

ALASKA RETIREMENT MANAGEMENT BOARD

DEC

7-8, 2023

BOARD of TRUSTEES MEETING

Board of Trustees Meeting

Thursday, December 7, 2023

Location: Alaska Housing Finance Corporation Board Room 4300 Boniface Parkway, Anchorage, AK	Microsoft Teams: Click here to join the meeting Meeting ID: 246 091 358 512 Passcode: QRBAD6	Call In (Audio Only) Phone: 1-907-202-7104 Code: 251 114 585#
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- I. 9:00 AM Call to Order**
- II. Roll Call**
- III. Public Meeting Notice**
- IV. Approval of Agenda**
- V. Public/Member Participation, Communications, and Appearances**
*(Three Minute Limit. Callers may need to press *6 to unmute.)*
- VI. Approval of Minutes – July 26, 2023**
- VII. 9:15 AM Election of Officers**
- VIII. 9:20 AM Staff Reports**
 - A. Liaison Report**
 - 1. Disclosures Report
 - 2. Communication Report
 - 3. Meeting Calendars
 - 4. Contract Review & Deadlines Timeline*Alysia Jones, Board Liaison, Treasury Division*
 - B. Fund Financial Presentation**
Ryan Kauzlarich, Assistant Comptroller, Treasury Division
Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits
 - C. Retirement & Benefits Division Report**
 - 1. Legislative Update
 - 2. Buck Consulting Invoices
 - 3. Member Statistics
 - 4. BEARS Project Update*Ajay Desai, Director, Division of Retirement & Benefits*
Kathy Lea, Chief Pension Officer, Division of Retirement & Benefits
Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits
Kris Humbert, Business Integration Officer, Division of Retirement & Benefits

NOTE: All Times are approximate, every attempt will be made to stay on schedule; however, adjustments may be made.

D. Treasury Division Report

Pamela Leary, Director, Treasury Division

E. CIO Report

Zachary Hanna, Chief Investment Officer, Treasury Division

F. Legal Report

Ben Hofmeister, Assistant Attorney General, Department of Law

IX. 9:55 AM

Trustee Reports

A. Chair Report, Bob Williams

B. Committee Reports

1. Audit Committee, *Michael Williams, Chair*

2. DC Plan Committee, *Bob Williams, Chair*

Action: *Participant-Directed Plans – Passive S&P 400 Index/ S&P 600 Index Fund*

3. Actuarial Committee, *Sandra Ryan, Chair*

4. Operations Committee, *Dennis Moen, Chair*

Action: *Asset-Liability Study*

Action: *RFP for Proxy Voting Services*

Action: *RFP for Performance Consultant Review*

5. Alaska Retiree Health Plan Advisory Board, *Lorne Bretz, ARMB Member*

X. 10:15 AM

Managed Accounts Update

Ajay Desai, Director, Division of Retirement & Benefits

Kathy Lea, Chief Pension Officer, Division of Retirement & Benefits

Dan Morrison, Senior Vice President, Head of Government Markets, Empower

Zachary Hanna, Chief Investment Officer, Treasury Division

BREAK @ 10:30 am (10 MINUTES)

XI. 10:40 AM

Presentations

10:40 – 10:55

A. KPMG Audit Report

Elizabeth Stuart, Audit Partner

Melissa Beedle, Audit Manager

10:55 – 11:15

B. Summary of Preliminary 2023 Valuation Results

David Kershner, Principal, Consulting Actuary, Buck

Robert Besenhofer, Principal, Health Actuary, Buck

11:15-12:15

C. Performance Measurement – 3rd Quarter

Steve Center, Senior Vice President, Callan

Ivan “Butch” Cliff, Executive Vice President and Director of Research, Callan

NOTE: All Times are approximate, every attempt will be made to stay on schedule; however, adjustments may be made.

LUNCH @ 12:15 pm (75 MINUTES)

1:30 – 2:10 **D. Private Equity Annual Plan**
Sean Howard, State Investment Officer, Treasury Division
Cahal Morehouse, State Investment Officer, Treasury Division

2:10 – 2:50 **E. Private Equity Manager Review**
Ashley Kahn, Vice President, Callan

BREAK @ 2:50 pm (10 MINUTES)

3:00 – 3:40 **F. Abbott Capital Management**
Matthew Smith, Managing Director
Young Lee, Managing Director

BREAK @ 3:40 pm (5 MINUTES)

XII. 3:45 PM Investment Advisory Council Perspectives
Ruth Traylor
Josh Rabuck
Dr. William Jennings

RECESS for the DAY @ 4:15 pm

NOTE: All Times are approximate, every attempt will be made to stay on schedule; however, adjustments may be made.

Board of Trustees Meeting

Friday, December 8, 2023

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XIII. 9:00 AM Presentations continued

9:00 – 9:45 **A. Artificial Intelligence Presentation**
Ganesh Bell, Managing Director, Insight Partners

9:45 – 10:25 **B. Pathway Capital Management**
James Chambliss, Managing Director
Canyon Lew, Managing Director
Wyatt Geiger, Principal

BREAK @ 10:25 am (10 MINUTES)

10:35 – 11:15 **C. Sentinel Capital Partners**
David Lobel, Founder & Managing Partner

11:15 – 11:20 **D. Investment Actions**
Sean Howard, State Investment Officer, Treasury Division
Action: Resolution 2023-19 Private Equity Plan

11:20 – 12:00 **E. State Street Global Cybersecurity (GCS) Overview**
Sean Bailey, Vice President, GCS Client Engagement Team

XIV. 12:00 PM Unfinished Business

XV. New Business

XVI. Other Matters to Properly Come Before the Board

XVII. Public/Member Comments

*(Three Minute Limit. Callers may need to press *6 to unmute.)*

XVIII. Investment Advisory Council Comments

XIX. Trustee Comments

XX. Future Agenda Items

XXI. 12:20 PM Adjournment

NOTE: A blue box around presentation denotes educational session. All Times are approximate, every attempt will be made to stay on schedule; however, adjustments may be made.

**ALASKA RETIREMENT MANAGEMENT BOARD
SPECIAL BOARD OF TRUSTEES MEETING
HYBRID/TEAMS**

July 26, 2023
10:00 a.m.

Originating at:
State Office Building
Department of Administration Conference Room, 10th Floor
333 Willoughby Avenue
Juneau, Alaska 99801

Trustees Present:

Bob Williams, Chair
Sandra Ryan
Lorne Bretz

Donald Krohn
Dennis Moen

Department of Revenue Staff Present:

Zach Hanna, Chief Investment Officer
Mark Moon, State Investment Officer
Alysia Jones, Board Liaison

Pamela Leary, Director, Treasury Division
Stephanie Pham, State Investment Officer

Department of Law Staff Present:

Ben Hofmeister, Assistant Attorney General

Investment Advisory Council Present:

Dr. William W. Jennings
Ruth Ryerson

Josh Rabuck

Department of Administration – Division of Retirement & Benefits Staff Present:

Ajay Desai, Director
Mindy Voigt, Acting Chief Pension Officer

Kevin Worley, Chief Financial Officer

Callan:

Benjamin Taylor, Senior Vice President, Head of Tax-Exempt DC Research
Ivan “Butch” Cliff, Executive Vice President and Director of Research
Steve Center, Senior Vice President
Patrick Wisdom, Assistant Vice President

Empower:

Marybeth Daubenspeck, Vice President
John Mohan, Vice President, Government Markets
Ashleigh Kester, Senior Segment Manager, Advisory Services Group
Robyn Loftin, AVP Advisory Services
Benjamin Sia, Senior Manager, Plan Sponsor Analytics, Empower Advisory Group
Jon Hess, Vice President, Participant Engagement Government Markets
Liz Davidsen, Managing Director, Government Markets

Morningstar:

Rajneesh Motay, Senior Vice President, Automated Portfolio Solutions
Michael Sawula, Senior Director, Automated Portfolio Solutions

PROCEEDINGS

CALL TO ORDER

CHAIR BOB WILLIAMS called the Alaska Retirement Management Board meeting to order and asked for a roll call.

MS. JONES called the roll, and noted Commissioner Crum and Trustee Michael Williams were absent.

PUBLIC MEETING NOTICE

CHAIR WILLIAMS asked if the public notice requirements had been met for this meeting.

MS. JONES replied, yes, it had.

APPROVAL OF AGENDA

CHAIR BOB WILLIAMS moved to the agenda, and asked for a motion to approve.

MOTION: A motion to approve the agenda was made by TRUSTEE KROHN; seconded by TRUSTEE RYAN.

There being no objection, the MOTION was APPROVED.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS, AND APPEARANCES

CHAIR BOB WILLIAMS stated that they were at the portion of the meeting for public/member participation, and asked if there was anyone that would like to speak.

Hearing none, he closed that part of the meeting, and warmly welcomed Josh Rabuck, the new IAC member, who was online. He then moved to any unfinished business. There being none, he moved to new business to come before the board. There being none, he moved to the Executive Session, the reason for the meeting, and asked for a motion.

MOTION: A motion to go into Executive Session per Alaska statute 44.62.310(c)(2) and (c)(3) to discuss Phase 1 of Callan's review of managed accounts for the Alaska Defined Contribution Plans. The discussion would include subjects that may tend to prejudice the reputation and character of a person. Further, the discussion may include advice from counsel for the ARM Board related to the issues set out in a presentation that is confidential by law under the attorney/client privilege. The following staff, consultants, and legal counsel were asked to join trustees in Executive Session: Department of Revenue staff, Zach Hanna, Mark Moon, Stephanie Pham, Pam Leary, Alysia Jones; Division of Retirement & Benefits staff: Ajay Desai, Kevin Worley, Mindy Voigt; IAC members: Ruth Traylor, Dr. Williams Jennings, and Josh Rabuck; Assistant Attorney General and ARM Board Counsel Ben Hofmeister; From Empower: Marybeth Daubenspeck, Liz Davidson, John Mohan, Ashley Ester, Robyn Loftin,

Benjamin Sia and John Hess; Morningstar: Rajneesh Motay, Michael Sawula. Representatives from Callan were invited to observe Empower and Morningstar's presentation, but would be excused, along with Morningstar and Empower, when there was just discussion between the IAC members and the trustees. Consultants would be excused from the Executive Session for the presentation of any legal advice. The motion was made by TRUSTEE MOEN; seconded by TRUSTEE RYAN.

There being no objection, the MOTION was APPROVED.

CHAIR BOB WILLIAMS moved into Executive Session.

(Executive Session from 10:06 a.m. until 4:14 p.m.)

CHAIR BOB WILLIAMS stated they had moved out of Executive Session and noted that no decisions were made in Executive Session. He moved on with the agenda and asked for any unfinished business to come before the Board. He continued to public/member comments and communications. There being no one online or present to comment, he stated that the IAC member comments were heard. He asked for any trustee comments and future agenda items. Hearing none, he asked for a motion for adjournment.

MOTION: A motion to adjourn the meeting was made by TRUSTEE RYAN; seconded by TRUSTEE KROHN.

There being no objection, the MOTION was APPROVED.

(Special Full Board meeting adjourned at 4:16 p.m.)

Bob Williams, Chair
Alaska Retirement Management Board

ATTEST:

Michael Williams, Secretary
Alaska Retirement Management Board

ALASKA RETIREMENT MANAGEMENT BOARD

STAFF REPORT

Disclosure – Communications – Calendar Update December 7, 2023

The 3rd Quarter Disclosure Memorandum is included in the packet; no disclosure transactions required additional review or discussion.

The Communications Memorandum lists communications directed to and sent on behalf of the Board since the September 14-15, 2023, Board of Trustees meeting, as well as a summary of public records requests received between September 1, 2023 – November 15, 2023.

The 2024 meeting calendar, approved at the June 2023 meeting is included. As a reminder, the ARMB quarterly meetings with transition to a Tuesday, Wednesday, Thursday schedule, beginning with the March 5-7, 2024, meetings.

For reference, a copy of the timeline showing contract and review deadlines for FY2024 through FY2029, is also included in the Liaison Report.

**ALASKA RETIREMENT MANAGEMENT BOARD
M E M O R A N D U M**

To: ARMB Trustees
From: Alysia Jones
Date: November 15, 2023
Subject: Financial Disclosures

As required by AS 37.10.230 and Alaska Retirement Management Board policy relating to investment conduct and reporting, trustees and staff must disclose certain financial interests. We are hereby submitting to you a list of disclosures for individual transactions made by trustees and staff.

3rd Quarter July 1, 2023 – September 30, 2023

Name	Position Title	Disclosure Type	Disclosure Date
Casey Colton	State Investment Officer	Equities	8/22/2023
Dennis Moen	ARMB Trustee	Equities	8/29/202
Scott Jones	Head of Investment Operations, Performance & Analytics	Equities	9/21/2023
Donald Krohn	ARMB Trustee	Equities (w/ Options)	9/30/2023
Hunter Romberg	Senior Investment Compliance Officer	Equities/Fixed Income	10/4/2023
Victor Djajalie	State Investment Officer	Equities/Fixed Income	10/13/2023
Cahal Morehouse	State Investment Officer	Equities/Fixed Income	10/17/2023
Emily Howard	State Investment Officer	Fixed Income	10/26/2023
Sean Howard	State Investment Officer	Fixed Income	10/26/2023

**ALASKA RETIREMENT MANAGEMENT BOARD
M E M O R A N D U M**

To: ARMB Trustees
From: Alysia Jones
Date: November 22, 2023
Subject: Communications & Information Requests

Communications Regarding Managed Accounts

The following is a summary of communications received following the ARMB's special meeting held on October 12, 2023.

Topic	# Received
Notifications from organizations to members	2
Experience with Empower	3
DCR Investment Options	3
Additional Information on ARMB's Decision & Resolution 2023-18	4

Communications to Trustees

There are no communications to report since the ARMB September 2023 meeting.

Communications Sent on behalf of the Board

Name	Type	Date	Topic
Notice to PERS & TRS Bargaining Units	Public Notice & Legal Ad*	11/18 – 12/19/23	Announcement and instructions on submission of PERS and TRS list of nominees for upcoming vacancies.

**In accordance with 15 AAC 112.110, the notice was posted on the Alaska Online Public Notice System, the Department of Revenue, Treasury Division, and ARMB websites, and in one or more newspapers of general circulation in each judicial district of the state.*

Public Records Requests

From September 1 to November 15, 2023

Topics	# of Requests	Description
Investment Portfolio	8	Portfolio performance data, investment pools, hedge funds/absolute return, real estate, private debt, etc.
Meeting Materials	2	Presentations from past meetings, minutes, audio files, transcripts.
Procurement	2	Timeframe for general & real assets consultant RFPs.

ALASKA RETIREMENT MANAGEMENT BOARD
2024 Meeting Calendar

DATE	LOCATION	DESCRIPTION
March 5 Tuesday	Juneau, AK	Audit Committee Defined Contribution Plan Committee Actuarial Committee Operations Committee
March 6-7 Wednesday - Thursday	Juneau, AK	Board of Trustees Meeting: <i>Performance Measurement – 4th Quarter</i> <i>Buck Draft Actuarial Report/GRS Draft Actuary Certification</i> <i>Capital Markets – Asset Allocation</i> <i>Manager Presentations (Emphasis on Public Investments - Fixed Income & Equities)</i>
April/May TBD*	Videoconference	Actuarial Committee <i>Follow-up/additional discussion/questions on valuations</i>
April/May TBD*	Videoconference	Board of Trustees Meeting
June 11 Tuesday	Anchorage, AK	Audit Committee Defined Contribution Plan Committee Actuarial Committee Operations Committee
June 12-13 Wednesday - Thursday	Anchorage, AK	Board of Trustees Meeting: <i>Final Actuary Reports/Adopt Valuation</i> <i>Adopt Asset Allocation</i> <i>Performance Measurement - 1st Quarter</i> <i>Manager Presentations (Emphasis on Multi-Asset & Asset Allocation)</i>
September 17 Tuesday	Fairbanks, AK	Audit Committee Defined Contribution Plan Committee Actuarial Committee Operations Committee
September 18-19 Wednesday - Thursday	Fairbanks, AK	Board of Trustees Meeting: <i>Set Contribution Rates</i> <i>Audit Results/Assets – Auditor</i> <i>Approve Budget</i> <i>Performance Measurement – 2nd Quarter</i> <i>Real Estate Annual Plan</i> <i>Real Assets Evaluation – Callan LLC</i> <i>Manager Presentations (Emphasis on Real Assets)</i>
October TBD*	Videoconference	Audit Committee
December 3 Tuesday	Anchorage, AK	Audit Committee Defined Contribution Plan Committee Actuarial Committee Operations Committee
December 4-5 Wednesday - Thursday	Anchorage, AK	Board of Trustees Meeting: <i>Audit Report - DRB Auditor</i> <i>Performance Measurement – 3rd Quarter</i> <i>Manager Review (Questionnaire)</i> <i>Private Equity Evaluation - Callan LLC</i> <i>Review Private Equity Annual Plan</i> <i>Cybersecurity</i> <i>Manager Presentations (Emphasis on Private Equity)</i>

NOTE: Meeting locations and topics are subject to change.

*Meetings to be held as necessary

Approved: 6/15/2023

ARMB Timeline of Contract and Review Deadlines FY2024 - FY2029

FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Trustee Appointments/ Nominations for Terms Ending 3/01/2024 <i>Public - D. Krohn</i> <i>PERS - D. Moen</i> <i>TRS - B. Williams</i>		Trustee Appointments/ Nominations for Terms Ending 3/01/2026 <i>PERS - M. Williams</i> <i>TRS - S. Ryan</i>	Trustee Appointments/ Nominations for Terms Ending 3/01/2027 <i>Finance Office- TBD</i> <i>Public - TBD</i>	Trustee Appointments/ Nominations for Terms Ending 3/01/2028 <i>Public - TBD</i> <i>PERS - TBD</i> <i>TRS - TBD</i>	
IAC Appointment <i>Seat 3 - Academic Advisor</i> March 2024 agenda Effective Date: 7/01/2024 (FY25)	IAC Appointment <i>Seat 1 - Trustee or manager of public fund or endowment</i> March 2025 agenda Effective Date: 7/01/2025 (FY26)	IAC Appointment <i>Seat 2 - Portfolio Manager</i> March 2025 agenda Effective Date: 7/01/2026 (FY27)	IAC Appointment <i>Seat 3 - Academic Advisor</i> March 2027 agenda Effective Date: 7/01/2027 (FY28)	IAC Appointment <i>Seat 1 - Trustee or manager of public fund or endowment</i> March 2028 agenda Effective Date: 7/01/2028 (FY29)	IAC Appointment <i>Seat 2 - Portfolio Manager</i> March 2029 agenda Effective Date: 7/01/2029 (FY30)
Performance Measurement (General) Consultant Contract (TRSY) Issue RFP - February 2024 Effective Date: 7/01/2024 (FY25)			Performance Measurement - General Consultant Contract (TRSY) <i>1st Renewal Option or RFP - TBD</i> March 2027 agenda Effective Date: 7/1/2027 (FY28)	Performance Measurement - General Consultant Contract (TRSY) <i>2nd Renewal Option or RFP - TBD</i> March 2028 agenda Effective Date: 7/1/2028 (FY29)	Performance Measurement (General) Consultant Contract (TRSY) <i>RFP - March 2029</i> Effective Date: 7/01/2029 (FY30)
Performance Consultant Review (TRSY) AS 37.10.220(a)(11) December 2023 agenda Presentation September 2024				Performance Consultant Review (TRSY) AS 37.10.220(a)(11) <i>RFP - March 2028</i> Presentation Sept 2028 (FY29)	
Real Assets Consultant Contract (TRSY) Issue RFP - February 2024 Effective Date: 7/01/2024 (FY25)			Real Assets Consultant Contract <i>1st Renewal Option or RFP - TBD</i> March 2027 agenda Effective Date: 7/1/2027 (FY28)	Real Assets Consultant Contract <i>2nd Renewal Option or RFP - TBD</i> March 2028 agenda Effective Date: 7/1/2028 (FY29)	Real Assets Consultant Contract (TRSY) <i>RFP - March 2029</i> Effective Date: 7/01/2029 (FY30)
Asset Liability Study (TRSY) December 2023 agenda Presentation June 2024					Asset Liability Study (TRSY) <i>Recommendation: Every 5 years</i>
		Actuary Contract (DRB) AS 37.10.220(a)(8 & 9) <i>2yr Renewal Option - Buck</i> Effective Date: 7/01/2026 (FY27)		Actuary Contract (DRB) AS 37.10.220(a)(8 & 9) <i>RFP</i> Effective Date: 7/01/2028 (FY29)	
	Review Actuary Contract (TRSY) AS 37.10.220(a)(9) <i>2yr Renewal Option</i> March 2025 agenda Effective Date: 7/01/2025 (FY26)		Review Actuary Contract (TRSY) AS 37.10.220(a)(9) <i>2 yr Renewal Option</i> March 2027 agenda Effective Date: 7/01/2027 (FY28)		Review Actuary Contract (TRSY) AS 37.10.220(a)(9) <i>RFP March 2029</i> Effective Date: 7/01/2029 (FY30)
	Actuarial Audit RFP (TRSY) AS 37.10.220(a)(10) <i>RFP March 2025</i> Effective Date: 7/01/2025 (FY26)			Actuarial Audit RFP (TRSY) AS 37.10.220(a)(10) <i>RFP March 2028</i> Effective Date: 7/01/2028 (FY29)	
Actuarial Valuations AS 37.10.220(a)(8)	Actuarial Valuations AS 37.10.220(a)(8)	Actuarial Valuations AS 37.10.220(a)(8)	Actuarial Valuations AS 37.10.220(a)(8)	Actuarial Valuations AS 37.10.220(a)(8)	Actuarial Valuations AS 37.10.220(a)(8)
	Actuarial Experience Analysis AS 37.10.220(a)(9)			Actuarial Experience Analysis AS 37.10.220(a)(9)	
	Recordkeeper RFP (DRB) <i>RFP</i> Effective Date: 7/01/2025 (FY26)				
Auditor (DRB) <i>2nd Renewal Option - KPMG</i> Effective Date: 7/01/2024 (FY25)				Auditor (DRB) <i>RFP</i> Effective Date: 7/01/2028 (FY29)	

ALASKA RETIREMENT MANAGEMENT BOARD

STAFF REPORT

Fund Financials – Cash Flow Report December 7, 2023

Ryan Kauzlarich, Assistant State Comptroller, Department of Revenue

As of October 2023 month-end, total plan assets were as follows: PERS - \$22.2 billion, TRS - \$10.2 billion, JRS - \$270.6 million, NGNMRS - \$42.2 million, SBS - \$4.5 billion, DCP - \$1.1 billion. Total non-participant-directed plans totaled \$29.9 billion, and participant-directed plans totaled \$8.4 billion. Total assets were \$38.3 billion.

Year-to-date income was \$(1.6) billion, and the plans experienced a net withdrawal of \$473.4 million. Total assets were down 5.21% year-to-date.

Internally managed assets totaled \$14.5 billion.

As of month-end, all plans were within the bands of their asset allocations.

Kevin Worley, Chief Financial Officer, Division of Retirement and Benefits

Presented is the Division of Retirement and Benefits (DRB) Supplement to the Treasury Division's Financial Report as of October 31, 2023.

DRB's supplement report expands on the ARMB Financial Report column "Net Contributions (Withdrawals)" located on pages 1 and 2. DRB reports the summary totals of actual employee and employer, State of Alaska, and other revenue items, as well as benefit payments, refunds & disbursements, and combined administrative & investment expenditures. DRB's supplement report presents cash inflows and outflows for the 4-monthd ended October 31, 2023 (page 1) and for the month of October 2023 (page 2).

Presented on Page 3 are participant-directed distributions by plan and by type for the 4-month period as well as vested percentage on those distributions. Additionally, this page includes Tier information for the defined benefit refunds.

"Notes for the DRB Supplement to the Treasury Report" includes information for the pension and healthcare plans. Additional information regarding other income is also presented on pages 4 and 5.

**ALASKA RETIREMENT MANAGEMENT BOARD
FINANCIAL REPORT**

As of October 31, 2023

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
Fiscal Year-to-Date through October 31, 2023

	Beginning Invested Assets	Investment Income ⁽¹⁾	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income ⁽²⁾
<u>Public Employees' Retirement System (PERS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	\$ 11,089,849,160	\$ (410,649,915)	\$ (161,894,945)	\$ 10,517,304,300	-5.16%	-3.73%
Retirement Health Care Trust	9,097,252,339	(335,530,577)	(182,668,230)	8,579,053,532	-5.70%	-3.73%
Total Defined Benefit Plans	<u>20,187,101,499</u>	<u>(746,180,492)</u>	<u>(344,563,175)</u>	<u>19,096,357,832</u>	-5.40%	-3.73%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	2,134,651,594	(121,709,597)	36,931,350	2,049,873,347	-3.97%	-5.65%
Health Reimbursement Arrangement	791,635,221	(30,054,167)	16,911,940	778,492,994	-1.66%	-3.76%
Retiree Medical Plan	241,605,465	(9,193,117)	5,893,473	238,305,821	-1.37%	-3.76%
<u>Defined Benefit Occupational Death and Disability:</u>						
Public Employees	50,630,681	(1,930,990)	1,414,870	50,114,561	-1.02%	-3.76%
Police and Firefighters	20,838,106	(790,806)	477,485	20,524,785	-1.50%	-3.75%
Total Defined Contribution Plans	<u>3,239,361,067</u>	<u>(163,678,677)</u>	<u>61,629,118</u>	<u>3,137,311,508</u>	-3.15%	-5.01%
Total PERS	<u>23,426,462,566</u>	<u>(909,859,169)</u>	<u>(282,934,057)</u>	<u>22,233,669,340</u>	-5.09%	-3.91%
<u>Teachers' Retirement System (TRS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	6,076,707,595	(225,800,506)	(77,088,846)	5,773,818,243	-4.98%	-3.74%
Retirement Health Care Trust	3,511,855,110	(129,819,284)	(58,766,818)	3,323,269,008	-5.37%	-3.73%
Total Defined Benefit Plans	<u>9,588,562,705</u>	<u>(355,619,790)</u>	<u>(135,855,664)</u>	<u>9,097,087,251</u>	-5.13%	-3.74%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	882,746,917	(50,532,943)	491,633	832,705,607	-5.67%	-5.72%
Health Reimbursement Arrangement	230,674,640	(8,751,793)	2,891,900	224,814,747	-2.54%	-3.77%
Retiree Medical Plan	75,940,325	(2,875,426)	914,264	73,979,163	-2.58%	-3.76%
<u>Defined Benefit Occupational Death and Disability:</u>						
Public Employees	7,389,977	(279,430)	78,994	7,189,541	-2.71%	-3.76%
Total Defined Contribution Plans	<u>1,196,751,859</u>	<u>(62,439,592)</u>	<u>4,376,791</u>	<u>1,138,689,058</u>	-4.85%	-5.21%
Total TRS	<u>10,785,314,564</u>	<u>(418,059,382)</u>	<u>(131,478,873)</u>	<u>10,235,776,309</u>	-5.10%	-3.90%
<u>Judicial Retirement System (JRS)</u>						
Defined Benefit Plan Retirement Trust	237,075,641	(8,891,961)	1,262,722	229,446,402	-3.22%	-3.74%
Defined Benefit Retirement Health Care Trust	43,003,660	(1,600,409)	(284,812)	41,118,439	-4.38%	-3.73%
Total JRS	<u>280,079,301</u>	<u>(10,492,370)</u>	<u>977,910</u>	<u>270,564,841</u>	-3.40%	-3.74%
<u>National Guard/Naval Militia Retirement System (MRS)</u>						
Defined Benefit Plan Retirement Trust	44,502,762	(1,728,973)	(616,965)	42,156,824	-5.27%	-3.91%
<u>Other Participant Directed Plans</u>						
Supplemental Annuity Plan	4,751,924,750	(236,426,361)	(43,124,667)	4,472,373,722	-5.88%	-5.00%
Deferred Compensation Plan	1,127,805,803	(53,954,188)	(16,257,305)	1,057,594,310	-6.23%	-4.82%
Total All Funds	<u>40,416,089,746</u>	<u>(1,630,520,443)</u>	<u>(473,433,957)</u>	<u>38,312,135,346</u>		
Total Non-Participant Directed	31,518,960,682	(1,167,897,354)	(451,474,968)	29,899,588,360	-5.14%	-3.73%
Total Participant Directed	8,897,129,064	(462,623,089)	(21,958,989)	8,412,546,986	-5.45%	-5.21%
Total All Funds	<u>\$ 40,416,089,746</u>	<u>\$ (1,630,520,443)</u>	<u>\$ (473,433,957)</u>	<u>\$ 38,312,135,346</u>	-5.21%	-4.06%

Notes:

(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: <http://treasury.dor.alaska.gov/amb/Reports-and-Policies/Investment-Performance.aspx>

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income (1)	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (2)
<u>Public Employees' Retirement System (PERS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	\$ 10,755,868,319	\$ (200,067,796)	\$ (38,496,223)	\$ 10,517,304,300	-2.22%	-1.86%
Retirement Health Care Trust	8,797,800,308	(161,823,607)	(56,923,169)	8,579,053,532	-2.49%	-1.85%
Total Defined Benefit Plans	<u>19,553,668,627</u>	<u>(361,891,403)</u>	<u>(95,419,392)</u>	<u>19,096,357,832</u>	-2.34%	-1.86%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	2,086,492,352	(52,744,258)	16,125,253	2,049,873,347	-1.76%	-2.52%
Health Reimbursement Arrangement	787,683,473	(14,578,604)	5,388,125	778,492,994	-1.17%	-1.84%
Retiree Medical Plan	240,946,447	(4,460,490)	1,819,864	238,305,821	-1.10%	-1.84%
Defined Benefit Occupational Death and Disability:						
Public Employees	50,588,680	(937,452)	463,333	50,114,561	-0.94%	-1.84%
Police and Firefighters	20,765,614	(384,201)	143,372	20,524,785	-1.16%	-1.84%
Total Defined Contribution Plans	<u>3,186,476,566</u>	<u>(73,105,005)</u>	<u>23,939,947</u>	<u>3,137,311,508</u>	-1.54%	-2.29%
Total PERS	<u>22,740,145,193</u>	<u>(434,996,408)</u>	<u>(71,479,445)</u>	<u>22,233,669,340</u>	-2.23%	-1.92%
<u>Teachers' Retirement System (TRS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	5,928,098,469	(110,074,520)	(44,205,706)	5,773,818,243	-2.60%	-1.86%
Retirement Health Care Trust	3,403,823,040	(62,634,572)	(17,919,460)	3,323,269,008	-2.37%	-1.84%
Total Defined Benefit Plans	<u>9,331,921,509</u>	<u>(172,709,092)</u>	<u>(62,125,166)</u>	<u>9,097,087,251</u>	-2.52%	-1.86%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	851,226,028	(21,982,343)	3,461,922	832,705,607	-2.18%	-2.58%
Health Reimbursement Arrangement	228,563,494	(4,223,166)	474,419	224,814,747	-1.64%	-1.85%
Retiree Medical Plan	75,129,523	(1,388,221)	237,861	73,979,163	-1.53%	-1.84%
Defined Benefit Occupational Death and Disability:						
Total Defined Contribution Plans	<u>1,162,221,474</u>	<u>(27,728,662)</u>	<u>4,196,246</u>	<u>1,138,689,058</u>	-2.02%	-2.38%
Total TRS	<u>10,494,142,983</u>	<u>(200,437,754)</u>	<u>(57,928,920)</u>	<u>10,235,776,309</u>	-2.46%	-1.92%
<u>Judicial Retirement System (JRS)</u>						
Defined Benefit Plan Retirement Trust	234,741,163	(4,360,512)	(934,249)	229,446,402	-2.26%	-1.86%
Defined Benefit Retirement Health Care Trust	41,986,193	(773,308)	(94,446)	41,118,439	-2.07%	-1.84%
Total JRS	<u>276,727,356</u>	<u>(5,133,820)</u>	<u>(1,028,695)</u>	<u>270,564,841</u>	-2.23%	-1.86%
<u>National Guard/Naval Militia Retirement System (MRS)</u>						
Defined Benefit Plan Retirement Trust	43,063,663	(719,746)	(187,093)	42,156,824	-2.11%	-1.67%
<u>Other Participant Directed Plans</u>						
Supplemental Annuity Plan	4,586,700,571	(99,424,560)	(14,902,289)	4,472,373,722	-2.49%	-2.17%
Deferred Compensation Plan	1,085,043,883	(23,177,529)	(4,272,044)	1,057,594,310	-2.53%	-2.14%
Total All Funds	<u>39,225,823,649</u>	<u>(763,889,817)</u>	<u>(149,798,486)</u>	<u>38,312,135,346</u>		
Total Non-Participant Directed	30,616,360,815	(566,561,127)	(150,211,328)	29,899,588,360	-2.34%	-1.86%
Total Participant Directed	8,609,462,834	(197,328,690)	412,842	8,412,546,986	-2.29%	-2.29%
Total All Funds	<u>\$ 39,225,823,649</u>	<u>\$ (763,889,817)</u>	<u>\$ (149,798,486)</u>	<u>\$ 38,312,135,346</u>	-2.33%	-1.95%

Notes:

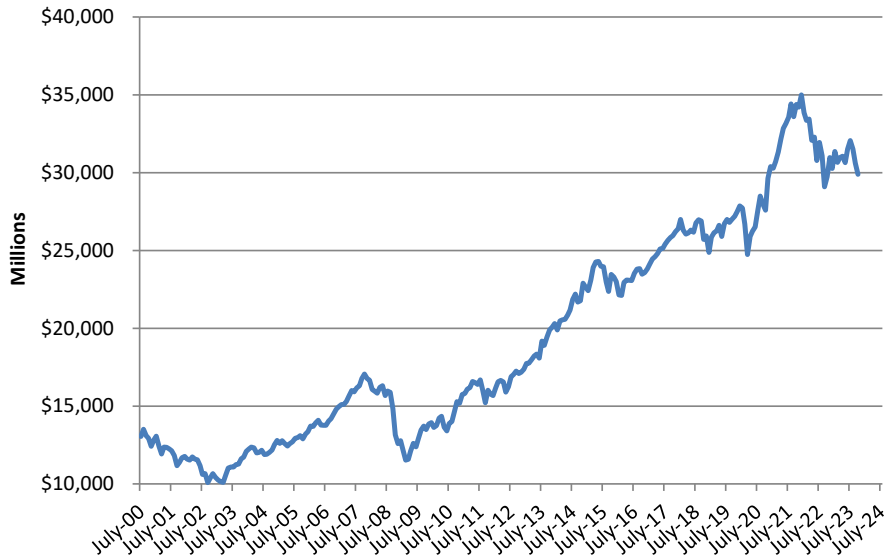
(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: <http://treasury.dor.alaska.gov/armb/Reports-and-Policies/Investment-Performance.aspx>

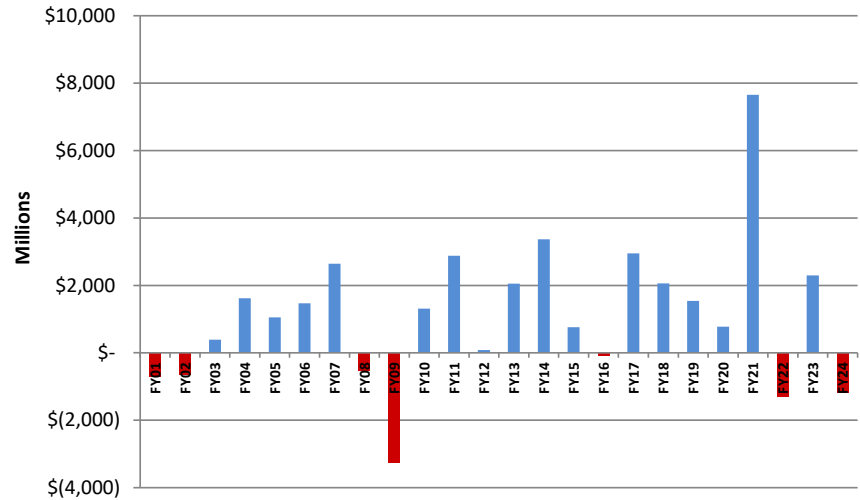
Total Non Participant Directed Assets

As of October 31, 2023

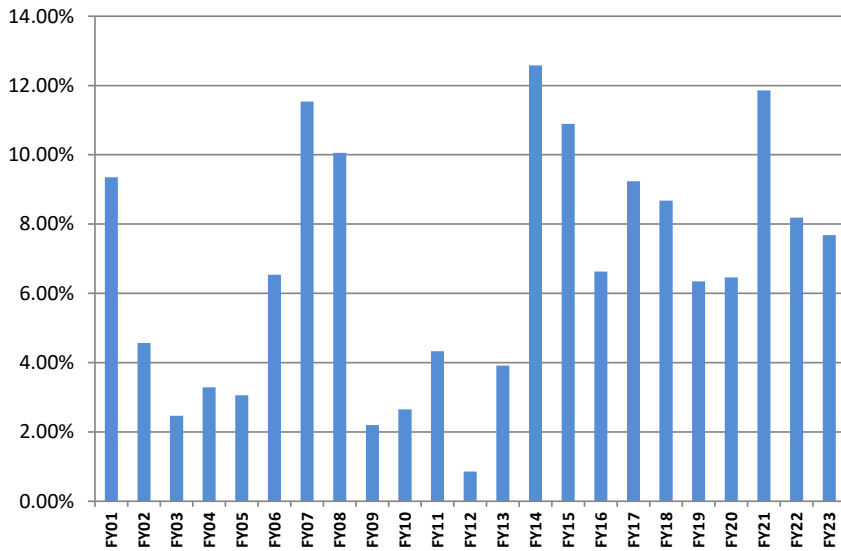
Total Assets History



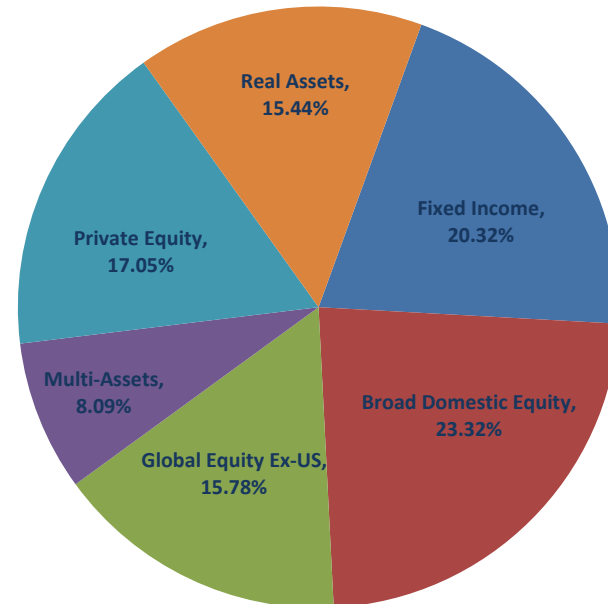
Income by Fiscal Year



5-year Annualized Returns as of Fiscal Year End



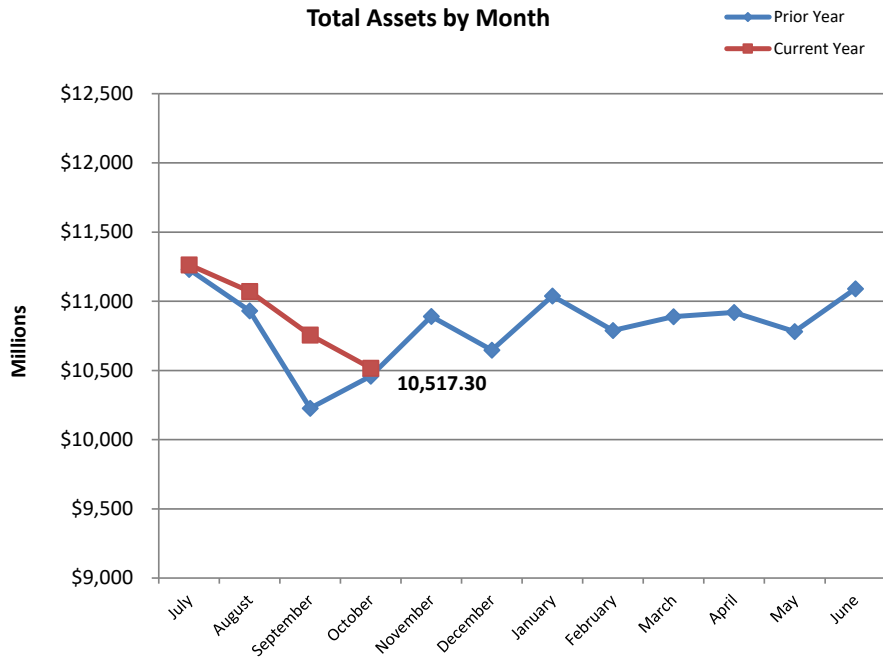
Actual Asset Allocation



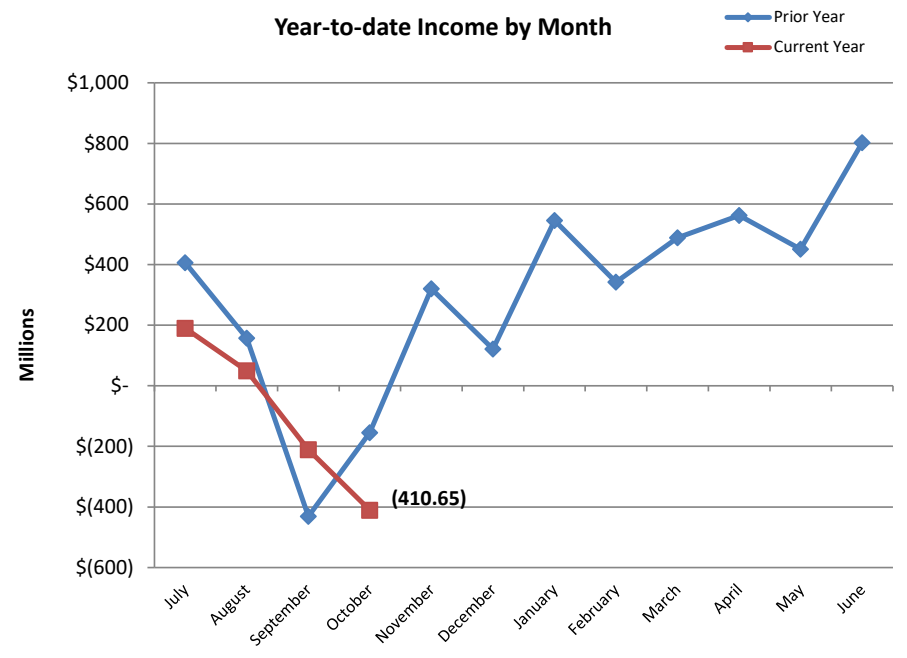
Public Employees' Retirement Pension Trust Fund

Fiscal Year-to-Date through October 31, 2023

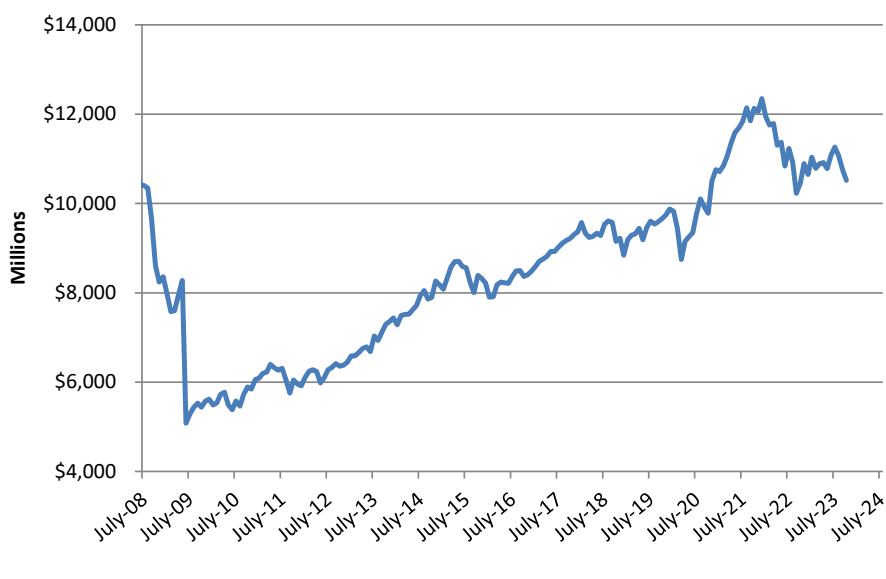
Total Assets by Month



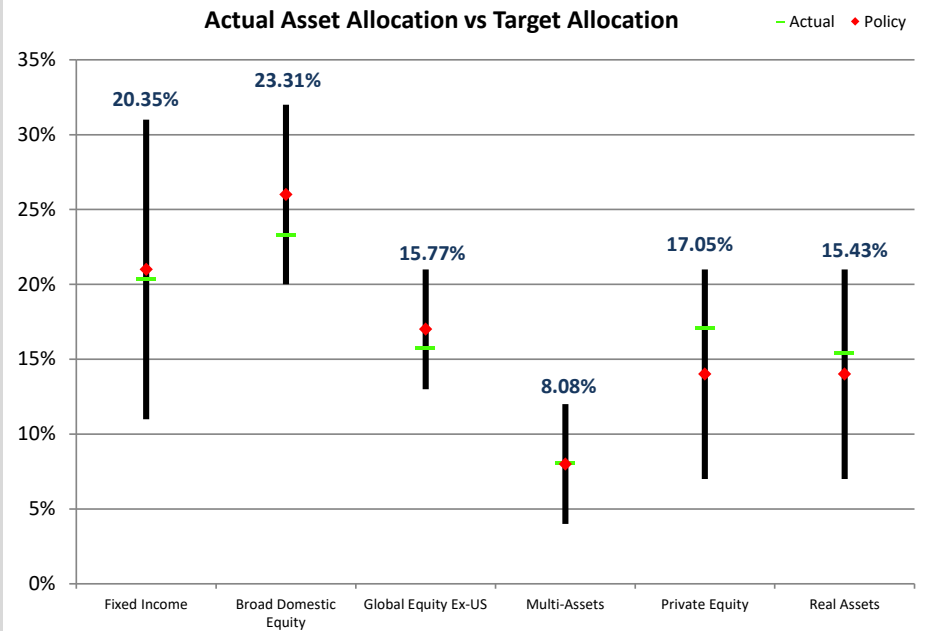
Year-to-date Income by Month



Total Assets History



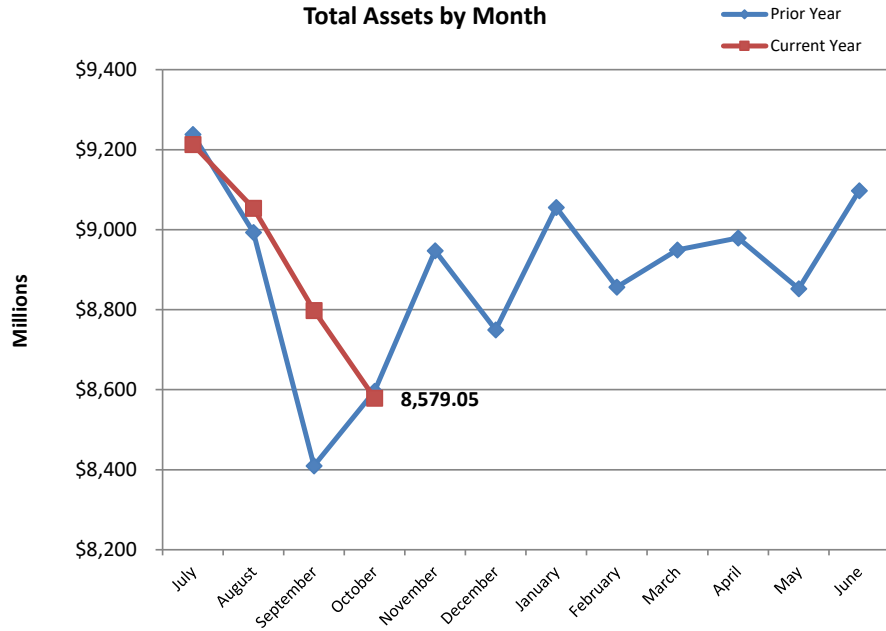
Actual Asset Allocation vs Target Allocation



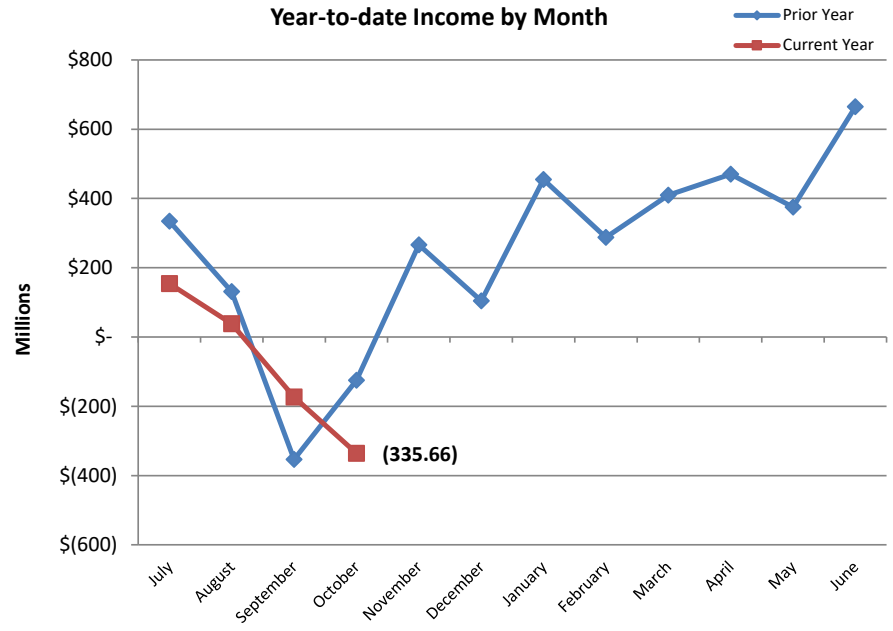
Public Employees' Retirement Health Care Trust Fund

Fiscal Year-to-Date through October 31, 2023

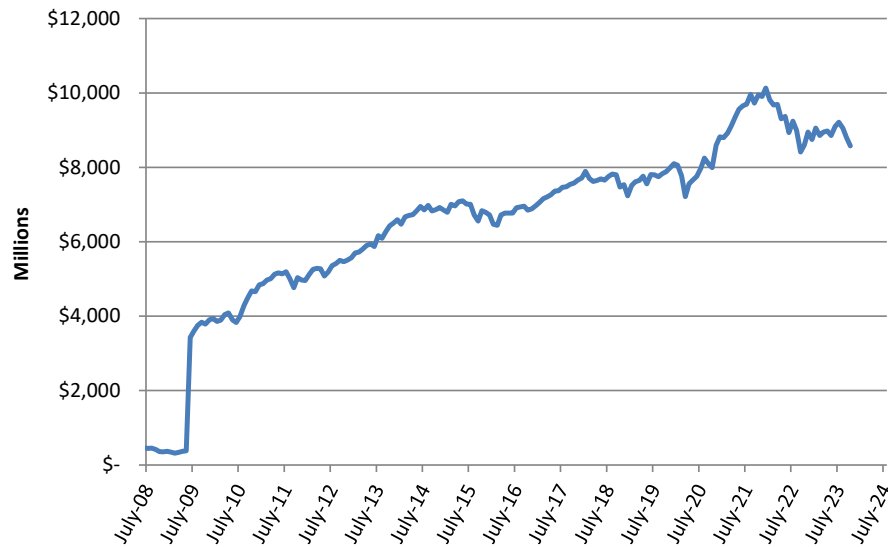
Total Assets by Month



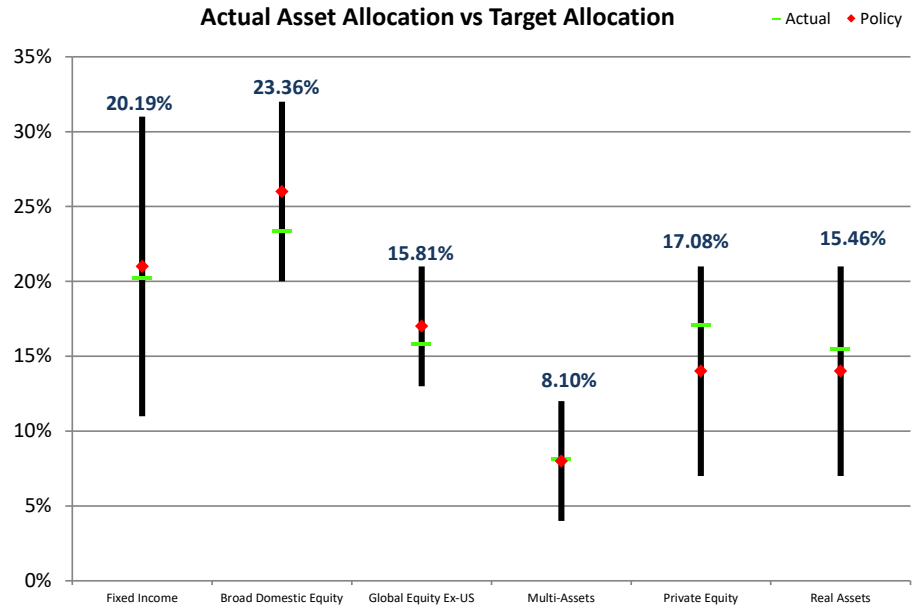
Year-to-date Income by Month



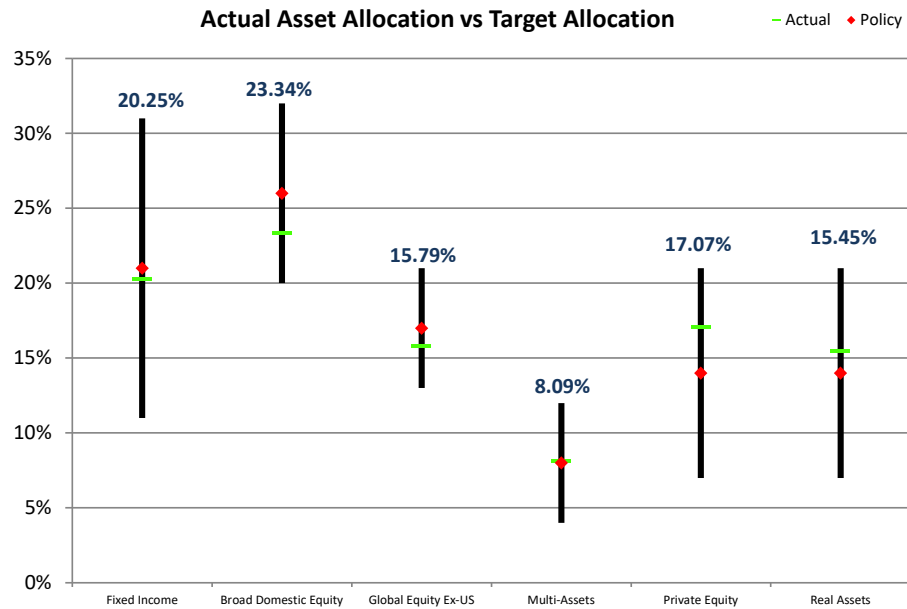
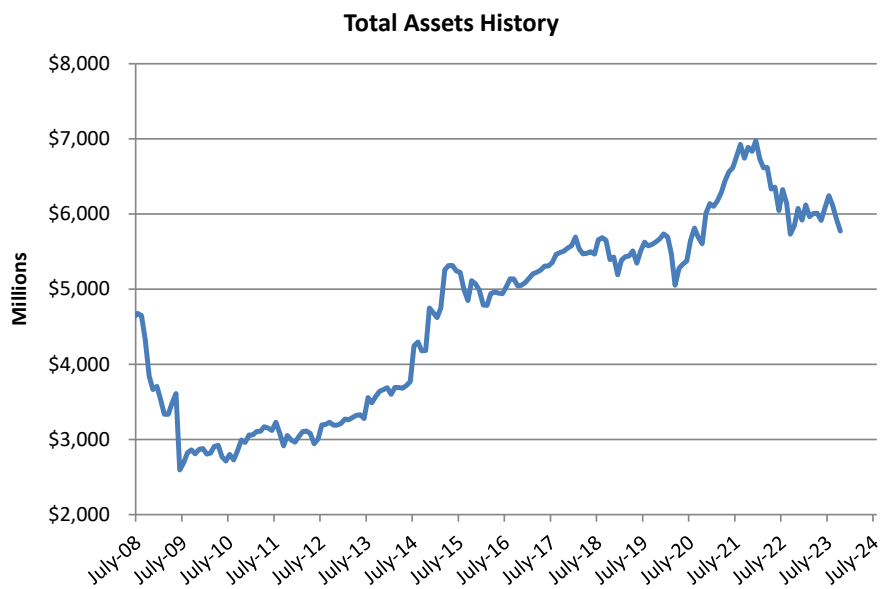
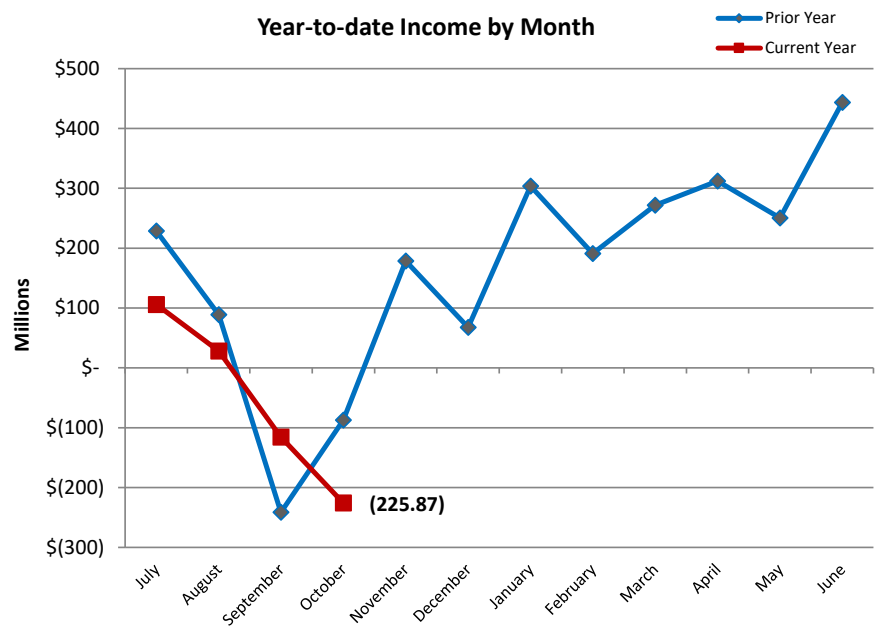
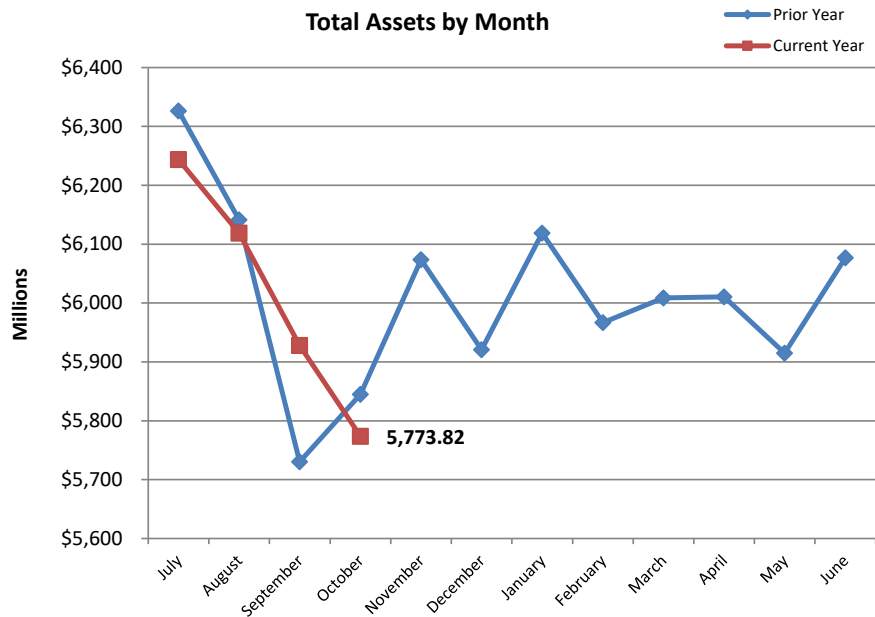
Total Assets History



Actual Asset Allocation vs Target Allocation



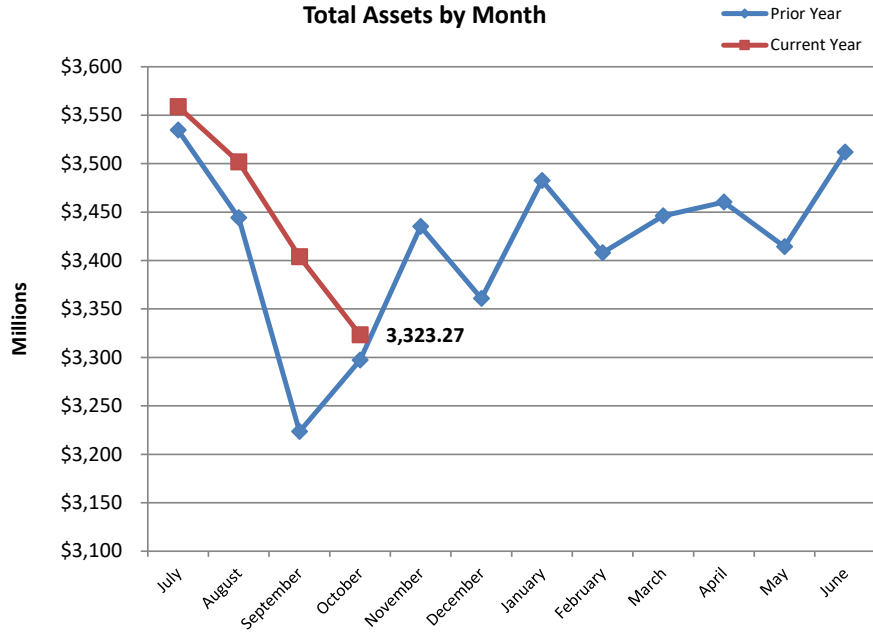
Teachers' Retirement Pension Trust Fund Fiscal Year-to-Date through October 31, 2023



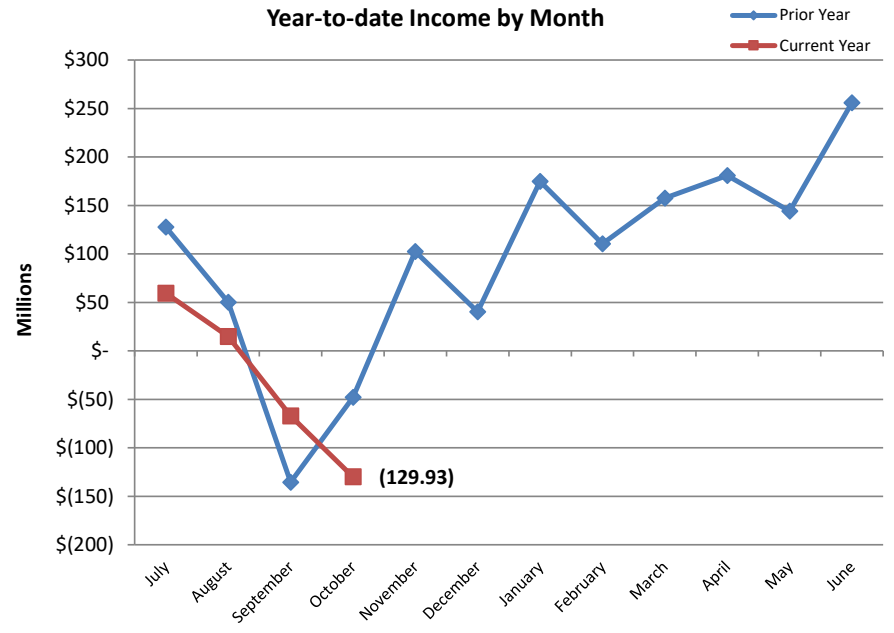
Teachers' Retirement Health Care Trust Fund

Fiscal Year-to-Date through October 31, 2023

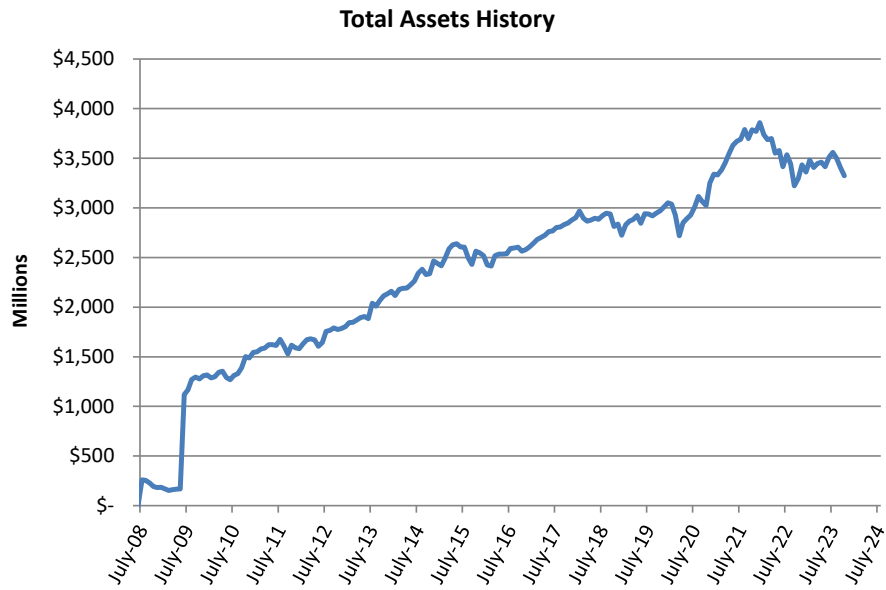
Total Assets by Month



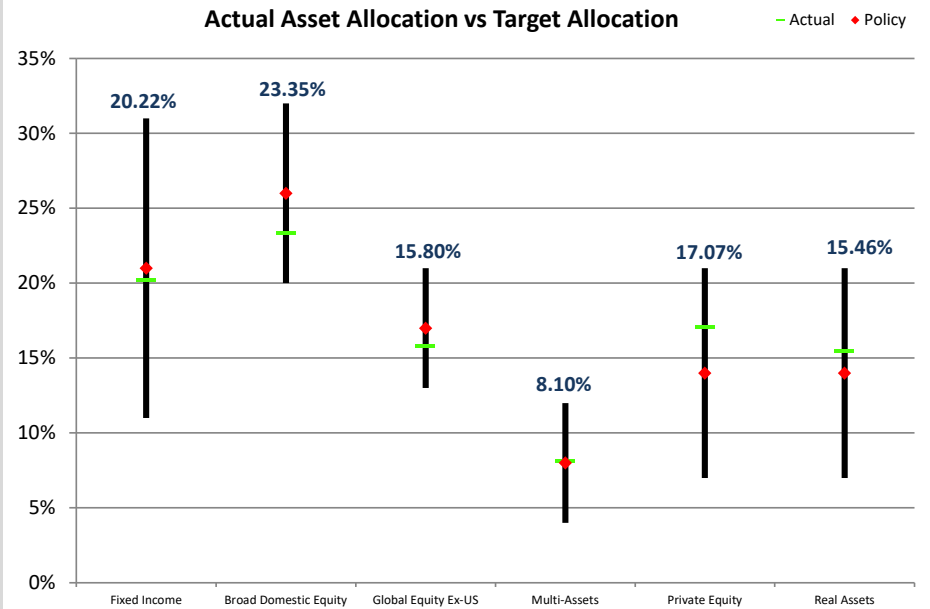
Year-to-date Income by Month



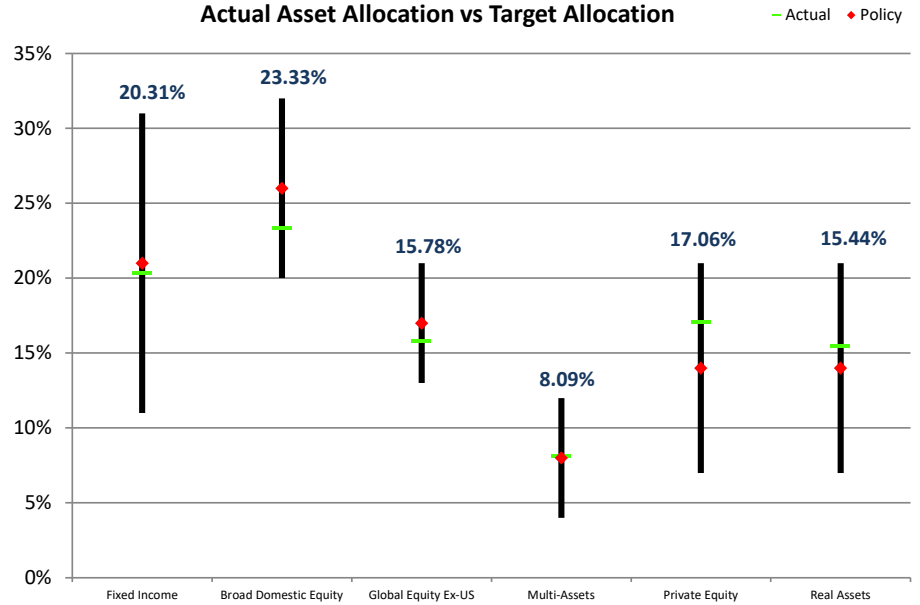
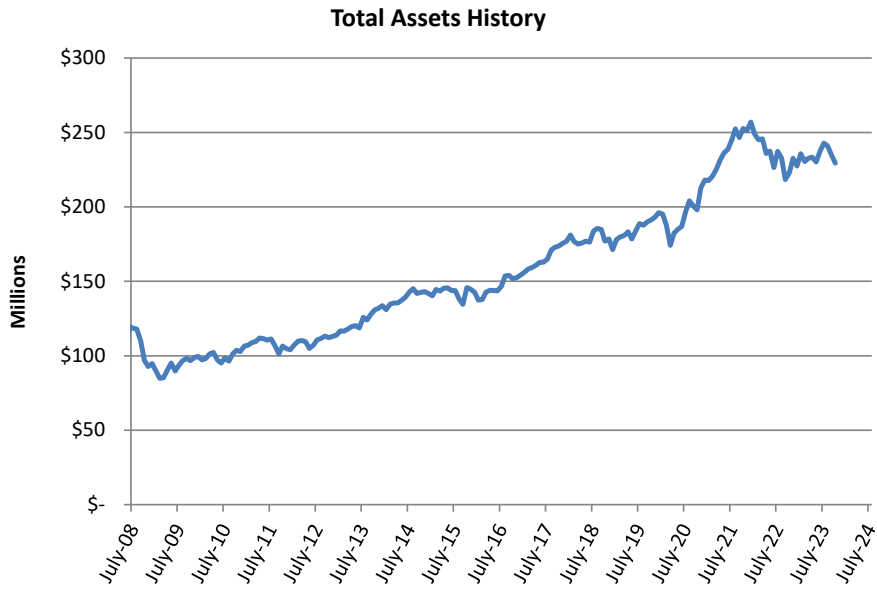
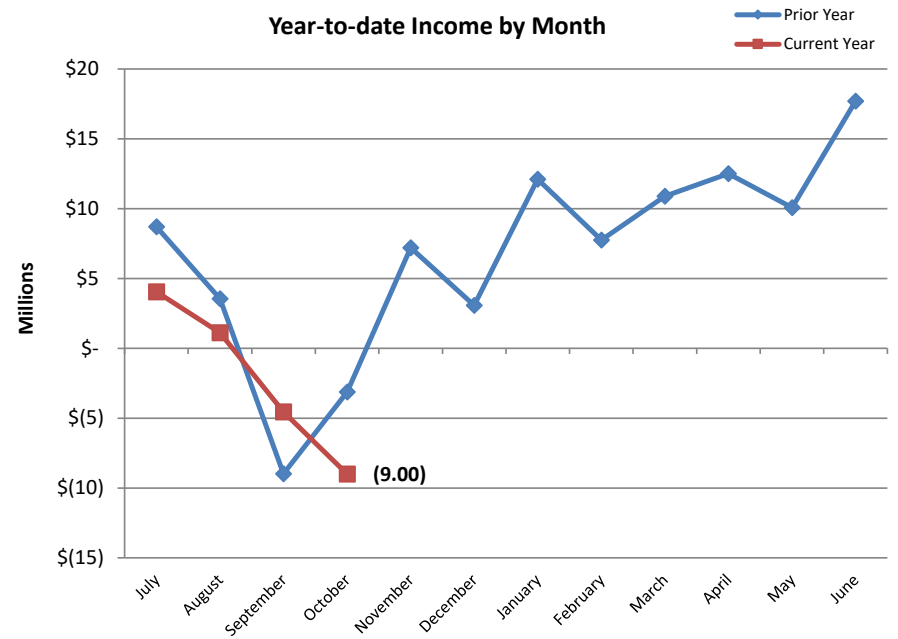
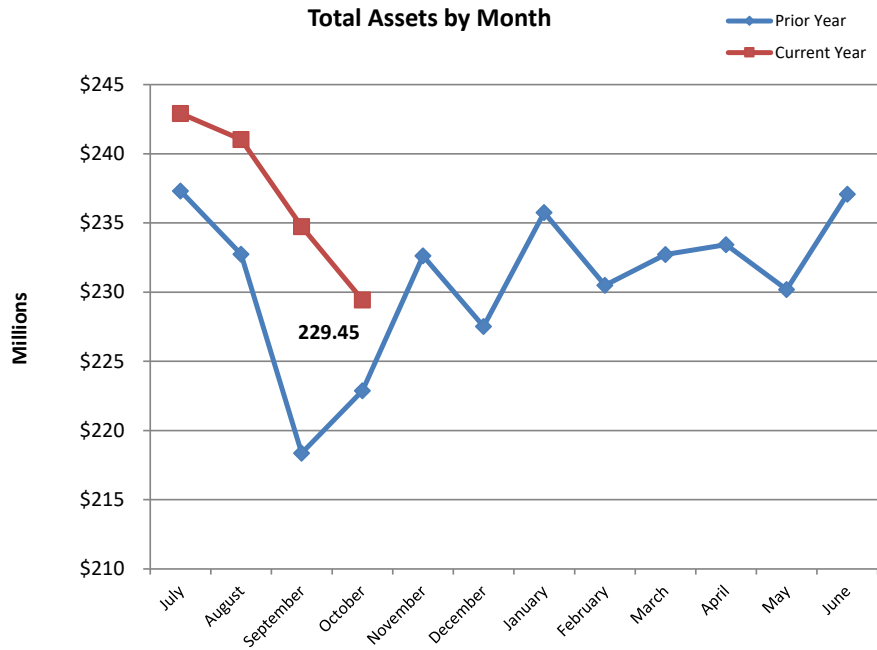
Total Assets History



