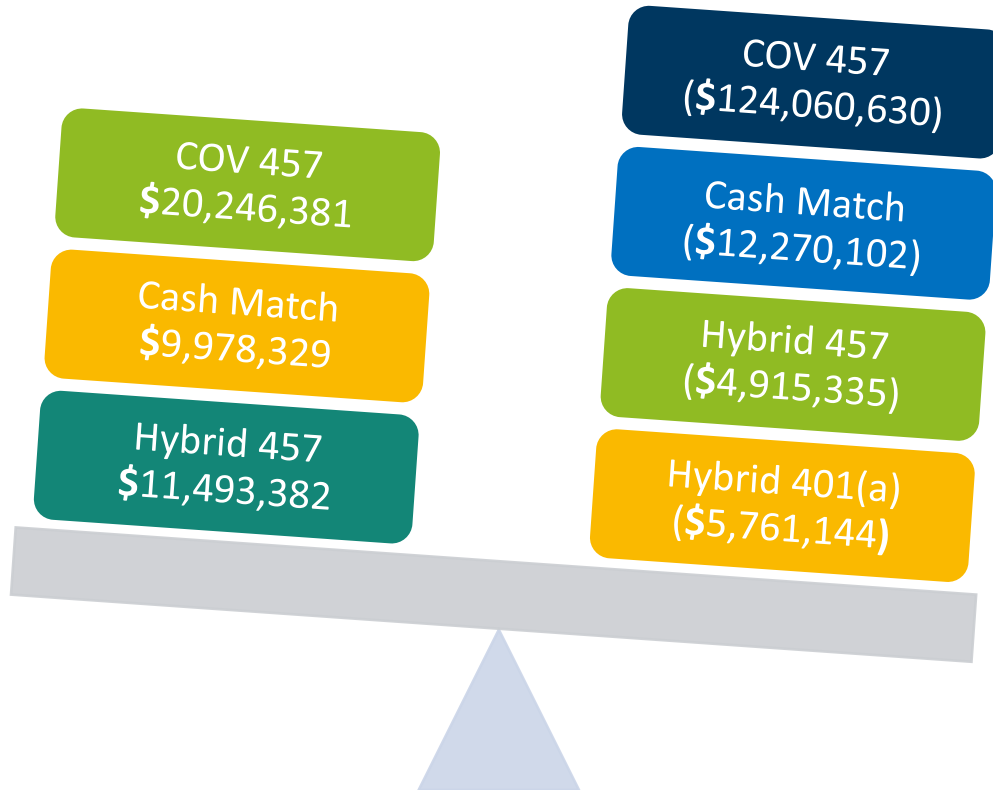
Lump sum payouts are a payout of the participant's full balance.

Hybrid plan members generally have only a few years of participation in the plan, and smaller balances.

Asset Retention – Incoming and Outgoing Rollovers

2021 Incoming Rollovers
Total
\$41,718,091
Up 21% from 2020

2021 Outgoing Rollovers
Total
(\$147,007,211)
Up 36% from 2020



Top 10 Outgoing Rollover Destinations*

Edward Jones
Fidelity
Vanguard
Pershing LLC
Charles Schwab
TD Ameritrade
LPL Financial
Wells Fargo Bank
Thrift Savings Plan
TIAA

These account for 44% of rollover transactions and 49% of rollover assets

Data reflects transactions processed in 2021.
*Includes outgoing rollovers from ALL MissionSquare plans.

Asset Retention – Unforeseen Emergency Withdrawals (UEW)

UEW requests decreased dramatically in 2020 due to the availability of Coronavirus-Related Distributions. Requests have not picked back up to pre-pandemic levels, potentially due to continued eviction moratoriums.

Historical UEW Data				
Year	Received	% Approved	Appealed	% Approved
2017	750	61%	23	48%
2018	748	61%	32	34%
2019	731	56%	22	64%
2020	277	49%	6	67%
2021	303	52%	6	33%



Medical bills are the top contributor to UEWs and account for between **50%** and **75%** of approved withdrawals.



Evictions and foreclosures are typically the 2nd highest contributor.

Asset Retention – Small Balance Distributions

Small Balance Distribution Process



Purpose

- Flat fee pricing results in small, inactive balances eventually being absorbed by fees
- Provides impacted participants with an opportunity to direct their own distribution, including consolidation



Timing/Frequency

- Semi-Annual (6/30 and 12/31)



Criteria

- Separation from covered employment of 90 days or more
- Individual plan balance less than \$200

Process

- Initial report provided to VRS for review.
- VRS staff validates the report and, if necessary, makes any updates.

- Notification letter provided 30 days in advance.
- Provides an opportunity to consolidate multiple VRS DC plan balances or to elect a rollover elsewhere.

- If no response is received, small balance distribution is processed.

Asset Retention – Small Balance Distributions

Small Balance Distributions December 2021		Total distributions – 1,361 Average Distribution - \$116		
Plan Name	Hybrid 401(a) CM Plan	COV 457 Plan	VA CM Plan	Hybrid 457 Plan
No. of Accounts	158	231	319	654
Asset Total	\$17,320	\$24,287	\$29,172	\$87,062

Asset Retention Efforts

Updated Distribution Process

- Specific form for rollover requests with enhanced messaging



DIRECT ROLLOVER/TRANSFER REQUEST COMMONWEALTH OF VIRGINIA 457 DEFERRED COMPENSATION PLAN

You work hard to build retirement security throughout your career. At every stage, you have important decisions to make about your retirement savings, including the money in your VRS Defined Contribution Plan (DCP). Please take time to carefully review your options.

- Review the *Leaving Employment Guide* to learn about the benefits of staying in the VRS DCP.
- Consider consolidating or rolling assets from other eligible retirement plans or traditional IRAs into your VRS defined contribution plan account.
- Compare your DCP to your alternate savings plan options by completing the checklist in the *Leaving Employment Guide*.
- Review the *Special Tax Notice Regarding Plan Payments* at the end of this application.
- Meet with your VRS Defined Contribution Plans Retirement Specialists to learn about investment and withdrawal strategies that maximize your chances of reaching your retirement goals.

Visit www.vrsire.org/plans and select your plan to get started. Select Publications to view the *Leaving Employment Guide*. Select Education then DC Plans Specialists to schedule an individual meeting or attend a webinar.

It is important to ensure you are using the most recent version of this form. Failure to do so will result in your request not being processed. Visit www.vrsire.org/leg, select your plan, log into Account Access and download the latest version of the form.

MissionSquare Retirement cannot release your funds until VRS is able to confirm that you are entitled to make a transfer from the Plan.

Incomplete or Inaccurate Information — In the event any section of the Direct Rollover/Transfer Form is incomplete or inaccurate, MissionSquare may not be able to process the transaction requested on the form. You may be required to complete a new form or provide additional information before the transaction will be processed.

Changes to Your Request — If you make a change to the Direct Rollover/Transfer Form as you are completing it, you must cross out any previously elected choice(s) and initial all changes. If you do not initial all changes, the form may be returned to you for verification or your Direct Rollover/Transfer may not be approved.

ROLLOVER METHOD

Transfer to an Eligible 457(b) Plan — You must determine whether your new employer's plan accepts eligible 457(b) plan transfers. Indicate the dollar amount or percentage of your

account balance you want to transfer and provide the company name, account number, mailing address, city, state, zip code and a phone number for your transfer. A check for the amount of the transfer will be payable to the new service provider for your benefit.

Direct Rollover to an Eligible Plan, or IRA — You must determine whether your new employer's plan or IRA accepts eligible rollover distributions.

Beginning in the later of the year you attain age 70½ (if you were born before July 1, 1949), or after age 72 (if you were born after June 30, 1949) or the year during which you sever employment, you may not roll over that portion of a distribution equal to your required minimum distribution amount.

If you are requesting a direct rollover, an eligible rollover distribution is paid from your Plan directly to an eligible retirement plan or to a Traditional IRA.

Indicate the dollar amount or percentage of your account balance you want to roll over and provide the company name, account number, mailing address, city, state, zip code and a phone number for your direct rollover.

If you choose this Distribution Method, a Form 1099-R will be issued for reporting purposes; however, no federal income tax will be automatically withheld from amounts directly rolled over.

At MissionSquare, we take security of our participants retirement assets seriously. We have security measures in place and we continuously apply enhancements to safeguard your assets.

Additional care is taken regarding the security of your account when processing rollover requests. Adding or changing information regarding personally identifiable information on file with MissionSquare may delay your rollover.

Financial Planning Services

- Launched April 2021
- Around 25% of users have separated employment or retired
- Popular topics include:
 - Retirement income
 - Retirement planning
 - Distribution order
 - Tax planning

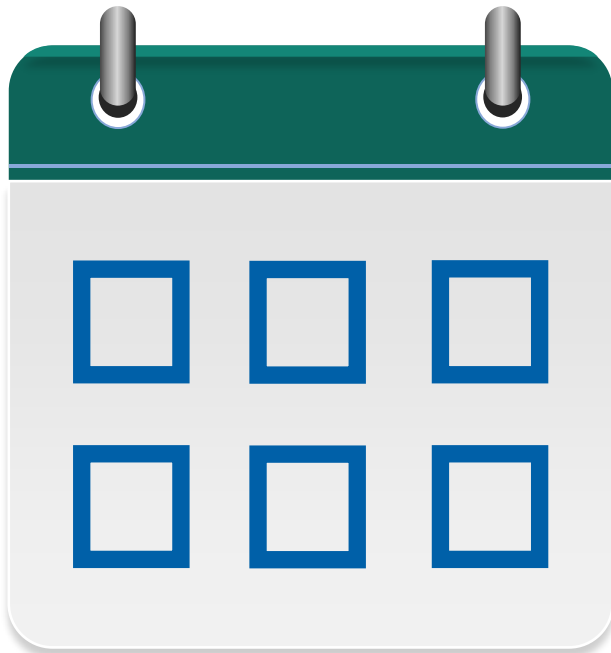


Leaving Employment Guide

Seven Reasons to Stay Plan Comparison Checklist

Seven Reasons to Stay		
1	Low fees	VRS Defined Contribution Plans offer you low administrative fees and investment products that are competitively priced relative to similar investment options offered in the retail market. Lower fees allow you to keep more of your retirement money working for you.
2	Tax-efficient compounding	By leaving your money in your VRS Defined Contribution Plan, you enjoy the benefits of tax deferred saving. You pay no federal income taxes on the money in your account and the savings — until you receive it. Consider the growth potential of your account. If you do not take a withdrawal, you continue to earn interest on your money. And then that interest earns interest. That's called compound interest, and it can help your account to grow over time.
3	VRS DC Plan Representatives	VRS Defined Contribution Plans are serviced by knowledgeable, salaried Defined Contribution Plans Retirement Specialists of MissionSquare Retirement, who are dedicated to supporting the plans and providing education. They are available — at no additional cost to you — to help you up to date on how to best plan for transition to and from retirement. Visit www.vrsire.org/dcp/plans , select your plan and click Education or call VRS-DC-PLANS (877-327-5261) to contact your local representative.
Compare Your VRS Plan to Alternate Savings Plan Options		
4	Investment options to meet changing need	
5	A variety of distribution options	
6	Convenient account access	
7	Consolidation options	
		<i>MissionSquare Retirement registered broker-dealer as "the plan will assign income"</i>
Feature	Your VRS Plan	Alternate Plan
Plan Administrative Fees	\$30.50 flat fee annually	
Charged for administration, management, maintenance and service fees (fees reduce your savings and add up over time)		
Fund Operating Expense (Expense Ratio)	Fees are available on the website at www.vrsire.org/dcp/plans , then select your plan. The expense ratios include any required fund fees and expenses.	
Annualized asset based expenses that can change from time to time, expressed as a ratio (expenses divided by net assets)	Yes	
Dedicated Plan Representatives	Personalized, one-on-one assistance, relevant group seminars and webinars	
Customized Education Resources	Yes, visit www.vrsire.org/dcp	
Dedicated plan website, education materials, interactive online calculators, videos and other tools	Yes	
Plan Oversight	Dedicated plan oversight to ensure your best interests are served (looks best value and suitable investment options, negotiates competitive pricing)	
Diversified Investment Options	Plan investments carefully reviewed and selected	Core investments are selected and reviewed by the VRS Investment Department. In addition to core investments, a Self-Directed Brokerage Account option is made available through the Plan's record keeper. The VRS Investment Department does not select or have any oversight responsibilities regarding any investments available through the brokerage option.
12b-1 Distribution Fees	None	
Charged to cover marketing costs and expenses for distributing their product		
Mortality and Expense Risk Fees	None	
Direct insurance charge; relates to most annuity investments		
Surrender and Transfer Fees	None	
Charged for early withdrawal from an annuity investment		
Short-Term Trading/Redemption Fees	None	
Charged when money is withdrawn from a fund over a short period of time		





Upcoming Events

TIAA Annual Service Review

Scheduled for June 28, 2022.

MissionSquare Annual Service Review

Will be scheduled for late summer 2022.

Annual service provider reviews are delegated to staff.

Annual Fee Disclosures

ORPHE – distributed mid-September.

All other plans – distributed with 3rd quarter statements.

ORPHE Annual Employer Update

Scheduled for September 29, 2022.

ORPHE Open Enrollment

Held annually in October. Allows participants to change providers for future contributions.



Virginia
Retirement
System

DC Plans Unbundled Recordkeeper Project Status



Unbundled Record Keeper Contract

Project Status

- Sageview Consulting procured to assist with the RFP process
- Andrew Ness is the primary consultant assisting VRS and has assisted us with similar projects



Thank You!

DC Plans Investments

June 2, 2022

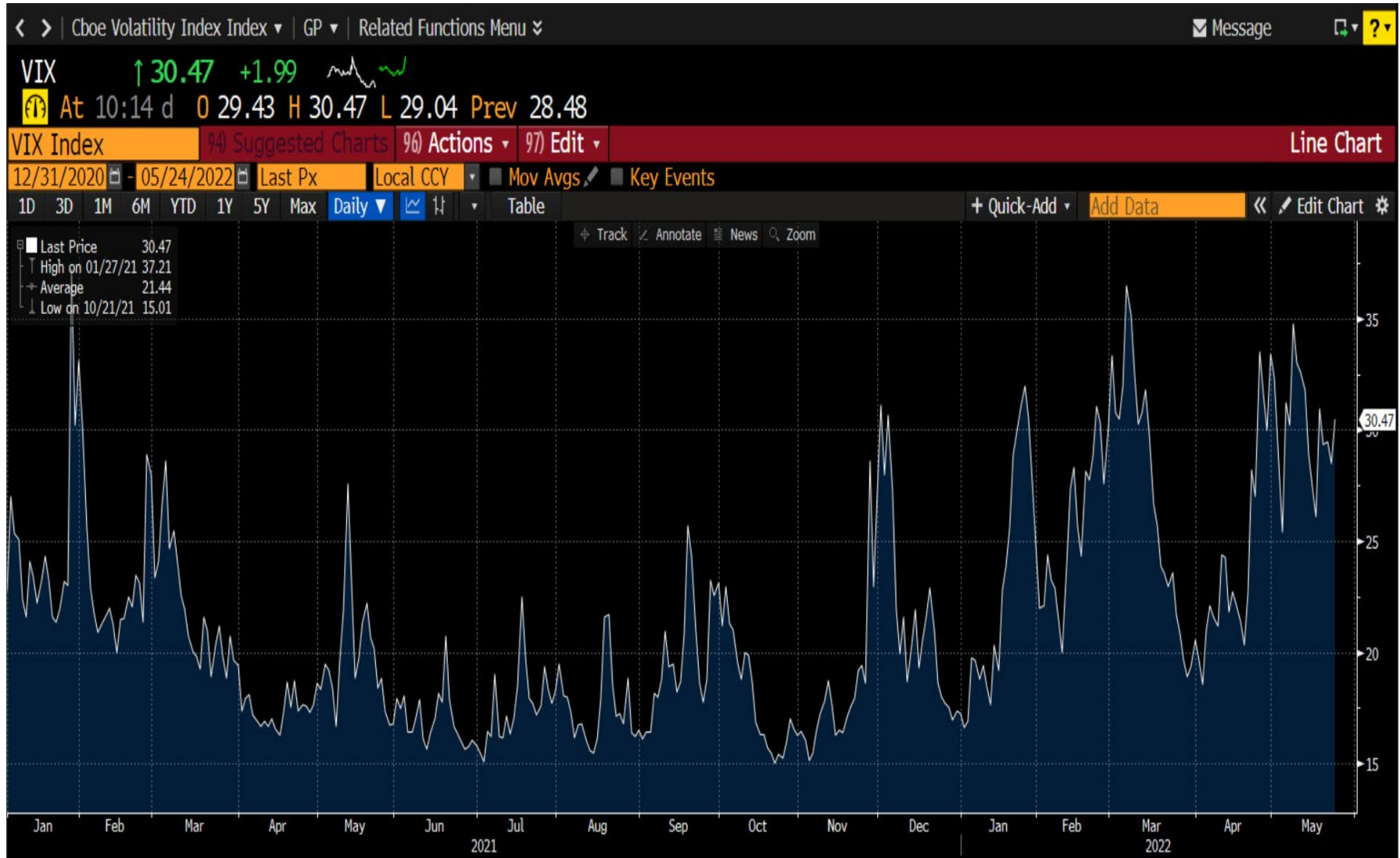




Performance



Volatility Index



Markets Ending 4/30/2022*

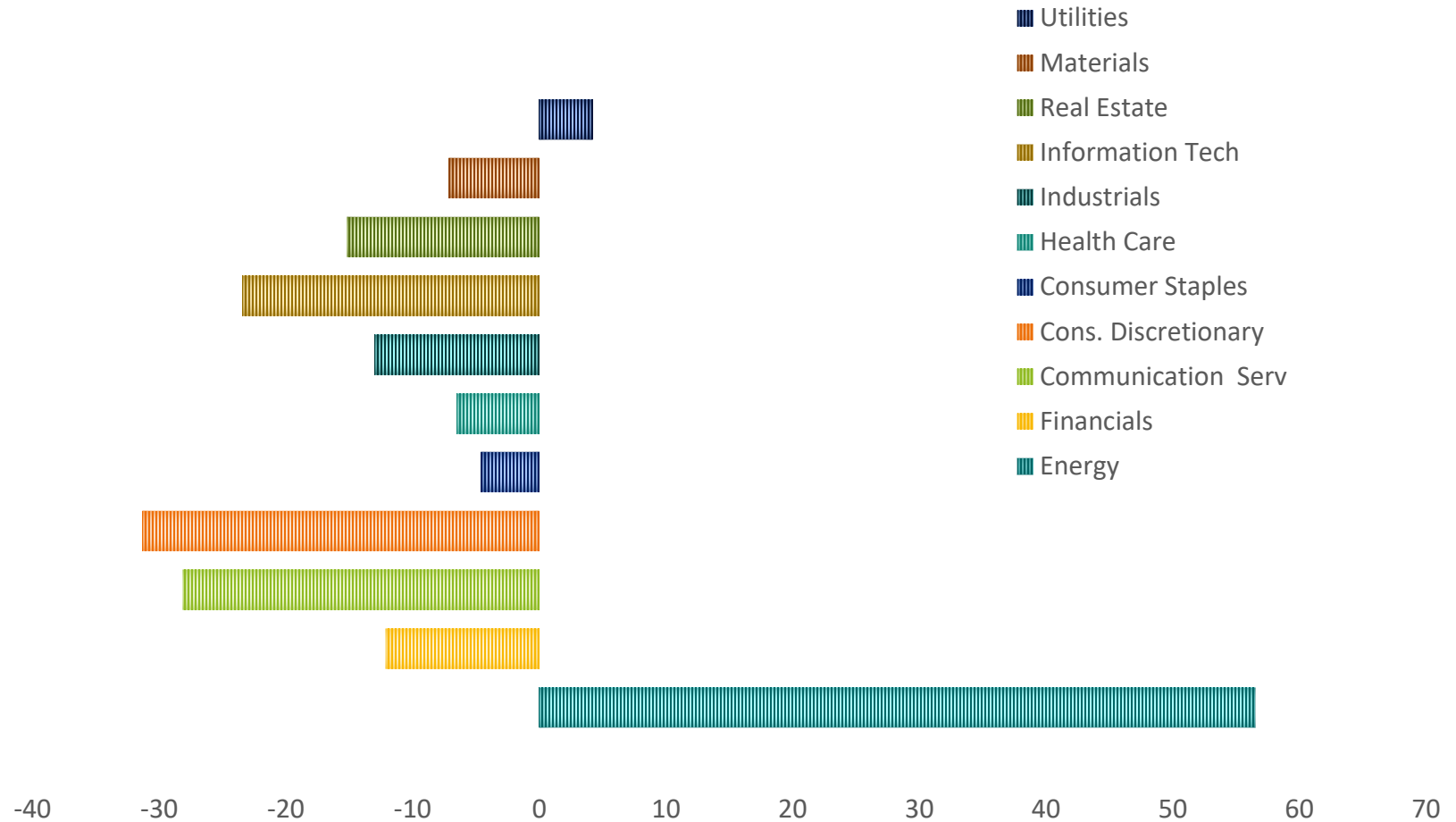
Benchmark	YTD	1 Year	3 Years	5 Years	10 Years
FTSE 3 Month Treasury Bill Index	0.06%	0.08%	0.71%	1.09%	0.61%
Bloomberg U.S. Aggregate Bond Index	-9.50%	-8.51%	0.38%	1.20%	1.73%
Bloomberg U.S. TIPS Index	-5.00%	0.75%	5.37%	3.88%	2.27%
ICE BofA U.S. HY BB-B Constrained Index	-7.99%	-5.05%	2.69%	3.57%	5.10%
S&P 500 Index	-12.92%	0.21%	13.85%	13.66%	13.67%
Russell 2500 Index	-13.84%	-11.73%	9.20%	9.44%	11.17%
MSCI ACWI ex-U.S. IMI Index	-11.55%	-10.34%	4.66%	5.06%	5.25%
MSCI ACWI IMI Index	-12.97%	-6.21%	9.21%	9.19%	9.17%
FTSE EPRA/NAREIT Developed Index	-9.21%	1.68%	3.93%	5.08%	6.07%

Source: BNY Mellon and MSCI

* Returns greater than one year are annualized.

S&P 500 Sector Total Returns YTD Ending 5/25/2022

(Source: S&P)



Defined Contribution Plans Advisory Committee Report
Unbundled Plans Investment Performance

Below are the totals for the period ending April 30, 2022. Returns greater than one year are annualized.

	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 ²⁷	% of Participants Selecting an Option ²⁸
	%	%	%	%	%	%	%	%		\$	%	%
Do-It-For-Me: Target Date Portfolios^{3,4}												
Retirement Portfolio	-5.20	-7.16	-10.06	-6.34	4.84	5.02	4.93	0.08	8/1/05	386,925,287	6.3	5.3
Custom Benchmark	-5.19	-6.98	-10.01	-6.21	4.84	5.00	4.90					
Target Date 2025 Portfolio	-5.51	-7.27	-10.36	-6.04	5.64	6.06	6.32	0.08	7/5/06	328,311,827	5.4	6.2
Custom Benchmark	-5.50	-7.03	-10.27	-5.88	5.65	6.04	6.27					
Target Date 2030 Portfolio	-6.02	-7.52	-10.88	-5.81	6.63	6.98	7.09	0.08	8/1/05	327,965,628	5.4	8.0
Custom Benchmark	-6.01	-7.19	-10.75	-5.60	6.65	6.95	7.03					
Target Date 2035 Portfolio	-6.51	-7.78	-11.41	-5.66	7.56	7.84	7.81	0.08	7/5/06	339,151,548²⁴	5.6	9.2
Custom Benchmark	-6.50	-7.37	-11.23	-5.40	7.59	7.80	7.73					
Target Date 2040 Portfolio	-6.99	-8.06	-11.97	-5.60	8.35	8.57	8.42	0.08	8/1/05	291,427,653	4.8	9.2
Custom Benchmark	-6.98	-7.57	-11.72	-5.29	8.39	8.54	8.34					
Target Date 2045 Portfolio	-7.41	-8.32	-12.45	-5.61	9.01	9.13	8.90	0.08	7/5/06	277,258,009	4.5	10.4
Custom Benchmark	-7.39	-7.75	-12.17	-5.27	9.04	9.09	8.81					
Target Date 2050 Portfolio	-7.68	-8.51	-12.79	-5.69	9.32	9.37	9.17	0.08	9/30/07	278,642,642	4.6	12.0
Custom Benchmark	-7.65	-7.90	-12.49	-5.35	9.36	9.34	9.09					
Target Date 2055 Portfolio	-7.76	-8.57	-12.87	-5.73	9.37	9.40	9.32	0.08	5/19/10	328,495,371	5.4	16.0
Custom Benchmark	-7.73	-7.95	-12.58	-5.39	9.42	9.37	9.23					
Target Date 2060 Portfolio	-7.76	-8.58	-12.88	-5.74	9.36	9.39	8.12	0.08	11/17/14	156,889,373	2.6	12.4
Custom Benchmark	-7.73	-7.96	-12.58	-5.40	9.42	9.37	8.04					
Target Date 2065 Portfolio	-7.77	-8.60	-12.90	-5.77	n/a	n/a	10.13	0.08	9/23/19	12,272,632	0.2	2.5
Custom Benchmark	-7.74	-7.97	-12.60	-5.42	n/a	n/a	10.34					
Help-Me-Do-It: Individual Options												
Money Market Fund^{5,6}	0.04	0.09	0.11	0.20	0.81	1.26	0.72	0.08	11/1/99	101,598,300	1.7	1.9
FTSE 3 Month Treasury Bill Index	0.03	0.05	0.06	0.08	0.71	1.09	0.61					
Yield as of 04/30/22: 0.56% ⁷												
Stable Value Fund^{8,9}	0.12	0.35	0.47	1.47	1.99	2.05	1.89	0.24	2/1/95	644,155,227	10.6	7.1
Custom Benchmark ¹⁰	0.24	0.57	0.69	1.15	1.09	1.64	1.47					
Yield as of 04/30/22: 1.46% ¹¹												
Bond Fund¹²	-3.78	-7.47	-9.40	-8.45	0.42	1.25	1.80	0.03	11/1/99	156,057,822	2.6	3.4
Bloomberg U.S. Aggregate Bond Index	-3.79	-7.51	-9.50	-8.51	0.38	1.20	1.73					
Inflation-Protected Bond Fund¹³	-2.06	-3.08	-4.98	0.71	5.44	3.97	2.35	0.03	7/30/02	58,720,800	1.0	1.5
Bloomberg U.S. TIPS Index	-2.04	-3.04	-5.00	0.75	5.37	3.88	2.27					
High-Yield Bond Fund¹⁴	-2.46	-3.81	-6.06	-2.78	3.74	4.43	5.57	0.40	5/31/04	48,741,701	0.8	1.8
ICE BofA U.S. High-Yield BB-B Constrained Index	-3.58	-5.30	-7.99	-5.05	2.69	3.57	5.10					
Stock Fund¹⁵	-8.72	-8.17	-12.91	0.22	13.88	13.70	13.71	0.01	11/1/99	1,498,774,869	24.6	10.2
S&P 500 Index	-8.72	-8.17	-12.92	0.21	13.85	13.66	13.67					
Small/Mid-Cap Stock Fund¹⁶	-8.53	-6.01	-13.83	-11.67	9.24	9.47	11.18	0.02	11/1/99	413,733,020	6.8	5.8
Russell 2500 Index ¹⁷	-8.52	-6.02	-13.84	-11.73	9.20	9.44	11.09					
International Stock Fund¹⁸	-6.38	-9.36	-12.31	-11.09	4.54	5.10	5.94	0.06	11/1/99	197,504,136	3.2	4.7
MSCI ACWI ex-U.S. IMI Index ¹⁹	-6.30	-7.81	-11.55	-10.34	4.66	5.06	5.72					
Global Real Estate Fund²⁰	-5.45	-3.76	-9.30	1.97	4.57	5.77	6.90	0.08	10/1/02	109,516,287	1.8	3.1
FTSE EPRA/NAREIT Developed Index ²¹	-5.48	-3.68	-9.21	1.68	3.93	5.08	6.19					
VRSIP²²	2.10	-0.88	-0.88	12.32	12.13	10.15	9.16	0.59	7/1/08	55,560,392²⁵	0.9	0.5
VRS Custom Benchmark ²³	1.19	-1.69	-1.69	7.42	10.54	9.04	8.39					
VRSIP and benchmark returns are reported with a one month lag. [Return information shown is as of March 31, 2022.] [Market value as of March 31, 2022 was \$57,748,503.]												
Do-It-Myself: Self-Directed Brokerage Account												
TD Ameritrade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	90,737,852	1.5	0.2
Total										\$6,102,440,376²⁶		

- 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 Target Date Portfolios invest in units of BlackRock's LifePath Index Funds O. The LifePath Index Funds O invest in the master LifePath Index Funds F. The inception dates shown reflect the inception dates of the master LifePath Funds F. The inception dates for most LifePath Funds O were 12/9/11. The 2055 Fund's O inception date was 12/12/11, the 2060 Fund's O inception date was 1/2/15, and the 2065 Fund's O inception date was 9/23/2019. Returns prior to Funds' O inception dates are those of the Funds F with deductions taken for Funds O 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 Index, Bloomberg U.S. Aggregate Bond 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 date 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. Returns prior to July 2012 represent performance by the previous investment manager, State Street Global Advisors. All 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.
- 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. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 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. The inception date of BlackRock's U.S. Treasury Inflation-Protected Securities Fund M was July 20, 2012. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M's investment management fees.
- 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. Performance reflects the investment manager's returns for the aforementioned Fund with deductions taken for investment management fees negotiated by VRS and fund administrative expenses.
- 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. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 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 strategy inception date. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 17 Effective July 2012, the performance benchmark is the Russell 2500 Index. Prior to July 2012, the performance benchmark was the Russell Small Cap Completeness Index. The benchmark returns are linked.
- 18 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. Returns prior to July 2012 represent performance by the previous manager, State Street Global Advisors. All performance returns are linked.
- 19 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 and prior to July 2012 it was the MSCI EAFE Index. The benchmark returns are linked.
- 20 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. The Fund transitioned from a U.S. domestic REIT fund to a global real estate fund during July 2012. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 21 Effective July 2012, the performance benchmark is the FTSE EPRA/NAREIT Developed Index. Prior to July 2012, the performance benchmark was the Dow Jones U.S. Select REIT Index. The benchmark returns are linked.
- 22 The inception date shown reflects the date the VRS Investment Portfolio (VRSIP) was unitized.
- 23 The VRS Custom Benchmark is a blend of the asset class benchmarks at policy weights.
- 24 Includes Pending Account VRSIP amount of \$417,086.
- 25 Includes Preliminary Investment Portfolio Account - PIP amount of \$0.
- 26 Includes \$5,923,131 held in the administrative Special Accounts.
- 27 May not equal 100% due to rounding.
- 28 The data reflects the percentage of participants who selected a particular investment option as of March 31, 2022. There were 491,132 participant accounts as of March 31, 2022 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.