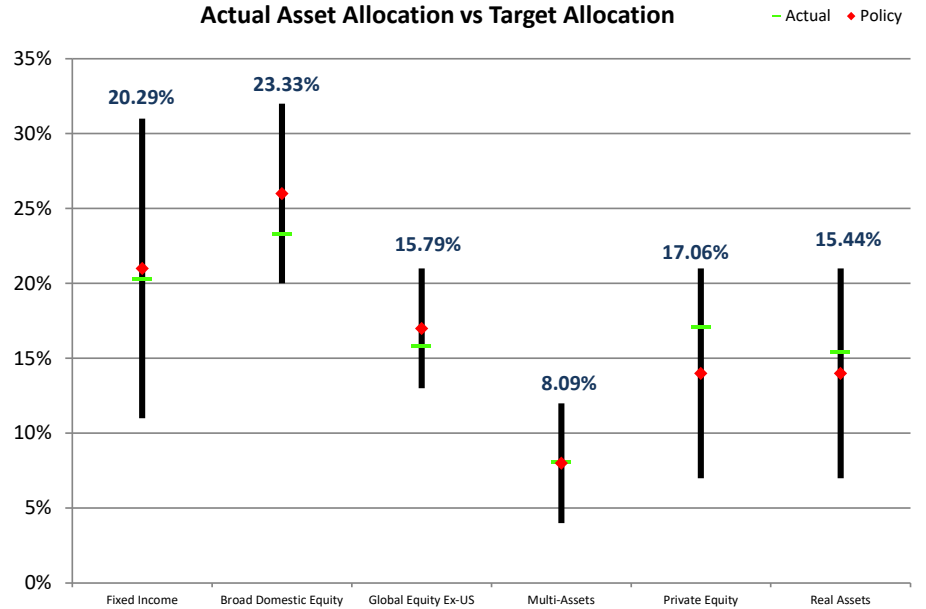
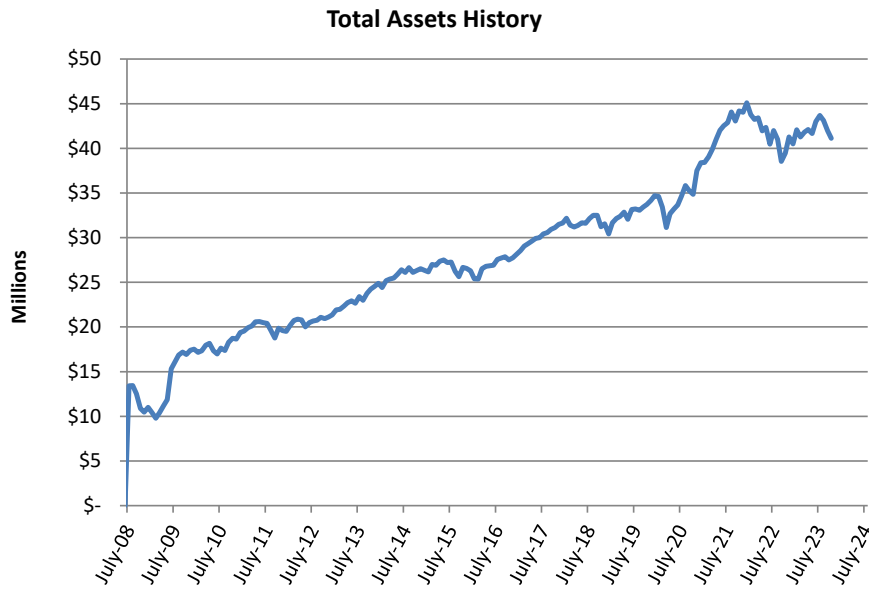
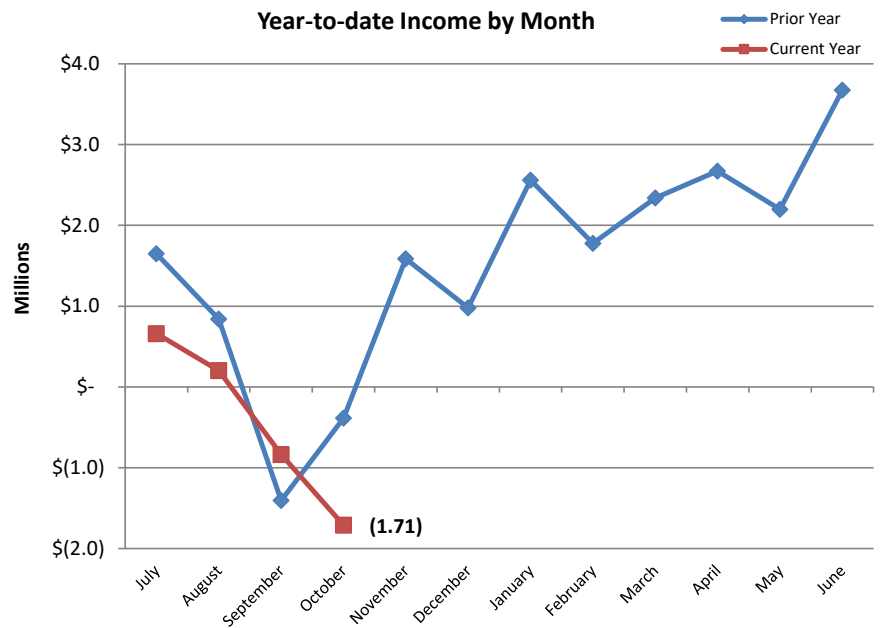
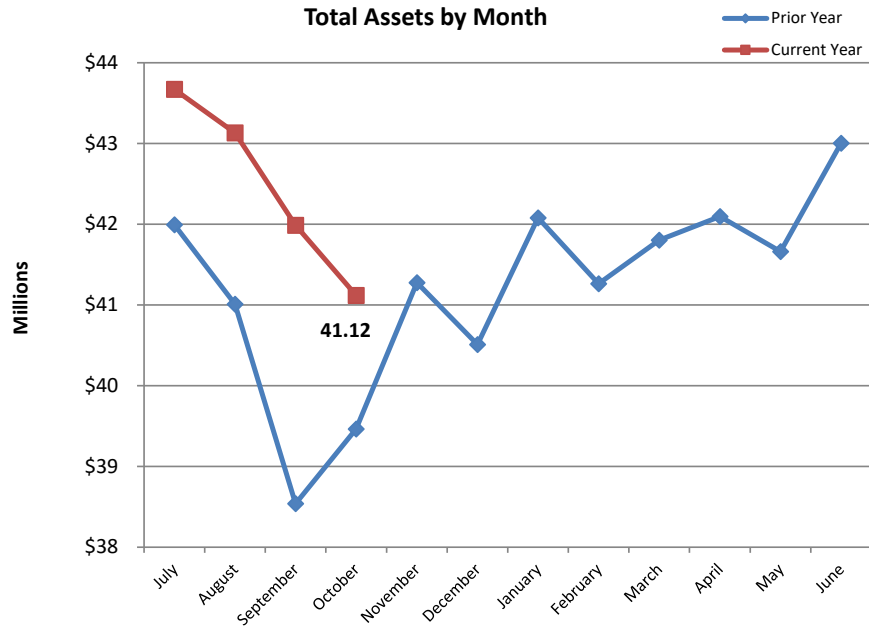
Actual Asset Allocation vs Target Allocation



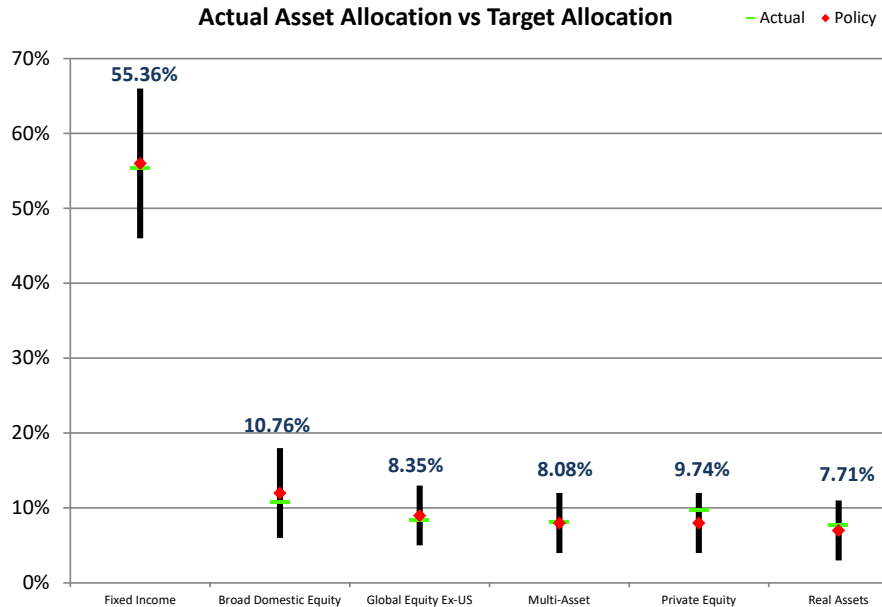
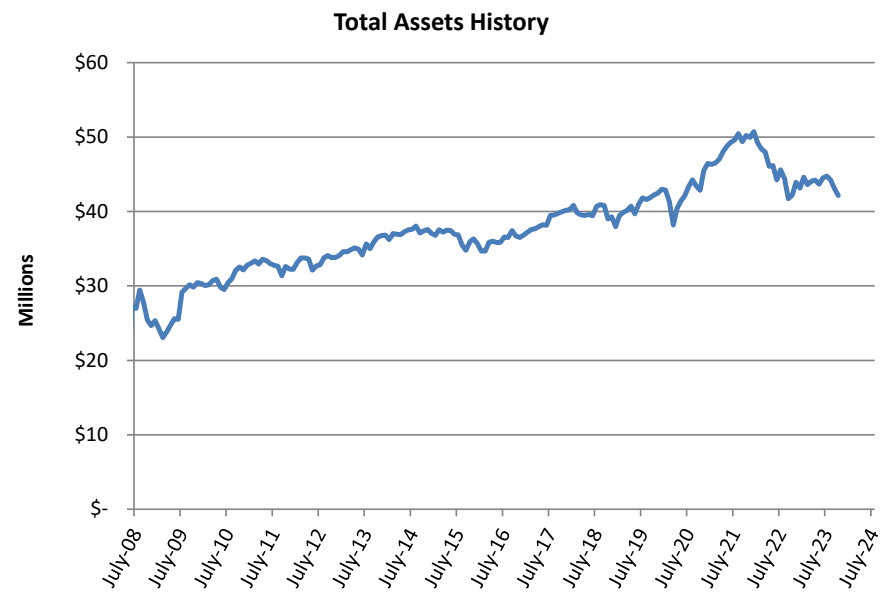
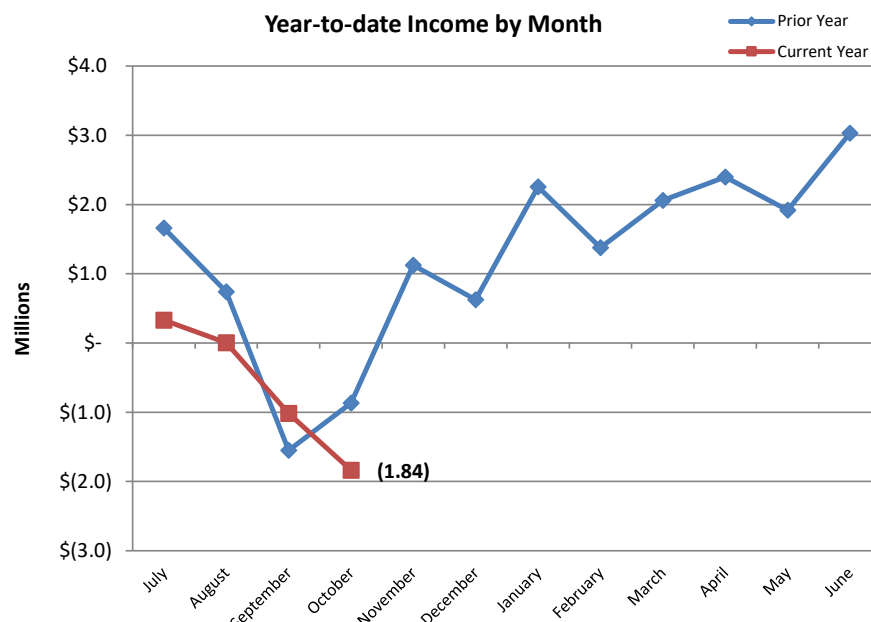
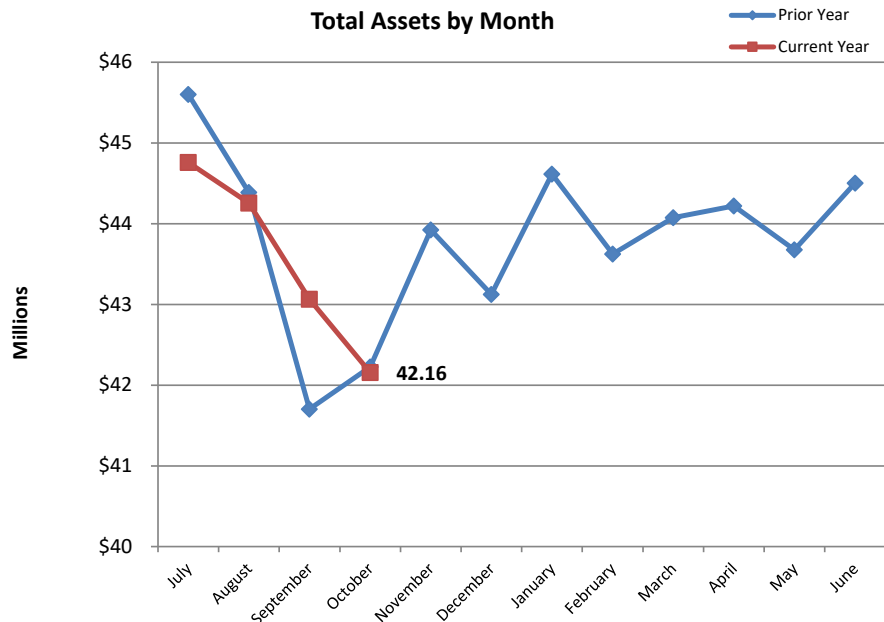
Judicial Retirement Pension Trust Fund Fiscal Year-to-Date through October 31, 2023



Judicial Retirement Health Care Trust Fund Fiscal Year-to-Date through October 31, 2023



Military Retirement Trust Fund Fiscal Year-to-Date through October 31, 2023



ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

All Non-Participant Directed Plans

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Fixed Income						
Cash Equivalents						
Short-Term Fixed Income Pool	\$ 302,509,350	\$ 1,408,879	\$ (8,240,287)	\$ 295,677,942	-2.26%	0.47%
Transition Fixed Income						
Fixed Income Transition Pool	-	-	-	-	-	-
Securities Lending						
Securities Lending Income Pool	58,490	45,478	(61,510)	42,458	-27.41%	163.97%
Opportunistic Fixed Income						
Fidelity Institutional Asset Management	1,104,799,172	(20,118,289)	80,000,000	1,164,680,883	5.42%	-1.76%
MacKay Shields, LLC	1,254,638	-	(18,042)	1,236,596	-1.44%	-
Total Opportunistic Fixed Income	<u>1,106,053,810</u>	<u>(20,118,289)</u>	<u>79,981,958</u>	<u>1,165,917,479</u>	5.41%	-1.76%
ARMB Barclays Agg Bond Fund						
ARMB Barclays Agg Bond Fund	4,683,223,938	(78,773,542)	10,000,000	4,614,450,396	-1.47%	-1.68%
Total Fixed Income	<u>6,091,845,588</u>	<u>(97,437,474)</u>	<u>81,680,161</u>	<u>6,076,088,275</u>	-0.26%	-1.59%
Domestic Equities						
Small Cap Passively Managed						
ARMB S&P 600	615,473,659	(35,232,287)	-	580,241,372	-5.72%	-5.72%
Small Cap Actively Managed						
Transition Account	-	-	-	-	-	-
Total Small Cap	<u>615,473,659</u>	<u>(35,232,287)</u>	<u>-</u>	<u>580,241,372</u>	-5.72%	-5.72%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Large Cap Passively Managed						
ARMB S&P 900	4,543,186,767	(98,689,596)	(225,000,000)	4,219,497,171	-7.12%	-2.23%
Large Cap Actively Managed						
ARMB Domestic Residual Assets	272,628	30,207	(266,108)	36,727	-86.53%	21.64%
ARMB Large Cap Multi-Factor	1,131,368,559	(31,226,059)	-	1,100,142,500	-2.76%	-2.76%
ARMB Scientific Beta	1,105,281,536	(32,778,223)	-	1,072,503,313	-2.97%	-2.97%
Transition Account	-	-	-	-	-	-
Total Large Cap Actively Managed	<u>2,236,922,723</u>	<u>(63,974,075)</u>	<u>(266,108)</u>	<u>2,172,682,540</u>	<u>-2.87%</u>	<u>-2.86%</u>
Total Large Cap	<u>6,780,109,490</u>	<u>(162,663,671)</u>	<u>(225,266,108)</u>	<u>6,392,179,711</u>	<u>-5.72%</u>	<u>-2.44%</u>
Total Domestic Equity	<u>7,395,583,149</u>	<u>(197,895,958)</u>	<u>(225,266,108)</u>	<u>6,972,421,083</u>	<u>-5.72%</u>	<u>-2.72%</u>
Global Equities						
Large Cap						
Acadian Asset Management	341,283,634	(15,456,667)	-	325,826,967	-4.53%	-4.53%
Arrow Street Capital	362,666,215	(16,025,363)	-	346,640,852	-4.42%	-4.42%
Baillie Gifford Overseas Limited	426,671,968	(23,109,546)	-	403,562,422	-5.42%	-5.42%
Brandes Investment Partners	516,278,956	(19,013,728)	-	497,265,228	-3.68%	-3.68%
Cap Guardian Trust Co	465,024,570	(15,465,320)	497,665	450,056,915	-3.22%	-3.32%
Legal & General	718,528,333	(28,602,438)	-	689,925,895	-3.98%	-3.98%
Legal & General DM Index Plus	-	(5,504,658)	800,000,000	794,495,342	-	-1.38%
ARMB Int'l Residual Assets	3,096,296	(134,584)	-	2,961,712	-4.35%	-4.35%
SSgA MSCI World Ex-US IMI Index Fund	1,176,487,568	(46,628,494)	(800,000,000)	329,859,074	-71.96%	-6.01%
Total Large Cap	<u>4,010,037,540</u>	<u>(169,940,798)</u>	<u>497,665</u>	<u>3,840,594,407</u>	<u>-4.23%</u>	<u>-4.24%</u>
Emerging Markets Equity						
MSCI Emerging Markets Index Fund	587,207,458	(22,414,528)	-	564,792,930	-3.82%	-3.82%
Legal & General Sci-Beta Emerging Markets	324,386,238	(12,011,509)	-	312,374,729	-3.70%	-3.70%
Total Emerging Markets	<u>911,593,696</u>	<u>(34,426,037)</u>	<u>-</u>	<u>877,167,659</u>	<u>-3.78%</u>	<u>-3.78%</u>
Total Global Equities	<u>4,921,631,236</u>	<u>(204,366,835)</u>	<u>497,665</u>	<u>4,717,762,066</u>	<u>-4.14%</u>	<u>-4.15%</u>

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Multi-Asset						
Alternative Equity Strategy						
Alternative Equity Strategies Transition Account	-	-	-	-	-	-
McKinley Global Health Care	258,776,239	(8,929,094)	-	249,847,145	-3.45%	-3.45%
Total Alternative Equity Strategy	258,776,239	(8,929,094)	-	249,847,145	-3.45%	-3.45%
Alternative Fixed Income						
Crestline Investors, Inc.	690,815,781	4,386,701	(9,614,557)	685,587,925	-0.76%	0.64%
Comvest Direct Lending Fund	-	-	10,000,000	10,000,000	100.00%	-
Prisma Capital Partners	43,217,018	(353,554)	-	42,863,464	-0.82%	-0.82%
Crestline Specialty Lending Fund II	33,443,627	-	(568,913)	32,874,714	-1.70%	-
Crestline Specialty Lending Fund III	67,369,317	-	-	67,369,317	-	-
Total Alternative Fixed Income	834,845,743	4,033,147	(183,470)	838,695,420	0.46%	0.48%
Alternative Beta						
Man Group Alternative Risk Premia	294,763,206	6,033,406	-	300,796,612	2.05%	2.05%
Other Opportunities						
Schroders Insurance Linked Securities	1	-	-	1	-	-
Tactical Allocation Strategies						
Fidelity Signals	531,197,026	(13,776,841)	-	517,420,185	-2.59%	-2.59%
PineBridge	523,296,211	(10,640,646)	-	512,655,565	-2.03%	-2.03%
Total Tactical Allocation Strategies	1,054,493,237	(24,417,487)	-	1,030,075,750	-2.32%	-2.32%
Total Multi-Asset	2,442,878,426	(23,280,028)	(183,470)	2,419,414,928	-0.96%	-0.95%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Private Equity						
Abbott Capital	1,986,268,514	(7,539,906)	(2,318,771)	1,976,409,837	-0.50%	-0.38%
Advent International GPE Fund VIII-B	27,562,888	-	-	27,562,888	-	-
Advent International GPE Fund IX	38,903,029	-	-	38,903,029	-	-
Advent International GPE Fund X	14,405,181	-	-	14,405,181	-	-
Battery Ventures XIV	4,467,417	-	-	4,467,417	-	-
Clearlake Capital Partners VI	45,185,991	(1)	(592,360)	44,593,630	-1.31%	0.00%
Clearlake Capital Partners VII	29,900,421	-	-	29,900,421	-	-
Dyal Capital Partners III	47,029,312	1,071,728	-	48,101,040	2.28%	2.28%
Dyal Capital Partners IV	32,140,839	902,478	3,000,000	36,043,317	12.14%	2.68%
Genstar X	18,204,843	-	4,404,167	22,609,010	24.19%	-
Glendon Opportunities	9,177,744	-	-	9,177,744	-	-
Glendon Opportunities II	94,596,546	-	-	94,596,546	-	-
Glendon Opportunities III	10,204,599	-	(2,405)	10,202,194	-0.02%	-
Insight XII	25,827,724	-	-	25,827,724	-	-
KKR Lending Partners II	6,525,192	-	-	6,525,192	-	-
Lexington Capital Partners VIII	28,758,845	151,598	-	28,910,443	0.53%	0.53%
Lexington Partners VII	8,107,716	(28,651)	(196,749)	7,882,316	-2.78%	-0.36%
Merit Capital Partners	3,739,377	-	-	3,739,377	-	-
NB SOF III	13,234,480	1	(946,022)	12,288,459	-7.15%	0.00%
NB SOF IV	35,888,655	-	(681,809)	35,206,846	-1.90%	-
Neuberger Berman Secondary Opportunities Fund V	33,968,956	-	(1,117,527)	32,851,429	-3.29%	-
New Mountain Partners IV	8,578,133	-	656,629	9,234,762	7.65%	-
New Mountain Partners V	67,552,775	-	-	67,552,775	-	-
New Mountain Partners VI	41,850,067	-	-	41,850,067	-	-
NGP XI	31,627,022	-	(308,090)	31,318,932	-0.97%	-
NGP XII	21,717,624	-	-	21,717,624	-	-
Onex Partnership III	4,219,014	-	-	4,219,014	-	-
Pathway Capital Management LLC	2,009,917,980	(3,716,991)	5,103,146	2,011,304,135	0.07%	-0.18%
Resolute Fund III	9,657,237	-	-	9,657,237	-	-
Resolute Fund IV	87,492,695	-	-	87,492,695	-	-
Resolute Fund V	67,133,516	-	-	67,133,516	-	-
Sentinel VII	1,167,062	-	-	1,167,062	-	-
Riverside Micro-Cap Fund VI	7,836,879	-	-	7,836,879	-	-
Summit Partners GE IX	60,498,579	-	-	60,498,579	-	-
Summit Partners GE X	37,024,771	-	241,500	37,266,271	0.65%	-
Summit XI	13,377,583	-	-	13,377,583	-	-
Warburg Pincus Global Growth Fund	47,605,434	-	1,500,000	49,105,434	3.15%	-
Warburg Pincus X	549,187	-	-	549,187	-	-
Warburg Pincus XI	10,745,857	-	-	10,745,857	-	-
Warburg Pincus XII	56,406,691	-	-	56,406,691	-	-
Total Private Equity	5,099,056,375	(9,159,744)	8,741,709	5,098,638,340	-0.01%	-0.18%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Real Assets						
Farmland						
UBS Farmland Investors LLC	1,063,690,264	-	1,639,229	1,065,329,493	0.15%	-
Timber						
Timberland Invt Resource LLC	393,099,569	1	(3,000,000)	390,099,570	-0.76%	0.00%
Energy						
EIG Energy Fund XIV-A	3,547,279	(1,809)	-	3,545,470	-0.05%	-0.05%
EIG Energy Fund XV	5,515,753	(226,698)	-	5,289,055	-4.11%	-4.11%
EIG Energy Fund XVI	44,585,315	173,171	-	44,758,486	0.39%	0.39%
Total Energy	<u>53,648,347</u>	<u>(55,336)</u>	<u>-</u>	<u>53,593,011</u>	-0.10%	-0.10%
REIT						
REIT Transition Account	-	-	-	-	-	-
ARMB REIT	442,885,815	(13,725,961)	-	429,159,854	-3.10%	-3.10%
Total REIT	<u>442,885,815</u>	<u>(13,725,961)</u>	<u>-</u>	<u>429,159,854</u>	-3.10%	-3.10%
Infrastructure Private						
IFM Global Infrastructure Fund-Private	700,263,433	2,993,251	-	703,256,684	0.43%	0.43%
JP Morgan Infrastructure Fund-Private	157,105,783	-	-	157,105,783	-	-
Total Infrastructure Private	<u>857,369,216</u>	<u>2,993,251</u>	<u>-</u>	<u>860,362,467</u>	0.35%	0.35%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)	% Change due to Investment Income
Real Estate						
<i>Core Commingled Accounts</i>						
BlackRock US Core Property Fund	378,794,929	(14,710,432)	(2,038,873)	362,045,624	-4.42%	-3.89%
JP Morgan	169,860,285	(4,053,130)	(1,128,190)	164,678,965	-3.05%	-2.39%
UBS Trumbull Property Fund	31,930,248	(515,417)	(651,286)	30,763,545	-3.65%	-1.63%
Total Core Commingled	580,585,462	(19,278,979)	(3,818,349)	557,488,134	-3.98%	-3.33%
<i>Core Separate Accounts</i>						
Sentinel Separate Account	282,672,885	-	(554,883)	282,118,002	-0.20%	-
UBS Realty	679,770,387	-	(851,034)	678,919,353	-0.13%	-
Total Core Separate	962,443,272	-	(1,405,917)	961,037,355	-0.15%	-
<i>Non-Core Commingled Accounts</i>						
Almanac Realty Securities V	43,126	-	-	43,126	-	-
Almanac Realty Securities VII	28,133,468	-	(285,211)	27,848,257	-1.01%	-
Almanac Realty Securities VIII	31,796,342	-	1,188,963	32,985,305	3.74%	-
Almanac Realty Securities IX	8,674,887	-	-	8,674,887	-	-
Clarion Ventures 4	4,567,968	-	-	4,567,968	-	-
Fidelity Inst. Asset Mgmt. High Yield CMBS	197,001,051	(4,354,064)	(10,000,000)	182,646,987	-7.29%	-2.27%
ING Clarion Development Ventures III	563,444	-	-	563,444	-	-
KKR Real Estate Partners Americas L.P.	3,393,703	-	-	3,393,703	-	-
KKR Real Estate Partners Americas II	5,996,357	-	-	5,996,357	-	-
KKR Real Estate Partners Americas III	29,537,390	-	-	29,537,390	-	-
Silverpeak Legacy Pension Partners II, L.P.	844,683	-	-	844,683	-	-
Silverpeak Legacy Pension Partners III, L.P.	1,091,677	-	-	1,091,677	-	-
Total Non-Core Commingled	311,644,096	(4,354,064)	(9,096,248)	298,193,784	-4.32%	-1.42%
Total Real Estate	1,854,672,830	(23,633,043)	(14,320,514)	1,816,719,273	-2.05%	-1.28%
Total Real Assets	4,665,366,041	(34,421,088)	(15,681,285)	4,615,263,668	-1.07%	-0.74%
Total Assets	\$ 30,616,360,815	\$ (566,561,127)	\$ (150,211,328)	\$ 29,899,588,360	-2.34%	-1.86%

ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

Participant Directed Plans

Supplemental Annuity Plan
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
October 31, 2023

	Beginning Invested Assets	Investment Income	Net Contributions (Withdrawals)	Transfers In (Out)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (1)
Participant Options							
T. Rowe Price							
Stable Value Fund	\$ 476,611,265	\$ 939,385	\$ (4,695,006)	\$ 9,440,253	\$ 482,295,897	1.19%	0.20%
Small Cap Stock Fund	189,748,817	(9,636,829)	(562,585)	(4,796,890)	174,752,513	-7.90%	-5.15%
Alaska Balanced Trust	994,762,035	(20,708,470)	(5,660,680)	(4,808,212)	963,584,673	-3.13%	-2.09%
Long Term Balanced Fund	717,314,107	(17,272,444)	(899,321)	(1,981,444)	697,160,898	-2.81%	-2.41%
AK Target Date 2010 Trust	7,951,982	(150,739)	(9,167)	361,472	8,153,548	2.53%	-1.85%
AK Target Date 2015 Trust	61,257,973	(1,173,645)	(373,773)	(647,012)	59,063,543	-3.58%	-1.93%
AK Target Date 2020 Trust	73,475,892	(1,523,153)	(414,048)	62,460	71,601,151	-2.55%	-2.08%
AK Target Date 2025 Trust	102,039,811	(2,317,039)	(34,734)	1,038,110	100,726,148	-1.29%	-2.26%
AK Target Date 2030 Trust	101,373,748	(2,515,964)	279,413	1,316,131	100,453,328	-0.91%	-2.46%
AK Target Date 2035 Trust	101,268,109	(2,658,334)	547,066	130,705	99,287,546	-1.96%	-2.62%
AK Target Date 2040 Trust	97,650,908	(2,665,198)	504,671	267,584	95,757,965	-1.94%	-2.72%
AK Target Date 2045 Trust	120,188,834	(3,294,717)	(160,914)	227,147	116,960,350	-2.69%	-2.74%
AK Target Date 2050 Trust	134,935,315	(3,785,348)	677,772	3,646	131,831,385	-2.30%	-2.80%
AK Target Date 2055 Trust	146,572,906	(4,099,226)	1,093,774	(370,994)	143,196,460	-2.30%	-2.79%
AK Target Date 2060 Trust	18,016,815	(505,359)	597,551	(110,492)	17,998,515	-0.10%	-2.77%
AK Target Date 2065 Trust	10,557,080	(300,652)	398,063	(32,037)	10,622,454	0.62%	-2.80%
Total Investments with T. Rowe Price	<u>3,353,725,597</u>	<u>(71,667,732)</u>	<u>(8,711,918)</u>	<u>100,427</u>	<u>3,273,446,374</u>		
JP Morgan							
JPMorgan SmartRetirement Blend 2015 R6	530,453	(6,876)	(428,475)	(95,102)	-	-100.00%	-2.56%
JPMorgan SmartRetirement Blend 2020 R6	468,436	(8,889)	1,032	(460,579)	-	-100.00%	-3.72%
Total Investments with JP Morgan	<u>998,889</u>	<u>(15,765)</u>	<u>(427,443)</u>	<u>(555,681)</u>	<u>-</u>		
State Street Global Advisors							
Money Market	71,345,645	320,635	(588,444)	1,331,745	72,409,581	1.49%	0.45%
S&P 500 Stock Index	526,394,423	(10,749,624)	(2,401,031)	(13,120,112)	500,123,656	-4.99%	-2.07%
Russell 3000 Index	135,486,367	(3,684,152)	(596,138)	8,250,654	139,456,731	2.93%	-2.64%
World Equity Ex-US Index	84,467,850	(3,460,528)	(139,511)	20,801,953	101,669,764	20.37%	-3.65%
Total Investments with SSgA	<u>817,694,285</u>	<u>(17,573,669)</u>	<u>(3,725,124)</u>	<u>17,264,240</u>	<u>813,659,732</u>		
BlackRock							
Passive U.S. Bond Index Fund	156,386,881	(2,478,633)	(1,078,854)	489,358	153,318,752	-1.96%	-1.59%
Strategic Completion Fund	63,184,337	(1,319,057)	(231,627)	(7,809,556)	53,824,097	-14.81%	-2.23%
Total Investments with BlackRock	<u>219,571,218</u>	<u>(3,797,690)</u>	<u>(1,310,481)</u>	<u>(7,320,198)</u>	<u>207,142,849</u>		
Brandes and Baillie Gifford							
AK International Equity Fund	93,975,649	(3,996,432)	(177,957)	(3,799,949)	86,001,311	-8.49%	-4.34%
Northern Trust							
Environmental, Social, and Governance Fund	100,734,933	(2,373,272)	(549,366)	(5,688,839)	92,123,456	-8.55%	-2.43%
Total All Funds	<u>\$ 4,586,700,571</u>	<u>\$ (99,424,560)</u>	<u>\$ (14,902,289)</u>	<u>\$ -</u>	<u>\$ 4,472,373,722</u>	-2.49%	-2.17%

Notes: Source data provided by the record keeper, Empower Retirement.

(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

Supplemental Annuity Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
October 31, 2023
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>
Investments with T. Rowe Price				
Stable Value Fund	\$ 481,021	\$ 480,052	\$ 476,611	\$ 482,296
Small Cap Stock Fund	210,365	200,560	189,749	174,753
Alaska Balanced Trust	1,049,046	1,028,111	994,762	963,585
Long Term Balanced Fund	762,160	745,916	717,314	697,161
AK Target Date 2010 Trust	8,458	8,307	7,952	8,154
AK Target Date 2015 Trust	65,762	63,295	61,258	59,064
AK Target Date 2020 Trust	77,976	77,274	73,476	71,601
AK Target Date 2025 Trust	109,151	106,402	102,040	100,726
AK Target Date 2030 Trust	105,869	104,409	101,374	100,453
AK Target Date 2035 Trust	108,673	105,171	101,268	99,288
AK Target Date 2040 Trust	102,849	100,934	97,651	95,758
AK Target Date 2045 Trust	127,510	124,292	120,189	116,960
AK Target Date 2050 Trust	143,442	139,935	134,935	131,831
AK Target Date 2055 Trust	154,288	151,329	146,573	143,196
AK Target Date 2060 Trust	18,272	17,928	18,017	17,999
AK Target Date 2065 Trust	9,816	10,009	10,557	10,622
Investments with JP Morgan				
JPMorgan SmartRetirement Blend 2015 R6	564	579	530	0
JPMorgan SmartRetirement Blend 2020 R6	327	479	468	0
Investments with State Street Global Advisors				
Money Market	68,889	72,347	71,346	72,410
S&P 500 Stock Index	566,706	553,790	526,394	500,124
Russell 3000 Index	143,843	140,851	135,486	139,457
World Equity Ex-US Index	90,444	86,613	84,468	101,670
Investments with BlackRock				
Passive U.S. Bond Index Fund	161,361	160,820	156,387	153,319
Strategic Completion Fund	67,737	66,106	63,184	53,824
Investments with Brandes and Baillie Gifford				
AK International Equity Fund	102,122	98,015	93,976	86,001
Investments with Northern Trust				
Environmental, Social, and Governance Fund	106,088	106,597	100,735	92,123
Total Invested Assets	\$ 4,842,739	\$ 4,750,123	\$ 4,586,701	\$ 4,472,374
Change in Invested Assets				
Beginning Assets	\$ 4,751,925	\$ 4,842,739	\$ 4,750,123	\$ 4,586,701
Investment Earnings	102,584	(79,868)	(159,718)	(99,425)
Net Contributions (Withdrawals)	(11,770)	(12,749)	(3,704)	(14,902)
Ending Invested Assets	\$ 4,842,739	\$ 4,750,123	\$ 4,586,701	\$ 4,472,374

Note: Source data provided by the record keeper, Empower Retirement.

Deferred Compensation Plan
Schedule of Invested Assets and Changes in Invested Assets
for the Month Ended
October 31, 2023

	<u>Beginning Invested Assets</u>	<u>Investment Income</u>	<u>Net Contributions (Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested Assets</u>	<u>% Change in Invested Assets</u>	<u>% Change due to Investment Income (1)</u>
Participant Options							
T. Rowe Price							
Stable Value Fund	\$ 187,653,883	\$ 371,498	\$ (1,802,045)	\$ 2,136,352	\$ 188,359,688	0.38%	0.20%
Small Cap Stock Fund	104,513,074	(5,363,969)	(214,560)	(1,149,416)	97,785,129	-6.44%	-5.17%
Alaska Balanced Trust	42,579,830	(885,775)	(221,611)	(181,387)	41,291,057	-3.03%	-2.09%
Long Term Balanced Fund	89,914,316	(2,161,452)	(860,469)	(328,409)	86,563,986	-3.73%	-2.42%
AK Target Date 2010 Trust	2,371,067	(43,108)	(69)	(115)	2,327,775	-1.83%	-1.82%
AK Target Date 2015 Trust	8,018,847	(151,749)	(2,400)	(182,296)	7,682,402	-4.20%	-1.91%
AK Target Date 2020 Trust	20,978,896	(433,799)	(1,365)	(87,452)	20,456,280	-2.49%	-2.07%
AK Target Date 2025 Trust	26,000,293	(586,643)	(136,111)	(169,829)	25,107,710	-3.43%	-2.27%
AK Target Date 2030 Trust	20,472,532	(513,233)	97,115	489,288	20,545,702	0.36%	-2.47%
AK Target Date 2035 Trust	16,277,853	(412,255)	117,637	(613,064)	15,370,171	-5.58%	-2.57%
AK Target Date 2040 Trust	14,742,861	(406,125)	95,821	136,026	14,568,583	-1.18%	-2.73%
AK Target Date 2045 Trust	11,320,851	(312,861)	90,416	180,729	11,279,135	-0.37%	-2.73%
AK Target Date 2050 Trust	10,374,415	(290,319)	49,985	(29,900)	10,104,181	-2.60%	-2.80%
AK Target Date 2055 Trust	7,919,010	(221,956)	99,325	809	7,797,188	-1.54%	-2.79%
AK Target Date 2060 Trust	1,933,690	(54,019)	30,247	61	1,909,979	-1.23%	-2.77%
AK Target Date 2065 Trust	950,522	(27,861)	14,845	40,000	977,506	2.84%	-2.85%
Total Investments with T. Rowe Price	<u>566,021,940</u>	<u>(11,493,626)</u>	<u>(2,643,239)</u>	<u>241,397</u>	<u>552,126,472</u>		
JP Morgan							
JPMorgan SmartRetirement Blend 2015 R6	92,687	(1,201)	57	(91,543)	-	-100.00%	-2.56%
JPMorgan SmartRetirement Blend 2020 R6	162,675	(2,961)	(2,920)	(156,794)	-	-100.00%	-3.58%
Total Investments with JP Morgan	<u>255,362</u>	<u>(4,162)</u>	<u>(2,863)</u>	<u>(248,337)</u>	<u>-</u>		
State Street Global Advisors							
Money Market	21,324,234	96,120	(454,134)	485,901	21,452,121	0.60%	0.45%
S&P 500 Stock Index	258,964,466	(5,372,056)	(722,594)	(3,637,157)	249,232,659	-3.76%	-2.09%
Russell 3000 Index	50,391,111	(1,339,413)	(15,307)	1,659,511	50,695,902	0.60%	-2.62%
World Equity Ex-US Index	26,189,824	(1,062,098)	70,541	5,451,752	30,650,019	17.03%	-3.67%
Total Investments with SSgA	<u>356,869,635</u>	<u>(7,677,447)</u>	<u>(1,121,494)</u>	<u>3,960,007</u>	<u>352,030,701</u>		
BlackRock							
Passive U.S. Bond Index Fund	64,897,642	(1,028,497)	(182,515)	411,023	64,097,653	-1.23%	-1.58%
Strategic Completion Fund	20,874,603	(437,975)	(80,454)	(2,047,739)	18,308,435	-12.29%	-2.21%
Total Investments with BlackRock	<u>85,772,245</u>	<u>(1,466,472)</u>	<u>(262,969)</u>	<u>(1,636,716)</u>	<u>82,406,088</u>		
Brandes and Baillie Gifford							
AK International Equity Fund	38,304,500	(1,638,391)	(57,939)	(824,203)	35,783,967	-6.58%	-4.33%
Northern Trust							
Environmental, Social, and Governance Fund	37,820,201	(897,431)	(183,540)	(1,492,148)	35,247,082	-6.80%	-2.43%
Total All Funds	<u>\$ 1,085,043,883</u>	<u>\$ (23,177,529)</u>	<u>\$ (4,272,044)</u>	<u>\$ -</u>	<u>\$ 1,057,594,310</u>	-2.53%	-2.14%

Notes: Source data provided by the record keeper, Empower Retirement.

(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

Deferred Compensation Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
October 31, 2023
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>
Investments with T. Rowe Price				
Stable Value Fund	\$ 191,478	\$ 190,227	\$ 187,654	\$ 188,360
Small Cap Stock Fund	116,873	111,422	104,513	97,785
Alaska Balanced Trust	44,493	43,660	42,580	41,291
Long Term Balanced Fund	96,425	93,771	89,914	86,564
AK Target Date 2010 Trust	2,459	2,428	2,371	2,328
AK Target Date 2015 Trust	8,485	8,296	8,019	7,682
AK Target Date 2020 Trust	20,763	20,952	20,979	20,456
AK Target Date 2025 Trust	28,077	28,007	26,000	25,108
AK Target Date 2030 Trust	21,272	20,984	20,473	20,546
AK Target Date 2035 Trust	17,271	17,046	16,278	15,370
AK Target Date 2040 Trust	15,320	15,241	14,743	14,569
AK Target Date 2045 Trust	12,075	11,752	11,321	11,279
AK Target Date 2050 Trust	10,982	10,810	10,374	10,104
AK Target Date 2055 Trust	8,240	8,149	7,919	7,797
AK Target Date 2060 Trust	2,124	2,025	1,934	1,910
AK Target Date 2065 Trust	907	885	951	978
Investments with JP Morgan				
JPMorgan SmartRetirement Blend 2015 R6	83	96	93	0
JPMorgan SmartRetirement Blend 2020 R6	164	165	163	0
Investments with State Street Global Advisors				
Money Market	21,347	21,703	21,324	21,452
S&P 500 Stock Index	279,366	272,931	258,964	249,233
Russell 3000 Index	53,593	51,883	50,391	50,696
World Equity Ex-US Index	28,011	26,818	26,190	30,650
Investments with BlackRock				
Passive U.S. Bond Index Fund	68,363	66,903	64,898	64,098
Strategic Completion Fund	22,769	21,932	20,875	18,308
Investments with Brandes and Baillie Gifford				
AK International Equity Fund	42,164	40,204	38,304	35,784
Investments with Northern Trust				
Environmental, Social, and Governance Fund	40,050	39,662	37,820	35,247
Total Invested Assets	\$ 1,153,156	\$ 1,127,953	\$ 1,085,044	\$ 1,057,594
Change in Invested Assets				
Beginning Assets	\$ 1,127,806	\$ 1,153,156	\$ 1,127,953	\$ 1,085,044
Investment Earnings	27,201	(19,172)	(38,805)	(23,178)
Net Contributions (Withdrawals)	(1,851)	(6,031)	(4,103)	(4,272)
Ending Invested Assets	\$ 1,153,156	\$ 1,127,953	\$ 1,085,044	\$ 1,057,594

Note: Source data provided by the record keeper, Empower Retirement.

Defined Contribution Retirement - Participant Directed PERS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
October 31, 2023

	<u>Beginning Invested</u> <u>Assets</u>	<u>Investment Income</u>	<u>Net Contributions</u> <u>(Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested</u> <u>Assets</u>	<u>% Change in</u> <u>Invested Assets</u>	<u>% Change due to</u> <u>Investment</u> <u>Income (1)</u>
Participant Options							
T. Rowe Price							
Stable Value Fund	\$ 128,946,719	\$ 250,096	\$ 43,493	\$ 3,803,708	\$ 133,044,016	3.18%	0.19%
Small Cap Stock Fund	82,783,063	(4,174,597)	347,968	(4,439,952)	74,516,482	-9.99%	-5.17%
Alaska Balanced Trust	56,424,874	(1,170,665)	70,262	(1,756,775)	53,567,696	-5.06%	-2.11%
Long Term Balanced Fund	54,224,413	(1,300,902)	86,696	(642,101)	52,368,106	-3.42%	-2.41%
AK Target Date 2010 Trust	2,798,609	(48,980)	(21,275)	(74,933)	2,653,421	-5.19%	-1.78%
AK Target Date 2015 Trust	9,938,182	(191,093)	39,273	157	9,786,519	-1.53%	-1.92%
AK Target Date 2020 Trust	35,843,878	(745,566)	38,135	(15,826)	35,120,621	-2.02%	-2.08%
AK Target Date 2025 Trust	81,751,704	(1,862,112)	119,069	(168,032)	79,840,629	-2.34%	-2.28%
AK Target Date 2030 Trust	99,668,277	(2,468,458)	686,527	316,919	98,203,265	-1.47%	-2.46%
AK Target Date 2035 Trust	129,840,566	(3,411,311)	1,218,177	254,650	127,902,082	-1.49%	-2.61%
AK Target Date 2040 Trust	150,583,111	(4,123,028)	1,384,106	251,291	148,095,480	-1.65%	-2.72%
AK Target Date 2045 Trust	203,625,854	(5,628,436)	1,356,419	530,261	199,884,098	-1.84%	-2.75%
AK Target Date 2050 Trust	245,007,957	(6,896,543)	2,703,757	(147,820)	240,667,351	-1.77%	-2.80%
AK Target Date 2055 Trust	274,061,742	(7,687,450)	3,264,198	(252,875)	269,385,615	-1.71%	-2.79%
AK Target Date 2060 Trust	27,986,527	(793,972)	1,434,054	(36,973)	28,589,636	2.15%	-2.77%
AK Target Date 2065 Trust	17,246,442	(496,948)	1,071,822	(60,107)	17,761,209	2.98%	-2.80%
Total Investments with T. Rowe Price	<u>1,600,731,918</u>	<u>(40,749,965)</u>	<u>13,842,681</u>	<u>(2,438,408)</u>	<u>1,571,386,226</u>		
JP Morgan							
JPMorgan SmartRetirement Blend 2015 R6	46,295	(602)	323	(46,016)	-	-100.00%	-2.57%
JPMorgan SmartRetirement Blend 2020 R6	93,840	(1,790)	1,208	(93,258)	-	-100.00%	-3.74%
Total Investments with JP Morgan	<u>140,135</u>	<u>(2,392)</u>	<u>1,531</u>	<u>(139,274)</u>	<u>-</u>		
State Street Global Advisors							
Money Market	22,241,410	99,383	(40,930)	(765,580)	21,534,283	-3.18%	0.46%
S&P 500 Stock Index	134,671,732	(2,727,607)	842,430	(6,749,539)	126,037,016	-6.41%	-2.07%
Russell 3000 Index	64,629,614	(1,860,150)	499,315	8,382,441	71,651,220	10.86%	-2.69%
World Equity Ex-US Index	59,970,205	(2,437,813)	353,031	12,901,327	70,786,750	18.04%	-3.66%
Total Investments with SSgA	<u>281,512,961</u>	<u>(6,926,187)</u>	<u>1,653,846</u>	<u>13,768,649</u>	<u>290,009,269</u>		
BlackRock							
Passive U.S. Bond Index Fund	83,978,596	(1,336,588)	44,467	367,245	83,053,720	-1.10%	-1.59%
Strategic Completion Fund	35,844,033	(739,391)	68,991	(5,612,335)	29,561,298	-17.53%	-2.24%
Total Investments with BlackRock	<u>119,822,629</u>	<u>(2,075,979)</u>	<u>113,458</u>	<u>(5,245,090)</u>	<u>112,615,018</u>		
Brandes and Baillie Gifford							
AK International Equity Fund	54,030,226	(2,288,399)	343,078	(2,903,673)	49,181,232	-8.97%	-4.34%
Northern Trust							
Environmental, Social, and Governance Fund	30,254,483	(701,336)	170,659	(3,042,204)	26,681,602	-11.81%	-2.43%
Total All Funds	<u>\$ 2,086,492,352</u>	<u>\$ (52,744,258)</u>	<u>\$ 16,125,253</u>	<u>\$ -</u>	<u>\$ 2,049,873,347</u>	-1.76%	-2.52%

Notes: Source data provided by the record keeper, Empower Retirement.

(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

Defined Contribution Retirement - Participant Directed PERS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
October 31, 2023
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>
Investments with T. Rowe Price				
Stable Value Fund	\$ 130,256	\$ 129,606	\$ 128,947	\$ 133,044
Small Cap Stock Fund	91,349	87,789	82,783	74,516
Alaska Balanced Trust	59,083	57,998	56,425	53,568
Long Term Balanced Fund	57,327	56,110	54,224	52,368
AK Target Date 2010 Trust	2,934	2,952	2,799	2,653
AK Target Date 2015 Trust	10,810	10,337	9,938	9,787
AK Target Date 2020 Trust	38,142	37,359	35,844	35,121
AK Target Date 2025 Trust	86,603	84,652	81,752	79,841
AK Target Date 2030 Trust	104,632	103,161	99,668	98,203
AK Target Date 2035 Trust	136,507	134,289	129,841	127,902
AK Target Date 2040 Trust	159,163	155,855	150,583	148,095
AK Target Date 2045 Trust	216,033	211,502	203,626	199,884
AK Target Date 2050 Trust	260,889	255,554	245,008	240,667
AK Target Date 2055 Trust	289,207	283,863	274,062	269,386
AK Target Date 2060 Trust	27,767	27,986	27,987	28,590
AK Target Date 2065 Trust	16,887	17,169	17,246	17,761
Investments with JP Morgan				
JPMorgan SmartRetirement Blend 2015 R6	10	47	46	0
JPMorgan SmartRetirement Blend 2020 R6	98	97	94	0
State Street Global Advisors				
Money Market	21,597	22,290	22,241	21,534
S&P 500 Stock Index	141,738	140,367	134,672	126,037
Russell 3000 Index	69,059	67,997	64,630	71,651
World Equity Ex-US Index	63,852	61,678	59,970	70,787
Investments with BlackRock				
Passive U.S. Bond Index Fund	86,531	85,738	83,979	83,054
Strategic Completion Fund	37,961	37,103	35,844	29,561
Investments with Brandes and Baillie Gifford				
AK International Equity Fund	58,118	56,224	54,030	49,181
Investments with Northern Trust				
Environmental, Social, and Governance Fund	32,007	31,895	30,254	26,682
Total Invested Assets	\$ 2,198,562	\$ 2,159,617	\$ 2,086,492	\$ 2,049,873
Change in Invested Assets				
Beginning Assets	\$ 2,134,652	\$ 2,198,562	\$ 2,159,617	\$ 2,086,492
Investment Earnings	58,433	(46,224)	(81,174)	(52,744)
Net Contributions (Withdrawals)	5,478	7,279	8,049	16,125
Ending Invested Assets	\$ 2,198,562	\$ 2,159,617	\$ 2,086,492	\$ 2,049,873

Note: Source data provided by the record keeper, Empower Retirement.

Defined Contribution Retirement - Participant Directed TRS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
October 31, 2023

Participant Options	Beginning Invested		Net Contributions		Ending Invested	% Change in	% Change due to
	Assets	Investment Income	(Withdrawals)	Transfers In (Out)	Assets	Invested Assets	Investment
							Income (1)
T. Rowe Price							
Stable Value Fund	\$ 47,581,591	\$ 94,682	\$ (265,285)	\$ 611,370	\$ 48,022,358	0.93%	0.20%
Small Cap Stock Fund	33,836,685	(1,663,766)	29,706	(3,105,737)	29,096,888	-14.01%	-5.15%
Alaska Balanced Trust	24,348,638	(495,940)	(22,531)	(1,615,001)	22,215,166	-8.76%	-2.11%
Long Term Balanced Fund	24,131,766	(572,445)	(18,252)	(921,654)	22,619,415	-6.27%	-2.42%
AK Target Date 2010 Trust	1,296,821	(23,347)	1,879	286,172	1,561,525	20.41%	-1.62%
AK Target Date 2015 Trust	3,321,089	(63,892)	21,850	-	3,279,047	-1.27%	-1.92%
AK Target Date 2020 Trust	10,869,922	(225,137)	4,999	(36,107)	10,613,677	-2.36%	-2.07%
AK Target Date 2025 Trust	25,416,764	(586,855)	(82,588)	556,764	25,304,085	-0.44%	-2.29%
AK Target Date 2030 Trust	37,586,079	(966,248)	(103,398)	2,368,994	38,885,427	3.46%	-2.50%
AK Target Date 2035 Trust	53,110,109	(1,401,160)	306,735	625,666	52,641,350	-0.88%	-2.62%
AK Target Date 2040 Trust	68,526,372	(1,892,595)	550,206	1,004,189	68,188,172	-0.49%	-2.73%
AK Target Date 2045 Trust	97,194,249	(2,713,190)	658,664	1,945,349	97,085,072	-0.11%	-2.75%
AK Target Date 2050 Trust	134,880,102	(3,778,689)	664,690	(374,246)	131,391,857	-2.59%	-2.80%
AK Target Date 2055 Trust	95,213,089	(2,665,000)	939,967	(25,565)	93,462,491	-1.84%	-2.79%
AK Target Date 2060 Trust	9,193,191	(259,744)	389,021	(25,198)	9,297,270	1.13%	-2.77%
AK Target Date 2065 Trust	2,710,944	(78,536)	165,594	3,538	2,801,540	3.34%	-2.81%
Total Investments with T. Rowe Price	<u>669,217,411</u>	<u>(17,291,862)</u>	<u>3,241,257</u>	<u>1,298,534</u>	<u>656,465,340</u>		
State Street Global Advisors							
Money Market	5,719,366	24,988	(18,870)	(384,961)	5,340,523	-6.62%	0.45%
S&P 500 Stock Index	44,028,070	(881,712)	144,319	(2,264,110)	41,026,567	-6.82%	-2.05%
Russell 3000 Index	26,058,005	(744,631)	65,929	2,991,723	28,371,026	8.88%	-2.70%
World Equity Ex-US Index	26,922,058	(1,089,070)	34,766	5,312,537	31,180,291	15.82%	-3.68%
Total Investments with SSgA	<u>102,727,499</u>	<u>(2,690,425)</u>	<u>226,144</u>	<u>5,655,189</u>	<u>105,918,407</u>		
BlackRock							
Passive U.S. Bond Index Fund	29,102,403	(463,286)	(34,543)	(475,287)	28,129,287	-3.34%	-1.61%
Strategic Completion Fund	15,150,339	(307,498)	(5,158)	(2,927,559)	11,910,124	-21.39%	-2.25%
Total Investments with BlackRock	<u>44,252,742</u>	<u>(770,784)</u>	<u>(39,701)</u>	<u>(3,402,846)</u>	<u>40,039,411</u>		
Brandes and Baillie Gifford							
AK International Equity Fund	23,264,942	(968,045)	24,483.00	(2,007,810)	20,313,570	-12.69%	-4.35%
Northern Trust							
Environmental, Social, and Governance Fund	11,763,434	(261,227)	9,739.00	(1,543,067)	9,968,879	-15.26%	-2.38%
Total All Funds	<u>\$ 851,226,028</u>	<u>\$ (21,982,343)</u>	<u>\$ 3,461,922</u>	<u>\$ -</u>	<u>\$ 832,705,607</u>	-2.18%	-2.58%

Notes: Source data provided by the record keeper, Empower Retirement.

(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

Defined Contribution Retirement - Participant Directed TRS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
October 31, 2023
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>
Investments with T. Rowe Price				
Stable Value Fund	\$ 47,706	\$ 47,760	\$ 47,582	\$ 48,022
Small Cap Stock Fund	37,650	35,983	33,837	29,097
Alaska Balanced Trust	25,615	25,091	24,349	22,215
Long Term Balanced Fund	25,673	25,010	24,132	22,619
AK Target Date 2010 Trust	1,397	1,332	1,297	1,562
AK Target Date 2015 Trust	3,712	3,547	3,321	3,279
AK Target Date 2020 Trust	11,555	11,276	10,870	10,614
AK Target Date 2025 Trust	27,498	26,606	25,417	25,304
AK Target Date 2030 Trust	39,825	39,019	37,586	38,885
AK Target Date 2035 Trust	56,632	55,037	53,110	52,641
AK Target Date 2040 Trust	73,196	71,193	68,526	68,188
AK Target Date 2045 Trust	104,309	101,361	97,194	97,085
AK Target Date 2050 Trust	145,234	140,618	134,880	131,392
AK Target Date 2055 Trust	102,402	99,492	95,213	93,462
AK Target Date 2060 Trust	9,759	9,458	9,193	9,297
AK Target Date 2065 Trust	2,817	2,753	2,711	2,802
Investments with State Street Global Advisors				
Money Market	6,115	5,752	5,719	5,341
S&P 500 Stock Index	46,699	46,135	44,028	41,027
Russell 3000 Index	27,848	27,317	26,058	28,371
World Equity Ex-US Index	29,167	27,842	26,922	31,180
Investments with BlackRock				
Passive U.S. Bond Index Fund	30,247	29,775	29,102	28,129
Strategic Completion Fund	15,937	15,574	15,150	11,910
Investments with Brandes and Baillie Gifford				
AK International Equity Fund	25,583	24,437	23,265	20,314
Investments with Northern Trust				
Environmental, Social, and Governance Fund	12,709	12,507	11,763	9,969
Total Invested Assets	\$ 909,283	\$ 884,875	\$ 851,226	\$ 832,706
<u>Change in Invested Assets</u>				
Beginning Assets	\$ 882,747	\$ 909,283	\$ 884,875	\$ 851,226
Investment Earnings	24,798	(19,776)	(33,572)	(21,982)
Net Contributions (Withdrawals)	1,739	(4,632)	(77)	3,462
Ending Invested Assets	\$ 909,283	\$ 884,875	\$ 851,226	\$ 832,706

Note: Source data provided by the record keeper, Empower Retirement.

ALASKA RETIREMENT MANAGEMENT BOARD

FINANCIAL REPORT

(Supplement to the Treasury Division Report)

As of October 31, 2023

Prepared by the Division of Retirement & Benefits

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Four Months Ending October 31, 2023

	Contributions				Expenditures				Net Contributions/ (Withdrawals)
	Contributions EE and/or ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	
Public Employees' Retirement System (PERS)									
<u>Defined Benefit Plans:</u>									
Retirement Pension Trust	\$ 169,405,287	\$ 37,942,000	\$ 54,401	\$ 207,401,688	\$ (363,854,786)	\$ (2,901,851)	\$ (2,539,996)	\$ (369,296,633)	\$ (161,894,945)
Retirement Health Care Trust	45,261	-	23,545,094	23,590,355	(199,478,620)	-	(6,779,965)	(206,258,585)	(182,668,230)
Total Defined Benefit Plans	169,450,548	37,942,000	23,599,495	230,992,043	(563,333,406)	(2,901,851)	(9,319,961)	(575,555,218)	(344,563,175)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	77,713,260	-	-	77,713,260	-	(37,412,658)	(3,369,252)	(40,781,910)	36,931,350
Health Reimbursement Arrangement ^(a)	17,391,108	-	-	17,391,108	(392,589)	-	(86,579)	(479,168)	16,911,940
Retiree Medical Plan ^(a)	6,409,977	-	67,868	6,477,845	(521,131)	-	(63,241)	(584,372)	5,893,473
Occupational Death and Disability: ^(a)									
All Others	1,485,558	-	-	1,485,558	(59,144)	-	(11,544)	(70,688)	1,414,870
Peace Officers and Firefighters	650,362	-	-	650,362	(168,486)	-	(4,391)	(172,877)	477,485
Total Defined Contribution Plans	103,650,265	-	67,868	103,718,133	(1,141,350)	(37,412,658)	(3,535,007)	(42,089,015)	61,629,118
Total PERS	273,100,813	37,942,000	23,667,363	334,710,176	(564,474,756)	(40,314,509)	(12,854,968)	(617,644,233)	(282,934,057)
Teachers' Retirement System (TRS)									
<u>Defined Benefit Plans:</u>									
Retirement Pension Trust	18,214,292	98,766,000	10,439	116,990,731	(192,211,175)	(709,308)	(1,159,094)	(194,079,577)	(77,088,846)
Retirement Health Care Trust	344	-	7,916,379	7,916,723	(64,196,085)	-	(2,487,456)	(66,683,541)	(58,766,818)
Total Defined Benefit Plans	18,214,636	98,766,000	7,926,818	124,907,454	(256,407,260)	(709,308)	(3,646,550)	(260,763,118)	(135,855,664)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	19,018,360	-	-	19,018,360	-	(17,379,563)	(1,147,164)	(18,526,727)	491,633
Health Reimbursement Arrangement ^(a)	3,001,313	-	-	3,001,313	(84,215)	-	(25,198)	(109,413)	2,891,900
Retiree Medical Plan ^(a)	1,049,586	-	15,789	1,065,375	(124,895)	-	(26,216)	(151,111)	914,264
Occupational Death and Disability ^(a)	91,638	-	-	91,638	(9,202)	-	(3,442)	(12,644)	78,994
Total Defined Contribution Plans	23,160,897	-	15,789	23,176,686	(218,312)	(17,379,563)	(1,202,020)	(18,799,895)	4,376,791
Total TRS	41,375,533	98,766,000	7,942,607	148,084,140	(256,625,572)	(18,088,871)	(4,848,570)	(279,563,013)	(131,478,873)
Judicial Retirement System (JRS)									
Defined Benefit Plan Retirement Pension Trust	4,269,320	2,593,000	-	6,862,320	(5,520,606)	-	(78,992)	(5,599,598)	1,262,722
Defined Benefit Plan Retirement Health Care Trust	326,173	-	90,597	416,770	(666,757)	-	(34,825)	(701,582)	(284,812)
Total JRS	4,595,493	2,593,000	90,597	7,279,090	(6,187,363)	-	(113,817)	(6,301,180)	977,910
National Guard/Naval Militia Retirement System (NGNMRS)									
Defined Benefit Plan Retirement Pension Trust ^(a)	-	-	-	-	(538,976)	-	(77,989)	(616,965)	(616,965)
Other Participant Directed Plans									
Supplemental Annuity Plan (SBS)	66,899,791	-	-	66,899,791	-	(107,210,183)	(2,814,275)	(110,024,458)	(43,124,667)
Deferred Compensation Plan ^(b) (DCP)	16,458,923	-	-	16,458,923	-	(32,039,727)	(676,501)	(32,716,228)	(16,257,305)
Total All Funds	402,430,553	139,301,000	31,700,567	573,432,120	(827,826,667)	(197,653,290)	(21,386,120)	(1,046,866,077)	(473,433,957)
Total Non-Participant Directed	222,340,219	139,301,000	31,700,567	393,341,786	(827,826,667)	(3,611,159)	(13,378,928)	(844,816,754)	(451,474,968)
Total Participant Directed	180,090,334	-	-	180,090,334	-	(194,042,131)	(8,007,192)	(202,049,323)	(21,958,989)
Total All Funds	\$ 402,430,553	\$ 139,301,000	\$ 31,700,567	\$ 573,432,120	\$ (827,826,667)	\$ (197,653,290)	\$ (21,386,120)	\$ (1,046,866,077)	\$ (473,433,957)

(a) Employer only contributions.

(b) Employee only contributions.

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Month Ended October 31, 2023

	Contributions				Expenditures				Net Contributions/ (Withdrawals)
	Contributions EE and/or ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	
Public Employees' Retirement System (PERS)									
<u>Defined Benefit Plans:</u>									
Retirement Pension Trust	\$ 53,327,776	\$ -	\$ 27,611	\$ 53,355,387	\$ (90,746,651)	\$ (373,451)	\$ (731,508)	\$ (91,851,610)	\$ (38,496,223)
Retirement Health Care Trust	4,721	-	2,017,883	2,022,604	(57,006,159)	-	(1,939,614)	(58,945,773)	(56,923,169)
Total Defined Benefit Plans	53,332,497	-	2,045,494	55,377,991	(147,752,810)	(373,451)	(2,671,122)	(150,797,383)	(95,419,392)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	23,986,886	-	-	23,986,886	-	(7,093,900)	(767,733)	(7,861,633)	16,125,253
Health Reimbursement Arrangement ^(a)	5,521,561	-	-	5,521,561	(94,154)	-	(39,282)	(133,436)	5,388,125
Retiree Medical Plan ^(a)	2,004,407	-	12,118	2,016,525	(173,137)	-	(23,524)	(196,661)	1,819,864
Occupational Death and Disability: ^(a)									
All Others	483,789	-	-	483,789	(14,797)	-	(5,659)	(20,456)	463,333
Peace Officers and Firefighters	187,536	-	-	187,536	(42,126)	-	(2,038)	(44,164)	143,372
Total Defined Contribution Plans	32,184,179	-	12,118	32,196,297	(324,214)	(7,093,900)	(838,236)	(8,256,350)	23,939,947
Total PERS	85,516,676	-	2,057,612	87,574,288	(148,077,024)	(7,467,351)	(3,509,358)	(159,053,733)	(71,479,445)
Teachers' Retirement System (TRS)									
<u>Defined Benefit Plans:</u>									
Retirement Pension Trust	4,371,231	-	1,895	4,373,126	(48,069,728)	(110,270)	(398,834)	(48,578,832)	(44,205,706)
Retirement Health Care Trust	-	-	716,604	716,604	(17,909,730)	-	(726,334)	(18,636,064)	(17,919,460)
Total Defined Benefit Plans	4,371,231	-	718,499	5,089,730	(65,979,458)	(110,270)	(1,125,168)	(67,214,896)	(62,125,166)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	6,688,941	-	-	6,688,941	-	(2,898,401)	(328,618)	(3,227,019)	3,461,922
Health Reimbursement Arrangement ^(a)	513,766	-	-	513,766	(27,748)	-	(11,599)	(39,347)	474,419
Retiree Medical Plan ^(a)	295,686	-	1,802	297,488	(49,833)	-	(9,794)	(59,627)	237,861
Occupational Death and Disability ^(a)	25,980	-	-	25,980	(2,302)	-	(1,634)	(3,936)	22,044
Total Defined Contribution Plans	7,524,373	-	1,802	7,526,175	(79,883)	(2,898,401)	(351,645)	(3,329,929)	4,196,246
Total TRS	11,895,604	-	720,301	12,615,905	(66,059,341)	(3,008,671)	(1,476,813)	(70,544,825)	(57,928,920)
Judicial Retirement System (JRS)									
Defined Benefit Plan Retirement Pension Trust	504,437	-	-	504,437	(1,382,132)	-	(56,554)	(1,438,686)	(934,249)
Defined Benefit Plan Retirement Health Care Trust	72,309	-	6,907	79,216	(154,654)	-	(19,008)	(173,662)	(94,446)
Total JRS	576,746	-	6,907	583,653	(1,536,786)	-	(75,562)	(1,612,348)	(1,028,695)
National Guard/Naval Militia Retirement System (NGNMRS)									
Defined Benefit Plan Retirement Pension Trust ^(a)	-	-	-	-	(147,682)	-	(39,411)	(187,093)	(187,093)
Other Participant Directed Plans									
Supplemental Annuity Plan (SBS)	14,324,544	-	-	14,324,544	-	(28,268,247)	(958,586)	(29,226,833)	(14,902,289)
Deferred Compensation Plan ^(b) (DCP)	4,106,635	-	-	4,106,635	-	(8,144,719)	(233,960)	(8,378,679)	(4,272,044)
Total All Funds	116,420,205	-	2,784,820	119,205,025	(215,820,833)	(46,888,988)	-	(269,003,511)	(149,798,486)
Total Non-Participant Directed	67,313,199	-	2,784,820	70,098,019	(215,820,833)	(483,721)	(4,004,793)	(220,309,347)	(150,211,328)
Total Participant Directed	49,107,006	-	-	49,107,006	-	(46,405,267)	(2,288,897)	(48,694,164)	412,842
Total All Funds	\$ 116,420,205	\$ -	\$ 2,784,820	\$ 119,205,025	\$ (215,820,833)	\$ (46,888,988)	\$ (6,293,690)	\$ (269,003,511)	\$ (149,798,486)

(a) Employer only contributions.

(b) Employee only contributions.

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Four Months Ending October 31, 2023

PARTICIPANT DIRECTED DISBURSEMENTS BY PLAN AND TYPE

Type	PERS DCR Plan	TRS DCR Plan	Supplemental Annuity Plan	Deferred Compensation	TOTAL	% of Total
Payment to Beneficiary	\$ 48,896	\$ 20,000	\$ 317,934	\$ 95,502	\$ 482,332	0.2%
Death Benefit	441,588	157,894	3,954,693	1,398,823	5,952,998	3.1%
Disability / Hardship	288,210	-	33,819	73,148	395,177	0.2%
Minimum Required Distribution	65,623	9,974	3,863,348	1,441,411	5,380,356	2.8%
Qualified Domestic Relations Order	684,155	12,784	2,557,762	271,065	3,525,766	1.8%
Separation from Service / Retirement	34,621,578 a	15,452,823 a	96,024,665	27,334,051	173,433,117	89.3%
Purchase of Service Credit	762,304 a	934,440 a	457,962	83,587	2,238,293	1.2%
Transfer to a Qualifying Plan	-	-	-	15,366	15,366	0.0%
59-½ In-service Distribution	-	-	-	1,306,603	1,306,603	0.7%
Qualified Birth / Adoption Expense	-	-	-	20,171	20,171	0.0%
DCR to DB Conversion	500,304 a	791,648 a	-	-	1,291,952	0.7%
TOTAL	\$ 37,412,658	\$ 17,379,563	\$ 107,210,183	\$ 32,039,727	\$ 194,042,131	100.0%

^a Employer distributions sent to the DB plan are shown as "DCR to DB Conversion". Employee funds sent to the DB plan are included with "Purchase of Service Credit". Excess employee money sent to employee after conversion are included in "Separation from Service".

PERS & TRS PARTICIPANT DIRECTED DISBURSEMENTS BY PLAN AND VESTED PERCENTAGE

Vesting	PERS DCR Plan	TRS DCR Plan	TOTAL	% of Total
100% Vested	\$ 33,793,834	\$ 15,781,767	\$ 49,575,601	90.5%
75% Vested	874,143	595,734	1,469,877	2.7%
50% Vested	738,355	302,905	1,041,260	1.9%
25% Vested	713,743	299,654	1,013,397	1.8%
0% Vested	1,292,583	399,503	1,692,086	3.1%
TOTAL	\$ 37,412,658	\$ 17,379,563	\$ 54,792,221	100.0%

DEFINED BENEFIT REFUNDS BY PLAN, TIER, CONTRIBUTION TYPE AND VESTED STATUS

Contribution Type	PERS DB Pension Plan				TRS DB Pension Plan			JRS	TOTAL
	Tier 1	Tier 2	Tier 3	Total	Tier 1	Tier 2	Total	DB Pension Plan	DB Pension Plan
Mandatory Vested	\$ 55,754	\$ -	\$ 2,527,222	\$ 2,582,976	\$ -	\$ 669,424	\$ 669,424	\$ -	\$ 3,252,400.00
Mandatory Non-Vested	738	6,438	71,032	78,208	-	39,655	39,655	-	117,863
Geographic Differential	-	4,457	67,020	71,477	-	-	-	-	71,477
Voluntary Full	-	46,194	80,442	126,636	-	-	-	-	126,636
Indebtedness, Lagging & Partial	-	4,514	38,040	42,554	-	229	229	-	42,783
TOTAL	\$ 56,492	\$ 61,603	\$ 2,783,756	\$ 2,901,851	\$ -	\$ 709,308	\$ 709,308	\$ -	\$ 3,611,159

Notes for the DRB Supplement to the Treasury Report

October 2023

This report is the DRB supplement to the Treasury Division's Financial Report. It expands the "Net Contributions/(Withdrawals)" column into contributions and expenditures. It shows contributions received from both employees and employers, contributions from the State of Alaska, and other non-investment income. This report also expands expenditures into benefits, refunds & disbursements, and administrative & investment expenditures.

The net amount of total contributions and total expenditures, presented as "Net Contributions/(Withdrawals)", agrees with the same column in the Treasury Division's Report. Page one shows the year-to-date totals for the first four months of Fiscal Year 2024, while page two shows only the month of October 2023.