Defined Contribution Plans Advisory Committee Report
TIAA RC Contract Investment Performance

Below are the totals for the period ending April 30, 2022. 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 O	-5.20	-7.16	-10.06	-6.34	4.84	5.02	4.93	0.08	8/1/05	25,395,145	7.7	8.9
Custom Benchmark	-5.19	-6.98	-10.01	-6.21	4.84	5.00	4.90					
BlackRock LifePath Index 2025 Fund O	-5.51	-7.27	-10.36	-6.04	5.64	6.06	6.32	0.08	7/5/06	19,671,844	6.0	7.1
Custom Benchmark	-5.50	-7.03	-10.27	-5.88	5.65	6.04	6.27					
BlackRock LifePath Index 2030 Fund O	-6.02	-7.52	-10.88	-5.81	6.63	6.98	7.09	0.08	8/1/05	29,053,777	8.9	8.7
Custom Benchmark	-6.01	-7.19	-10.75	-5.60	6.65	6.95	7.03					
BlackRock LifePath Index 2035 Fund O	-6.51	-7.78	-11.41	-5.66	7.56	7.84	7.81	0.08	7/5/06	22,830,122	7.0	9.1
Custom Benchmark	-6.50	-7.37	-11.23	-5.40	7.59	7.80	7.73					
BlackRock LifePath Index 2040 Fund O	-6.99	-8.06	-11.97	-5.60	8.35	8.57	8.42	0.08	8/1/05	25,747,685	7.8	9.7
Custom Benchmark	-6.98	-7.57	-11.72	-5.29	8.39	8.54	8.34					
BlackRock LifePath Index 2045 Fund O	-7.41	-8.32	-12.45	-5.61	9.01	9.13	8.90	0.08	7/5/06	21,821,275	6.7	10.3
Custom Benchmark	-7.39	-7.75	-12.17	-5.27	9.04	9.09	8.81					
BlackRock LifePath Index 2050 Fund O	-7.68	-8.51	-12.79	-5.69	9.32	9.37	9.17	0.08	9/30/07	12,865,267	3.9	8.1
Custom Benchmark	-7.65	-7.90	-12.49	-5.35	9.36	9.34	9.09					
BlackRock LifePath Index 2055 Fund O	-7.76	-8.57	-12.87	-5.73	9.37	9.40	9.32	0.08	5/19/10	5,842,689	1.8	5.9
Custom Benchmark	-7.73	-7.95	-12.58	-5.39	9.42	9.37	9.23					
BlackRock LifePath Index 2060 Fund O	-7.76	-8.58	-12.88	-5.74	9.36	9.39	8.12	0.08	11/17/14	1,252,689	0.4	2.5
Custom Benchmark	-7.73	-7.96	-12.58	-5.40	9.42	9.37	8.04					
BlackRock LifePath Index 2065 Fund O	-7.77	-8.60	-12.90	-5.77	n/a	n/a	10.13	0.08	9/23/19	1,419,729	0.4	1.0
Custom Benchmark	-7.74	-7.97	-12.60	-5.42	n/a	n/a	10.34					
Individual Options												
BlackRock Short-Term Investment Fund W ⁵	0.04	0.09	0.11	0.20	0.81	1.26	0.79	0.08	7/1/03	5,584,628	1.7	7.7
FTSE 3 Month Treasury Bill Index	0.03	0.05	0.06	0.08	0.71	1.09	0.61					
Yield as of 04/30/22: 0.56% ⁶												
BlackRock U.S. Debt Index Fund M ⁷	-3.78	-7.47	-9.40	-8.45	0.42	1.25	1.80	0.03	6/6/96	8,708,911	2.7	18.5
Bloomberg U.S. Aggregate Bond Index	-3.79	-7.51	-9.50	-8.51	0.38	1.20	1.73					
BlackRock U.S. TIPS Fund M ⁸	-2.06	-3.08	-4.98	0.71	5.44	3.97	2.35	0.03	7/30/02	5,251,656	1.6	12.7
Bloomberg U.S. TIPS Index	-2.04	-3.04	-5.00	0.75	5.37	3.88	2.27					
BlackRock Equity Index Fund J ⁹	-8.72	-8.17	-12.91	0.22	13.88	13.70	13.71	0.01	3/5/97	35,164,135	10.7	24.8
S&P 500 Index	-8.72	-8.17	-12.92	0.21	13.85	13.66	13.67					
BlackRock Russell 2500 Index Fund M ¹⁰	-8.53	-6.01	-13.83	-11.68	9.23	9.46	11.26	0.04	9/30/08	8,390,131	2.6	4.7
Russell 2500 Index	-8.52	-6.02	-13.84	-11.73	9.20	9.44	11.17					
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M ¹¹	-6.39	-9.38	-12.33	-11.13	4.49	5.05	5.34	0.11	2/28/11	15,468,530	4.7	18.6
MSCI ACWI ex-U.S. IMI Index	-6.30	-7.81	-11.55	-10.34	4.66	5.06	5.25					
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M ¹²	-7.96	-8.79	-13.22	-6.51	9.29	9.41	8.96	0.05	4/12/13	42,505,071	13.0	32.7
MSCI ACWI IMI Index	-7.94	-8.21	-12.97	-6.21	9.21	9.19	8.65					
TIAA Real Estate Account ¹³	1.42	5.53	6.93	21.74	8.89	7.32	7.88	0.87	10/2/95	11,618,668	3.5	27.0
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}	0.35	0.97	1.26	3.60	3.83	3.93	4.15	0.47	8/1/05	24,873,004	7.6	28.9
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	4,829,785	1.5	0.8
Total										\$328,294,741		

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 O 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 O were 12/9/11. The 2055 Fund's O inception date was 12/12/11, the 2060 Fund's O inception date was 1/2/15 and the 2065 Fund's O inception date was 9/23/19. Returns prior to Funds' O inception dates are those of Funds F with deductions taken for Funds O investment management fees.
- 4 Benchmarks are calculated using blended returns of third-party indices that proportionately reflect the respective weightings of the Funds' asset classes. Weightings are adjusted quarterly to reflect the Funds' 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 Index, Bloomberg U.S. Aggregate Bond 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 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 1/30/13. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M'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 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 not require a minimum transaction amount; however, in the future TIAA reserves the right, in its sole discretion, to impose minimum transaction levels, which levels will generally be at least \$1,000 (except for systematic transfers, which must be at least \$100) or your entire accumulation, if less. Participants may not make a lump-sum transfer into the REA if their aggregated balances across all contracts is greater than \$150,000. Systematic transfers and recurring contributions are not subject to this limitation.
- 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 1%. 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 April was 4.50%.
- 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. The 45 basis points (0.45%) approximates the expense provision in the formula for determining TIAA Traditional Annuity returns inclusive of administrative and investment expenses. This expense provision is not guaranteed, it is subject to change.
- 19 May not equal 100% due to rounding
- 20 The data reflects the percentage of participants who selected a particular investment option as of March 31, 2022. There were 5,218 (RC contract) participants as of March 31, 2022.

Performance returns shown reflect all fund management fees and other investment related expenses, but do not reflect the TIAA annual administrative fee of \$66 (deducted at \$16.50 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.

- Consistent Consumption
- Glidepath
 - Equity starting point: 99%
 - Equity landing point: 40%
- Continual research: Focus on target date evolution to improve outcomes
- Recent research: Disaggregating the Bloomberg U.S. Aggregate Bond Index suggests BlackRock can improve investors' lifetime consumption by varying their fixed income exposures

Disaggregation allows BlackRock to weight sectors according to participant objectives at different ages rather than index weights.

Five Components:
(more precision)

Intermediate Government

Long Government

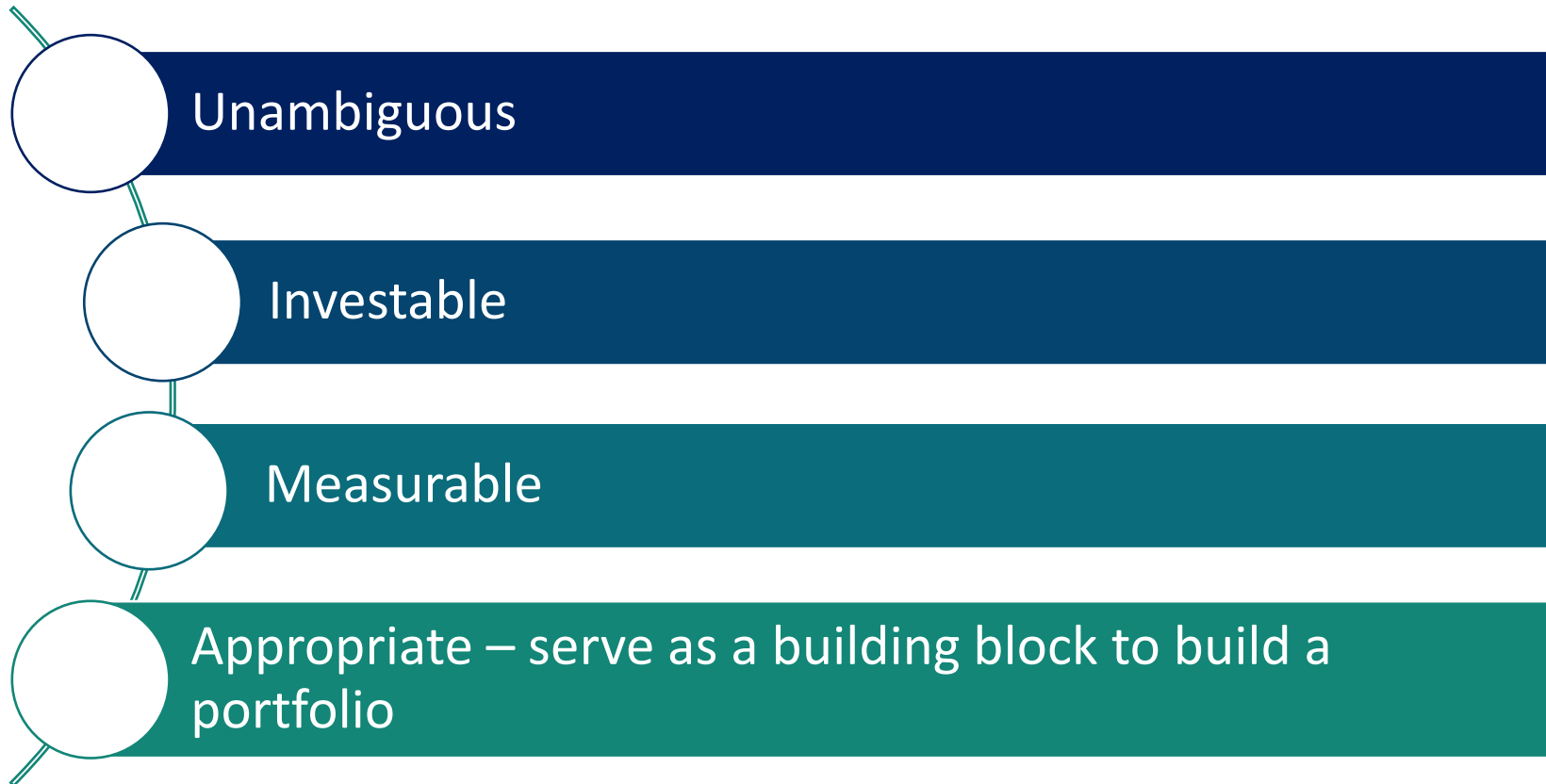
Intermediate Credit

Long Credit

Securitized

Benchmark Review





Correlations

Correlations: 5 Years Ending 3/31/2022

Benchmark	FTSE 3 Month Treasury Bill	Bloomberg U.S. Agg Bond	Bloomberg U.S. TIPS	ICE BofA U.S. HY BB-B Constrained	S&P 500	Russell 2500	MSCI ACWI ex- U.S. IMI	FTSE EPRA/NAREIT Developed
FTSE 3 Month Treasury Bill	1.00							
Bloomberg U.S. Agg Bond	0.35	1.00						
Bloomberg U.S. TIPS	0.03	0.81	1.00					
ICE BofA U.S. HY BB-B Constrained	-0.05	0.31	0.45	1.00				
S&P 500	-0.15	0.08	0.32	0.77	1.00			
Russell 2500	-0.17	0.06	0.29	0.83	0.91	1.00		
MSCI ACWI ex-U.S. IMI	-0.18	0.08	0.28	0.81	0.89	0.89	1.00	
FTSE EPRA/NAREIT Developed	-0.12	0.21	0.44	0.78	0.82	0.82	0.81	1.00

Source: Zephyr StyleAdvisor

- All use market cap weighted benchmarks
- S&P 500 Index is the most widely used in the large-cap equity space
- Bloomberg U.S. Aggregate Index is the most widely used in the core fixed income space
- Russell 2000 Index is the most widely used in the small-cap equity space
- No predominant index used in the mid-cap equity space
- MSCI ACWI ex-U.S. Index is widely used along with MSCI EAFE in the international equity space
- Limited uptake in real estate (REIT) space

2022 PIMCO US DC Consultant Study Highlights



2022 PIMCO US Consulting Study



Overview

In its 16th year, the **PIMCO US Defined Contribution Consulting Study** seeks to help consultants, advisors and plan sponsors understand the breadth of views and consulting services available within the defined contribution (DC) marketplace.

Our 2022 study captures data, trends and opinions from **36 consulting and advisory firms** who serve over **37,000 clients** with aggregate DC assets in excess of **\$6.9 trillion**.

All responses were collected from January 4, 2022 through March 7, 2022.

Participating Firms¹

AndCo Consulting	Clearstead	Marquette Associates	RVK
Aon	Cook Street Consulting, Inc.	Marsh & McLennan Companies*	SageView Advisory Group*
Bellwether Consulting	Fiducient Advisors	Meketa Investment Group	Segal Marco Advisors
Callan	Gallagher (Chicago)*	Mercer	USI Advisors Inc*
Cambridge Associates	GSAM/Rocaton Investment Advisors	Multnomah Group, Inc.	Verus
Capital Cities	Highland Consulting Associates	NEPC, LLC	Wilshire
Capital Strategies Inv Group	HUB International*	Newport Group	
CAPTRUST*	Hyas Group	NFP*	
CBIZ Retirement Plan Services*	Innovest Portfolio Solutions, LLC	OneDigital*	
Cerity Partners*	LCG Associates, Inc.	Russell Investments	

1. List includes firms with \$10B in DC AUM or more. Firms with less than \$10B in DC AUM were included in topline results but not included in individual results.

* "Aggregator" – Independent DC focused advisors with shared resources; "Institutional Consultant" – traditional large plan consultant firms

Key Findings

Services offered by consultants remained constant; retirement income product evaluations now the fastest growth service

- Key priorities for consultants focus on enhancing OCIO capabilities and expanding custom investment solutions capabilities; Aggregators are focusing on acquisition or mergers and expanding research capabilities
- Retirement income product evaluation services is the highest growth service for consultants
- 4 out of 5 Aggregators offer Advisor Managed Accounts compared to only 4% of Institutional Consultants

Client Priorities: Target date funds (TDF) and Retirement Income remain top two; evaluating fees shifting down

- Reviewing TDFs are the top priority, followed by reviewing retirement income solutions
- Evaluating ESG options emerges to the top five priorities
- Evaluating investment and administration fees fell meaningfully as a priority and are now ranked below 50%

Target date funds dominance as preferred QDIA continues; growing advocacy for Blend format

- TDFs remain as the near-unanimous recommended default. Glidepath, fees, and the quality of underlying funds remain the leading selection factors
- Most important glidepath factors are the level of drawdown risk near retirement and the level of diversification
- Recommendations for blend TDFs increased in five of six plan size categories
- Despite custom being the most common recommendation, off-the-shelf typically implemented

Consultants report a significant majority of sponsors want to retain retiree assets; consensus growing on steps recommended for servicing retiree needs

- Over the last eight years, consultants report a significant increase in the number of sponsors who prefer to retain retiree assets, up to 76% from 46% in 2015. Today, only 6% prefer retirees move their assets out
- Over half of consultants' clients have either implemented or plan to implement a retirement-tier
- Plan design items (distribution flexibility, retirement education/tool, and communicating the value of staying in the plan) combined with retiree-focused investment options are recommended to retain assets

Key Findings

White label assets represent 17% of institutional clients' advised assets

- Almost \$1T in white label assets managed by consultants – this is 17% of the assets advised by this segment.
- Predominant form of white label is multi-manager (80%) as opposed to single manager.

Core menu: Substantial increases in fixed income recommendations and inflation-protection strategies

- Non-U.S. Bonds, U.S. Bonds and Emerging Market Equity top three asset classes where active management is most important.
- Within fixed income, increased recommendations within income-focused multi-sector, investment grade, and high yield.
- Within inflation protection, TIPS and Multi-Asset are the most frequent top choice.

Interest in ESG and alternatives increasing

- A majority of consultants (83%) consider ESG when selecting investment options; 40% of consultants state evaluating and/or adding ESG options is among their clients' top priorities
- Consultants almost evenly split as to best practice for offering ESG: 43% recommend it be an evaluation factor for all funds while 39% prefer to offer funds explicitly branded ESG.
- One third of consultants believe private investments benefit all clients' multi-asset portfolios; direct real estate, private equity and private credit receive highest consideration.

Consultants state cyber risk is fairly well addressed by providers

- Over 75% of consulting firms now track cybersecurity breaches; three quarters say cyber risk is fairly well addressed by providers
- Types of analysis varies by consulting firm, with Summaries or Analysis Reports provide by the Vendor the most common sources of information.



2022 PIMCO US DC Consulting Study

May 2022

IMPORTANT NOTICE

This material contains opinions of survey respondents as of the date noted and not necessarily those of PIMCO. Such opinions are subject to change without notice and may not have been updated to reflect real time market developments. The results have been distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product.

For Institutional Investor Use Only – Not for Public Distribution

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Capital Cities	Highland Consulting Associates	NEPC, LLC	Wilshire
Capital Strategies Inv Group	HUB International*	Newport Group	
CAPTRUST*	Hyas Group	NFP*	
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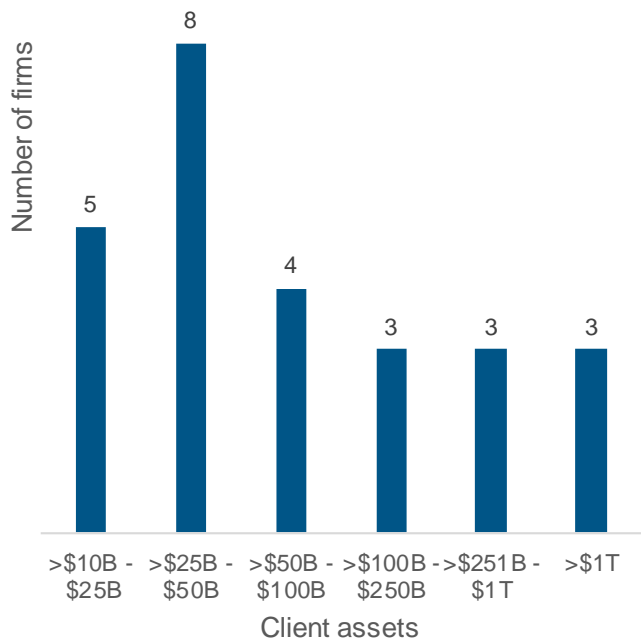
Consultant Organization and Services

Consultants by DC Assets, Number of Clients, and Median Plan Size

\$5.6T in Study assets represent over 50% of DC market*

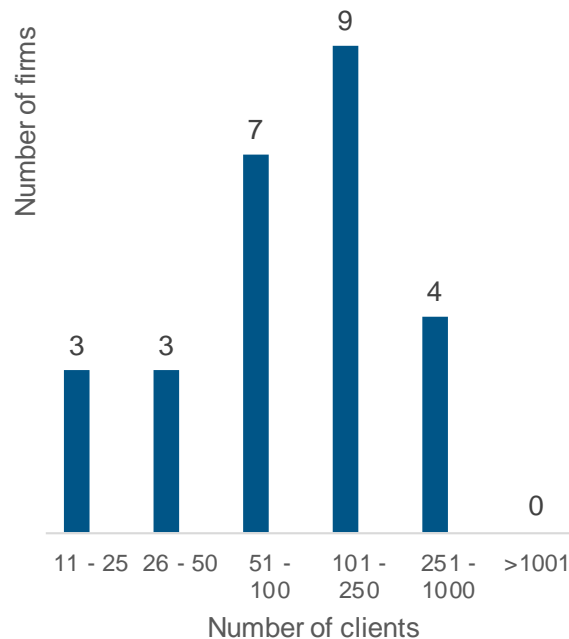
DC ASSETS

Average: \$288B
Median: \$48B
Total: \$5.7T

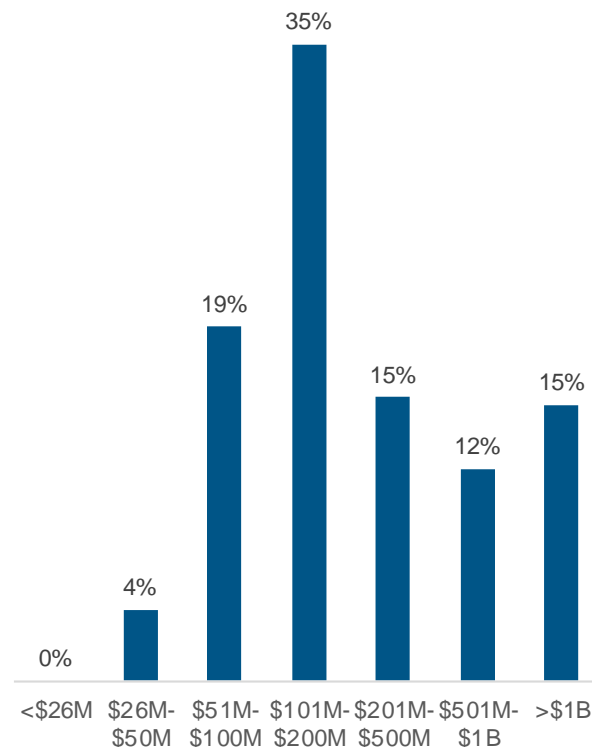


NUMBER OF CLIENTS

Average: 180
Median: 114
Total: 4,675



MEDIAN PLAN SIZE



1. What are the total assets in the defined contribution (DC) plans represented by your DC client base across these client types? (n=26)

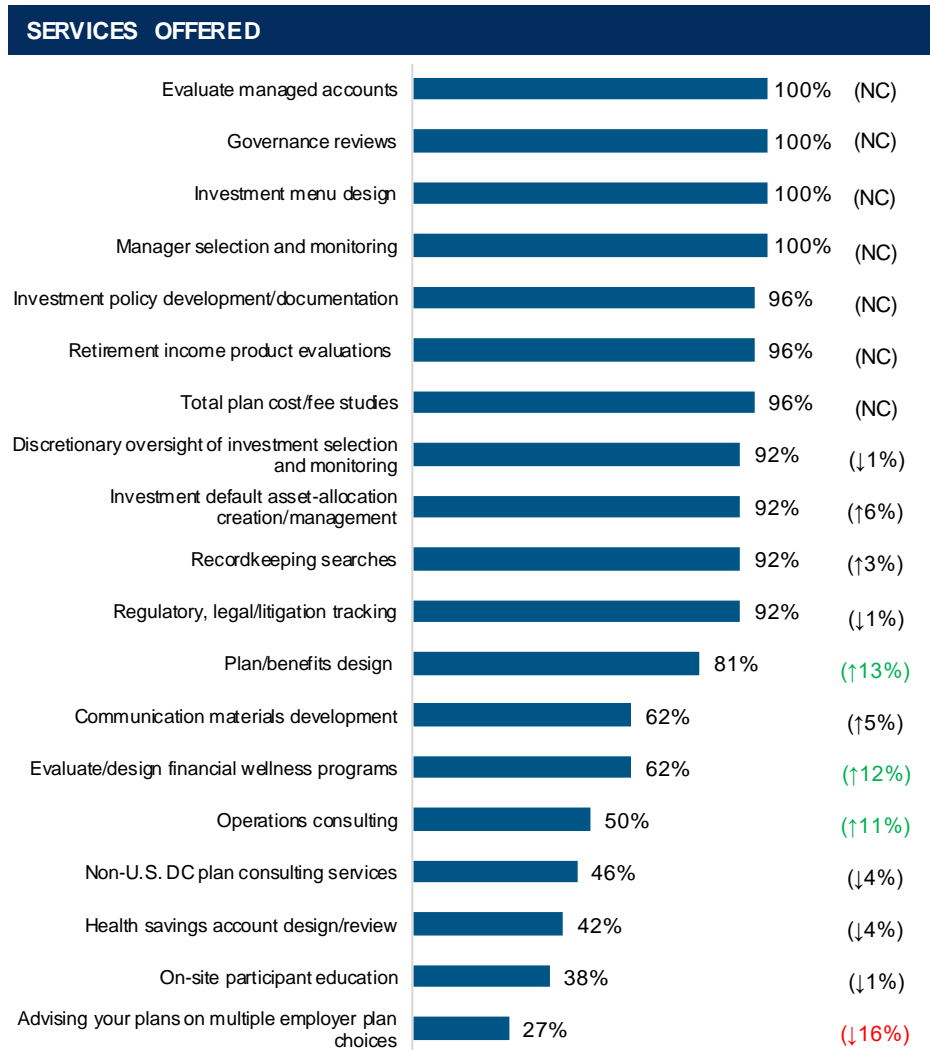
*\$11T; ICI.org; Defined Contribution Plan Assets by Type of Plan, December 2021

2. How many DC clients does your firm currently serve across these client types? (n=26)

3. What is your best estimate as to the median plan size (in millions) of DC plans you currently manage? (n=26)

Defined Contribution Services Offered and Highest Growth

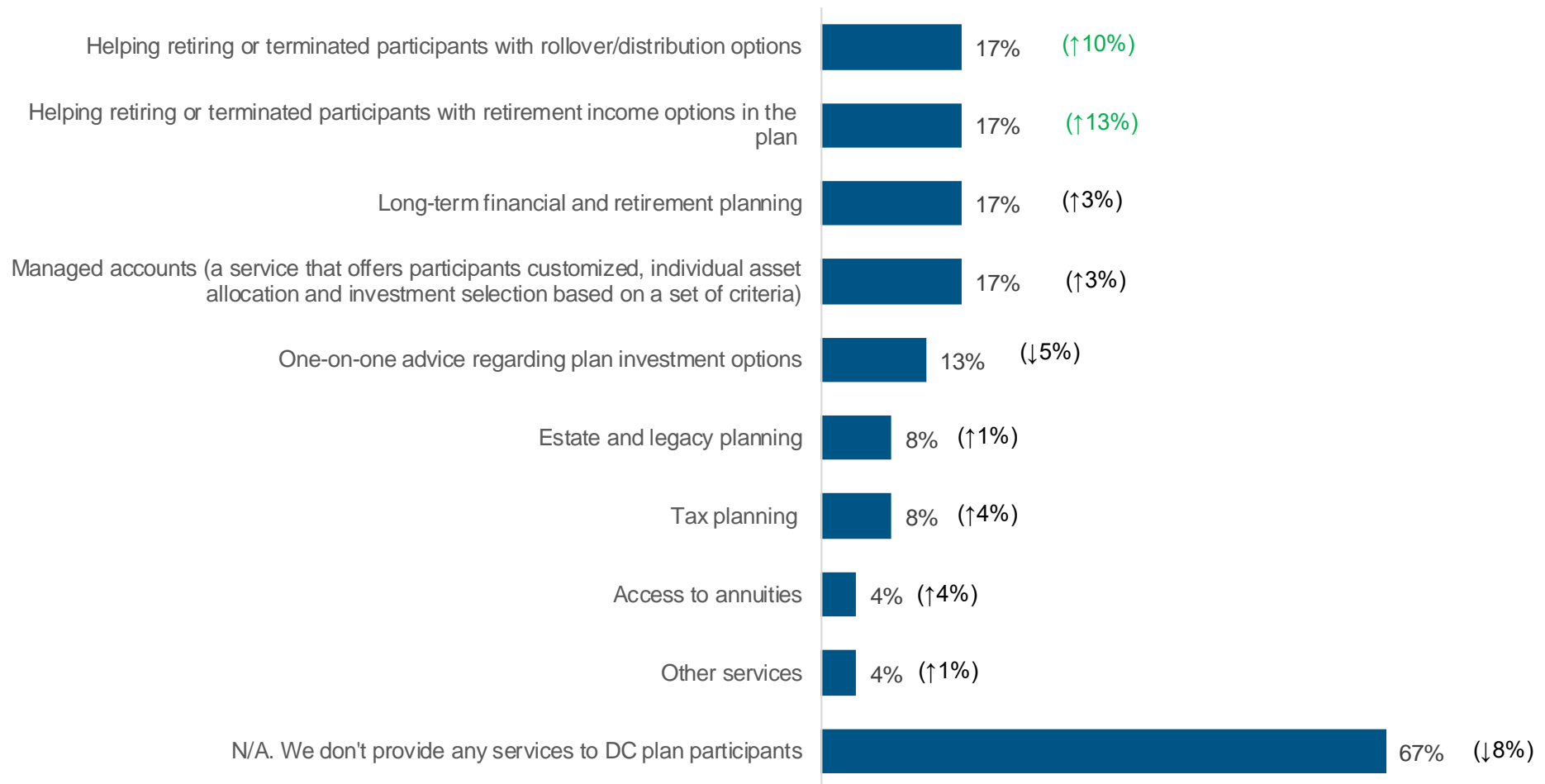
Consultants see growth of retirement income product evaluations, recordkeeping searches, and fee studies



8. Which of the following DC services do you currently provide to clients? Select all that apply. Among those services, which have grown the most over the past year? Select the top 3 services. (n=26)
 (↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

DC Plan Participant Services

Most consultants do not provide any services to DC plan participants; those that do primarily focus on helping retired or terminated participants

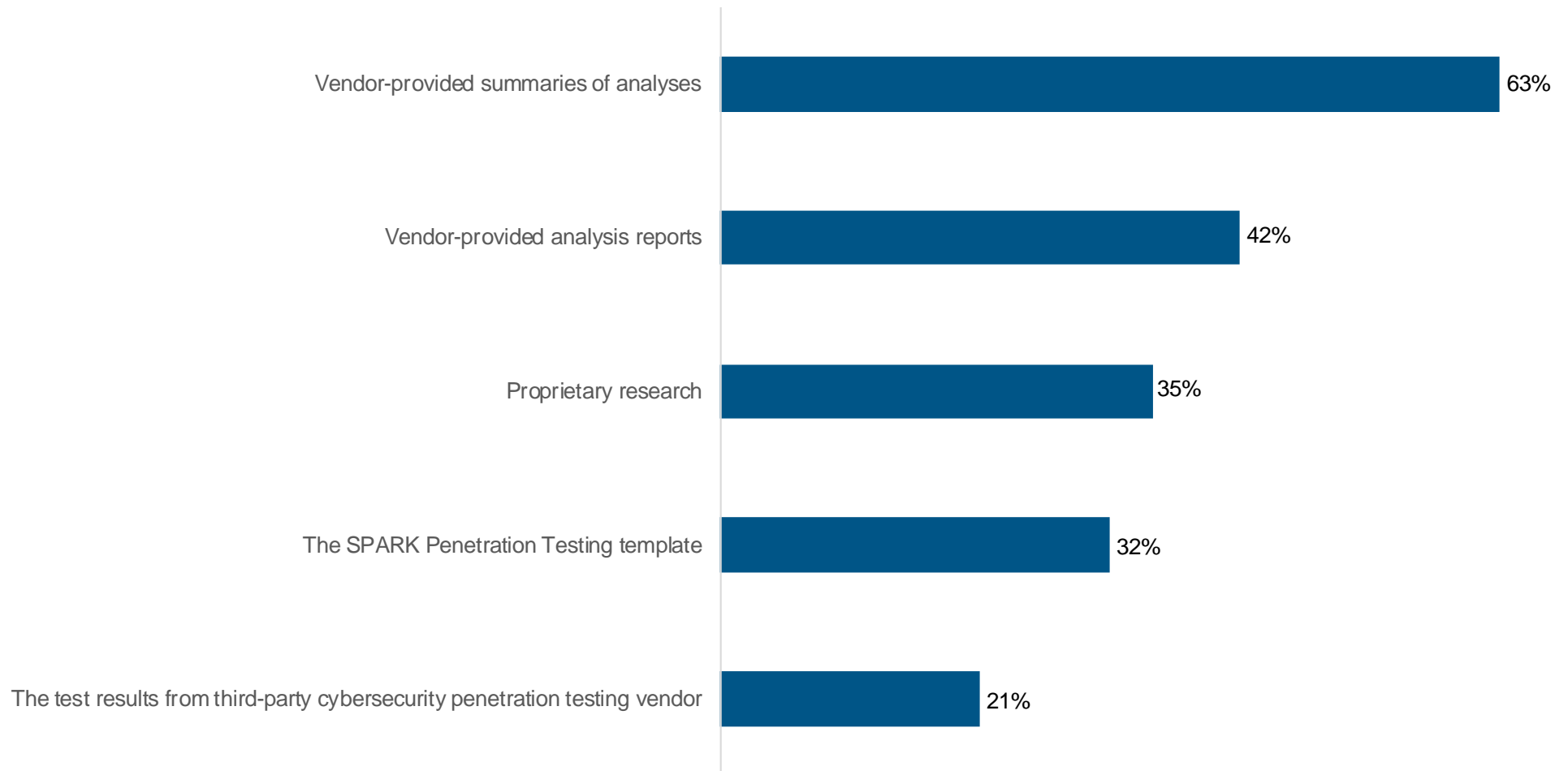


62. What services—if any—do you provide to participants in the DC plans you manage? *Select all that apply.*(n=24)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Required Cybersecurity Penetration Analysis Documentation

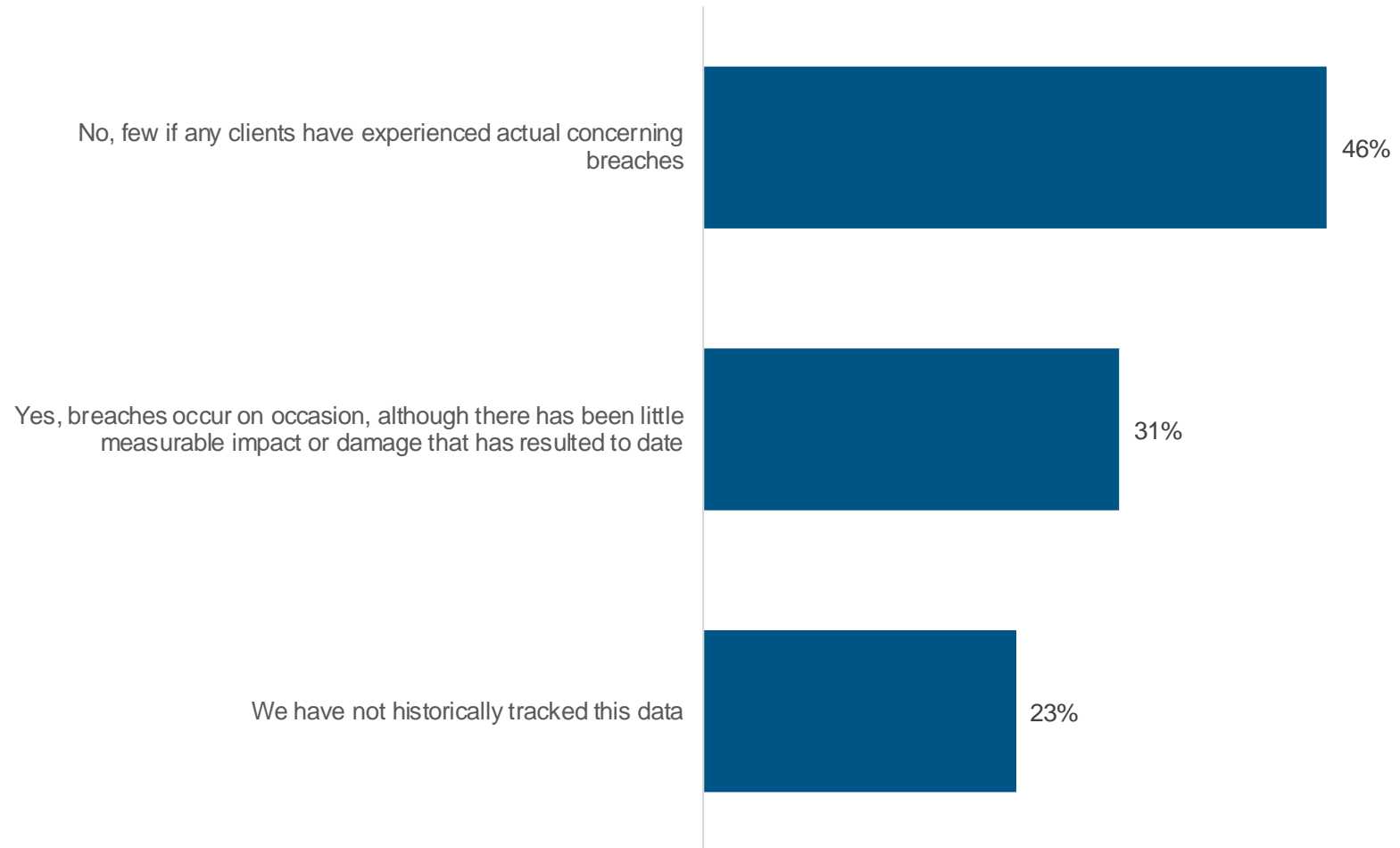
Most consultants require vendors to provide summaries of analysis reports



9. What forms of research/documentation do you require for recordkeeping or other searches when doing cyber penetration analysis?

Cybersecurity Breaches

Consultants state few if any clients have experienced actual breaches

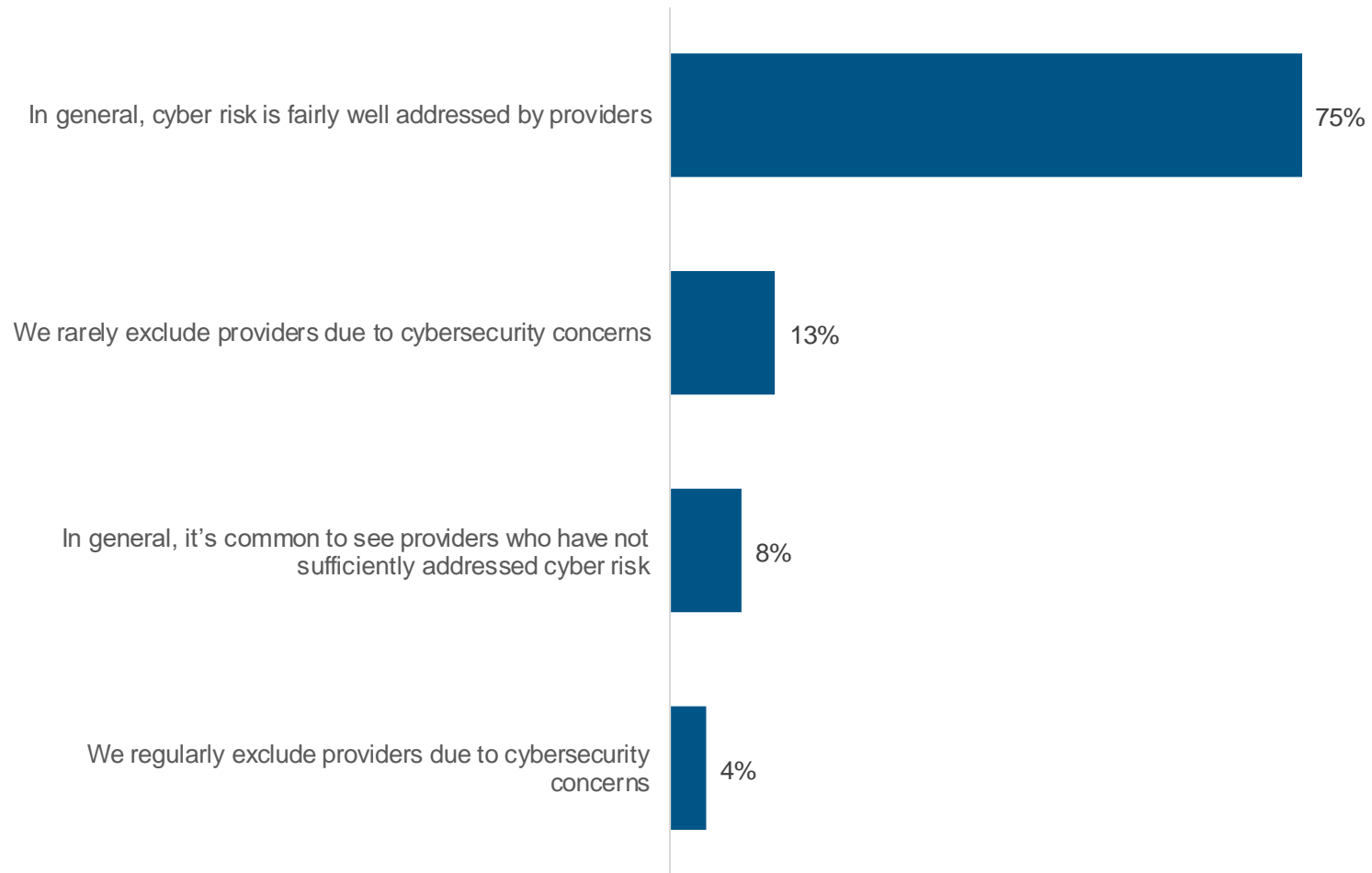


10. To date, have clients experienced cybersecurity breaches? (n=26)

Analyst Note: "Yes, breaches are fairly common and have at times impacted the plan or participants" was a response option but was not selected.

Quality of Service Providers' Cybersecurity

Most consultants agree cybersecurity is well address by providers



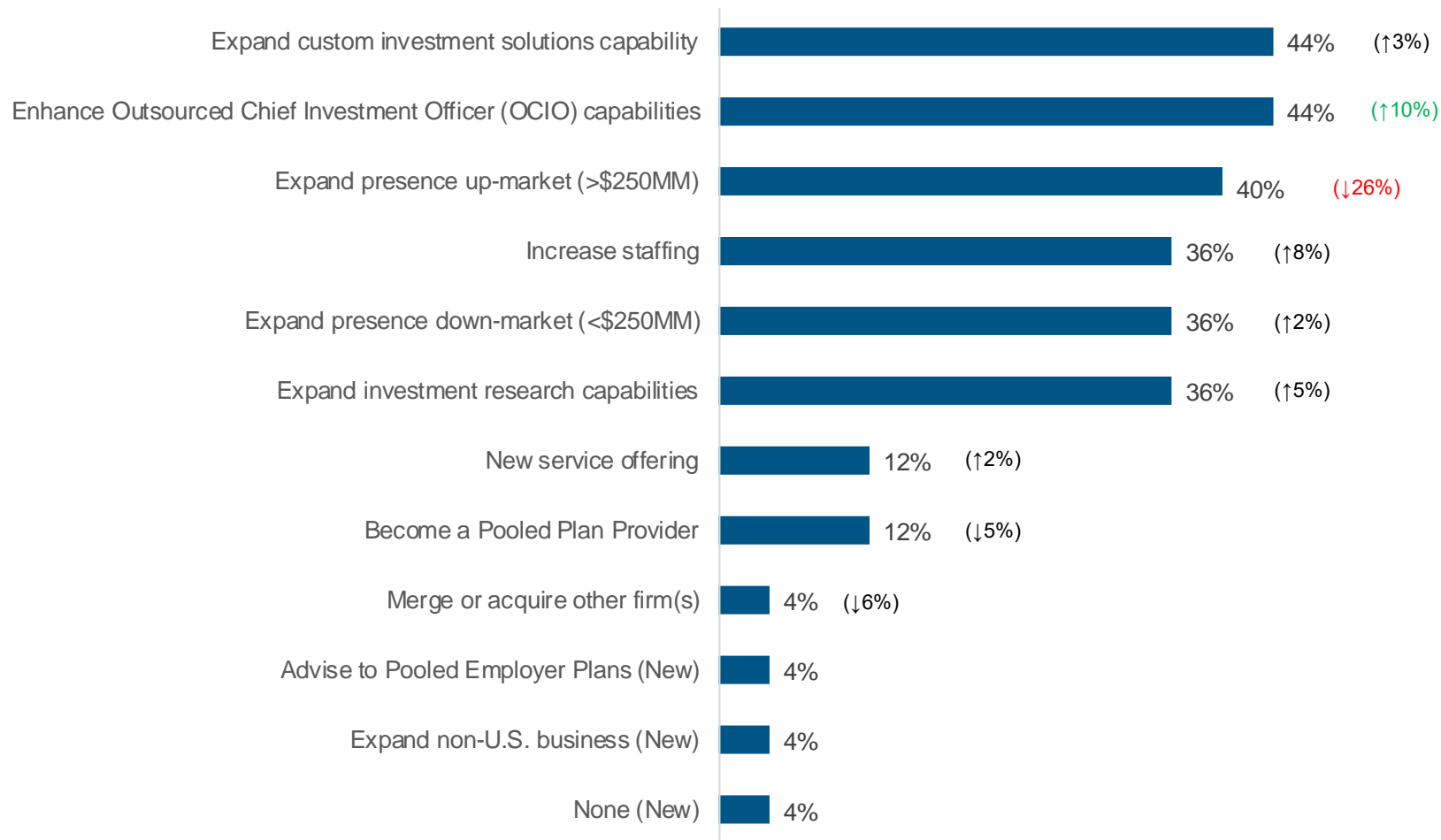
11. Which statement most accurately describes how much the quality of your cybersecurity currently impacts service provider ratings? (n=24)



Client and Consultant Priorities

Consultants' Top Strategic DC Priorities

Consultants state expanding custom investment solution capability, enhancing OCIO, as top priorities



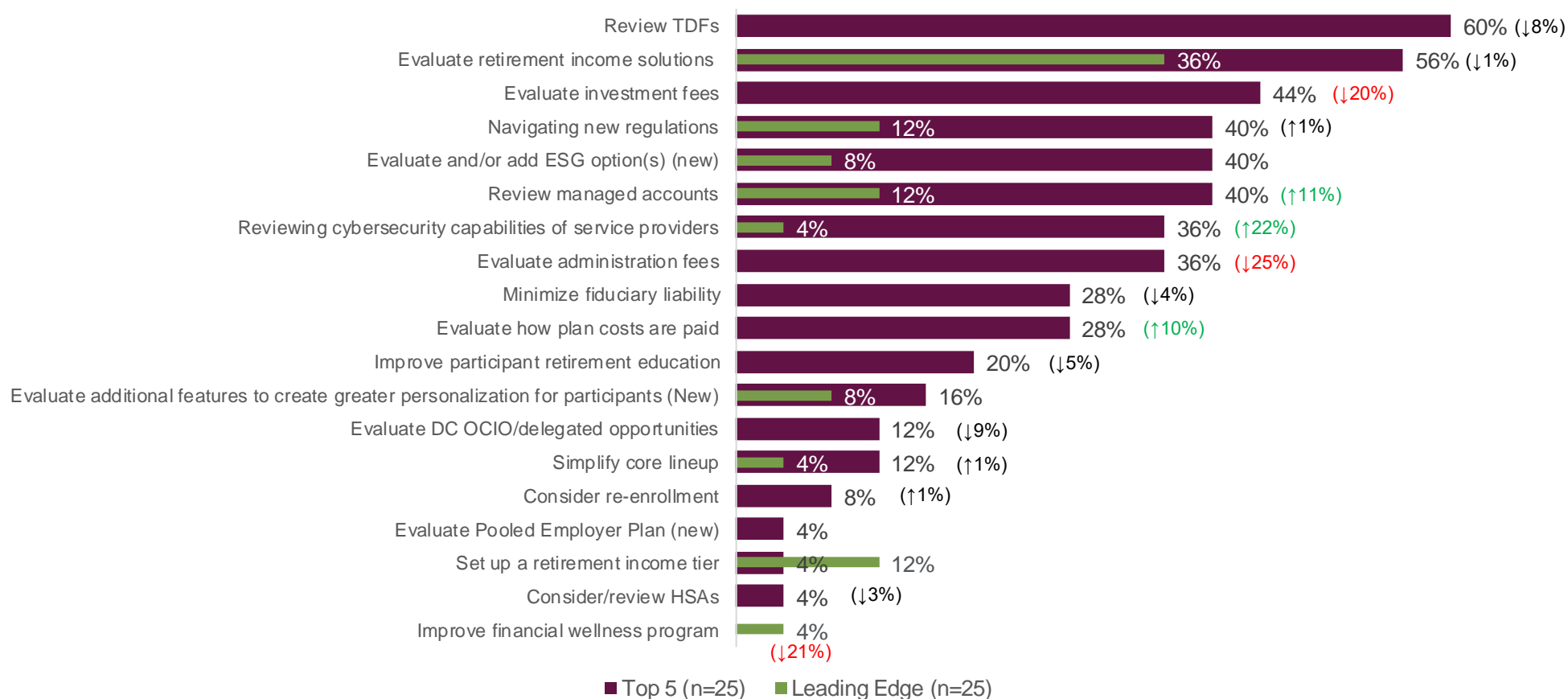
4. What will your firm's top three strategic DC priorities be in 2022? Select up to 3. (n=25)

Analyst Note: New consultant service offerings include "Retirement income solutions."

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Top Client Priorities

Consultants state reviewing TDFs is their clients' top priority, and their leading-edge clients prioritize retirement income evaluations



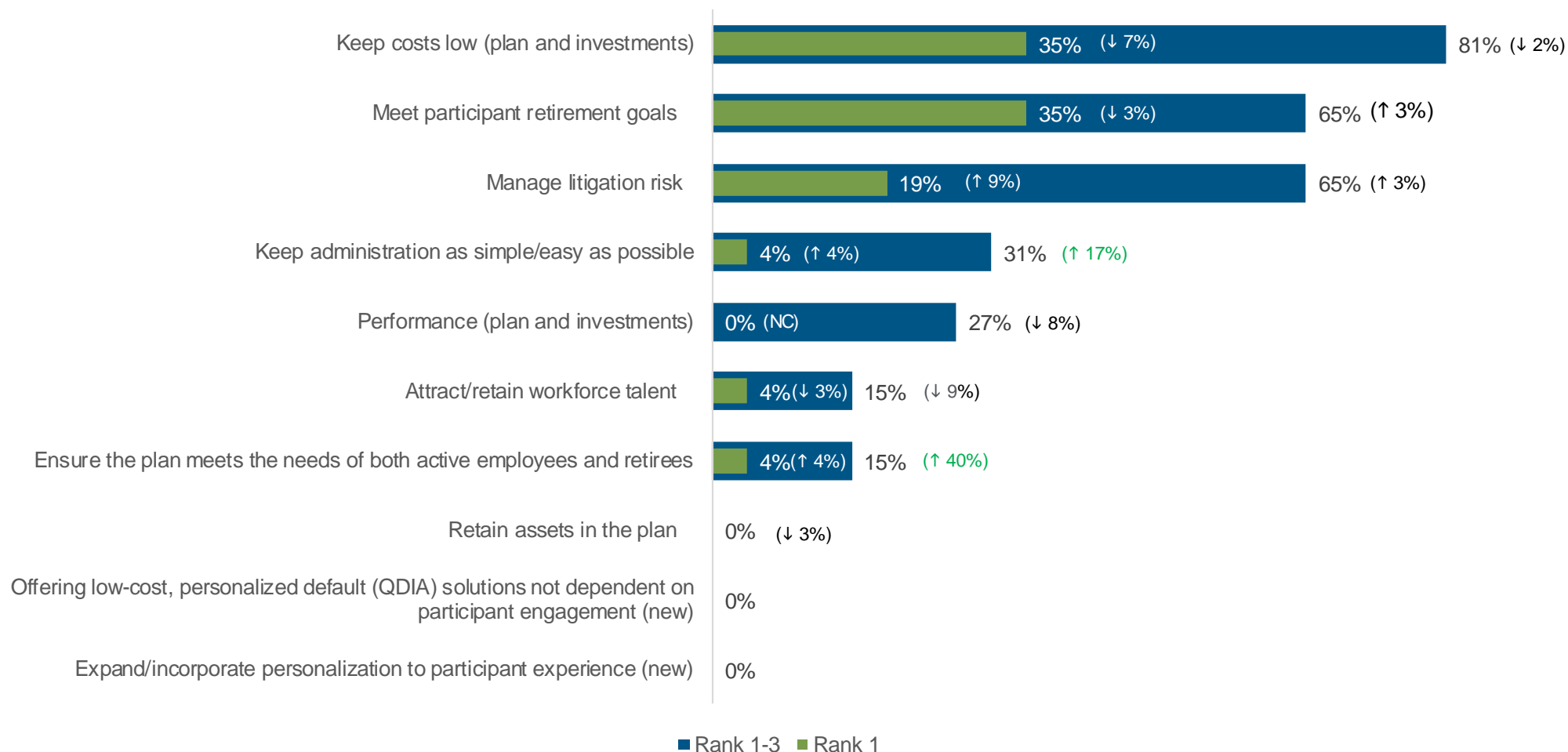
5. What will your clients' top five priorities be in 2022? Select up to 5. Of these priorities, which do you see as the top one for "leading-edge" clients? Select 1.

Analyst Note: No respondents indicated "Reviewing/adding emergency account feature" or "other priorities" as a priority.

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Most Important Factors to Plan Sponsors

Consultants state keeping costs low and meeting participant retirement goals are the most plan important factors to plan sponsors



23. As plan sponsors consider their DC plan, which of the following factors are the most important? Rank the top 3 factors. (n=26)

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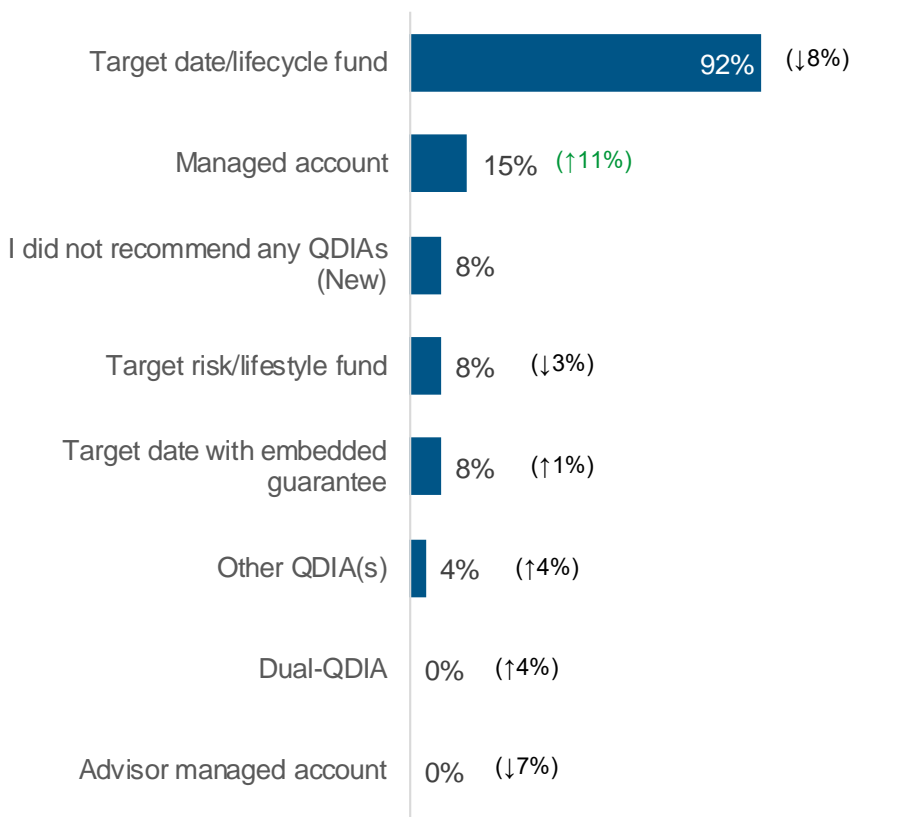


Plan Design and Investments: QDIA

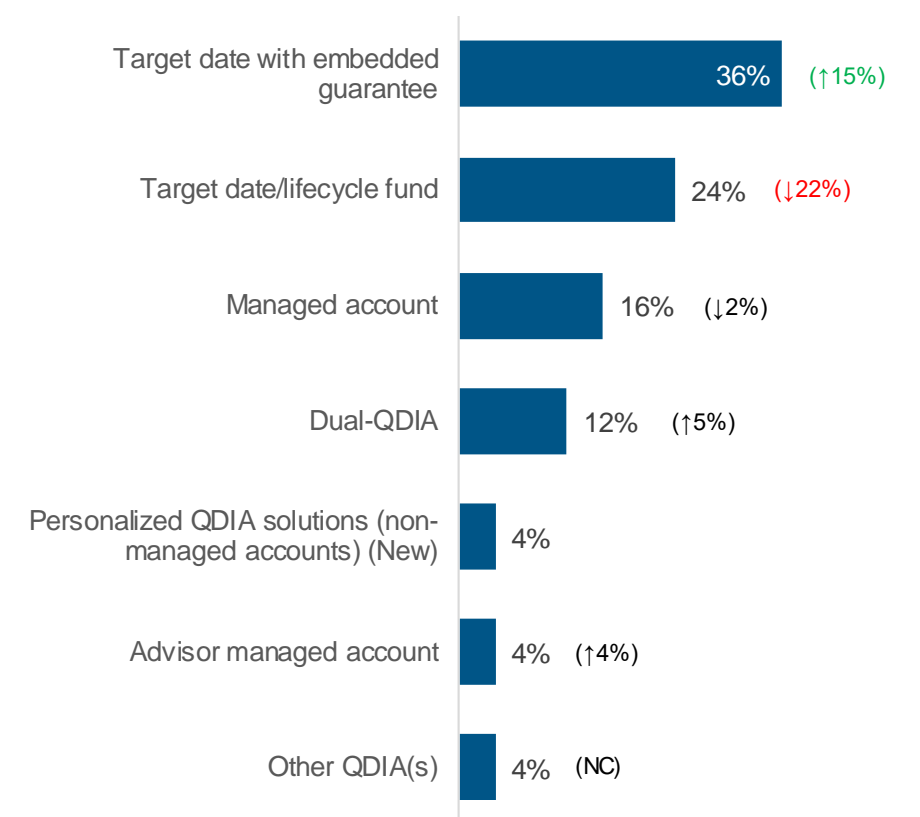
Recommended QDIA Option and QDIA Option with the Most Growth