Highlights – On page one, for the four months ending October 31, 2023:

- PERS DB Pension – Average employer and employee contributions of \$42.4 million per month, benefit payments of approximately \$91 million per month, refunds average \$725 thousand, and administrative and investment expenditures of \$635 thousand per month (DOR and DRB).
- PERS DB Healthcare – Average employer contributions of \$11 thousand per month, and benefit payments of approximately \$49.9 million per month. Other income of \$8.1 million from OptumRx EGWP subsidies (most recently received in October for October), \$8.6 million from OptumRx pharmacy rebates (most recently received in September for 45108), \$6.4 million from OptumRx EGWP coverage gap discount program (CGDP) (most recently received in July for 1st Qtr 2023), \$361 thousand from Aetna pharmacy rebates (most recently received in September for 1st Quarter 2023), and average administrative and investment expenditures of \$1.7 million per month (DOR and DRB).
- PERS DC Pension – Average employer and employee contributions of \$19.4 million per month, participant disbursements average \$9.4 million per month, and average administrative and investment expenditures of \$842 thousand per month (DOR and DRB).
- PERS DCR Health – For HRA, RMP, and OD&D only, employer contributions average \$6.5 million per month on behalf of participating employees, and benefit payments of approximately \$285 thousand per month. Currently, 15 benefits are being paid from the Occupational Death & Disability plans, 207 retirees are participating in RMP, and 277 retirees are participating in HRA. Other income of \$45 thousand from OptumRx EGWP subsidies (most recently received in October for October), \$15.5 thousand from OptumRx pharmacy rebates (most recently received in August for 2nd Qtr 2023), \$7.3 thousand from OptumRx EGWP coverage gap discount program (CGDP) (most recently received in July for 1st Qtr 2023), and administrative and investment expenditures were approximately \$41 thousand per month (DOR and DRB).
- TRS DB Pension – Average employer and employee contributions of \$4.6 million per month, benefit payments of approximately \$48.1 million per month, refunds average \$177 thousand, and average administrative and investment expenditures of \$290 thousand per month (DOR and DRB).
- TRS DB Healthcare – For HRA, RMP, and OD&D only, average employer contributions of 344 per month, and benefit payments of approximately \$16 million per month. Other income of \$2.1 million from OptumRx EGWP subsidies (most recently received in October for October), \$2.8 million from OptumRx pharmacy rebates (most recently received in August for 2nd Qtr 2023), \$2.1 million from OptumRx EGWP coverage gap discount program (CGDP) (most recently received in July for 1st Qtr 2023), \$144 thousand from Aetna pharmacy rebates (most recently received in September for 1st Quarter 2023), and average administrative and investment expenditures of \$622 thousand per month (DOR and DRB).

- TRS DC Pension – Average employer and employee contributions of \$4.8 million per month, participant disbursements average \$4.3 million per month, and average administrative and investment expenditures of \$287 thousand per month (DOR and DRB).
- TRS DCR Health – Average employer contributions of \$1 million per month, and benefit payments of approximately \$55 thousand per month. Other income of \$5 thousand from OptumRx EGWP subsidies (most recently received in October for October), \$2.3 thousand from OptumRx pharmacy rebates (most recently received in August for 2nd Qtr 2023), \$6.5 thousand from OptumRx EGWP coverage gap discount program (CGDP) (most recently received in July for 1st Qtr 2023), and average administrative and investment expenditures of \$14 thousand per month (DOR and DRB).
- JRS Pension – Average employer and employee contributions of \$1.1 million per month, benefit payments of approximately \$1.4 million per month, and average administrative and investment expenditures of \$20 thousand per month (DOR and DRB).
- JRS Healthcare – Average employer contributions of \$82 thousand per month, and benefit payments of approximately \$167 thousand per month. Other income of \$21 thousand from OptumRx EGWP subsidies (most recently received in October for October), \$46.5 thousand from OptumRx pharmacy rebates (most recently received in August for 2nd Qtr 2023), \$14.5 thousand from EGWP coverage gap discount program (CGDP) (most recently received in July for 1st Qtr 2023), and average administrative and investment expenditures of \$9 thousand per month (DOR and DRB).
- NGNMRS – A combination of lump-sum and monthly benefit payments of \$135 thousand per month, and average administrative and investment expenditures of \$19 thousand per month (DOR and DRB).
- SBS – Average employer and employee contributions and transfers in of \$16.7 million per month. Participant disbursements average of \$26.8 million per month, and average administrative and investment expenditures of \$704 thousand per month (DOR and DRB).
- Deferred Compensation – Average employer and employee contributions and transfers in of \$4.1 million per month, participant disbursements average of \$8 million per month, and average administrative and investment expenditures of \$169 thousand per month (DOR and DRB).

Highlights – On page two, activity for the one month of October 2023 only:

- PERS DB Healthcare - Other income of \$2.0 million from OptumRx pharmacy rebates and EGWP subsidy.
- PERS DCR Health - Other income of \$12 thousand from OptumRx pharmacy rebates and EGWP subsidy.
- TRS DB Healthcare - Other income of \$711 thousand from OptumRx pharmacy rebates and EGWP subsidy.
- JRS DB Healthcare - Other income of \$7 thousand from OptumRx pharmacy rebates and EGWP subsidy.
- All other funds - Nothing significant to report.

If you have any questions or comments, please let me know.

ALASKA RETIREMENT MANAGEMENT BOARD
STAFF REPORT
Division of Retirement & Benefits Report
December 6, 2023

Summary of Monthly Billings – Buck Global LLC

Attached is the requested summary schedule of invoices by quarter related to actuarial services provided by the Division's consulting actuary, Buck Global LLC.

Included on this schedule is the quarter ended September 30, 2023.

Items listed on the left side of the schedule represent regular and non-regular services provided under our current contract.

The associated costs of each service are charged to the System or Plan noted on the column headings.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Summary of Monthly Billings - ACTION: _____
Buck Global LLC
DATE: December 6, 2023 INFORMATION: X

BACKGROUND:

AS 37.10.220(a)(8) prescribes that the Alaska Retirement Management Board (Board) “coordinate with the retirement system administrator to have an annual actuarial valuation of each retirement system prepared to determine system assets, accrued liabilities, and funding ratios....”

As part of the oversight process, the Board has requested that the Division of Retirement and Benefits provide quarterly summary updates to review services provided and costs incurred for actuarial valuations and other systems’ requests.

STATUS:

Attached are the summary totals for the three months ended September 30, 2023, with comparative totals from the prior fiscal year.

**Buck
Billing Summary
For the Three Months Ended September 30, 2023**

	<u>PERS</u>	<u>TRS</u>	<u>JRS</u>	<u>NGNMRS</u>	<u>EPORS</u>	<u>TOTAL</u>
Actuarial valuations	\$ 55,311	44,019	5,643	5,643	2,259	\$ 112,875
Change to valuation data request for DRB's new systems	84	33	-	-	-	117
JRS Valuation and GASB report update for new salary assumptions	-	-	29,233	-	-	29,233
KPMG audit information request	2,631	1,070	19	75	-	3,795
ARMB presentations and meeting attendance	1,177	1,178	-	-	-	2,355
PERS/TRS contribution rates	3,531	3,534	-	-	-	7,065
GASB 67/74	7,830	6,264	783	783	-	15,660
GASB 68/75	23,502	18,804	2,352	2,352	-	47,010
Projections	6,984	6,981	-	-	-	13,965
Meeting materials	8,655	4,917	47	180	-	13,799
TOTAL	\$ 109,705	86,800	38,077	9,033	2,259	\$ 245,874
For the Three Months Ended September 30, 2022	\$ 103,163	82,749	8,533	8,656	2,184	\$ 205,285

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Retirement System Membership Activity
as of September 30, 2023

ACTION: _____

DATE: December 7, 2023

INFORMATION: X

BACKGROUND:

Information related to PERS, TRS, JRS, NGNMRS, SBS, and DCP membership activity as requested by the Board.

STATUS:

Membership information as of September 30, 2023.

ALASKA RETIREMENT MANAGEMENT BOARD

STAFF REPORT

Division of Retirement & Benefits Report December 7, 2023

Retirement System Membership Activity as of September 30, 2023

Attached are the membership statistics for the quarter ending

- September 30, 2023

Active counts have changed in the following manner:

- PERS Tier 1-3 active members decreased from 8,557 to 8,329, or a decrease of 228.
- PERS DCR active members increased from 26,261 to 26,704, or an increase of 443.
- PERS active members had a net increase of 215.

- TRS Tier 1-2 active members decreased from 2,897 to 2,776, or a decrease of 121.
- TRS DCR active members decreased from 6,416 to 6,825, or an increase of 409.
- TRS active members had a net increase of 288.

Retiree counts have changed in the following manner:

- PERS retirees decreased from 37,206 to 37,026, or a decrease of 180 (all tiers).
- TRS retirees increased from 13,537 to 13,749, or an increase of 212 (all tiers).

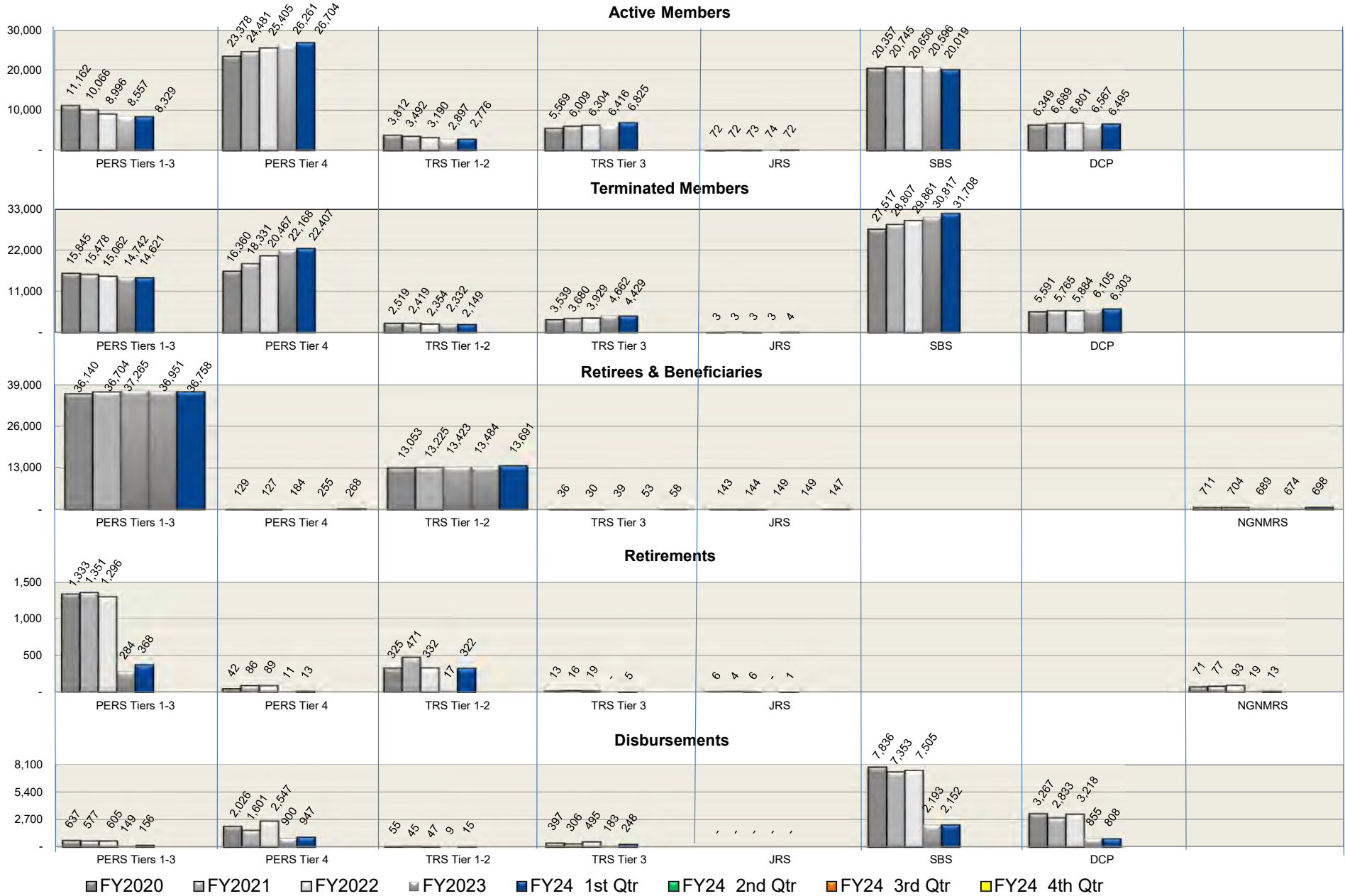
MEMBERSHIP STATISTICS AS OF JUNE 30, 2023

	PERS						TRS					JRS	NGNMRS	SBS	DCP
	DB			Total	DCR	SYSTEM	DB			DCR	SYSTEM				
	Tier I	Tier II	Tier III		Tier IV	TOTAL	Tier I	Tier II	Total	Tier III	TOTAL				
Active Members	464	1,756	6,337	8,557	26,261	34,818	95	2,802	2,897	6,416	9,313	74	n/a	20,596	6,567
Terminated Members															
Entitled to Future Benefits	234	1,395	3,152	4,781	2,773	7,554	24	749	773	1,247	2,020	2	n/a	30,817	6,105
Other Terminated Members	927	1,894	7,140	9,961	19,395	29,356	205	1,354	1,559	3,415	4,974	1	n/a	n/a	n/a
Total Terminated Members	1,161	3,289	10,292	14,742	22,168	36,910	229	2,103	2,332	4,662	6,994	3	n/a	30,817	6,105
Retirees & Beneficiaries	21,441	9,609	5,901	36,951	255	37,206	9,619	3,865	13,484	53	13,537	149	674	n/a	n/a
Managed Accounts	n/a	n/a	n/a	n/a	5,700	5,700	n/a	n/a	n/a	1,295	1,295	n/a	n/a	3,650	3,628
Managed account balance qtr end					\$527,939,079					\$206,590,014				\$673,438,028	\$183,554,001
Retirements - 4th QTR FY23	34	112	138	284	11	295	3	14	17	-	17	-	19	n/a	n/a
Full Disbursements - 4th QTR FY23	11	57	81	149	225	374	1	7	9	24	32	-	n/a	214	77
Partial Disbursements - 4th QTR FY23	n/a	n/a	n/a	n/a	675	675	n/a	n/a	n/a	159	159	n/a	n/a	1,979	778

MEMBERSHIP STATISTICS AS OF SEPTEMBER 30, 2023

	PERS						TRS					JRS	NGNMRS	SBS	DCP
	DB			Total	DCR	SYSTEM	DB			DCR	SYSTEM				
	Tier I	Tier II	Tier III		Tier IV	TOTAL	Tier I	Tier II	Total	Tier III	TOTAL				
Active Members	430	1,693	6,206	8,329	26,704	35,033	84	2,692	2,776	6,825	9,601	72	n/a	20,019	6,495
Terminated Members															
Entitled to Future Benefits	223	1,358	3,105	4,686	2,834	7,520	12	599	611	1,150	1,761	3	n/a	31,708	6,303
Other Terminated Members	925	1,886	7,124	9,935	19,573	29,508	200	1,338	1,538	3,279	4,817	1	n/a	n/a	n/a
Total Terminated Members	1,148	3,244	10,229	14,621	22,407	37,028	212	1,937	2,149	4,429	6,578	4	n/a	31,708	6,303
Retirees & Beneficiaries	21,316	9,574	5,868	36,758	268	37,026	9,811	3,880	13,691	58	13,749	147	698	n/a	n/a
Managed Accounts	n/a	n/a	n/a	n/a	5,675	5,675	n/a	n/a	n/a	1,275	1,275	n/a	n/a	3,682	3,632
Managed account balance qtr end					\$514,656,001					\$197,540,117				\$662,600,893	\$177,194,175
Retirements - 1st QTR FY24	48	139	181	368	13	381	25	297	322	5	327	1	13	n/a	n/a
Full Disbursements - 1st QTR FY24	14	42	100	156	693	849	1	14	15	153	168	-	n/a	695	210
Partial Disbursements - 1st QTR FY24	n/a	n/a	n/a	n/a	254	254	n/a	n/a	n/a	95	95	n/a	n/a	1,457	598

Alaska Division of Retirement and Benefits
FY 2024 QUARTERLY REPORT OF MEMBERSHIP STATISTICS
 Annual & Quarterly Trends as of September 30, 2023



LEGEND

- Active Members** - All active members at the time of the data pull, except SBS & DCP, which are counts of contributors during the final quarter of each period.
- Terminated Members** - All members who have terminated without refunding their account, except SBS & DCP, which are counts of members with balances at the end of the period less active members.
- Retirees & Beneficiaries** - All members who have retired from the plans, including beneficiaries eligible for benefits.
- Managed Accounts** - Individuals who have elected to participate in the managed accounts option with Empower.
- Retirements** - The number of retirement applications processed.
- Full Disbursements** - All types of disbursements that leave the member balance at zero.
- Partial Disbursements** - All types of disbursements that leave the member balance above zero. If more than one partial disbursement is completed during the quarter for a member, they are counted only once for statistical purposes.

Division of Retirement & Benefits

Alaska Retirement Management Board

Division Staff Report December 7, 2023

Benefits And Retirement System (BEARS) IT Modernization

Project Background:

In FY19, the Division of Retirement and Benefits (DRB) began implementing a multi-year capital project to modernize IT and work processes to drive efficiency, accuracy, and security associated with its core business and services. This integrated, enterprise-wide system will support all of our pension and health functions and will provide many modern tools to enable the state to maintain and improve service to members. BEARS will integrate core business processes, facilitate consistency, and enable additional oversight and accountability. DRB's contracted vendors, Linea (Project Management) and Sagitec (Technical Implementation), are working closely with DRB staff to design, develop, and implement the modules that will comprise the enterprise-wide system.

Status Update:

Since the September 2023 update, the project continues to progress in accordance with the revised project schedule as discussed in that brief. Accomplishments in this period include:

- **Scope Change Requests:** All change requests mentioned in prior updates have been fully designed and developed.
- **Program Modules:** Design has been completed on all modules and Change Requests, and development of 30 of the 35 modules is complete. Pilot 3 testing was held October 23-27 and changes resulting from that session are being incorporated into the implementation schedule.
- **Data Conversion:** Success of BEARS requires that data sources be mapped correctly for accessibility. 17 modules are fully mapped, 2 modules are at or over 98% complete, and 1 module is at 60% complete. Confirmation and cleansing of data is underway for all modules.
- **System Testing:** Testing by Sagitec of the developed modules has begun. Test execution on 28 of 35 modules is complete and exception and error corrections are underway for those modules. The 7 remaining modules have unit or system testing in process.

Budget and Spending by Vendors (as of 11/20/2023):

Sagitec – Program design, development, and implementation

Total Auth	26,461,270
Spend-to-date	<u>18,213,573</u>
Balance Remaining	8,247,696

Linea – Program management

Total Auth	4,167,186
Spend-to-date	<u>3,270,858</u>
Balance Remaining	896,328



Chief Investment Officer Report – December 2023

1. CIO Update
2. Watch List:
 - a. Existing – Baillie Gifford, performance, 9/22
 - b. Recommended Addition – JP Morgan Strategic Property Fund, personnel
 - c. Recommended Addition – McKinley Capital, ownership
 - d. Recommended Addition – Man Group Alternative Risk Premia, performance
3. Material contract and investment actions:
 - a. 09/14/23 Legal & General Investment Management – Intl. equity separate account
 - b. 10/06/23 First Eagle Investment Management – Intl. equity separate account
 - c. 11/15/23 Clearlake Capital Partners VIII, L.P. – \$50 million private equity commitment
4. Information Memo – Fidelity Signals Fund Additions

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Fidelity Signaling Funds List Delegation

ACTION: _____

DATE: December 7-8, 2023

INFORMATION: X

BACKGROUND

Fidelity was hired by the Alaska Retirement Management Board (ARMB) in 2018 to invest in a global multi-asset strategy. The strategy is based on the expectation that the stage of the business cycle, valuation, and momentum drive asset class performance and risk characteristics. Portfolio risk and allocation is adjusted over time based on the assessment of the systematic drivers as well as portfolio manager discretion. The objective is to deliver 90-100 basis points of excess returns over a full market cycle.

The Fidelity Signaling portfolio is in ARMB's Multi-Asset Asset Class. The portfolio is composed of underlying funds in asset classes ranging from equities, commodities, cash, and bonds. There are currently 50 approved underlying funds for Fidelity to select.

Historically, ARMB has approved the list of underlying funds and the most recent board action was at the June 2023 meeting.

STATUS

Since the June 2023 board meeting, Fidelity has requested adding three additional funds. Both Fidelity and staff anticipate additional requests to add or modify the investable universe of underlying funds going forward. Changes in the investable universe may be driven by market opportunities or underlying fund specific opportunities or concerns which could warrant a short approval process.

To more efficiently and timely manage Fidelity's requests to add to the investable universe of underlying funds, staff intends to work with Fidelity to modify the contract and investment guidelines for the Fidelity Signals mandate to allow staff to approve in real-time modifications to the underlying funds lists. The contract and investment guideline modifications will not alter existing portfolio objectives, constraints, or the benchmark. Additionally, the fee structure includes the cost of underlying investment funds so any changes to the underlying fund list will not change the investment fees.

The ARMB has delegated authority to staff to modify contracts without specific board pre-approval. Since this is a departure from past practice for this mandate, staff is providing notice of its intent to operate in this manner moving forward. Staff will continue to provide the board with notification at ARMB meetings of actions taken using delegated authority.

5. Portfolio Transaction Update from September 2023 through October 2023

Individual Manager Transactions

September 2023 - October 2023

Asset Class	Total
Fixed Income	336,266,108
Broad Domestic Equity	(261,266,108)
Global Equity Ex-US	(45,000,000)
Real Assets	(30,000,000)
Multi-Asset	-
Private Equity	-
Net Buys	336,266,108
Net Sells	(336,266,108)

Manager	Total	Fund	Asset Class	Description
ARMB REIT	(30,000,000)	AY9H	Real Assets	Rebalancing
SSGA World ex-US IMI	(45,000,000)	AYL7	Intl. Equity	Rebalancing
Short Term Fixed Income Pool	246,284,150	AY70	Fixed Income	Rebalancing
Fidelity Tactical Bond	80,000,000	AY1F	Fixed Income	Rebalancing
ARMB Aggregate Bond Fund	10,000,000	AY77	Fixed Income	Rebalancing
Mackay Shields LLC	(18,042)	AY9P	Fixed Income	Rebalancing
ARMB Domestic Residual Assets	(266,108)	AY5E	Dom. Equity	Rebalancing
ARMB S&P 900	(261,000,000)	AY4L	Dom. Equity	Rebalancing

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Participant-Directed Plans - Passive
S&P 400 Index/S&P 600 Index Fund

ACTION: X

DATE: December 7-8, 2023

INFORMATION: _____

BACKGROUND

During the March 2023 Investment Structure Evaluation of the participant-directed plans, Callan recommended adding a passive U.S. Small/Mid-Cap (SMID) equity option. The U.S. Small/Mid-Cap (SMID) equity is the only core equity tier asset class that participants do not currently have as an option to invest in as a standalone passively implemented strategy.

To address this issue, staff reviewed possibilities of adding a single fund or adding two funds. Staff also took into consideration the vendor services and fees charged for this mandate to ensure participants receive competitive rates and options.

STATUS

Staff reviewed 9 different managers who offer U.S. Small/Mid-Cap (SMID) equity passive index funds which include the S&P 400 Index fund and the S&P 600 Index fund.

Staff recommends BlackRock Institutional Trust Company as investment manager for the board's consideration. BlackRock offers both funds, provides high quality institutional index management, and has the lowest fees. Additionally, the S&P 400 fund is available in both a securities lending version and a non-securities lending version, whereas the S&P 600 is only offered in a securities lending version. Staff recommends the securities lending versions for both.

RECOMMENDATION

The Alaska Retirement Management Board direct staff to hire BlackRock Institutional Trust Company to manage a passive S&P 400 Index fund and passive S&P 600 Index fund for the Deferred Compensation Plan, Supplemental Annuity Plan and PERS/TRS Defined Contribution Retirement Plans subject to successful contract negotiations.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Asset-Liability Study

ACTION: X

DATE: December 7-8, 2023

INFORMATION: _____

BACKGROUND:

An asset-liability study would provide the Alaska Retirement Management Board with a deeper analysis of options for strategic asset allocation by modeling the interaction of the plan's investment assets with the projected benefits/liabilities. Additionally, the study would provide information on the impact of illiquid investments on portfolio performance and the payment of benefits along with the impact of return sequencing risk.

STATUS:

It is considered best practice to conduct an asset-liability study every five years. The last time the ARMB conducted one was in 2019. The asset-liability study is listed in the general consultant contract. Staff has held preliminary discussions with Jay Kloepfer at Callan LLC regarding the scope for such a study.

RECOMMENDATION:

That the Alaska Retirement Management Board authorize an asset-liability study to be conducted by Callan LLC.



Participant education and advisory services

December 8, 2023

Participant education and advisory services

Service	Description of Education and Advisory Services	Prior to 11/23 All participants	Current	
			Enrolled in MTR	Not enrolled in MTR
Enrollment / new hire orientation	Review and educate on key provisions, plan services available to participants and rules applicable to the plan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
One-on-one meetings	Review and educate on key plan provisions, plan services, education and planning tools, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Group meetings	Seminars focusing on a variety of financial wellness, investment, market volatility, and milestone topics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customer Care Center	Representatives who address questions regarding all aspects of participant accounts and assist with transactions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RSG point-in-time advice	Provided by an Empower representative (over the phone) and may include roll-in, rollover, and distribution advice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Online Advice	Provides participants with access to self-service point-in-time advice powered by the same methodology as My Total Retirement. Online Advice includes investment allocation and savings advice that the employee implements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Retirement Plan Advisor point-in-time advice	Our advisors deliver fiduciary advice, looking at the individual's full financial picture, providing point in time advice to personalize their retirement savings, investment and spend down strategies.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Retirement Readiness Reviews	Personalized comprehensive review assessing the participant's path to retirement, considering household assets and income streams, making specific savings and investment recommendations in the best interest of the participant to help reach established goals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MTR – professionally managed accounts	My Total Retirement is a professionally managed service for a fee that provides a customized retirement strategy using a wide range of factors available in our recordkeeping platform, as well as information from participants on outside assets and income streams. This service also provides tax-efficient spend down strategies.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The services marked with a red box have been suspended because these services are reliant on the managed account service being active.

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Thank you



Alaska Retirement Management Board Discussion with those charged with governance

Audit results and strategy for the year ending June 30, 2023

December 6, 2023



Audit results: Overview

Outstanding matters None	Auditors' report PERS – Unmodified TRS – Unmodified JRS – Unmodified NGNMRS – Qualified DCP – Unmodified SBS – Unmodified Invested Assets -- Unmodified	Uncorrected Misstatements Ongoing uncorrected misstatement related to the timing of the valuation reporting for the Invested Assets private portfolio – this relates to the ARMB Invested Assets report only.
Corrected Misstatements None	Deficiencies Ongoing material weakness related to census data at the National Guard and Naval Militia Retirement System	Other No other matters

Audit results required communications and other matters

Matters to communicate		Response
Significant unusual transactions	X	
Uncorrected audit misstatements	✓	Page 5
Corrected audit misstatements	X	
Financial statement presentation and disclosure omissions	X	
Non-GAAP policies and practices	X	
Material weaknesses and significant deficiencies in internal control	✓	Page 6
Auditors' report	✓	Page 7
Changes to our risk assessment and planned audit strategy	X	
Significant accounting policies and practices	X	
Significant accounting estimates	✓	Page 8
Significant financial statement disclosures	✓	Page 9

Matters to communicate		Response
Related parties	X	
Going concern	X	
Other information	✓	Page 10
Subsequent events	X	
Noncompliance with laws and regulations	X	
Significant difficulties encountered during the audit	X	
Significant findings or issues discussed, or the subject of correspondence with management	X	
Management's consultation with other accountants	X	
Difficult or contentious matters for which the auditor consulted	X	
Disagreements with management	X	
Other significant matters	X	

✓ = Matters to report X = No matters to report

Audit results required communications and other matters

Matters to communicate	
Illegal acts or fraud	No actual or suspected fraud involving management, employees with significant roles in internal control, or where fraud results in a material misstatement in the financial statements were identified during the audit.
Written communications	Management representation letters, including summary of uncorrected misstatements, and internal control deficiency letter to be distributed under separate covers.
Independence	X
Inquiries	X

Uncorrected Audit Misstatement

This misstatement relates to the ARMB Invested Assets report only

Account	Increase (decrease) to invested assets	Increase (decrease) to investment income	As a % of reported
Private equity investments	\$27,816,392		0.54%
Private equity investment income		\$27,816,392	27.61%
Total investment income			0.88%

Material weaknesses and significant deficiencies in internal control

Material weaknesses		
Description	Potential effects	Status
The Division of Retirement & Benefits did not design control activities to validate the census data for National Guard and Naval Militia Retirement System	The total pension liability for this system could be over or under stated as a result of inaccurate census data being used to calculate the amount.	Material weakness communicated in previous audits that has not yet been remediated.

Significant deficiencies		
Description	Potential effects	Status
None identified		

Auditor's report

Matters affecting the form and content of the auditors' report

- As outlined on page 2, we are issuing unmodified opinions for all Systems except NGNMRS due to the census data issue.

Significant accounting estimates

Description of significant accounting estimates

- Valuation of private investments

Audit findings

Management's process used to develop the estimates

- Management receives periodic capital statements from external fund managers. These capital statements are the starting point to estimate fair value of each private investment and are adjusted for any contributions made during the period and any other actors management believes impact fair value.

Significant assumptions used that have a high degree of subjectivity

- None

Indicators of possible management bias

- There were no indicators of possible management bias identified during our audit of this estimate

Conclusions

- We determined that the methods used by management and the valuations recorded by management are reasonable and not affected by indicators of management bias.

Significant financial statement disclosures

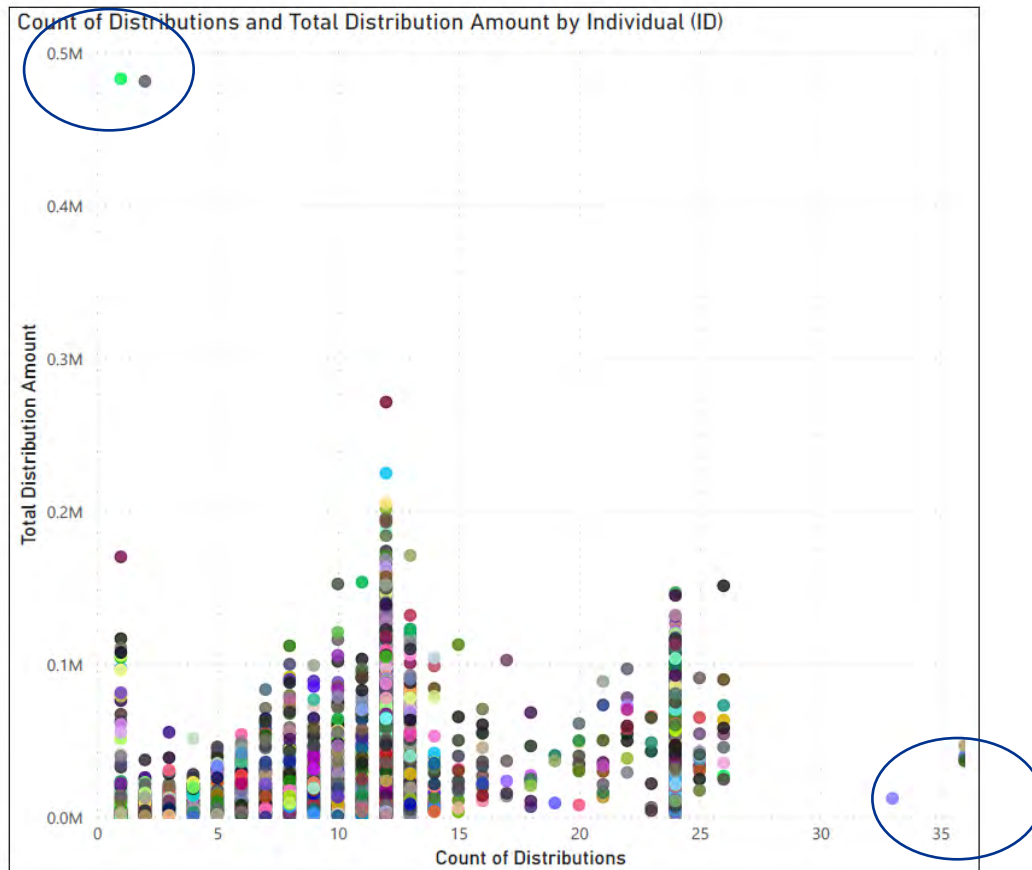
Description of significant financial statement disclosures	Audit findings
<ul style="list-style-type: none">• The net pension (asset)/liability and net OPEB (asset)/liability disclosures are considered significant financial statement disclosures. These disclosures are prepared using management's specialist, Buck, to calculate the amount of the total pension and OPEB (assets)/liabilities based upon actuarial methods described in GASB Statements No. 67 and 74 and assumptions adopted by the ARMB.• Significant assumptions used that have a high degree of subjectivity are:<ul style="list-style-type: none">• Rate of return• Mortality rates• Discount rate	<p>Qualitative aspects</p> <ul style="list-style-type: none">• As part of our testing, we involved a KPMG actuary to assist in our determination of the reasonableness of the assumptions• The information contained within the disclosures are prescribed by GASB and consistent with prior years• There were no indications that these estimates or the disclosures were prepared with management bias.

Other information

Other information	Procedures performed
PERS and TRS Annual Comprehensive Financial Reports	We will obtain copies of these reports prior to their issuance and review the financial information contained within to ensure consistency with the understanding we gained during our audit process.

System Insights

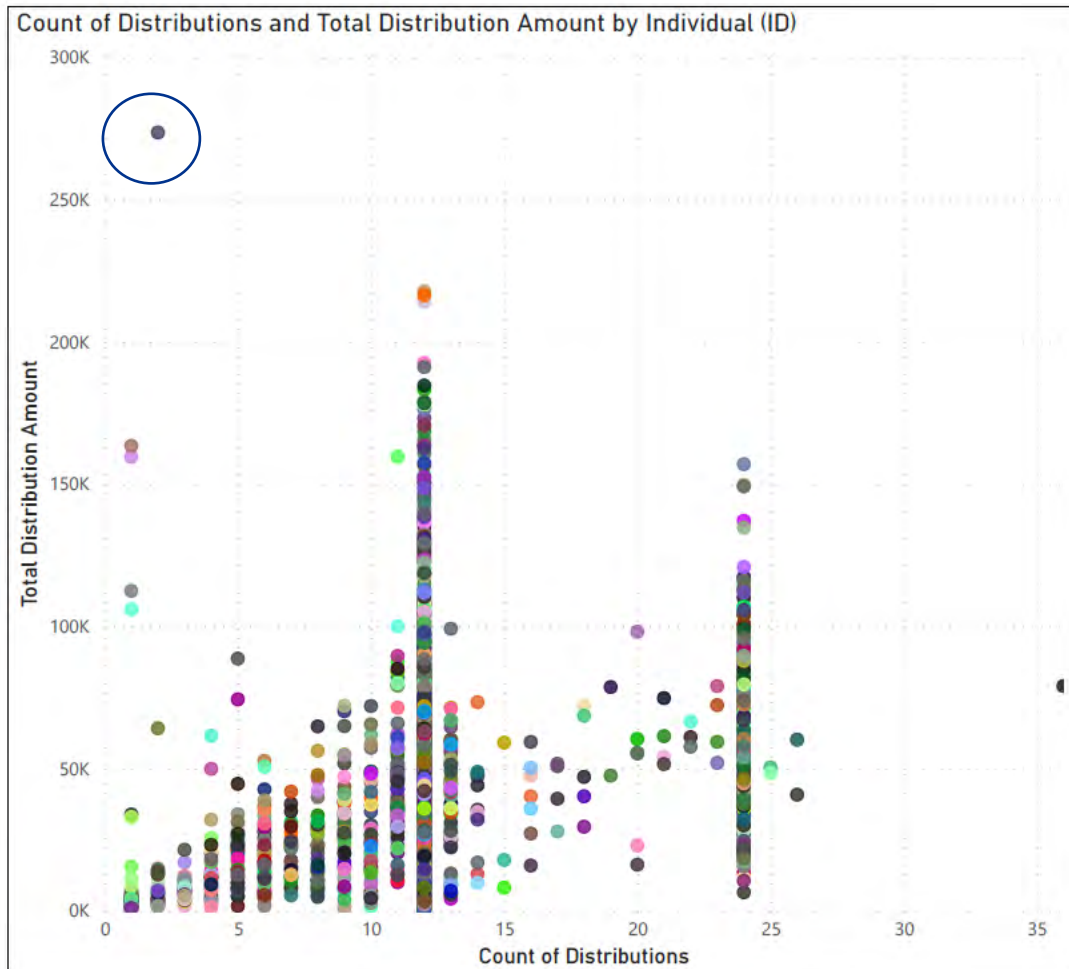
PERS Distributions



- Majority of retirees received between 1 and 24 payments during the year.
- Greater than 30 were receiving survivor benefits in addition to their own retirement benefits
- Higher distribution amount indicated a lump sum payment rather than periodic payments

System Insights

TRS Distributions



- Majority of retirees received between 1 and 24 payments during the year.
- Greater than 30 were receiving survivor benefits in addition to their own retirement benefits
- Higher distribution amount indicated a lump sum payment rather than periodic payments



Questions?

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For additional information and audit committee resources, including National Audit Committee Peer Exchange series, a Quarterly webcast, and suggested publications, visit the KPMG Audit Committee Institute (ACI) at www.kpmg.com/ACI

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State of Alaska Retirement Systems

Presentation to ARMB Actuarial Committee

Preliminary June 30, 2023 Valuation Results (PERS and TRS)

December 6, 2023

Contents

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Actuarial Certification	29

Purpose of the 2023 Valuations

Purpose of the 2023 Valuations

- Measure each plan's funded status as of June 30, 2023.
- Compare *actual* FY23 experience to *expected* experience based on the 2022 valuations.
 - If the difference is **favorable** to the plan, it is a **gain**.
 - If the difference is **unfavorable** to the plan, it is a **loss**.
- Valuation results provide the basis for FY26 contribution rates which will be adopted by the ARMB in September 2024.

2023 Valuation Highlights

General Observations

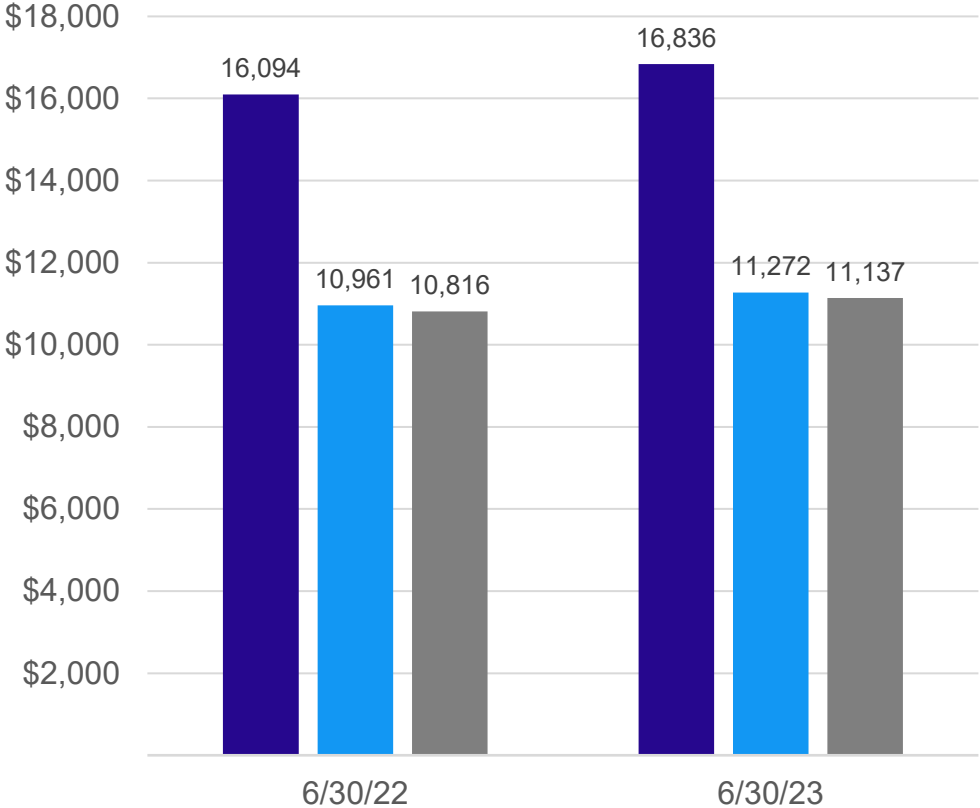
- FY23 asset returns were slightly above the 7.25% expected return (approx. returns were 7.6% market, 7.4% actuarial). See slide 11 for asset gain amounts.
- Liabilities for Postretirement Pension Adjustments (PRPAs) are higher than expected (PERS - \$366M, TRS - \$189M) due to FY22 inflation increase of 7.9% vs 2.5% expected.
- Metcalfe transfers from the DCR plans increased unfunded liabilities.
- Healthcare liabilities are higher than expected (PERS - \$347M, TRS - \$127M) primarily due to unfavorable claims experience.
- Overall, liabilities increased more than assets did in FY23. This resulted in an increase in unfunded liabilities and a decrease in funded ratios compared to last year (see slide 9 for details).
- Actuarially determined contribution rates are higher than last year for pension, but are relatively level for healthcare (see slide 10 for details).

Summary of Valuation Results – PERS

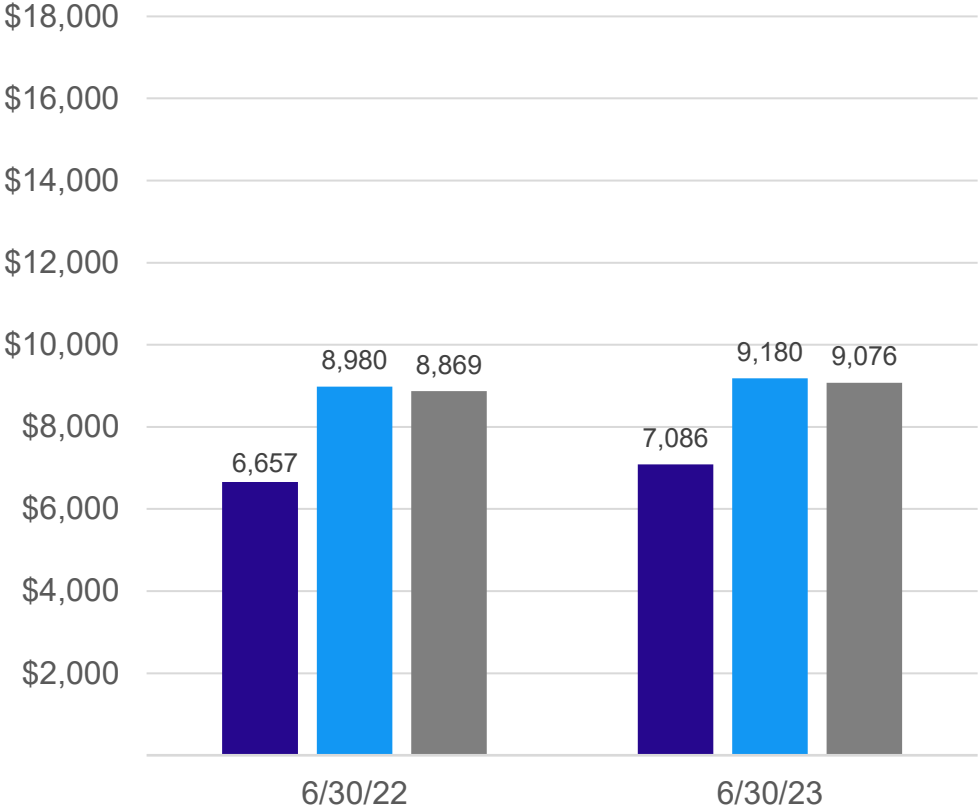
(\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Market Value of Assets

Pension



Healthcare

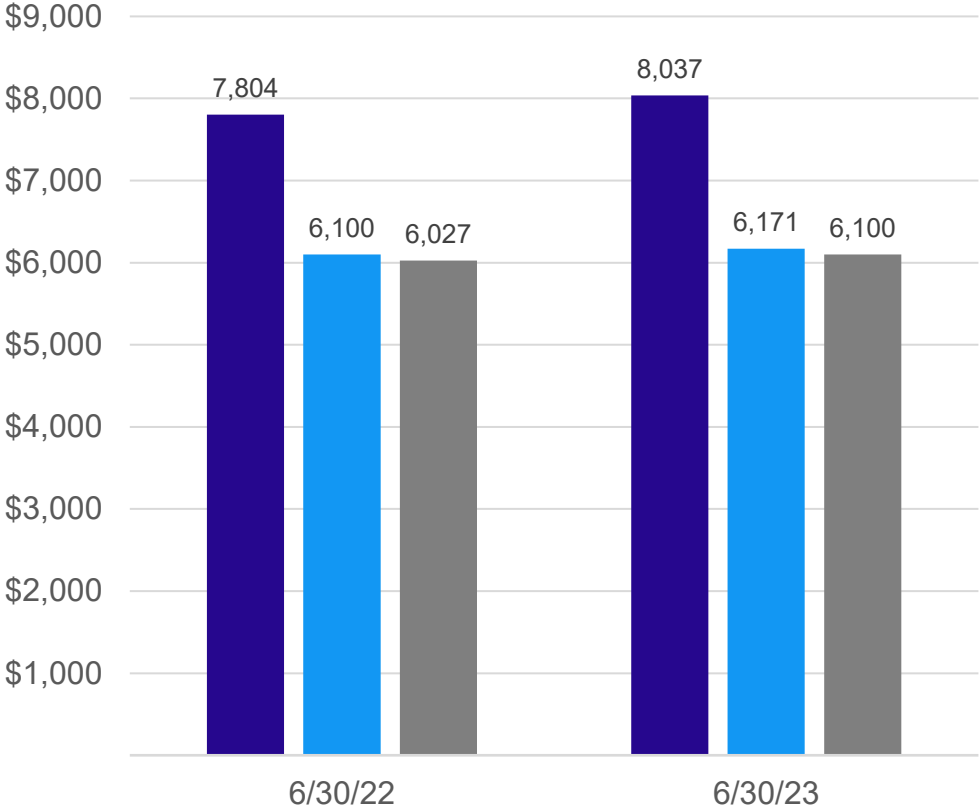


Summary of Valuation Results – TRS

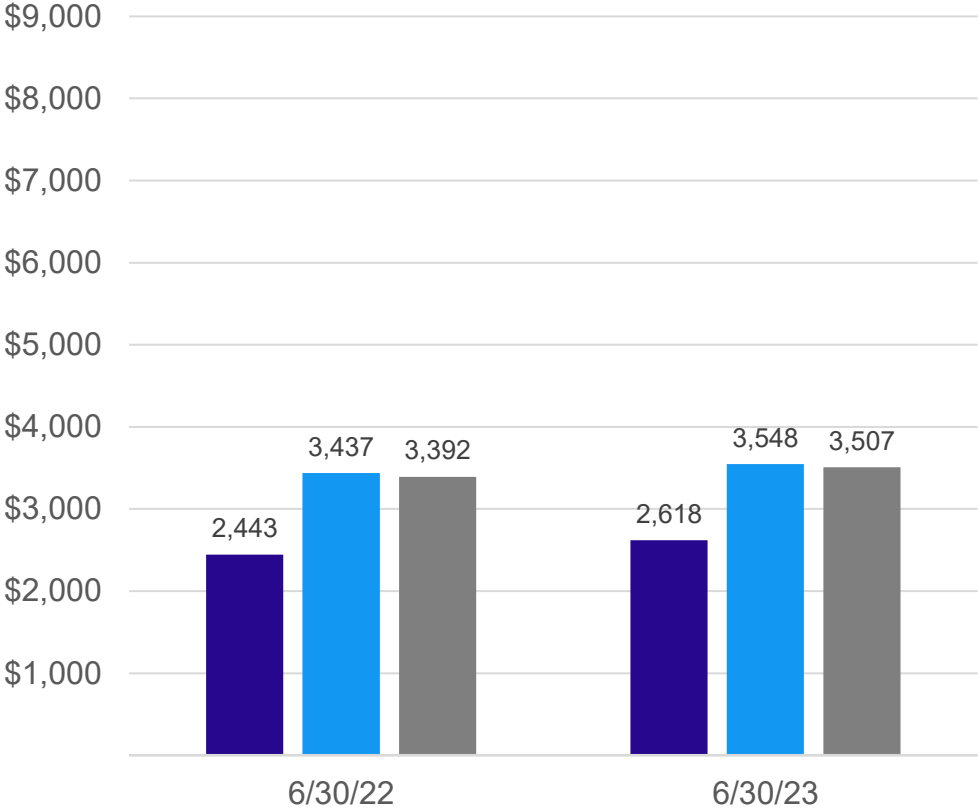
(\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Market Value of Assets

Pension



Healthcare



Summary of Valuation Results

(\$000's)	PERS Pension	PERS Healthcare	TRS Pension	TRS Healthcare
Actuarial Accrued Liability (AAL)				
6/30/23	\$ 16,835,726	\$ 7,085,823	\$ 8,036,685	\$ 2,617,821
6/30/22	\$ 16,093,679	\$ 6,657,069	\$ 7,804,046	\$ 2,442,577
Actuarial Value of Assets (AVA)				
6/30/23	\$ 11,272,339	\$ 9,180,231	\$ 6,171,460	\$ 3,547,973
6/30/22	\$ 10,961,498	\$ 8,979,943	\$ 6,100,204	\$ 3,437,216
Unfunded Liability (AAL - AVA)				
6/30/23	\$ 5,563,387	\$ (2,094,408)	\$ 1,865,225	\$ (930,152)
6/30/22	\$ 5,132,181	\$ (2,322,874)	\$ 1,703,842	\$ (994,639)
Market Value of Assets (MVA)				
6/30/23	\$ 11,137,489	\$ 9,076,222	\$ 6,099,520	\$ 3,506,595
6/30/22	\$ 10,816,140	\$ 8,869,134	\$ 6,026,651	\$ 3,392,211
Actuarial Funded Ratio (AVA / AAL)				
6/30/23	67.0%	129.6%	76.8%	135.5%
6/30/22	68.1%	134.9%	78.2%	140.7%
Market Funded Ratio (MVA / AAL)				
6/30/23	66.2%	128.1%	75.9%	134.0%
6/30/22	67.2%	133.2%	77.2%	138.9%

Actuarially Determined Contribution Rates*

	PERS Pension	PERS Healthcare	TRS Pension	TRS Healthcare
6/30/23				
Employer Normal Cost	2.66%	2.42%	2.64%	2.56%
Past Service Cost	<u>17.50%</u>	<u>(5.56)%</u>	<u>20.36%</u>	<u>(8.62)%</u>
Total	20.16%	2.42%	23.00%	2.56%
6/30/22				
Employer Normal Cost	2.85%	2.46%	2.83%	2.56%
Past Service Cost	<u>16.79%</u>	<u>(6.32)%</u>	<u>18.17%</u>	<u>(8.86)%</u>
Total	19.64%	2.46%	21.00%	2.56%

*As a percentage of total (DB/DCR) payroll.

FY23 Asset and Liability Experience

(\$000's)	PERS Pension	PERS Healthcare	TRS Pension	TRS Healthcare
Actuarial Accrued Liability				
Expected 6/30/23	\$ 16,322,712	\$ 6,736,354	\$ 7,857,964	\$ 2,496,048
Actual 6/30/23	<u>\$ 16,835,726</u>	<u>\$ 7,085,823</u>	<u>\$ 8,036,685</u>	<u>\$ 2,617,821</u>
FY23 Gain/(Loss)	\$ (513,014)	\$ (349,469)	\$ (178,721)	\$ (121,773)
Actuarial Value of Assets				
Expected 6/30/23	\$ 11,258,590	\$ 9,162,616	\$ 6,162,484	\$ 3,542,175
Actual 6/30/23	<u>\$ 11,272,339</u>	<u>\$ 9,180,231</u>	<u>\$ 6,171,460</u>	<u>\$ 3,547,973</u>
FY23 Gain/(Loss)	\$ 13,749	\$ 17,615	\$ 8,976	\$ 5,798
Market Value of Assets				
Expected 6/30/23	\$ 11,102,693	\$ 9,043,773	\$ 6,083,598	\$ 3,493,908
Actual 6/30/23	<u>\$ 11,137,489</u>	<u>\$ 9,076,222</u>	<u>\$ 6,099,520</u>	<u>\$ 3,506,595</u>
FY23 Gain/(Loss)	\$ 34,796	\$ 32,449	\$ 15,922	\$ 12,687

FY23 Liability Gain/(Loss) Analysis – PERS

(\$000's)	Pension	Healthcare
PRPA increases due to 2022 CPI > expected	\$ (365,537)	\$ n/a
Salary increases > expected	(93,860)	n/a
Demographic experience	2,484	(16,929)
Claims experience	n/a	(346,557)*
Changes in dependent coverage elections	n/a	18,880
Medicare Part B only experience	n/a	(1,275)
Metcalf transfers from DCR	(77,939)	(43,265)
Other	<u>21,838</u>	<u>39,677**</u>
Total (\$)	\$ (513,014)	\$ (349,469)
Total (%)	(3.1)%	(5.2)%

*Approx. \$134M of the \$347M loss is due to lower-than-expected EGWP subsidies.

**Includes (i) a \$38.9M loss for benefit payments different than expected, and (ii) a \$70.2M gain for the removal of duplicate spouse records.

FY23 Liability Gain/(Loss) Analysis – TRS

(\$000's)	Pension	Healthcare
PRPA increases due to 2022 CPI > expected	\$ (189,020)	\$ n/a
Salary increases < expected	17,683	n/a
Demographic experience	4,003	(14,446)
Claims experience	n/a	(126,535)*
Changes in dependent coverage elections	n/a	(2,034)
Medicare Part B only experience	n/a	(999)
Metcalf transfers from DCR	(16,471)	(9,787)
Other	<u>5,084</u>	<u>32,028**</u>
Total (\$)	\$ (178,721)	\$ (121,773)
Total (%)	(2.3)%	(4.9)%

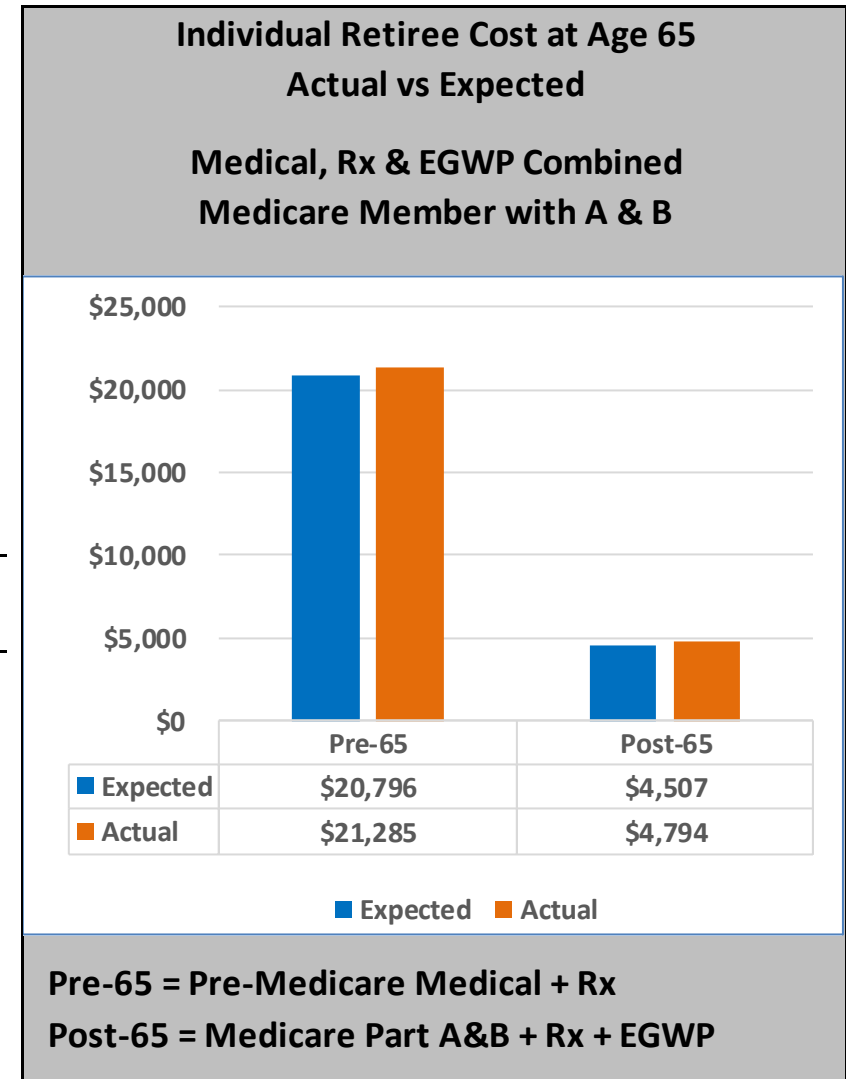
*Approx. \$48M of the \$127M loss is due to lower-than-expected EGWP subsidies.

**Includes a \$32.3M gain for the removal of duplicate spouse records.

FY23 Claims Experience Losses

- Key reasons for the \$347M (PERS) and \$127M (TRS) claims experience losses:
 - Medical costs are higher than projected (3.2% higher for Pre-Medicare, 2.7% higher for Medicare).
 - EGWP subsidies estimated by Segal decreased by 3.2% from \$1,309 for 2023 to \$1,267 for 2024.

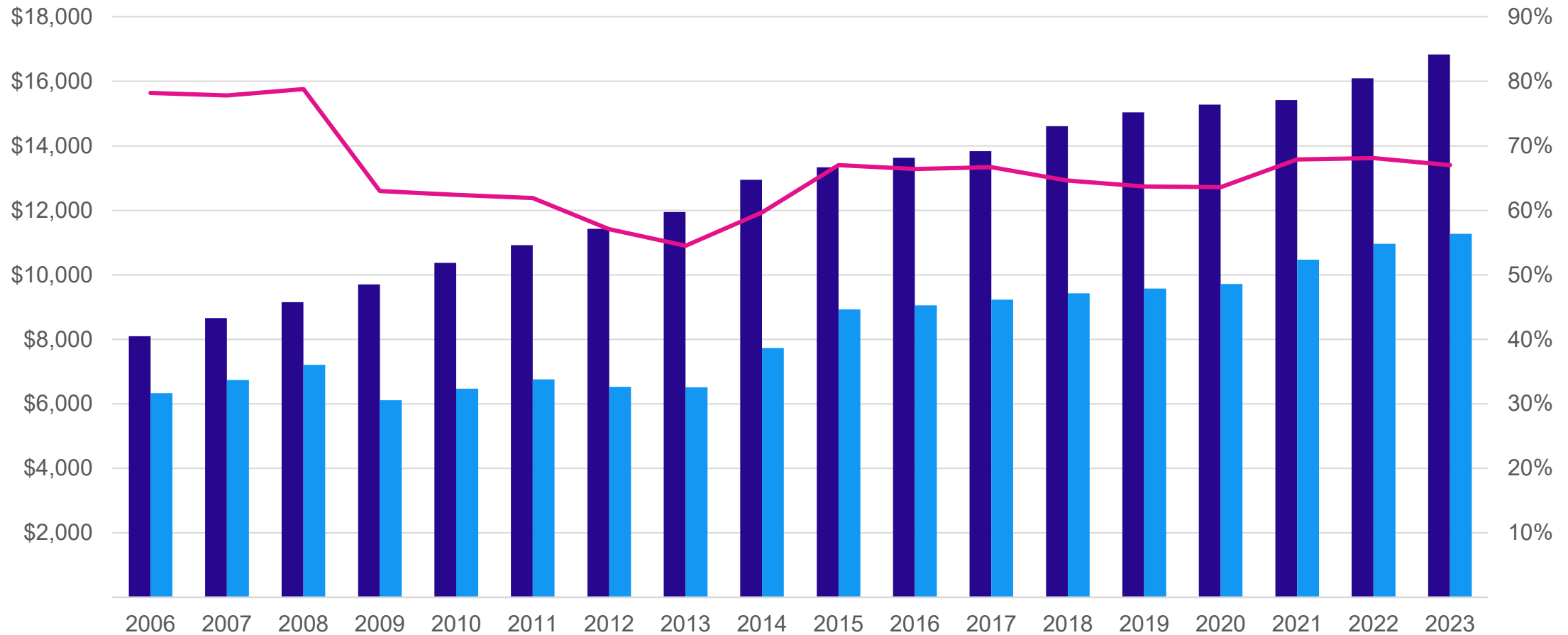
2023 Valuation Age 65 Per Capita Costs	Medical			Prescription Drugs (Rx)		
	Pre-Medicare	Medicare Parts A & B	Medicare Part B Only	Pre-Medicare	Medicare	EGWP Subsidy
Expected	\$16,806	\$1,714	\$5,658	\$3,990	\$4,200	-\$1,407
Actual	\$17,338	\$1,761	\$5,812	\$3,947	\$4,300	-\$1,267
Dollar (Gain)/Loss	\$532	\$47	\$154	-\$43	\$100	\$140
Percentage (Gain)/Loss	3.2%	2.7%	2.7%	-1.1%	2.4%	10.0%



Historical Figures (2006-2023)

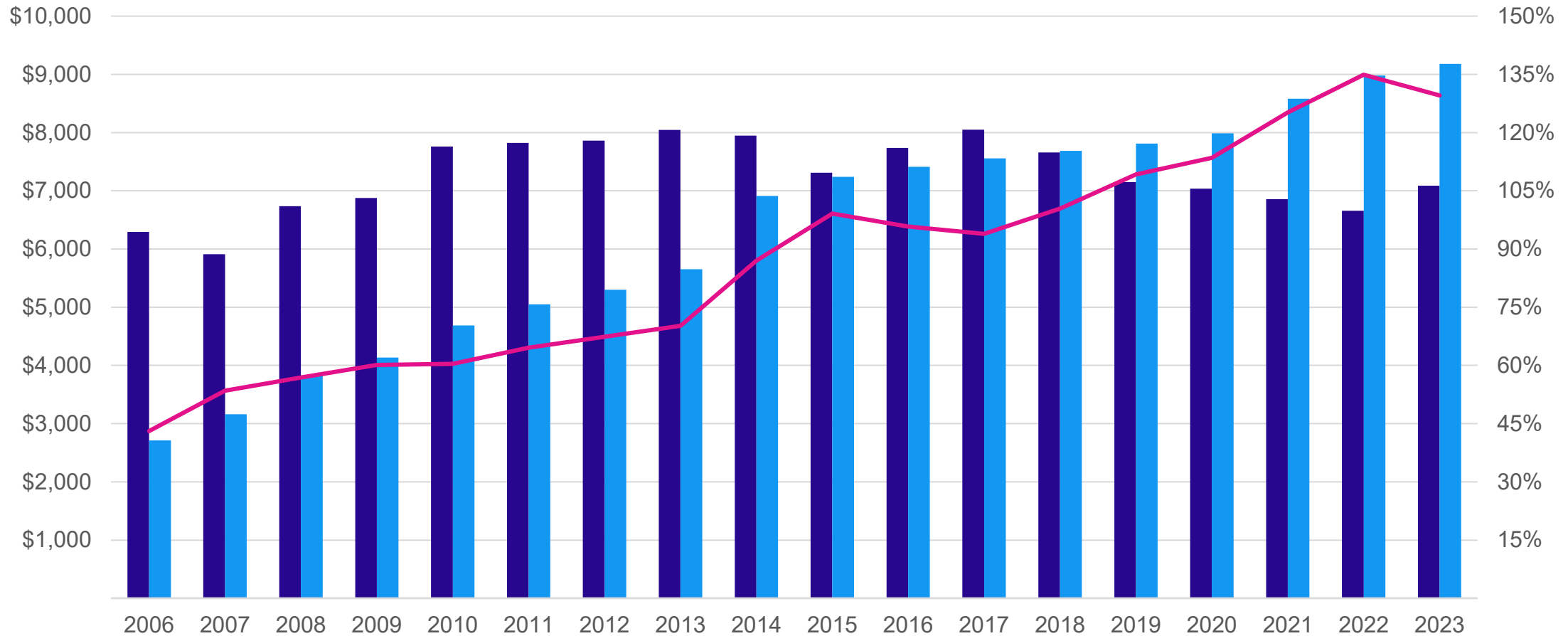
Assets, Liabilities, and Funded Ratios – PERS Pension (\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Funded Ratio



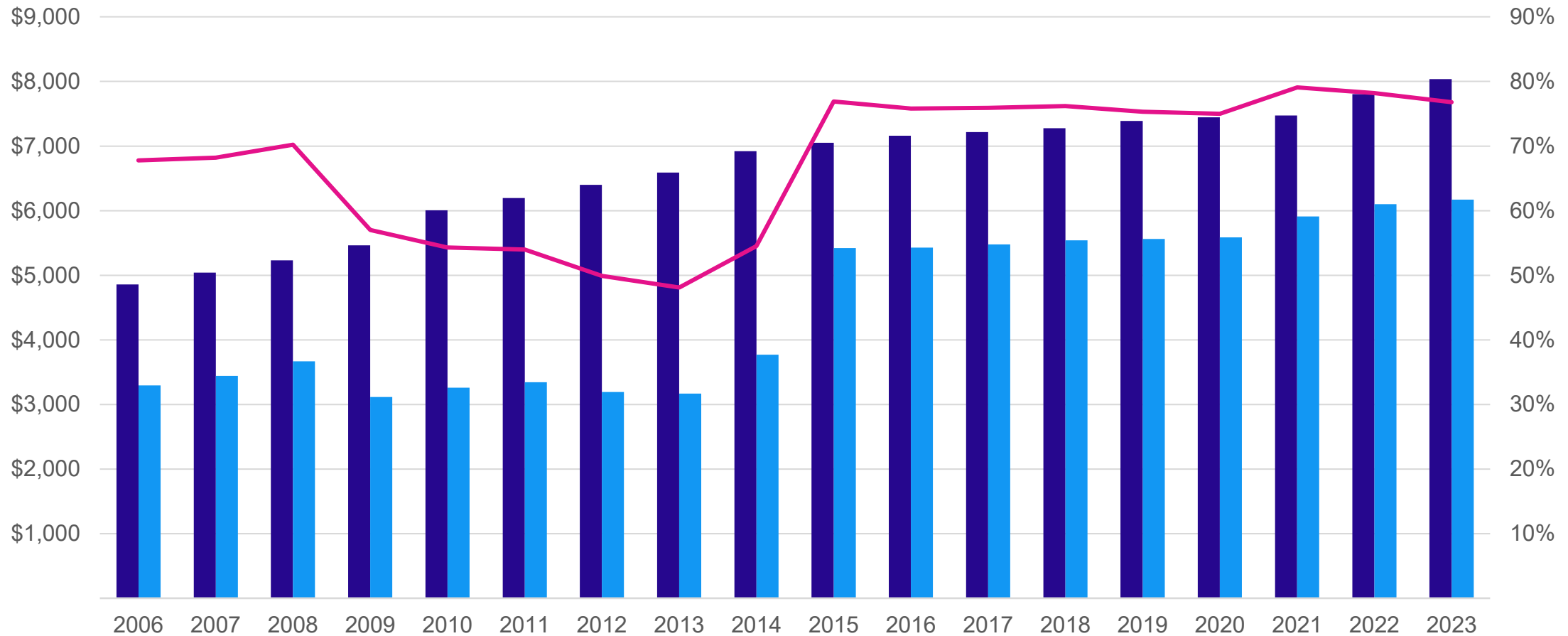
Assets, Liabilities, and Funded Ratios – PERS Healthcare (\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Funded Ratio



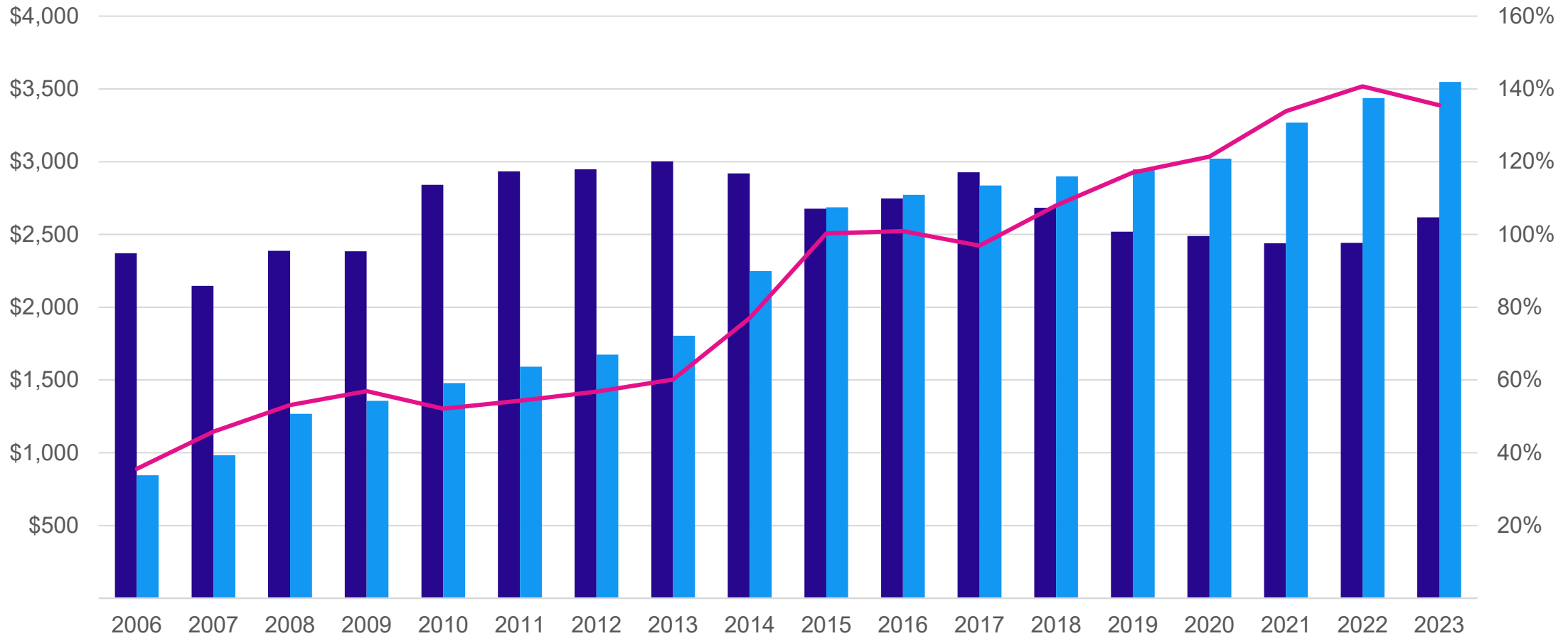
Assets, Liabilities, and Funded Ratios – TRS Pension (\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Funded Ratio



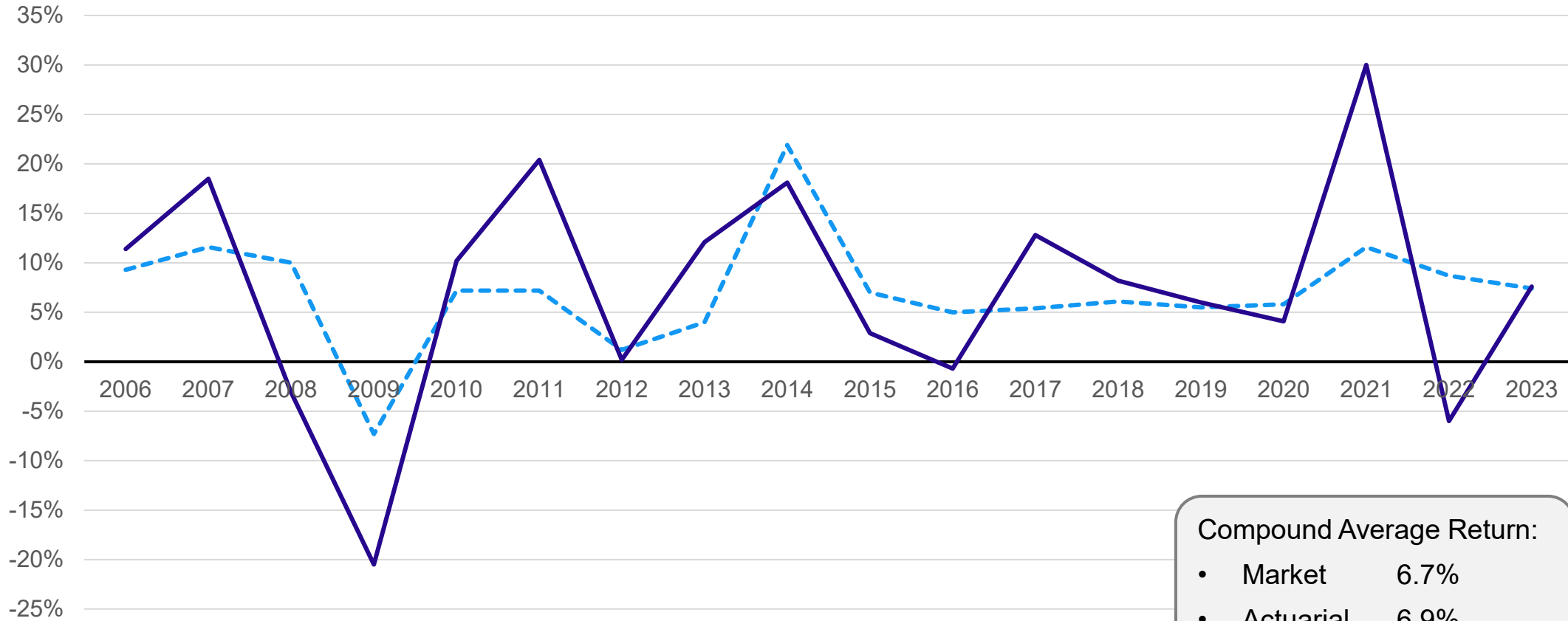
Assets, Liabilities, and Funded Ratios – TRS Healthcare (\$millions)