One-third of consultants expect target date with an embedded guarantee to grow

RECOMMENDED QDIA OPTION



QDIA OPTION EXPECTED TO GROW THE MOST



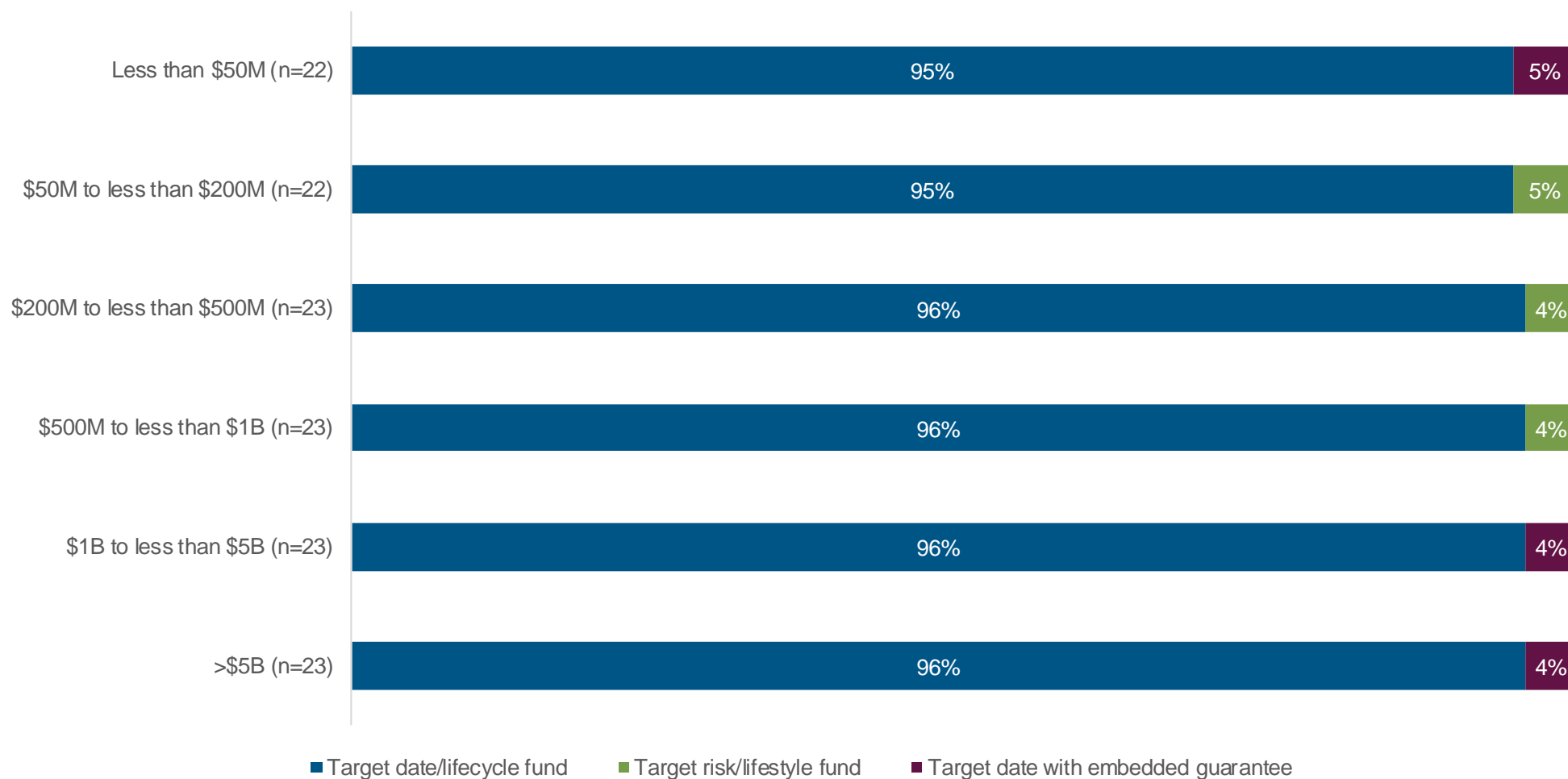
29. What QDIA option—if any—have you recommended for any of the plans you opened/transitioned during the past 12 months? *Select all that apply.* "Other QDIA" is "n/a." (n=26)

31. Which category do you expect to grow the most in the next three years? Other QDIA is "Target date with embedded guarantee Dual-QDIA and Target date funds with managed payouts." Analyst note: "No opinion / I do not recommend any QDIAs" was an option but was not selected. (n=25)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Recommended QDIA Option by Plan Size

Broad consensus to recommend target date/lifecycle for the QDIA

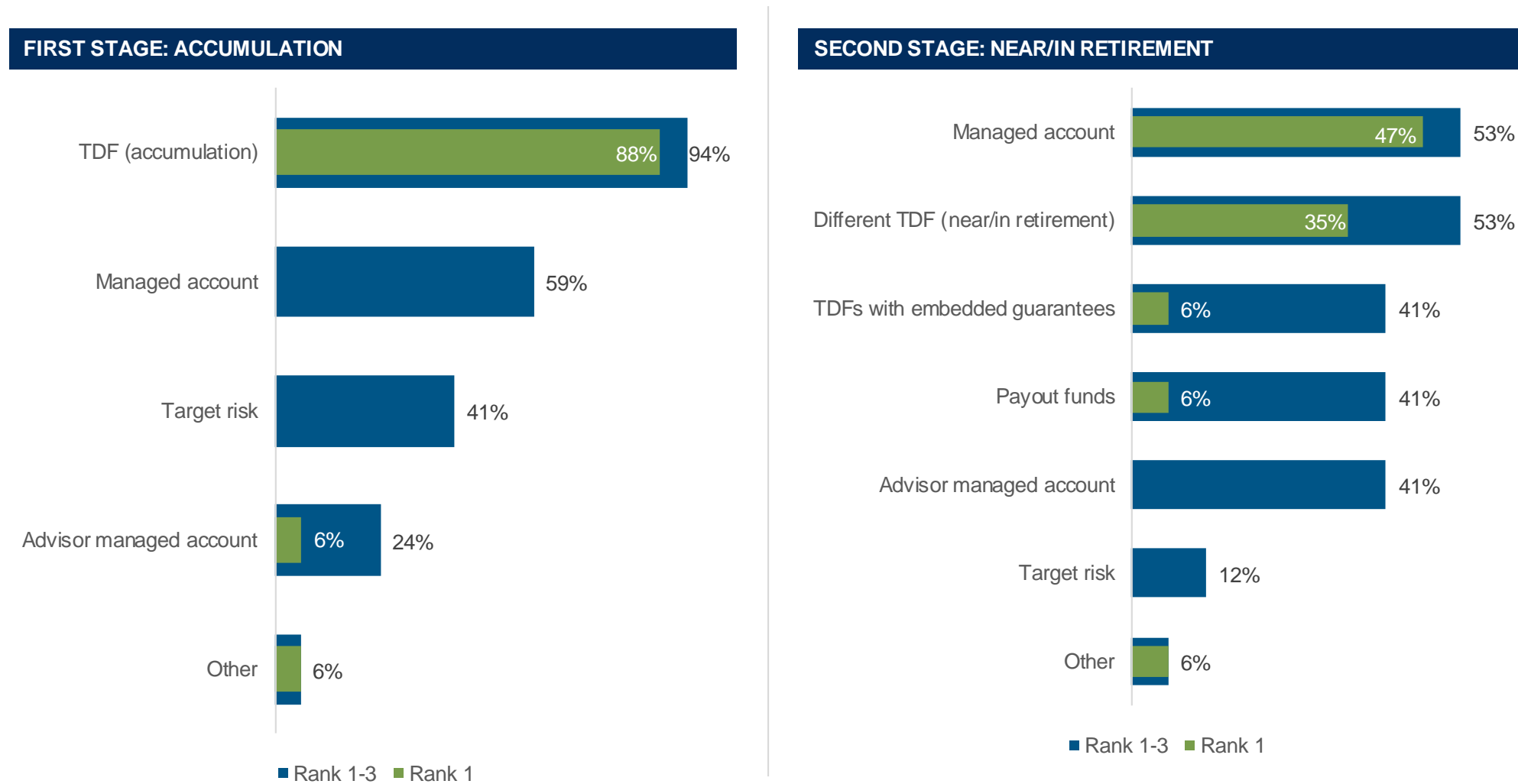


30. Which type of QDIA do you/your firm most commonly recommend for plans of the following sizes?

Analyst Note: "Target risk/lifestyle fund", "Advisor managed account", "Dual-QDIA", and "Other QDIA" were response options but were not selected.

Strategies Used to Implement Dual-QDIA During Accumulation and Near/In Retirement Stages

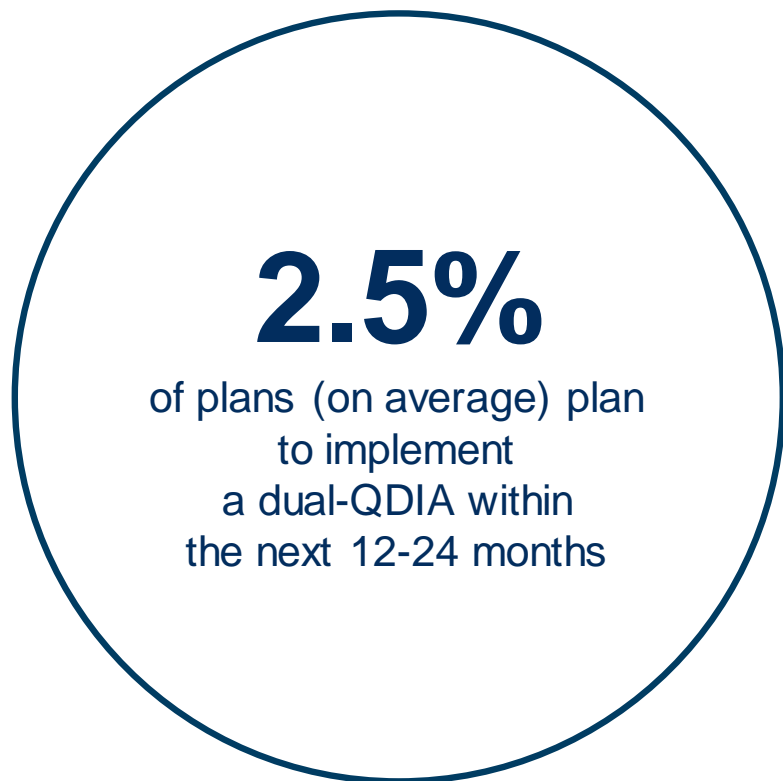
Broad agreement on TDFs during accumulation, and TDFs or managed accounts near/in retirement



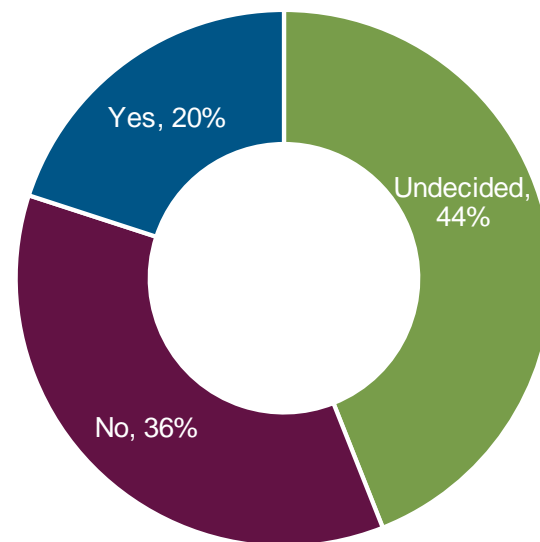
34. What are the most common strategies used to implement the dual-QDIA? Rank in order of preference for the first stage (accumulation) and second stage (near/in retirement). "Other" responses were not specified. (n=17)

Implementation of Dual-QDIA: Current vs. Next 12-24 Months and Dual-QDIA vs Target Date Funds

Three-quarters remain unconvinced about dual-QDIAs; little growth expected



DO YOU AGREE WITH THE FOLLOWING STATEMENT WITH REGARDS TO DUAL-QDIA? "DUAL-QDIA IS A MEANINGFUL ENHANCEMENT AS THE TARGET DATE FUND DOES NOT SUFFICIENTLY MEET THE NEEDS OF RETIRED PARTICIPANTS."



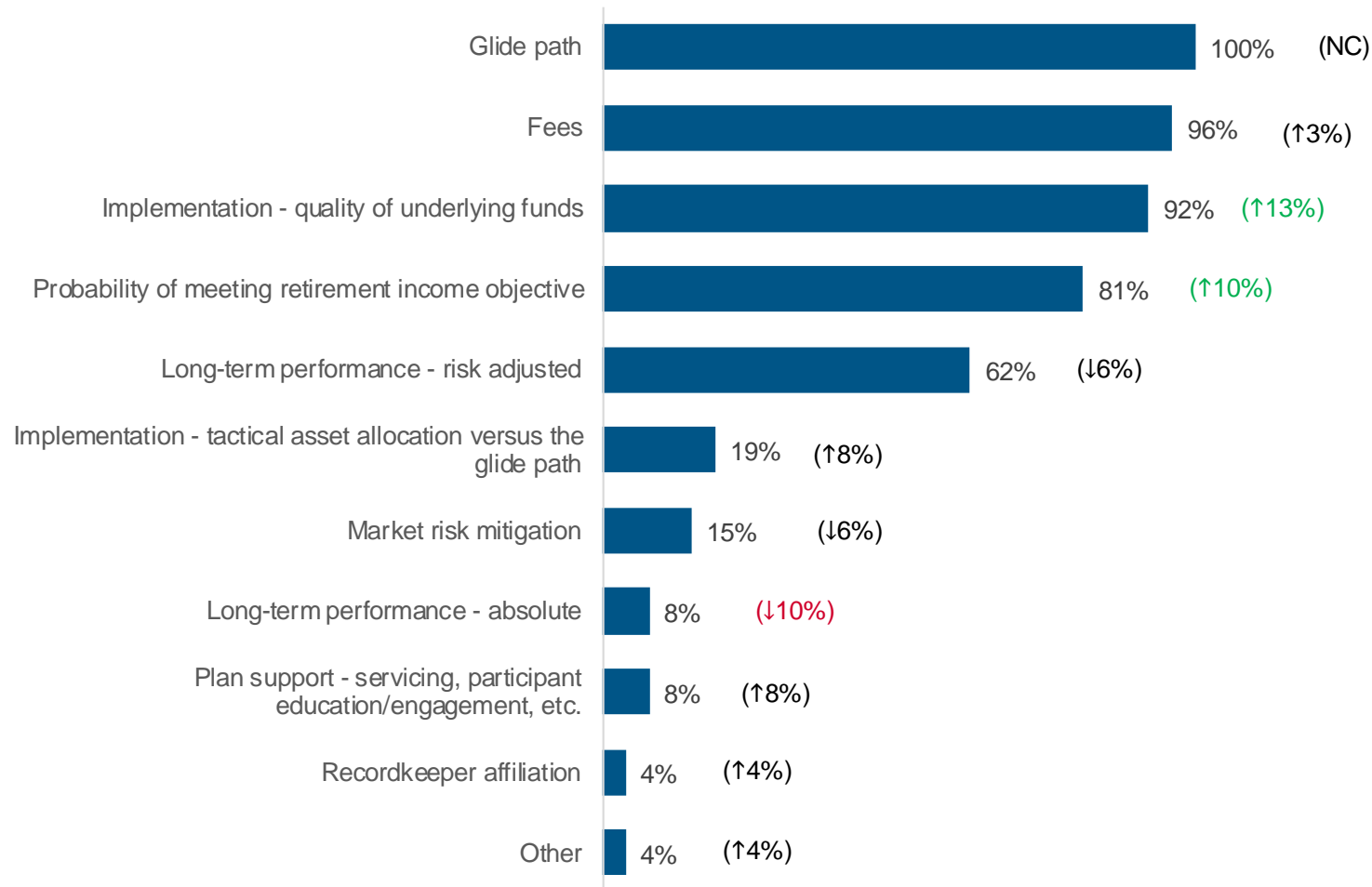
32. What percentage of your plans have implemented a dual-QDIA today, and what percentage of your plans do you think would implement a dual-QDIA over the next 12-24 months? (n=25)
 33. Do you agree with the following statement with regards to dual-QDIA? "Dual-QDIA is a meaningful enhancement as the target date fund does not sufficiently meet the needs of retired participants." (n=25)



Plan Design and Investments: Target Date Funds

Key Factors in Evaluating Target Date Funds

Increased focus on the quality of underlying funds and meeting retirement income objectives; Glide path and fees remain top considerations



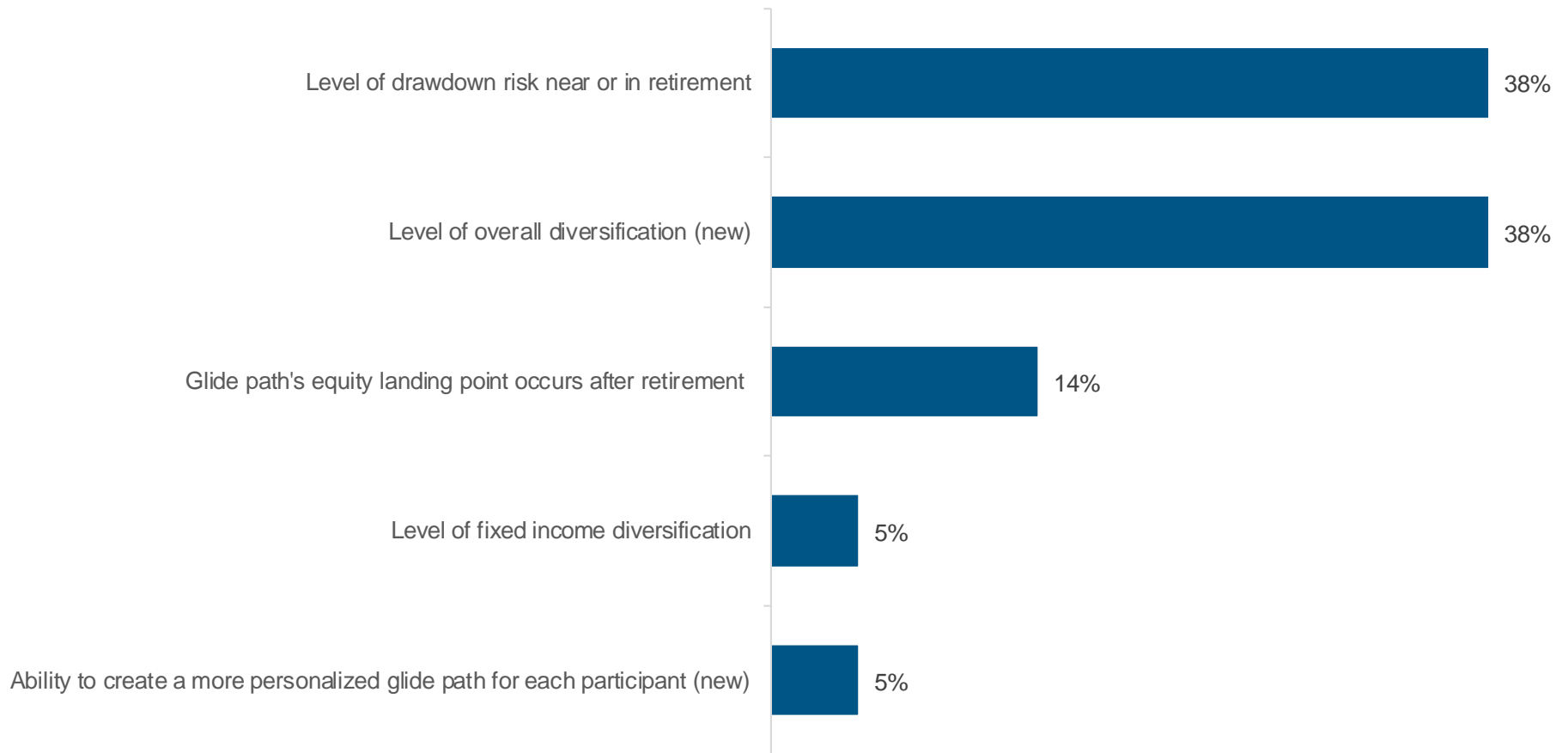
36. What are the top five most important factors when selecting and/or evaluating target date funds? Select up to 5 factors.(n=26)

Analyst Note: Other is "Implementation aligns with the investment beliefs of the committee." "Brand" and "Short-term performance" were options but were not selected.

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Most Important Factors in glide path Design

Level of drawdown risk near or in retirement and level of overall diversification most important factors

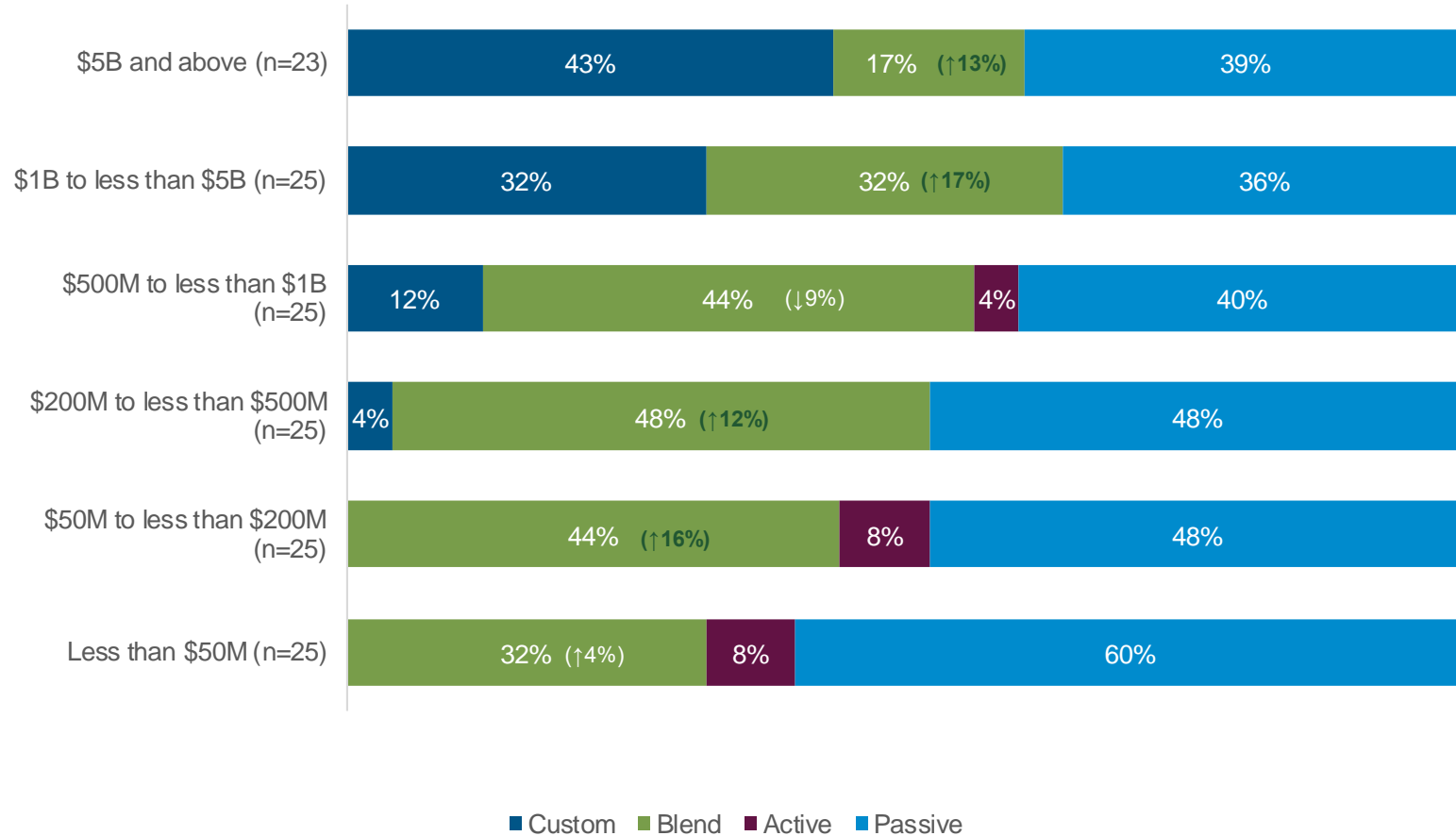


35. Presuming the glide path design aligns well with the plan's demographics, what is the next most important factor related to glide-path design? (n=21)

Analyst Note: "Glide-path's equity landing point occurs at retirement" and "Level of equity diversification" were options but were not selected.

Target Date Recommendations by Plan Size

Custom popular above \$1B, recommendations for blend have substantially increased in most plan size segments



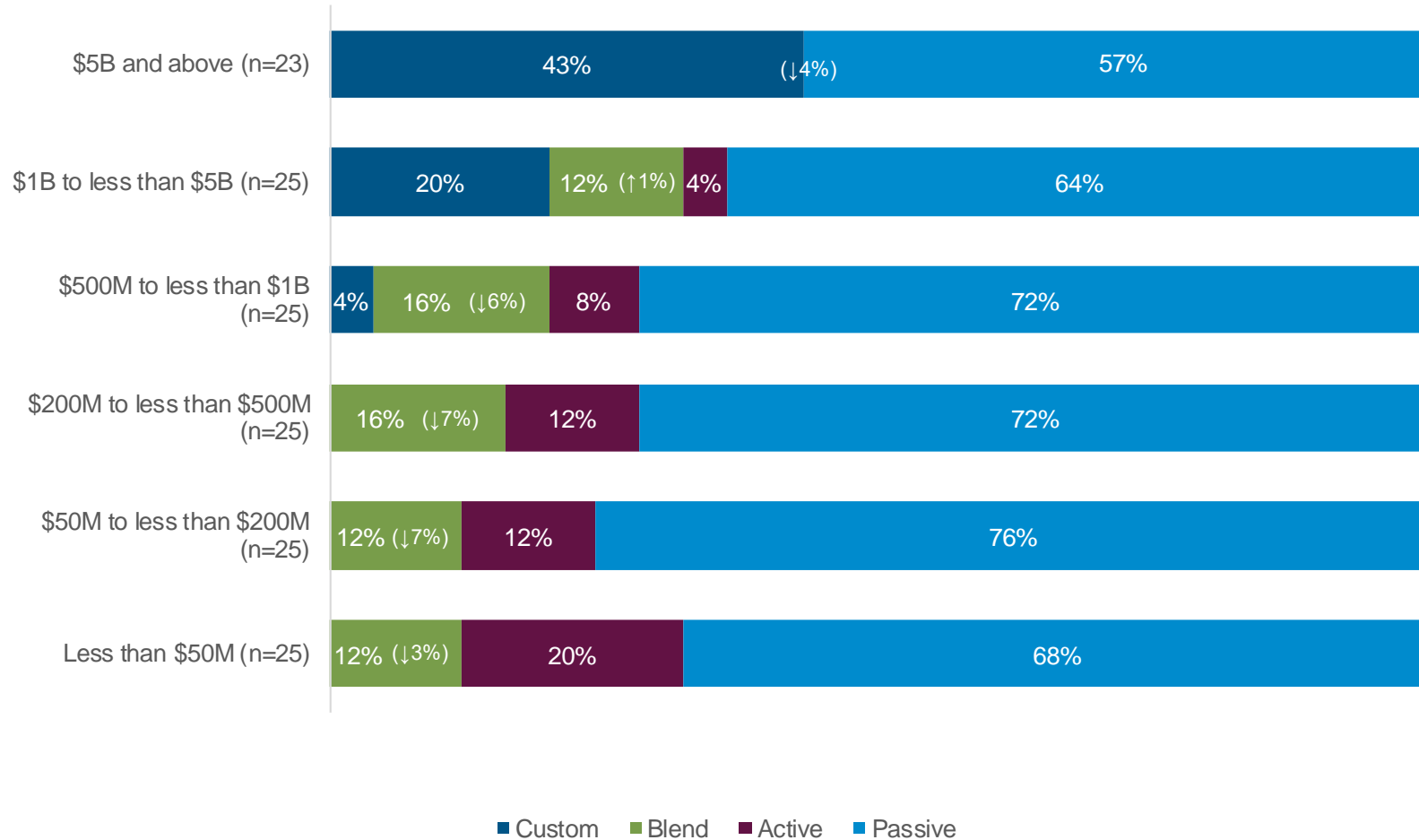
38. Without knowing the plan sponsor's preferences, what type of target date offerings do you/your firm most commonly recommend for plans of the following sizes?

Analyst note: Due to rounding, total percentages may not equal 100%

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Target Date Implemented by Plan Size

Despite custom recommendation, off-the-shelf typically implemented

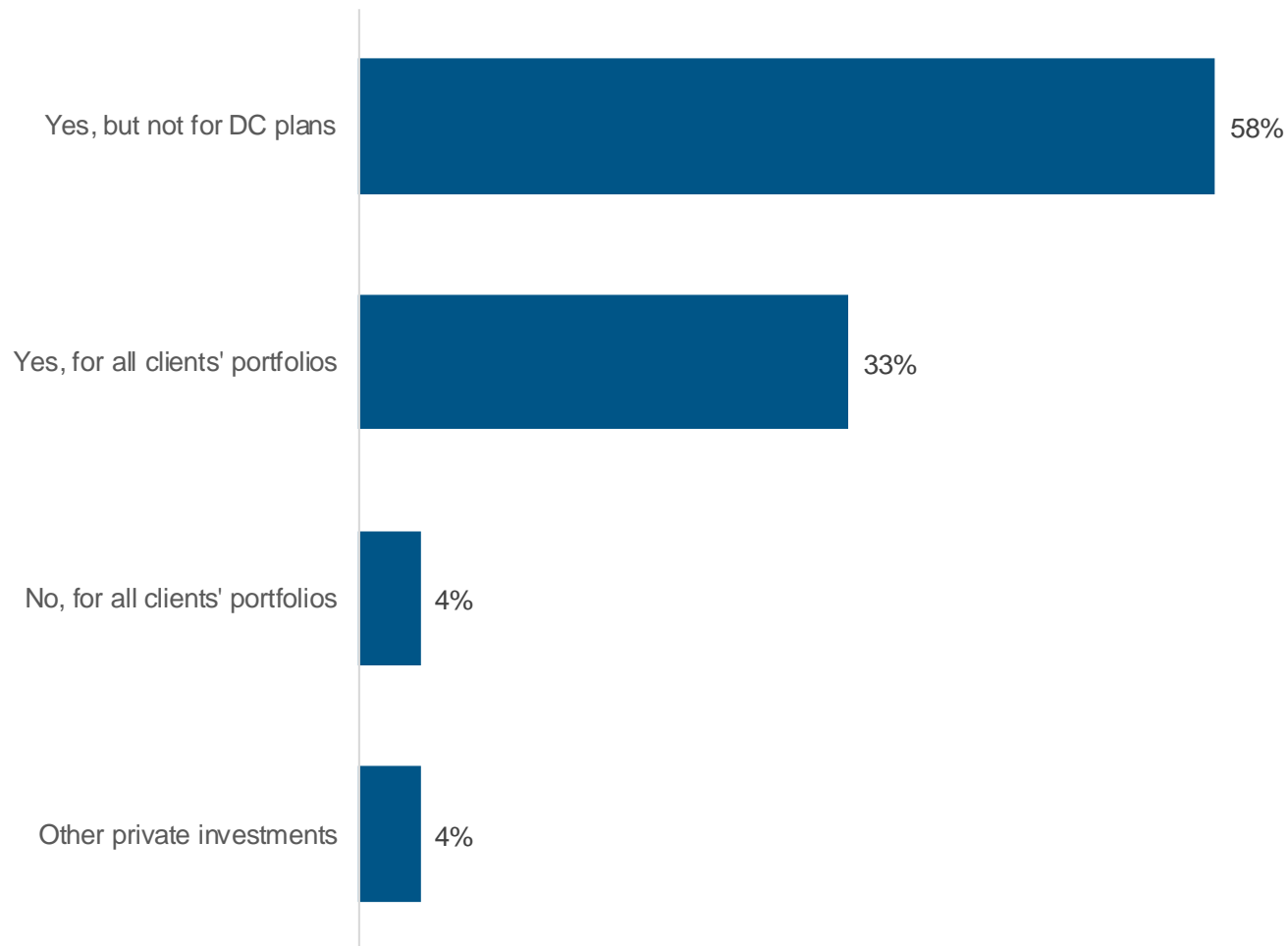


39. What type of target date offerings are most commonly implemented for plans of the following sizes?

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Private Investments in Multi-Asset Portfolios

One third of consultants believe private investments are beneficial to all clients' portfolios

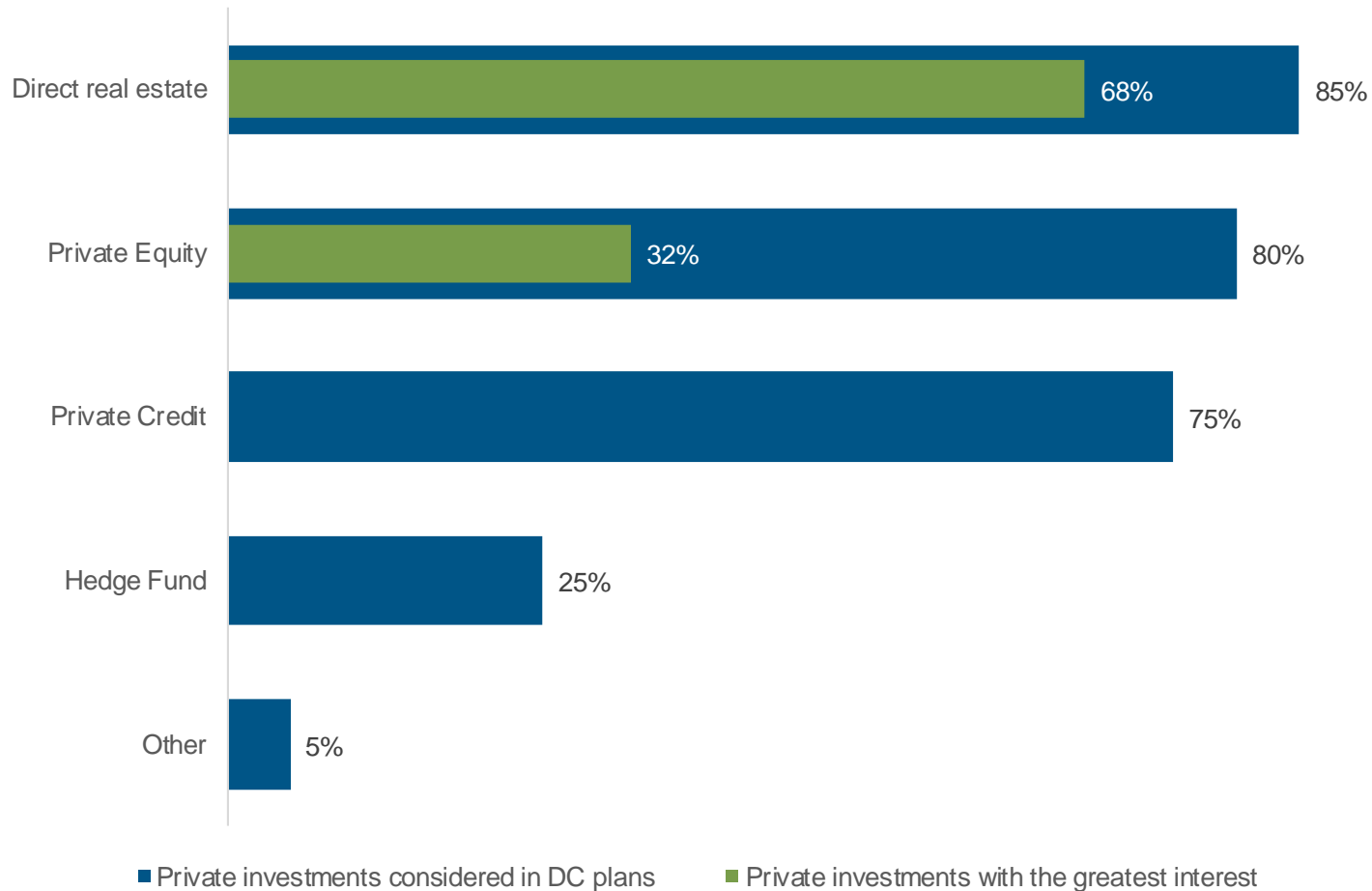


48. Do you consider including any private investments (e.g., private equity, private credit, direct real estate, and hedge fund) beneficial in a multi-asset portfolio? (n=24)

Analyst Note: Other includes "Yes, for clients whose skill and objectives make private markets appropriate."

Private Investments Considered for Inclusion in target date fund or Multi-Asset Portfolio

Direct real estate, private equity and private credit are the most common private investments considered for inclusion in a TDF or multi-asset portfolio



49. Which of the following types of private investments would you consider for inclusion in either a target date fund or multi-asset portfolio offered within a DC plan? *Select all that apply (on the left).* (n=20) Of these private investments, which is of the greatest interest? *Select 1 (on the right).* (n=19)

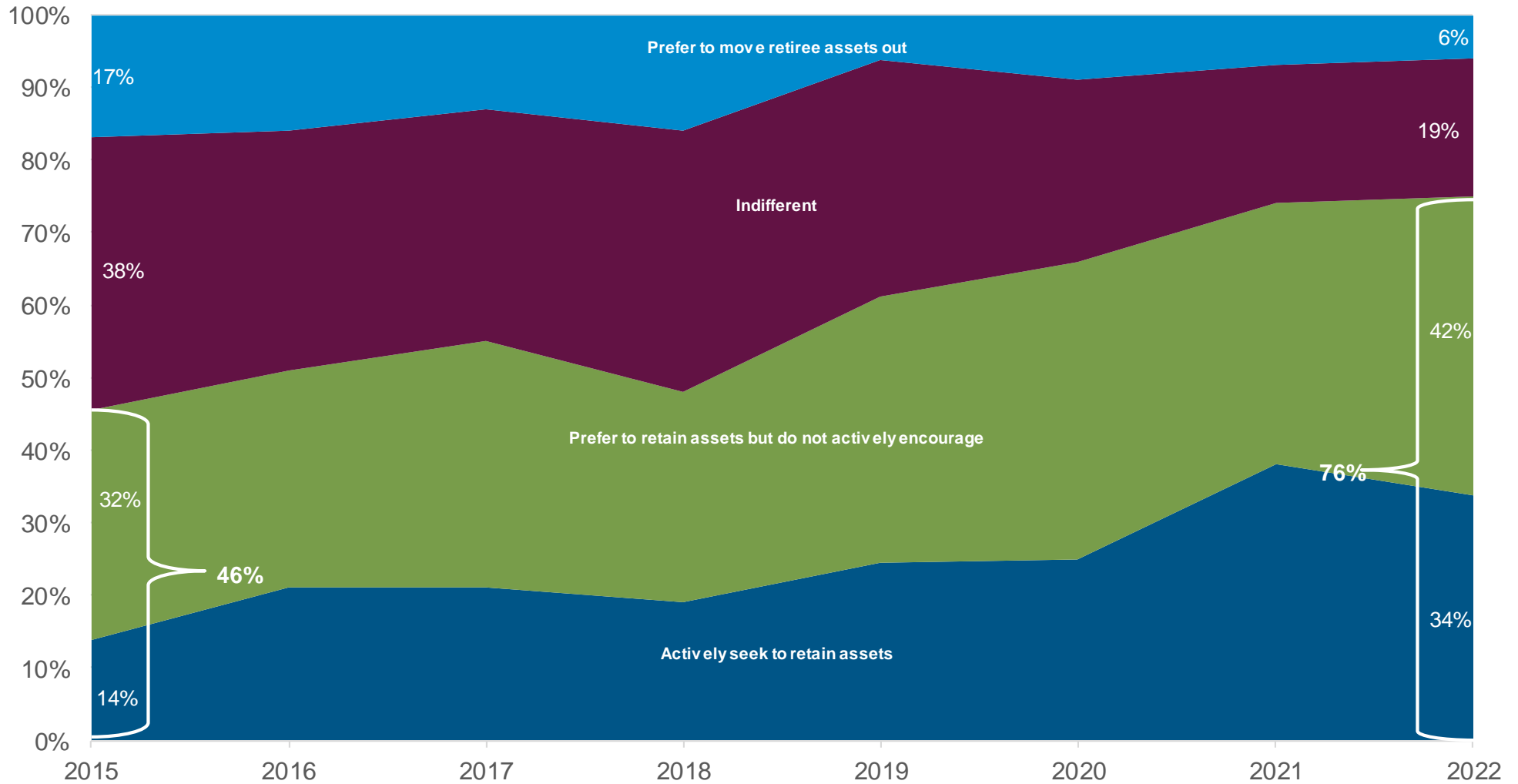
Analyst Note: Other includes "infrastructure."



Retirement Income

Plan Sponsor View on Retaining Retiree Assets in Plan

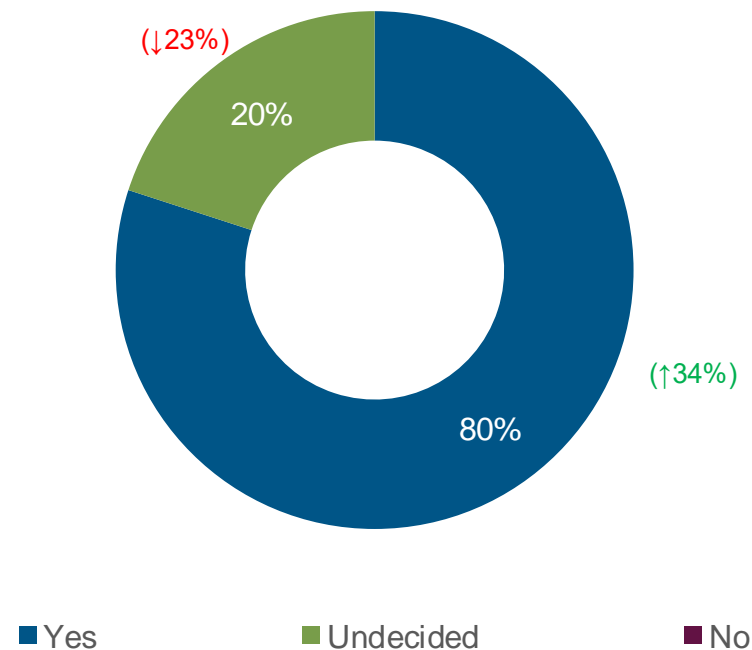
Continued increased conviction to retain retiree assets



50. Approximately what percent of your plan sponsor clients take the below view on retaining retired participants' assets in their plan? (n=24)

Retirement Income Tier as Separate Offering

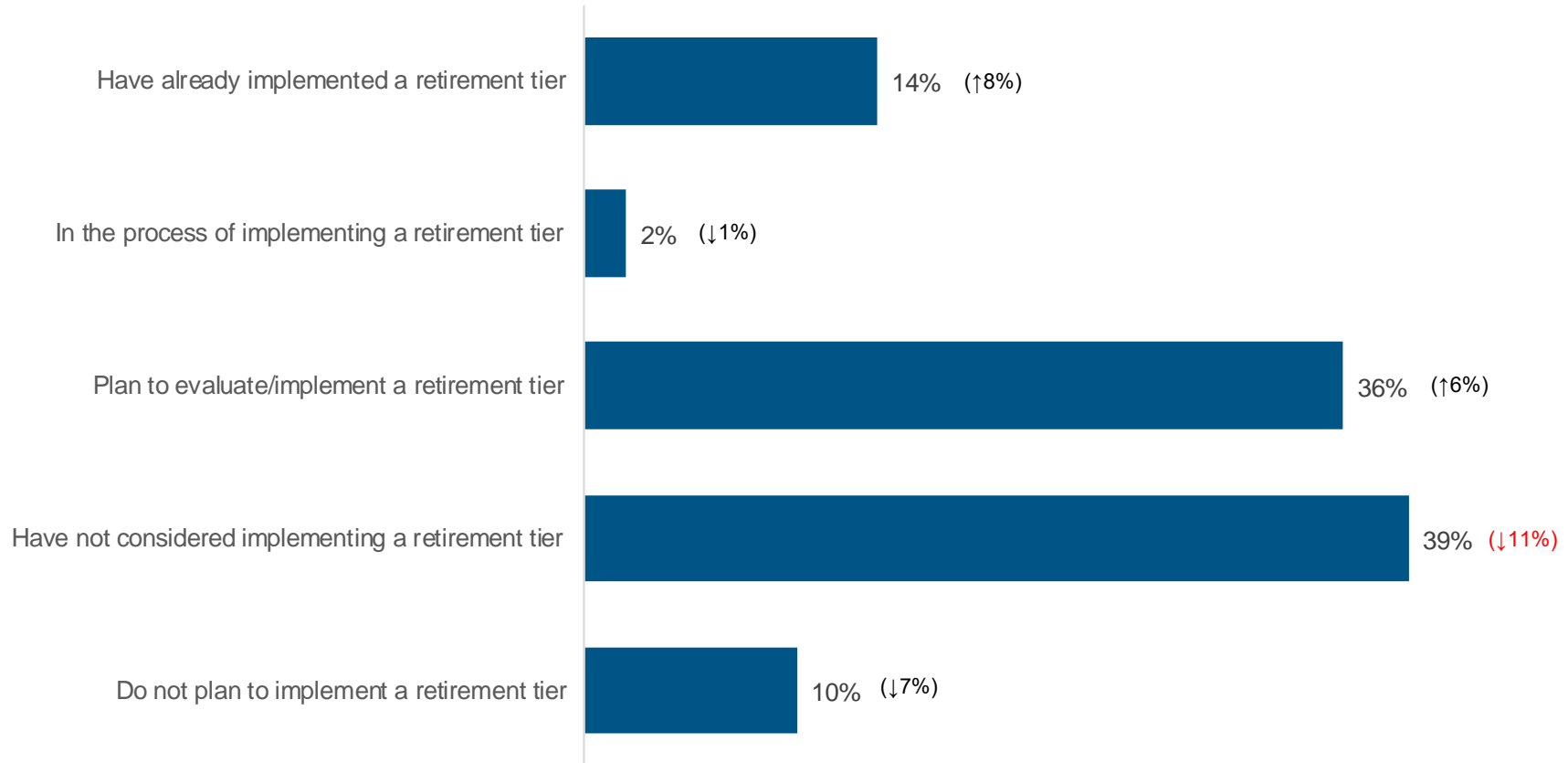
Almost all consultants believe plans should offer investments and services to allow retired participants to remain in the plan



51. Do you believe plans should offer investments and services which allow retired participants to remain in the plan and support their retirement spending needs (e.g., retirement income tier)? (n=25)
 (↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Stage of Implementing a Retirement Tier

Consultants say that over half of their clients have either implemented, are in the process of implementing, or plan to evaluate/implement a retirement tier

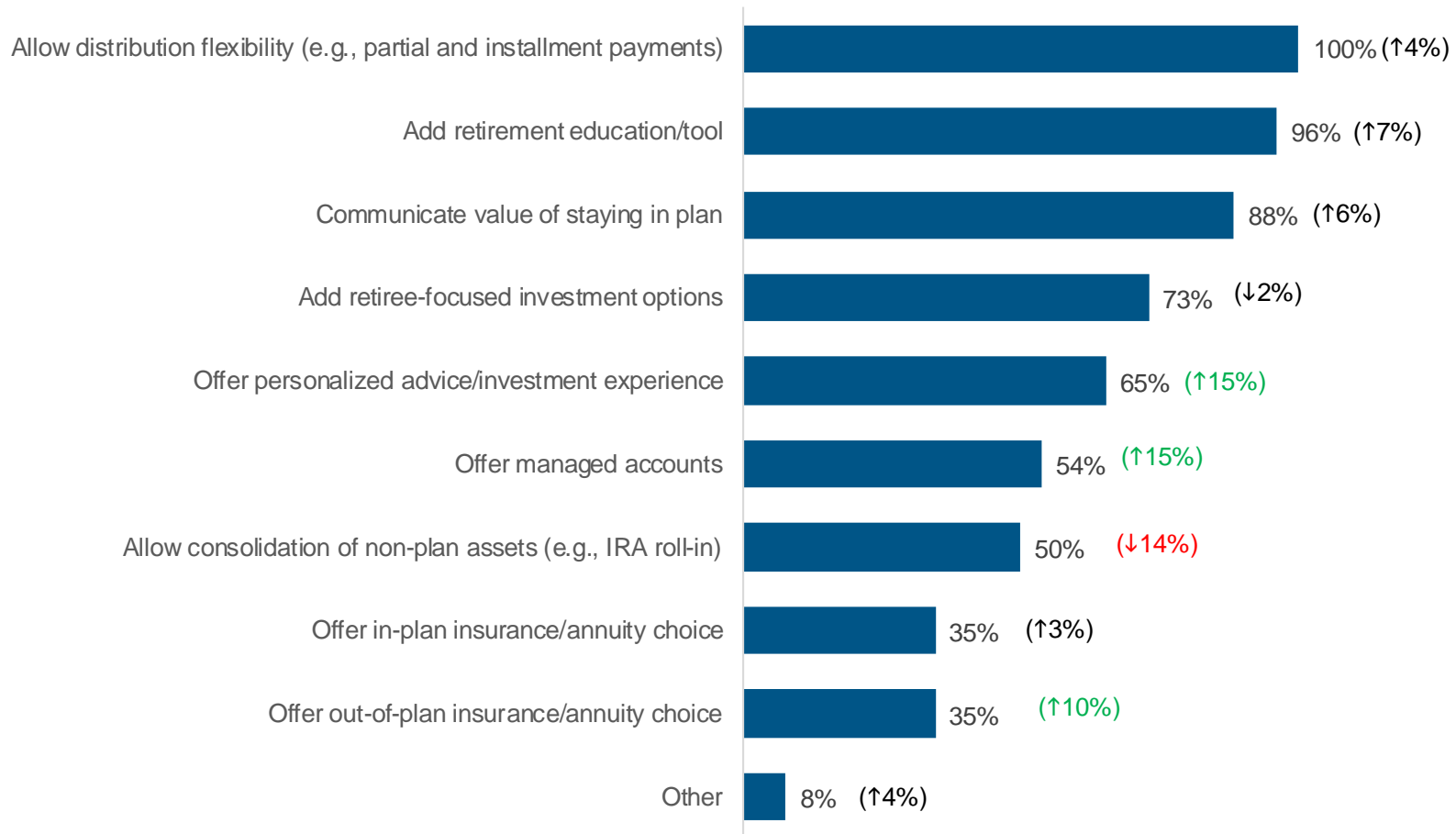


52. What percent of your clients are in each stage of implementing a retirement tier?(n=22)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Recommended Actions to Retain Assets in The Plan

More uniformity among top actions to retain retiree assets



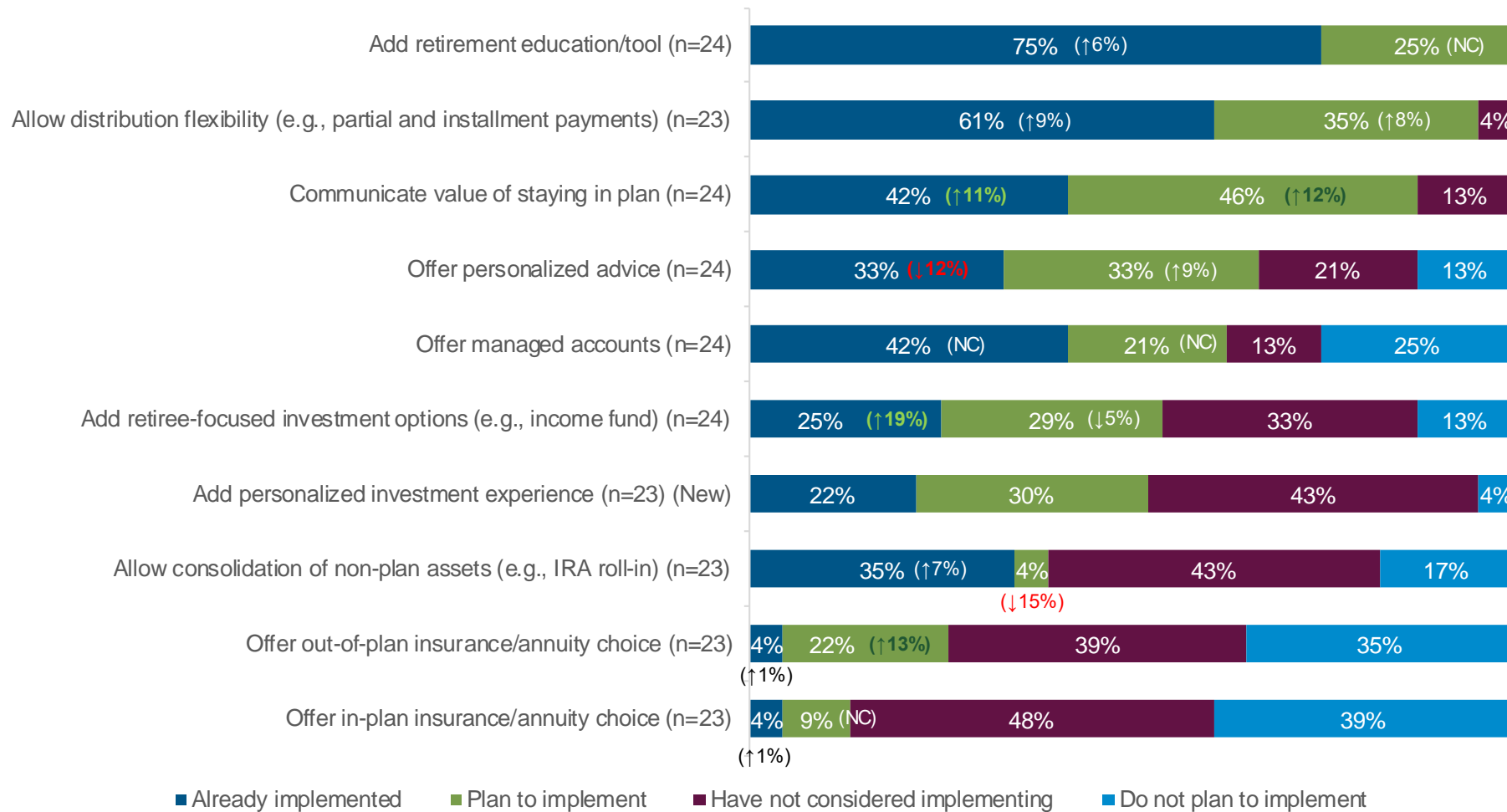
53. Which actions do you recommend plan sponsors take to encourage retirees to retain their assets in the plan? Select all that apply. (n=25)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Analyst Note: Other includes "IRA option with similar investment menu."

Actions Implemented to Encourage Asset Retention

Most consultants' clients have already implemented retirement education and distribution flexibility



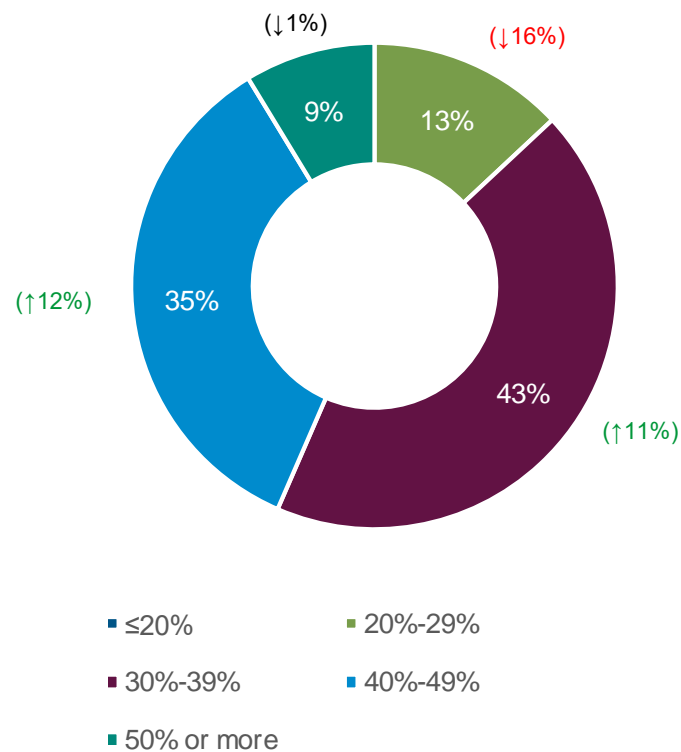
54. Where are the majority of your clients in implementing these actions to encourage retention of retiree assets?– (n=24)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

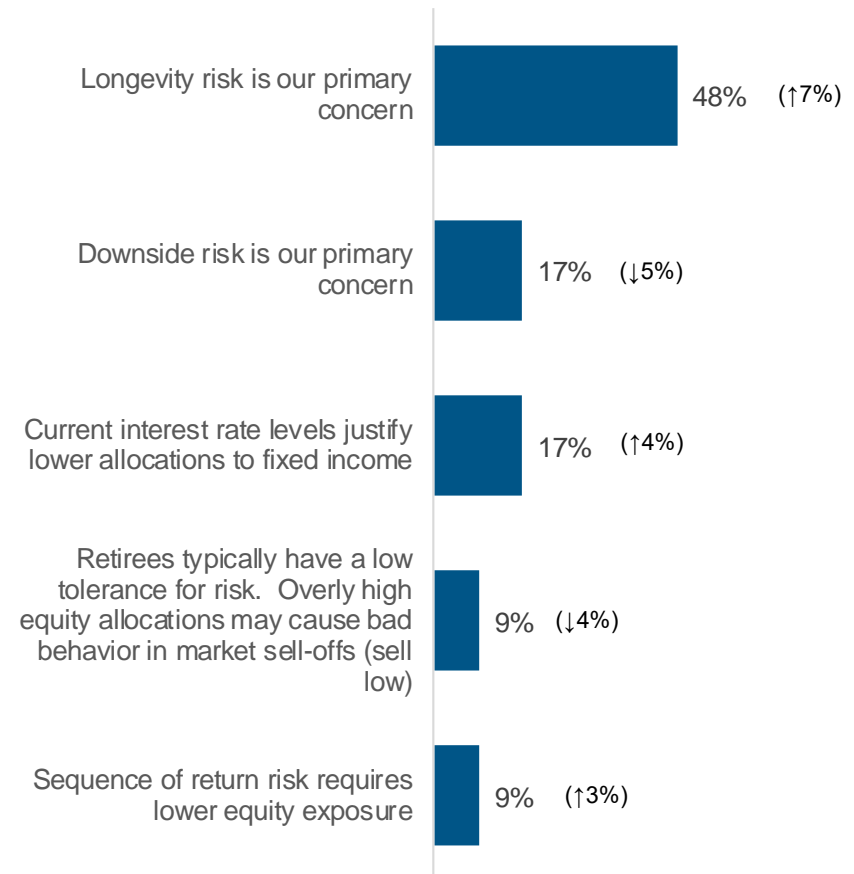
Preferred Equity Exposure

Consultants prefer equity exposure over 30%; longevity cited as primary concern

PREFERRED EQUITY EXPOSURE



REASONS FOR CHOOSING EQUITY EXPOSURE



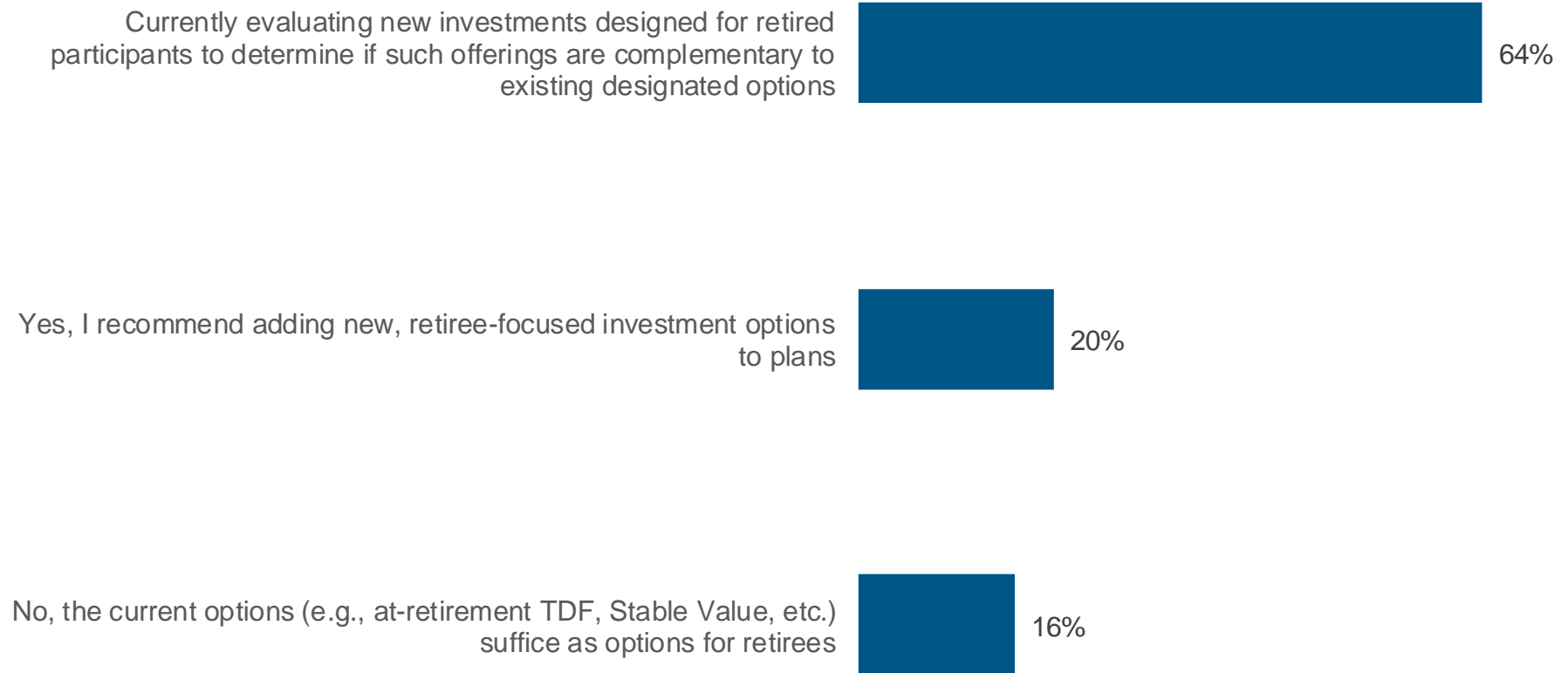
58. For non-guaranteed retirement income solutions, what is your preferred equity exposure? (n=23).