● Actuarial Accrued Liability
 ● Actuarial Value of Assets
 ● Funded Ratio



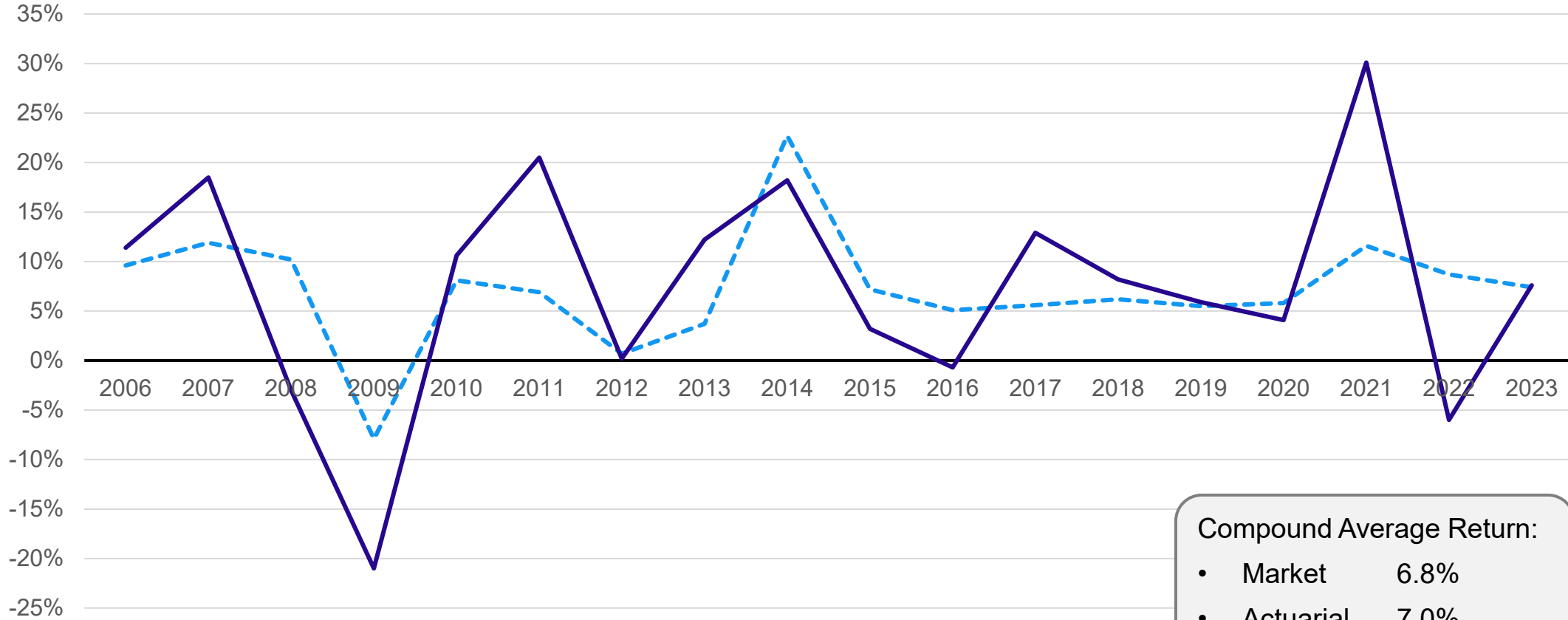
Asset Returns – PERS

● Market Return ● Actuarial Return



Asset Returns – TRS

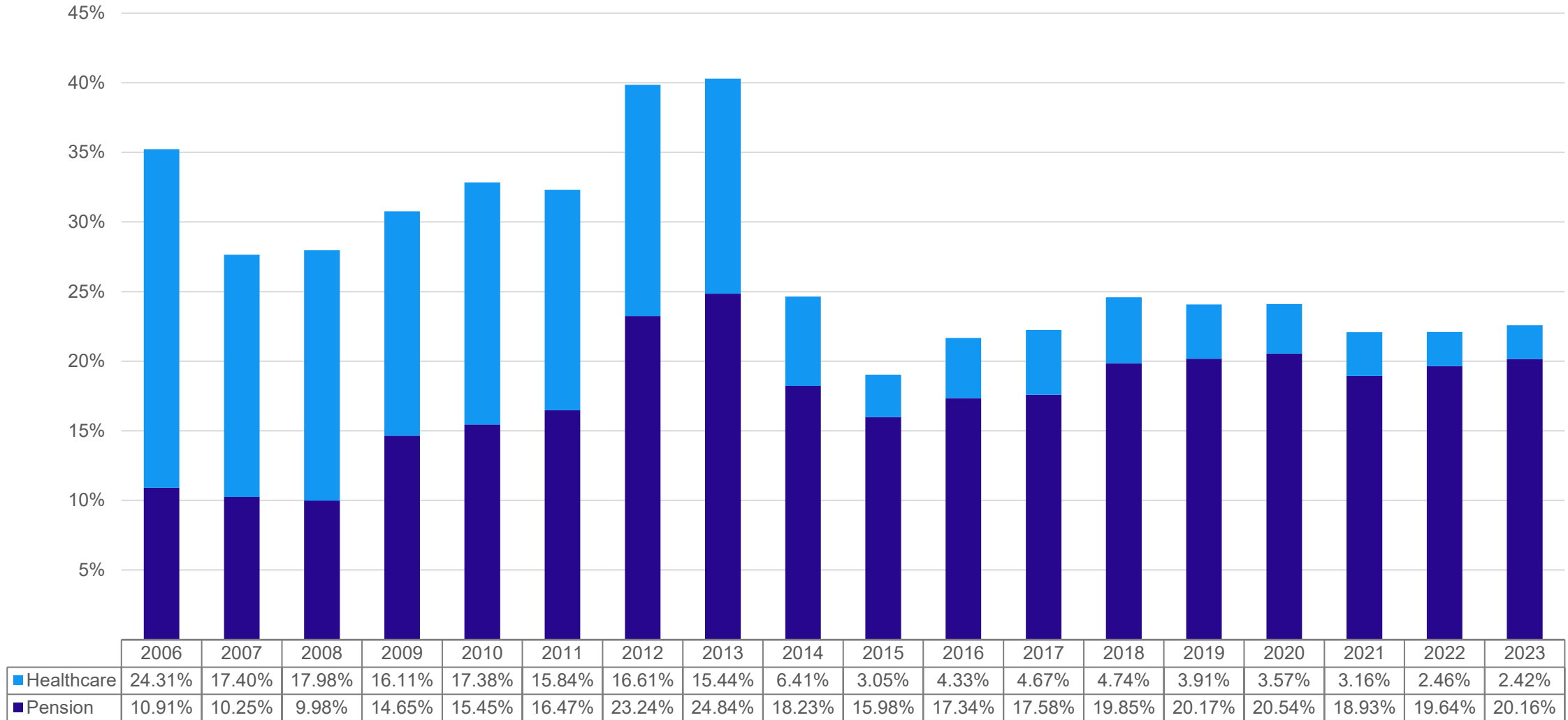
● Market Return ● Actuarial Return



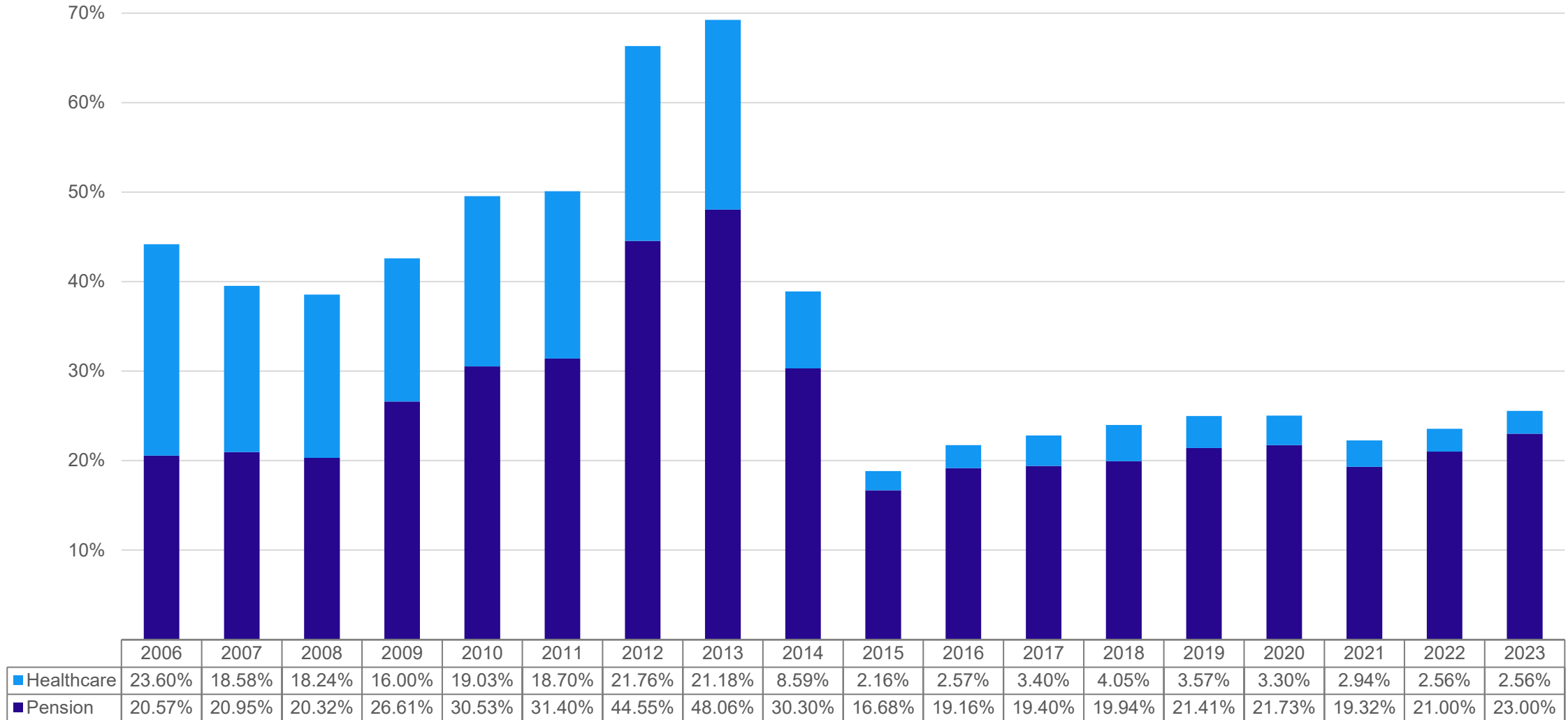
Compound Average Return:

- Market 6.8%
- Actuarial 7.0%

June 30 Valuation Contribution Rates – PERS

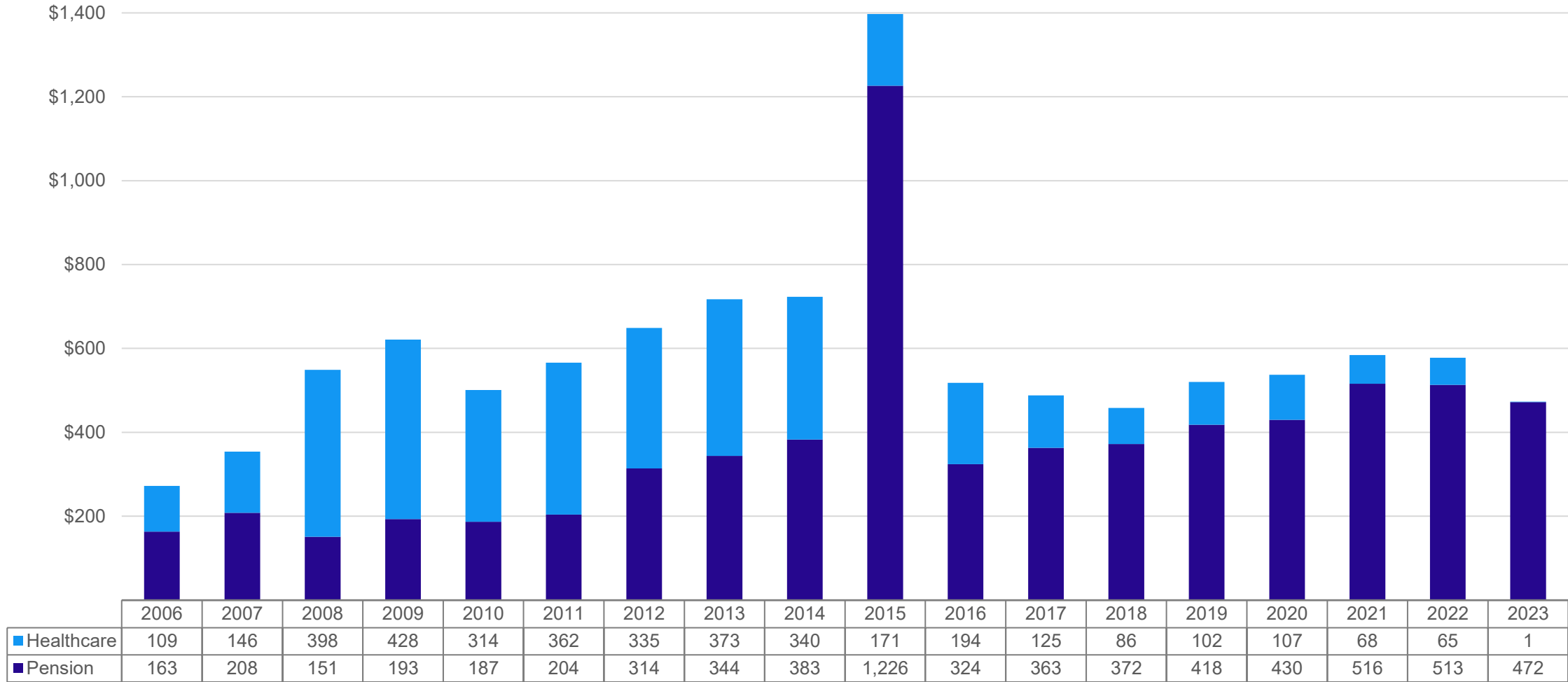


June 30 Valuation Contribution Rates – TRS



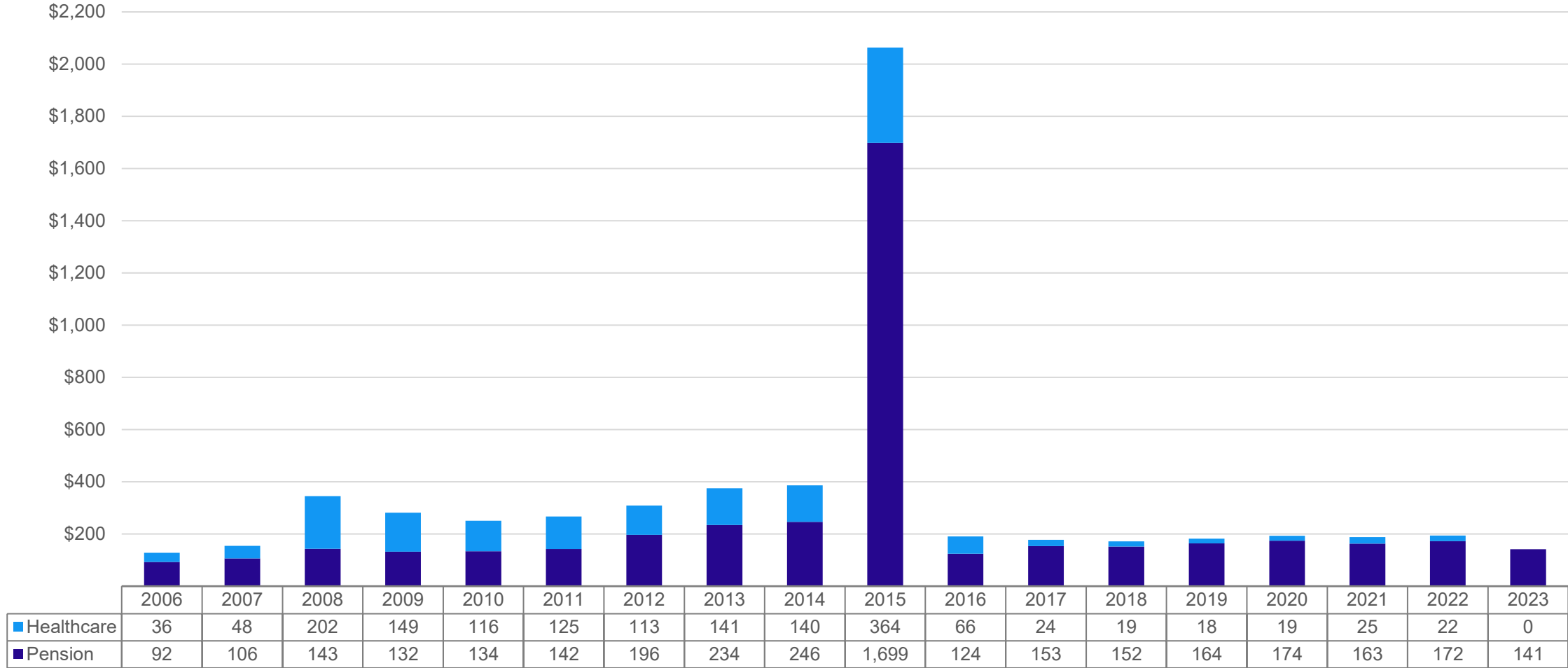
Employer/State Contributions – PERS

(\$millions)



Employer/State Contributions – TRS

(\$millions)



Next Steps

Next Steps

- Complete the DCR valuations and the JRS/NGNMRS roll-forward valuations.
- Run projections of assets, liabilities, and contributions for PERS and TRS.
 - Identify sensitivity analysis scenarios for projections?
- Prepare draft valuation reports.
- Discuss these items at the March meeting.

Actuarial Certification

Actuarial Certification

The purpose of this presentation is to provide the ARMB Actuarial Committee with preliminary PERS and TRS June 30, 2023 valuation results for discussion at the December 6, 2023 meeting. More complete valuation results will be presented at the March 5, 2024 meeting. This presentation should be considered part of the June 30, 2023 actuarial valuation report services.

The data, assumptions, methods, and plan provisions used to determine the results shown in this presentation are as shown in the June 30, 2023 actuarial valuation reports (draft reports will be provided within the next few weeks). The June 30, 2023 actuarial valuation reports will contain disclosures required by Actuarial Standards of Practice.

Where presented, references to “funded ratio” and “unfunded actuarial accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e., purchase annuities) for a portion or all of its liabilities.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the actuarial assumptions, changes in assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

The results were prepared under the direction of David Kershner and Bob Besenhofer, both of whom meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice.

David Kershner
FSA, EA, MAAA, FCA
Principal, Retirement

Robert Besenhofer
ASA, MAAA, FCA
Director, Health



State of Alaska

Timeline for June 30, 2023 Valuations (PERS, TRS, PERS DCR, TRS DCR)

Item #	Task	Original Deadline	Revised Deadline	Date Completed	Team Responsible	Comments / Notes
1	Monthly audit discussion with GRS / Buck	7/12/23		7/12/23	GRS / Buck	
2	Enrollment data request to Aetna	7/14/23		7/13/23	Buck	
3	Valuation data request to DRB	7/14/23		7/14/23	Buck	
4	Monthly audit discussion with GRS / Buck	8/9/23		8/9/23	GRS / Buck	
5	Preliminary 6/30/23 assets to Buck (to be used for FY25 contribution rates only)	8/18/23		8/18/23	DRB	Updated TRS statement provided on 8/21.
6	Valuation data to Buck	9/1/23		9/5/23	DRB	
7	Monthly audit discussion with GRS / Buck	9/6/23	9/7/23	9/7/23	GRS / Buck	
8	Send valuation data files received from DRB to GRS	9/8/23		9/6/23	Buck	
9	Actuarial Committee Meeting - FY25 contribution rates (based on 6/30/22 valuations)	9/13/23		9/13/23	All	Anchorage. Deadline for meeting materials is 8/26.
10	Audit data and sample lives request to Buck	9/15/23		9/18/23	GRS	
11	Claims data request to Segal/DRB	9/22/23		9/6/23	Buck	Incurred claims through 6/30/23 that are paid through 8/31/23.
12	Data questions to DRB	9/22/23		9/27/23	Buck	PERS sent on 9/26. TRS sent on 9/27. Additional questions sent on 10/4.
13	Data answers to Buck	10/6/23		10/11/23	DRB	Updated responses to data questions received on 10/25.
14	Monthly audit discussion with GRS / Buck	10/11/23		not needed	GRS / Buck	
15	Final 6/30/23 assets to Buck (to be used for 6/30/23 valuations)	10/13/23		10/16/23	DRB	
16	Claims data to Buck	10/20/23		11/1/23	Segal / DRB	Incurred claims through 6/30/23 that are paid through 8/31/23.
17	6/30/23 valuation data and DRB data questions to GRS	10/27/23		11/14/23	Buck	Pension files sent on 11/6. OPEB files sent on 11/14.
18	Monthly audit discussion with GRS / Buck	11/8/23		11/8/23	GRS / Buck	
19	Sample life information to GRS	11/10/23		11/17/23	Buck	
20	Preliminary valuation results and PVB's by individual to GRS	11/17/23		11/17/23	Buck	
21	Actuarial Committee Meeting - 6/30/23 valuation results (preliminary)	12/6/23			All	Anchorage.
22	Monthly audit discussion with GRS / Buck	12/13/23			GRS / Buck	
23	Draft DCR valuation reports to GRS	1/5/24			Buck	
24	Monthly audit discussion with GRS / Buck	1/10/24			GRS / Buck	
25	Draft DB valuation reports to GRS	1/19/24			Buck	
26	Monthly audit discussion with GRS / Buck	2/14/24			GRS / Buck	
27	Actuarial Committee Meeting - 6/30/23 valuation results (full), projections, sensitivity analysis, draft valuation reports	3/5/24			All	Juneau.
28	Draft actuarial review report to Buck	3/8/24			GRS	
29	Monthly audit discussion with GRS / Buck	4/10/24			GRS / Buck	
30	ARMB Meeting - follow-up to March meeting (if needed)	April 2024 - TBD			All	Teleconference.
31	Monthly audit discussion with GRS / Buck	5/8/24			GRS / Buck	
32	Monthly audit discussion with GRS / Buck	6/5/24			GRS / Buck	
33	Actuarial Committee Meeting - final valuation reports	6/11/24			All	Anchorage.

Note: All deadline and completion dates are specific to PERS and TRS.

December 7, 2023



ARMB Board Meeting

Preliminary Investment Performance
Periods Ended September 30, 2023

Steve Center, CFA
Senior Vice President

Ivan “Butch” Cliff, CFA
Executive Vice President and Director of
Research

Hannah Vieira
Assistant Vice President

Agenda

- Market and Economic Environment
- Total Fund Performance
 - Participant-Directed Plans
 - Defined Benefit Plans
 - DB Plans Major Asset Classes

Equity Markets Down in 3Q, Following Rebound in First Half of 2023

Stocks and bonds still have ground to make up after declines in 2022

S&P 500 down 3.3% in 3Q23.

- Loss through first three quarters of 2022 was 23.9%; rebound in the following three quarters reduced the loss to 2.9% by June, but decline in 3Q shows S&P is still over 4% below 1/2022 high-water mark

Fixed income recovered in first half of 2023 as high inflation began to ease; speculation about interest rate cuts evaporated in 2Q

- Bloomberg Aggregate: up 3% in 1Q, but declined 0.8% in 2Q and another 3.2% in 3Q as Fed continued to raise rates
- CPI-U: +3.7% year-over year for 3Q, and still up 5.8% since the start of 2022

Economic data defied expectations of recession in 2023; GDP growth came in at 2.1% in 1Q and 2.2% in 2Q, and surged to a stunning 4.9% in 3Q

- Job market remains solid, providing support to Fed efforts to fight inflation

Returns for Periods ended 9/30/23

	Quarter	YTD	Since 1/2022	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	-3.25	12.39	-5.36	9.14	11.28	8.09
S&P 500	-3.27	13.07	-4.30	9.92	11.91	7.92
Russell 2000	-5.13	2.54	-10.98	2.40	6.65	8.00
Global ex-U.S. Equity						
MSCI World ex USA	-4.10	6.73	-4.97	3.44	3.84	4.98
MSCI Emerging Markets	-2.93	1.82	-11.12	0.56	2.07	--
MSCI ACWI ex USA Small Cap	-1.70	5.03	-9.45	2.58	4.35	7.41
Fixed Income						
Bloomberg Aggregate	-3.23	-1.21	-8.29	0.10	1.13	3.59
90-day T-Bill	1.31	3.60	2.89	1.72	1.11	1.89
Bloomberg Long Gov/Credit	-9.37	-5.40	-19.12	-1.21	1.94	4.67
Bloomberg Global Agg ex-US	-4.00	-3.20	-12.79	-3.10	-1.73	2.04
Real Estate						
NCREIF Property	-1.98	-5.66	-0.26	5.13	7.33	8.29
FTSE Nareit Equity	-7.13	-2.14	-15.80	2.77	5.96	8.49
Alternatives						
CS Hedge Fund Index	1.81	3.71	2.72	4.77	4.08	5.96
Cambridge Private Equity*	1.59	3.71	0.39	15.37	14.91	13.67
Bloomberg Commodity	4.71	-3.44	6.74	6.13	-0.75	2.45
Gold Spot Price	-3.28	2.18	1.17	9.30	3.47	7.60
Inflation - CPI-U	0.88	3.70	5.81	4.04	2.77	2.56

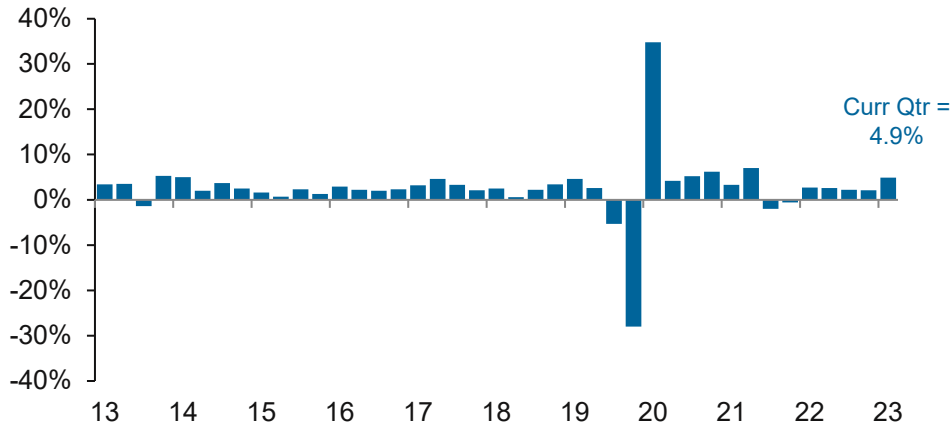
*Cambridge PE data as of 2Q23

Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

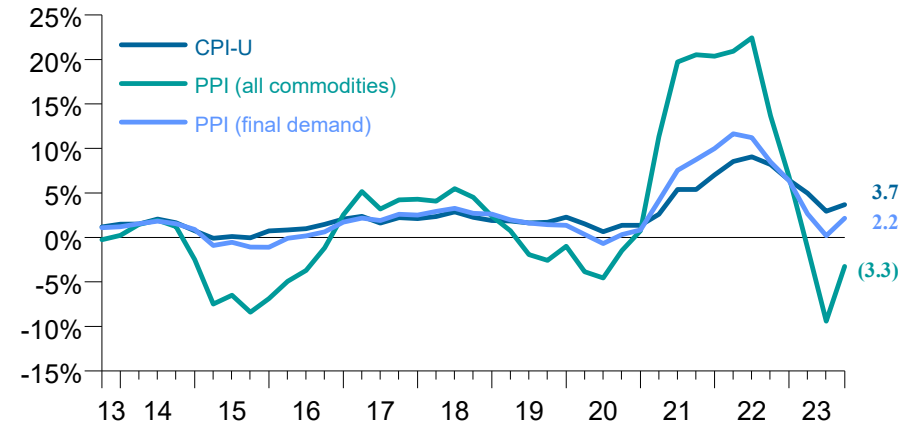
U.S. Economy—Summary

For periods ended 9/30/23

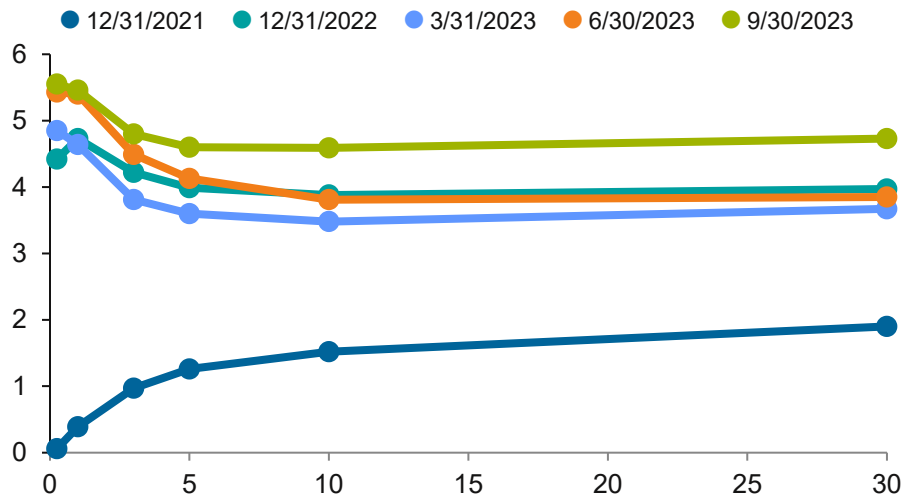
Quarterly Real GDP Growth



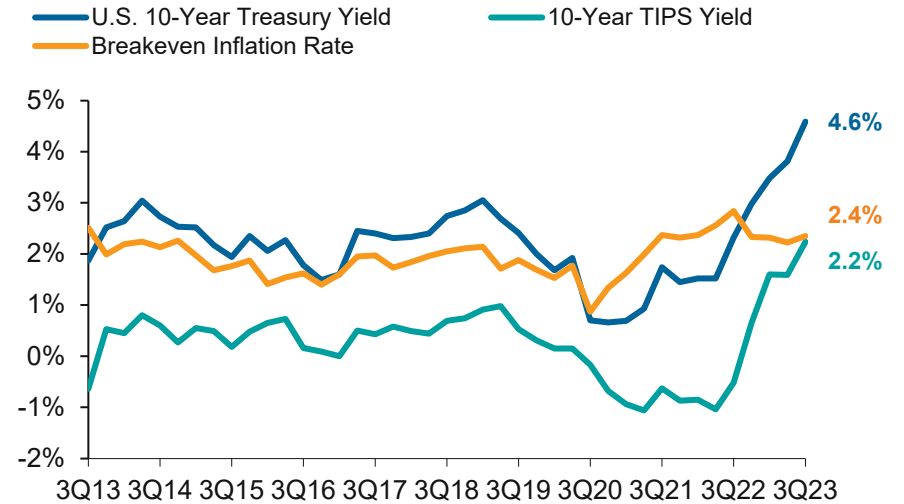
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Historical 10-Year Yields Through 9/30/23



Sources: Bloomberg, Bureau of Labor Statistics, Callan

Callan Periodic Table of Investment Returns – Trailing Year

Monthly Returns												Trailing Year
Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	July 2023	Aug 2023	Sept 2023	12 Mos.
Small Cap Equity	Emerging Market Equity	Global ex-U.S. Fixed Income	Small Cap Equity	High Yield	Global ex-U.S. Fixed Income	Dev ex-U.S. Equity	Large Cap Equity	Small Cap Equity	Emerging Market Equity	High Yield	High Yield	Dev ex-U.S. Equity
11.01%	14.83%	1.31%	9.75%	-1.29%	3.73%	2.84%	0.43%	8.13%	6.23%	0.28%	-1.18%	24.00%
Large Cap Equity	Dev ex-U.S. Equity	U.S. Fixed Income	Real Estate	Small Cap Equity	Large Cap Equity	Real Estate	High Yield	Large Cap Equity	Small Cap Equity	U.S. Fixed Income	U.S. Fixed Income	Large Cap Equity
8.10%	10.65%	-0.45%	8.98%	-1.69%	3.67%	1.89%	-0.92%	6.61%	6.12%	-0.64%	-2.54%	21.62%
Dev ex-U.S. Equity	Real Estate	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Emerging Market Equity	Large Cap Equity	Small Cap Equity	Dev ex-U.S. Equity	Real Estate	Large Cap Equity	Emerging Market Equity	Emerging Market Equity
5.51%	6.73%	-0.48%	8.20%	-2.33%	3.03%	1.56%	-0.92%	4.75%	3.74%	-1.59%	-2.62%	11.70%
Real Estate	Large Cap Equity	High Yield	Emerging Market Equity	Large Cap Equity	U.S. Fixed Income	High Yield	U.S. Fixed Income	Emerging Market Equity	Dev ex-U.S. Equity	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	High Yield
2.99%	5.59%	-0.62%	7.90%	-2.44%	2.54%	1.00%	-1.09%	3.80%	3.24%	-1.97%	-3.30%	10.28%
High Yield	Global ex-U.S. Fixed Income	Emerging Market Equity	Large Cap Equity	U.S. Fixed Income	Dev ex-U.S. Equity	U.S. Fixed Income	Emerging Market Equity	Real Estate	Large Cap Equity	Real Estate	Dev ex-U.S. Equity	Small Cap Equity
2.60%	5.58%	-1.41%	6.28%	-2.59%	2.22%	0.61%	-1.68%	3.02%	3.21%	-3.35%	-3.37%	8.93%
Global ex-U.S. Fixed Income	U.S. Fixed Income	Real Estate	High Yield	Global ex-U.S. Fixed Income	High Yield	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	High Yield	High Yield	Dev ex-U.S. Equity	Large Cap Equity	Global ex-U.S. Fixed Income
-0.14%	3.68%	-2.79%	3.81%	-3.99%	1.07%	0.29%	-2.69%	1.67%	1.38%	-3.87%	-4.77%	3.39%
U.S. Fixed Income	Small Cap Equity	Large Cap Equity	Global ex-U.S. Fixed Income	Real Estate	Real Estate	Emerging Market Equity	Dev ex-U.S. Equity	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	Small Cap Equity	Small Cap Equity	Real Estate
-1.30%	2.34%	-5.76%	3.48%	-4.41%	-3.26%	-1.13%	-4.36%	0.26%	1.28%	-5.00%	-5.89%	1.64%
Emerging Market Equity	High Yield	Small Cap Equity	U.S. Fixed Income	Emerging Market Equity	Small Cap Equity	Small Cap Equity	Real Estate	U.S. Fixed Income	U.S. Fixed Income	Emerging Market Equity	Real Estate	U.S. Fixed Income
-3.10%	2.17%	-6.49%	3.08%	-6.48%	-4.78%	-1.80%	-4.48%	-0.36%	-0.07%	-6.16%	-6.11%	0.64%

Sources: ● Bloomberg Aggregate ● Bloomberg Corp High Yield ● Bloomberg Global Aggregate ex US ● FTSE EPRA Nareit Developed
 ● MSCI Emerging Markets ● MSCI World ex USA ● Russell 2000 ● S&P 500

Callan Periodic Table of Investment Returns – Fiscal Year

Fiscal Year Returns – Ending June 30

06/2014	06/2015	06/2016	06/2017	06/2018	06/2019	06/2020	06/2021	06/2022	06/2023
Large Cap Equity 24.61%	Large Cap Equity 7.42%	Real Estate 11.58%	Small Cap Equity 24.60%	Small Cap Equity 17.57%	Large Cap Equity 10.42%	U.S. Fixed Income 8.74%	Small Cap Equity 62.03%	U.S. Fixed Income -10.29%	Large Cap Equity 19.59%
Dev ex-U.S. Equity 23.83%	Small Cap Equity 6.49%	Global ex-U.S. Fixed Income 11.24%	Emerging Market Equity 23.75%	Large Cap Equity 14.37%	U.S. Fixed Income 7.87%	Large Cap Equity 7.51%	Emerging Market Equity 40.90%	Large Cap Equity -10.62%	Dev ex-U.S. Equity 17.41%
Small Cap Equity 23.64%	U.S. Fixed Income 1.86%	U.S. Fixed Income 6.00%	Dev ex-U.S. Equity 19.49%	Emerging Market Equity 8.20%	Real Estate 7.68%	Global ex-U.S. Fixed Income 0.71%	Large Cap Equity 40.79%	High Yield -12.81%	Small Cap Equity 12.31%
Emerging Market Equity 14.31%	Real Estate -0.36%	Large Cap Equity 3.99%	Large Cap Equity 17.90%	Dev ex-U.S. Equity 7.04%	High Yield 7.48%	High Yield 0.03%	Dev ex-U.S. Equity 33.60%	Real Estate -13.45%	High Yield 9.06%
Real Estate 13.55%	High Yield -0.40%	High Yield 1.62%	High Yield 12.70%	Real Estate 5.64%	Global ex-U.S. Fixed Income 4.10%	Emerging Market Equity -3.39%	Real Estate 33.55%	Dev ex-U.S. Equity -16.76%	Emerging Market Equity 1.75%
High Yield 11.73%	Emerging Market Equity -5.12%	Small Cap Equity -6.73%	Real Estate 0.21%	Global ex-U.S. Fixed Income 2.78%	Dev ex-U.S. Equity 1.29%	Dev ex-U.S. Equity -5.42%	High Yield 15.37%	Global ex-U.S. Fixed Income -18.78%	U.S. Fixed Income -0.94%
Global ex-U.S. Fixed Income 9.42%	Dev ex-U.S. Equity -5.28%	Dev ex-U.S. Equity -9.84%	U.S. Fixed Income -0.31%	High Yield 2.62%	Emerging Market Equity 1.22%	Small Cap Equity -6.63%	Global ex-U.S. Fixed Income 4.60%	Small Cap Equity -25.20%	Global ex-U.S. Fixed Income -1.83%
U.S. Fixed Income 4.37%	Global ex-U.S. Fixed Income -13.19%	Emerging Market Equity -12.05%	Global ex-U.S. Fixed Income -3.80%	U.S. Fixed Income -0.40%	Small Cap Equity -3.31%	Real Estate -16.25%	U.S. Fixed Income -0.33%	Emerging Market Equity -25.28%	Real Estate -4.54%

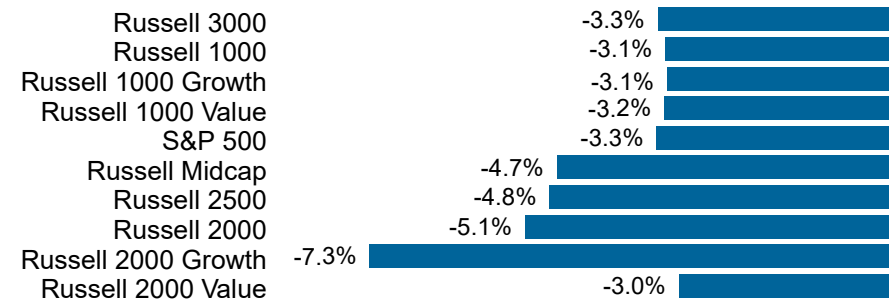
Sources: ● Bloomberg Aggregate ● Bloomberg Corp High Yield ● Bloomberg Global Aggregate ex US ● FTSE EPRA Nareit Developed
● MSCI Emerging Markets ● MSCI World ex USA ● Russell 2000 ● S&P 500

U.S. Equity Performance: 3Q23

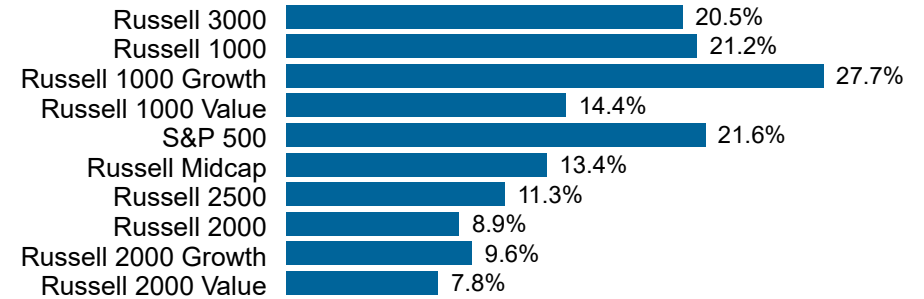
The U.S. equity markets cooled in 3Q after an exuberant start to the year

- All U.S. equity indices posted losses during 3Q23. August and September were marked by investor fears about the potential of a “higher for longer” interest rate environment, leading to broader market declines.
- While all indices were negative, the Russell 2000 Value Index led the pack during the quarter, a reversal of the previous two quarters when the Russell 1000 Growth Index led.
- Only two of the 11 S&P 500 Index sectors generated positive 3Q returns; Energy was up 12% and Communication Services was up 3%. However, on a YTD basis, six sectors generated positive returns, with Information Technology, Communication Services and Consumer Discretionary substantially leading the group.

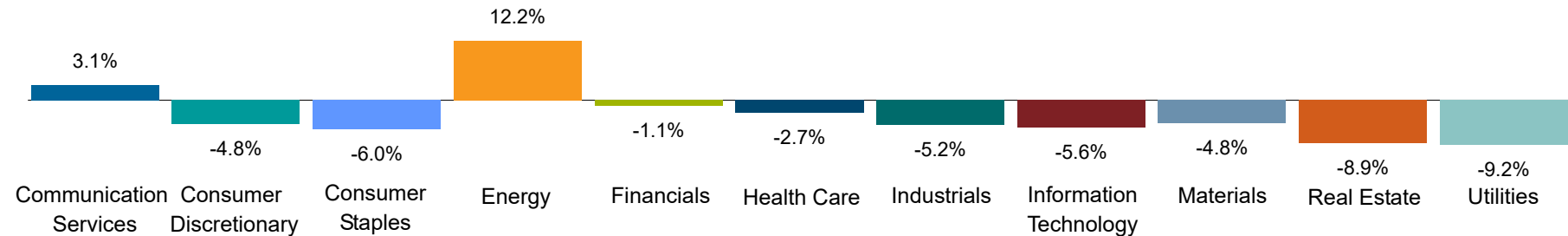
U.S. Equity: Quarter Ended 9/30/23



U.S. Equity: One-Year Returns Ended 9/30/23



Industry Sector Quarterly Performance (S&P 500) as of 9/30/23



Sources: FTSE Russell, S&P Dow Jones Indices

Global/Global ex-U.S. Equity Performance: 3Q23

Global growth concerns

Most global markets were in the red for 3Q23.

Narrow market

- Global markets retreated in 3Q23 amid fears of a global recession driven by higher interest rates and slowing growth in regions outside the U.S.
- Emerging markets outperformed developed markets, buoyed by good results from India, whose economy grew nearly 8% on the heels of supportive infrastructure spending.
- Japan was strong again in local currency as it continues to benefit from post-COVID exuberance, easy monetary policy, and a new economic stimulus plan.

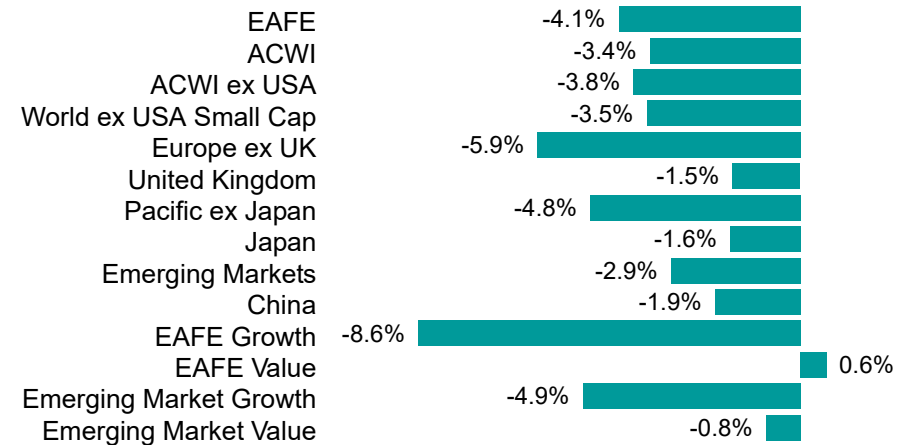
Growth vs. value

With energy as a strong outperformer on the heels of oil price increases, value outpaced growth by a wide margin in global ex-U.S. markets.

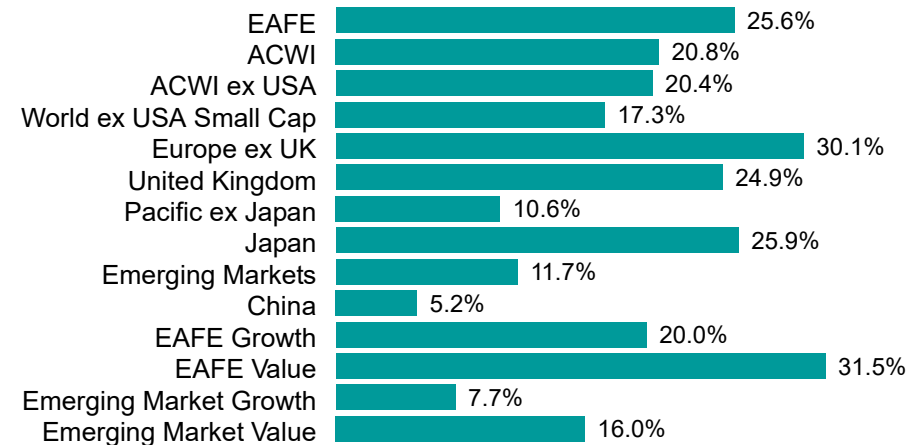
U.S. dollar vs. other currencies

The stronger U.S. dollar, which gained 3% over the quarter, was a notable headwind for the period.

Global Equity Returns: Quarter Ended 9/30/23



Global Equity Returns: One Year Ended 9/30/23



Source: MSCI

U.S. Fixed Income Performance: 3Q23

Yields continue to march upward as spreads remain range-bound

U.S. fixed income fell for a second straight quarter

- The Bloomberg Aggregate Index is on track for a third calendar year of negative returns, with the rise in yields continuing to detract from performance.

U.S. Treasury 10-year yield climbed roughly 80 bps

- 10-year ended the quarter at 4.59%, its highest level since 2007.
- The yield curve's inversion narrowed as long-term rates rose more than short-term rates.

TIPS outperformed nominal Treasuries

- 10-year break-even spreads widened over 10 bps.

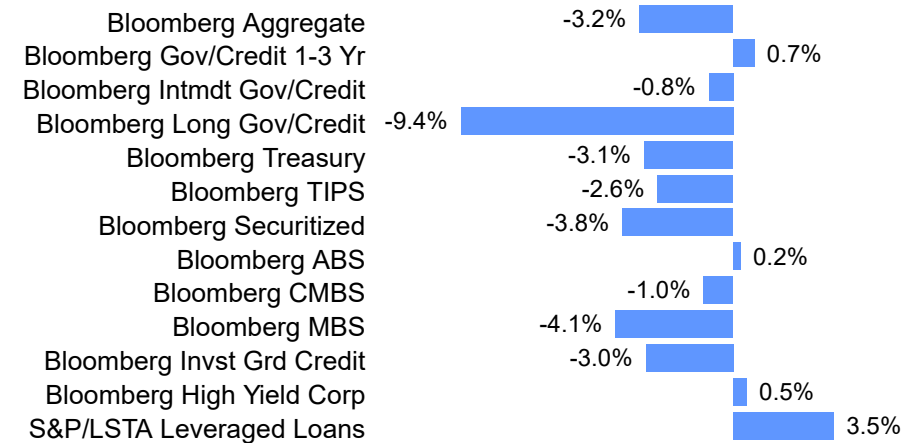
Fed policy rate held to 5.25%-5.50%

- The updated dot plot suggested an additional rate hike may be in the cards before year-end.

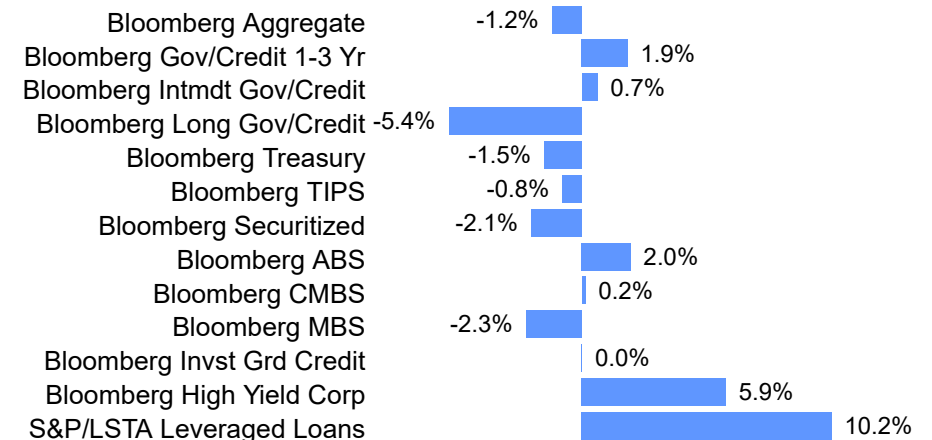
Lower-quality credit continued to outperform

- High yield spreads were flat, but the sector was buoyed by strong performance in July. Additionally, a combination of higher yields and no duration continued to drive bank loan outperformance.
- IG corporate spreads tightened slightly and remained close to their 10-year average.
- Agency RMBS underperformed other securitized sectors as interest rate volatility weighed on the sector.

U.S. Fixed Income Returns: Quarter Ended 9/30/23



U.S. Fixed Income Returns: YTD Ending 9/30/23



Sources: Bloomberg, S&P Dow Jones Indices

U.S. Private Real Estate Performance: 3Q23

Income returns positive but appreciation returns negative once again

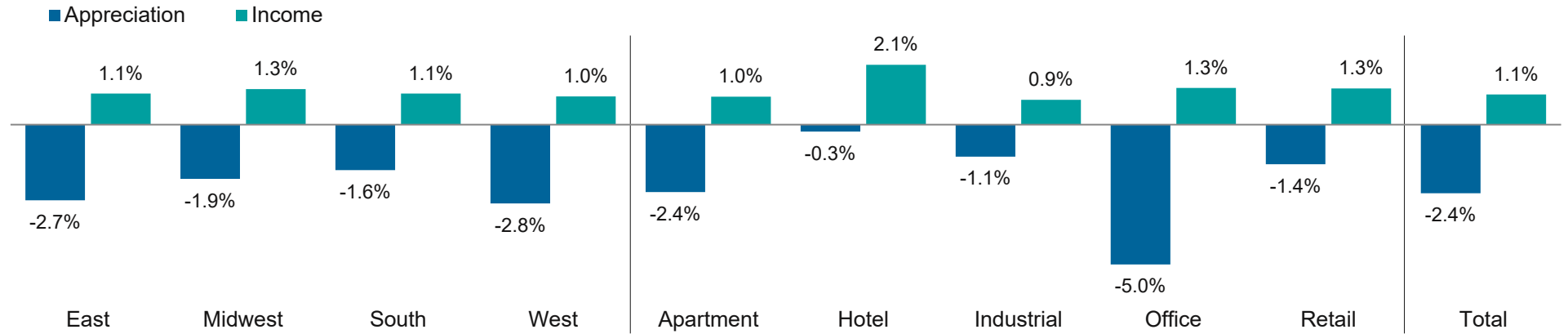
Valuations reflect higher interest rates

- Income returns were positive across sectors and regions.
- All property sectors and regions experienced negative appreciation.
- Valuations are reflective of higher interest rates, which have put upward pressure on capitalization rate and discount rate assumptions.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	-2.1%	-12.9%	6.2%	4.7%	7.2%
Income	0.7%	2.0%	2.8%	3.0%	3.3%
Appreciation	-2.8%	-15.2%	3.3%	1.7%	3.8%
NCREIF Property Index	-1.4%	-8.4%	6.0%	5.3%	7.4%
Income	1.1%	4.1%	4.1%	4.2%	4.6%
Appreciation	-2.4%	-12.1%	1.9%	1.0%	2.7%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type

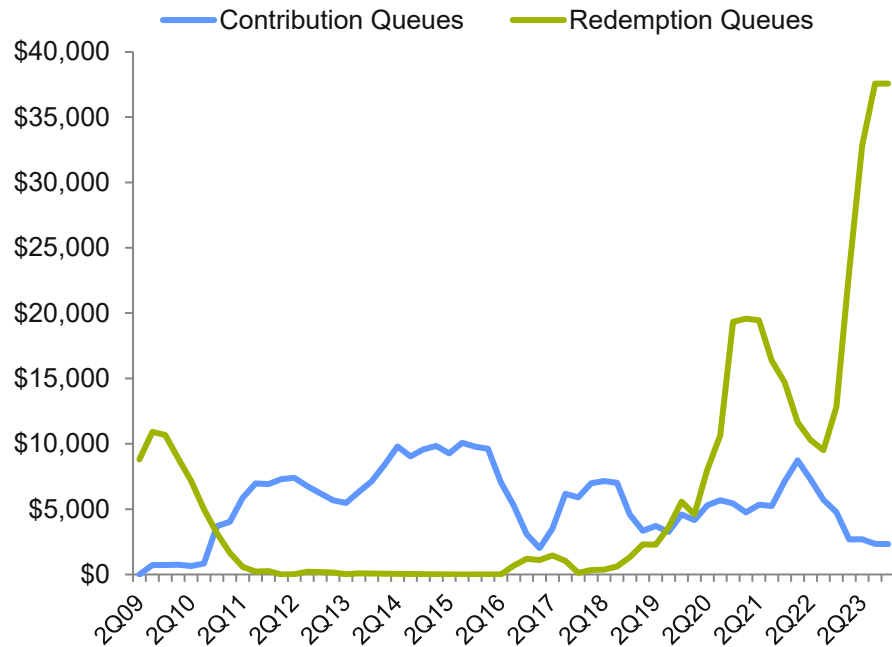


Source: NCREIF, ODCE return is net

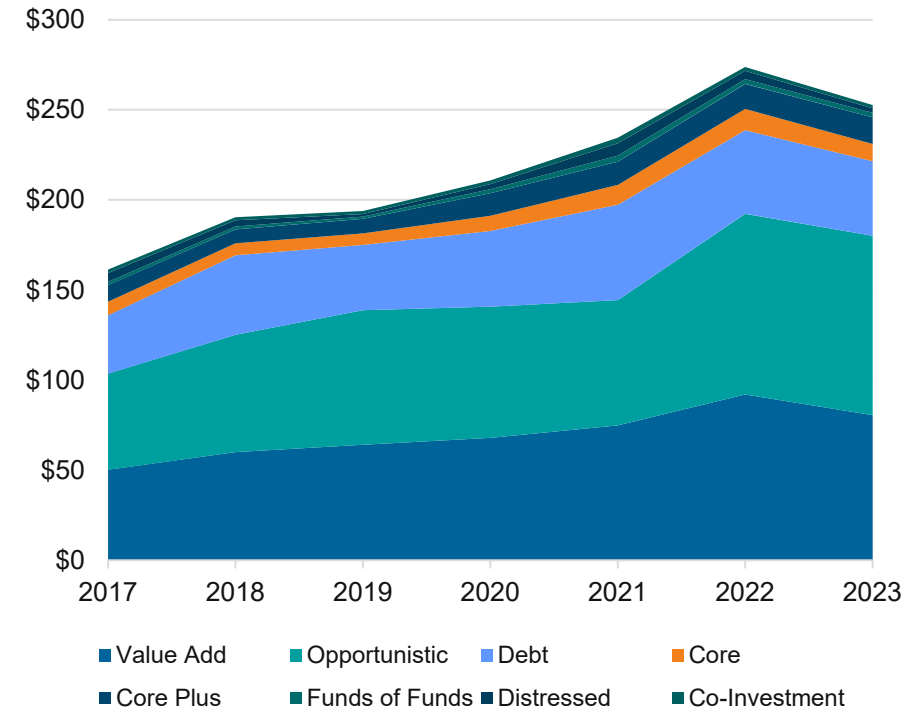
U.S. Private Real Estate Market Trends

Dry powder nears \$250 billion

Core Fund Contribution/Redemption Queues (\$mm)^A



Dry Powder for CRE Investment in North America (\$bn)



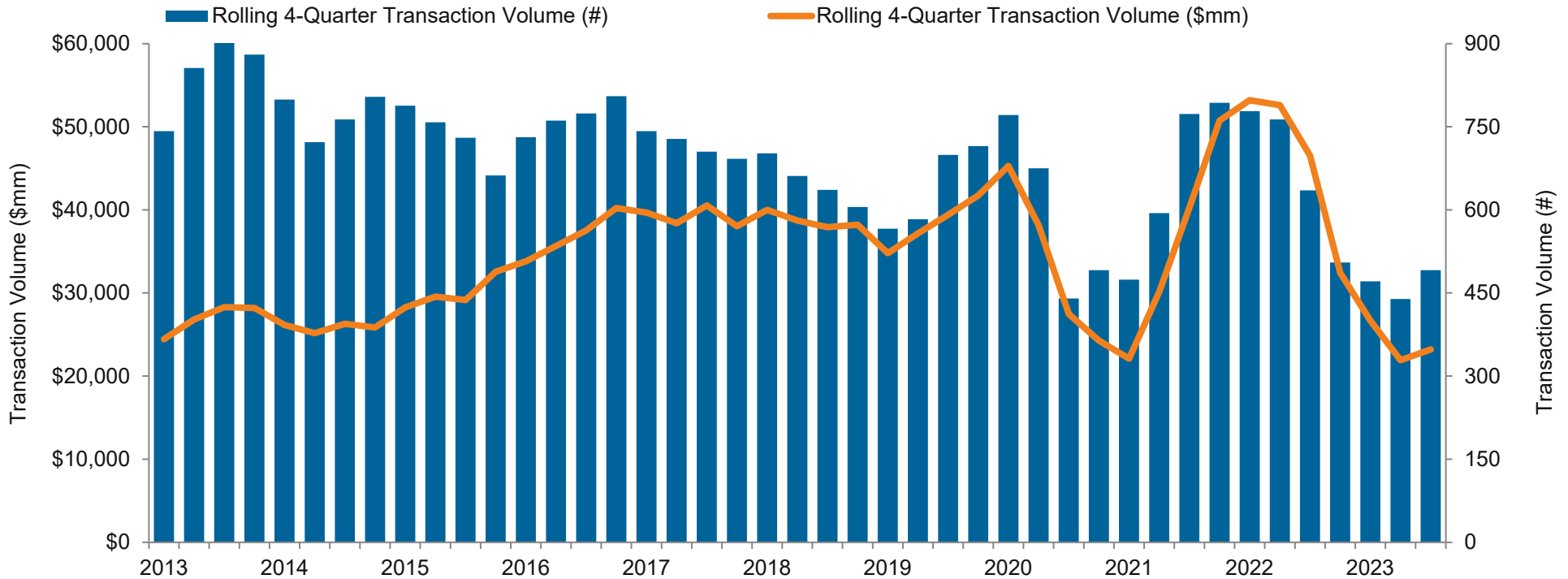
- Current ODCE redemption queues average approximately 14.3%, with a median queue of 12.7%. This compares to the GFC, when queues peaked at approximately 17% of NAV.
- Outstanding redemption requests for most large ODCE funds are approximately 10% to 20% of net asset value. Additional redemption requests have slowed substantially, and redemption queues are increasing at a decreasing rate.
- For a large proportion of funds, these redemptions are partial redemptions, due to portfolio rebalancing and liquidity needs. For a smaller underperforming subset, redemption requests are full redemptions indicative of manager termination.

Sources: AEW, NCREIF, Prequin
Queue data as of 2Q23, the latest available at time of publication

U.S. Private Real Estate Market Trends

Pricing and transaction volumes decline through 3Q23

NCREIF Rolling 4-Quarter Transaction Totals Through 9/30/23



- Transaction volume continues to flatten on a rolling four-quarter basis and remains well below five-year averages.
- In 3Q23 transaction volume increased slightly on a quarter-over-quarter basis; however, transaction volume remains significantly lower compared to 3Q22.
- The rise in interest rates is the driving force behind the slowdown in transactions. A bid-ask spread remains and price discovery continues to occur among market participants.