59. Why did you choose that equity exposure range? (n=23).

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

New Plan Investment Options for Retirees

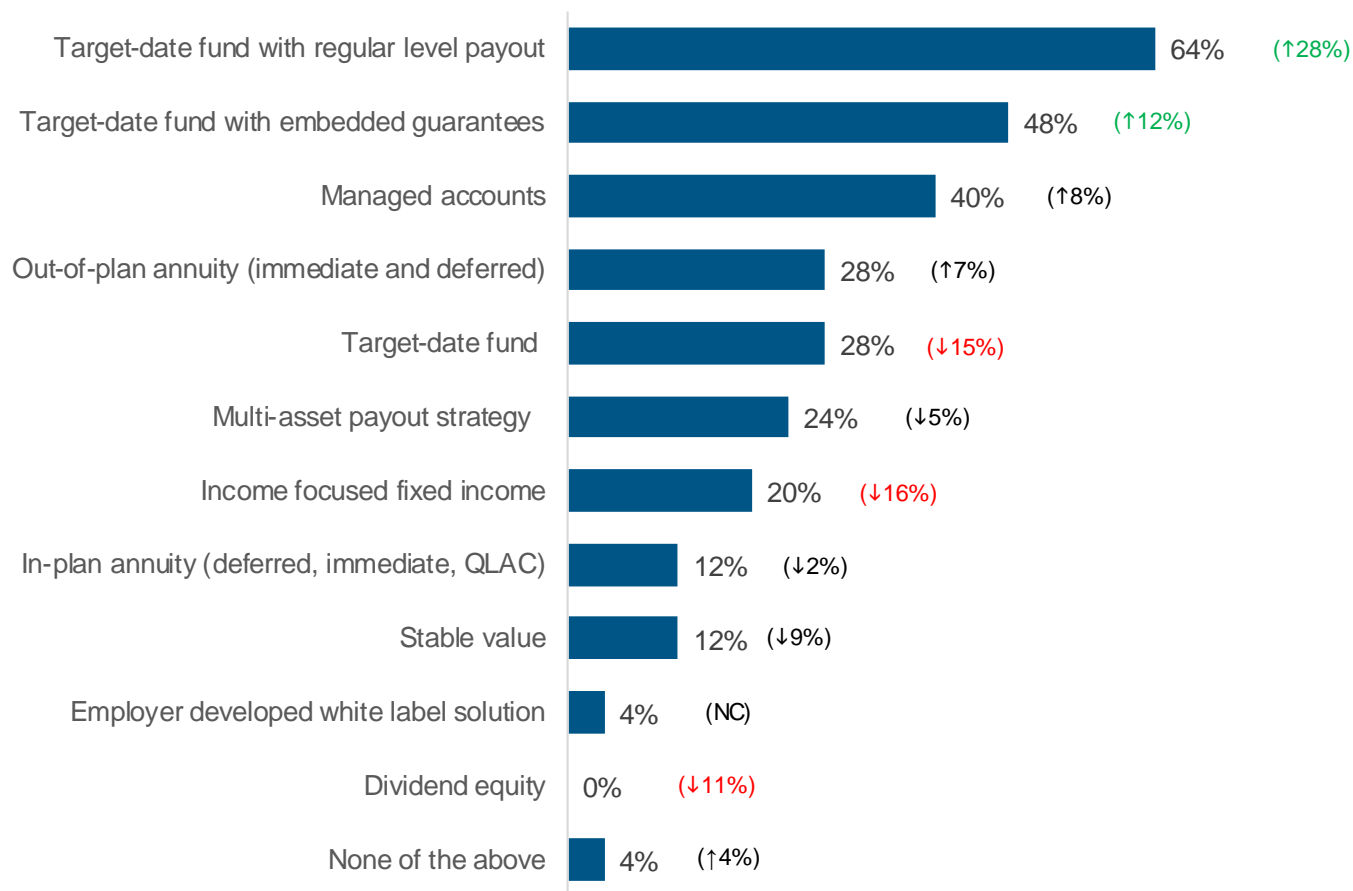
Most consultants are evaluating how new retirement focused investment options complement existing options



60. Do you recommend adding new plan investment options specifically to cater to retirees? (n=25)

Recommended Retirement Income Investment Solutions

Target date funds with regular payout and guarantees are the top two choices for investment consultants



61. Which of the following investment options—if any—are you most likely to recommend as a retirement income solution? *Select up to 3.* (n=25)

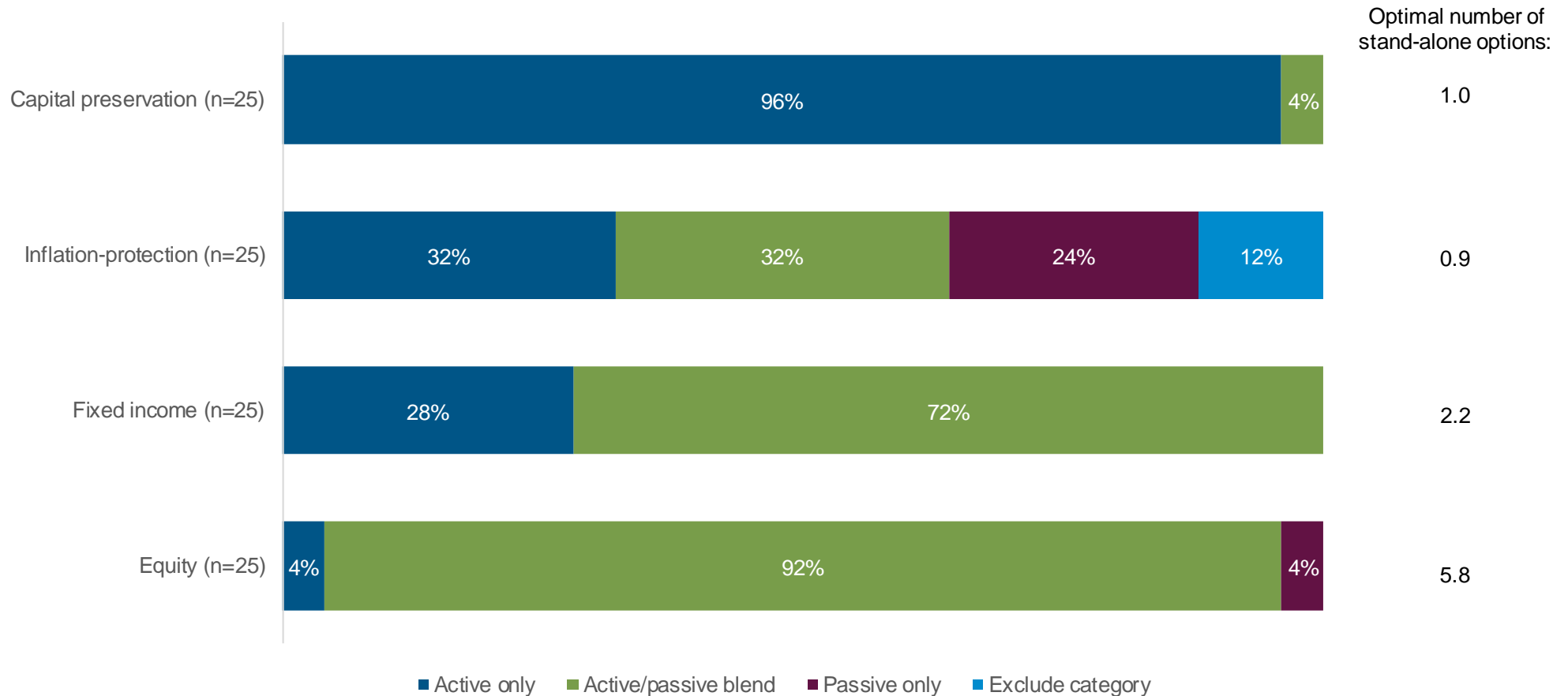
(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black



Plan Design and Investments: Core Menu

Core Lineup Management Approach by Asset Class

Consultants strongly prefer active management or a blended approach; Few suggest only passive

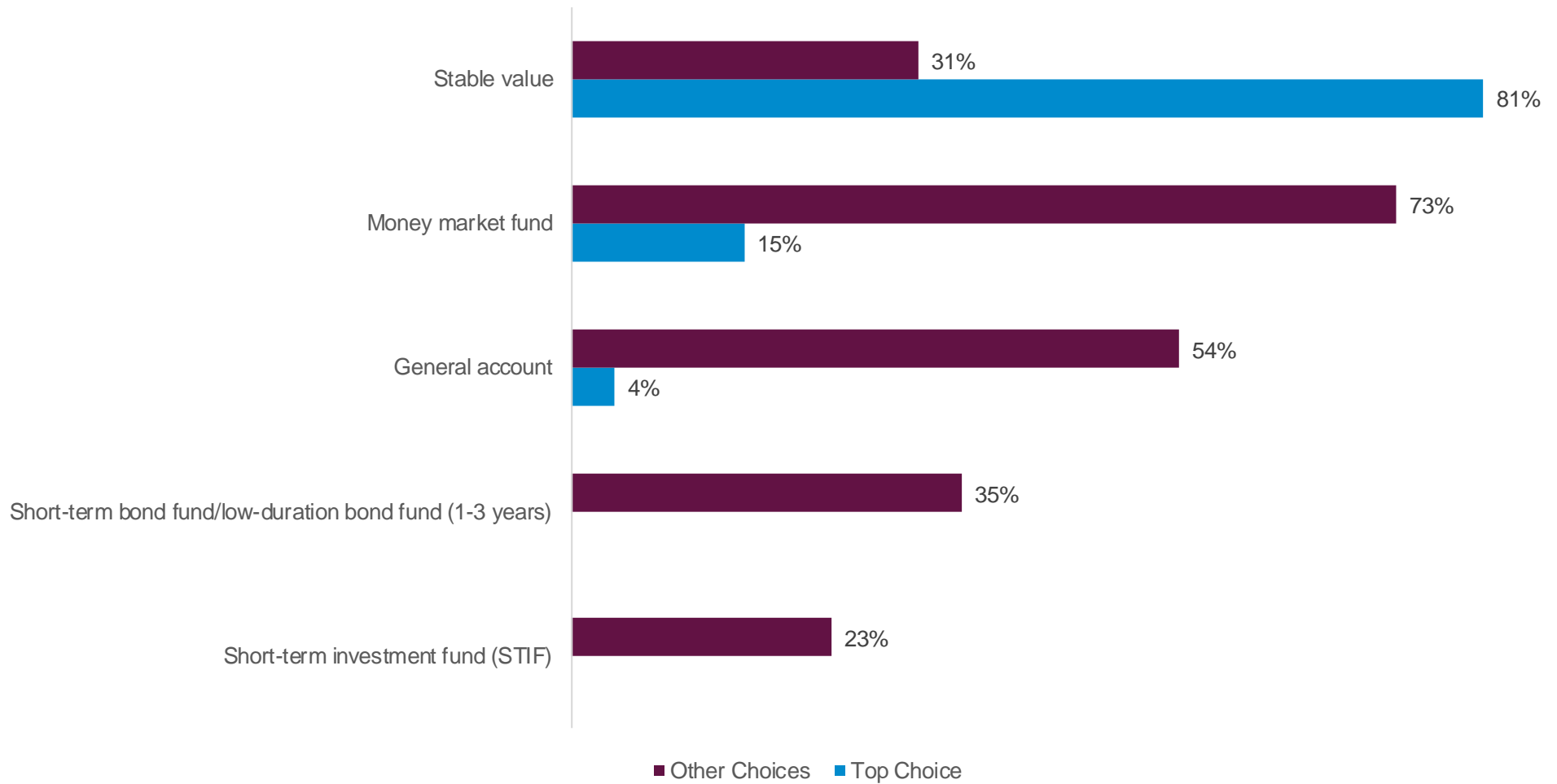


40. On the core lineup, what management approach would you suggest for the following strategies? (n=25)

41. What is the optimal number of plan stand-alone options for each of these asset categories? (n=25)

Capital Preservation Recommendations

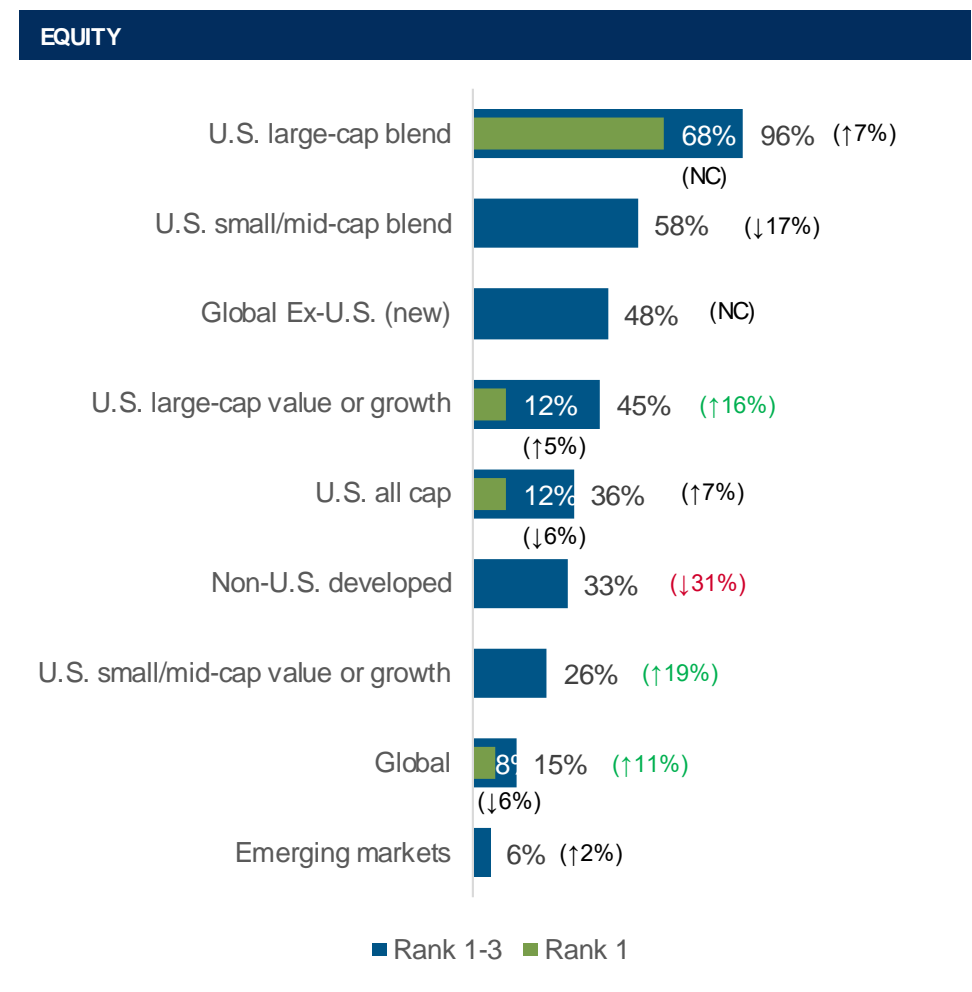
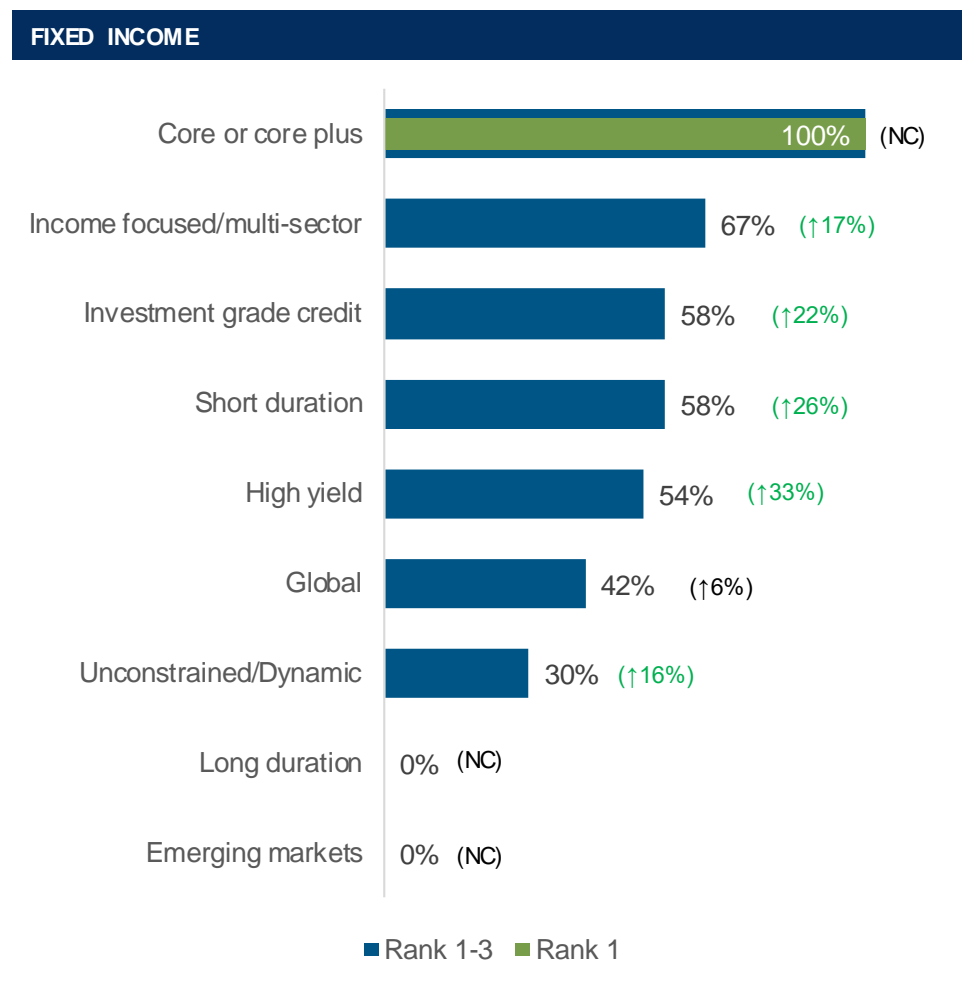
4 out 5 consultants recommend Stable Value



24. Which capital preservation strategies would you recommend? (n=26)

Fixed Income and Equity Strategy Recommendations

Unanimous preference for core or core plus, Income-focused multi-sector widely recommended by two-thirds; U.S. large-cap blend top equity choice



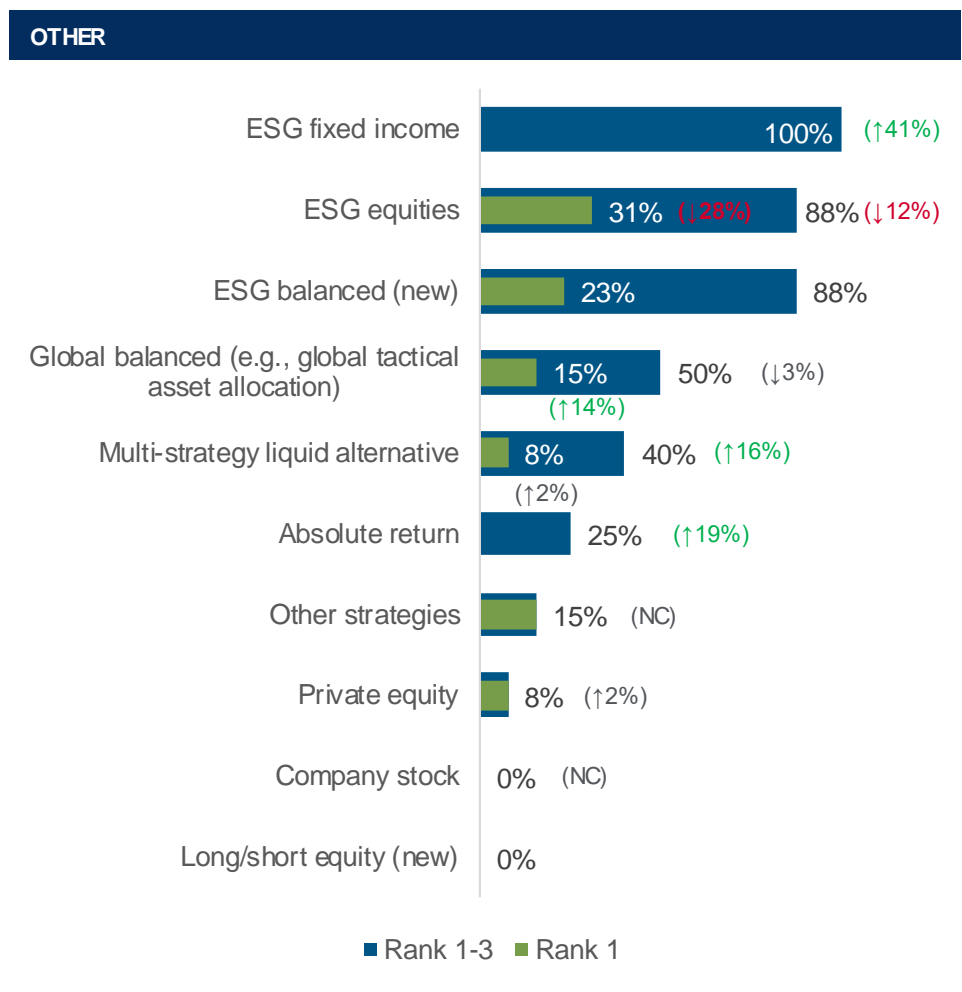
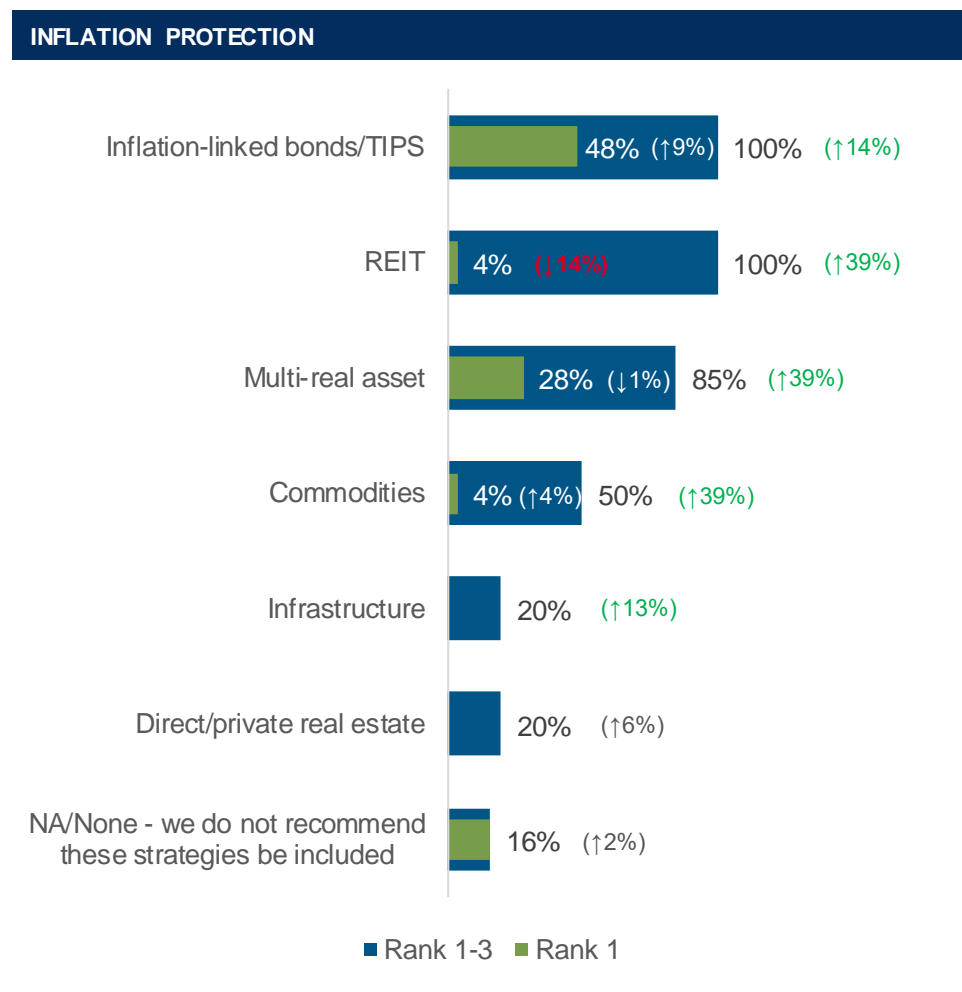
25. On the core lineup, which fixed income strategies do you recommend? Rank in order of preference. (n=25)

26. On the core lineup, which equity strategies do you recommend? Rank in order of preference. (n=25)

(↑/↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Inflation-Protection and Other Core Strategy Recommendations

REITs, TIPS and multi asset all popular recommendations; when adding non-traditional strategies, ESG recommended by most consultants



27. On the core lineup, which inflation-protection strategies do you recommend? Rank in order of preference unless NA/None is ranked No. 1. (n=25)

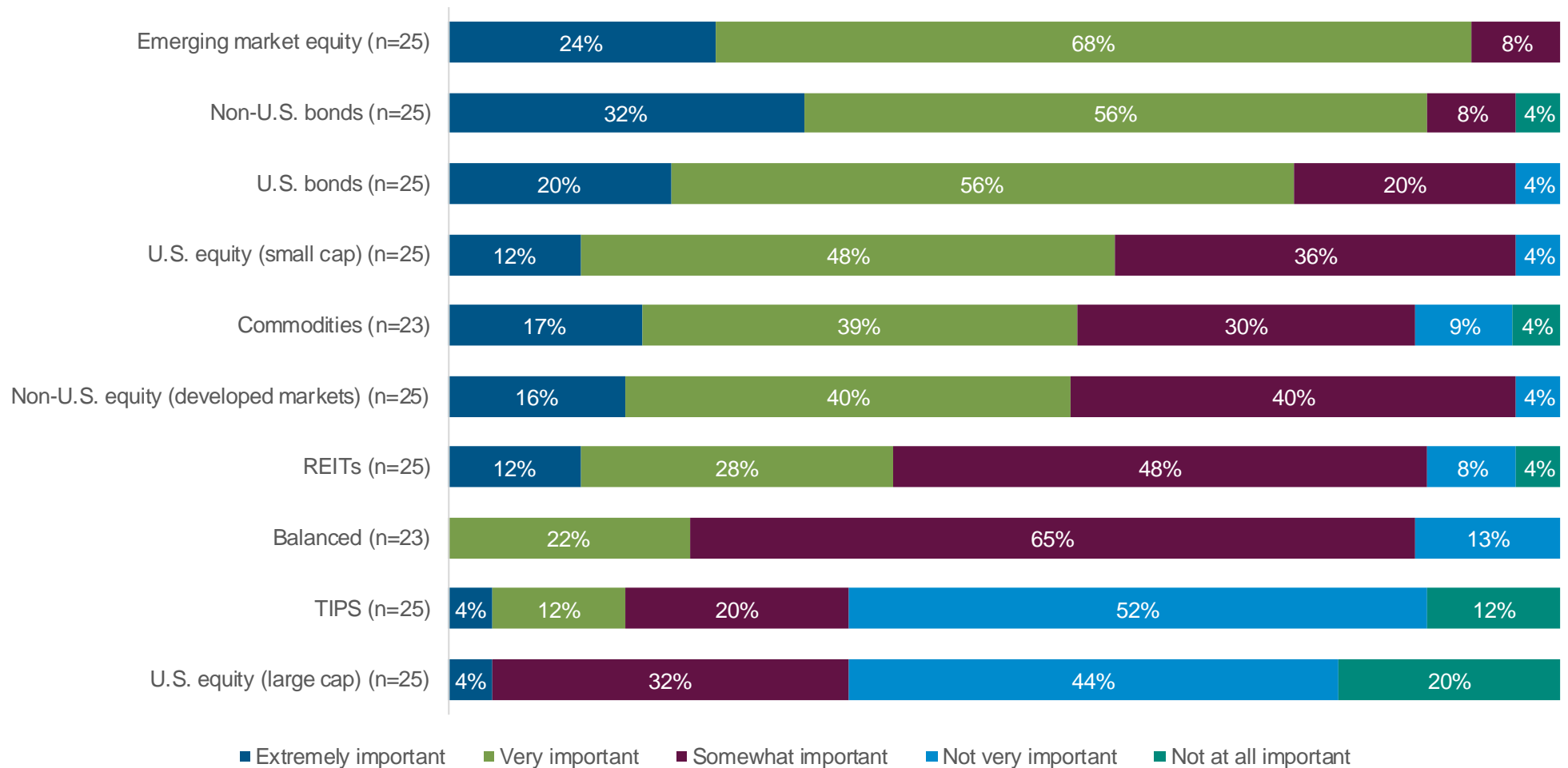
28. On the core lineup, what are the other core strategies that you recommend? Rank in order of preference. (n=13)

Analyst Note: Other strategies includes "We do not recommend these strategies" and "we would recommend ESG or private markets within an above-mentioned core option but wouldn't proactively recommend any of these as stand-alone options."