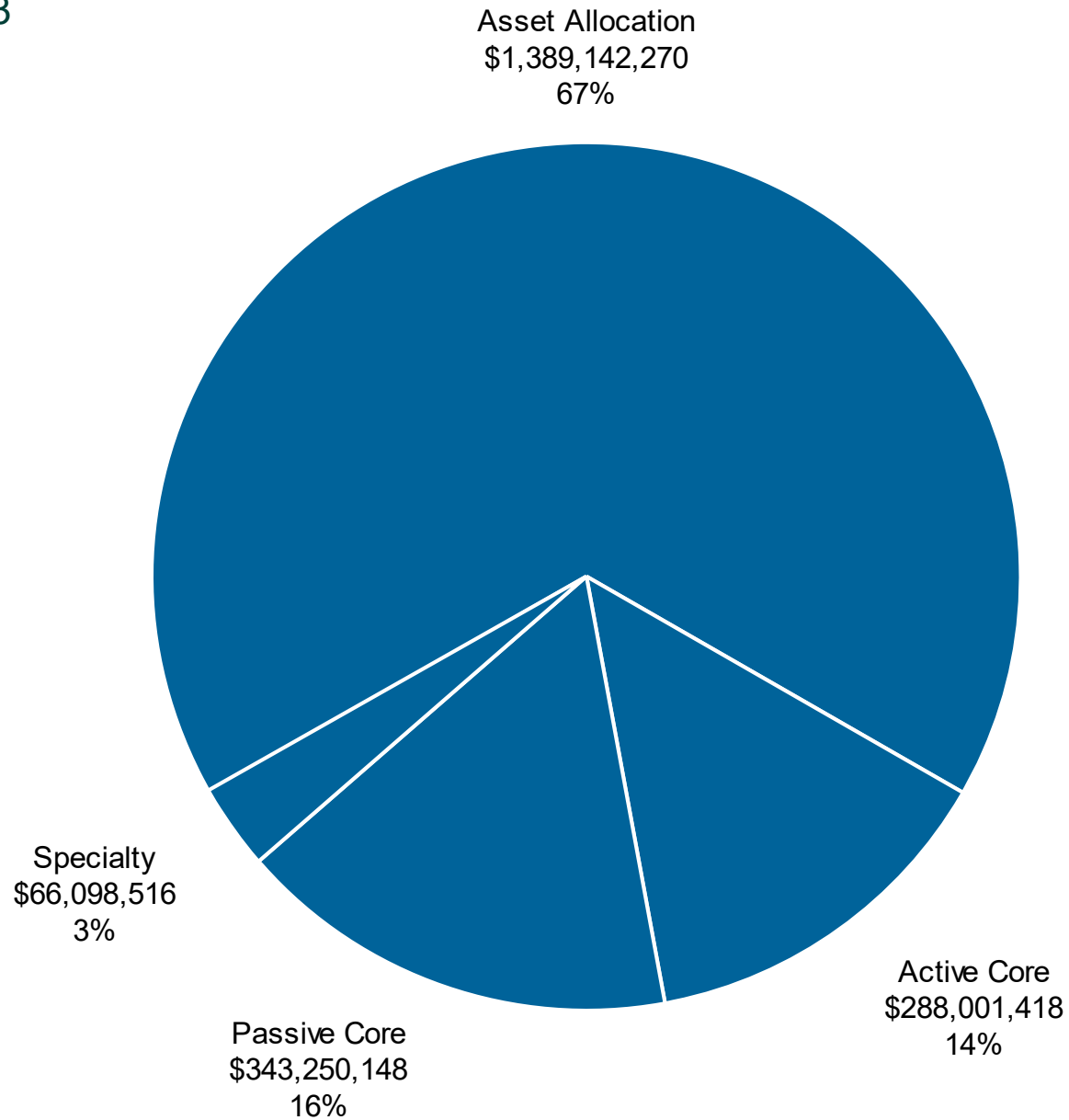
Source: NCREIF

Callan

Participant-Directed Plans

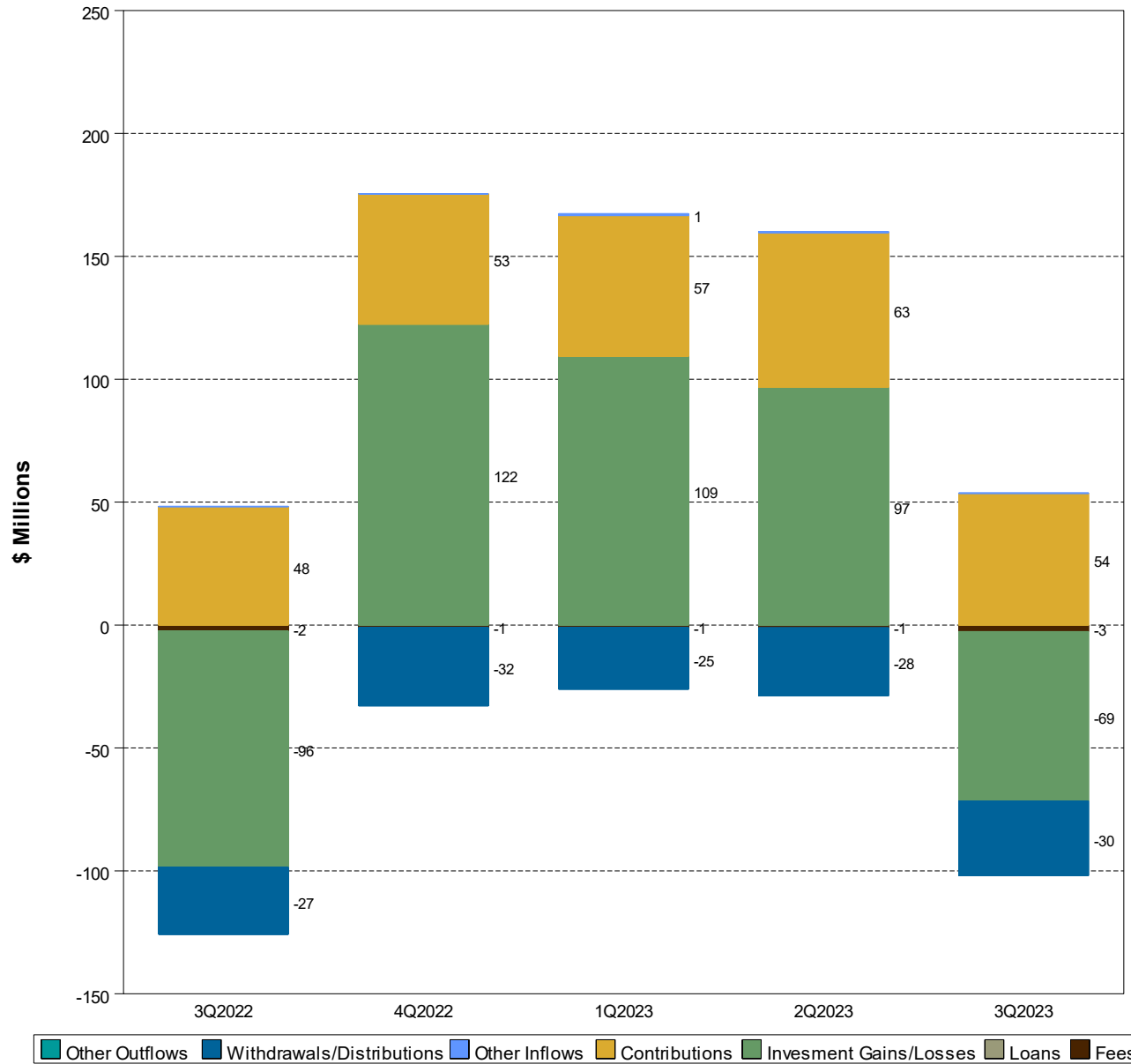
PERS DC Plan

September 30, 2023



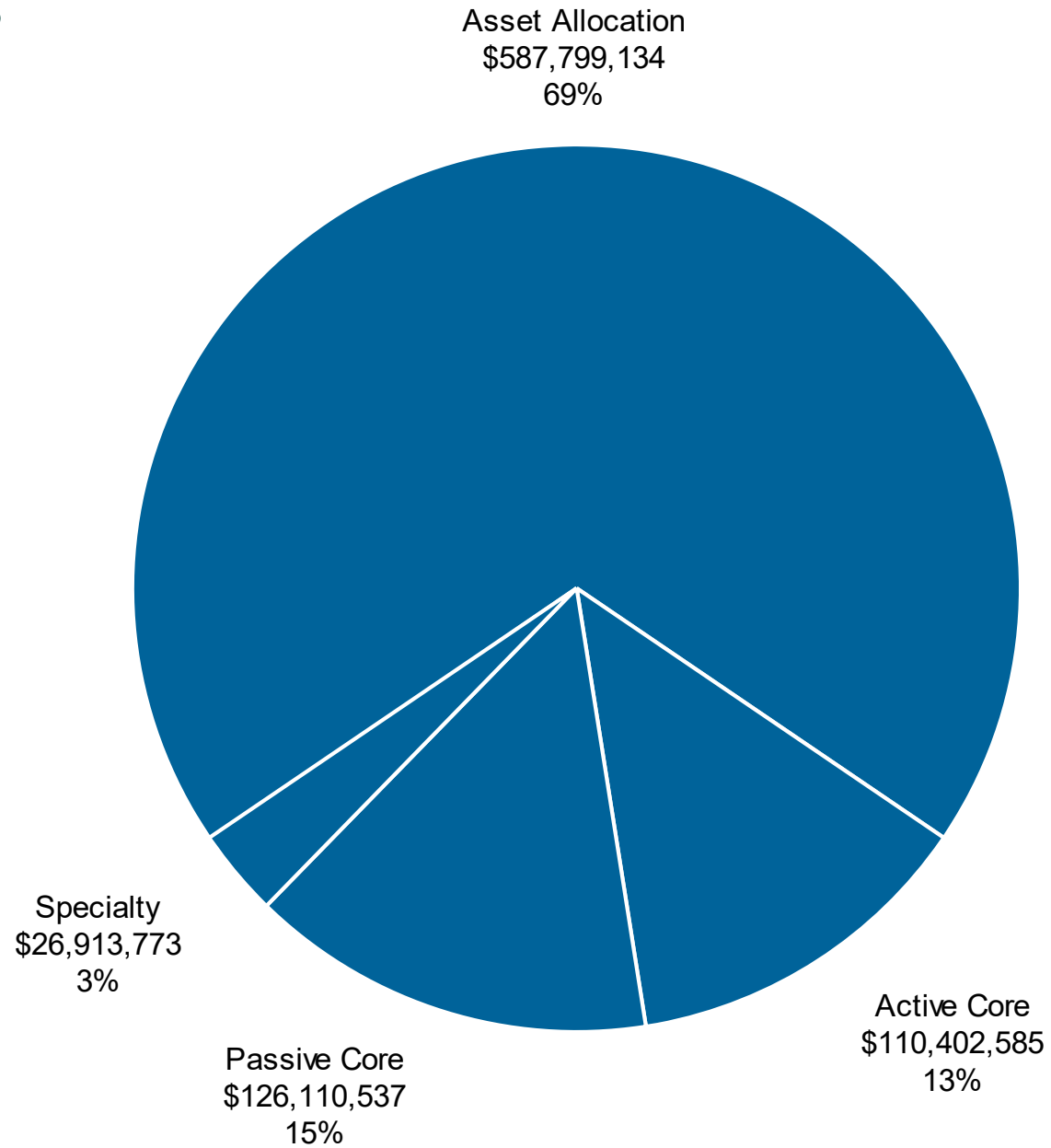
PERS DC Plan: Asset Changes

September 30, 2023



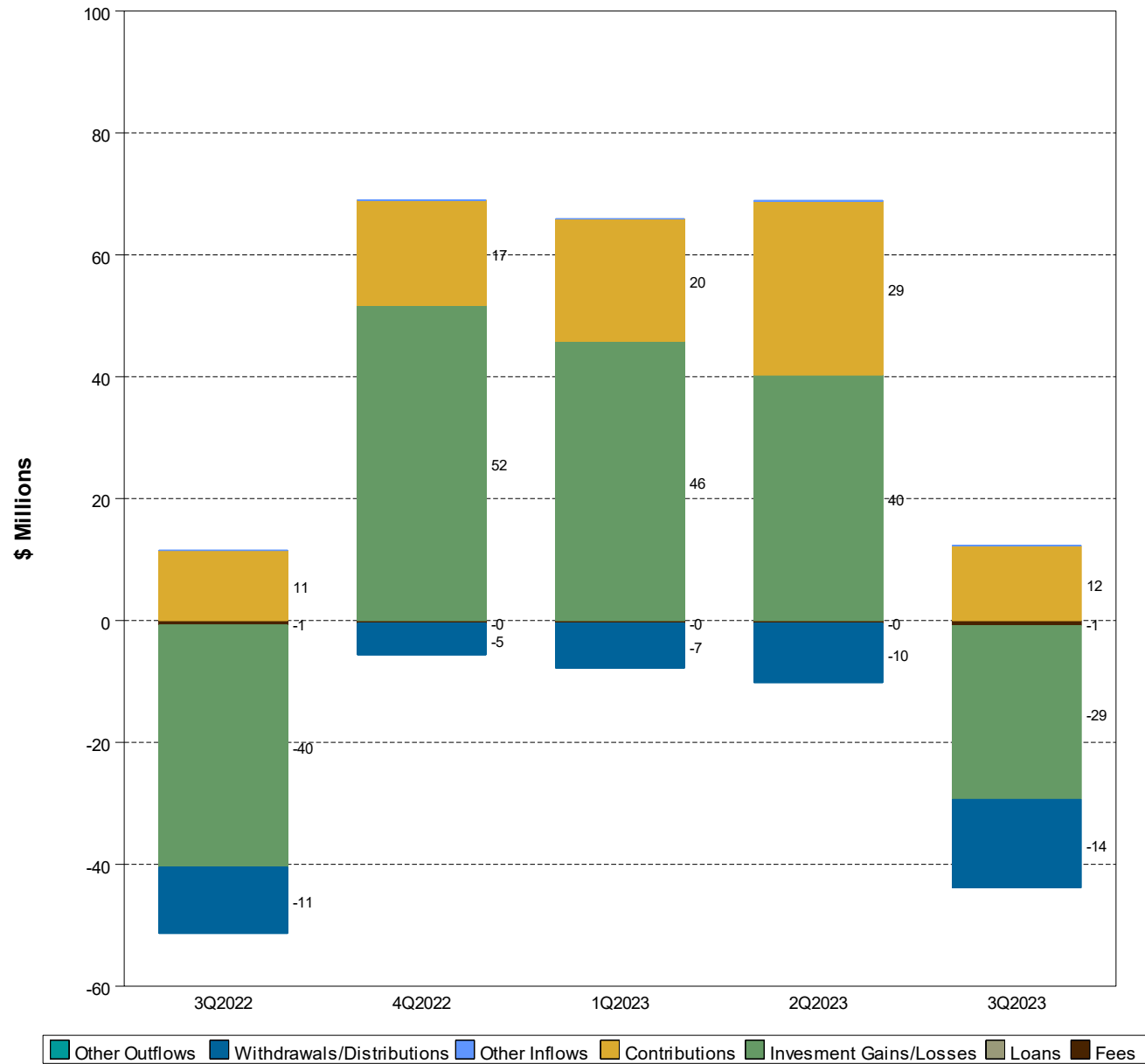
TRS DC Plan

September 30, 2023



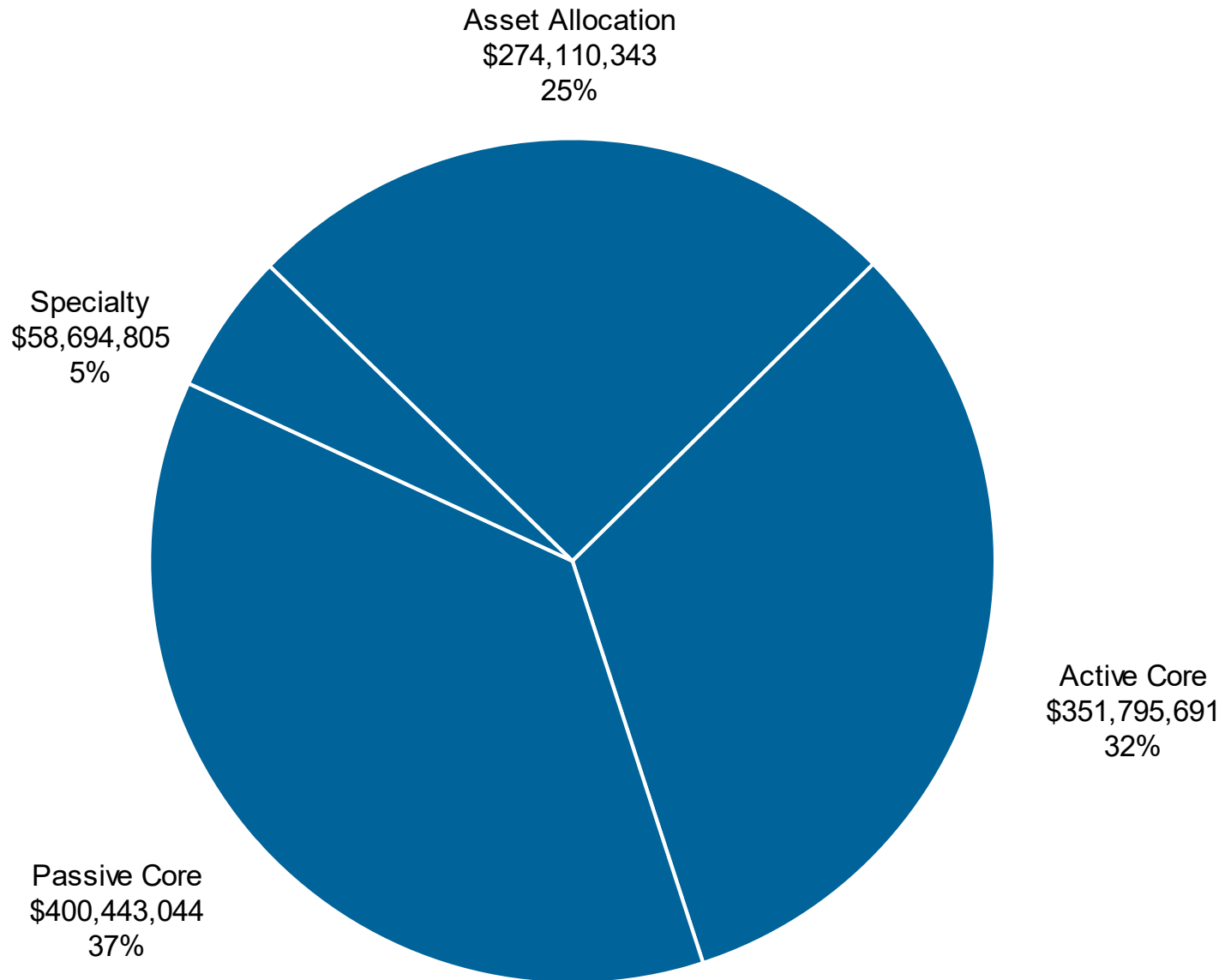
TRS DC Plan: Asset Changes

September 30, 2023



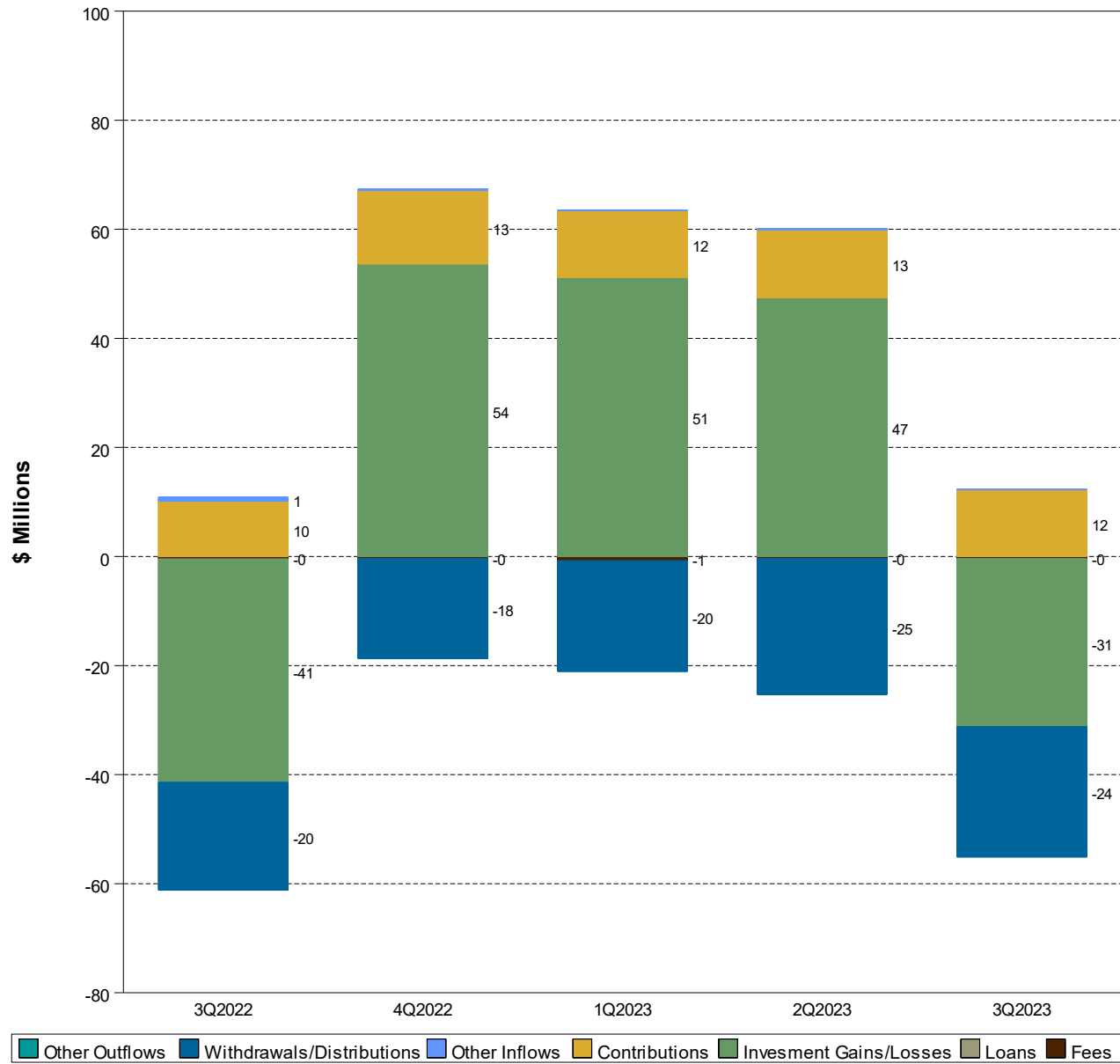
Deferred Comp Plan

September 30, 2023



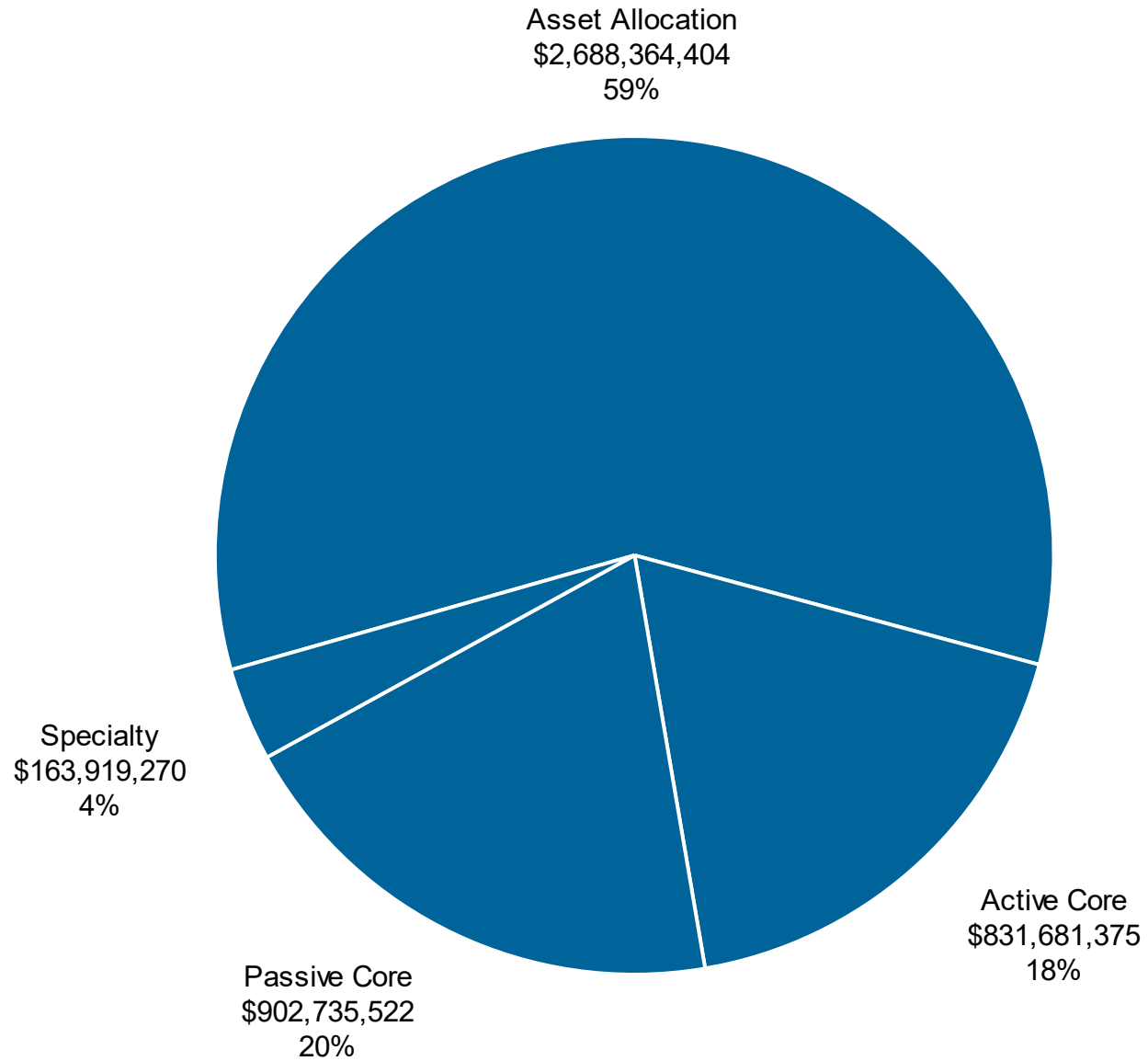
Deferred Comp Plan: Asset Changes

September 30, 2023



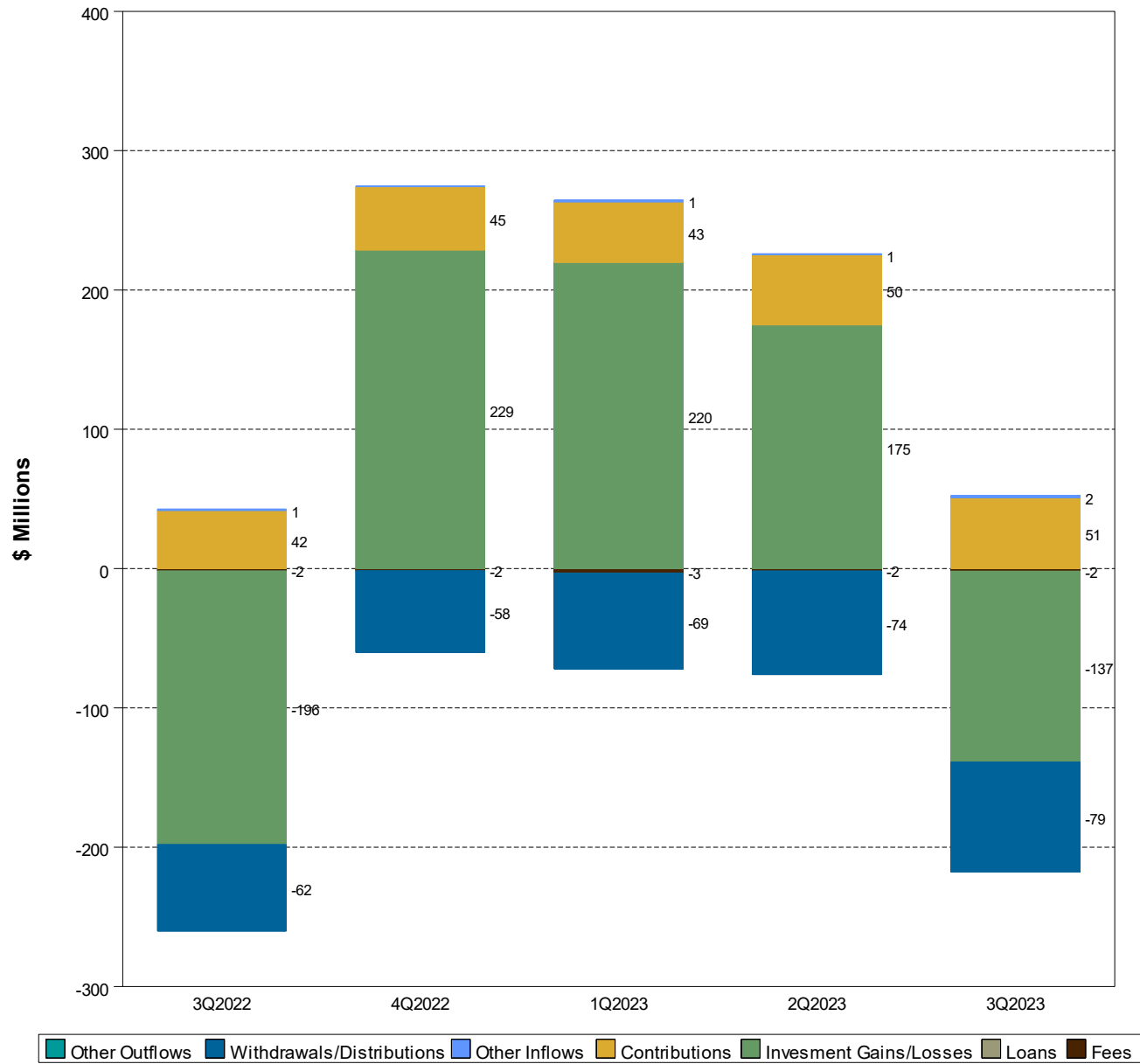
SBS Fund

September 30, 2023



SBS Fund: Asset Changes

September 30, 2023



Individual Account Option Performance: 09/30/23

Balanced & Target Date Funds

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Asset Allocation										
Alaska Balanced Trust	-3.1 81	7.6 20	0.8 29	3.3 12	3.8 16	8.7 64		0.3 2	0.5 100	0.2 10
CAI MA Tgt Alloc Cons MFs										
Passive Target	-3.2 83	7.6 20	0.7 32	3.2 16	3.8 17	8.9 54				0.2 13
Alaska Long-Term Balanced	-3.3 77	12.3 26	3.5 39	4.9 28	6.1 29	13.3 56		0.1 20	0.5 100	0.2 23
CAI MA Tgt Alloc Mod MFs										
Passive Target	-3.5 81	12.4 23	3.4 43	4.9 29	6.1 28	13.6 52				0.2 27
Target 2010 Trust	-2.7 70	8.3 28	1.8 28	3.5 29	4.4 18	9.3 71		-0.0 29	0.4 100	0.2 20
CAI Tgt Date 2010										
Custom Index	-2.8 73	8.5 18	1.7 29	3.5 29	4.5 17	9.6 55				0.2 25
Target 2015 Trust	-2.8 61	9.2 17	2.4 14	4.0 14	5.1 11	10.5 70		0.1 12	0.5 98	0.2 7
CAI Tgt Date 2015										
Custom Index	-2.9 68	9.4 13	2.3 15	3.9 14	5.1 12	10.8 55				0.2 11
Target 2020 Trust	-2.9 63	10.7 10	3.2 5	4.5 8	6.0 5	12.3 35		0.2 3	0.5 100	0.2 4
CAI Tgt Date 2020										
Custom Index	-3.0 74	10.8 9	3.1 8	4.5 9	5.9 6	12.6 27				0.2 5
Target 2025 Trust	-3.2 58	12.6 1	4.1 2	5.1 3	6.7 3	14.1 28		0.2 2	0.5 100	0.2 2
CAI Tgt Date 2025										
Custom Index	-3.3 66	12.7 1	4.0 3	5.0 4	6.7 3	14.4 22				0.2 4
Target 2030 Trust	-3.3 49	14.1 2	4.9 3	5.6 4	7.4 3	15.7 34		0.1 4	0.5 100	0.2 4
CAI Tgt Date 2030										
Custom Index	-3.4 57	14.2 1	4.8 3	5.6 4	7.4 3	16.0 29				0.2 5
Target 2035 Trust	-3.4 41	15.7 11	5.6 4	6.1 3	8.0 3	17.1 48		0.2 1	0.5 100	0.3 3
CAI Tgt Date 2035										
Custom Index	-3.5 47	15.8 11	5.5 6	6.0 4	8.0 3	17.4 42				0.2 4
Target 2040 Trust	-3.5 34	17.0 21	6.2 9	6.4 4	8.5 3	18.2 56		0.2 1	0.5 100	0.3 2
CAI Tgt Date 2040										
Custom Index	-3.6 41	17.0 21	6.1 14	6.4 6	8.5 4	18.5 53				0.3 6
Target 2045 Trust	-3.5 25	18.1 26	6.8 7	6.8 2	8.8 3	19.1 73		0.2 1	0.5 100	0.3 1
CAI Tgt Date 2045										
Custom Index	-3.6 30	18.1 28	6.6 13	6.7 3	8.8 3	19.3 63				0.3 3

Returns:
■ above median
■ third quartile
■ fourth quartile

Risk:
■ below median
■ second quartile
■ first quartile



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

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

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

Individual Account Option Performance: 09/30/23

Balanced & Target Date Funds

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Target 2050 Trust CAI Tgt Date 2050 Custom Index	-3.5 ²⁵	18.5 ³²	6.9 ¹²	6.8 ⁴	8.8 ³	19.1 ⁷⁷		0.2 ¹	0.5 ¹⁰⁰	0.3 ³
	-3.5 ²⁹	18.6 ³²	6.7 ²⁰	6.7 ⁶	8.8 ³	19.4 ⁷³				0.3 ⁵
Target 2055 Trust CAI Tgt Date 2055 Custom Index	-3.5 ²³	18.5 ⁴¹	6.9 ¹³	6.8 ⁵	8.8 ³	19.1 ⁸⁵		0.2 ¹	0.5 ¹⁰⁰	0.3 ²
	-3.5 ²⁷	18.6 ³⁹	6.7 ²¹	6.7 ⁵	8.8 ³	19.4 ⁸²				0.3 ³
Target 2060 Trust CAI Tgt Date 2060 Custom Index	-3.5 ²⁶	18.6 ³⁶	6.8 ¹⁵	6.7 ⁶	8.8 ⁶	19.2 ⁷⁹		0.0 ⁵	0.5 ¹⁰⁰	0.3 ⁴
	-3.5 ³⁰	18.6 ³⁷	6.7 ²²	6.7 ⁶	8.8 ⁵	19.4 ⁷⁷				0.3 ⁵
Target 2065 Trust CAI Tgt Date 2065 Custom Index	-3.5 ²⁵	18.5 ⁴⁷	6.8 ¹⁹						0.5 ¹⁰⁰	
	-3.5 ³⁰	18.6 ⁴⁵	6.7 ²⁹							
JPMorgan SmartRetirementBlend 2015 R6 Callan Target Date 2015 JPMorgan:SR Income MF Idx	-2.8 ⁶⁰	8.2 ⁶¹								
	-2.6 ⁴⁴	9.7 ¹²	0.6 ⁷⁷	2.9 ⁸⁸	3.6 ⁹⁵	10.1 ⁸¹				0.1 ⁸³
JPMorgan SmartRetirementBlend 2020 R6 Callan Target Date 2020 JPMorgan:SR 2020 MF Index	-2.7 ⁴¹	8.6 ⁶⁹								
	-2.6 ³⁰	9.7 ²⁴	0.7 ⁸⁵	2.9 ⁷⁸	4.0 ⁷⁹	10.6 ⁷⁹				0.1 ⁷⁸

Returns:
■ above median
■ third quartile
■ fourth quartile

Risk:
■ below median
■ second quartile
■ first quartile



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

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

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

Passive Options: 09/30/23

Passive Strategies

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Index Funds										
SSgA S&P 500 Index Fund (i) Callan S&P 500 Index MFs S&P 500 Index	-3.3 21	21.6 6	10.1 9	9.9 13	12.2 12	20.9 39		-0.9 17	0.0 76	0.4 13
SSgA Russell 3000 Index Fund (i) CAI Mut Fd: Large Cap Broad Style (Net) Russell 3000 Index	-3.2 57	20.5 54	9.5 45	9.2 43	11.7 48	21.9 54		0.8 2	0.1 100	0.3 35
SSgA World Equity ex-US Index Fund (i) CAI MF: Non-U.S. Equity Style MSCI ACWI x U.S. Index (Net)	-4.0 37	21.3 69	3.9 52	2.8 57	4.9 53	21.3 78		0.2 27	0.9 99	0.1 56
BlackRock Passive US Bd Index Fund (i) Callan Core Bond MFs Blmbg Aggregate	-3.2 71	0.6 76	-5.2 69	0.1 76		5.8 80		-0.1 85	0.2 99	-0.3 83
	-3.2 71	0.6 76	-5.2 69	0.1 75	-0.1 84	5.9 80				-0.3 82

Returns:
■ above median
■ third quartile
■ fourth quartile

Risk:
■ below median
■ second quartile
■ first quartile



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

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

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

(i) – Indexed scoring method used. Green: manager & index ranking differ by less than +/- 10 percentiles; Blue: manager and index ranking differ by +/- 20 percentiles; Gold: manager & index ranking differ by more than 20 percentiles.

Other Options: 09/30/23

Active Equity, Stable Value, and Money Market

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Active and Other Funds										
BlackRock Strategic Completion Fd Callan Real Assets MFs Strategic Completion Custom Index	-2.4 67	1.4 70	3.0 79						0.2 98	
Northern Trust ESG Fund Callan Lg Cap Broad MF MSCI USA ESG	-2.2 24	23.7 38	10.5 36	10.7 19		20.5 82		-1.9 100	0.1 100	0.4 8
International Equity Fund CAI Mut Fd: Non-U.S. Equity Style MSCI ACWI ex US Index	-4.5 43	28.2 26	3.2 58	3.1 50	4.5 63	24.2 30		0.1 48	5.3 61	0.1 52
T. Rowe Price Small Cap CAI Mut Fd: Sm Cap Broad Style Russell 2000 Index	-5.5 59	7.2 81	5.0 59	5.4 30	9.3 30	25.8 88		0.5 13	5.4 90	0.1 22
T. Rowe Price Stable Value Callan Stable Value CT FTSE 3 Mo T-Bill	0.6 46	2.2 35	2.0 13	2.3 3	2.3 1	0.2 82		0.6 5	1.0 6	3.5 5
SSgA Inst Treasury Money Market Callan Money Market Funds FTSE 3 Mo T-Bill	1.3 19	4.5 34	1.7 33	1.6 19	1.4 13	0.9 27		-2.6 55	0.1 92	-0.1 19

Returns:
■ above median
■ third quartile
■ fourth quartile

Risk:
■ below median
■ second quartile
■ first quartile

Risk Quadrant:

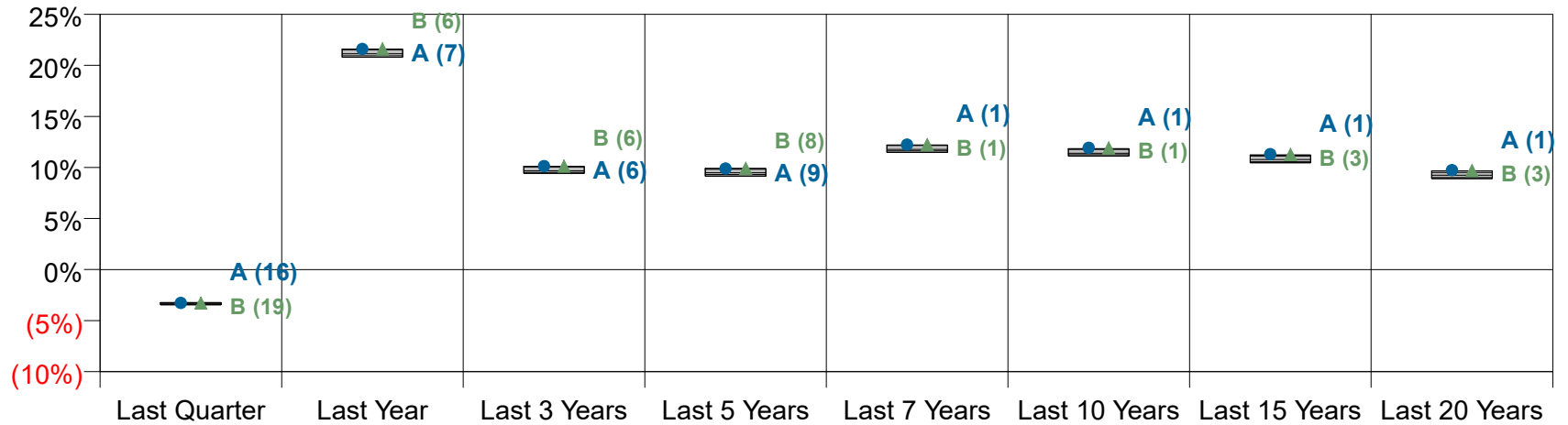

Excess Return Ratio:
■ above median
■ third quartile
■ fourth quartile

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

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

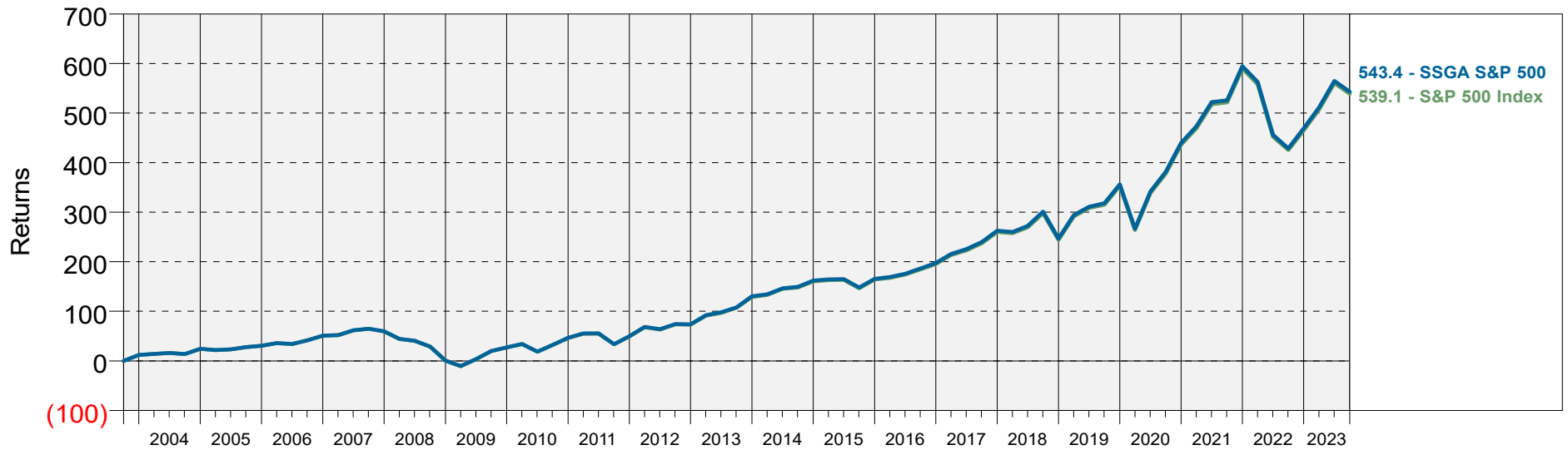
S&P 500 Index Performance

Returns for Periods Ended September 30, 2023 vs Callan S&P 500 Index Mutual Funds



SSGA S&P 500	● A	(3.26)	21.61	10.14	9.90	12.24	11.93	11.32	9.76
S&P 500 Index	▲ B	(3.27)	21.62	10.15	9.92	12.24	11.91	11.28	9.72

Cumulative Returns for 20 Years Ended September 30, 2023

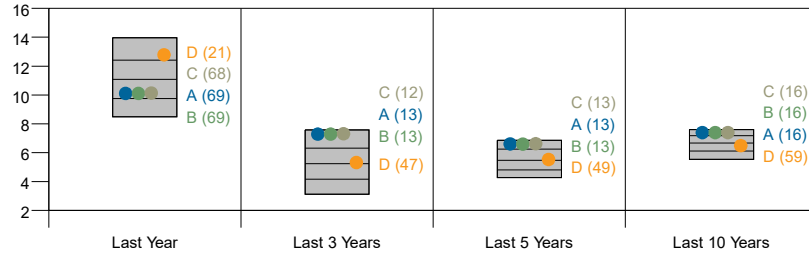


Callan

Pension Plans

PERS, TRS, and JRS Performance Dashboard – September 30, 2023

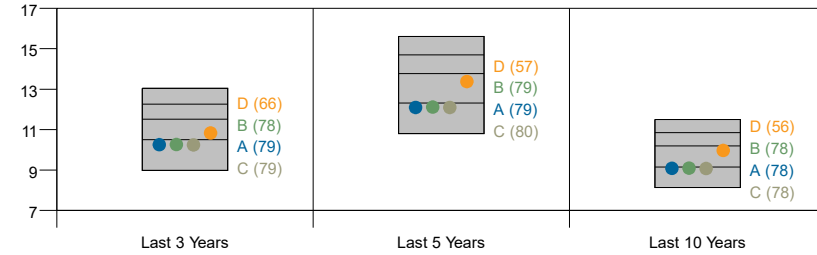
Returns vs Callan Public Fund Sponsor Database



10th Percentile	13.96	7.58	6.86	7.61
25th Percentile	12.42	6.31	6.25	7.18
Median	11.09	5.25	5.48	6.68
75th Percentile	9.75	4.16	4.81	6.12
90th Percentile	8.49	3.13	4.28	5.55

Member Count	329	327	327	317
Employees' Total Plan	10.11	7.30	6.61	7.40
Teachers' Total Plan	10.11	7.29	6.60	7.40
Judicial Total Plan	10.13	7.31	6.62	7.40
Policy Target	12.78	5.32	5.53	6.49

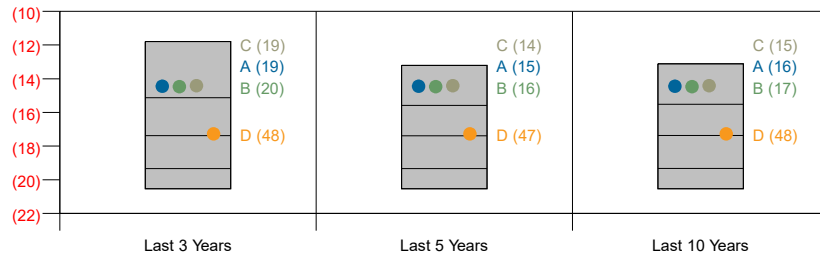
Standard Deviation vs Callan Public Fund Sponsor Database



10th Percentile	13.05	15.62	11.50
25th Percentile	12.26	14.70	10.86
Median	11.52	13.77	10.20
75th Percentile	10.50	12.32	9.15
90th Percentile	8.99	10.81	8.14

Member Count	327	327	317
Employees' Total Plan	10.25	12.10	9.08
Teachers' Total Plan	10.27	12.12	9.09
Judicial Total Plan	10.25	12.10	9.08
Policy Target	10.84	13.38	9.97

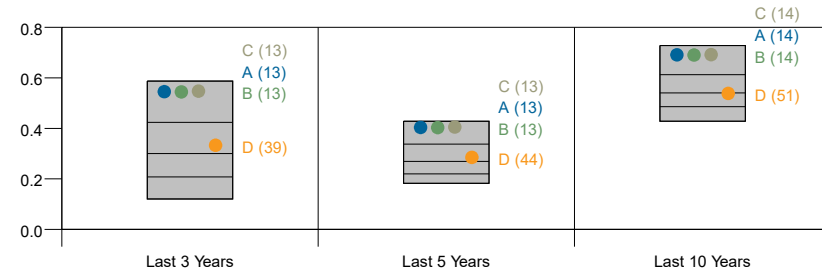
Maximum Drawdown vs Callan Public Fund Sponsor Database



10th Percentile	(11.78)	(13.20)	(13.11)
25th Percentile	(15.13)	(15.58)	(15.51)
Median	(17.38)	(17.39)	(17.36)
75th Percentile	(19.33)	(19.33)	(19.33)
90th Percentile	(20.54)	(20.54)	(20.54)

Member Count	327	327	317
Employees' Total Plan	(14.44)	(14.44)	(14.44)
Teachers' Total Plan	(14.46)	(14.46)	(14.46)
Judicial Total Plan	(14.41)	(14.41)	(14.41)
Policy Target	(17.28)	(17.28)	(17.28)

Sharpe Ratio vs Callan Public Fund Sponsor Database

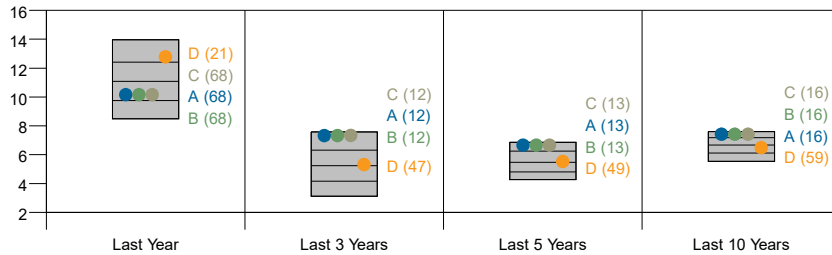


10th Percentile	0.59	0.43	0.73
25th Percentile	0.42	0.34	0.61
Median	0.30	0.27	0.54
75th Percentile	0.21	0.22	0.49
90th Percentile	0.12	0.18	0.43

Member Count	327	327	317
Employees' Total Plan	0.55	0.40	0.69
Teachers' Total Plan	0.54	0.40	0.69
Judicial Total Plan	0.55	0.41	0.69
Policy Target	0.33	0.29	0.54

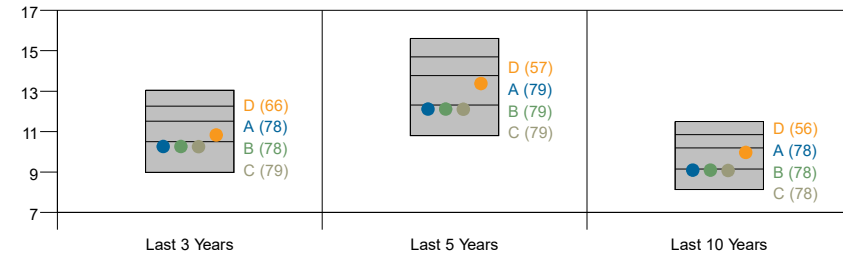
Health Care Plans Performance Dashboard – September 30, 2023

Returns vs Callan Public Fund Sponsor Database



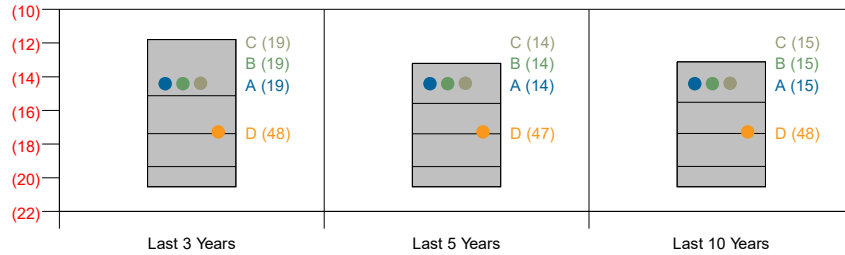
10th Percentile	13.96	7.58	6.86	7.61	
25th Percentile	12.42	6.31	6.25	7.18	
Median	11.09	5.25	5.48	6.68	
75th Percentile	9.75	4.16	4.81	6.12	
90th Percentile	8.49	3.13	4.28	5.55	
Member Count	329	327	327	317	
PERS Health Plan	● A	10.17	7.33	6.66	7.42
TRS Health Plan	● B	10.17	7.33	6.66	7.42
JRS Health Plan	● C	10.17	7.34	6.67	7.43
Policy Target	● D	12.78	5.32	5.53	6.49

Standard Deviation vs Callan Public Fund Sponsor Database



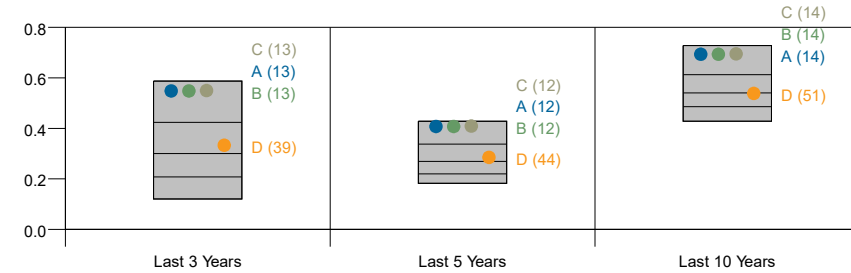
10th Percentile	13.05	15.62	11.50	
25th Percentile	12.26	14.70	10.86	
Median	11.52	13.77	10.20	
75th Percentile	10.50	12.32	9.15	
90th Percentile	8.99	10.81	8.14	
Member Count	327	327	317	
PERS Health Plan	● A	10.27	12.12	9.09
TRS Health Plan	● B	10.27	12.12	9.09
JRS Health Plan	● C	10.26	12.11	9.08
Policy Target	● D	10.84	13.38	9.97

Maximum Drawdown vs Callan Public Fund Sponsor Database



10th Percentile	(11.78)	(13.20)	(13.11)	
25th Percentile	(15.13)	(15.58)	(15.51)	
Median	(17.38)	(17.39)	(17.36)	
75th Percentile	(19.33)	(19.33)	(19.33)	
90th Percentile	(20.54)	(20.54)	(20.54)	
Member Count	327	327	317	
PERS Health Plan	● A	(14.41)	(14.41)	(14.41)
TRS Health Plan	● B	(14.41)	(14.41)	(14.41)
JRS Health Plan	● C	(14.39)	(14.39)	(14.39)
Policy Target	● D	(17.28)	(17.28)	(17.28)

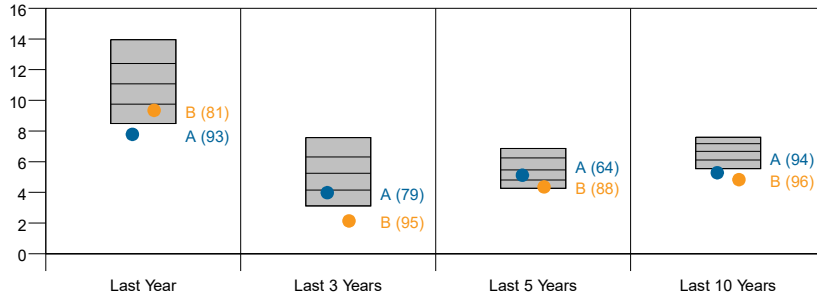
Sharpe Ratio vs Callan Public Fund Sponsor Database



10th Percentile	0.59	0.43	0.73
25th Percentile	0.42	0.34	0.61
Median	0.30	0.27	0.54
75th Percentile	0.21	0.22	0.49
90th Percentile	0.12	0.18	0.43
Member Count	327	327	317
PERS Health Plan	● A	0.55	0.69
TRS Health Plan	● B	0.55	0.69
JRS Health Plan	● C	0.55	0.70
Policy Target	● D	0.33	0.54

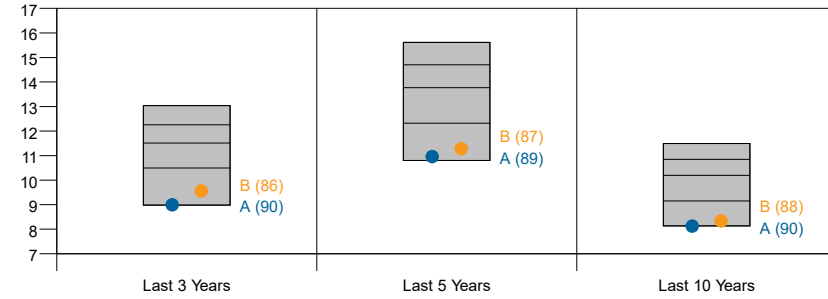
Military Plan Performance Dashboard – September 30, 2023

Returns vs Callan Public Fund Sponsor Database



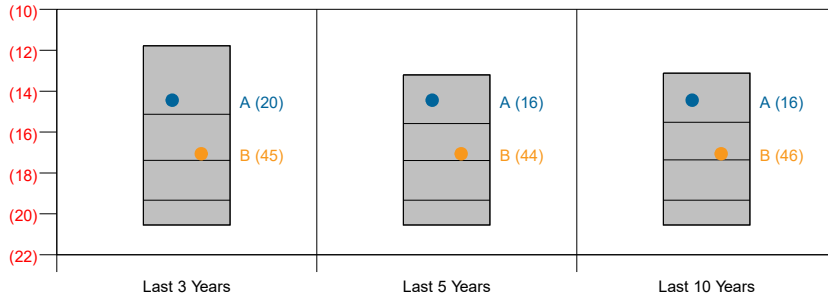
	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	13.96	7.58	6.86	7.61
25th Percentile	12.42	6.31	6.25	7.18
Median	11.09	5.25	5.48	6.68
75th Percentile	9.75	4.16	4.81	6.12
90th Percentile	8.49	3.13	4.28	5.55
Member Count	329	327	327	317
Military Total Plan	● A			
Military Policy Target	● B			

Standard Deviation vs Callan Public Fund Sponsor Database



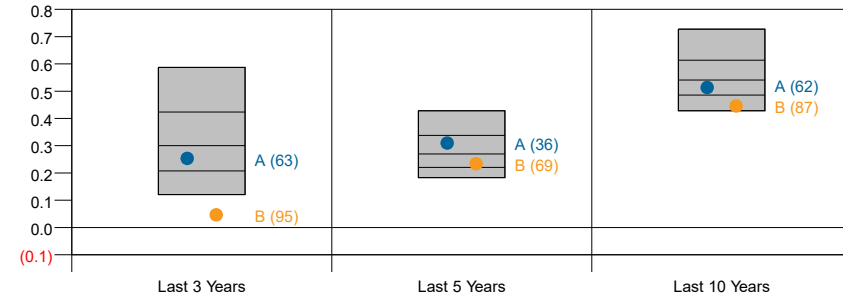
	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	13.05	15.62	11.50
25th Percentile	12.26	14.70	10.86
Median	11.52	13.77	10.20
75th Percentile	10.50	12.32	9.15
90th Percentile	8.99	10.81	8.14
Member Count	327	327	317
Military Total Plan	● A		
Military Policy Target	● B		

Maximum Drawdown vs Callan Public Fund Sponsor Database



	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(11.78)	(13.20)	(13.11)
25th Percentile	(15.13)	(15.58)	(15.51)
Median	(17.38)	(17.39)	(17.36)
75th Percentile	(19.33)	(19.33)	(19.33)
90th Percentile	(20.54)	(20.54)	(20.54)
Member Count	327	327	317
Military Total Plan	● A		
Military Policy Target	● B		

Sharpe Ratio vs Callan Public Fund Sponsor Database

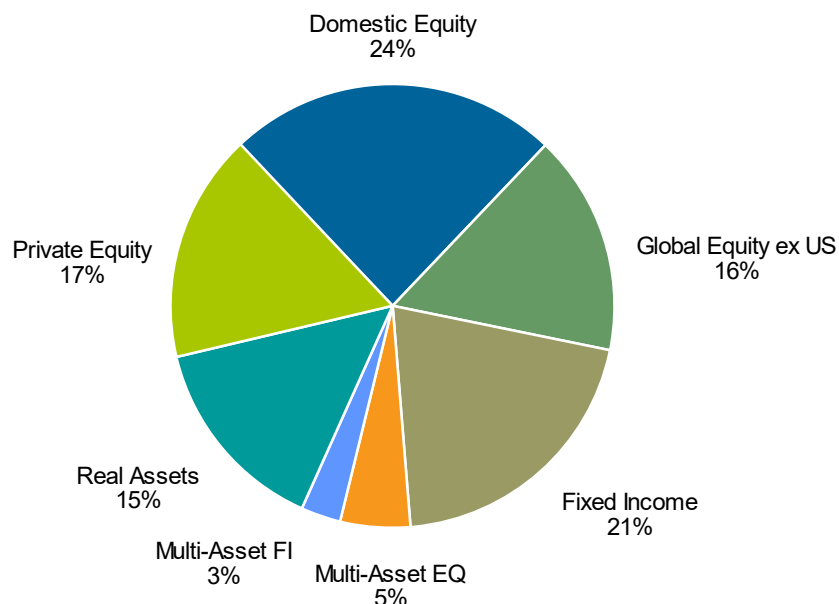


	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.59	0.43	0.73
25th Percentile	0.42	0.34	0.61
Median	0.30	0.27	0.54
75th Percentile	0.21	0.22	0.49
90th Percentile	0.12	0.18	0.43
Member Count	327	327	317
Military Total Plan	● A		
Military Policy Target	● B		

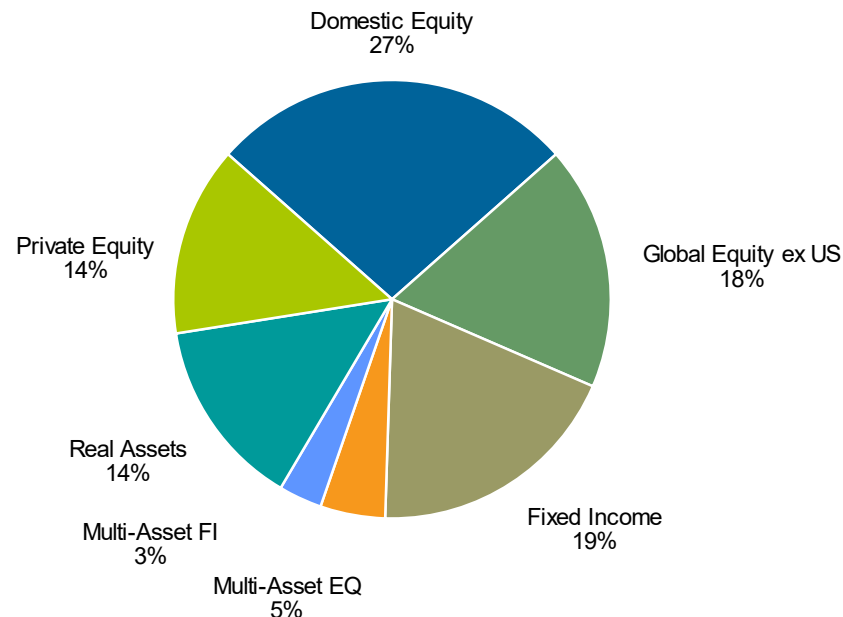
Asset Allocation – Public Employees’ Retirement System

Quarter Ending September 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equity	2,599,469	24.2%	27.0%	(2.8%)	(304,610)
Global Equity ex US	1,729,740	16.1%	18.0%	(1.9%)	(206,313)
Fixed Income	2,206,033	20.5%	19.0%	1.5%	162,421
Multi-Asset EQ	551,151	5.1%	4.8%	0.3%	34,871
Multi-Asset FI	306,842	2.9%	3.2%	(0.3%)	(37,345)
Real Assets	1,570,626	14.6%	14.0%	0.6%	64,807
Private Equity	1,791,987	16.7%	14.0%	2.7%	286,168
Total	10,755,848	100.0%	100.0%		

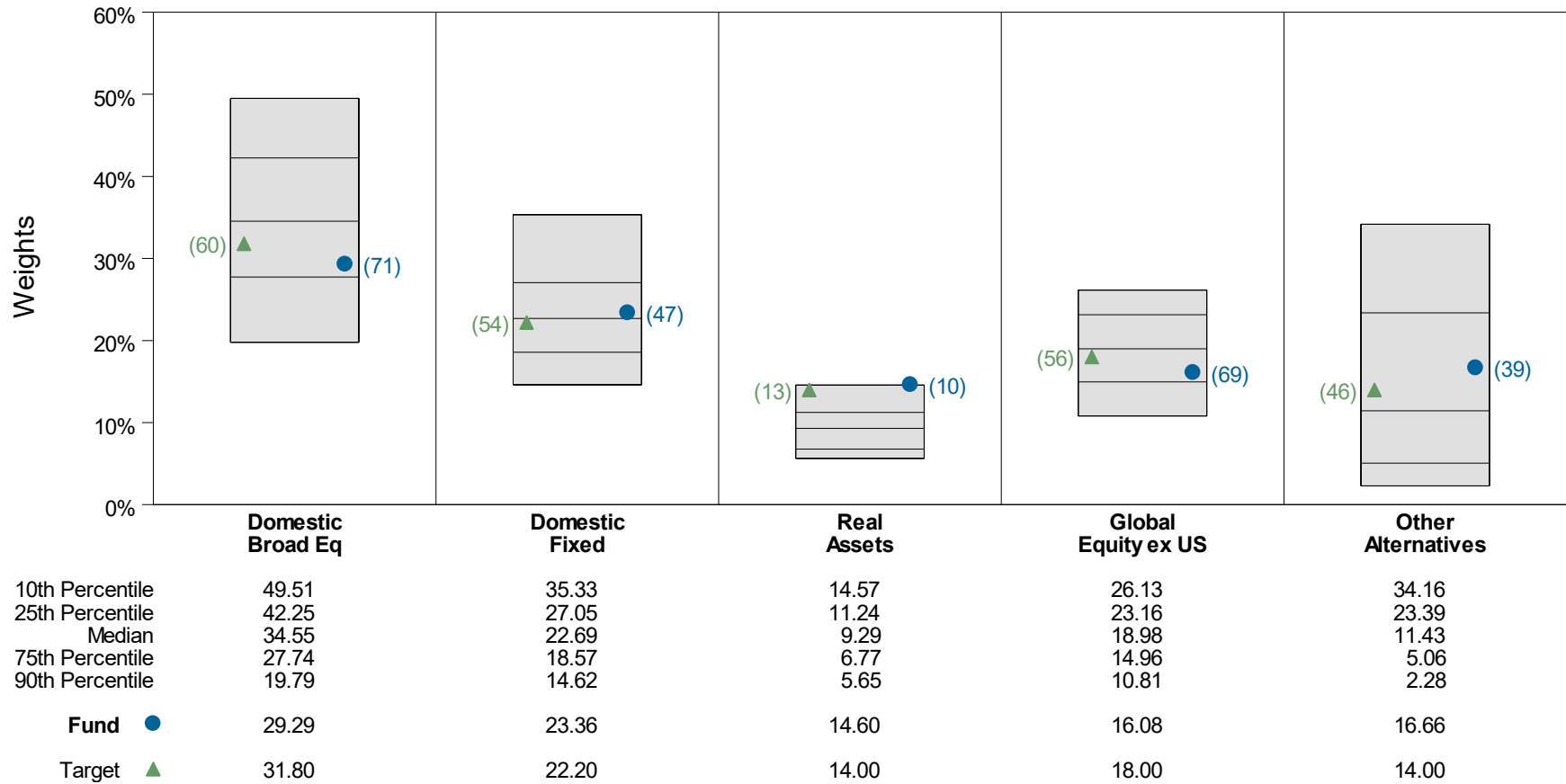
PERS is used as illustrative throughout the presentation.

The other plans exhibit modest variations from strategic target allocations.

Asset Allocation vs. Public Funds (PERS)

Callan Public Fund Database

Asset Class Weights vs Callan Public Fund Sponsor Database



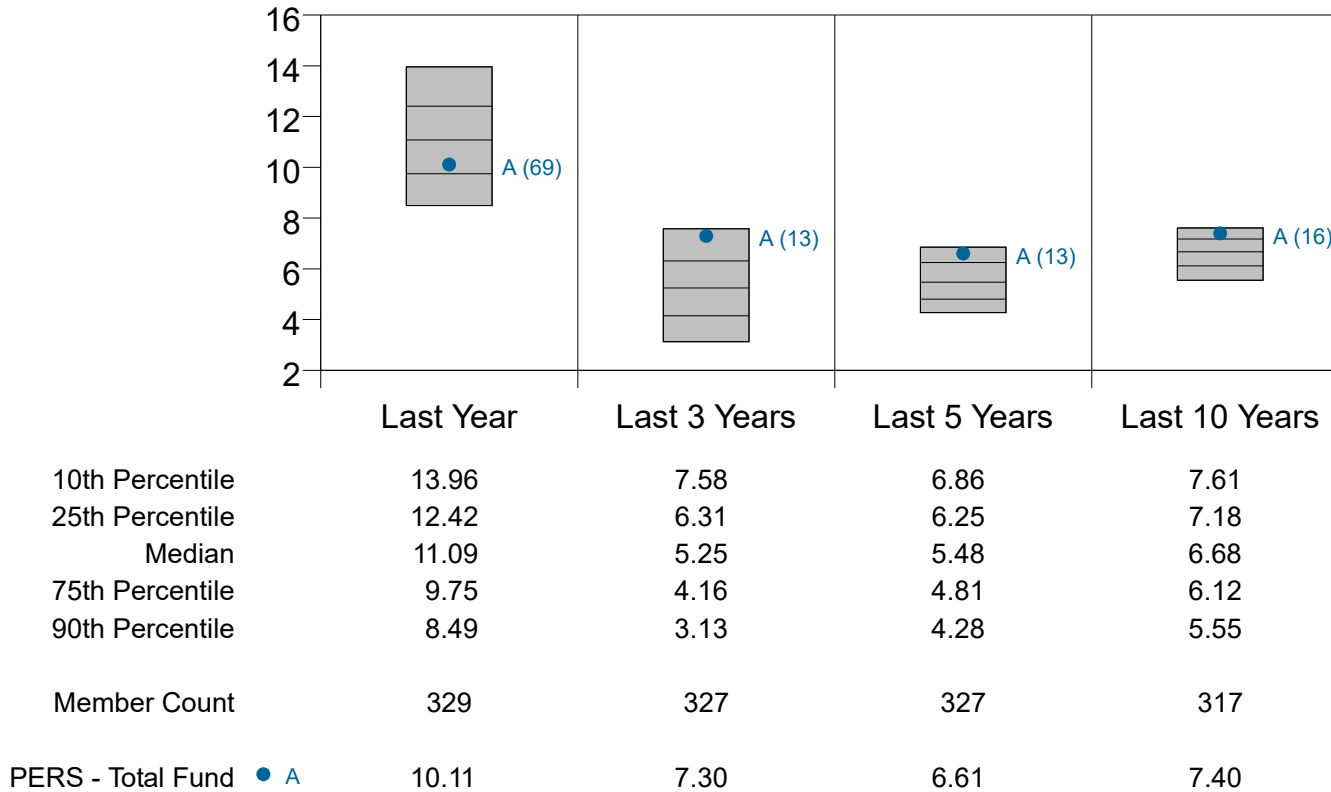
- Asset class allocations near targets after the asset allocation update and associated rebalancing.
- Weightings to real assets and alternatives are relatively high in comparison to other public funds.

Notes: Real Assets includes Private Real Estate, REITs, Farmland, Timber, Energy, and Infrastructure. Other Alternatives represents private equity.

Total Fund Return vs Public Funds (PERS)

Callan Public Fund Database

Gross of Fee Returns
for Periods Ended September 30, 2023
Group: Callan Public Fund Sponsor Database

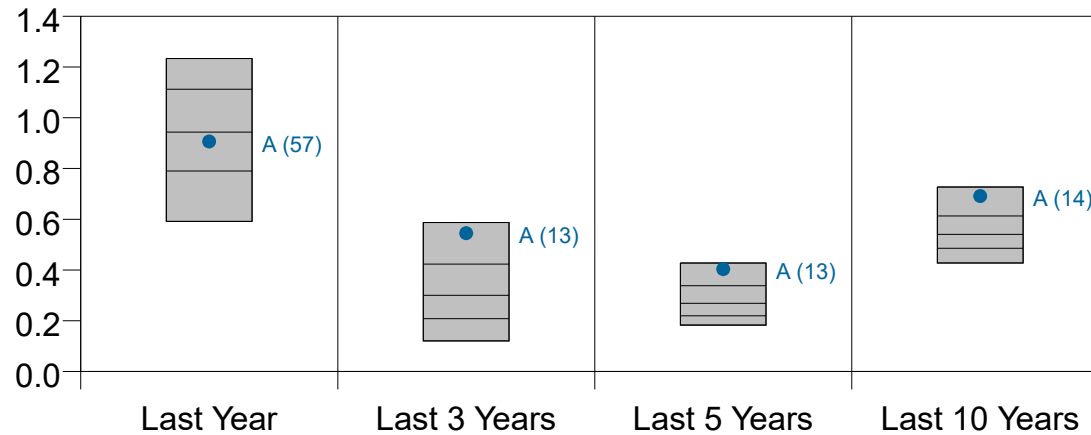


- Despite the recent change to the asset allocation, longer-term performance reflects ARMB's prior orientation toward capital growth as opposed to income generation.
- Performance was above the Public Funds median for the three-, five-, and ten-year periods.

Total Fund Sharpe Ratio Rankings vs Public Funds (PERS)

Callan Public Fund Database

Gross of Fee Sharpe Ratio
for Periods Ended September 30, 2023
Group: Callan Public Fund Sponsor Database



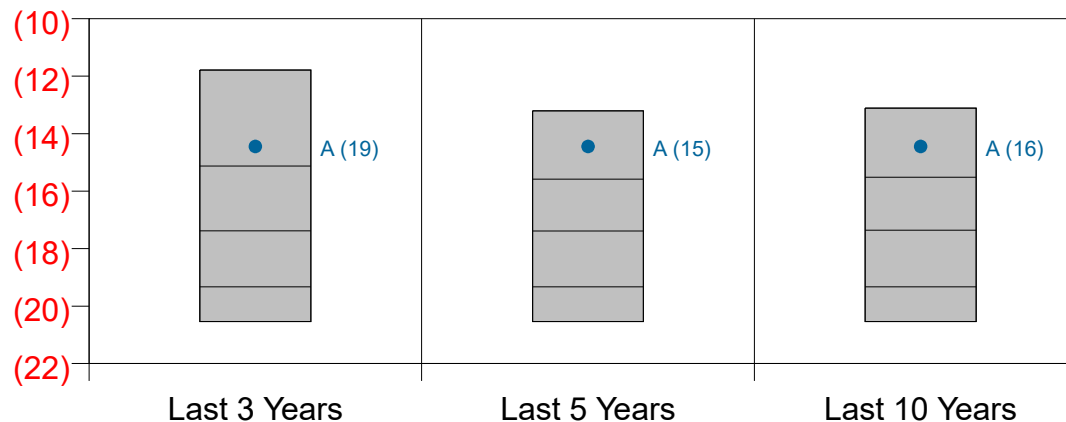
	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.23	0.59	0.43	0.73
25th Percentile	1.11	0.42	0.34	0.61
Median	0.94	0.30	0.27	0.54
75th Percentile	0.79	0.21	0.22	0.49
90th Percentile	0.59	0.12	0.18	0.43
Member Count	329	327	327	317
PERS - Total Fund ● A	0.91	0.55	0.40	0.69

- “Sharpe ratio” is a risk-adjusted measure of excess return above the risk-free rate.
- ARMB’s risk-adjusted return (Sharpe ratio) was above the Public Funds median for the three-, five-, and ten-year periods.

Total Maximum Drawdown Rankings vs Public Funds (PERS)

Callan Public Fund Database

Gross of Fee Maximum Drawdown
for Periods Ended September 30, 2023
Group: Callan Public Fund Sponsor Database



	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(11.78)	(13.20)	(13.11)
25th Percentile	(15.13)	(15.58)	(15.51)
Median	(17.38)	(17.39)	(17.36)
75th Percentile	(19.33)	(19.33)	(19.33)
90th Percentile	(20.54)	(20.54)	(20.54)

Member Count	327	327	317
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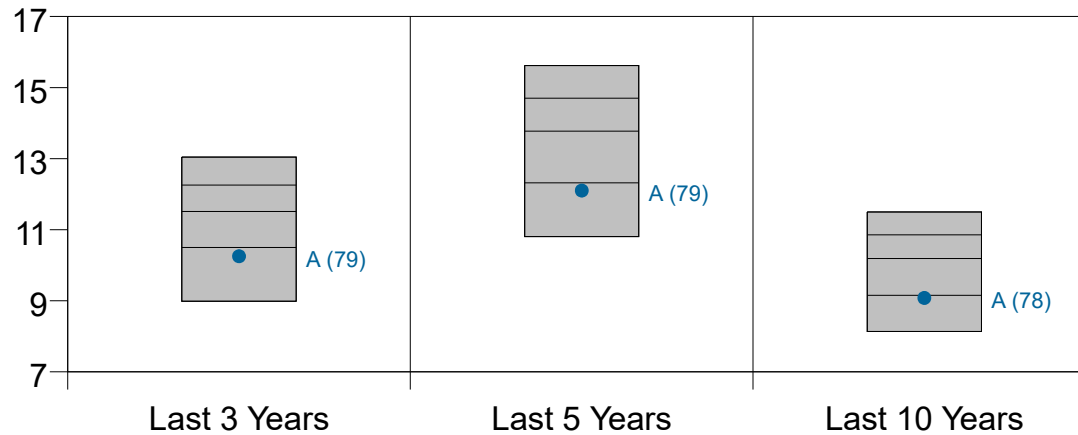
PERS - Total Fund ● A	(14.44)	(14.44)	(14.44)
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- “Maximum drawdown” is a measure of the largest loss from peak to trough in each period.
- Lower rankings reflect larger drawdowns (i.e. bigger losses). ARMB’s drawdown rankings for all periods have reflected better than average drawdowns (i.e. lower losses) and have improved over time.
- The drawdown experienced in the first quarter of 2020 is the largest of the last 10 years.

Standard Deviation Ranking vs Public Funds (PERS)

Callan Public Fund Database

Gross of Fee Standard Deviation
for Periods Ended September 30, 2023
Group: Callan Public Fund Sponsor Database



	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	13.05	15.62	11.50
25th Percentile	12.26	14.70	10.86
Median	11.52	13.77	10.20
75th Percentile	10.50	12.32	9.15
90th Percentile	8.99	10.81	8.14
Member Count	327	327	317
PERS - Total Fund ● A	10.25	12.10	9.08

- “Standard deviation” measures variability of returns. It is one measurement of investment risk.
- Less standard deviation results in lower rankings. A lower ranking of standard deviation suggests lower variability.
- ARMB’s portfolio diversification has resulted in volatility that is lower than median compared to peers.

PERS Performance Attribution – 3rd Quarter 2023 & Trailing Year

Relative Attribution Effects for Quarter ended September 30, 2023

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	25%	27%	(3.16%)	(3.25%)	0.02%	0.03%	0.06%
Fixed-Income	19%	19%	(2.78%)	(3.00%)	0.04%	(0.01%)	0.04%
Multi-Asset	8%	8%	(2.16%)	(3.33%)	0.10%	(0.00%)	0.09%
Real Assets	15%	14%	(1.23%)	(1.36%)	0.02%	0.00%	0.02%
Global Equity ex US	17%	18%	(2.83%)	(3.49%)	0.11%	0.02%	0.13%
Private Equity	16%	14%	1.56%	5.63%	(0.66%)	0.16%	(0.50%)
Total			(1.90%)	(1.75%)	+ (0.36%)	+ 0.21%	(0.16%)

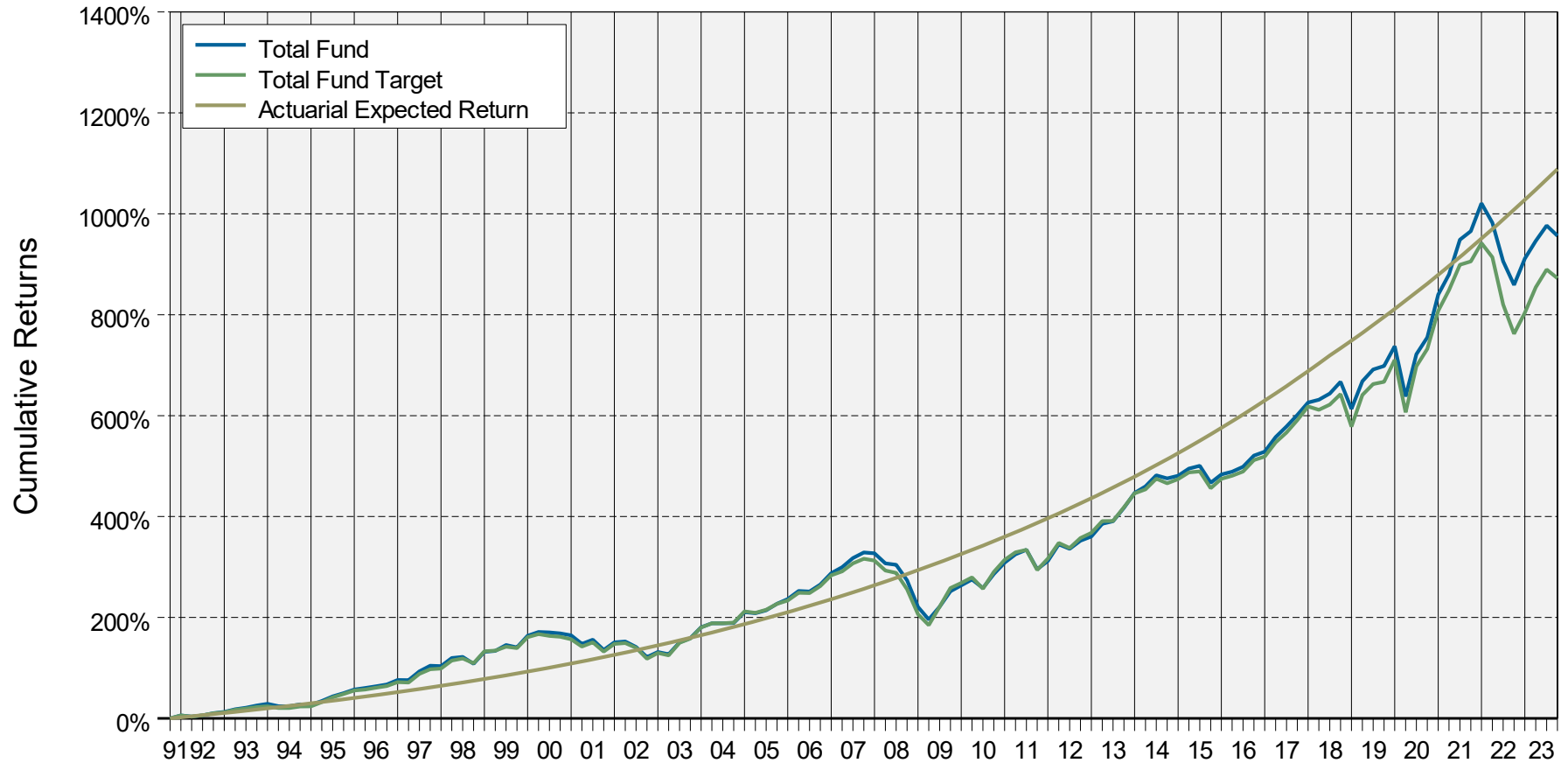
One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	25%	27%	19.91%	20.46%	(0.14%)	(0.17%)	(0.31%)
Fixed-Income	19%	19%	1.65%	0.84%	0.16%	0.05%	0.21%
Multi-Asset	8%	8%	5.15%	12.09%	(0.59%)	0.00%	(0.59%)
Real Assets	15%	14%	0.59%	0.74%	(0.04%)	(0.14%)	(0.19%)
Global Equity ex US	17%	18%	23.74%	20.19%	0.57%	(0.14%)	0.43%
Private Equity	16%	14%	3.80%	17.08%	(2.26%)	0.03%	(2.23%)
Total			10.11%	12.79%	+ (2.31%)	+ (0.37%)	(2.68%)

Current Quarter Target = 27.0% Russell 3000 Index, 18.0% Blmbg Aggregate, 18.0% MSCI ACWI xUS IMI, 4.9% NCREIF NFI-ODCE Val Wt Nt lagged 3 months, 4.8% MSCI ACWI IMI, 4.7% Russell 2000 Index lagged 3 months, 4.7% MSCI EAFE lagged 3 months, 4.7% S&P 500 Index lagged 3 months, 3.5% UBS Farmland Index (MB) lagged 3 months, 3.2% Blmbg Aggregate, 2.1% CPI All Urban Cons lagged 3 months+4.0%, 2.1% FTSE NAREIT All Eq Index, 1.4% NCREIF Timberland Index lagged 3 months and 0.9% 3-month Treasury Bill.

PERS Long-Term Total Fund Performance as of 09/30/2023

Cumulative Returns Actual vs Target

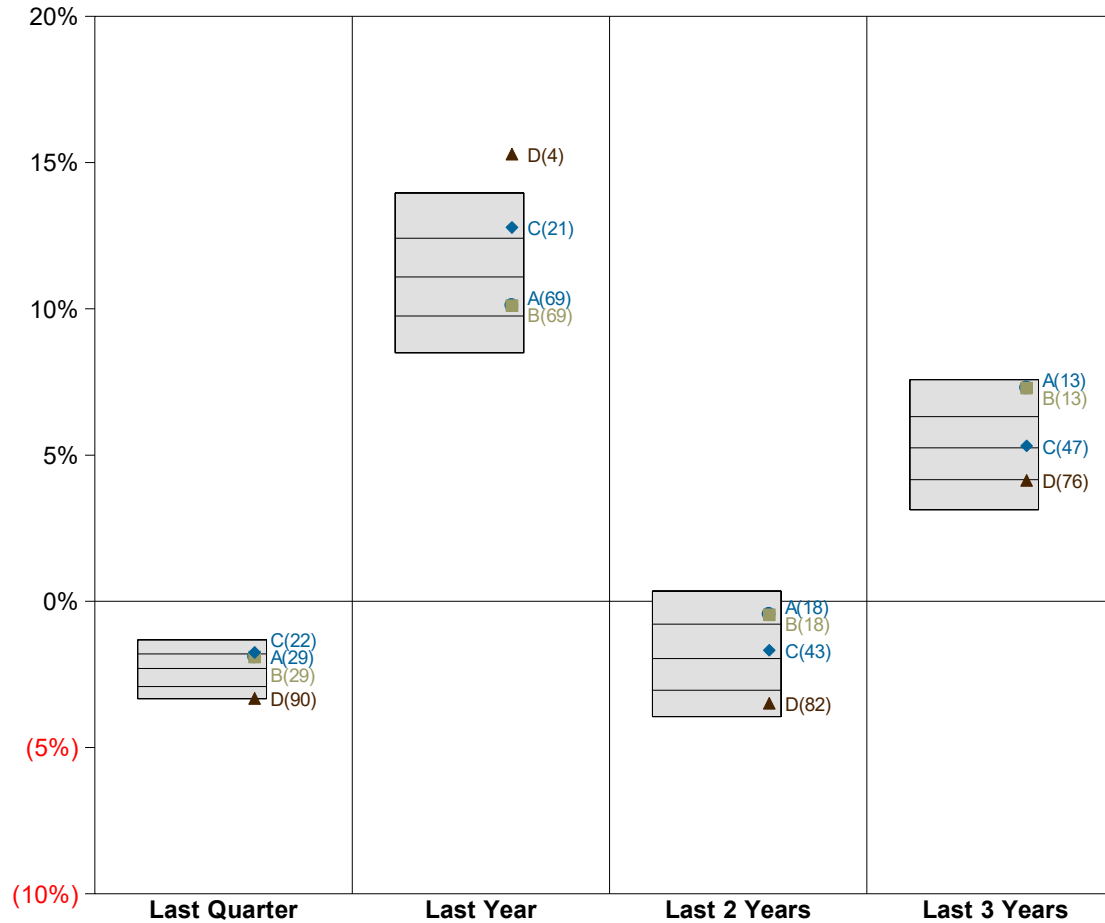


- Each Fund has two targets: the asset allocation policy return and the actuarial return.
- Total Fund returns continue to closely track the strategic allocation target.
- Market correction setbacks in 3Q15, 4Q18, 1Q20, and 2022 have hindered the Total Fund's progress toward closing the gap versus the actuarial return following the Global Financial Crisis of 2008/2009.

Historical Fiscal Year Actuarial Rate of Return: 1986-1991 9.00%, 1992-1993 8.75%, 1994-1995 8.00% 1996-2009 8.25%, 2010-2018 8.00%, 2019-2022 7.38%, 2023-Present 7.25%

Annualized Total Fund Returns as of 09/30/23

Callan Public Fund Database



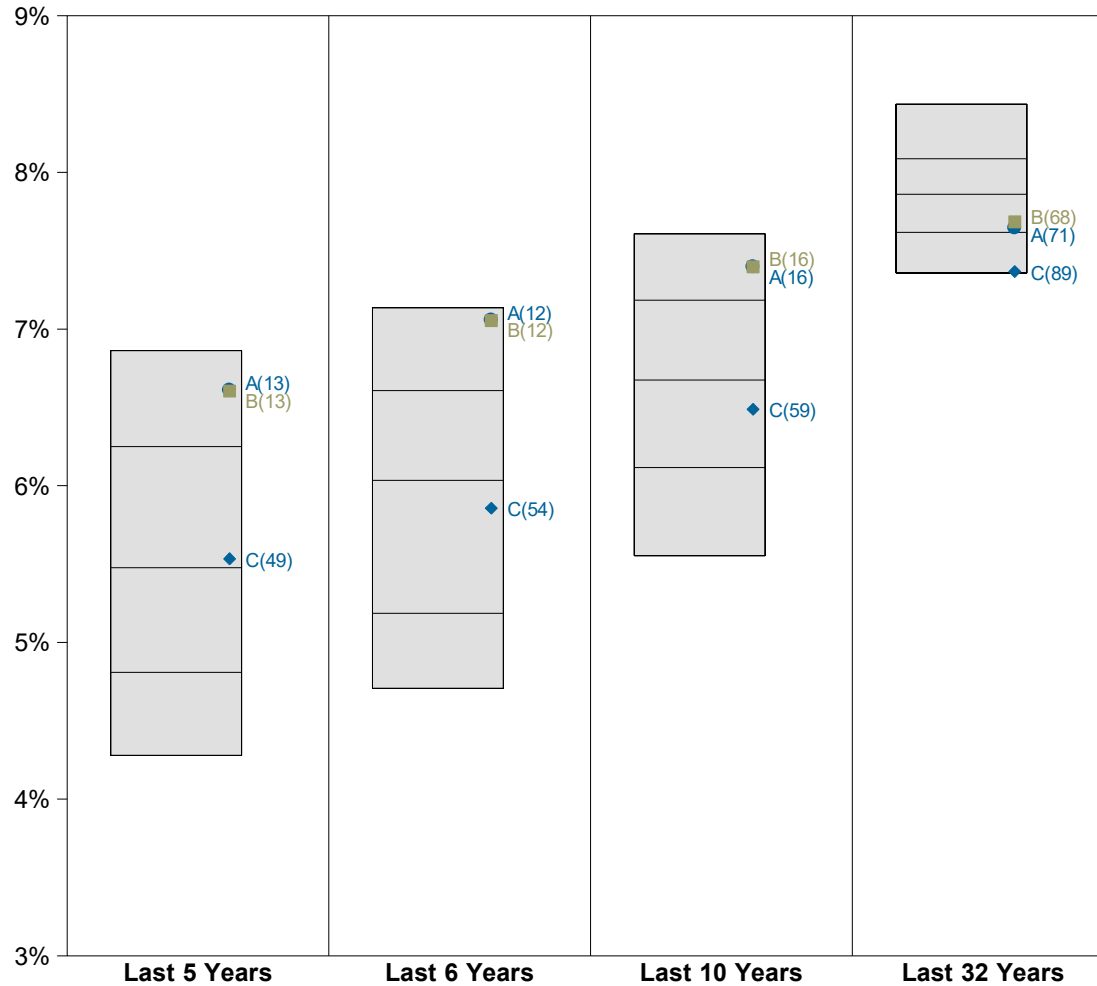
- PERS and TRS have outperformed their target for the last two-year and three-year periods.

	Last Quarter	Last Year	Last 2 Years	Last 3 Years
10th Percentile	(1.32)	13.96	0.35	7.58
25th Percentile	(1.80)	12.42	(0.78)	6.31
Median	(2.30)	11.09	(1.96)	5.25
75th Percentile	(2.92)	9.75	(3.04)	4.16
90th Percentile	(3.33)	8.49	(3.94)	3.13
PERS Total Plan ● A	(1.90)	10.11	(0.45)	7.30
TRS Total Plan ■ B	(1.91)	10.11	(0.46)	7.29
Target Index ◆ C	(1.75)	12.78	(1.67)	5.32
Public Market Proxy ▲ D	(3.32)	15.29	(3.49)	4.13

The Public Market Proxy consists of 45% Russell 3000 Index, 30% MSCI ACWI ex US IMI (Net), and 25% Bloomberg Aggregate Index.

Longer-Term Total Fund Returns as of 09/30/23

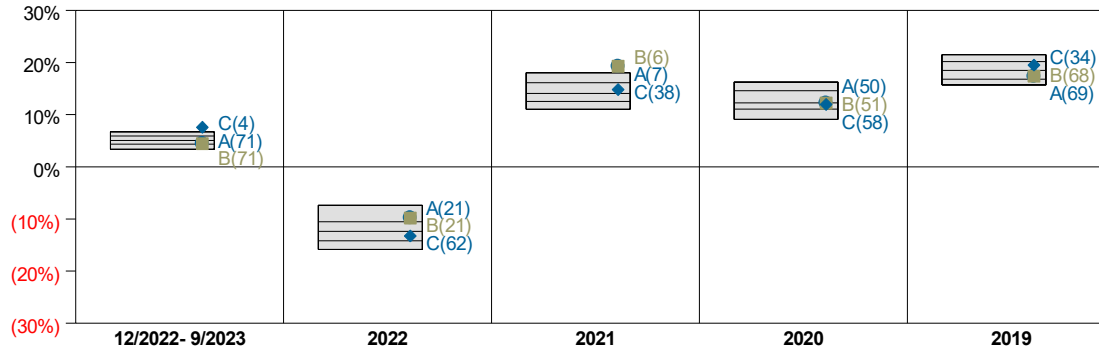
Callan Public Fund Database



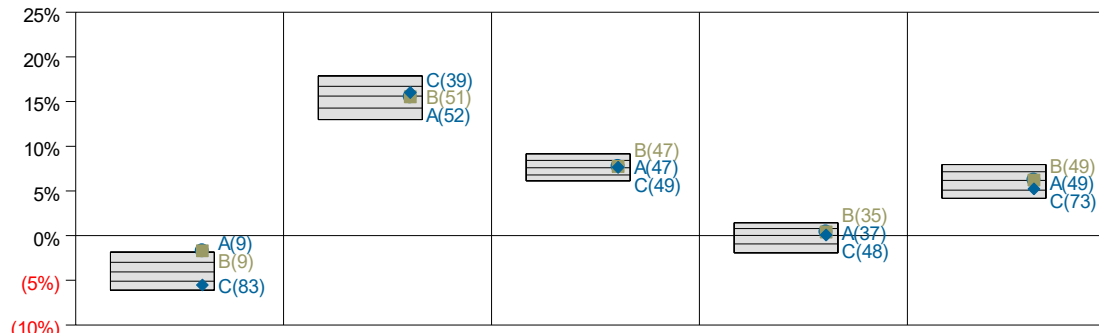
- Five-, six-, and ten-year performance is above target and median.
- 32-year return for PERS surpassed the target by 27 basis points.

Calendar Period Total Fund Performance

Callan Public Fund Database



	12/2022- 9/2023	2022	2021	2020	2019
10th Percentile	6.72	(7.36)	18.03	16.25	21.48
25th Percentile	5.92	(10.53)	16.12	14.61	20.18
Median	5.05	(12.38)	14.07	12.25	18.51
75th Percentile	4.35	(14.19)	12.55	11.07	16.83
90th Percentile	3.38	(15.83)	11.04	9.09	15.71
PERS Total Plan ● A	4.45	(9.80)	19.27	12.23	17.34
TRS Total Plan ■ B	4.45	(9.83)	19.28	12.21	17.36
Target Index ◆ C	7.57	(13.27)	14.81	11.97	19.50



	2018	2017	2016	2015	2014
10th Percentile	(1.83)	17.87	9.16	1.43	7.95
25th Percentile	(2.97)	16.71	8.42	0.79	7.14
Median	(4.05)	15.62	7.60	0.02	6.18
75th Percentile	(5.11)	14.28	6.79	(0.94)	5.09
90th Percentile	(6.11)	12.99	6.12	(1.93)	4.18
PERS Total Plan ● A	(1.70)	15.52	7.74	0.40	6.22
TRS Total Plan ■ B	(1.70)	15.54	7.74	0.41	6.22
Target Index ◆ C	(5.53)	16.03	7.64	0.08	5.24

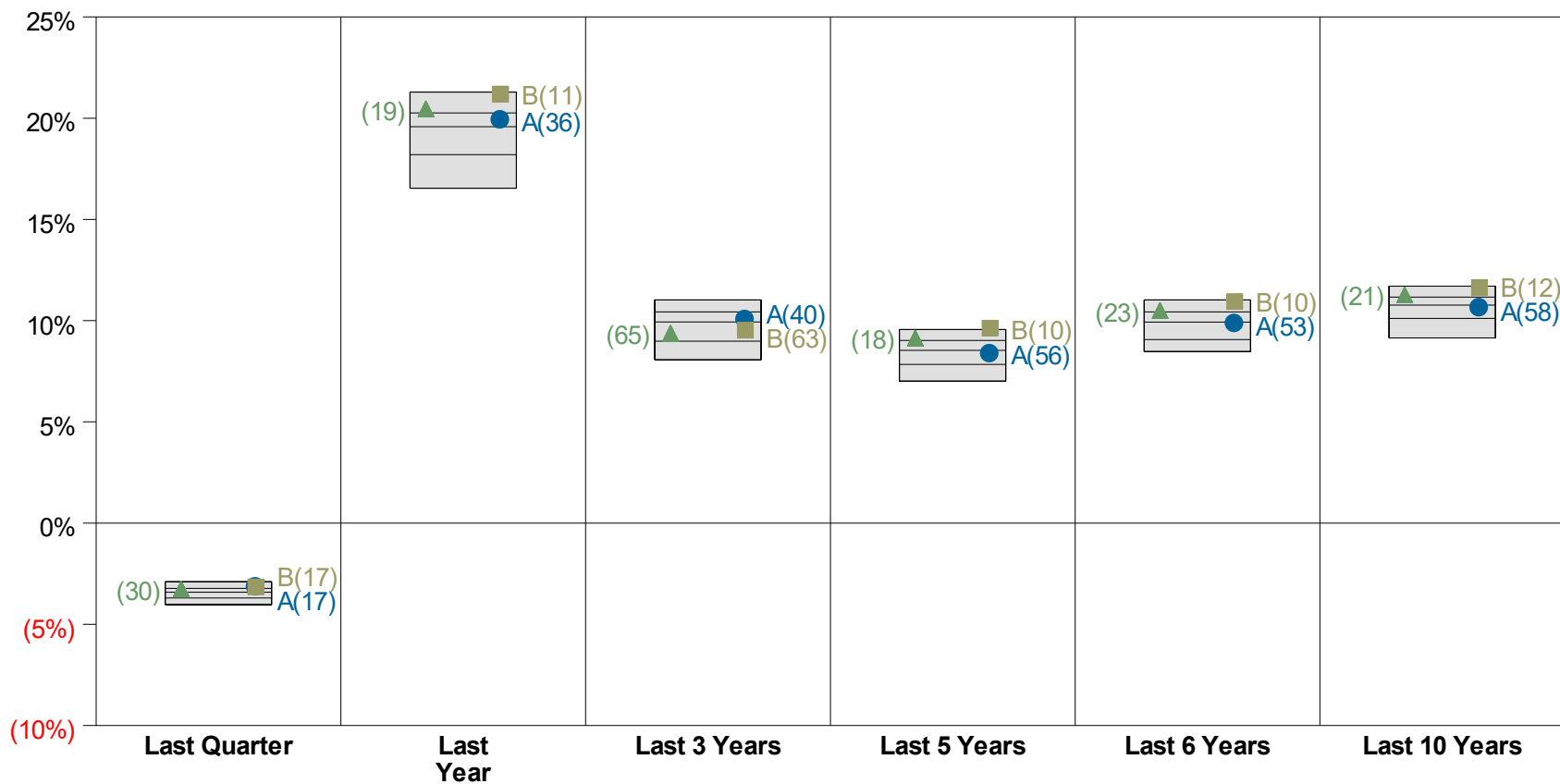
- PERS and TRS rank near or above median in eight of the ten periods shown.
- Peer group range of returns during 2016, 2015, and 2014 were very tight.
- In the three periods with negative Public Fund returns (2022, 2018, and 2015), ARMB's results ranked well above median in the Public Fund universe.

Callan

Pension Plan – Asset Class Performance

Total Domestic Equity through 09/30/23

Performance vs Public Fund - Domestic Equity (Gross)



10th Percentile	(2.90)	21.29	11.03	9.57	11.03	11.71
25th Percentile	(3.22)	20.26	10.44	9.02	10.44	11.16
Median	(3.41)	19.58	9.94	8.53	9.93	10.77
75th Percentile	(3.69)	18.20	8.98	7.84	9.07	10.11
90th Percentile	(4.03)	16.54	8.07	7.02	8.48	9.15
Domestic Equity Pool	● A					
Russell 1000 Index	■ B					
Russell 3000 Index	▲					

Domestic Equity Component Returns

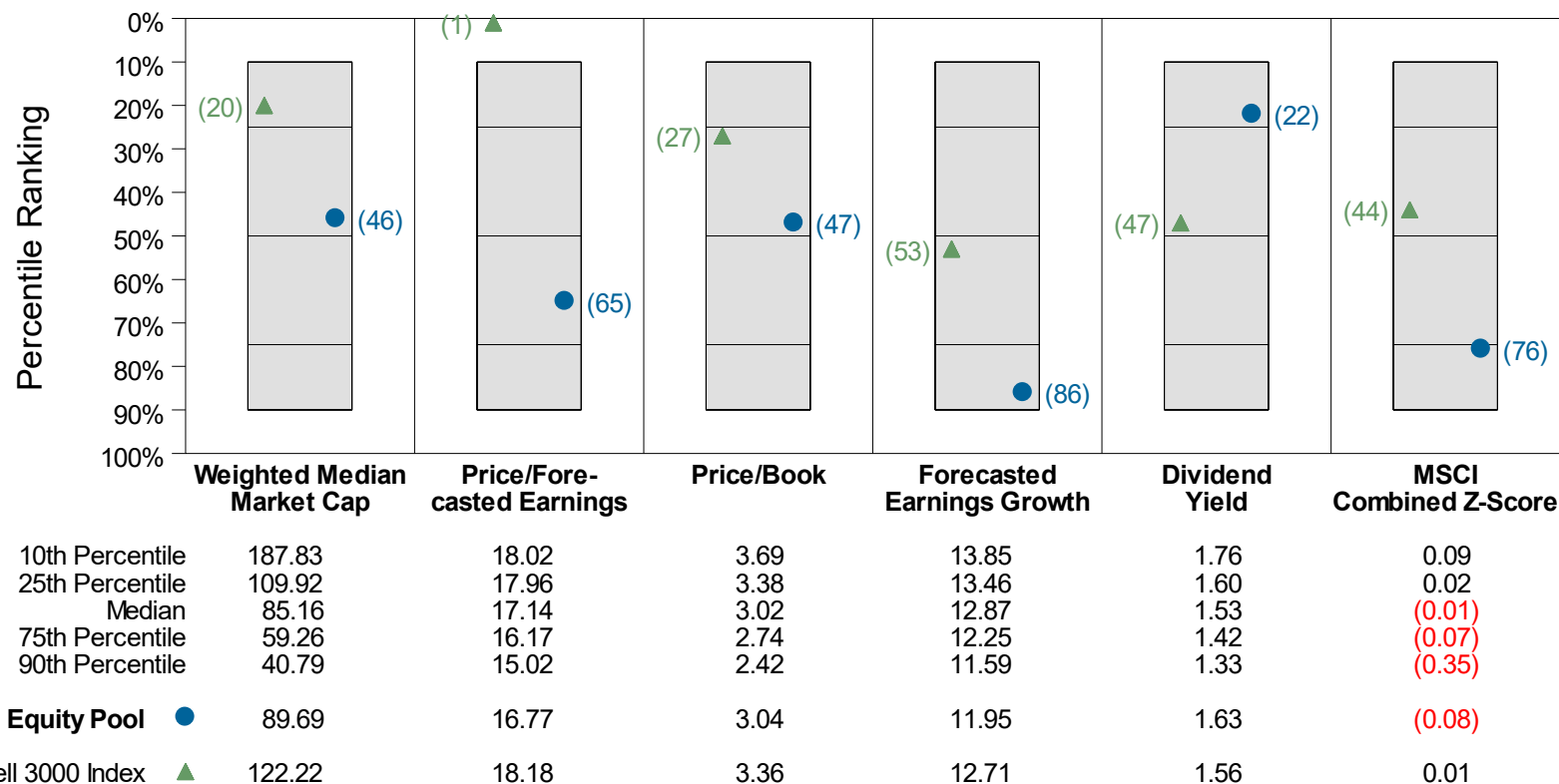
Returns for Periods Ended September 30, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Total Dom Equity Pool	(3.16%)	19.91%	10.05%	8.36%	10.63%
Russell 3000 Index	(3.25%)	20.46%	9.38%	9.14%	11.28%
Large Cap Managers	(3.00%)	20.86%	9.84%	8.87%	11.15%
Russell 1000 Index	(3.15%)	21.19%	9.53%	9.63%	11.63%
Small Cap Managers	(4.89%)	10.23%	11.94%	3.90%	7.76%
Russell 2000 Index	(5.13%)	8.93%	7.16%	2.40%	6.65%

- The large cap composite trailed its benchmark (the Russell 1000 Index) for the last 1-, 5-, and 10-year periods and outpaced its benchmark over the last quarter and trailing 3-year period.
- The small cap composite outperformed its benchmark (the Russell 2000 Index) over all periods shown.

Domestic Equity Portfolio Characteristics

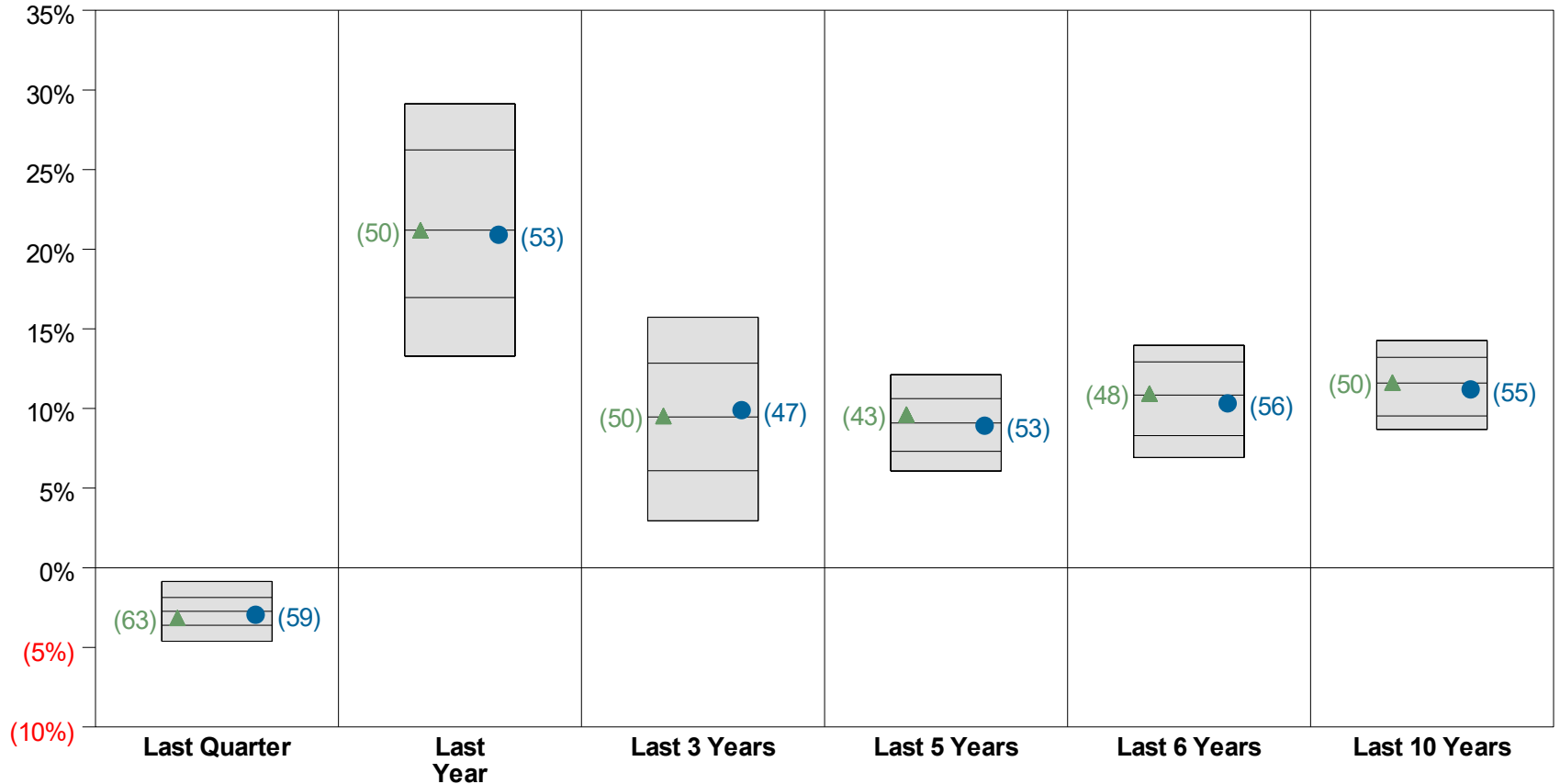
Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of September 30, 2023



- ARMB’s overall domestic equity portfolio’s weighted median market capitalization is lower than the index but slightly above the median of public funds (first column).
- Overall, ARMB’s domestic equity portfolio tilts decidedly “value” versus peers and the index (last column on right).
 - “MSCI Combined Z-Score” measures Growth and Value characteristics of individual stocks within managers’ portfolios.
 - A low Z-Score rank (i.e.– the dot appears towards the top of the floating bar) indicates a Growth bias.
 - A high Z-Score rank (i.e. – the dot appears towards the bottom of the floating bar) indicates a Value bias.

Large Cap Domestic Equity through 09/30/23

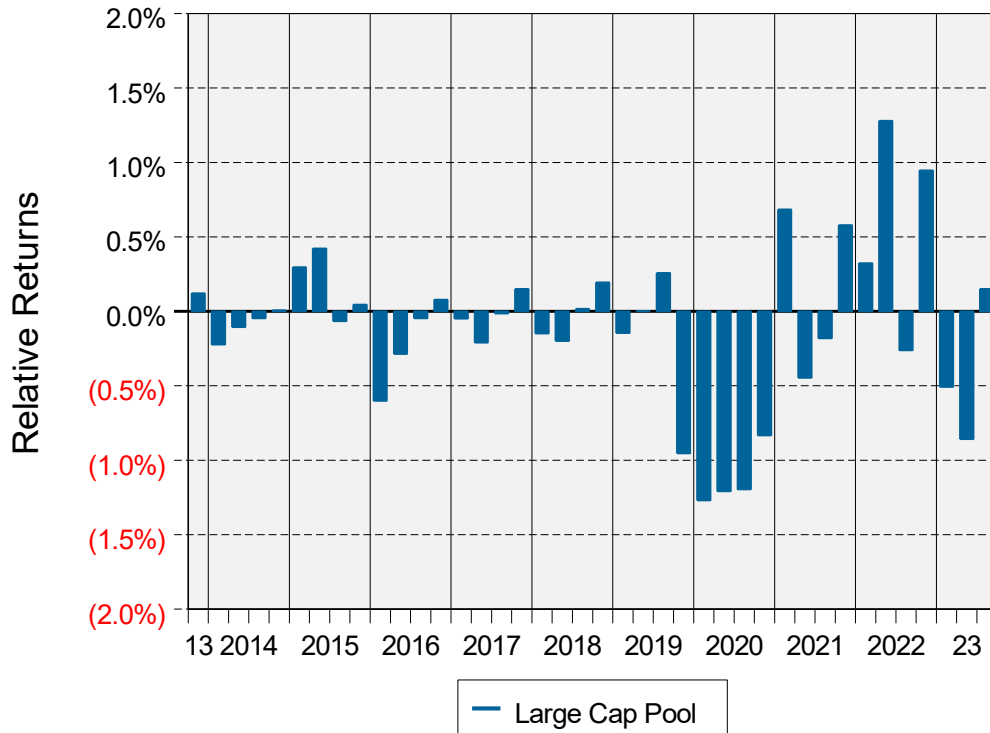
Performance vs Callan Large Capitalization (Gross)



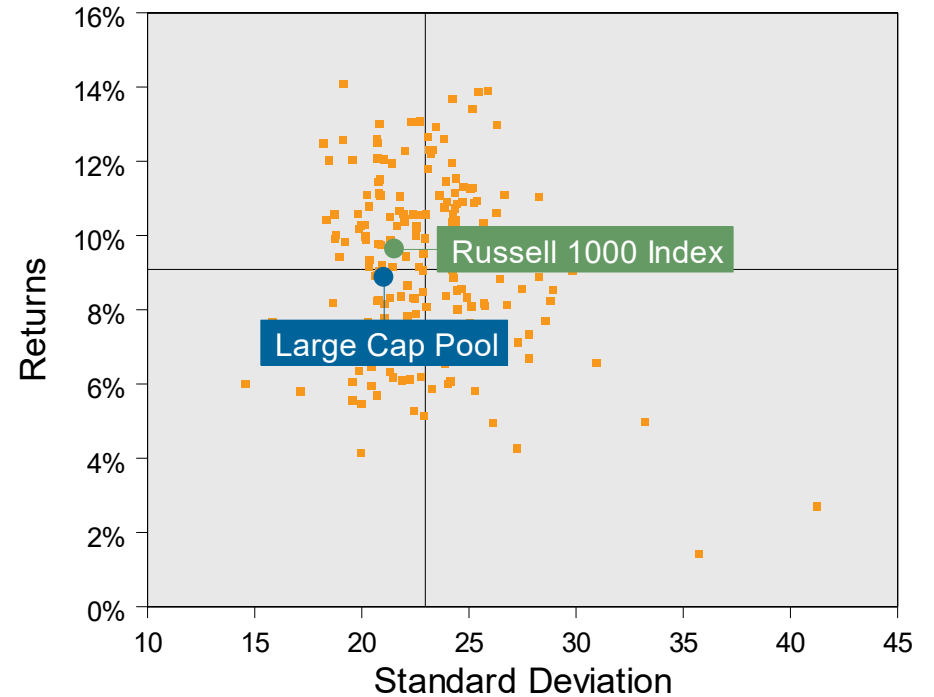
10th Percentile	(0.86)	29.13	15.72	12.12	13.96	14.27
25th Percentile	(1.87)	26.23	12.84	10.62	12.92	13.20
Median	(2.73)	21.20	9.47	9.09	10.84	11.59
75th Percentile	(3.61)	16.96	6.09	7.31	8.30	9.53
90th Percentile	(4.62)	13.28	2.95	6.08	6.92	8.69
Large Cap Pool ●	(3.00)	20.86	9.84	8.87	10.27	11.15
Russell 1000 Index ▲	(3.15)	21.19	9.53	9.63	10.94	11.63

Large Cap Domestic Equity as of 09/30/23

Relative Return vs Russell 1000 Index



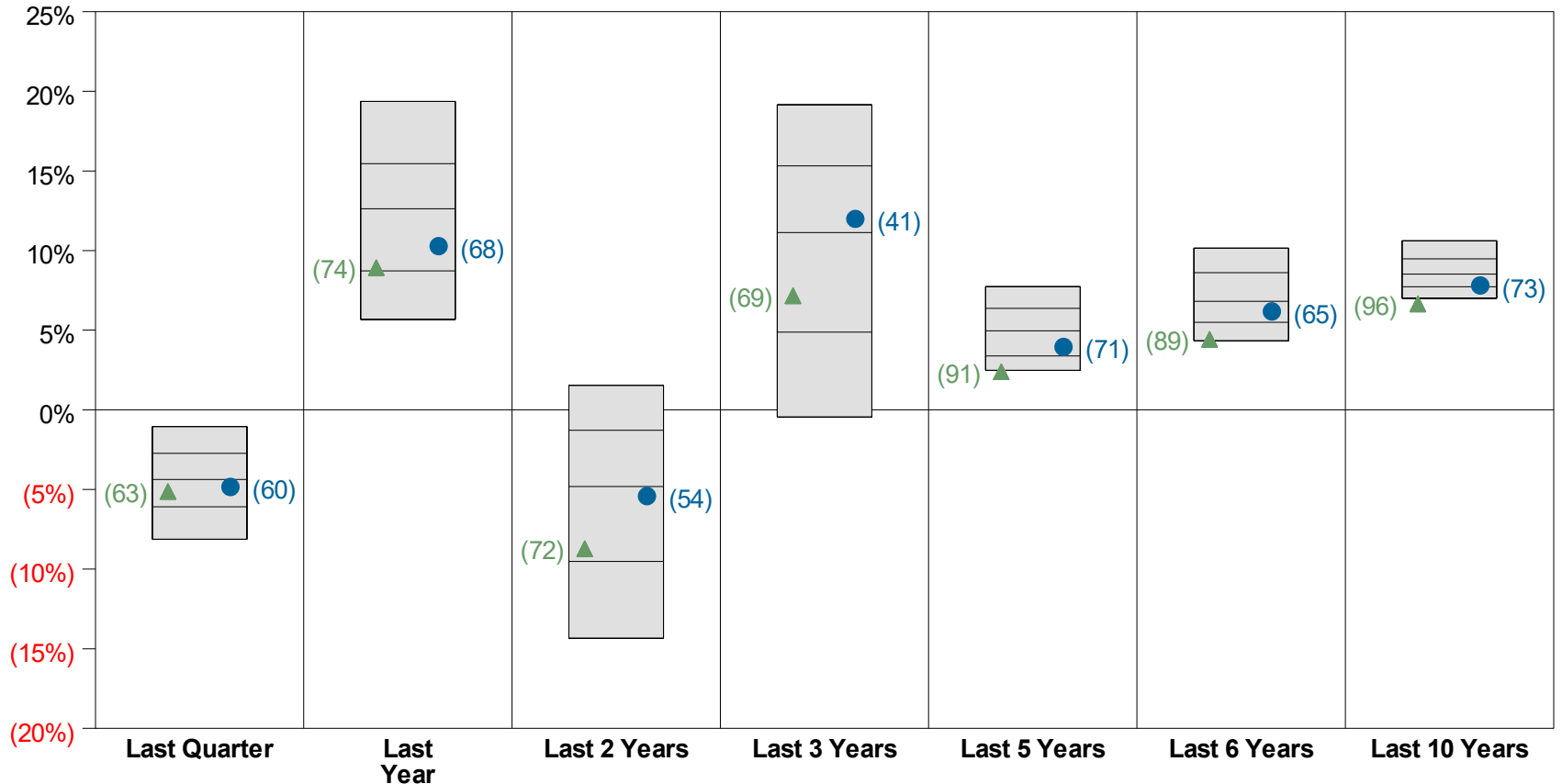
Callan Large Capitalization (Gross) Annualized Five Year Risk vs Return



- Large Cap Domestic Equity returns outperformed the Russell 1000 index by 15bps in the third quarter of 2023.
- Long-term performance exhibits market-like returns with similar risk.
- Underperformance vs. the Russell 1000 Index in 4Q19 through 4Q20 was driven by Scientific Beta, which trailed the broad benchmark by between 2% and 4% in each of those quarters.
- Passive implementation also detracted as the S&P 900 Index trailed the Russell 1000 Index by 1.1% in 2Q20, 0.8% in 3Q20, and 0.9% in 4Q20.

Small Cap Domestic Equity through 09/30/23

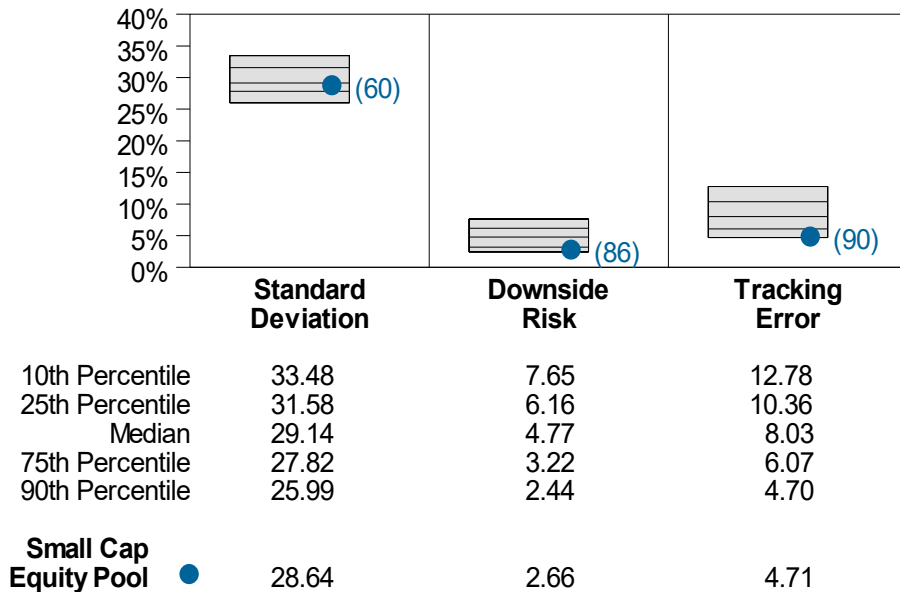
Performance vs Callan Small Capitalization (Gross)



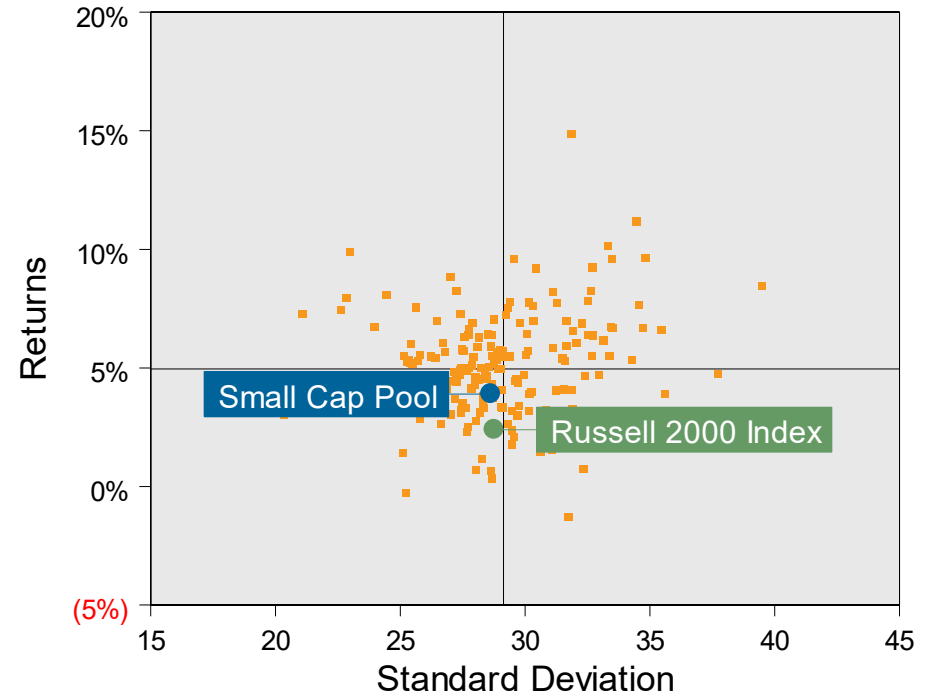
10th Percentile	(1.06)	19.38	1.54	19.16	7.74	10.15	10.61
25th Percentile	(2.73)	15.46	(1.28)	15.32	6.37	8.61	9.48
Median	(4.37)	12.62	(4.82)	11.13	4.96	6.81	8.52
75th Percentile	(6.09)	8.73	(9.52)	4.88	3.38	5.49	7.73
90th Percentile	(8.12)	5.67	(14.34)	(0.46)	2.47	4.33	7.00
Small Cap Pool	● (4.89)	10.23	(5.47)	11.94	3.90	6.13	7.76
Russell 2000 Index	▲ (5.13)	8.93	(8.71)	7.16	2.40	4.43	6.65

Small Cap Domestic Equity through 09/30/23

Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended September 30, 2023



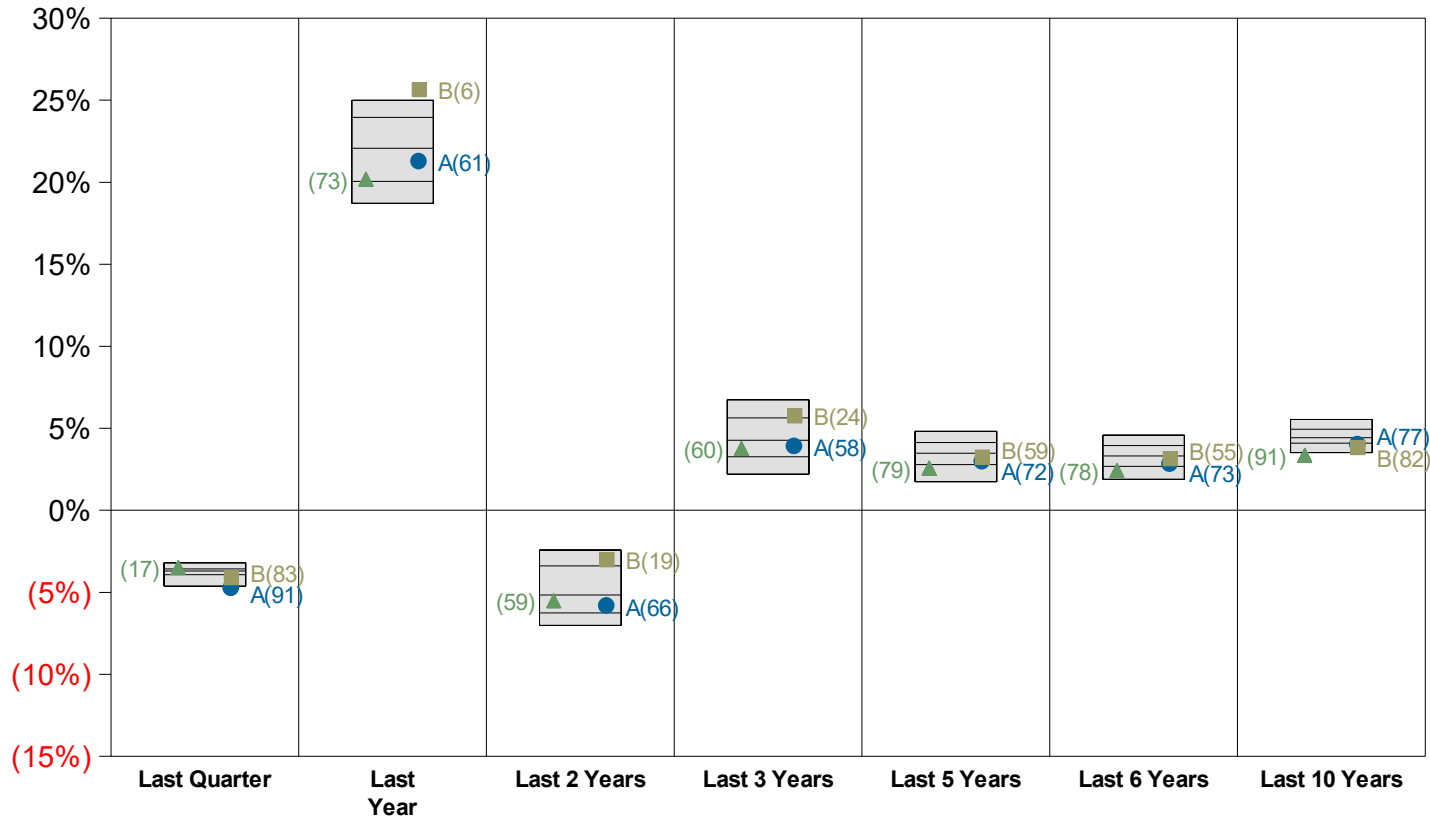
Callan Small Capitalization (Gross) Annualized Five Year Risk vs Return



- The five-year risk statistics of standard deviation, downside risk, and tracking error compare favorably versus the peer group of small cap managers.
- Over this period, the S&P Small Cap 600 Index has outperformed the Russell 2000 benchmark with similar risk.

Global Equity ex-US through 09/30/23

Performance vs Public Fund - International Equity (Gross)

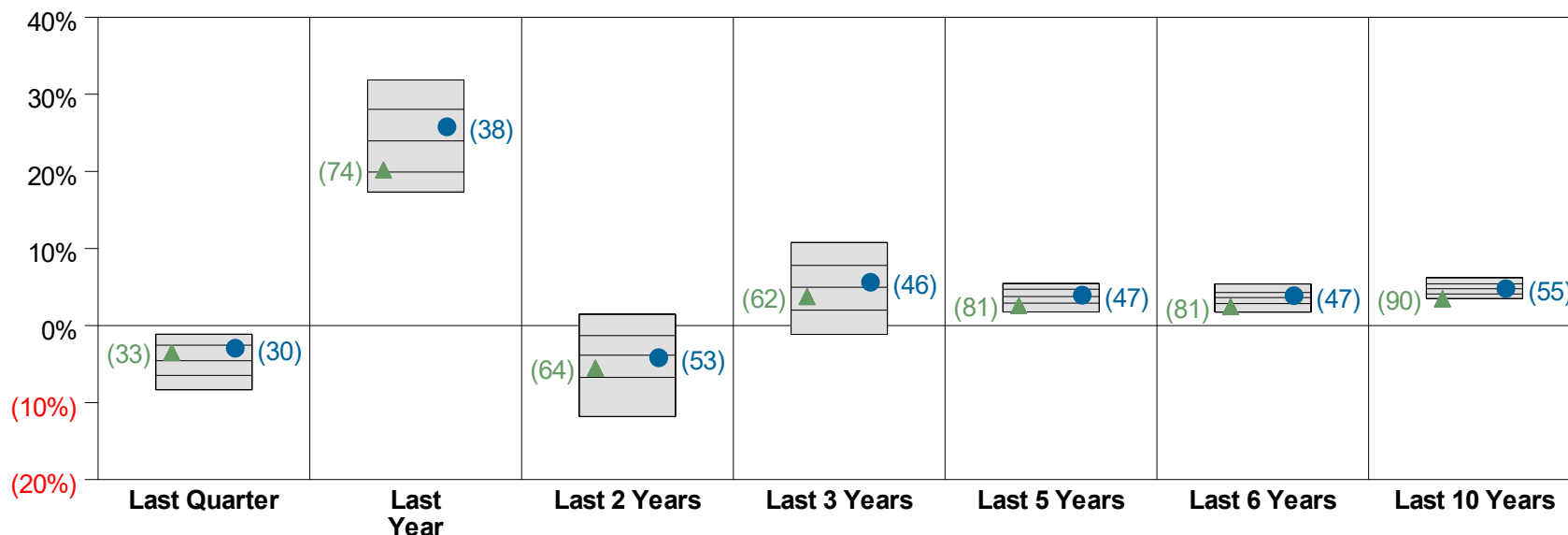


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	(3.20)	24.99	(2.42)	6.74	4.81	4.58	5.54
25th Percentile	(3.57)	23.95	(3.39)	5.63	4.13	3.95	4.94
Median	(3.70)	22.07	(5.17)	4.27	3.48	3.31	4.42
75th Percentile	(3.92)	20.06	(6.25)	3.27	2.79	2.68	4.09
90th Percentile	(4.62)	18.72	(7.02)	2.20	1.75	1.89	3.52
Global Equity ex-US MSCI	● A (4.77)	21.24	(5.84)	3.88	2.95	2.80	3.99
EAFE Index	■ B (4.11)	25.65	(3.01)	5.75	3.24	3.15	3.82
Int'l Equity Target	▲ (3.49)	20.19	(5.51)	3.77	2.57	2.44	3.36

The Int'l Equity Target currently consists of MSCI ACWI ex U.S. IMI.

International Equity ex Emerging Markets through 09/30/23

Performance vs Callan Non-US Equity (Gross)



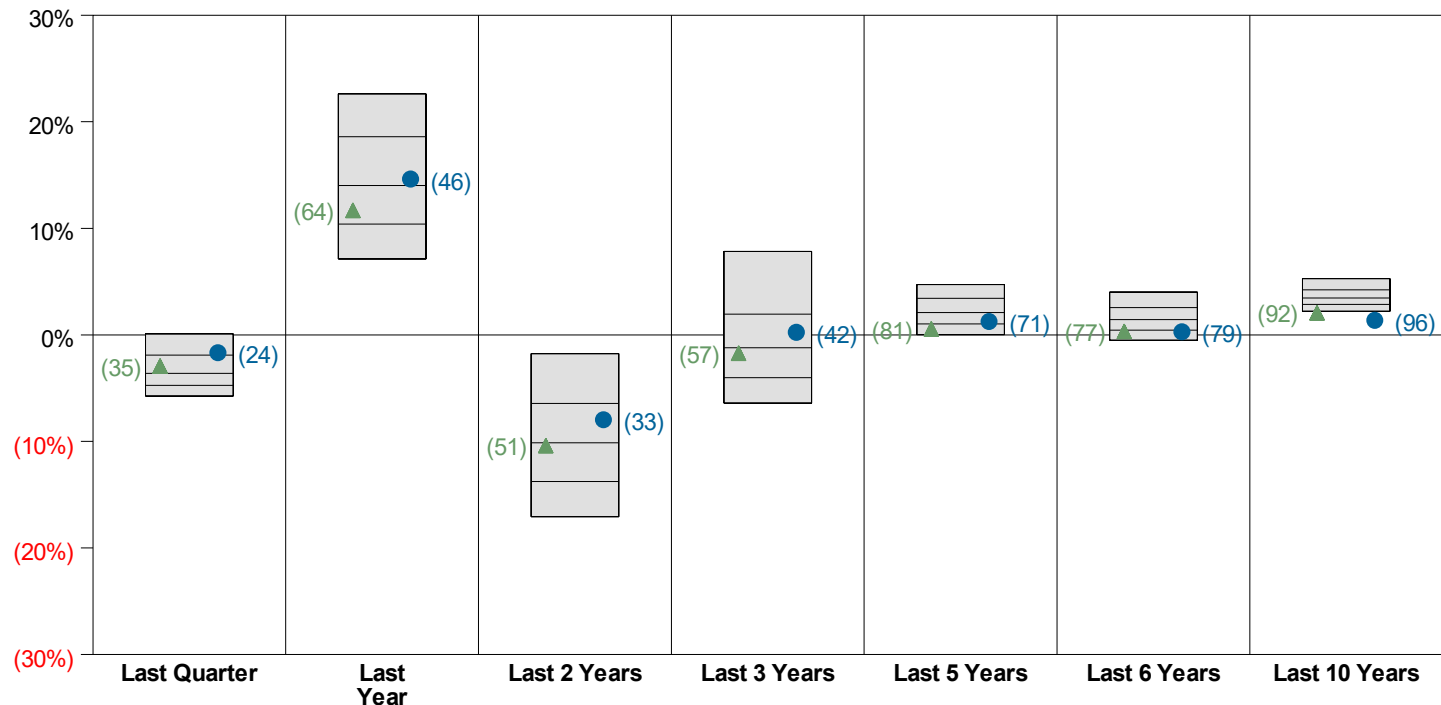
10th Percentile	(1.13)	31.87	1.48	10.76	5.45	5.40	6.22
25th Percentile	(2.56)	28.05	(1.29)	7.80	4.72	4.29	5.41
Median	(4.58)	23.96	(3.86)	4.97	3.76	3.65	4.76
75th Percentile	(6.47)	19.93	(6.72)	2.00	2.92	2.84	4.09
90th Percentile	(8.34)	17.31	(11.79)	(1.17)	1.76	1.72	3.49
Int'l Equity Pool (ex Emerging. Mkt)	● (3.07)	25.67	(4.28)	5.50	3.84	3.75	4.68
MSCI ACWI xUS IMI	▲ (3.49)	20.19	(5.51)	3.77	2.57	2.44	3.48

International Equity ex Emerging Markets through 09/30/23

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Int'l Equity Pool (ex Emerging Market)	(3.07%)	25.67%	5.50%	3.84%	4.68%
Arrowstreet ACWI ex -US	3.48%	33.61%	12.76%	9.47%	-
Baillie Gifford ACWI ex US	(9.91%)	13.42%	(5.87%)	1.72%	-
Brandes Investment	1.76%	43.20%	15.23%	4.99%	5.32%
Capital Guardian	(6.58%)	22.07%	(1.21%)	3.50%	4.82%
L&G Sci Beta Dev ex US	(2.14%)	23.50%	6.21%	-	-
SSgA World ex US IMI	(3.99%)	23.18%	5.56%	-	-
MSCI EAFE Index	(4.11%)	25.65%	5.75%	3.24%	3.82%
MSCI ACWI ex-US IMI Index	(3.49%)	20.19%	3.77%	2.57%	3.48%

Emerging Markets through 09/30/23

Performance vs Callan Emerging Broad (Gross)



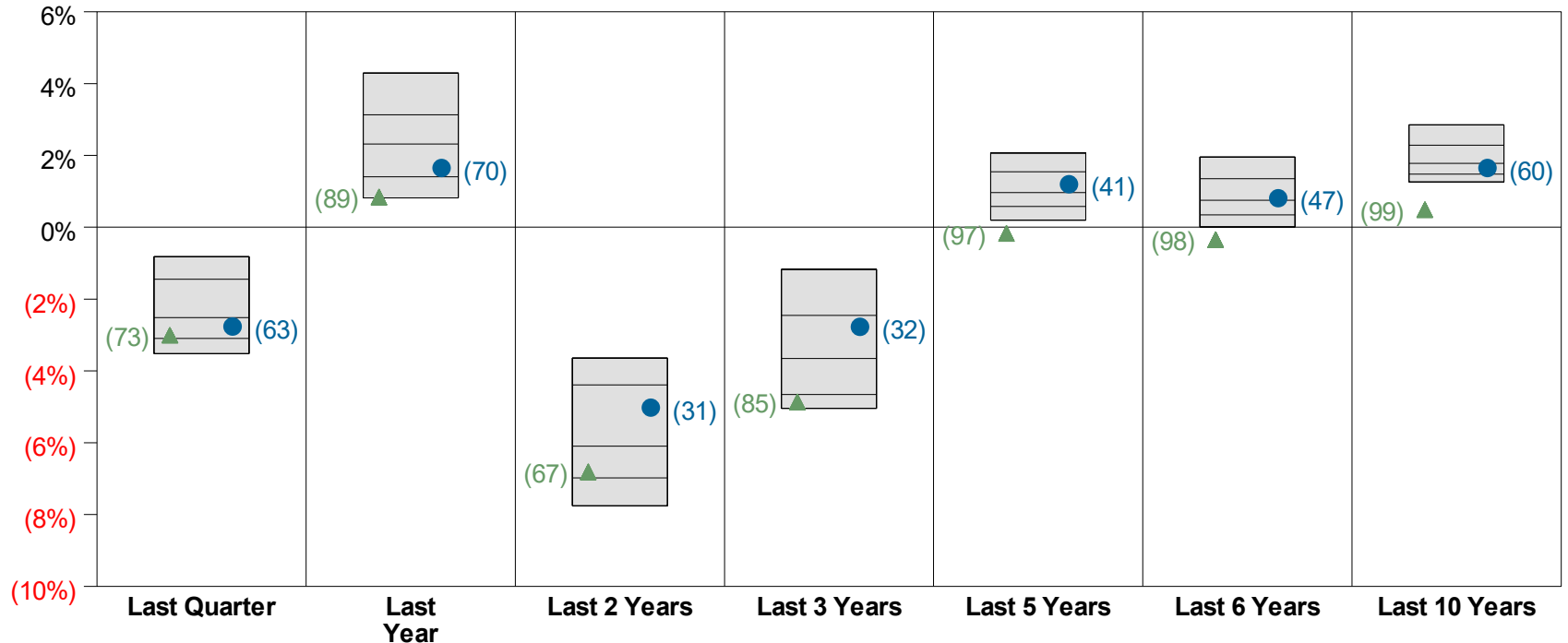
- The Emerging Markets Pool was restructured in 4Q 2019 to be a blend of passive and smart beta investments.
- The restructured Pool found its footing in 2021 and outperformed the benchmark by 1.90% over the last three years. For the most recent quarter, the Emerging Markets Pool surpassed its benchmark by 1.18% and ranks above median.

Emerging Markets Pool through 09/30/23

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Emerging Markets Pool	(1.75%)	14.56%	0.17%	1.18%	1.29%
SSgA Emerging Markets	(2.95%)	11.56%	(1.83%)	-	-
L&G SciBeta EM	0.49%	20.69%	4.63%	-	-
MSCI EM	(2.93%)	11.70%	(1.73%)	0.56%	2.07%

Total Fixed Income as of 09/30/23

Performance vs Public Fund - Domestic Fixed (Gross)



10th Percentile	(0.82)	4.30	(3.64)	(1.17)	2.07	1.95	2.85
25th Percentile	(1.45)	3.13	(4.39)	(2.46)	1.55	1.35	2.29
Median	(2.52)	2.32	(6.09)	(3.65)	0.97	0.75	1.78
75th Percentile	(3.10)	1.41	(6.98)	(4.66)	0.58	0.35	1.48
90th Percentile	(3.52)	0.82	(7.76)	(5.05)	0.19	0.01	1.26

Total Fixed Income Pool ● (2.79) 1.63 (5.05) (2.80) 1.18 0.78 1.63

Fixed Income Target ▲ (3.00) 0.84 (6.81) (4.86) (0.17) (0.34) 0.49

- The Total Fixed Income Pool portfolio outperformed the Fixed Income Target in all time periods shown.
- The transition from intermediate Treasury to Aggregate mandates was completed during the fourth quarter of 2019.

Total Fixed Income through 09/30/23

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Fixed Income	(2.79%)	1.63%	(2.80%)	1.18%	1.63%
Fixed Income Target	(3.00%)	0.84%	(4.86%)	(0.17%)	0.49%
Blmbg Treasury Intmdt	(0.81%)	1.30%	(3.21%)	0.68%	0.80%
ARMB US Aggregate	(3.15%)	1.31%	(4.87%)	-	-
Opportunistic Fixed Income	(2.55%)	1.89%	(1.39%)	1.00%	3.16%
FIAM Tactical Bond	(3.05%)	2.95%	(1.73%)	2.18%	-
Blmbg Aggregate	(3.23%)	0.64%	(5.21%)	0.10%	1.13%
FIAM REHI	0.33%	(2.02%)	1.11%	0.71%	-
Blmbg:Universal CMBS xAaa	(1.08%)	(2.84%)	(3.12%)	0.13%	1.75%

Fixed Income Target = 100% Blmbg Agg from 198912 - 199503, 100% Blmbg Govt/Credit 199503 - 200006, 100% Blmbg Aggregate 200006- 200706, 97.3% Blmbg Agg and 2.7% Blmbg US TIPS 200706 - 200806, 10% ML US High Yield master II, 70% Blmbg Agg, 10% Blmbg Treasury Index, and 10% Citigroup WGBI Non-US 200806 - 201006, 10.53% ML US High Yield master II, 78.95% Blmbg Treasury Intermediate, 10.53 % Citigroup WGBI Non-US 201006 - 201706, 100% Blmbg Treasury Intermediate 201706 - 201906, Custom floating target applied 201906 - 201912, 95% Blmbg Agg and 5% 3 Mo T-Bill thereafter. Total Fixed-Income Pool was funded in 1Q91.

Multi-Asset through 09/30/23

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Multi-Asset (T)	(2.12%)	5.36%	2.37%	3.44%	-
Alternative Equity Strategies	(7.68%)	0.97%	(2.29%)	3.38%	6.23%
McKinley Healthcare Transformation	(7.68%)	0.97%	(2.29%)	-	-
MSCI ACWI	(3.40%)	20.80%	6.89%	6.46%	7.56%
Tactical Allocation Strategies	(3.49%)	9.66%	2.62%	4.62%	-
PineBridge	(2.90%)	6.89%	2.36%	3.57%	-
Pine Bridge Benchmark	(3.33%)	14.12%	2.29%	4.06%	4.69%
Fidelity Signals	(4.06%)	12.53%	2.88%	5.65%	-
Fidelity Signals Benchmark	(3.33%)	14.12%	2.55%	4.28%	5.22%
Alternative Beta	1.63%	4.32%	7.21%	1.28%	-
Man Group Alternative Risk Premia	1.63%	4.32%	7.21%	2.84%	-
T-Bills + 5%	2.49%	9.47%	6.70%	6.72%	6.12%
Alternative Fixed Income	0.25%	2.13%	7.90%	-	-
Crestline (Blue Glacier)	0.58%	2.89%	8.24%	6.36%	7.74%
Prisma Capital (Polar Bear)	(3.29%)	(14.54%)	(1.22%)	(0.51%)	1.47%
Crestline Specialty Lndg Fd II	(8.63%)	(6.19%)	7.05%	8.21%	-
Crestline Specialty Lndg Fd III	4.12%	12.87%	-	-	-
HFRI Fund of Funds Idx	0.53%	4.61%	3.78%	3.39%	3.28%
T-Bills + 5%	2.49%	9.47%	6.70%	6.72%	6.12%

Real Assets through 09/30/23

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Real Assets	(1.28%)	0.69%	8.33%	6.20%	6.67%
Real Assets Target (1)	(0.72%)	4.71%	11.41%	6.89%	7.18%
Real Estate	(3.12%)	(8.49%)	6.51%	5.71%	8.12%
Real Estate Target (2)	(2.06%)	(7.69%)	5.86%	5.22%	7.40%
Private Real Estate	(1.62%)	(10.12%)	7.74%	6.79%	8.84%
NCREIF NFI-ODCE Val Wt Nt	(2.10%)	(12.88%)	6.19%	4.72%	7.19%
NCREIF Total Index	(1.37%)	(8.39%)	6.04%	5.26%	7.40%
ARMB REIT	(8.32%)	(1.70%)	2.66%	2.77%	6.11%
NAREIT Equity Index	(8.33%)	(1.71%)	2.68%	2.79%	6.17%
Total Farmland	0.64%	10.54%	9.22%	7.22%	6.65%
UBS Agrivest	0.64%	10.54%	9.23%	7.54%	7.03%
ARMB Farmland Target (3)	0.92%	9.68%	9.99%	7.78%	7.36%
Total Timber	0.30%	8.51%	8.18%	5.71%	5.43%
Timberland Investment Resources	0.30%	8.51%	8.18%	5.67%	5.37%
NCREIF Timberland Index	1.37%	10.03%	9.15%	5.87%	5.93%
Total Energy Funds	(0.02%)	(9.31%)	7.13%	(0.45%)	(2.79%)
CPI + 5%	2.15%	8.57%	10.98%	9.16%	7.75%
Total Infrastructure	0.97%	10.76%	12.09%	10.54%	-
JPM Infrastructure	2.79%	11.36%	9.81%	8.33%	-
IFM Infrastructure	0.57%	10.64%	12.63%	11.10%	-
CPI + 4%	1.91%	7.57%	9.97%	8.16%	6.75%
Global Infrastructure Idx	(7.28%)	6.88%	7.33%	4.07%	5.10%

(1) As of 10/01/2019, Real Assets Target is 37.5% NFI-ODCE Value Weight Net Index, 10% FTSE NAREIT All Equity Index, 25% NCREIF Farmland Index, 10% NCREIF Timberland Index, 17.5% CPI+4.

(2) ARMB Custom Real Estate Target is 90% NCREIF Property Index and 10% FTSE NAREIT All Equity REIT Index.

(3) ARMB Custom Farmland Target is leased-only properties in the NCREIF Farmland Index reweighted to reflect 90% row crops and 10% permanent crops until 1/1/08 and 80% row crops and 20% permanent crops thereafter.

Farmland and Timber data supplied by the manager and may vary from State Street returns due to timing variations.

Private Equity as of 09/30/2023 (with one quarter lag)

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Private Eq Pool	1.56	3.80	23.17	18.16	17.65
Private Equity Target	5.63	17.08	11.67	6.25	8.04

Private Equity Target is 1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE (Net)

Callan

Callan Update

Published Research Highlights from 3Q23

**Office-to-Residential
Conversions: Vast Opportunity
or Unfeasible Challenge?**



**Four-Part Series: The ESG Rule
Explained**



**Callan Discount Rate Reporter:
Regular Update on Corporate
DB Plans**



**How Your Public DB Plan's
Returns Compare: Quarterly
Update**



Recent Blog Posts

**An Investor's
Guide to the
Nasdaq-100's
Special
Rebalance**

Mark Wood

**A Deeper Dive
Into the Tradeoff
Between Return
and Risk**

Kevin Machiz

**S&P Global
Moves Away
from Numeric
ESG Credit
Indicators**

Kristin Bradbury

Additional Reading

Alternatives Focus quarterly newsletter

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Real Estate Indicators market outlook

Callan Institute Events

Upcoming conferences, workshops, and webinars

Callan College

Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

- November 1–2, 2023 – Atlanta, Georgia
- March 5–7, 2024 – Virtual Session via Zoom

Intro to Alternatives

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with alternative investments like private equity, hedge funds, and real estate and how they can play a key role in any portfolio. You will learn about the importance of allocations to alternatives and how to consider integrating, evaluating, and monitoring them.

- February 21–22, 2024 – Virtual Session via Zoom

Please visit our website at callan.com/events-education as we add dates to our 2023 and 2024 calendar!

Mark Your Calendar

2023 Regional Workshops

- October 24, 2023 – New York
- October 26, 2023 – Chicago

2024 National Conference

- April 8–10, 2024 – San Francisco

2024 Regional Workshops

- June 25, 2024 – Atlanta
- June 27, 2024 – San Francisco

Watch your email for further details and an invitation.

Webinars & Research Café Sessions

Webinar: ESG Study

- November 7, 2023 – Virtual Session via Zoom

Webinar: The Retirement Conundrum

- November 15, 2023 – Virtual Session via Zoom

Research Café: Conversion of Commercial Real Estate

- December 6, 2023 – Virtual Session via Zoom

Callan Updates

Firm updates by the numbers, as of 9/30/23

Total Associates: ~200

Ownership

- ▶ 100% employees
- ▶ ~70% of employees are equity owners
- ▶ ~55% of shareholders identify as women or minority

Total General and Investment Consultants: more than 55

Total Specialty and Research Consultants: more than 50

Total CFA/CAIA/FRMs: more than 55

Total Institutional Investor Clients: more than 475

Assets Under Advisement: more than \$4 trillion

Headquarters Office Move

- ▶ In August, Callan's headquarters office moved to One Bush Street in San Francisco

Milestones

- ▶ Celebrating our 50th anniversary

“Callan’s reputation for providing exceptional, thoughtful guidance to clients for the past 50 years initially drew me to the organization...it’s clear that quality people and a cohesive culture are essential to this enduring success. I’m excited about the opportunity to work in this collaborative environment to deliver the best outcomes for clients.”

— Tony Lissuzzo, SVP, on joining Callan’s Chicago Fund Sponsor Consulting this May



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Past performance is no guarantee of future results.

ALASKA RETIREMENT MANAGEMENT BOARD

Private Equity Annual Plan Staff Summary and Overview

Sean Howard, CFA
State Investment Officer

Cahal Morehouse
State Investment Officer

ARMB Private Equity Program

- Overview
- Market Review
- ARMB Portfolio
- Commitments
- Pacing Model
- Plan Recommendation
- Summary

Overview - Characteristics

Positive Characteristics

- Larger, more diverse investment universe
- Less efficient companies – opportunity to create value
- Less efficient markets – pricing opportunities
- Control and alignment of interests
- Managed for longer-term value

Negative Characteristics

- Illiquid, long-term investments
- High fees
- Potential for high leverage
- Portfolio transparency and valuation issues
- Incomplete data and benchmarks

Overview – Primary Strategies

ARMB's Private equity partnerships are classified into three primary groups:

Buyout (45%)

Control investments in more mature companies. These businesses are typically profitable, cash flow positive, and have established end markets with developed product or service offerings. Investments typically include the use of leverage.

Venture Capital (25%)

Investments in companies developing new products and services. Value creation focuses on managing entrepreneurial companies through high growth. Investments are generally riskier, minority positions.

Special Situations (30%)

Investments with a specialty or opportunistic approach; including groups that have a specific industry, investment style, or capital structure focus. Value creation is driven by specialized skill and execution.

Overview – Strategy Performance

Global Private Capital Performance by Calendar Year

'14	'15	'16	'17	'18	'19	'20	'21	'22	'23 YTD
Venture Capital 26%	Venture Capital 15%	Natural Resources 22%	Buyout 23%	Venture Capital 21%	Venture Capital 20%	Venture Capital 57%	Venture Capital 49%	Natural Resources 20%	Buyout 5%
Real Estate 13%	Expansion Capital 10%	Buyout 12%	Infrastructure 18%	Buyout 9%	Buyout 17%	Expansion Capital 25%	Buyout 37%	Infrastructure 10%	Mezzanine 5%
Expansion Capital 11%	Real Estate 9%	Distressed 10%	Venture Capital 15%	Infrastructure 8%	Expansion Capital 14%	Buyout 25%	Natural Resources 30%	Mezzanine 5%	Senior 5%
Mezzanine 11%	Buyout 9%	Senior 9%	Expansion Capital 15%	Mezzanine 7%	Mezzanine 10%	Mezzanine 9%	Expansion Capital 27%	Senior 4%	Distressed 4%
Buyout 10%	Infrastructure 6%	Expansion Capital 8%	Real Estate 13%	Real Estate 7%	Real Estate 8%	Infrastructure 7%	Real Estate 26%	Distressed 3%	Infrastructure 3%
Distressed 9%	Mezzanine 5%	Mezzanine 8%	Mezzanine 13%	Senior 6%	Infrastructure 8%	Distressed 7%	Distressed 22%	Real Estate 2%	Expansion Capital 3%
Infrastructure 8%	Senior 3%	Infrastructure 8%	Senior 11%	Expansion Capital 6%	Senior 7%	Senior 7%	Mezzanine 17%	Buyout -2%	Natural Resources 0%
Senior 5%	Distressed -1%	Real Estate 7%	Distressed 10%	Distressed 3%	Distressed 5%	Real Estate 1%	Infrastructure 14%	Expansion Capital -16%	Real Estate -1%
Natural Resources -1%	Natural Resources -14%	Venture Capital 1%	Natural Resources 6%	Natural Resources -3%	Natural Resources -5%	Natural Resources -9%	Senior 8%	Venture Capital -20%	Venture Capital -1%

Source: Burgiss as of June 30, 2023

Overview – How We Invest

ARMB's private equity investments are made through three platforms:

Staff (“Direct”) investments – fewer, relatively larger commitments focused on core GP relationships and special situations.

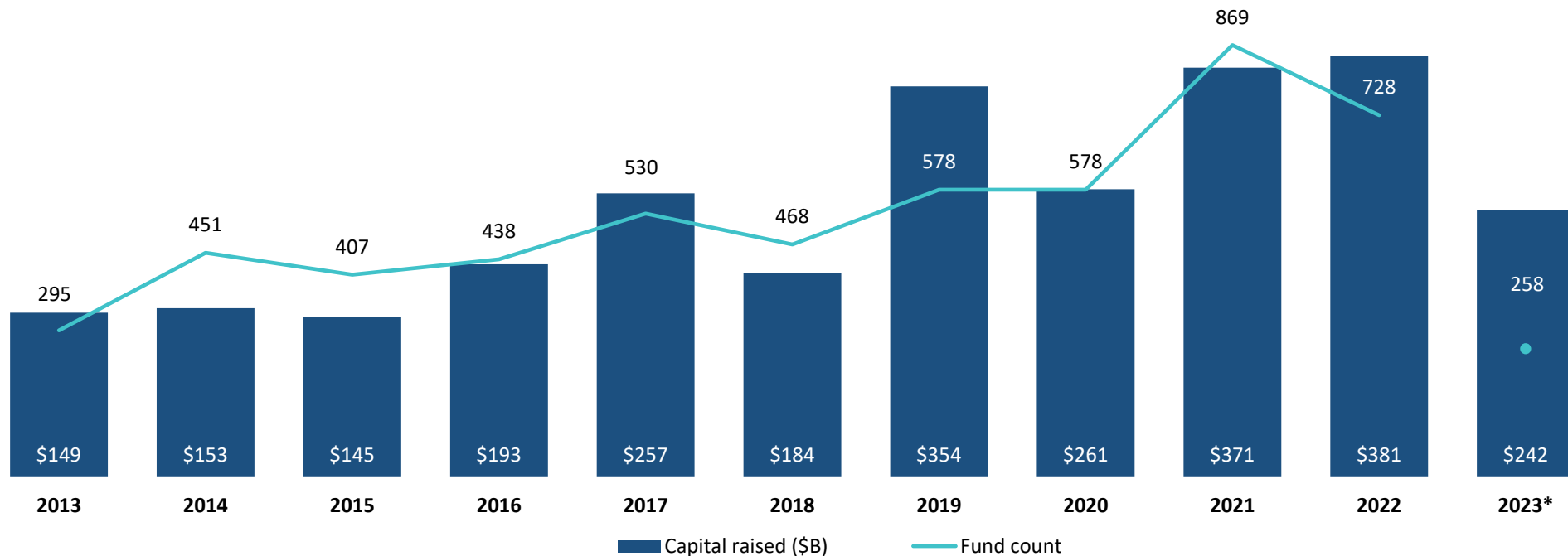
- Overweight buyout and special situations
- Can be used for portfolio management purposes to better control diversification and portfolio size

Abbott and **Pathway** investments – more, relatively smaller commitments with a diversified approach including a larger allocation to venture capital.

- Plus, co-investments, secondaries, and newer funds
- Results in a combined portfolio which naturally overweight's higher conviction opportunities and allows staff to harness the knowledge base of larger organizations in fund sourcing, diligence, and portfolio management.

Market – Fundraising

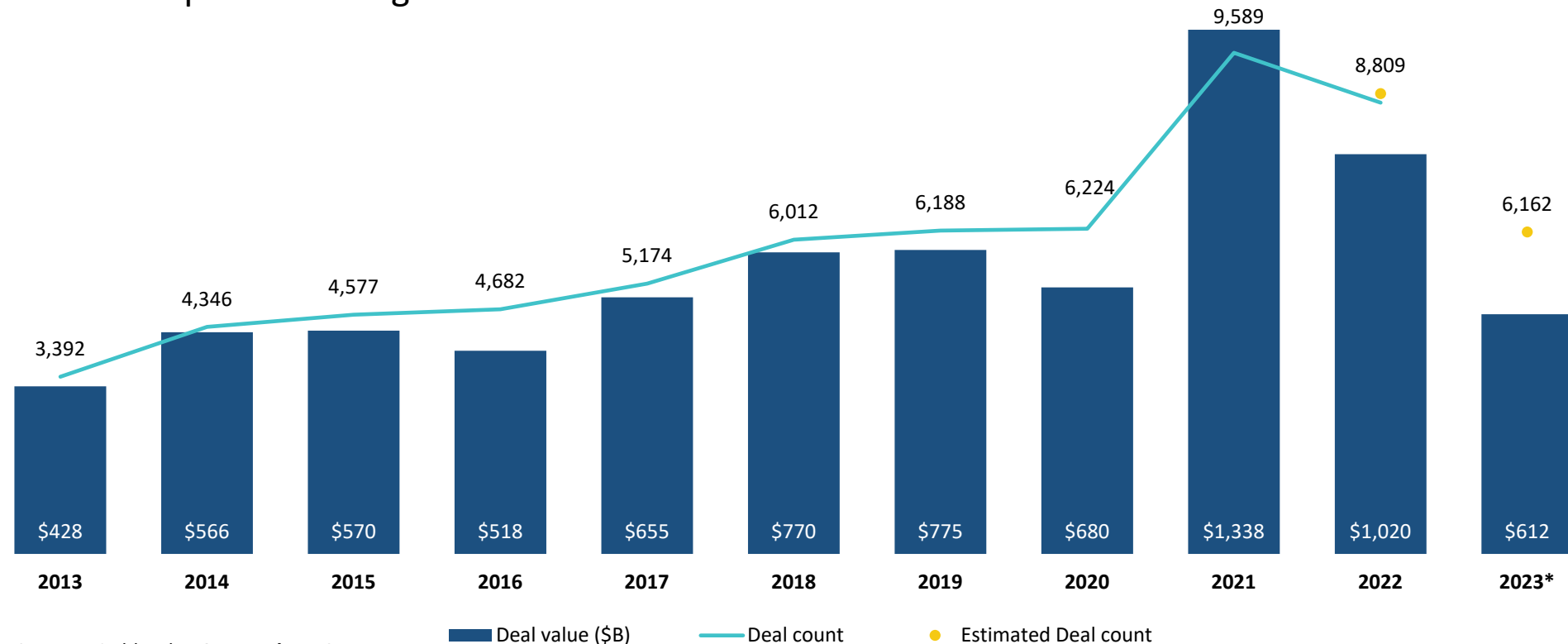
- Fundraising in 2022 was exceptionally strong following the prior year’s record investment and exit activity forcing GPs back to market.
- 2023 has proven more challenging due to the lingering denominator effect pressuring LPs to slow commitment growth and a reduction of activity over the past year.
- There has been a race to quality and established funds. The largest fund ever at \$29bn was raised in Q2 2023.