(↑/↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Importance of Active Management by Asset Class

Active management very important for fixed income and EM equity

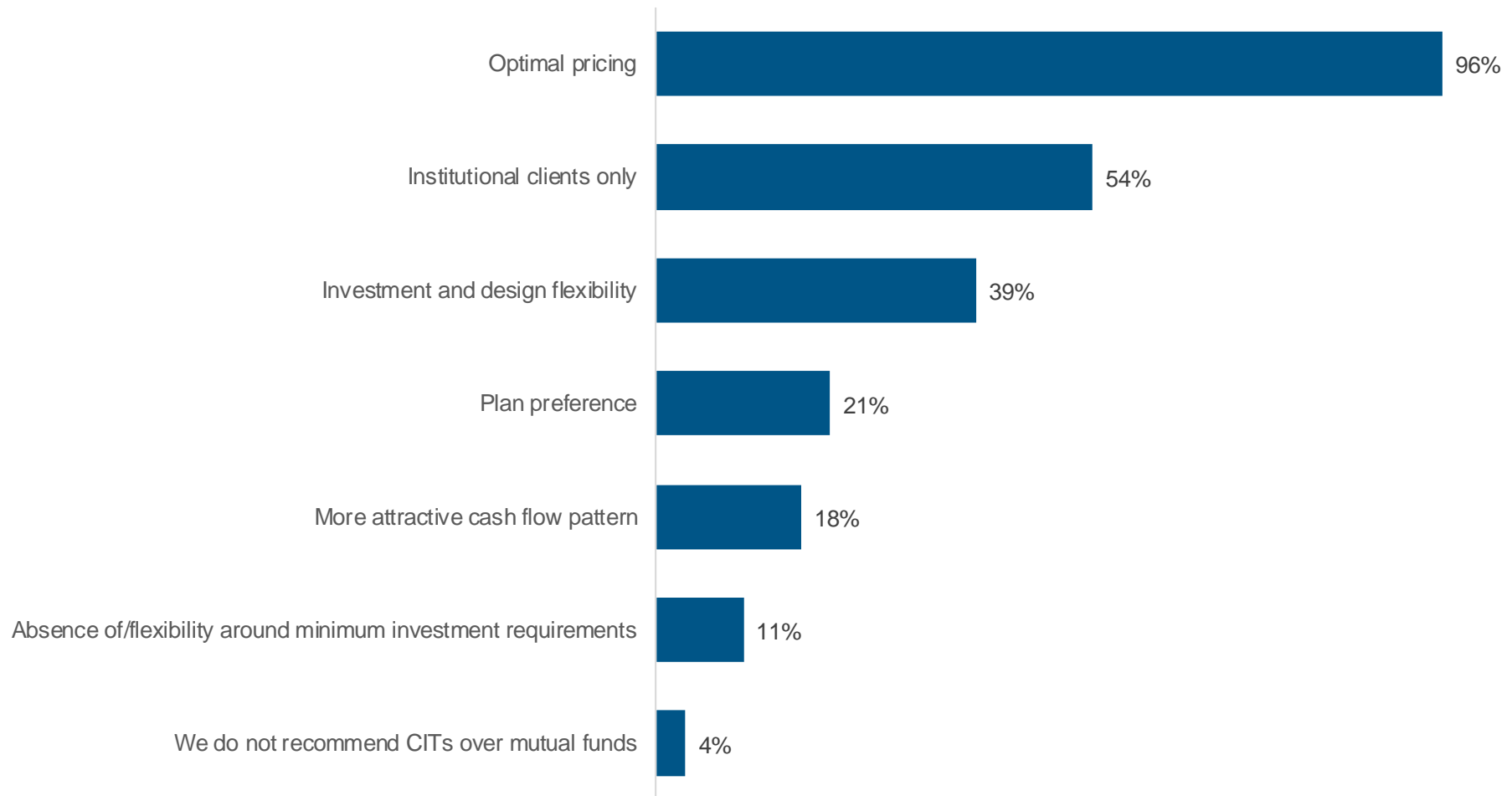


42. How important is active management in the following strategies?

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Reasons to Recommend CIT Over Mutual Fund

Consultants say optimal pricing is the top reason to recommend CIT

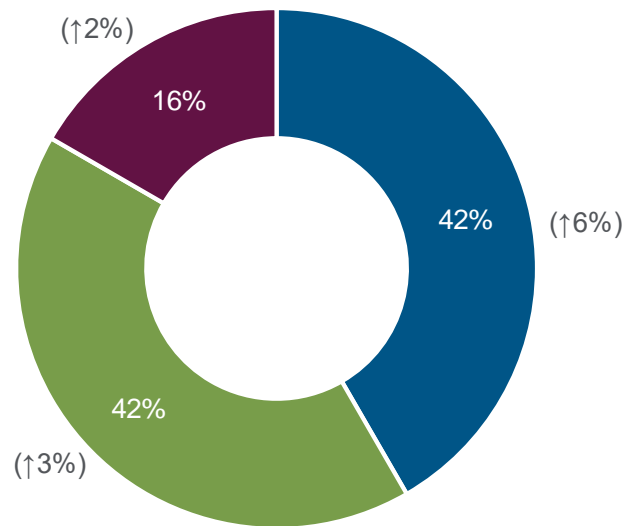


43. What are the top three reasons that would cause you to recommend a collective investment trust (CIT) over a mutual fund (MF)? *Select up to 3.* (n=25)
 Analyst Note: No respondents selected "Ease of communication" or "Trustee oversight" as a reason.

Minimum Pricing Difference for CIT Recommendation Over Mutual Fund – Core Lineup and Default

Most consultants state 3 bps or less is enough to recommend a CIT over a mutual fund; 1 bp less expensive is enough to recommend a CIT for the default

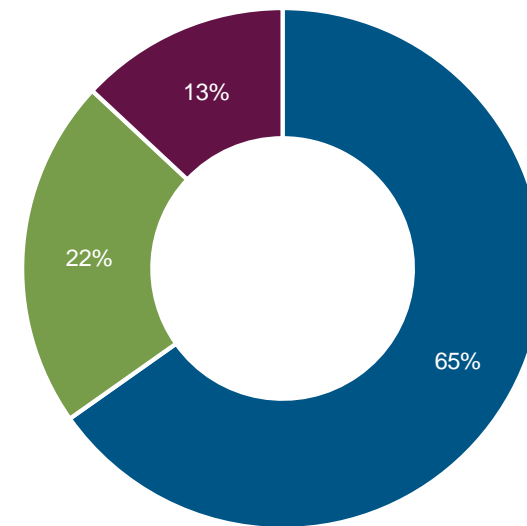
CORE LINE-UP



- CIT is 1 bp less expensive
- CIT is at least 3 bps less expensive
- CIT is at least 5 bps less expensive

44. Assuming comparable performance, what is the minimum pricing difference that would cause you to recommend a CIT over a mutual fund? (Core Lineup) n=24
Analyst Note: No respondents selected "Prefer to recommend mutual funds."

DEFAULT (new)



- CIT is 1 bp less expensive
- CIT is at least 3 bps less expensive
- CIT is at least 5 bps less expensive

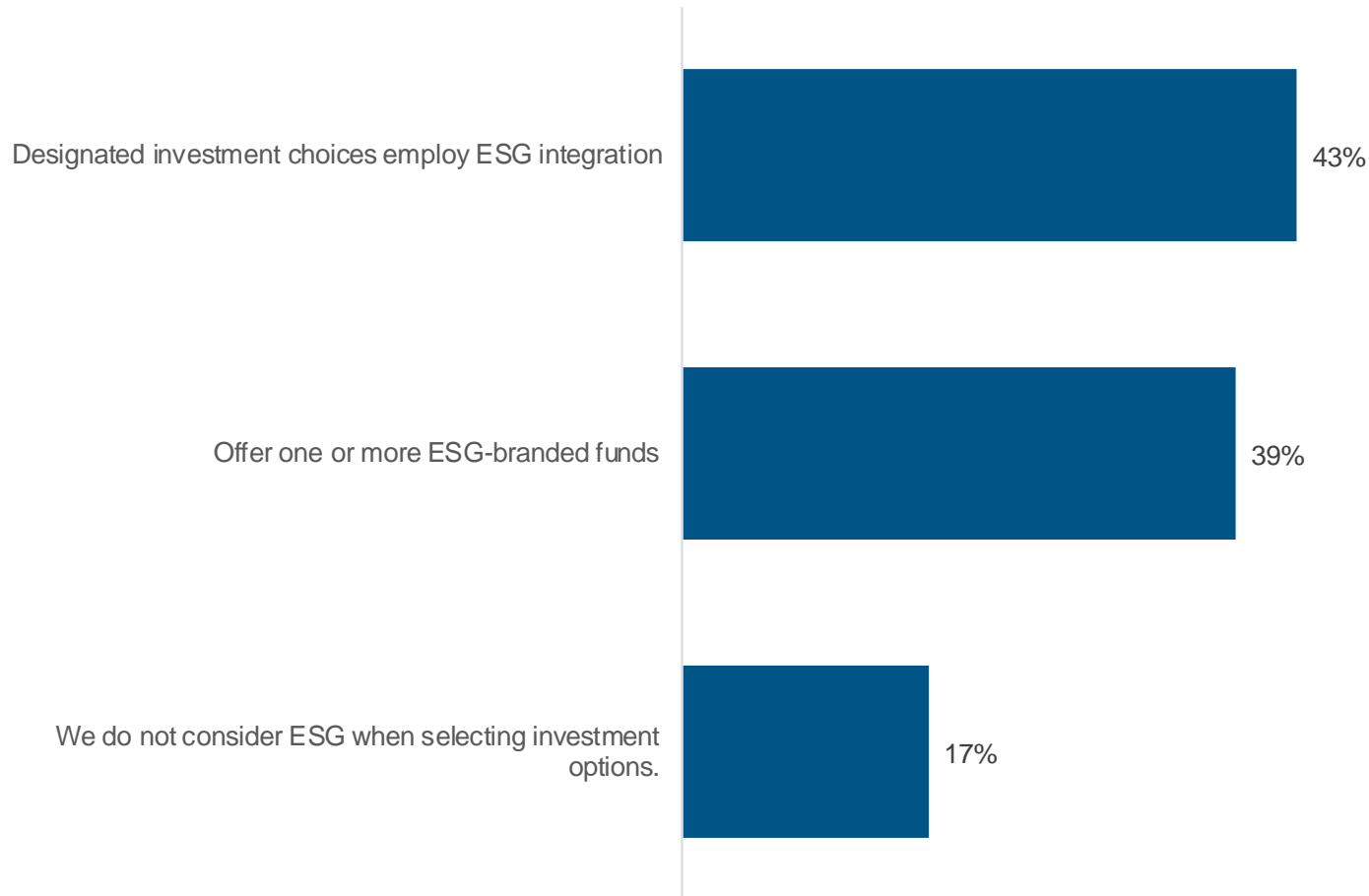
44. Assuming comparable performance, what is the minimum pricing difference that would cause you to recommend a CIT over a mutual fund? (Default Investment) n=23
Analyst Note: No respondents selected "Prefer to recommend mutual funds."



Plan Design and Investments: ESG

Approach to ESG for DC Plans

Consultants split on ESG approach for DC plan

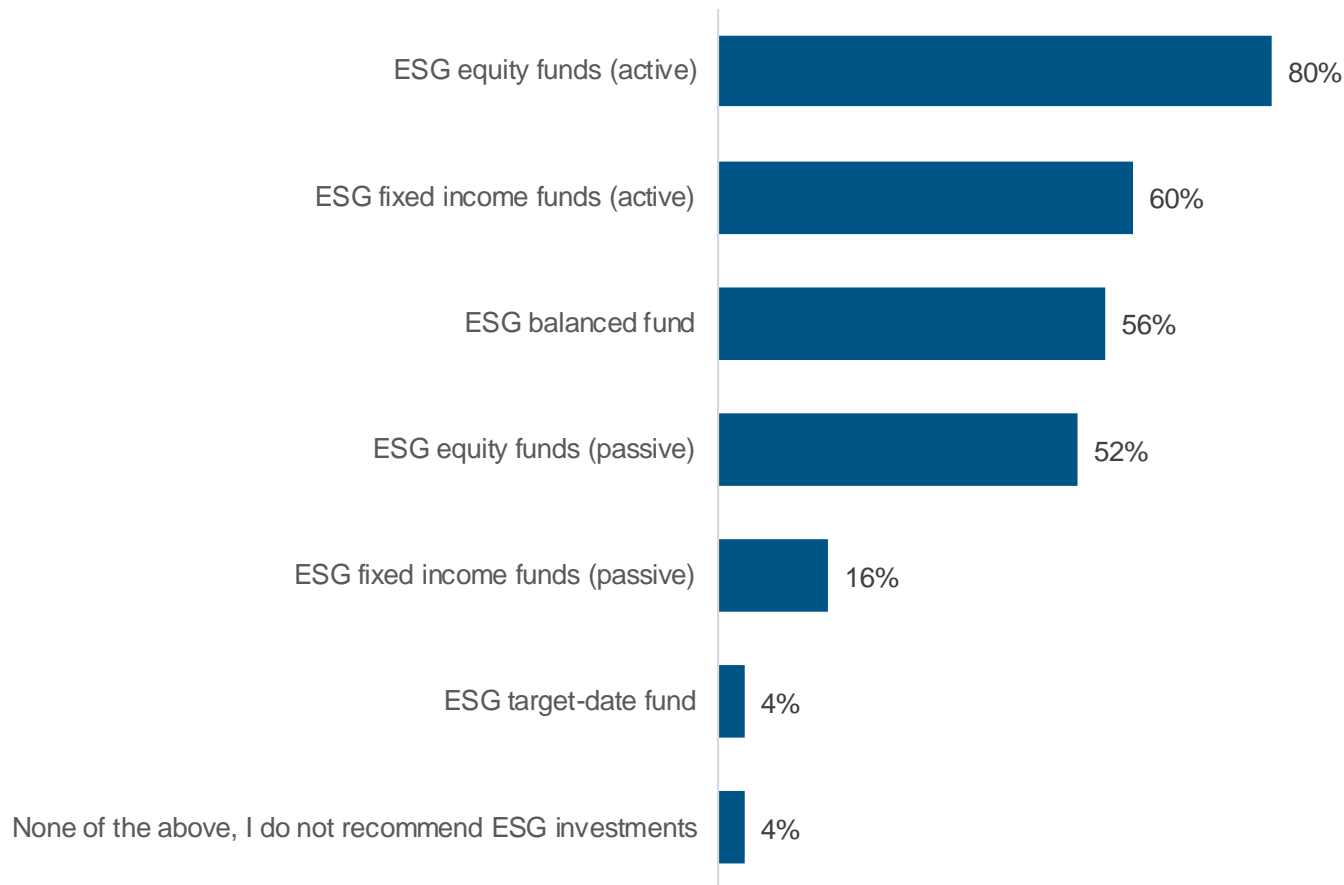


45. Which of the following best explains your approach to ESG for DC plans? (n=25)

Analyst Note: "Offer ESG-branded funds" percentage represents respondents that selected "Offer one or more funds as designated investment choices which are explicit in their branding on a focused approach to environmental, social, and governance issues." "Designated investment choices employ ESG integration" percentage represents respondents that selected "Have all designated investment choices included as one evaluation factor regarding their approach to environmental, social, and governance issues." Firms that selected "We do not consider ESG when selecting investment options" noted "ESG incorporation & driven by client preference", "lack of available quality products today", "need of more predictable regulatory framework", and "not a factor unless seeking a dedicated ESG strategy."

ESG Investment Recommendations for Explicitly Branded ESG Products

Active recommended over passive, majority suggest equity, fixed income, and balanced options



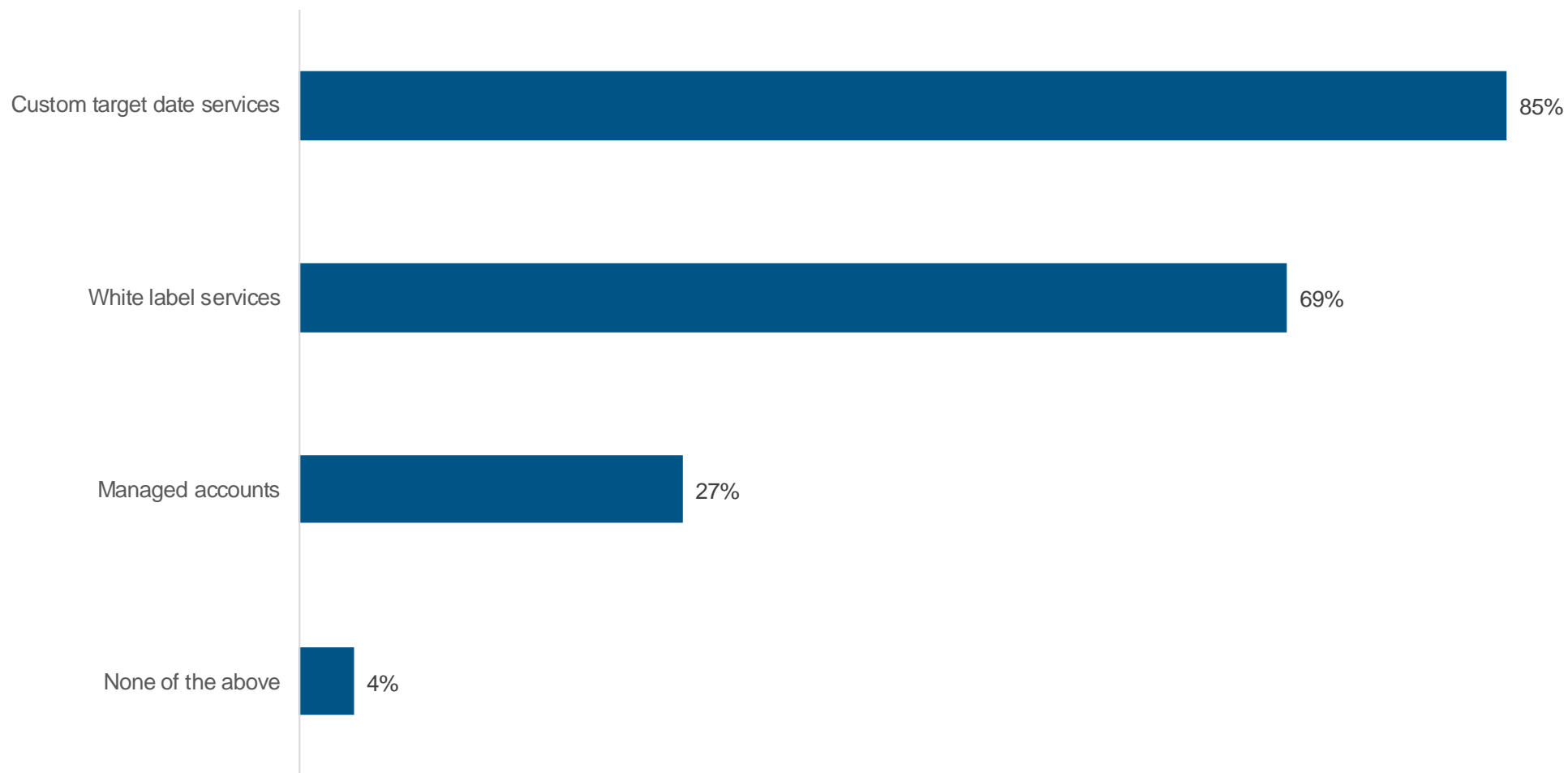
46. For those of your clients who prefer funds as designated investment choices which are explicit in their branding on a focused approach to ESG issues, which of the following ESG investments do you recommend? (n=25)



Custom and White Label Solutions

Custom Asset Allocation Services Offered

Most consultants offer custom target date and white label services



12. Which—if any—of these custom asset allocation services (e.g., consulting or asset allocation management) do you **currently** provide to any of your DC clients? *Select all that apply.* (n=26)

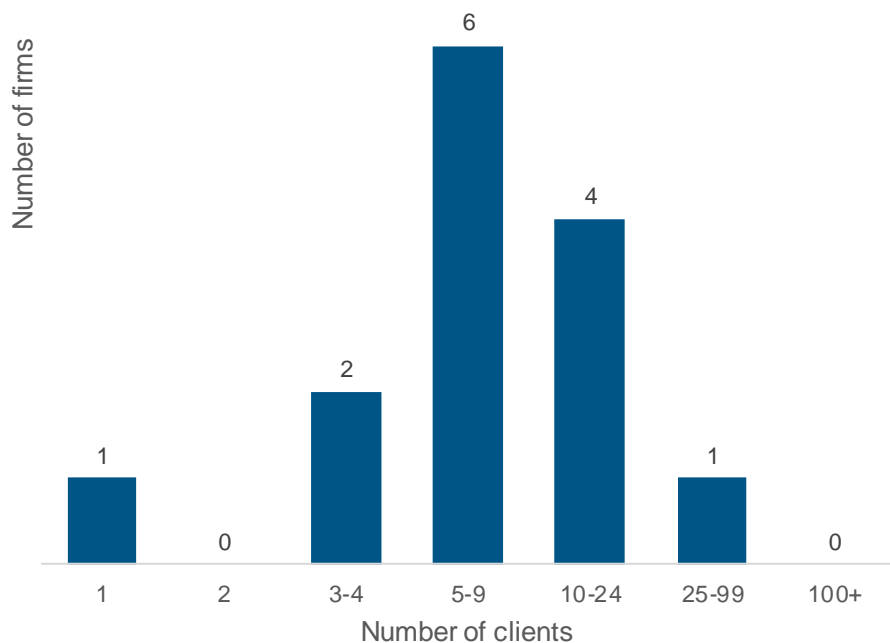
Distribution by White Label Clients and Assets

White label assets represent 17% of institutional clients' advised assets

DISTRIBUTION BY TOTAL WHITE LABEL CLIENTS

AMONG CONSULTANTS WHO PROVIDE THE SERVICE

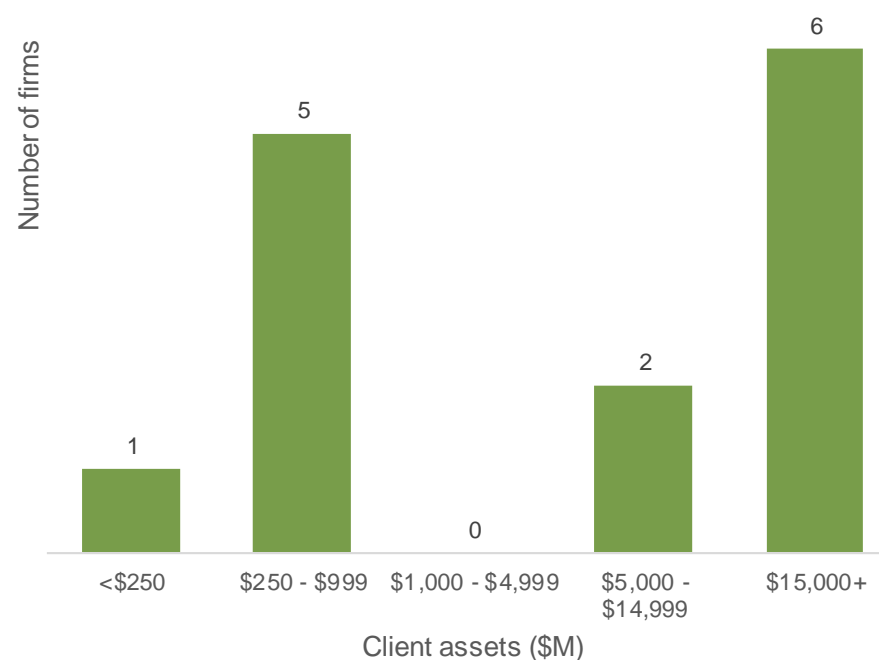
Average: 11
Median: 8
Total: 147



DISTRIBUTION BY TOTAL WHITE LABEL ASSETS

AMONG CONSULTANTS WHO PROVIDE THE SERVICE

Average: \$69.3B
Median: \$9.4B
Total: \$969.8B



*PIMCO, 2022 DC Consulting Study, \$8.9T represents total DC AUM of respondents

13. To how many of your DC clients do you currently provide...? White Label Services (n=14).

15. Considering the DC clients to whom you currently provide custom asset allocation services, what is the combined total assets (in \$ millions) held in these custom strategies? White Label Services (n=14)

Number of Clients by Single- and Multi-Manager White Label

Multi-manager white label used more often than single-manager



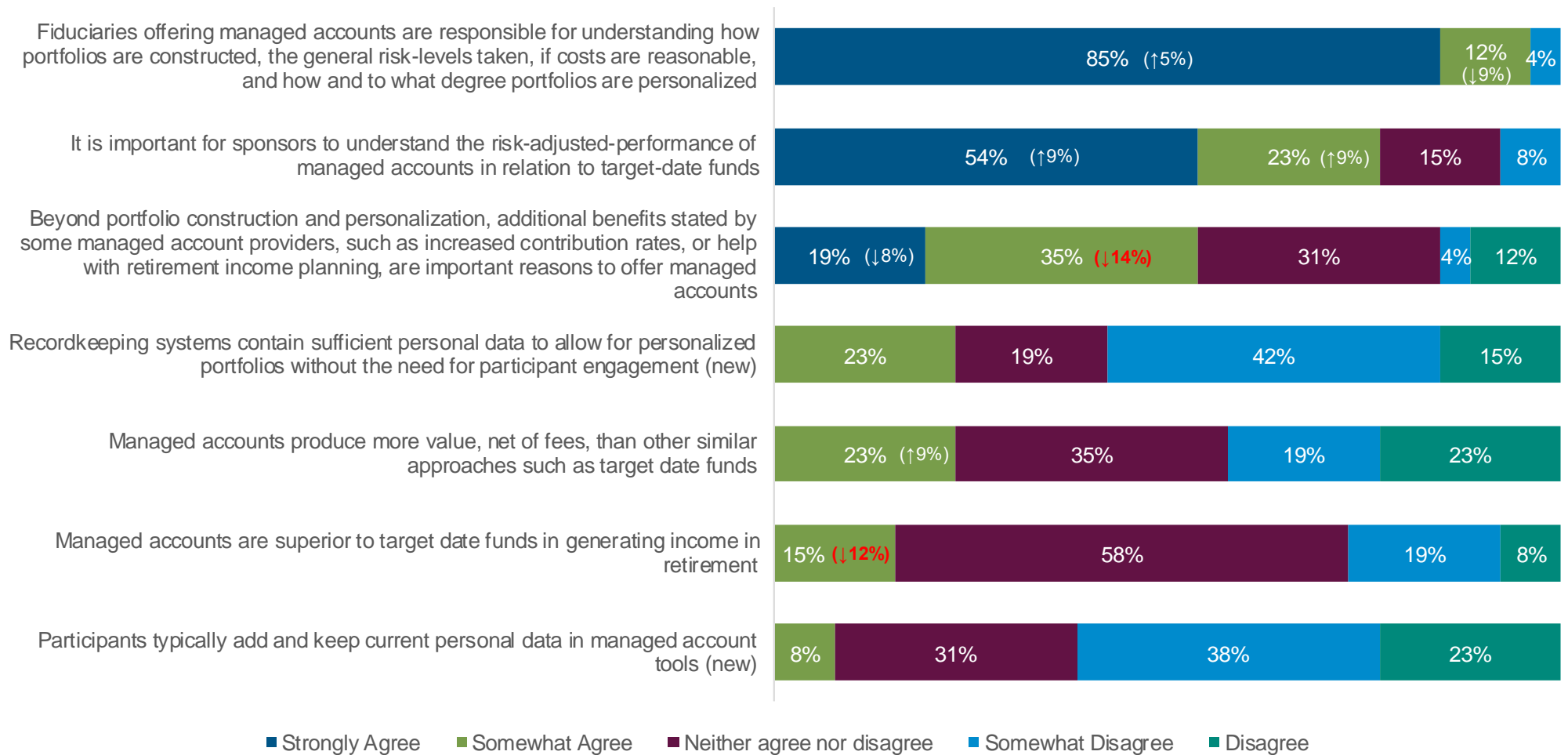
14. Of your white label clients, how many are multi-manager white label vs single-manager white label? Figures show total number of clients. *Single-manager (n=8) and Multi-manager (n=14)*



Plan Design and Investments: Managed Accounts

Perspective on Managed Accounts

Near unanimous consultant agreement on needed fiduciary analysis; high importance on understanding how MA performance relates to TDFs

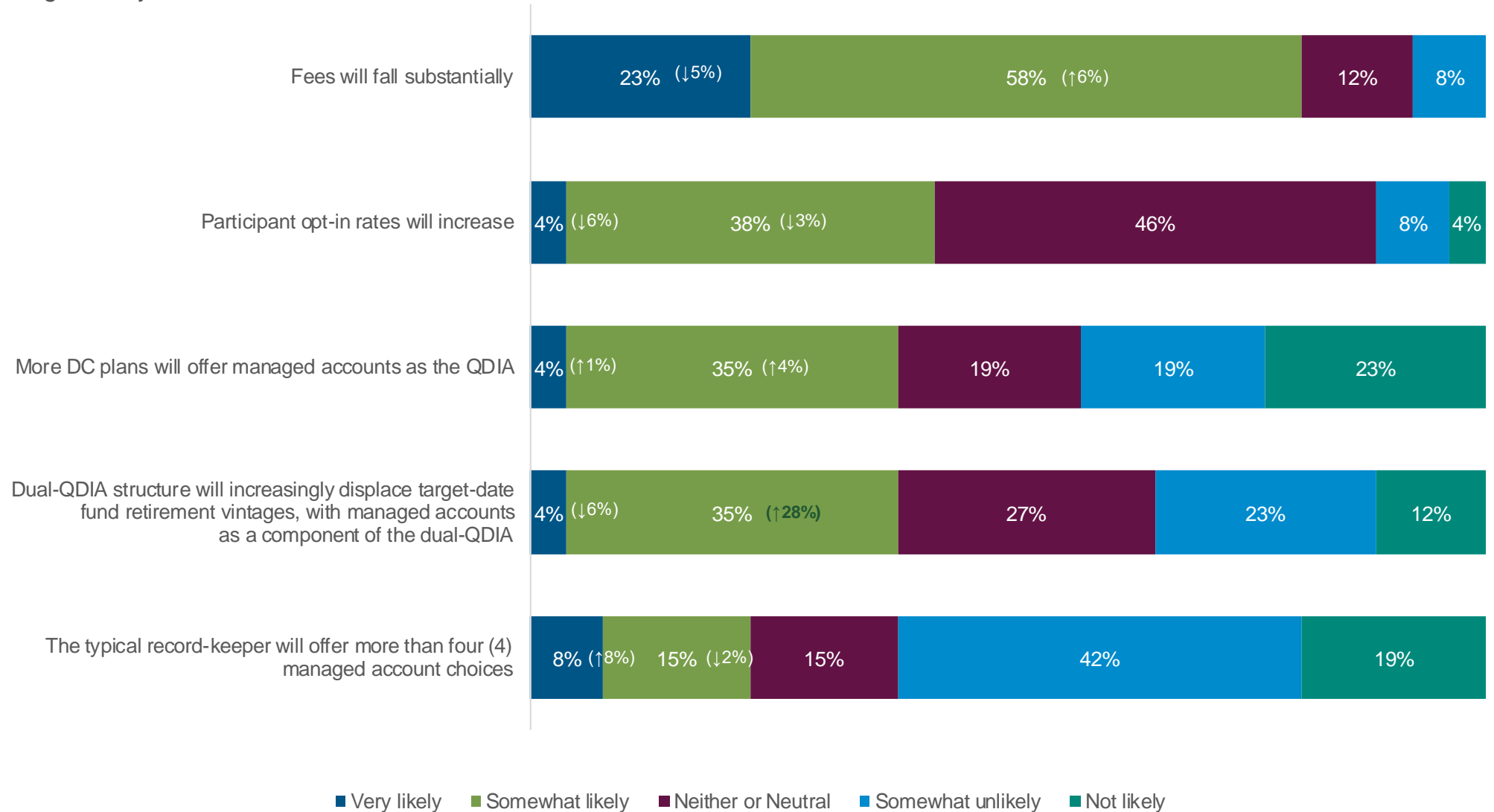


21. Regarding **managed accounts**, how much do you agree or disagree with the following statements? (n=26)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Managed Account Trends Within the Next 3 Years

Although consultants are optimistic on falling fees, only a minority of consultants believe there will be meaningful change on a range of key items



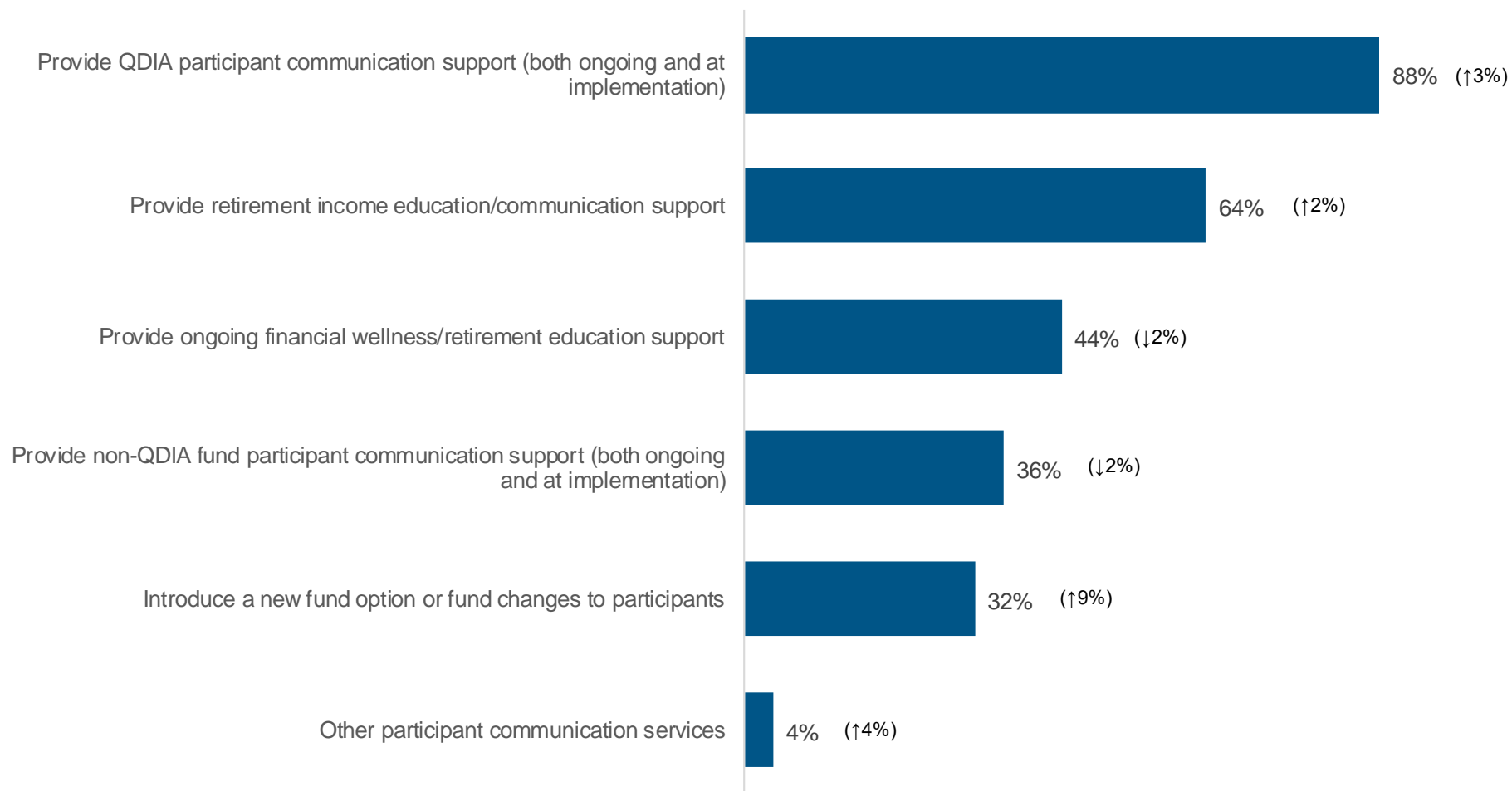
22. How likely are the following possible managed account trends within the next 3 years? (n=26)
 (↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.



Participant Services

Participant Communication Services

Majority of consultants rank QDIA and retirement income communication support as most important

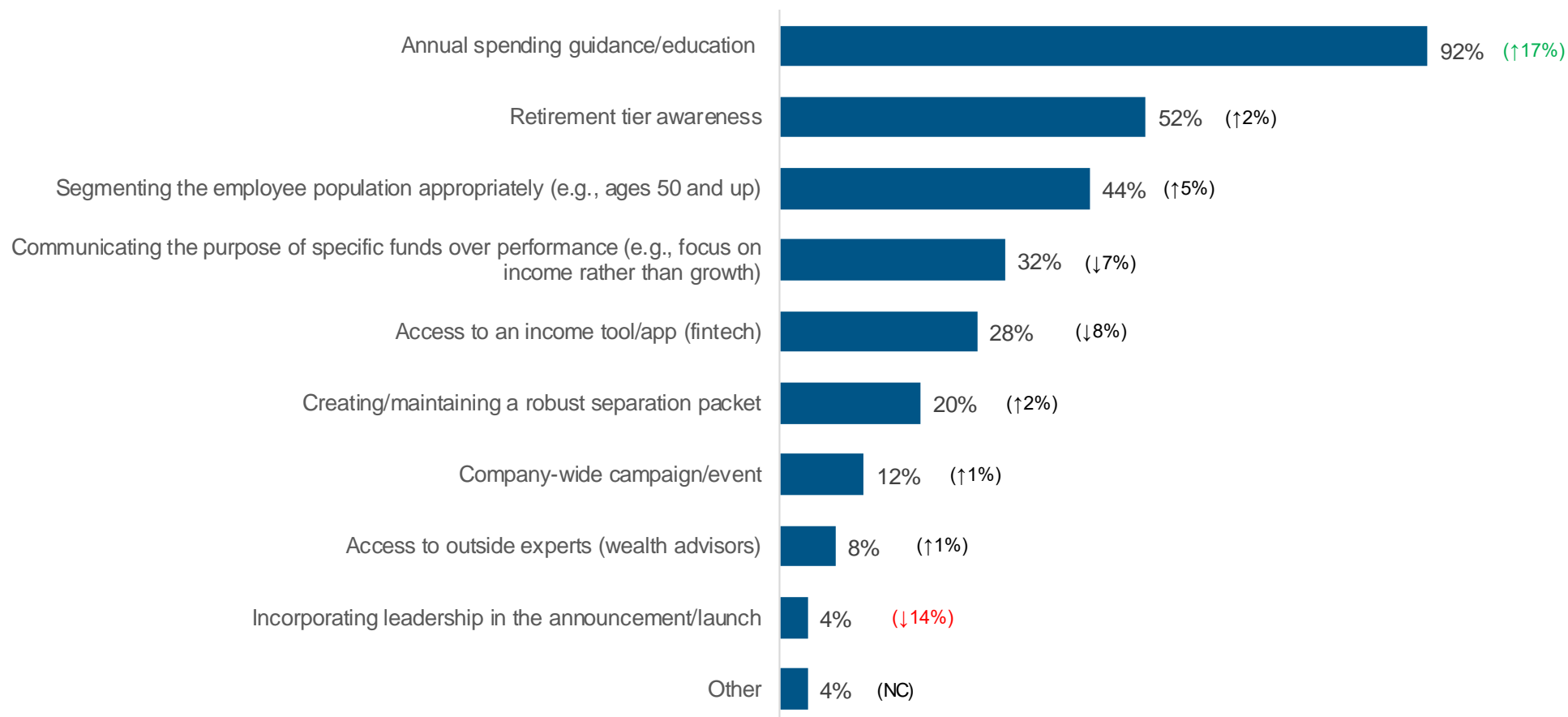


63. What are the most important participant communication services for a DC investment manager to provide? *Select up to 3 services.* (n=25)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

Key Components of a Retirement Income Communications Program

Spending guidance ranks top, consultants advocate for retirement tier awareness



64. What are the most important components of a retirement income communications program? *Select up to 3 components.* (n=25)

(↑-↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

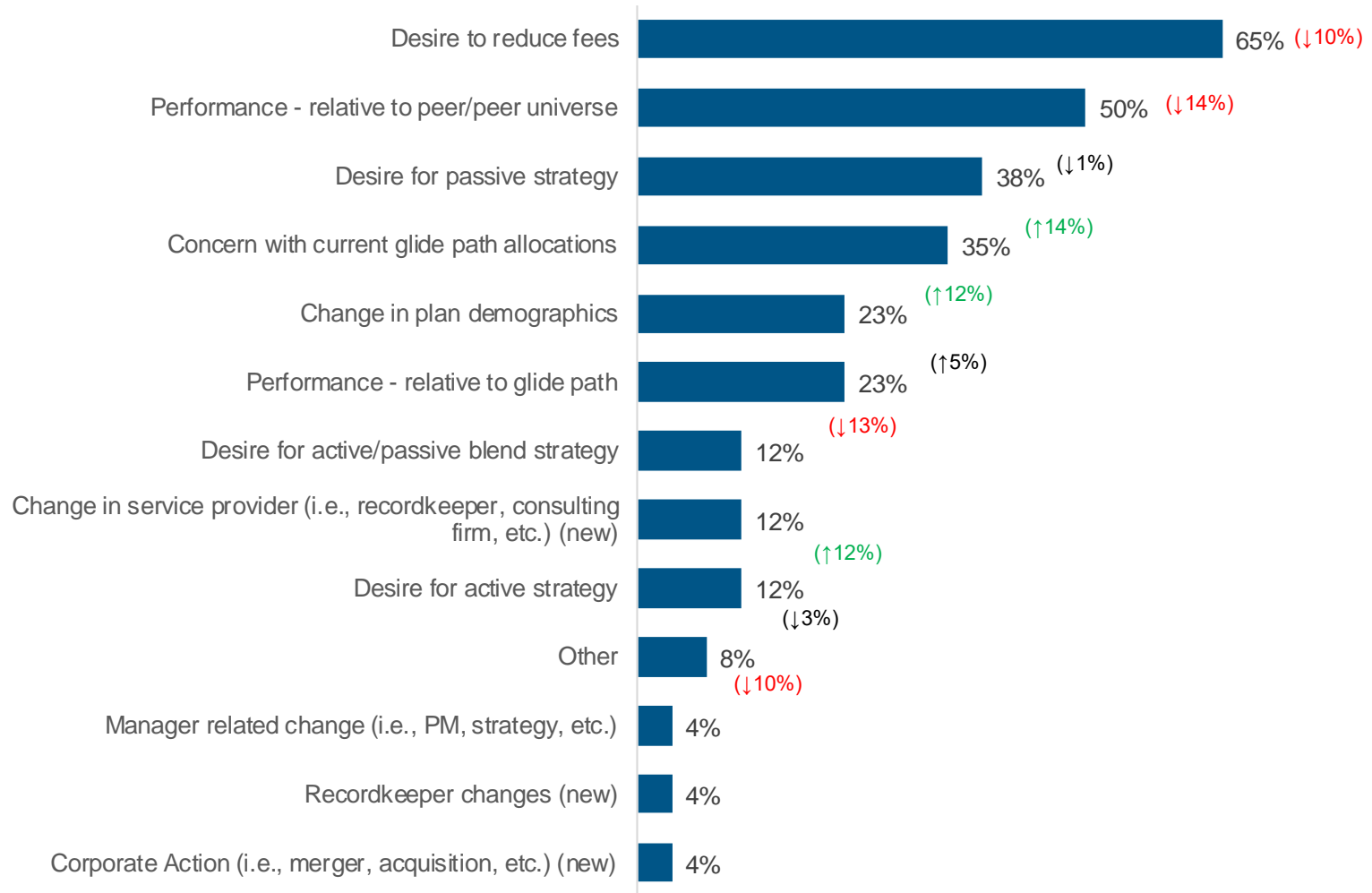
Analyst Note: Other is "Retirement Readiness/Retirement Portfolio goals."



Appendix

Top Factors for Changing Target Date Fund Manager

Desire to reduce fees and performance relative to peer universe top factors for changing their target date fund managers



37. Please identify the top 3 factors that cause your clients to change their current TDF manager. Select up to 3 factors. (n=24)

Analyst Note: Other includes "Performance – relative to stated benchmarks" and "aligning implementation with investment beliefs of the committee."

(↑/↓ %) – Represents corresponding YoY percentage difference from the 2021 PIMCO DC Consulting Study. Positive (↑) differences of 10% and over are displayed in green, negative (↓) in red and less than 10% in black.

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Quarterly Review

VRS Defined Contribution Plans

January 1, 2022 – March 31, 2022

D**C****P**
Virginia Retirement System

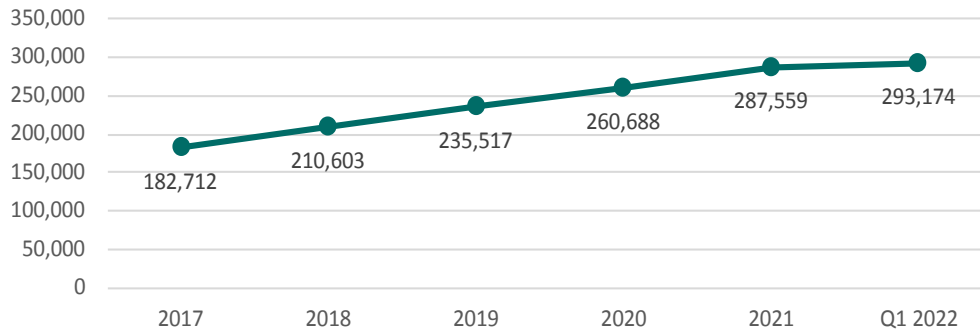


VRS Defined Contribution Plans¹

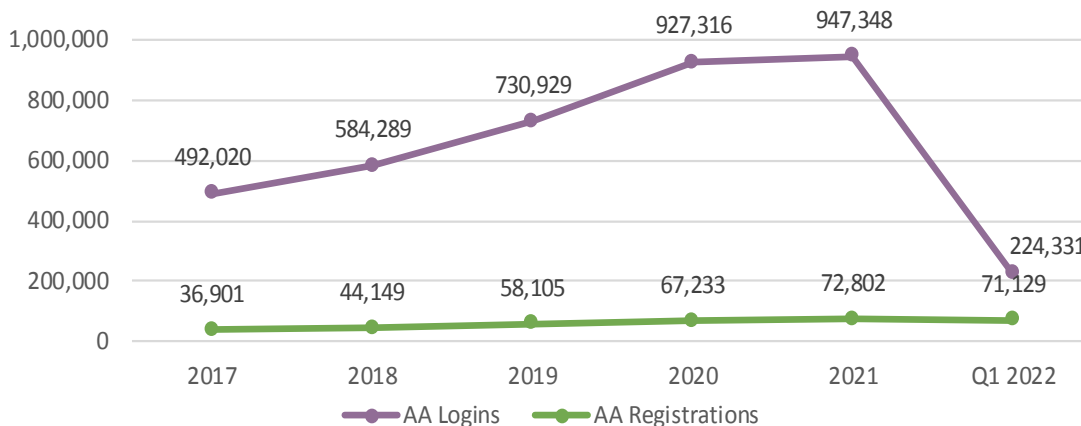
1st Quarter 2022 – DC Plans Metrics

Total Assets²: \$6,479,816,805.78 Total Accounts²: 490,319

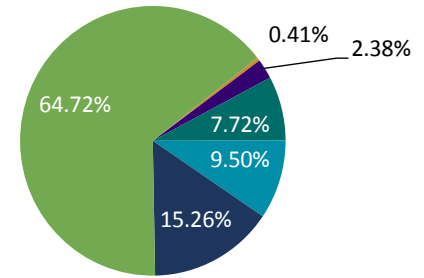
Unique Participants



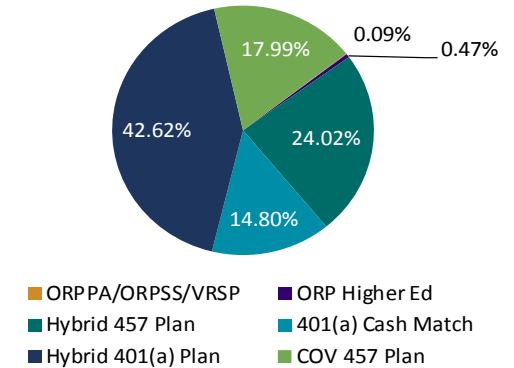
Account Access Registrations & Logins



Assets Under Management



Accounts Under Management



Top 10 Visited Pages³

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

VRS Defined Contribution Plans

1st Quarter 2022 – DC Plans Participant Engagement

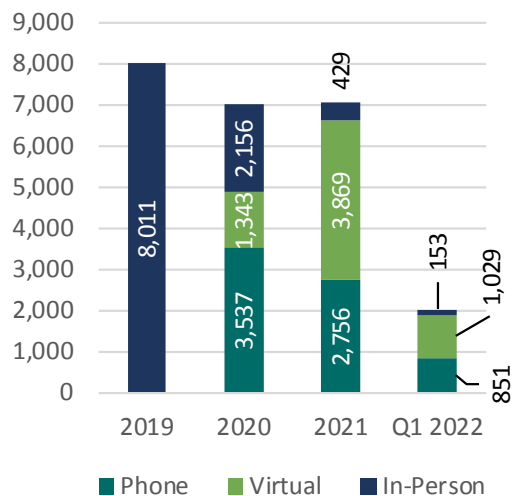
Call Center – Participant Services

- 14,080 calls received YTD in 2022
- 55,311 calls received in 2021
- 63,953 calls received in 2020
- 56,612 calls received in 2019

Current call trends:

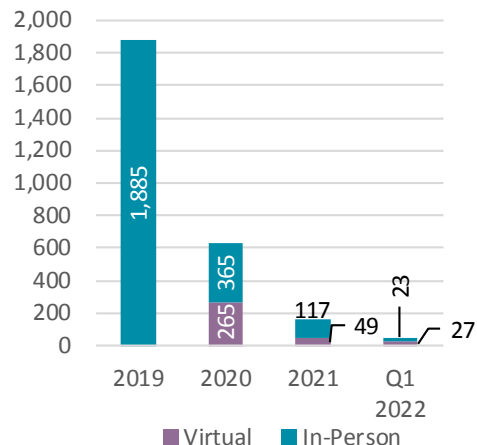
1. Withdrawals
2. General inquiries
3. Internet assistance
4. Indicative data
5. Deferrals

Individual Account Reviews

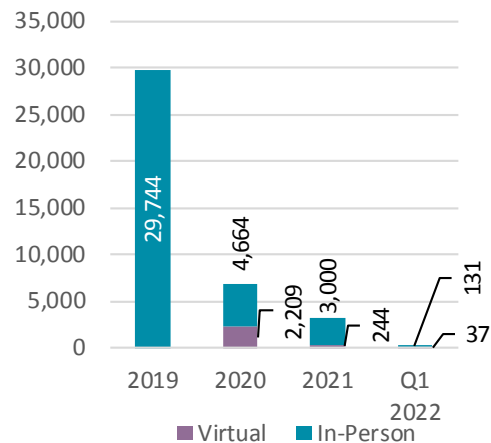


Participant Sessions

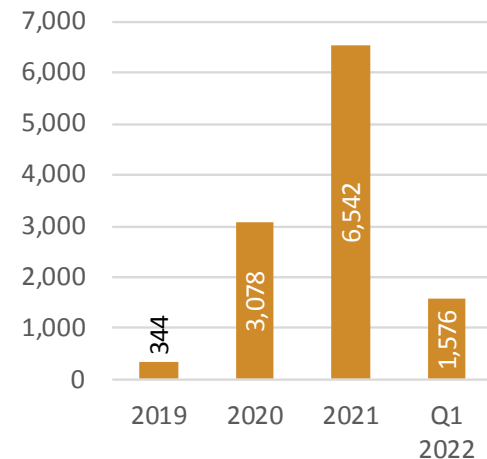
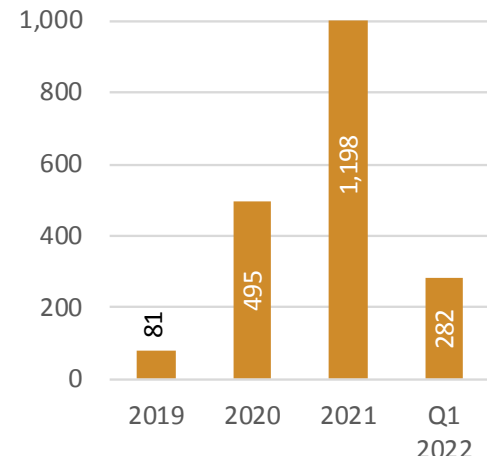
Group Meetings



Participant Attendance



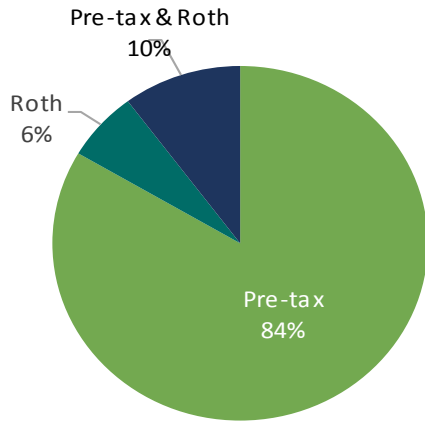
Webinars



VRS Defined Contribution Plans

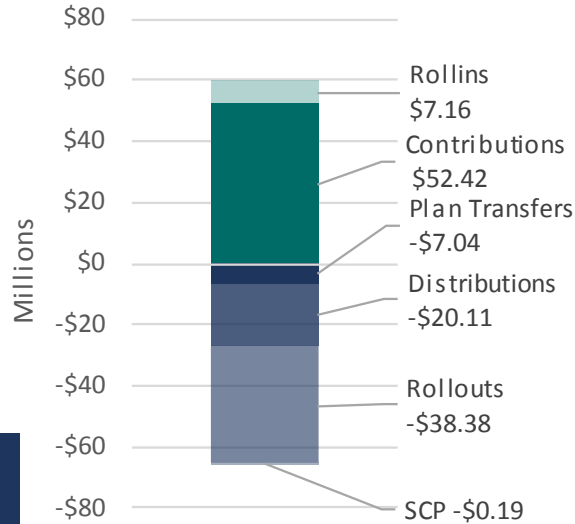
1st Quarter 2022 – COV 457 Plan, Virginia Cash Match Plan

Deferral Type



Average pre-tax deferral per pay = \$169.34
Average Roth deferral per pay = \$179.81

Contributions/Distributions⁵



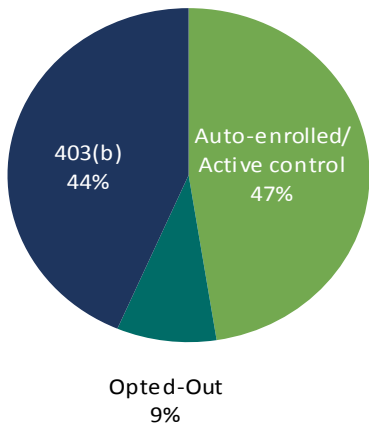
COV 457 Participation Rates

- State⁴ 36.15%
- Non-state 9.99%

Top 10 Fund Holdings

- | | |
|------------------------------|-----------------|
| 1. Stock | \$1,547,144,312 |
| 2. Target Date Portfolios | \$1,375,179,745 |
| 3. Stable Value | \$623,780,792 |
| 4. Small/Mid-Cap Stock | \$421,704,973 |
| 5. International Stock | \$197,333,991 |
| 6. Bond | \$155,843,299 |
| 7. Global Real Estate | \$108,408,056 |
| 8. TD Ameritrade | \$92,189,748 |
| 9. Money Market | \$88,865,754 |
| 10. Inflation-Protected Bond | \$56,458,202 |

Auto Enrollment



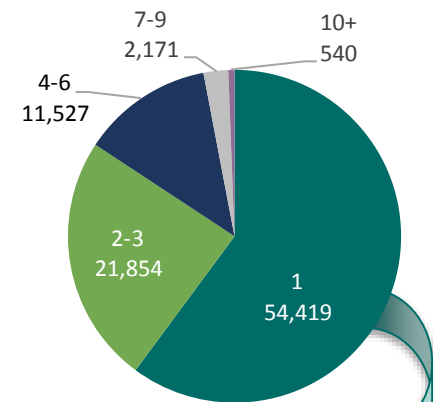
Participant Status Overview⁶

160,170 total accounts

57% Active
43% Separated

\$2,052m assets at-risk

of Funds Held by Participants

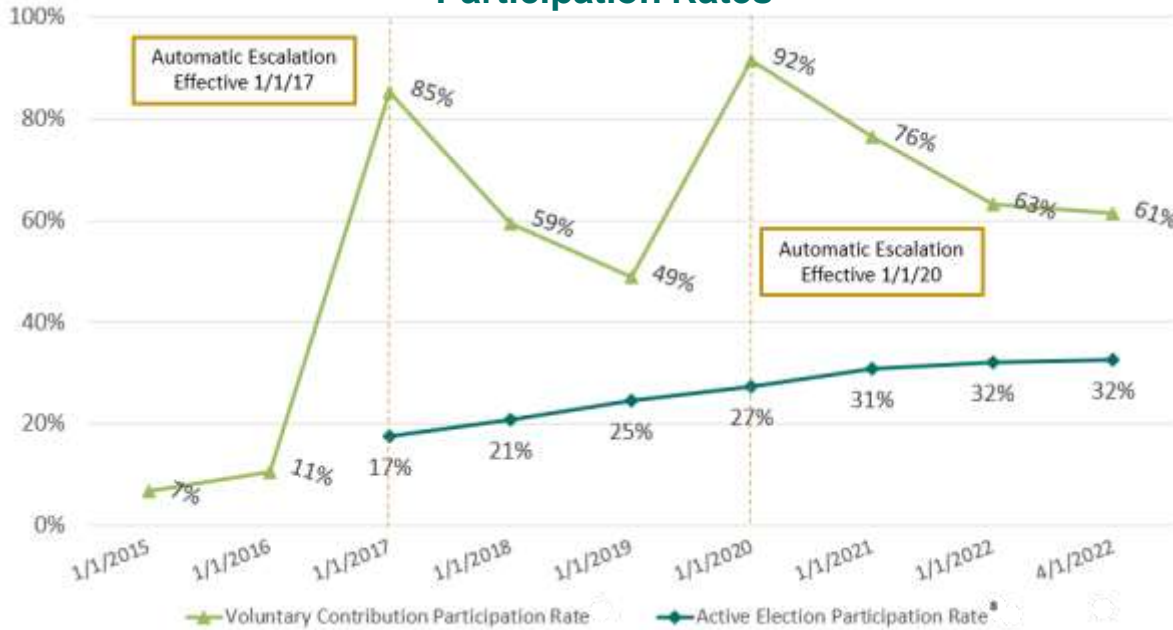


81% of this population is invested in a single TDP

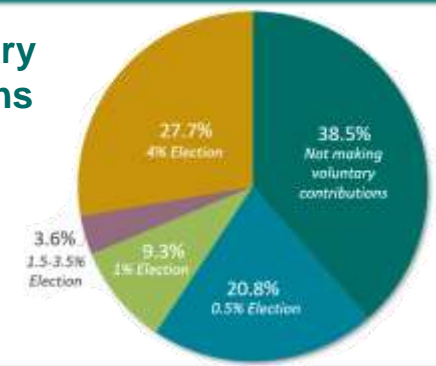
VRS Defined Contribution Plans

1st Quarter 2022 – Hybrid Retirement Plan – 401(a) & 457(b)

Participation Rates⁷



Voluntary Elections



Top 10 Fund Holdings

1. Target Date Portfolios	\$1,386,634,974
2. Stock	\$53,175,674
3. Small/Mid-Cap Stock	\$16,712,440
4. Money Market	\$8,355,368
5. International Stock	\$7,824,310
6. Stable Value	\$6,182,525
7. Global Real Estate	\$4,104,609
8. TD Ameritrade	\$3,355,028
9. High-Yield Bond	\$3,059,918
10. Bond	\$2,819,467

Participant Status Overview³

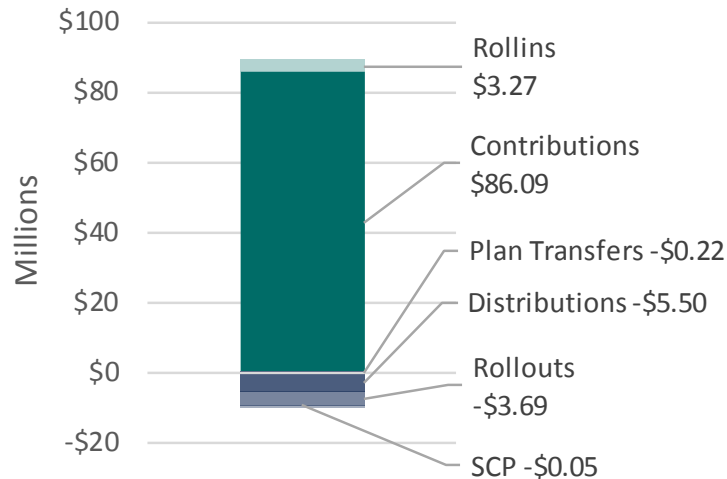
326,703 total accounts

73% Active

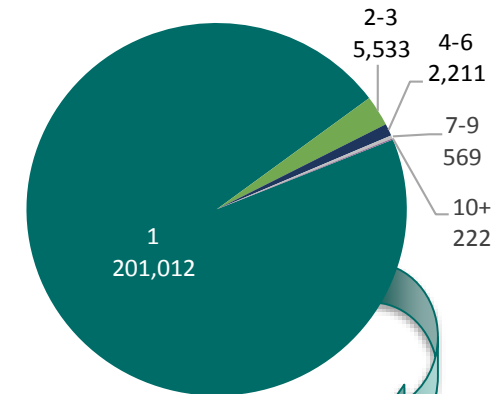
27% Separated

\$248m assets at-risk

Contributions/Distributions



of Funds Held by Participants



99.6% of this population is invested in a single TDP

VRS Defined Contribution Plans

1st Quarter 2022 – DC Plans Metrics

Source Information/Additional Footnotes

All data unless noted otherwise was provided by MissionSquare Retirement and is as of 3/31/2022.

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: 4/1/22 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.