Source: Pitchbook • Geography: US
*as of 9/30/2023

Market – Deal Activity

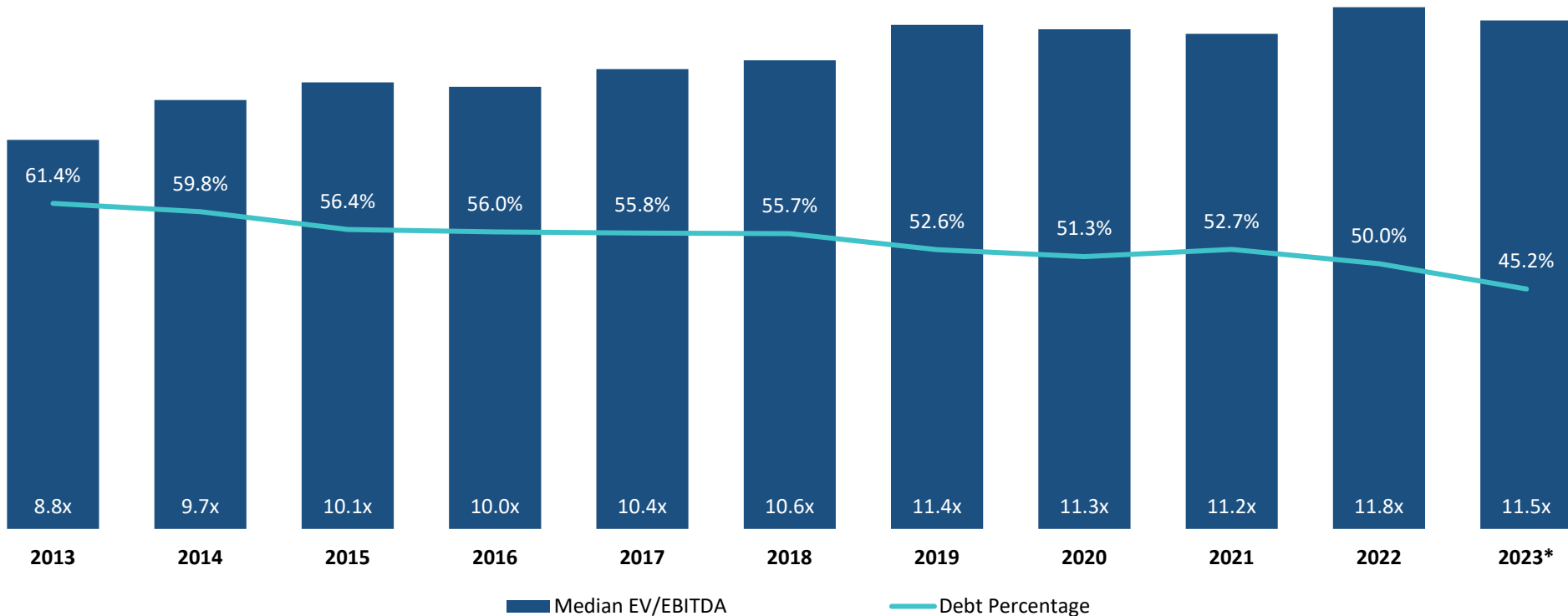
- Deal activity slowed in the second half of 2022 and first half of 2023 but was still above pre-covid levels.
- Add-on investments continue to make up a growing percentage of deal activity as buy and build strategies increase in popularity.
- Take private deals have been a popular form of acquisitions with some of the largest take privates being recent IPOs.



Source: Pitchbook • Geography: US
 *as of 9/30/2023

Market – Pricing and Leverage

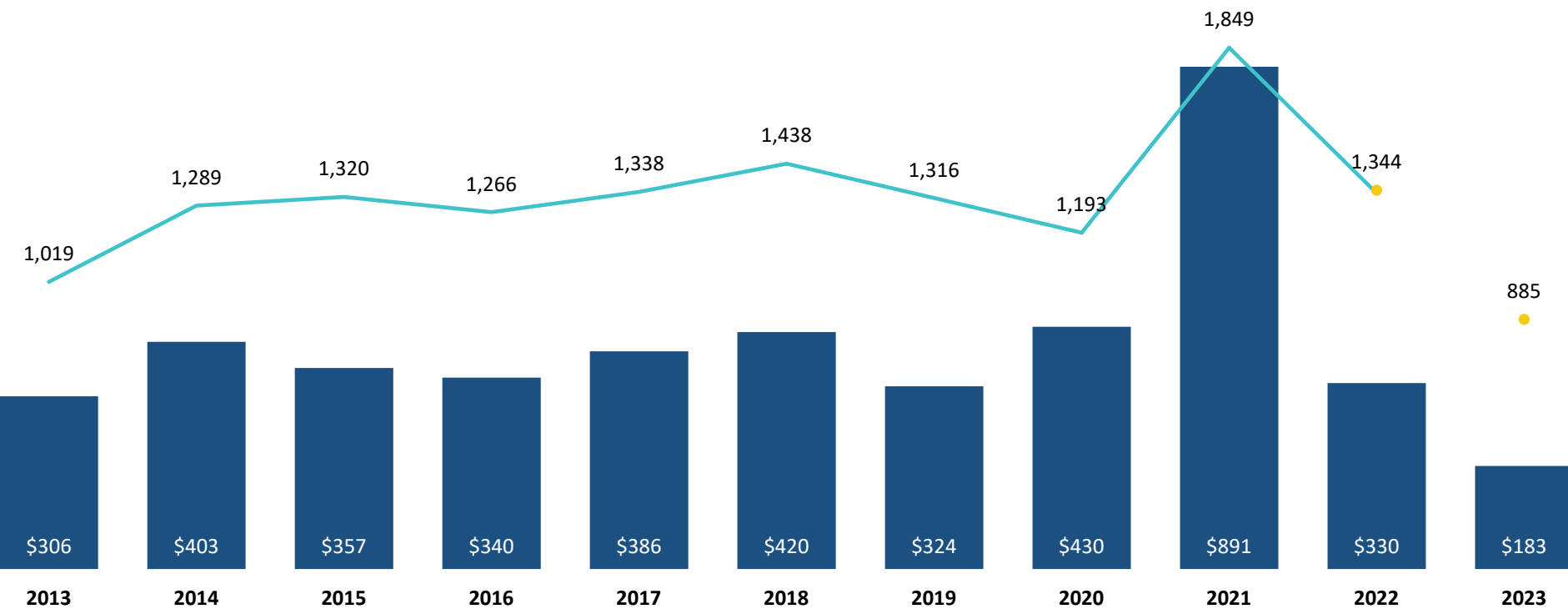
- Pricing multiples declined from 2022 highs but remain elevated.
- Debt markets paused in late 2022 with rate hikes but have since reopened at higher costs.
- The proportion of debt financing in deals has declined over the past year and has trended downward over the past decade.
- Assets that have transacted over the past year have been weighted towards the strongest companies in the portfolio which are able to capture elevated multiples at exit.



Source: Pitchbook | LCD • Geography: US
*as of 9/30/2023

Market – Exit Activity

- Exit activity has declined significantly from the record set in 2021 and is below the pacing of recent years.
- Bid-ask spreads were substantial and private equity funds elected to hold onto assets rather than sell at reduced multiples.
- Continuation vehicles, both single asset and fund continuations, are increasingly being utilized by firms to extend assets and not become forced sellers.

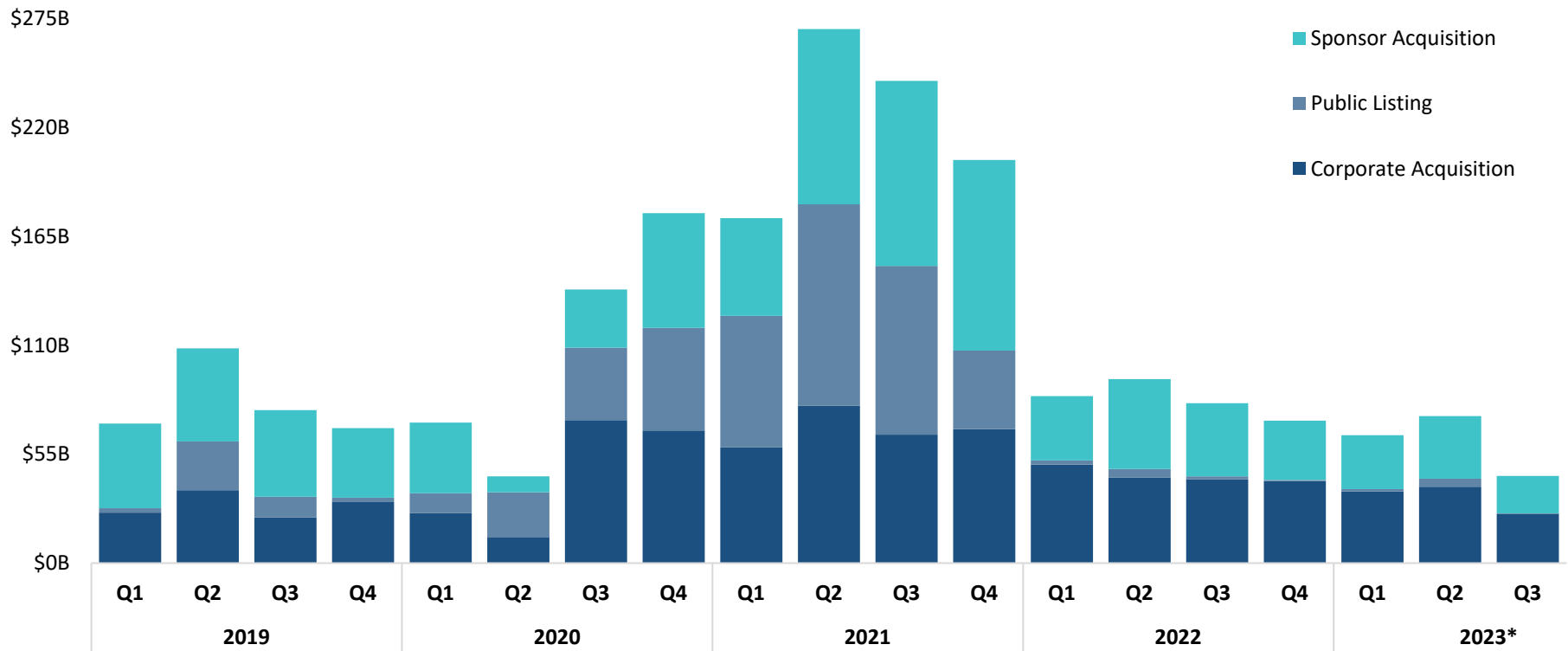


Source: Pitchbook • Geography: US
*as of 9/30/2023

■ Exit value (\$B) — Exit count ● Estimated exit count

Market – Exit Sourcing

- Corporate exits have been the most popular path to exit in recent quarters, accounting for over half of all exits.
- Following a historically strong representation in recent years, the IPO market has largely been closed as a source of exit.
- Sponsor-to-sponsor exits continue to be a popular path to realization due to the growth in private markets over the past decade.

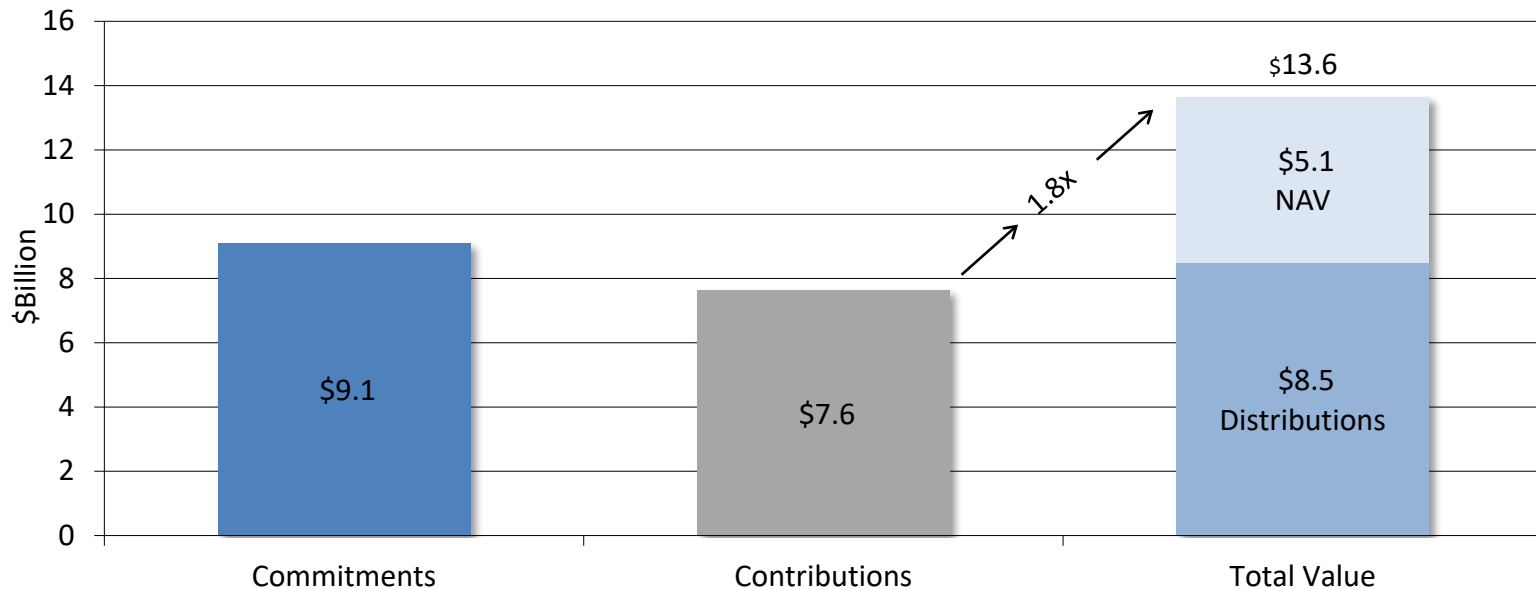


Source: Pitchbook • Geography: US
 *as of 9/30/2023

ARMB Portfolio Performance

- ARMB's private equity program is in the second quartile with a 13.0% internal rate of return (IRR) and 1.8x multiple on invested capital (MOIC) compared to the Cambridge median IRR of 10.4% and 1.5x MOIC.
- The 10-year time-weighted return for the private equity portfolio is 18.0% versus 9.0% for the PE benchmark blend (1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE).

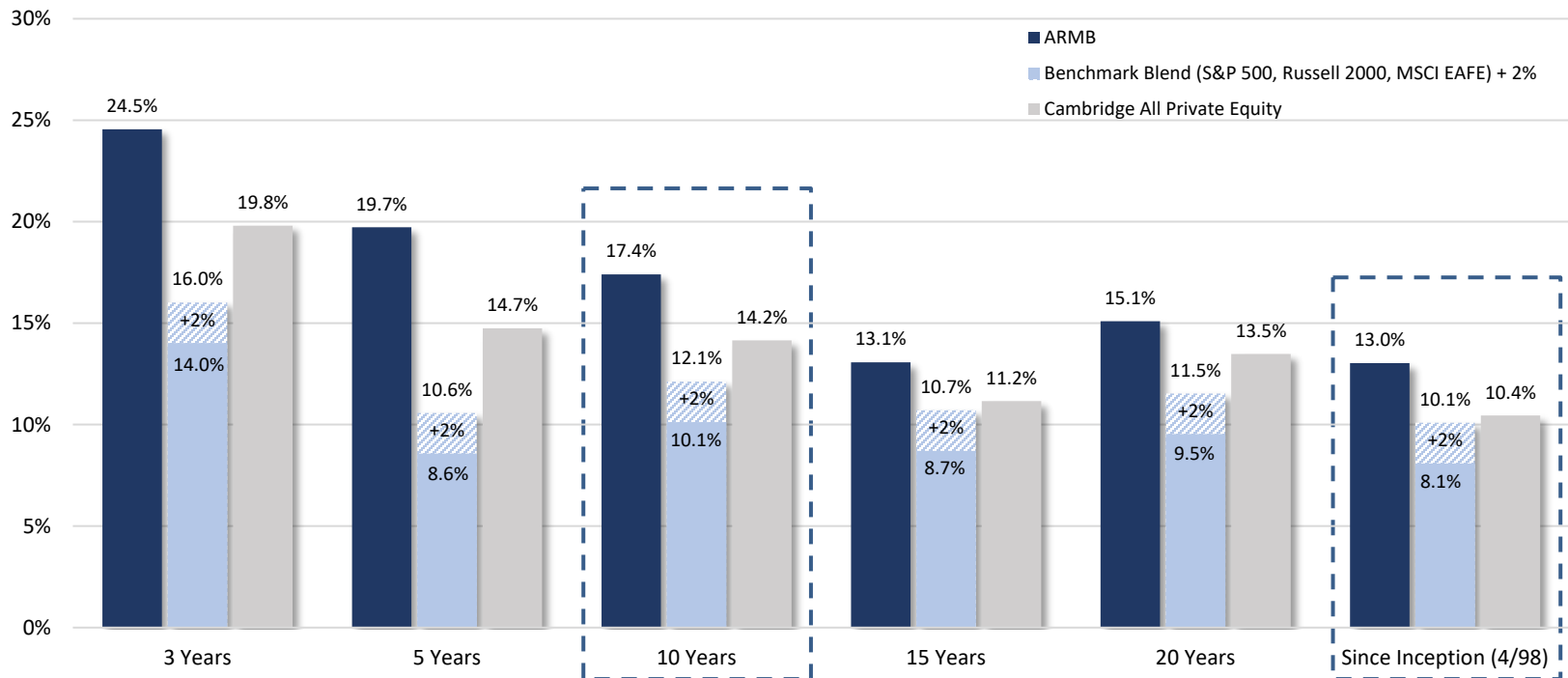
Commitments, Contributions, and Total Value as of June 30, 2023



ARMB Public Market Equivalent (PME)

- ARMB’s benchmark for private equity is an equal-weighted blend of the S&P 500, Russell 2000, and MSCI EAFE + 2%.
- Since inception, ARMB’s portfolio has delivered a 13.0% internal rate of return (IRR) – outperforming both the PME and Cambridge private equity benchmarks.
- Outperformance has generated \$4.3 billion in additional fund value.
- The portfolio’s 10-year IRR is 17.4%, outperforming the PME benchmark by over 7%.

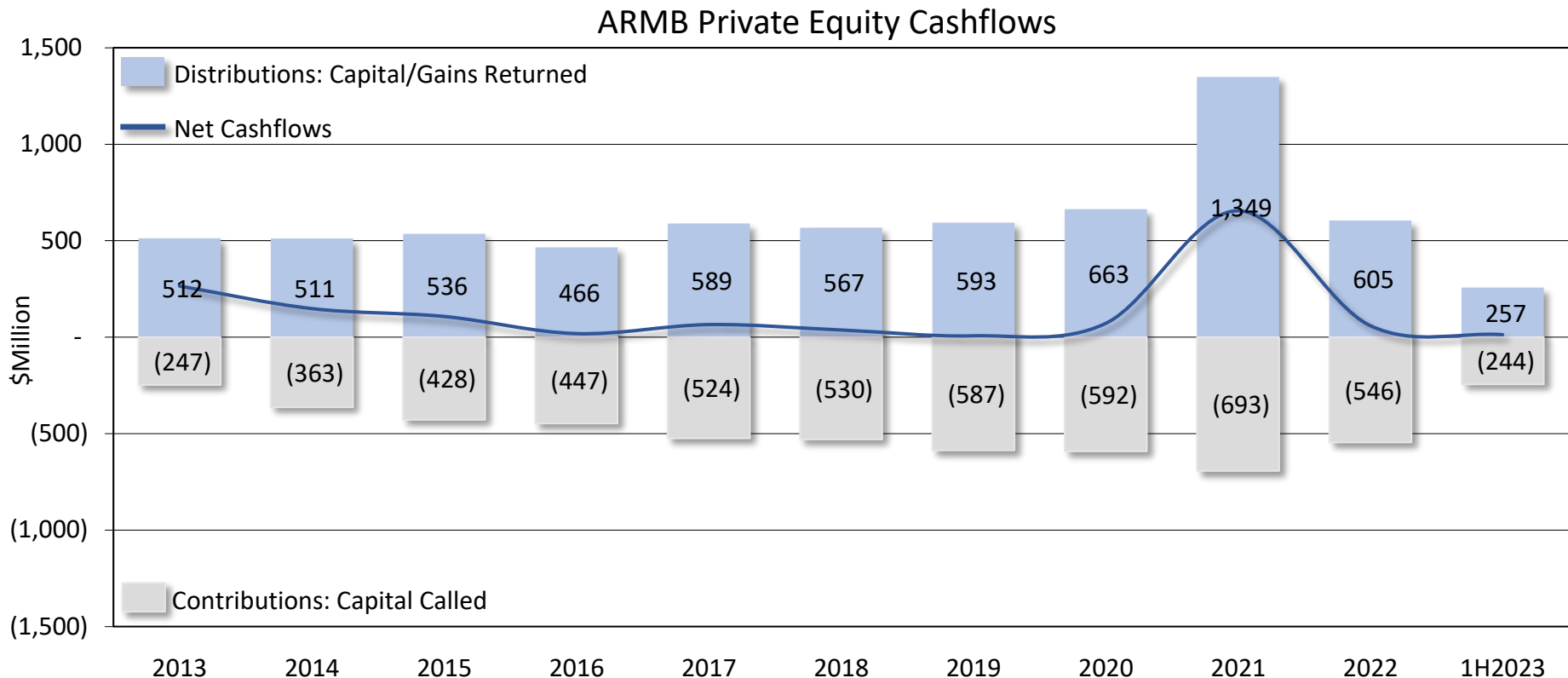
Public Market Equivalent as of June 30, 2023



Source: Refinitiv/Cambridge. Cambridge since inception return includes vintage years 1998-2023. Returns are annualized and net of fees.

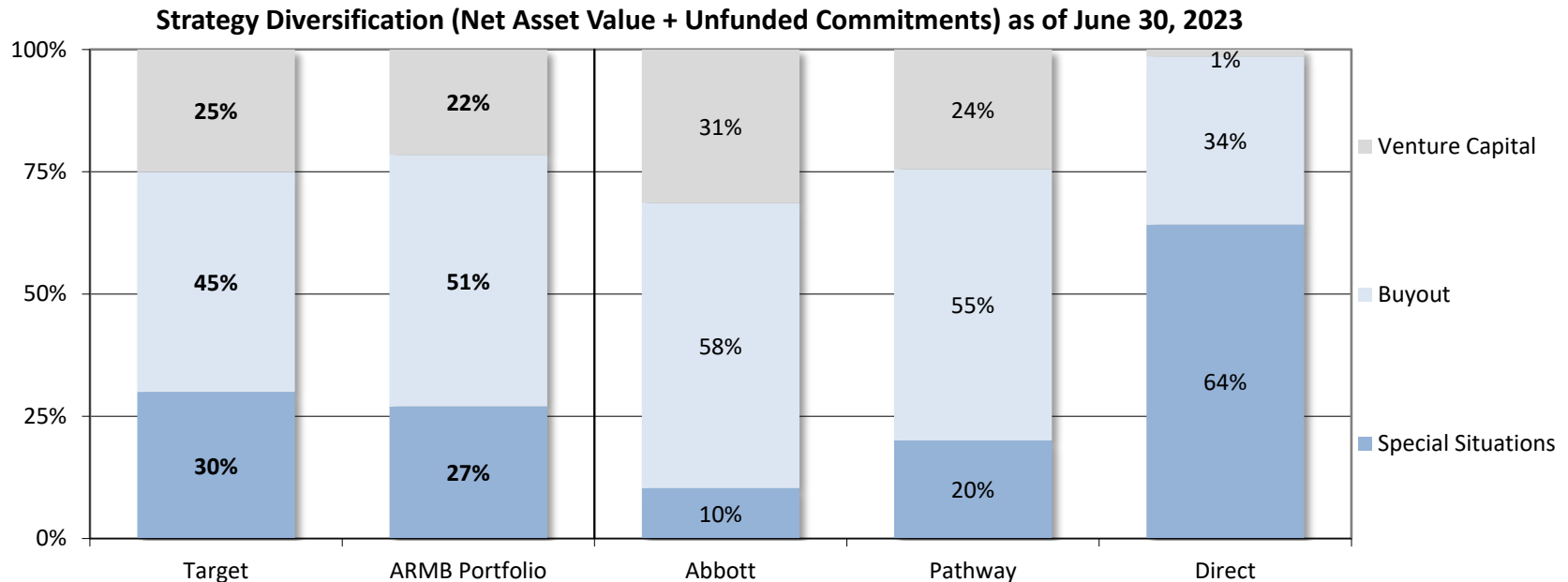
Portfolio Cash Flows

- Contributions and distributions remain steady and elevated over recent years because of the growth in allocation to private equity and the maturity of the program.
- Net cash inflows over the past five years were \$814 million – driven by record distributions received during 2021.



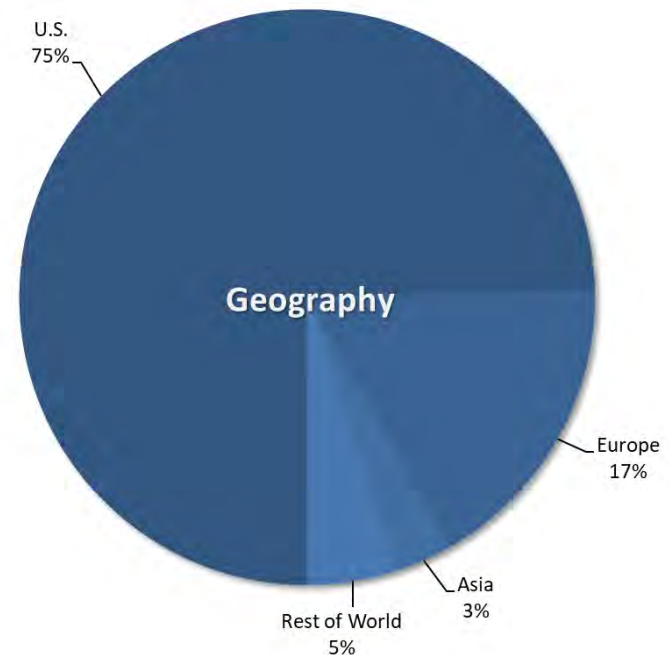
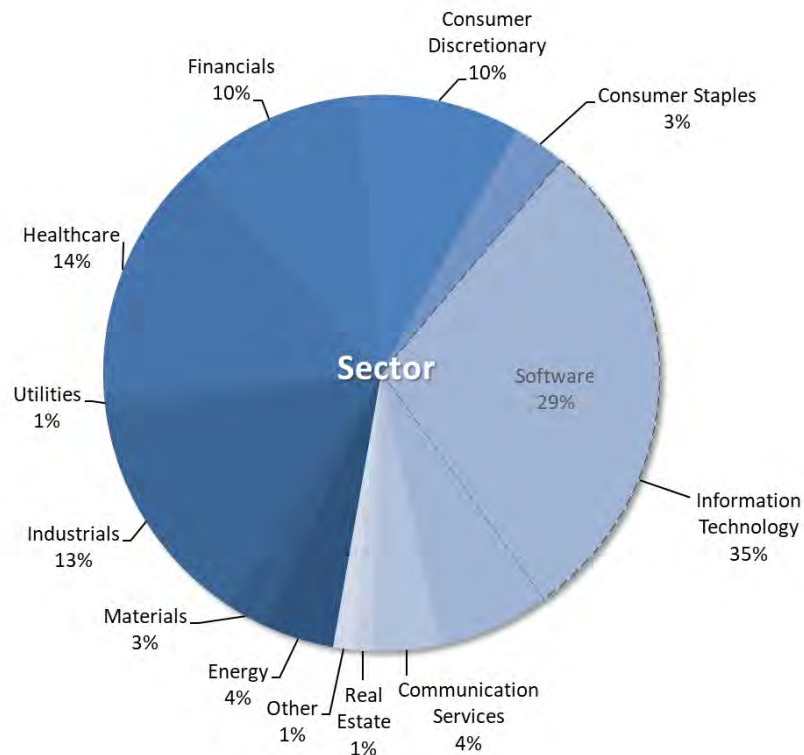
Diversification by Strategy

- The portfolio is well-diversified by strategy across venture capital, buyout, and special situations.
- Strategy exposures are within policy bands and near target:
 - Abbott’s portfolio is overweight venture capital.
 - The direct partnership portfolio is overweight special situations and underweight venture capital to achieve a strategy allocation which is close to target.
 - Total portfolio is overweight buyout, reflective of the resiliency in recent years.



Diversification by Portfolio Company

- ARMB's private equity portfolio consists of over 7,000 portfolio companies.
- Industry exposure is largely reflective of the broader deal volume within private equity. The portfolio's exposure to software has declined over the past year but remains the largest industry weight.
- International investments now account for 25% of the portfolio.



Commitments

- ARMB committed \$624 million of the targeted \$700 million during 2022.
- Pathway's co-investment program made 20 investments totaling \$36 million while Abbott made 5 co-investments totaling \$25 million.
- Commitments were well-diversified by investment strategy.
- Direct commitments were reduced to help manage ARMB's private equity overweight.

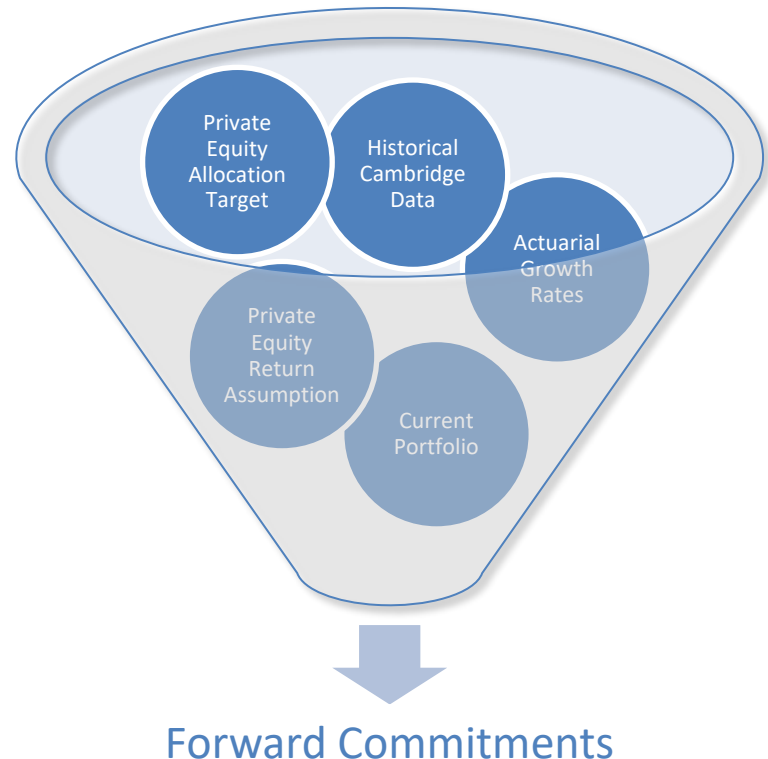
Commitments for 2022 (\$million)

Manager	Target	Actual	Number of Investments	Investment Strategy					
				Venture	%	Buyout	%	Special Situations	%
Abbott	\$235	\$234	26	\$60	26%	\$154	65%	\$20	9%
Pathway	\$235	\$235	43	\$42	18%	\$144	61%	\$49	21%
Direct	\$230	\$155	4	\$25	16%	\$90	58%	\$40	26%
Total	\$700	\$624	73	\$127	20%	\$388	62%	\$109	18%

- Commitments in 2023 are expected to be approximately \$670 million.

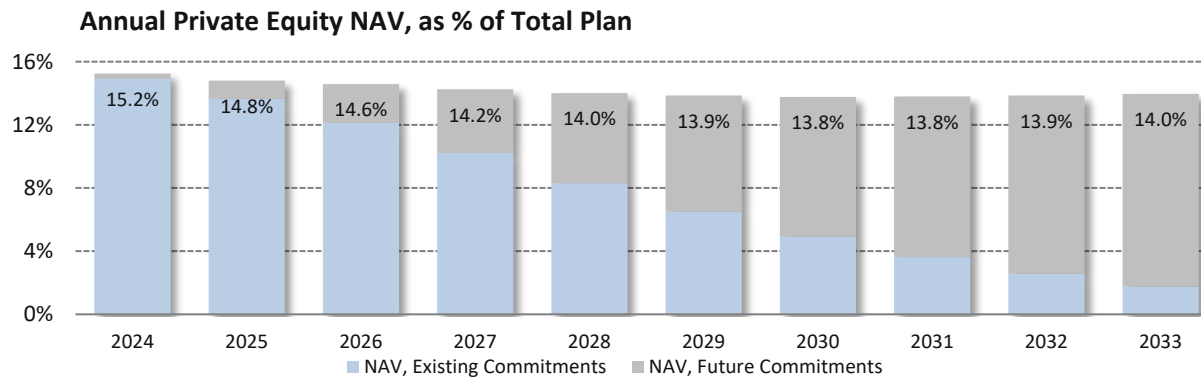
Pacing Model

- Staff uses a pacing model to project the forward commitments needed to achieve ARMB's targeted allocation to private equity.
- The illiquid nature and cash flow characteristics of private equity necessitate a forward projection to guide the portfolio towards the target allocation over time.
- Considerations:
 - Denominator effect: sharp declines in liquid asset classes result in over-allocations to illiquid asset classes
 - Annual commitment decisions are long-term decisions
 - Vintage year diversification



Commitment Pacing Recommendation

- ARMB’s long-term allocation target for private equity is 14% with a band of +/- 7%.
- Although private equity is above target, an increase in commitment pacing is needed to offset projected distributions and maintain the targeted allocation.
- Staff recommends a 2024 commitment target of \$700 million, split equally between Abbott, Pathway, and direct partnership investments.



Summary

- Following a year of historic private equity activity, deal making has retreated from record highs back to historical averages while portfolio cash flows remain positive.
- The swiftness and magnitude of the Fed's interest rate tightening is a new test for the asset class and GPs are in the process of focusing their strategies to succeed in the current environment.
- ARMB's private equity program has delivered strong performance relative to public and private benchmarks and staff believes the portfolio is well-positioned going forward to capitalize on opportunities.
- Staff continues to explore ways to improve the cost structure of the private equity portfolio and is working on an update to ARMB's private equity investment policies to modernize the document and better reflect investable strategy buckets.

Appendix A:

2022 Commitments – Buyout 1 of 3

Strategy	Partnership Fund	Description	Amount	% Total	Date	Manager
Buyout	Advent International GPE X	Control-oriented investments in mid-market and large-cap companies, primarily in Europe and North America.	\$10,000,000	1.7%	4/28/22	Pathway
	Advent International GPE X	Control-oriented buyouts in middle-and large-market companies, primarily in Europe and North America.	\$20,000,000	3.3%	4/28/22	Abbott
	Advent International GPE X	Control-oriented buyouts in middle-and large-market companies, primarily in Europe and North America.	\$50,000,000	8.3%	4/12/22	Direct
	AEA EXC CF LP	Single asset GP-led secondary investment,	\$4,425,063	0.7%	8/12/22	Abbott
	Alpine Co-Invest	Co-investment alongside Thoma Bravo XV in a subscription service provider for cloud-based business-planning software.	\$2,500,000	0.4%	5/24/22	Pathway
	Arlington VI	Small- and middle-market buyouts in the aerospace & defense, government services & technology, healthcare, and business services & software industries.	\$10,000,000	1.7%	4/29/22	Pathway
	Astorg VIII	European mid-market B2B companies operating in niche markets. Focus is on Europe with but will invest in US software and healthcare.	\$19,129,086	3.2%	2/1/22	Abbott
	Climber Co-Invest	Co-investment alongside Inflexion VI in a global provider of technology services focused on specialist temporary staffing and consulting services.	\$2,528,406	0.4%	8/12/22	Pathway
	Constellation	Co-investment alongside Resolute V in a designer and manufacturer of electronic components, subsystems, and antenna systems.	\$2,500,000	0.4%	7/29/22	Pathway
	ECI 11 E	Co-investment, Provides energy and sustainability services.	\$8,188,293	1.4%	9/14/22	Abbott
	ECI 12	Middle-market buyout investments in the U.K.	\$9,821,639	1.6%	7/15/22	Abbott
	Ergotron Investments, LLC	Co-investment, Global manufacturer of mobility, workflow and workspace solutions.	\$6,000,000	1.0%	9/23/22	Abbott
	Falcon Co-Investment Partners	Co-investment, Revenue cycle management software provider	\$5,400,000	0.9%	2/18/22	Abbott
	Galahad	Co-investment alongside Mayfair II in a UK-based tech-enabled retail energy provider.	\$2,554,253	0.4%	11/9/22	Pathway
	Green Equity Investors IX	Upper-middle market buyout investments in consumer/retail, healthcare services/wellness, distribution, business services, and industrials.	\$13,300,000	2.2%	3/1/22	Abbott
	GTCR Strategic Growth Fund I	Lower middle and middle market focused fund across healthcare, technology, communications, financial services and growth business services.	\$10,000,000	1.7%	1/18/22	Abbott
	GTCR Strategic Growth I	Control buyouts of mature, mid-market companies in the financial services, healthcare, and information technology sectors in North America.	\$7,500,000	1.2%	1/18/22	Pathway

Appendix A:

2022 Commitments – Buyout 2 of 3

Strategy	Partnership Fund	Description	Amount	% Total	Date	Manager
	HIG MM LBO IV	Control and influential minority equity investments in middle-market companies operating primarily in the United States.	\$10,000,000	1.7%	9/30/22	Pathway
	Hotel California Co-Invest	Co-investment alongside Thoma Bravo XV in a provider of identity governance and cloud identity management software.	\$2,500,000	0.4%	7/15/22	Pathway
	Jade Equity Investors II	Middle market buyout operating across six sectors: consumer services, healthcare, business services, distribution, consumer/retail, and industrials.	\$6,700,000	1.1%	3/1/22	Abbott
	Kinderhook Capital Fund 7	Value-oriented opportunities across healthcare services, business/environmental services, and light manufacturing & automotive.	\$10,000,000	1.7%	1/28/22	Abbott
	Knockout	Co-investment alongside Insight XII in U.S.-based SaaS provider of IT management and security software solutions for small/medium businesses.	\$2,575,000	0.4%	9/15/22	Pathway
	Light Co-Invest	Co-investment alongside Mayfair II in a platform for digital advertising.	\$2,533,961	0.4%	1/20/22	Pathway
	Lions Co-Invest 2	Follow-on co-investment alongside Summit GE X in an independent integrated care-delivery provider.	\$241,095	0.0%	9/14/22	Pathway
	M/C Partners IX	Control & non-control in middle/upper-middle-market companies in the U.S. in technology, business services, financial services, and healthcare sectors.	\$10,000,000	1.7%	5/6/22	Abbott
Buyout	Magnesium	Co-investment alongside Permira VIII in a cybersecurity provider.	\$2,500,000	0.4%	4/28/22	Pathway
	MDCP Mobius	Co-investment alongside Madison Dearborn Capital Partners VIII in a global provider of consumer-to-consumer money transfer services.	\$2,500,000	0.4%	7/22/22	Pathway
	MDCP Tango	Co-investment alongside Madison Dearborn VII in an insurance brokerage platform.	\$2,500,000	0.4%	3/4/22	Pathway
	MDP ACM 3	Follow-on co-investment alongside Madison Dearborn VII in a provider of end-to-end solutions to support drug development.	\$403,292	0.1%	1/31/22	Pathway
	NC Maas 3 Co-Invest	Follow-on co-investment alongside Nordic IX in a provider of an online payment platform focused on bank account-to-account transfers.	\$175,988	0.0%	6/16/22	Pathway
	Nordic XI	Control buyouts of upper-mid-market companies in Northern Europe, and selectively in North America.	\$9,690,319	1.6%	4/29/22	Pathway
	Odyssey Co-Invest	Co-investment alongside Clearlake VII in a provider of cloud management, software as a service, security, workforce mobility, and backup & recovery.	\$1,040,000	0.2%	1/18/22	Pathway
	Orangewood WWB Co-Invest	Co-investment, Quick Service Restaurant (QSR) franchisee	\$324,327	0.1%	4/4/22	Abbott
	Permira VIII	Buyouts of large- and upper-middle-market companies in Europe and North America in various sectors	\$9,857,136	1.6%	2/10/22	Pathway

Appendix A:

2022 Commitments – Buyout 3 of 3

Strategy	Partnership Fund	Description	Amount	% Total	Date	Manager
	Project Webster	Co-investment alongside Platte River Equity IV in an independent distributor and fabricator of lightweight conveyor belts and other conveyor systems.	\$1,500,000	0.2%	8/22/22	Pathway
	REP Patriot Coinvest	Co-investment alongside Ridgemont IV in a provider of intermodal logistics solutions.	\$1,500,000	0.2%	12/30/22	Pathway
	REP Patriot Coinvest	Co-investment alongside Ridgemont IV in a provider of intermodal logistics solutions.	\$4,692,000	0.8%	12/30/22	Abbott
	Ridgemont IV	Middle-market buyout and growth-equity investments in the business & industrial services, energy, healthcare and TMT sectors.	\$9,000,000	1.4%	1/4/22	Pathway
	RKD Co-Invest	Co-investment alongside Incline V in a provider of end-to-end outsourced fundraising and marketing services to the non-profit industry.	\$2,500,000	0.4%	8/16/22	Pathway
	Sentinel Capital Partners VII	Value-oriented control investments in small- and lower-middle-market companies primarily in North America.	\$40,000,000	6.4%	8/26/22	Direct
	Sentinel Capital Partners VII	Value-oriented control investments in small- and lower-middle-market companies primarily in North America.	\$20,000,000	3.2%	7/14/22	Abbott
	Sentinel Capital Partners VII	Control buyouts of lower-middle-market companies in the United States and Canada across a variety of sectors.	\$10,000,000	1.6%	7/13/22	Pathway
Buyout	SSID CV Fund AB	GP-led secondary transaction by Adelis Equity, in medial diagnostics company.	\$5,819,400	0.9%	7/27/22	Abbott
	Thoma Bravo XV	Control-oriented buyouts of large-market software companies, primarily in the U.S.	\$4,000,000	0.6%	2/3/22	Pathway
	Thoma Discover IV	Control-oriented buyouts of middle-market software companies, primarily in the U.S.	\$4,000,000	0.6%	2/3/22	Pathway
	Thoma Explore II	Control-oriented buyouts of small- and lower-middle-market software companies, primarily in the U.S.	\$4,000,000	0.6%	2/3/22	Pathway
	T-IX Boost	Co-investment alongside Trident IX in an independent extended workforce management software platform supporting global enterprises.	\$1,270,000	0.2%	4/27/22	Pathway
	TowerBrook TMX Continuation	Single-asset continuation vehicle for a provider of technology-enabled clinical asset management services to U.S. health systems.	\$2,500,000	0.4%	6/3/22	Pathway
	Trident IX (Stone Point)	Control and substantial minority investments in middle/large-market financial services and related companies.	\$10,000,000	1.6%	1/28/22	Pathway
	T-VIII Co-Invest - 2	Follow-on co-investment alongside Trident VIII in a provider of diversified professional and business services.	\$894,284	0.1%	12/30/22	Pathway
	WestView V	Control and minority investments in lower-middle-market growth-oriented companies across a variety of sectors.	\$8,500,000	1.4%	12/15/22	Pathway
	Buyout Subtotals		\$387,563,542	62.1%		

Appendix A:

2022 Commitments – Venture Capital

Strategy	Partnership Fund	Description	Amount	% Total	Date	Manager
Venture Capital	Battery Ventures XIV	Multi-stage venture fund with a focus on information technology companies primarily in North America.	\$25,000,000	4.0%	2/18/22	Direct
	Battery Ventures XIV	Multi-stage venture fund with a focus on information technology companies primarily in North America.	\$10,000,000	1.6%	2/24/22	Abbott
	Battery Ventures XIV	Venture capital investments a wide range of technology-driven industry subsectors.	\$11,000,000	1.8%	2/24/22	Pathway
	Battery Select II	Follow-on venture capital investments in Battery's highest conviction portfolio companies	\$2,000,000	0.3%	2/24/22	Pathway
	Bessemer Venture Partners XII	Multi-stage investments in technology companies. They focus primarily on North America Europe and Isreal.	\$10,000,000	1.6%	6/30/22	Abbott
	Bessemer Venture Partners XII	Venture capital investments in high-growth technology companies across a variety of sectors.	\$13,000,000	2.1%	6/30/22	Pathway
	Bond III	Venture capital investments in companies in their early and mid-growth phases in the consumer, enterprise, fintech and healthcare sectors.	\$10,000,000	1.6%	4/1/22	Pathway
	CRV XIX	Early-stage venture fund focused on investments in enterprise technology, consumer, and bioengineering/healthcare companies primarily in the U.S.	\$10,000,000	1.6%	1/27/22	Abbott
	Everside Health	Co-investment alongside NEA 16 in a provider of direct primary care and behavioral health services for employers.	\$1,249,997	0.2%	4/6/22	Pathway
	H 2022a	Late stage venture investments primarily in enterprise technology companies, with the balance going towards fintech, healthcare / IT, and consumer deals.	\$8,150,000	1.3%	5/25/22	Abbott
	H 2022b	\$250m Sidecar vehicle which will invest in approximately ten of the H 2022a deals.	\$1,825,000	0.3%	5/25/22	Abbott
	Oak HC/FT Partners V	Early and growth stage investments in fintech and healthcare companies primarily in North America.	\$10,000,000	1.6%	5/11/22	Abbott
	Versant Vantage III	Will invest in eight to twelve later stage oportunities (series B and beyond) alongside Venture IX.	\$2,500,000	0.4%	10/12/22	Abbott
	Versant Venture Capital IX	Global early stage biotechnology fund.	\$5,000,000	0.8%	10/12/22	Abbott
	Versant Voyageurs III	Will invest in eight to twelve early rounds alongside Venture IX.	\$2,500,000	0.4%	10/12/22	Abbott
	YC ESP22	Seed-stage venture capital investments in various startups made through Y Combinator's accelerator program	\$5,000,000	0.8%	1/14/22	Pathway
	Venture Capital Subtotals			\$127,224,997	20.4%	

Appendix A:

2022 Commitments – Special Situations

Strategy	Partnership Fund	Description	Amount	% Total	Date	Manager
Special Situations	Glendon Opportunities Fund	Debt-related investments across geographic regions, industries, and capital-structure positions in distress/dislocated markets.	\$40,000,000	6.4%	6/29/22	Direct
	Great Hill VIII	Middle-market growth buyout investments, primarily in North America.	\$13,000,000	2.1%	1/31/22	Pathway
	Fortissimo VI	Control and influential minority equity investments in maturing technology and industrial companies based in Israel.	\$13,000,000	2.1%	6/27/22	Pathway
	TCV XII	Growth equity investments in information technology companies, primarily in the United States and Western Europe.	\$10,000,000	1.6%	6/27/22	Pathway
	Spectrum X	Minority and control growth equity investments in information services, Internet-related, and software-related companies.	\$20,000,000	3.2%	7/20/22	Abbott
	Spectrum X	Minority and control growth equity investments in information services, Internet-related, and software-related companies.	\$13,000,000	2.1%	7/20/22	Pathway
<i>Special Situations Subtotals</i>			<i>\$109,000,000</i>	<i>17.5%</i>		
Abbott Subtotal			\$233,774,808	37.5%		
Pathway Subtotal			\$235,013,731	37.7%		
Direct Subtotal			\$155,000,000	24.8%		
TOTAL (\$MM)			\$623,788,539	100.0%		

December 7, 2023



ARMB Private Equity Portfolio

Annual Review and Performance
Analysis

Ashley Kahn, CAIA
Private Equity Consulting

Private Equity Discussion Topics

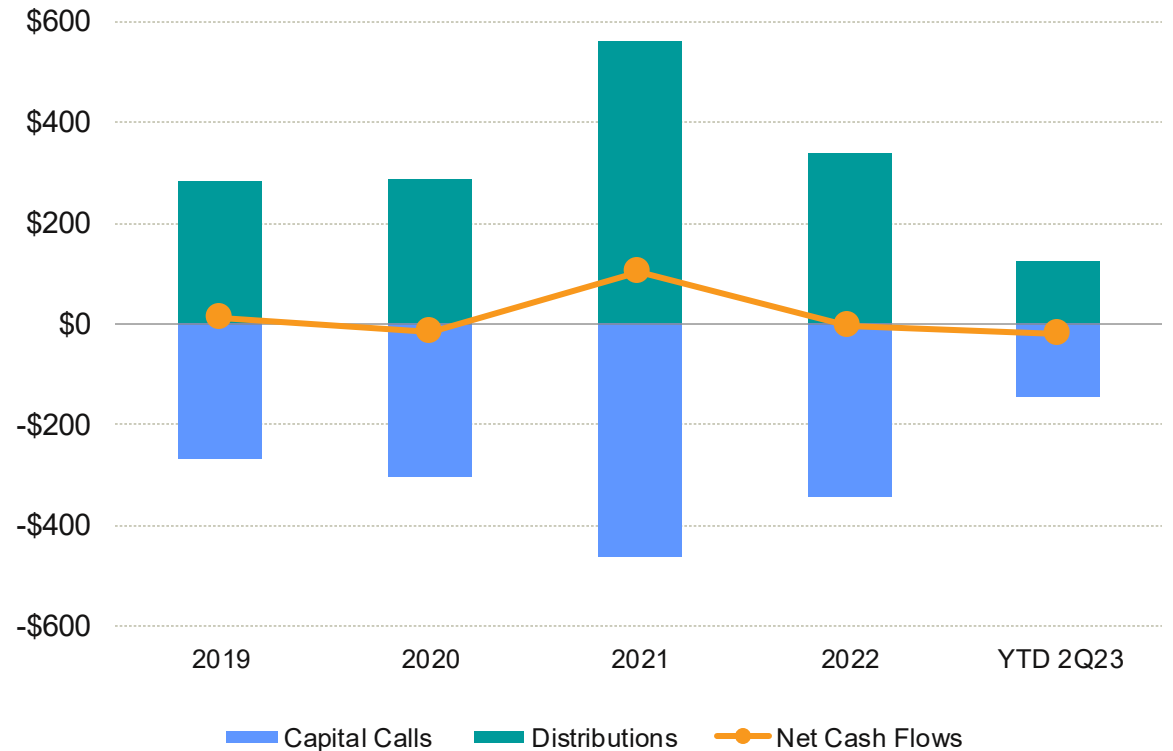
- Private Equity Market Trends
- ARMB Program History and Overview
- Performance
- Portfolio Diversification
- Manager Profiles and Performance:
 - Abbott Capital Management
 - Pathway Capital Management
 - Treasury Portfolio
- Summary and Observations

Private Equity Market Trends

2022 - A Return to Normal

- 2021 was an exceptional year for private equity cash flows, with record levels of distributions driven by a surge in exit activity.
- In 2022, distributions sank back down to normalized levels, in response to a significant slowdown in private equity exits.
- So far in 2023, both cash inflows and outflows have dropped further, with capital calls outpacing distributions.

LP Cash Flows by Calendar Year (\$b)



Source: Refinitiv/Cambridge Global Private Equity & Energy.

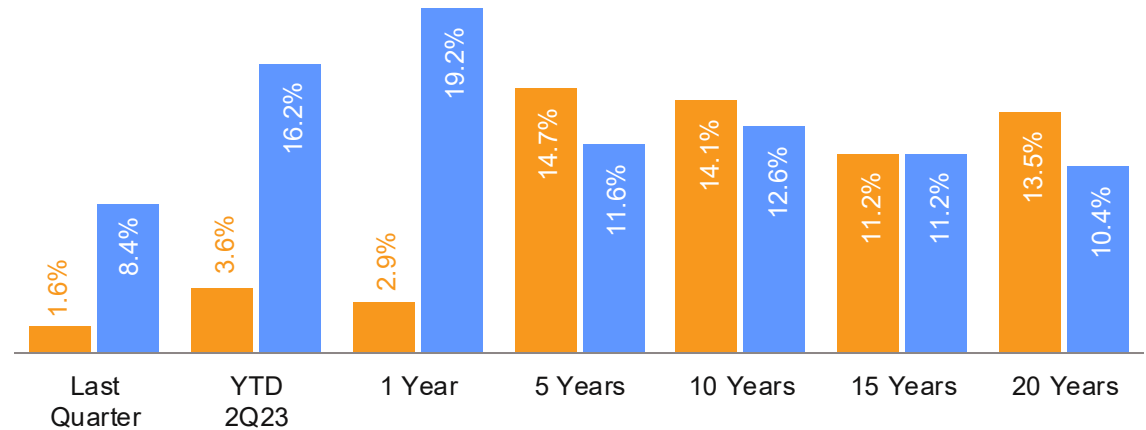
Private Equity Market Trends

Smoothing Effect in Performance

- Public equity's strong recovery in 2023 (led by the "Magnificent 7" technology stocks) has left private equity in its wake.
- Private equity doesn't recover as quickly as the public markets, because the smoothing effect dampens private equity returns in both up and down markets.
- Private equity only saw about a quarter of the gains of the public markets in 1H23, on a PME basis.
- Venture capital and growth equity are the only strategies that saw negative returns this past year, as those strategies continue to struggle with falling valuations.

Net IRRs as of 06/30/2023

■ Global Private Equity & Energy ■ Russell 3000 PME



Net IRRs by Strategy as of 06/30/2023

Strategy	Last Quarter	YTD 2Q23	1 Year	5 Years	10 Years	20 Years
Venture Capital	-0.7%	-1.5%	-9.3%	18.9%	18.2%	13.2%
Growth Equity	1.3%	2.6%	-0.3%	15.6%	15.0%	12.8%
Buyouts	2.6%	6.1%	8.1%	15.7%	15.3%	11.2%
Mezzanine	3.2%	9.9%	10.7%	11.1%	11.2%	10.5%
Credit Opportunities	1.4%	3.6%	7.4%	7.1%	7.6%	9.1%
Control-Oriented Distressed	1.2%	2.8%	4.9%	13.6%	12.0%	10.7%
Private Energy	1.5%	1.5%	6.6%	4.4%	4.0%	4.7%

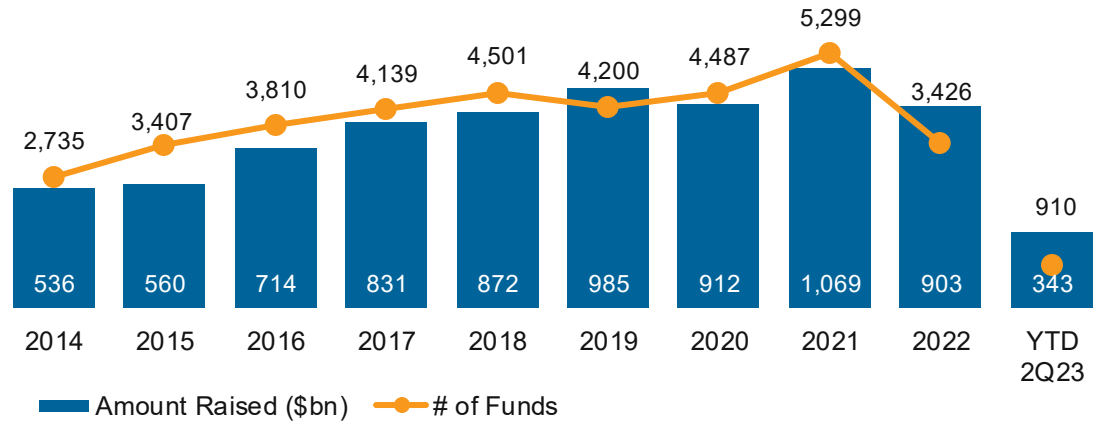
Source: Refinitiv/Cambridge. PME: Public Market Equivalent.

Private Equity Market Trends

“Flight to Quality” in Fundraising

- Fundraising declined back to historical levels in 2022 after its frenzied peak in 2021.
- So far, 2023 has been another down year, with LPs being more selective with their commitments.
- With significantly fewer funds closing this year and constrained LP commitment budgets, many GPs are reluctant to come back to market in the near term.

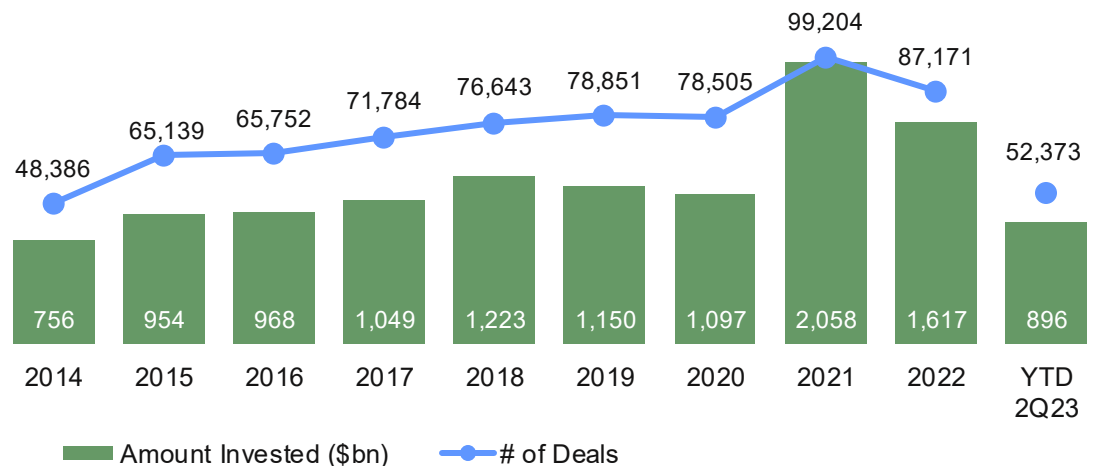
Annual Fundraising



Slowdown in Deal and Exit Activity

- Both investment and exit activity have slowed markedly, following rising interest rates, declines in the public markets, and resulting price uncertainty.

Annual Deal Activity



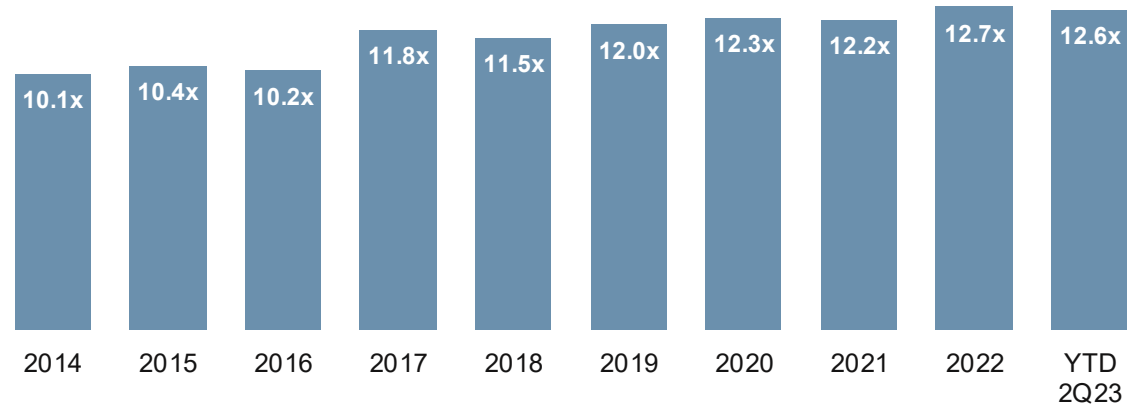
Source: PitchBook

Private Equity Market Trends

Buyout Valuations Plateau

- Although buyout valuations have plateaued in the first half of this year, EBITDA multiples remain elevated on an absolute basis, especially given the increases in interest rates.
- The bid-ask spread remains wide as many sellers are unwilling to accept lower valuations, which has contributed to slower deal activity this year.

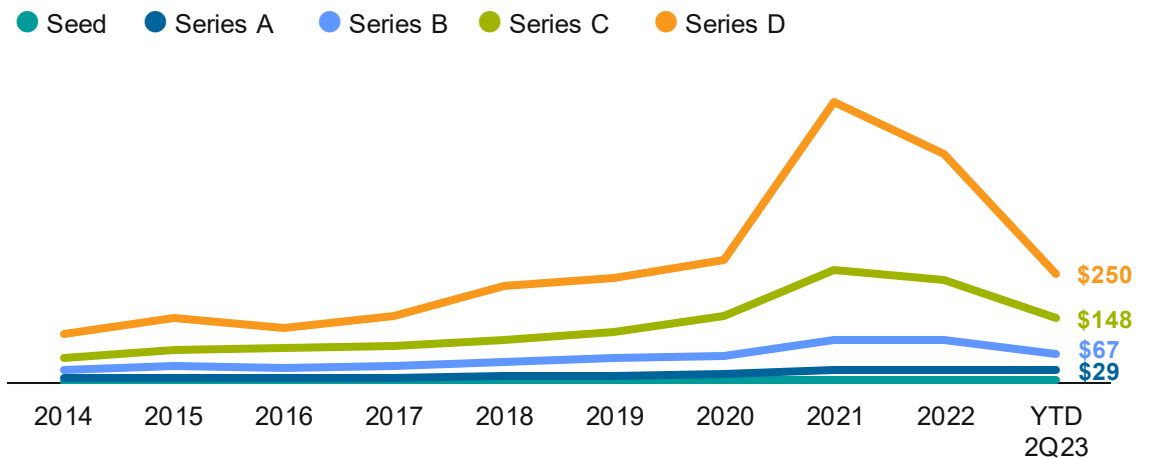
US Buyout EBITDA Multiples



Late-Stage Valuations Plummet

- Late-stage venture-backed companies have seen a drastic drop in valuations, back to pre-pandemic levels. Late-stage valuations are especially sensitive to public markets declines given these companies are closer to an IPO.

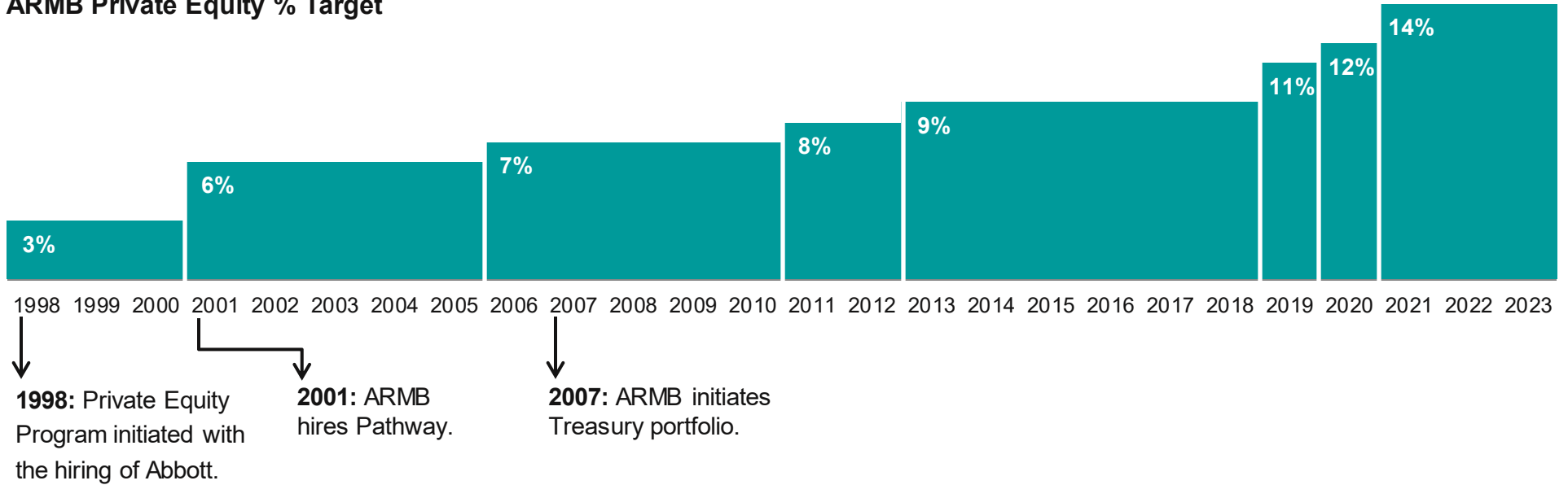
Venture Capital Pre-Money Valuations (\$m)



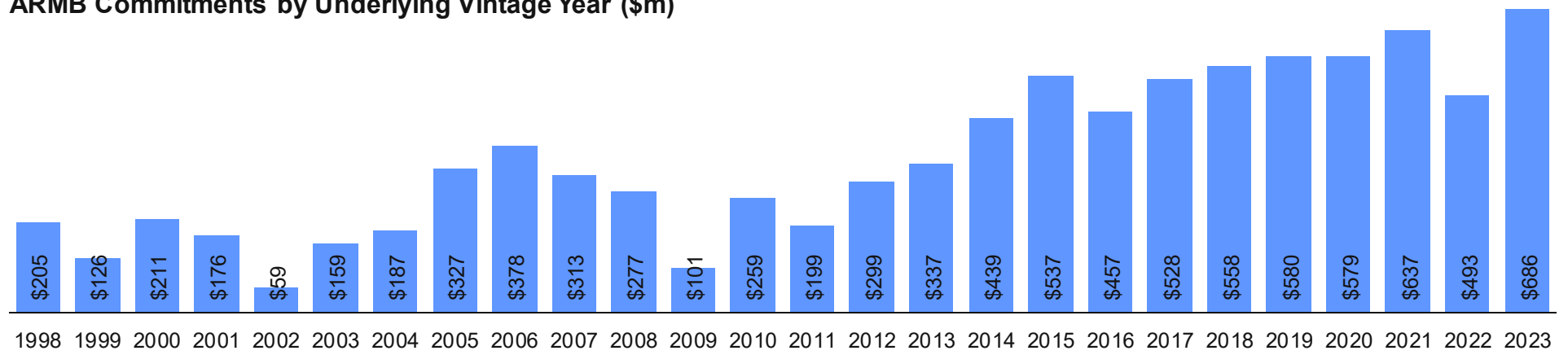
Source: PitchBook. Both charts show the median multiple or valuation for each calendar year.

ARMB Private Equity Program History

ARMB Private Equity % Target



ARMB Commitments by Underlying Vintage Year (\$m)



Private Equity Program Overview

Portfolio Overweight

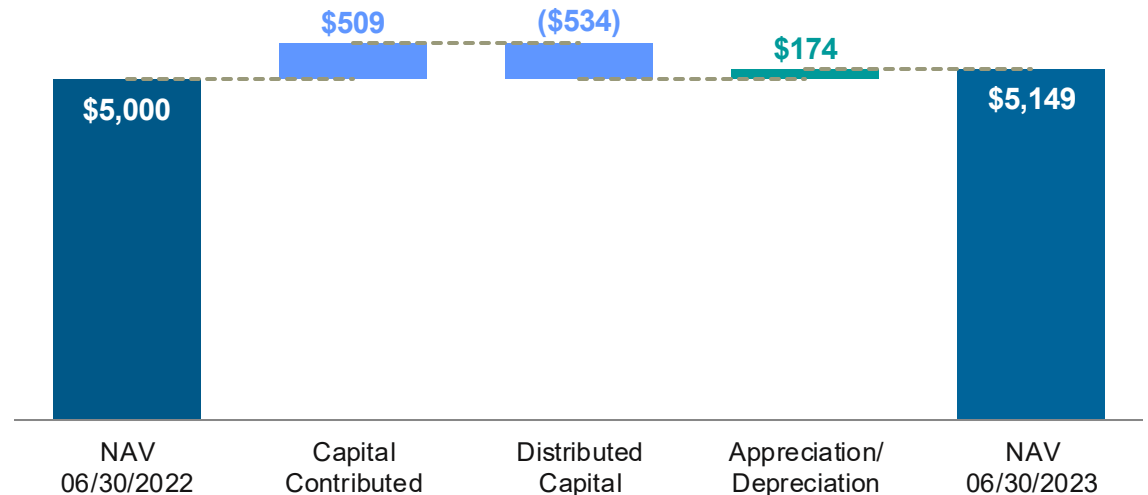
- ARMB's private equity portfolio is overweight at 17.3% of the target, but well within the upper band of 21%.
- The denominator effect continues to impact the private equity allocation, as is the case with most mature private equity programs this year.

Distribution Levels Normalize

- After experiencing a surge in distributions in 2021-2022, distributions this year have normalized back to historical levels, totaling \$534 million.

Private Equity Target vs. Actual	
% Target	14.0%
% of Plan	17.3%
+/- Target	+3.3%

	06/30/2022	% Change	06/30/2023
Commitments	\$8,457	8%	\$9,106
Paid-In Capital	\$7,129	7%	\$7,638
<i>% Paid-In</i>	84%	-	84%
Uncalled Capital	\$1,792	6%	\$1,906
Distributed Capital	\$7,966	7%	\$8,500
NAV	\$5,000	3%	\$5,149
Total Value (NAV + Distributed)	\$12,965	5%	\$13,649



\$millions

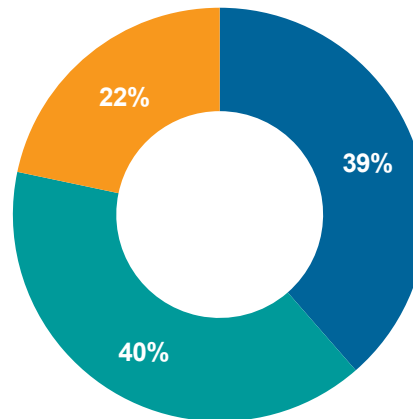
Private Equity Program by Manager

Growing Treasury Portfolio

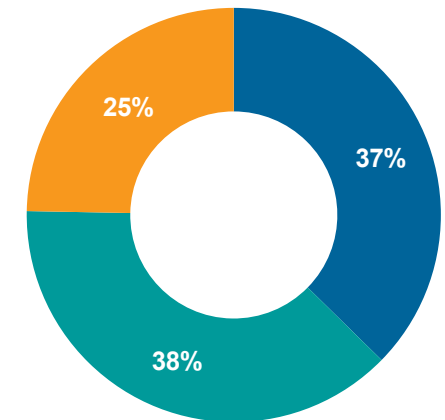
- With higher commitment levels in recent years, the Treasury portfolio has been growing and now represents 22% of the private equity NAV.
- While Abbott's and Pathway's NAVs remained flat this year, the Treasury portfolio saw a 12% uptick.
- The Treasury portfolio is expected to ultimately make up a third of the program, as new commitments are split roughly equally between the three managers.

NAV	06/30/2022	% Change	06/30/2023
Abbott	\$1,963	1%	\$1,986
Pathway	\$2,040	0%	\$2,046
Treasury	\$996	12%	\$1,117
Total Private Equity	\$5,000	3%	\$5,149

NAV by Manager



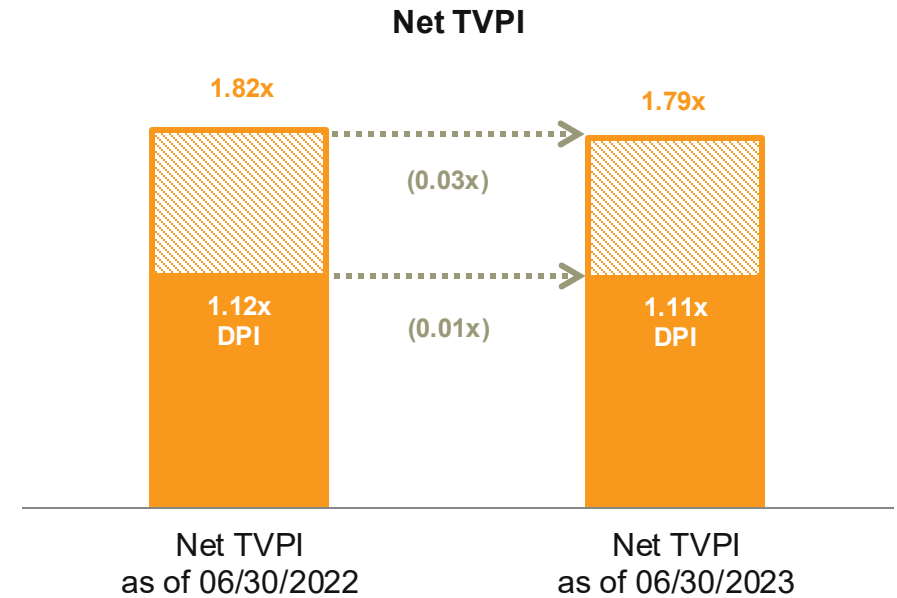
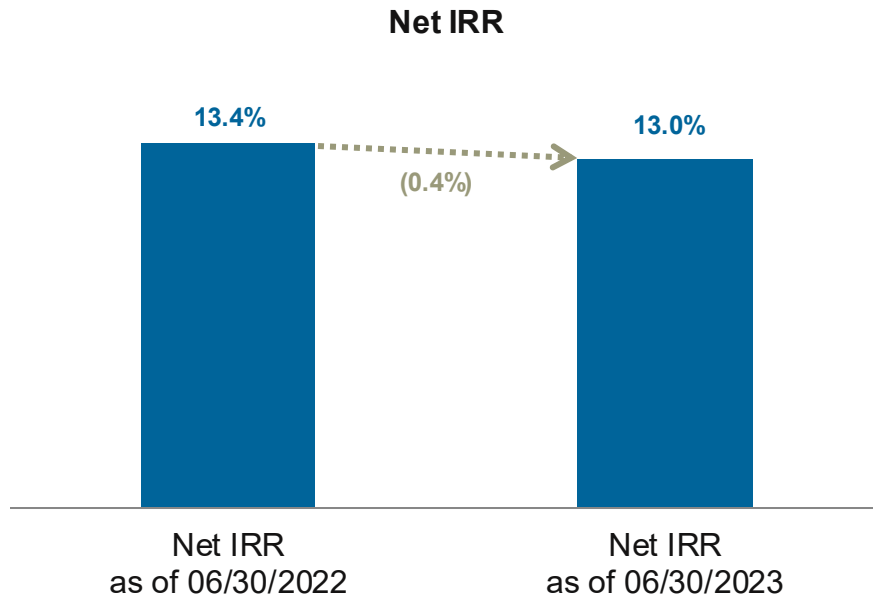
NAV + Uncalled by Manager



■ Abbott ■ Pathway ■ Treasury

\$millions

Performance



Slight Decline in Net IRR

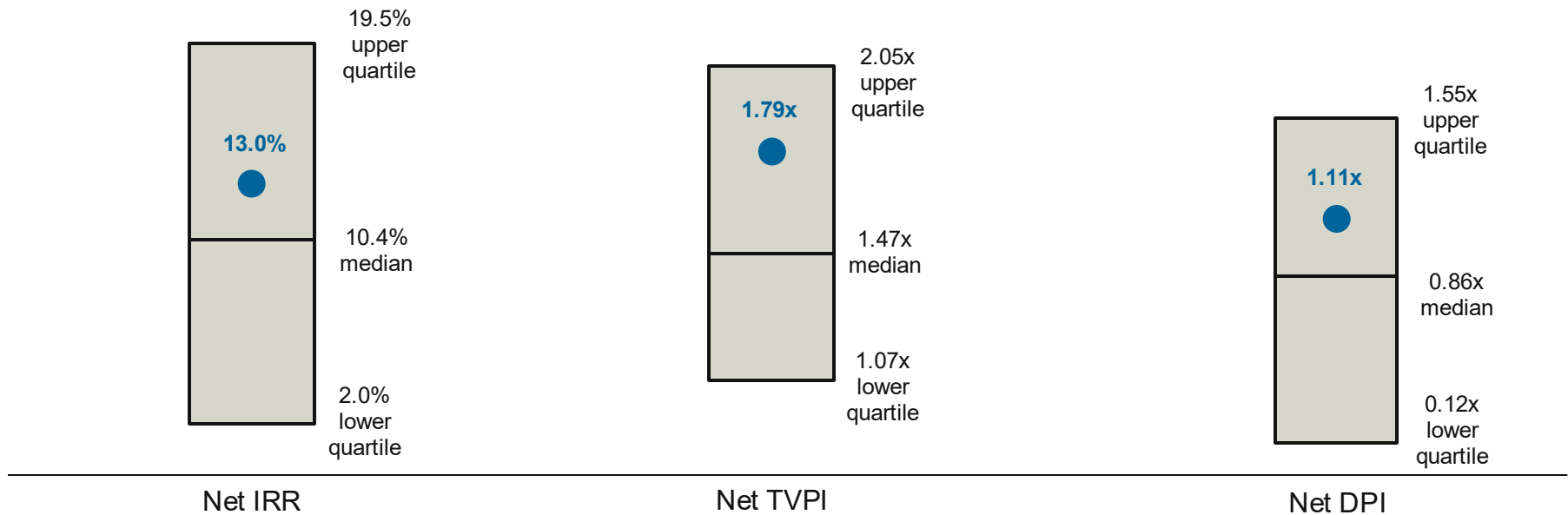
- The portfolio's Net IRR experienced a small decline from last year. The slight drop to 13.0% reflects some depreciation from the time value of money as well as the slow recovery of the private equity markets.

Ratios Decline Modestly

- The portfolio produced positive cash flow this year, with increases in distributions as well as NAV.
- The ratios above declined, however, due to the relatively larger increase in the denominator (paid-in capital).

DPI: Distributions divided by Paid-In Capital
TVPI: Total Value (Distributions + NAV) divided by Paid-In Capital

Relative Performance



Second Quartile Performance

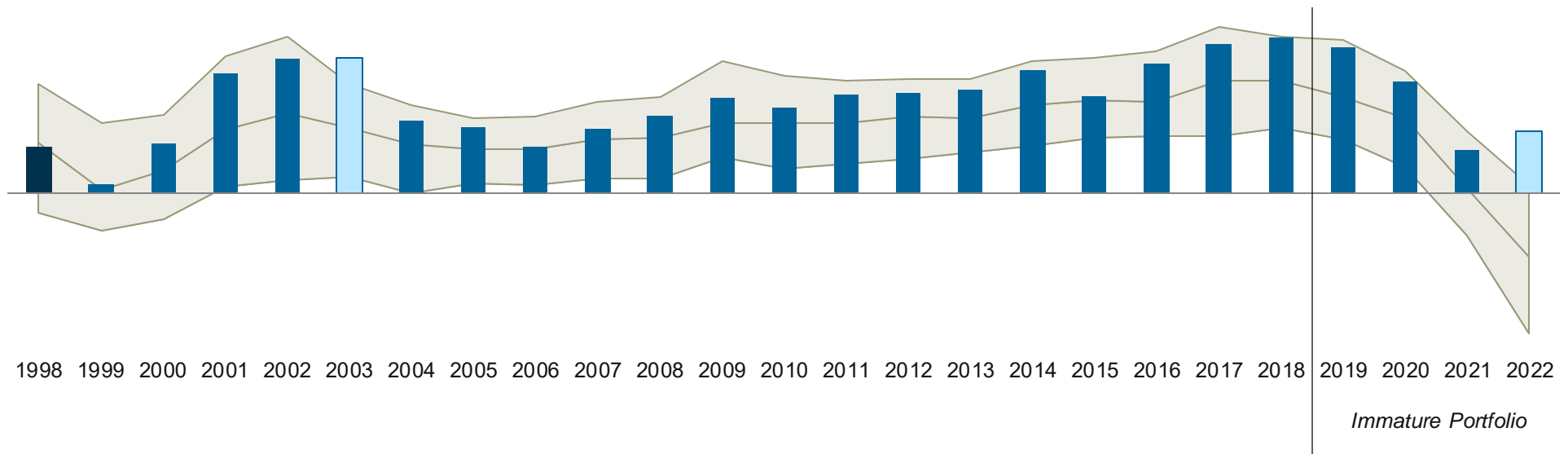
- The portfolio has generated 2nd quartile performance across all three measures, consistent with prior years.
- Given the wide dispersion of private equity returns, 2nd quartile performance is expected, and desired, for a well-diversified, mature portfolio.

As of 06/30/2023. Quartile Rankings against the Global Private Equity & Energy Refinitiv/Cambridge database for vintage years 1998-2023.

Performance by Vintage Year

Net IRR by Vintage Year

● 1st Quartile
 ● 2nd Quartile
 ● 3rd Quartile
 ● Global Private Equity & Energy Peer Group



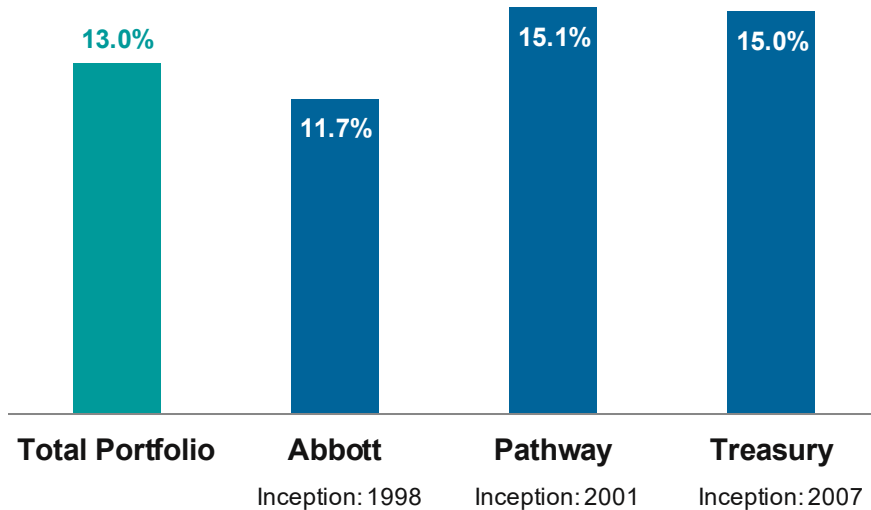
Consistent Second Quartile Performance

- The portfolio has exhibited consistent 2nd quartile performance by vintage year. Across the last 25 vintage years, only one year (1998) has been in the 3rd quartile.
- Since 2006 (which was impacted by the 2008 financial crisis), performance has been trending positively, in line with the broader private equity market.

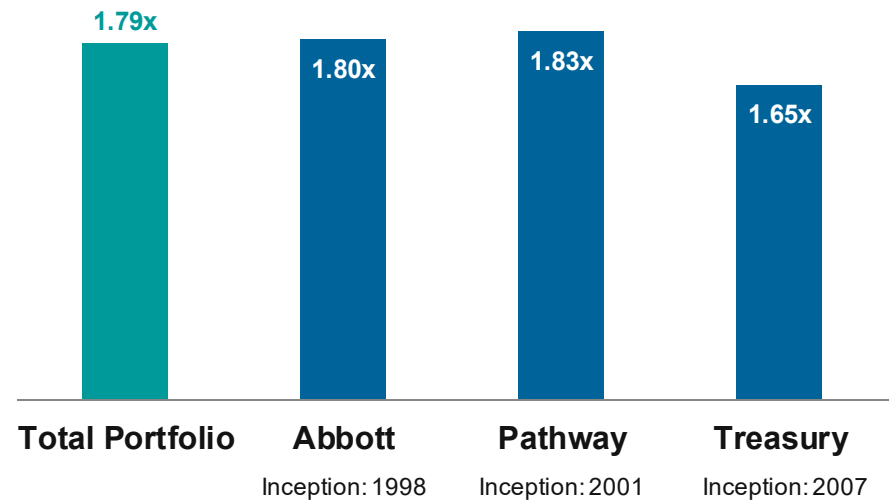
2023 has been excluded since it is not yet meaningful. Peer group reflects the Refinitiv/Cambridge database.

Performance by Manager

Net IRR



Net TVPI



Strong Net IRRs for Pathway & Treasury

- All three managers have generated 2nd quartile performance on a Net IRR basis.
- Pathway and the Treasury portfolio have both returned strong Net IRRs around 15%. Abbott's Net IRR of 12% still ranks 2nd quartile but reflects a longer time period and initial underperformance just before the Dot-Com Bubble.

Treasury Net TVPI Still Developing

- All three managers have generated 2nd quartile performance on a Net TVPI basis.
- Abbott and Pathway have both returned similar Net TVPIs at 1.80x-1.83x. The Treasury portfolio's Net TVPI of 1.65x is still developing, given 45% of its commitments have been made during the last five years.

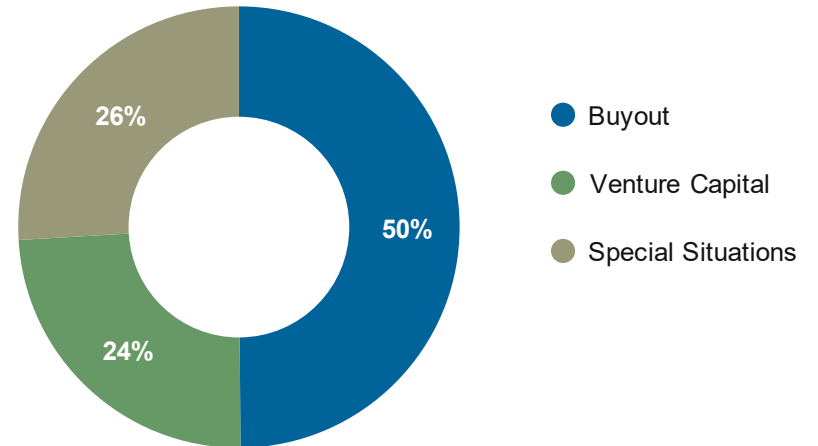
As of 06/30/2023.

Diversification by Strategy

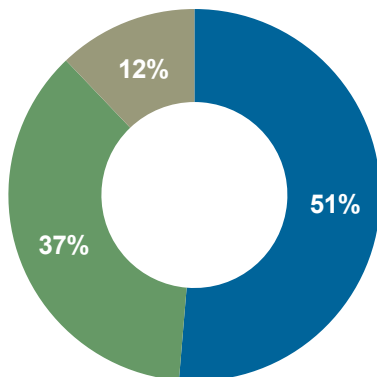
Well-Diversified by Strategy Type

- The portfolio is tilted towards buyouts, with the other half split between Venture Capital and Special Situations.
- Special Situations consists of secondaries, growth equity, distressed, and private energy strategies, among others.
- Compared to Pathway, Abbott has higher exposures to Venture Capital. As a result, their Buyout and Special Situations exposures are slightly lower.
- The Treasury portfolio is dominated by Special Situations, but it made its first Venture Capital commitment in 2022.

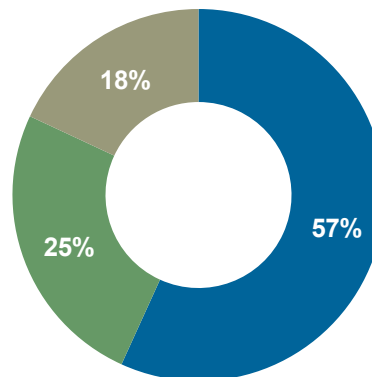
Total Portfolio



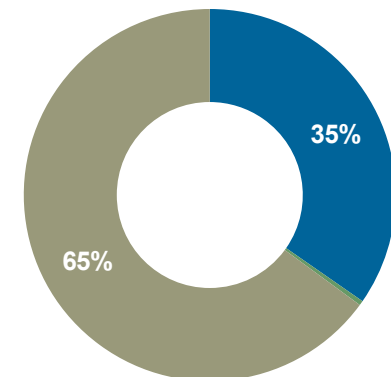
Abbott



Pathway



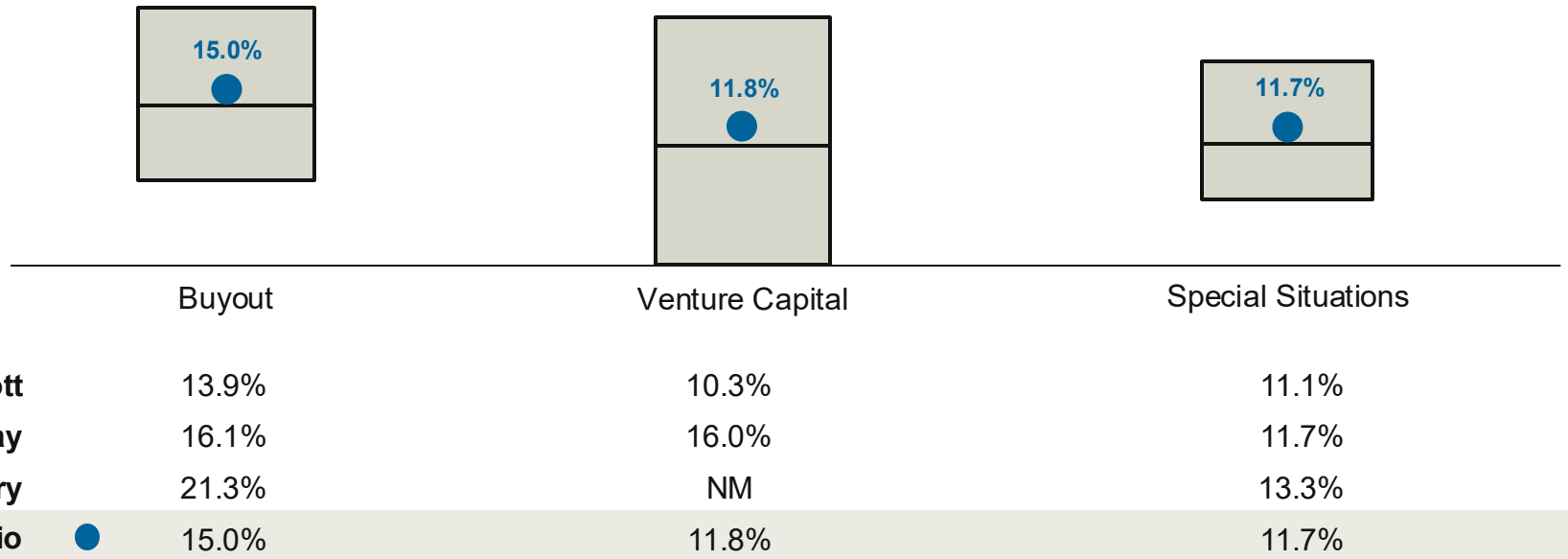
Treasury



As of 06/30/2023. Strategy diversification based on underlying partnerships, shown as a % of NAV.

Performance by Strategy

Net IRRs by Strategy Type



- The total portfolio has generated 2nd quartile performance for each strategy type.
- Buyouts have generated the strongest performance with a 15% Net IRR, with Venture Capital and Special Situations both around 12% Net IRRs.
- The Treasury portfolio has generated the strongest Net IRRs within both Buyouts and Special Situations.

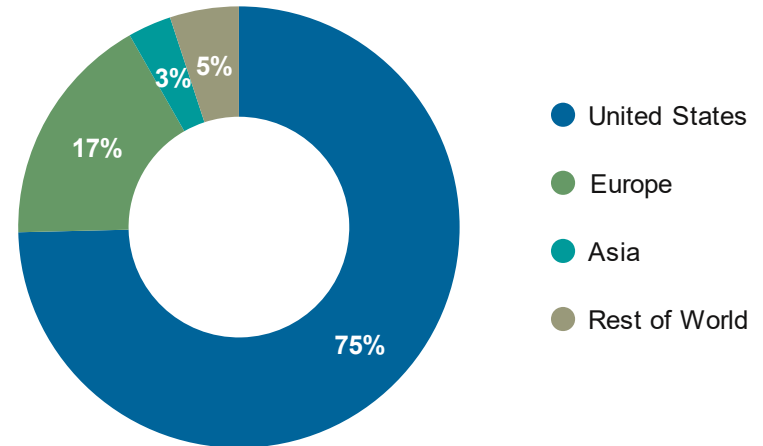
As of 06/30/2023. Quartile rankings against the Global Refinitiv/Cambridge database customized for each strategy type for vintage years 1998-2023. Special Situations includes Mezzanine, Credit Opportunities, Private Energy, and Secondaries.

Diversification by Geography

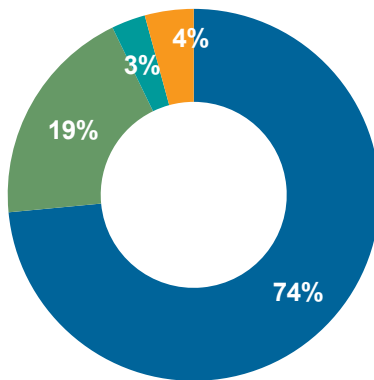
Concentration in U.S. Strategies

- The program is heavily weighted towards U.S. strategies, which make up 75% of the total portfolio. Such a high U.S. exposure has likely benefitted performance, given U.S. strategies have outperformed all other regions over the last 10 years.
- Compared to Abbott, Pathway has a heavier tilt towards international strategies, representing 29% of their portfolio.
- The Treasury portfolio has some international exposure as well, and it is broadly in line with Abbott and Pathway.

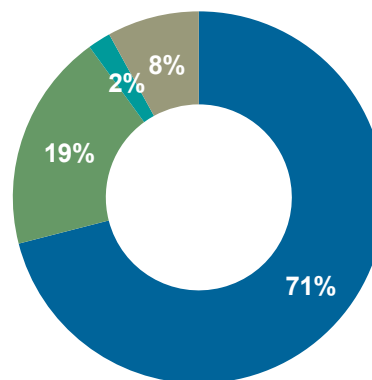
Total Portfolio



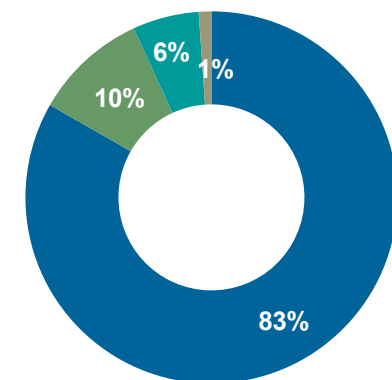
Abbott



Pathway



Treasury



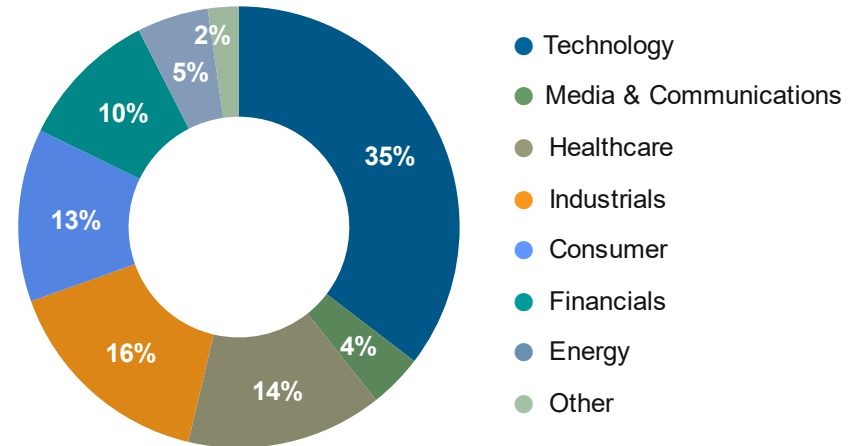
As of 06/30/2023. Geographic diversification based on underlying portfolio companies, shown as a % of NAV.

Diversification by Industry

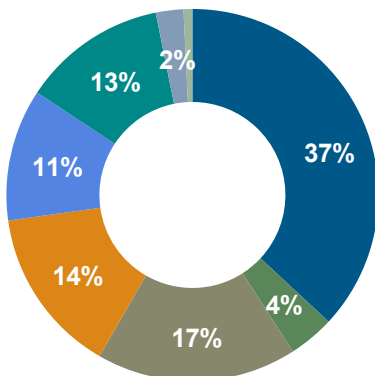
Well-Diversified by Industry with Healthy Tech Exposure

- The portfolio is well diversified by industry, with a tilt towards Technology. At 35% of the portfolio, the Technology exposure is consistent with other large private equity programs, but nevertheless, may require a thoughtful approach to future commitments.
- After Technology, the portfolio is split between Industrials, Healthcare, and Consumer.
- Pathway has a larger Technology exposure, while Abbott has larger exposures to Healthcare and Financials.
- The Treasury portfolio is the most diversified, with Industrials making up the largest sector and only 22% in Technology.

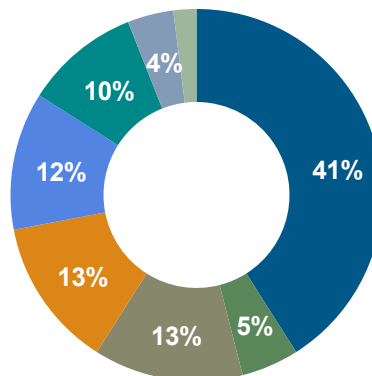
Total Portfolio



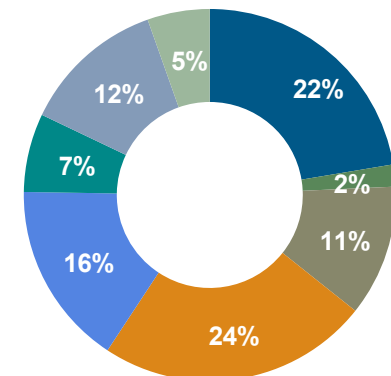
Abbott



Pathway



Treasury



As of 06/30/2023. Industry diversification based on underlying portfolio companies, shown as a % of NAV.

Abbott Capital Management – Profile

Year Founded	Headquarters	Additional Office(s)	Ownership	# Employees	# Investment Professionals
1986	New York City	London	Employee-Owned	58	19

Overview

- Abbott is a boutique fund-of-funds manager, with a longstanding client base across their commingled funds and separate accounts.
- Abbott constructs highly diversified portfolios across buyouts, venture capital and growth equity. In particular, the Firm has strong relationships in venture capital and European buyouts. Their portfolios also have small exposures to secondaries and co-investments.
- Abbott has been managing a private equity separate account for ARMB since 1998. ARMB represents 18% of their AUM, making ARMB an important client for the Firm.
- Compared to Pathway, Abbott is a smaller firm with stronger venture capital relationships, but more limited exposure to international strategies and co-investments.

Callan Stoplight

Performance

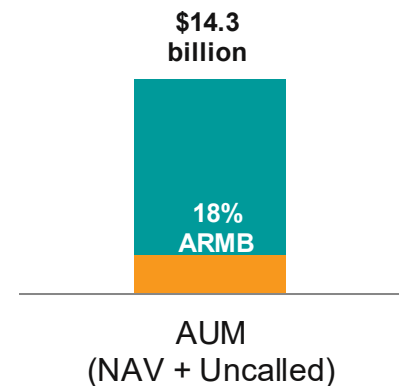
● Within Expectations

Organization

● Within Expectations

Organization/Team Updates

- Following the announcement 2021, Co-President Jonathan Roth has now retired and Len Pangburn became President.
- Key 2023 promotions included Wolf Witt to Managing Director as well as Arianna Merrill and Moritz Turck to Principal (becoming Investment Committee members).
- There were no Investment Committee or senior-level departures during the year and no pending retirements.



Callan Stoplight Legend: ● Within Expectations ● Notable ● Cautionary

Abbott Performance & Portfolio Construction

Vintage Years	# Partnerships*	Committed	Paid-in	% Paid-In	Unfunded	Distributions	NAV	Total Value
1998-2023	Total: 345 Active: 262	\$3.8b	\$3.3b	86%	\$649mm	\$3.9b	\$2.0b	\$5.9b

Portfolio Construction – Last 5 Years

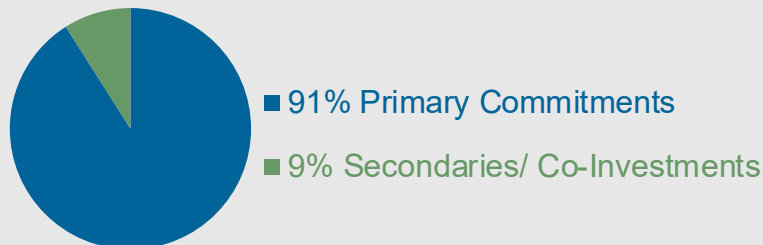
Recent commitments have tilted towards mid and large buyouts. Venture capital, growth equity, and small buyouts make up smaller percentages of the portfolio. Abbott's last private energy commitment was made in 2015, and they have not invested in credit-oriented or distressed funds in the last 10 years.

Average Commitment Size

\$10.7 million

Average # Per Year

19



Net TVPI	Quartile Ranking
----------	------------------

1.80x	2 nd
-------	-----------------

Net IRR	Quartile Ranking
---------	------------------

11.72%	2 nd
--------	-----------------

Net DPI	Quartile Ranking
---------	------------------

1.19x	2 nd
-------	-----------------

*Includes co-investments and secondaries.

Quartile rankings against the Global Private Equity & Energy Refinitiv/Cambridge database for vintage years 1998-2023.

Pathway Capital Management – Profile

Year Founded	Headquarters	Additional Office(s)	Ownership	# Employees	# Investment Professionals
1991	Irvine, CA	Providence, RI, London, Hong Kong & Tokyo	Employee-Owned	299	72

Overview

- Pathway is a large fund-of-funds manager, with a longstanding client base across their commingled funds and separate accounts. Pathway has been managing a separate account for ARMB since 2001.
- Pathway constructs highly diversified portfolios across buyouts, venture capital, growth equity, distressed, and credit-oriented strategies. In particular, they have expertise in co-investments as well as international strategies.
- As Pathway is a larger firm with a total AUM is \$105 billion, of which \$74 billion is private equity. ARMB only represents 4% of their private equity AUM.
- Compared to Abbott, Pathway is a larger firm with a global presence. They have more experience with co-investments, but fewer venture capital relationships.

Callan Stoplight

Performance

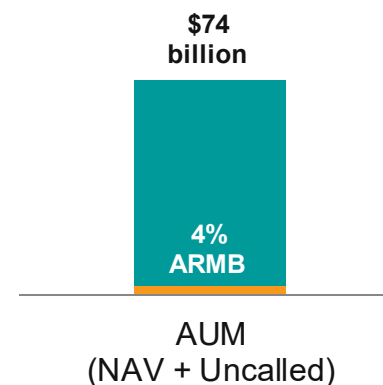
● Within Expectations

Organization

● Within Expectations

Organization/Team Updates

- Pathway recently promoted one investment professional to Partner, thereby expanding the partnership from 21 to 22 members (21 of which are investment partners).
- As previously announced, the CFO retired in 2023, with his duties transferred to two existing professionals.
- Pathway's Chief Compliance Officer (CCO) will retire at the end of 2023, and the position will be filled through an internal promotion.



Callan Stoplight Legend: ● Within Expectations ● Notable ● Cautionary

Pathway Performance & Portfolio Construction

Vintage Years	# Partnerships*	Committed	Paid-in	% Paid-In	Unfunded	Distributions	NAV	Total Value
2001-2023	Total: 398 Active: 349	\$3.5b	\$3.1b	89%	\$631mm	\$3.6b	\$2.0b	\$5.7b

Portfolio Construction – Last 5 Years

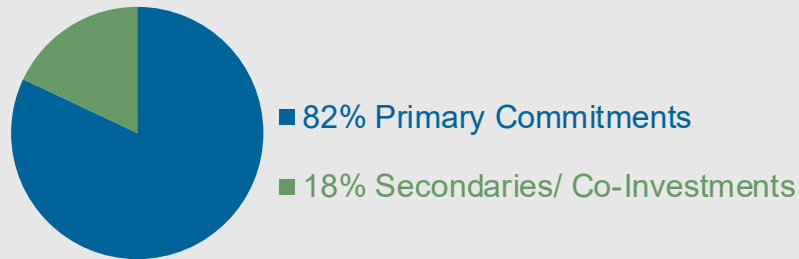
Recent commitments have tilted towards large and mid buyouts, followed by venture capital. Small buyouts and growth equity make up smaller percentages of the portfolio. Pathway has also invested small amounts in distressed, credit-oriented and private energy strategies, but will no longer be pursuing these going forward.

Average Commitment Size

\$6.5 million

Average # Per Year

33



Net TVPI	Quartile Ranking
----------	------------------

1.83x	2 nd
-------	-----------------

Net IRR	Quartile Ranking
---------	------------------

15.09%	2 nd
--------	-----------------

Net DPI	Quartile Ranking
---------	------------------

1.17x	2 nd
-------	-----------------

*Includes co-investments and secondaries.

Quartile rankings against the Global Private Equity & Energy Refinitiv/Cambridge database for vintage years 2001-2023.

Treasury Performance & Portfolio Construction

Vintage Years	# Partnerships*	Committed	Paid-in	% Paid-In	Unfunded	Distributions	NAV	Total Value
2007-2023	Total: 41 Active: 40	\$1.8b	\$1.3b	70%	\$626mm	\$981mm	\$1.1b	\$2.1b

Portfolio Construction – Last 5 Years

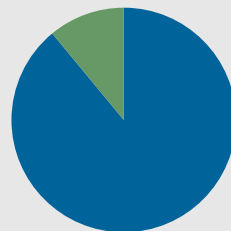
Recent commitments have focused on blue chip managers, particularly within large buyouts as well as growth-oriented strategies. The portfolio made its first venture capital commitment in 2022. 67% of these recent commitments have doubled down on Abbott and Pathway's investments. The portfolio continues to mature, as 45% of commitments have been made in the last five years.

Average Commitment Size

\$43 million

Average # Per Year

3.8



- 89% Primary Commitments
- 11% Secondaries Funds
- 0% Co-Investments

Net TVPI	Quartile Ranking
----------	------------------

1.65x	2 nd
-------	-----------------

Net IRR	Quartile Ranking
---------	------------------

14.96%	2 nd
--------	-----------------

Net DPI	Quartile Ranking
---------	------------------

0.77x	2 nd
-------	-----------------

*Includes co-investments and secondaries.

Quartile rankings against the Global Private Equity & Energy Refinitiv/Cambridge database for vintage years 2007-2023.

Summary & Observations

Mature Portfolio

- ARMB manages a large, mature private equity program with a successful 25-year history.
- As is the case with many mature private equity programs this year, ARMB's portfolio continues to be overweight its target due to the "denominator effect".

Strong Performance

- The portfolio has generated consistent 2nd quartile performance on a Net IRR, Net TVPI, and Net DPI basis as of 06/30/2023.
- All three managers have been positive contributors to performance.

Well Diversified

- The program is highly diversified across 668 unique partnerships, secondaries and co-investments.
- The portfolio primarily consists of blue chip managers spanning a variety of strategy types, industries and, to a lesser extent, geographies.

Distributions Normalize

- After experiencing exceptionally strong distributions in 2021 and 2022, distributions have normalized this year back to historical levels.
- The portfolio's net cash flow remained slightly positive for the year, with distributions still outpacing contributions.

Looking Ahead...

- While the depths of the slowdown in 2022 appear to be behind us, uncertainty in the private equity markets persists, driven by slower deal activity, higher interest rates, a wide bid-ask spread, and a closed IPO window.
- Private equity fundraising has significantly slowed down, which may impact ARMB's commitment activity this coming year.

Disclaimers

This report is for informational purposes only and should not be construed as legal or tax advice on any matter. Any decision you make on the basis of this content is your sole responsibility. You should consult with legal and tax advisers before applying any of this information to your particular situation.

This report may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact.

Reference to or inclusion in this report of any product, service or entity should not be construed as a recommendation, approval, affiliation or endorsement of such product, service or entity by Callan.

Past performance is no guarantee of future results.

The statements made herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties such that actual results may differ materially from these statements. There is no obligation to update or alter any forward-looking statement, whether as a result of new information, future events or otherwise. Undue reliance should not be placed on forward-looking statements.

Abbott Capital Management, LLC

Mandate: Private Equity

Hired: 1998

Firm Information	Investment Approach	Total ARMB Mandate
<p>Abbott is an independent investment management firm founded in 1986. Abbott focuses exclusively on private equity by making primary commitments, secondaries, and co-investments for both separate account clients and Abbott-sponsored commingled funds in professionally managed venture capital, growth equity, and buyout funds. Since inception, Abbott has committed more than \$25 billion to more than 700 private equity investments on behalf of its clients, and currently manages over \$14 billion in assets.</p> <p>Abbott is registered as an investment advisor with the SEC in the United States and its UK subsidiary is authorized and regulated by the FCA. The firm has offices in New York and London.</p> <p>As of 10/15/23, Abbott has 61 employees, including 20 investment professionals.</p> <p>Key Executives: Young Lee, Managing Director Leonard Pangburn, Managing Director Matthew Smith, Managing Director</p>	<p>Abbott employs a collaborative approach to investing and managing portfolios. This team approach ensures that investment discussions benefit from the broad range of backgrounds and experiences of the members of the investment team, as well as from the investment management disciplines the firm has developed over more than three decades of managing private equity assets.</p> <p>Abbott's investment process is multi-stepped and disciplined. Investment decisions are made through an iterative process of review, analysis, and further review designed to meet the standards of Abbott's investment team. Fundamentally, Abbott evaluates general partners based on its views of:</p> <p>The quality of the team, including:</p> <ul style="list-style-type: none"> • Proven ability to work cohesively • Past investment success • Individual and joint reputations, including for acting with integrity and honesty <p>The quality of the prior track record, including:</p> <ul style="list-style-type: none"> • Absolute and relative performance • Relevance to the current strategy • Repeatability • Involvement of present team members in that record <p>The team's ability to be successful in the future, given:</p> <ul style="list-style-type: none"> • Strategy • Experience • Motivation <p>Benchmark: 1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE +200 basis points and the Cambridge vintage year peer comparison.</p>	<p>Assets Under Management: (6/30/23) Market Value: \$2.0 billion</p>

Concerns: None

Performance

The since inception internal rate of return (IRR) for ARMB's Abbott portfolio is 11.7% through 6/30/23, which compares favorably against the public market equivalent return of ARMB's blended benchmark (1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE) of 7.4%.

ARMB's portfolio managed by Abbott has outperformed the Cambridge median over all vintage years with four vintage years in the top quartile and 18 in the second quartile when compared against the Cambridge database for vintage years 1999-2020.



ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 2023

ABBOTT PRESENTERS



MATTHEW SMITH

Managing Director

Investment Team
Joined Abbott in 2000

Georgetown University, A.B. in History
Georgetown University, M.B.A. in Finance



YOUNG LEE

Managing Director

Investment Team
Joined Abbott in 2007

Stanford University, B.A. in Economics
Columbia University, M.B.A.

FIRM OVERVIEW

ABOUT ABBOTT

Founded in **1986**, Abbott is a multi-strategy private equity firm with **\$14+ billion** in assets under management. Our global platform spans the **private equity, growth equity, and venture capital** markets with solutions for a diverse investor base comprised of:

- Corporate, Public and Multiemployer Pension Plans;
- Endowments and Foundations;
- Family Offices and High-Net-Worth Individuals

Since inception, Abbott has committed **\$25+ billion to over 700 primary, secondary, and co-investments** on behalf of its clients.

100%
Independent and Employee-Owned

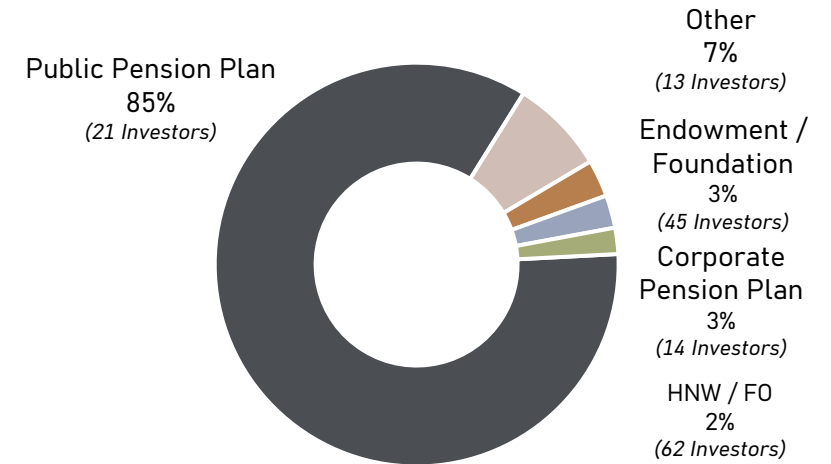
\$1B+
Avg Annual Capital Deployed

160+
GP Relationships

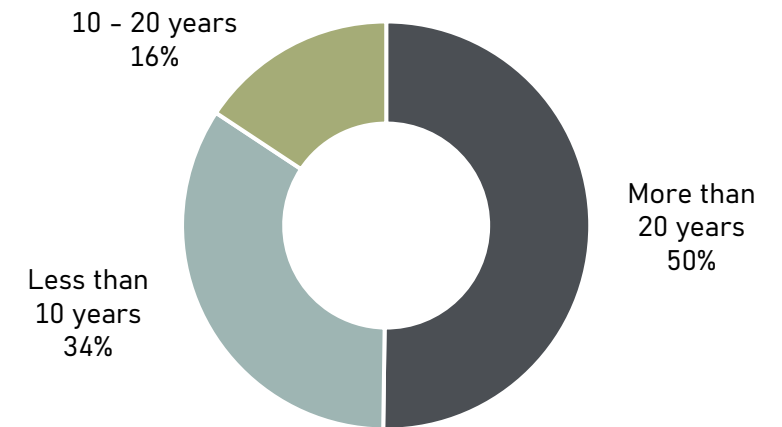
160+
LPAC Seats

2015
UN PRI Signatory

INVESTORS BY TYPE BY AUM



INVESTORS BY TENURE¹ BY AUM



¹ Excludes investors and separately managed accounts who have not made a commitment since 2018.

All information as of Dec 31 2022; LPAC Seats include observer rights. AUM does not reflect Abbott's reported RAUM due to the inclusion of liabilities and approximately \$776M of non-discretionary assets for which Abbott provides ongoing investment monitoring and reporting but does not provide continuous and regular supervisory or management services.

PRIVATE EQUITY SOLUTIONS

SEPARATELY MANAGED ACCOUNTS

CUSTOMIZED PORTFOLIOS
built to meet client-specific
investment goals

ACCESS to sector-focused,
emerging, and diverse
managers

PERSONALIZED REPORTING
and administrative support

35+ YEARS

LONGEST
ACTIVELY INVESTING
SEPARATE ACCOUNT

SECONDARIES & CO-INVESTMENTS

DEDICATED FUNDS for each
strategy

SECONDARIES include GP-
led, asset carve-outs, and
fund purchases

CO-INVESTMENTS with both
new and existing Abbott GPs
via direct deals and SPVs

110+/\$1.5B+

TRANSACTIONS /
INVESTED CAPITAL

SINCE INCEPTION

FLEXIBLE FUND SOLUTIONS

DIVERSIFIED FUNDS with
flexible strategy allocations

TARGETED geographic and
sector exposures

**SINGLE AND MULTI-ASSET
EXPOSURE** through
secondaries and co-
investments

\$6.0B+

LP COMMITMENTS TO
DIVERSIFIED ABBOTT FUNDS

SINCE INCEPTION

ABBOTT TEAM

INVESTMENT COMMITTEE



LEONARD PANGBURN
Managing Director,
President
Joined 2005



Secondaries
MEREDITH RERISI
Managing Director
Joined 1998



TIM MALONEY
Managing Director
Joined 2004



MATTHEW SMITH
Managing Director
Joined 2000



YOUNG LEE
Managing Director
Joined 2007



Abbott Europe
JOBST KLEMME
Managing Director
Joined 2015



Secondaries
WOLF WITT
Managing Director
Joined 2018



JONATHAN TUBIANA
Principal
Joined 2009



Abbott Europe
MORITZ TURCK
Principal
Joined 2017



ARIANNA MERRILL
Principal
Joined 2018

INVESTMENT TEAM



Secondaries
DECLAN FEELEY
Vice President



AMY CAPORALE
Associate



WILLIAM CRENSHAW
Associate



GANGGAS HARJIANTO
Associate



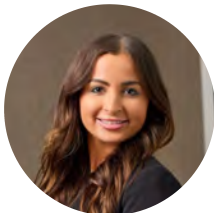
VICTORIA LIN
Associate



Secondaries
ALEXIS MAIDA
Associate



LUIS DELGADO
Analyst



KATE HOLZER
Analyst



DILLON WEISBERG
Analyst



JEREMIAH YONDAH
Analyst

Joined refers to the year employee joined Abbott.

ABBOTT TEAM

OPERATIONS, FINANCE & LEGAL / COMPLIANCE



MARY T. HORNBY
Managing Director,
General Counsel & CCO
Joined 2004



LAUREN MASSEY
Managing Director,
Chief Administrative Officer
Joined 1995



PAOLO PARZIALE
Managing Director,
Chief Financial Officer
Joined 2002



PETER DORO
Director,
Compliance



JOE JULIANO
Director,
Investment Operations



JENNIFER LAGNADO
Director,
Corporate Operations



SITI (PUTRI) KAFRAWI
Senior Manager,
Fund Administration



SAMANTHA HEWITT
Director,
Investor Relations



SEAN P. LONG
Director,
Marketing & Client Solutions



KERI GAWLIK
Vice President,
Investor Relations



LAYLA BEYZAVI
Vice President,
Marketing & Client Solutions

CLIENT SOLUTIONS & INVESTOR RELATIONS

50+ PEOPLE DEDICATED TO PRIVATE EQUITY

Joined refers to the year employee joined Abbott.

PORTFOLIO REVIEW

ARMB ACTIVE & LIQUIDATED PORTFOLIO SNAPSHOT

AS OF JUN 30 2023

	Commitment	Amount Paid-in	Distributions	Valuation	Total Value	TVPI	IRR
ACTIVE PORTFOLIO FUNDS & CO-INVESTMENTS:							
Venture Capital & Growth Equity	\$846,205,000	\$764,298,453	\$977,121,406	\$687,855,989	\$1,664,977,395	2.18	12.03%
Buyouts & Special Situations	\$2,056,087,220	\$1,624,006,962	\$1,662,203,680	\$1,164,388,849	\$2,826,592,529	1.74	15.55%
Secondary Transactions	\$60,622,826	\$55,110,329	\$38,314,327	\$52,431,994	\$90,746,321	1.65	20.99%
Co-Investments	\$72,908,076	\$66,714,501	\$11,894,811	\$78,405,516	\$90,300,327	1.35	14.74%
Total Active Portfolio Funds & Co-Investments	\$3,035,823,122	\$2,510,130,245	\$2,689,534,224	\$1,983,082,348	\$4,672,616,572	1.86	13.84%
LIQUIDATED PORTFOLIO FUNDS:							
Venture Capital & Growth Equity	\$196,722,219	\$191,738,050	\$289,493,962	-	\$289,493,962	1.51	6.67%
Buyouts & Special Situations	\$557,720,261	\$551,146,149	\$912,651,709	-	\$912,651,709	1.66	10.30%
Secondary Transactions	\$12,403,734	\$11,854,677	\$26,997,393	-	\$26,997,393	2.28	24.53%
Total Liquidated Portfolio Funds	\$766,846,213	\$754,738,876	\$1,229,143,064	-	\$1,229,143,064	1.63	9.43%
Total ARMB Portfolio Funds & Co-Investments	\$3,802,669,336	\$3,264,869,121	\$3,918,677,288	\$1,983,082,348	\$5,901,759,636	1.81¹	11.85%¹
Net IRR							11.62%²

¹Total ARMB Portfolio Funds & Co-Investments IRR and TVPI are shown gross of investment management fees charged by Abbott and gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.

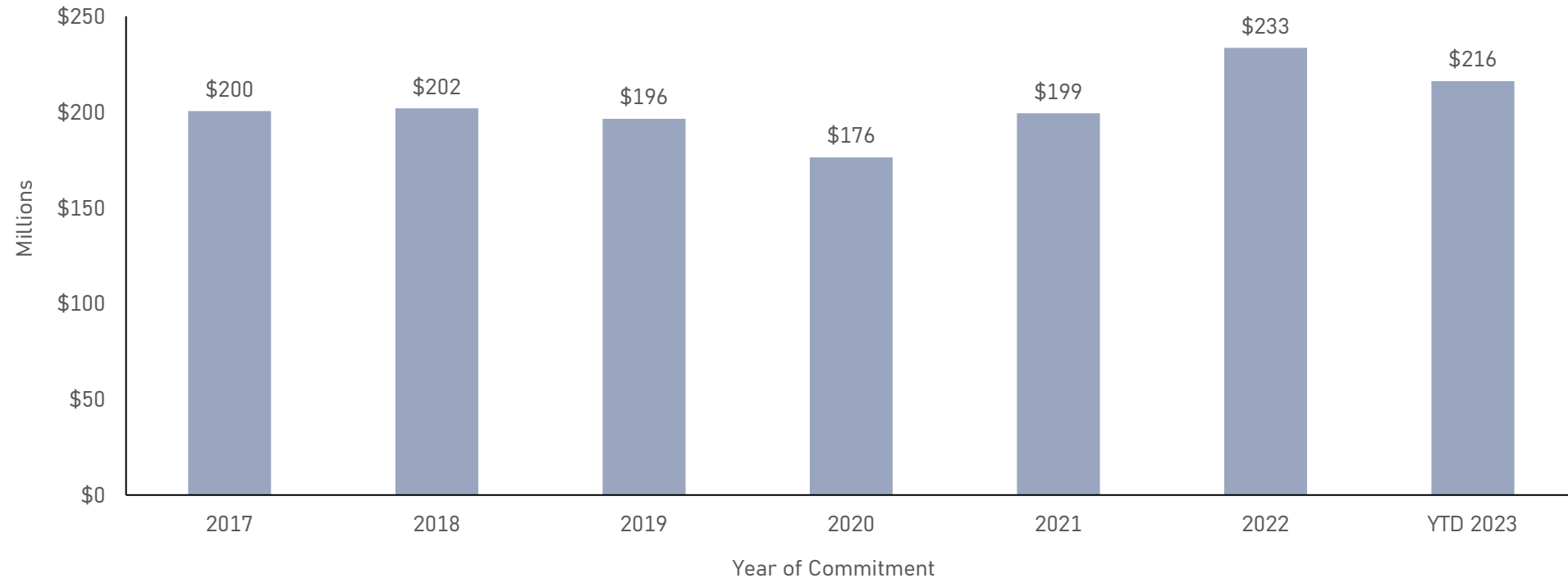
²Net IRR is shown net of investment management fees charged by Abbott and gross of gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.

Past performance is not a guide to future results and is not indicative of expected realized returns.
See Important Information pages herein including [ARMB Account Performance Information](#).

ARMB COMMITMENT ACTIVITY

CONSISTENT, STEADY PACE OF COMMITMENTS

- Disciplined, measured approach to deployment
- High conviction manager selection



YTD information provided as of Oct 31 2023.

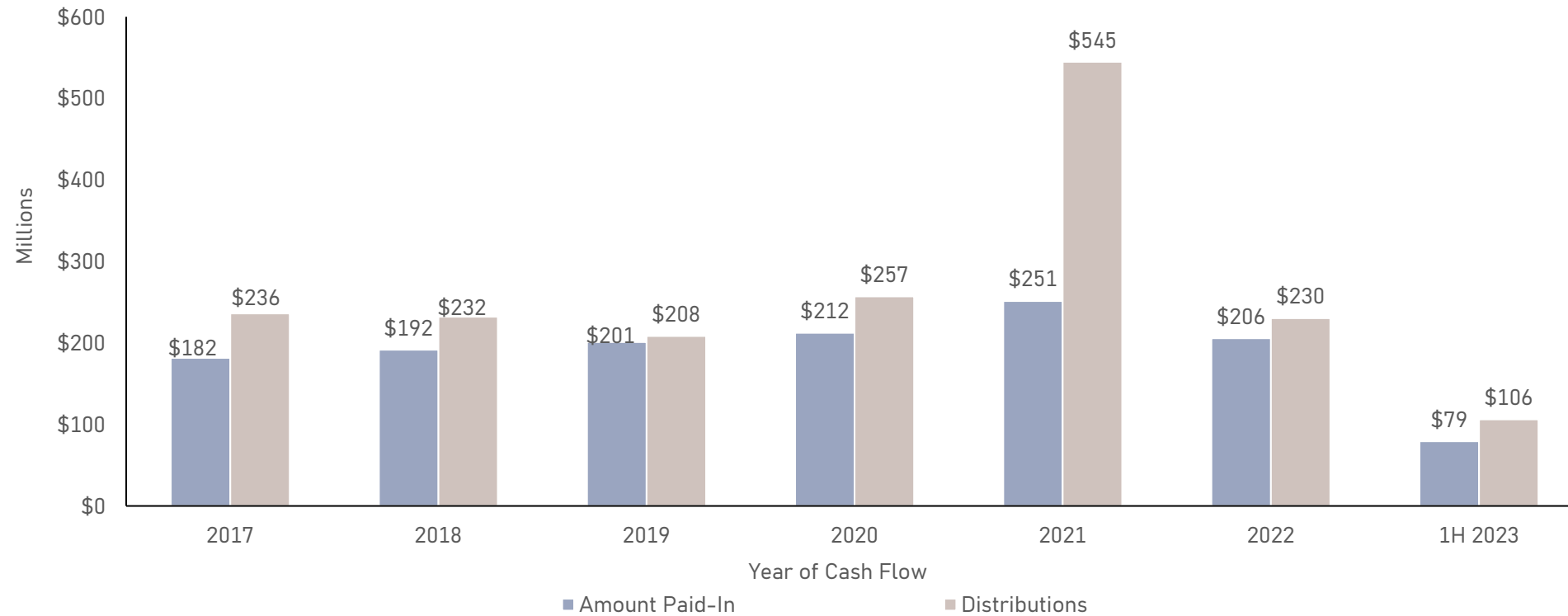
Amounts committed in a currency other than USD (if any) have been converted to USD using the applicable exchange rate on the date of closing.

See Important Information pages herein including [ARMB Account Performance Information](#).

ARMB PORTFOLIO FUND CASH FLOWS

CALLS & DISTRIBUTIONS REMAIN MUTED

- Since 2017, \$1.3 billion of capital paid-in, \$1.8 billion returned to ARMB
- Cash flow positive by more than \$492 million since 2017



As of Jun 30 2023.

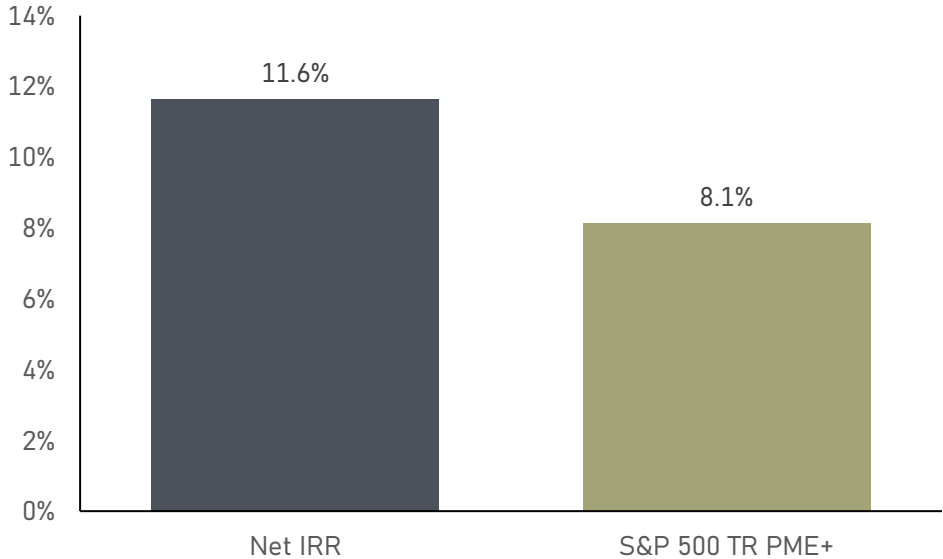
Past performance is not a guide to future results and is not indicative of expected realized returns. See Important Information pages herein including [ARMB Account Performance Information](#).

ARMB NET PERFORMANCE

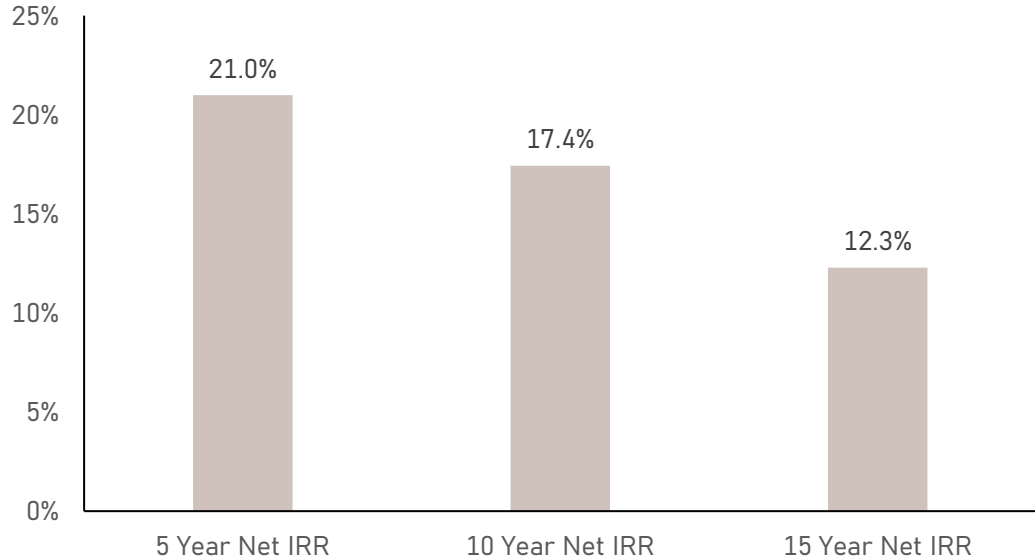
POOLED IRR & PUBLIC MARKET EQUIVALENT+

- ARMB's since inception Net IRR is 11.6%
- Based on a PME+ analysis, ARMB's since inception Net IRR has outperformed the S&P 500 Total Return Index ("S&P 500 TR") by 350 bps

ARMB NET PORTFOLIO AND S&P 500 TR PME+ SINCE INCEPTION



ARMB NET PORTFOLIO HORIZON PERFORMANCE



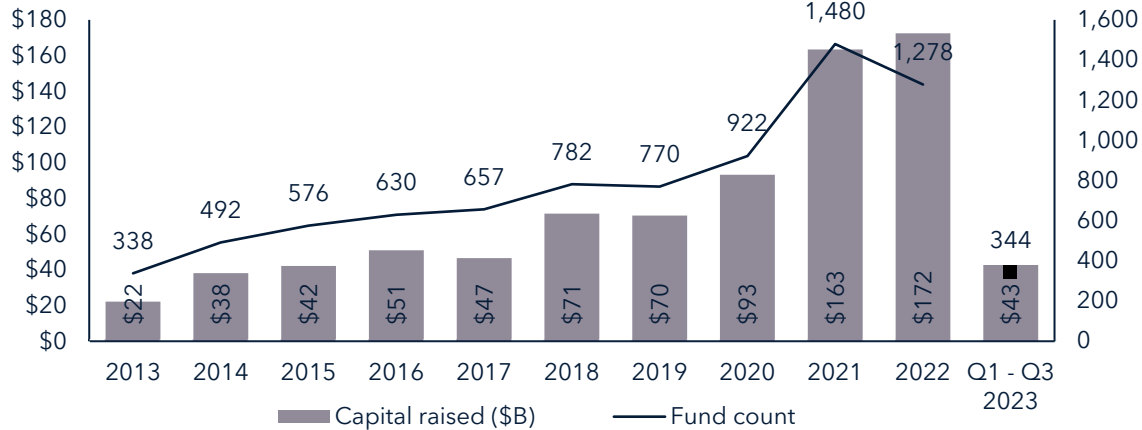
As of Jun 30 2023.
Net IRR is shown net of investment management fees charged by Abbott and gross of gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.
The S&P 500 TR has not been selected to represent a benchmark for ARMB, but rather allow for comparison of ARMB's performance to that of a widely recognized index.

Past performance is not a guide to future results and is not indicative of expected realized returns.
See Important Information pages herein including [ARMB Account Performance Information](#) and [Public Market Equivalent and Indices](#).

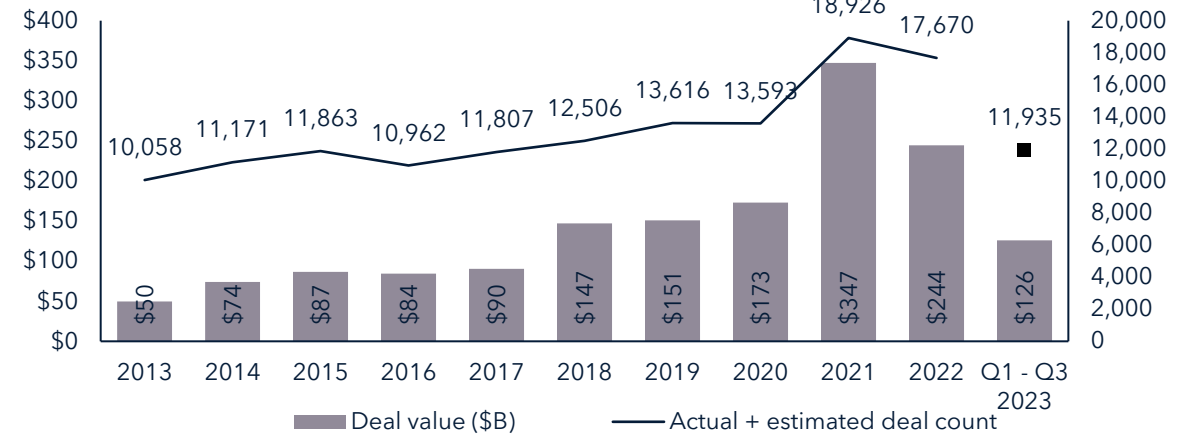
MARKET OVERVIEW

U.S. VENTURE CAPITAL

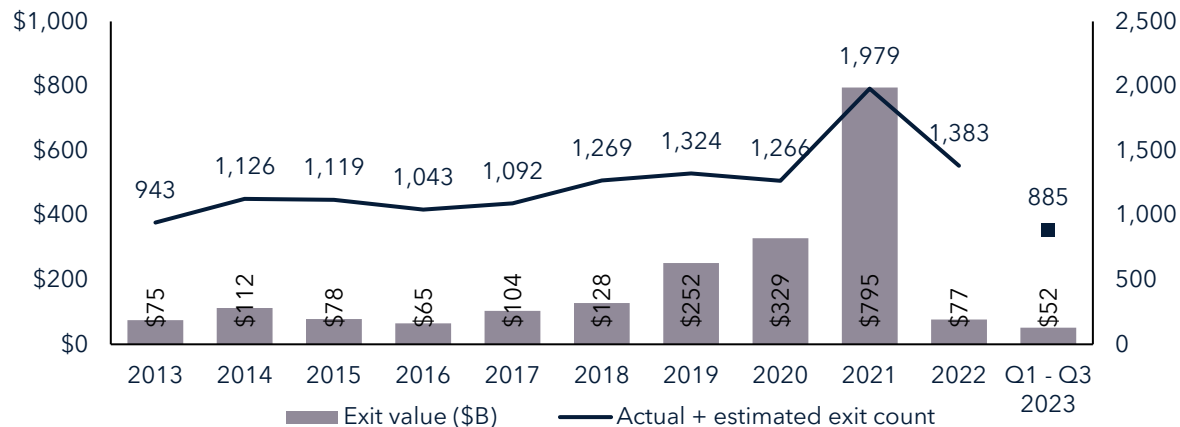
U.S. VC FUNDRAISING ACTIVITY



U.S. VC DEAL ACTIVITY



U.S. VC EXIT ACTIVITY



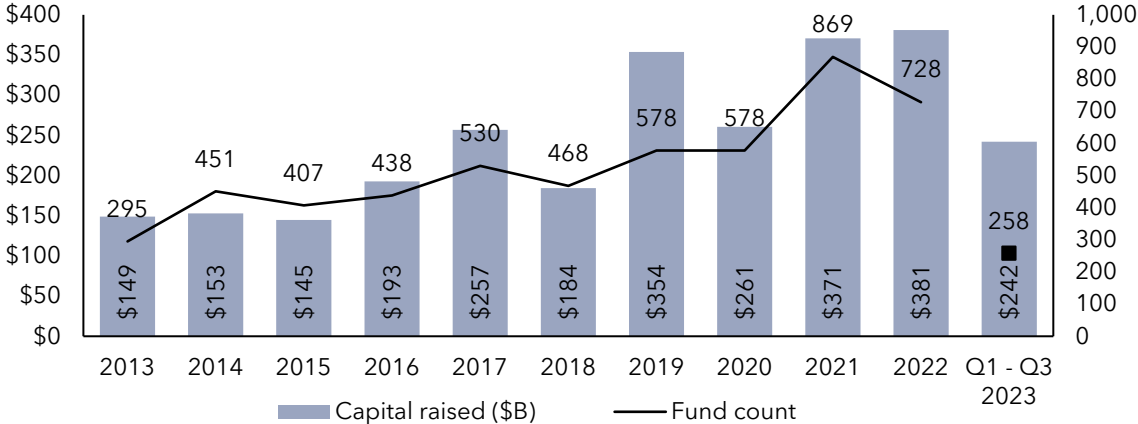
MAIN TAKEAWAYS

- U.S. venture capital raised \$43 billion across 344 funds through Q3 2023, which is roughly one-quarter of 2022's full-year figures.
- Deal value fell to \$37 billion this quarter, its lowest level since Q4 2019. Deal count fell for the sixth consecutive quarter and was nearly half of Q1 2022's peak.
- Exit value totaled \$36 billion this quarter - more than double the prior two quarters combined - due to an uptick in IPOs.

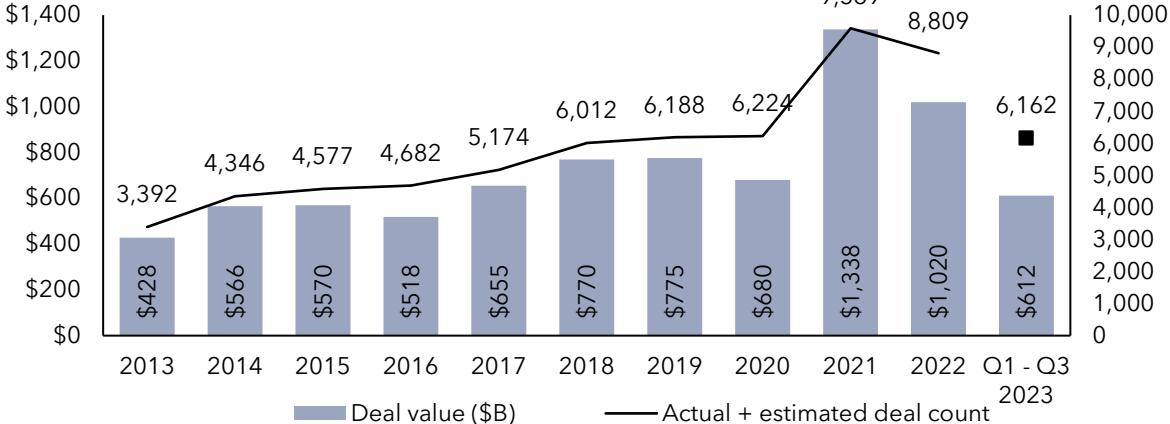
Data Source: Q3 2023 PitchBook-NVCA Venture Monitor.
 For illustrative purposes only. There is no assurance that any trends depicted or described will continue.
 The Main Takeaways expressed are Abbott's opinion and are subject to change without notice.

U.S. PRIVATE EQUITY

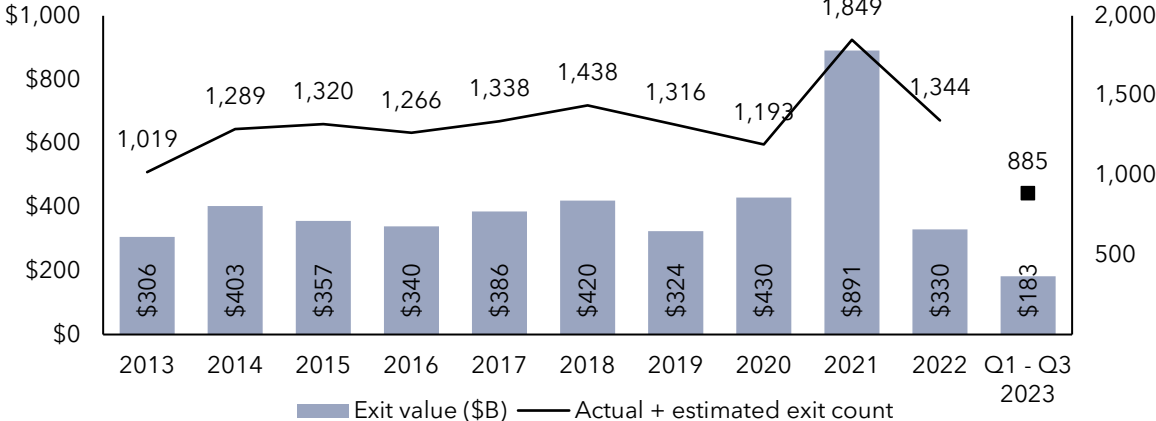
U.S. PE FUNDRAISING ACTIVITY



U.S. PE DEAL ACTIVITY



U.S. PE EXIT ACTIVITY



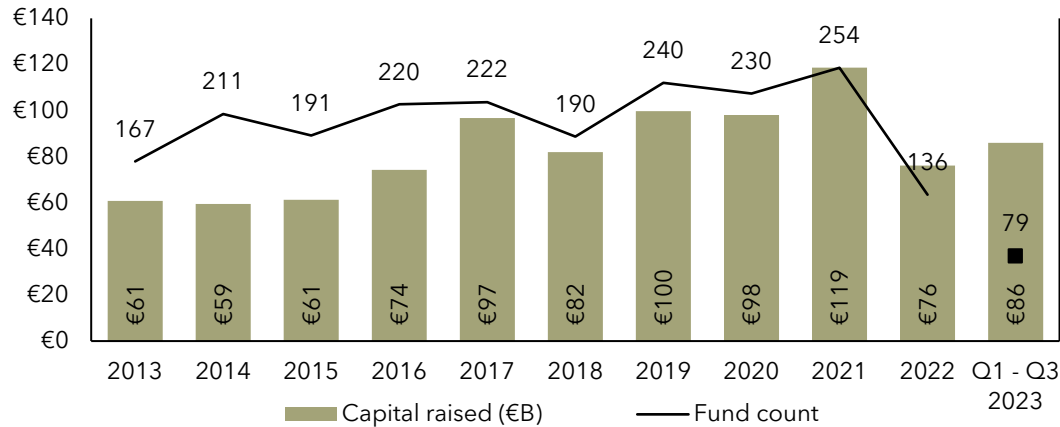
MAIN TAKEAWAYS

- U.S. private equity funds raised \$242 billion through Q3 2023, making it unlikely to reach 2022’s record of \$381 billion. However, this nine-month total nearly matches all of 2020 (\$261 billion raised) and has already surpassed all of 2018 (\$184 billion raised).
- U.S. dealmaking declined in Q3 2023, with \$173 billion of value recorded over 1,972 transactions.
- This quarter’s exit activity produced the second-lowest reading since Q1 2013, with \$44 billion across 275 deals.

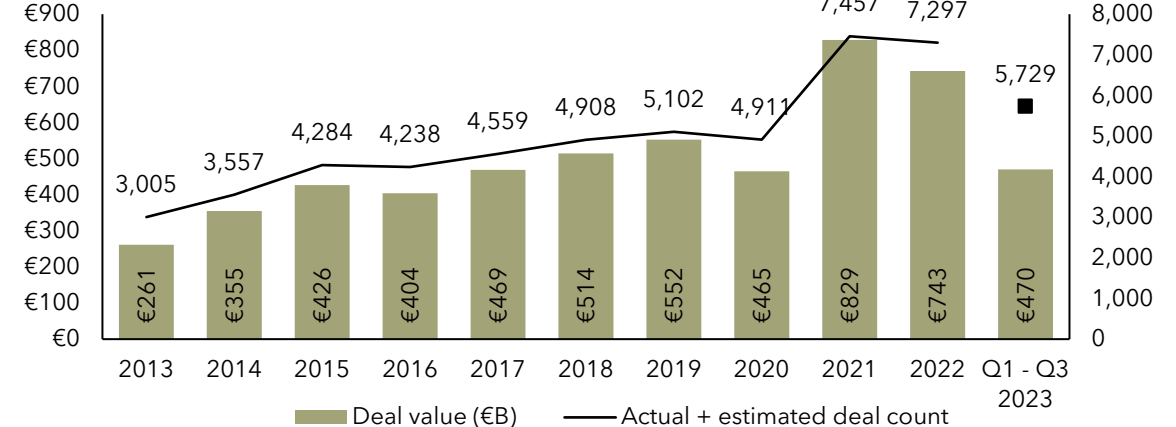
Data Source: PitchBook Q3 2023 US PE Breakdown.
 For illustrative purposes only. There is no assurance that any trends depicted or described will continue.
 The Main Takeaways expressed are Abbott’s opinion and are subject to change without notice.

EUROPE PRIVATE EQUITY

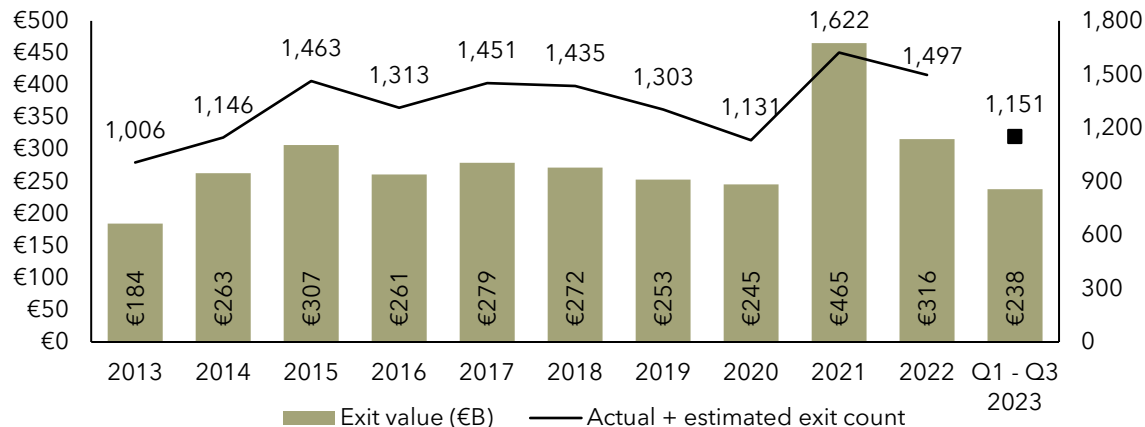
EUROPE PE FUNDRAISING ACTIVITY



EUROPE PE DEAL ACTIVITY



EUROPE PE EXIT ACTIVITY



MAIN TAKEAWAYS

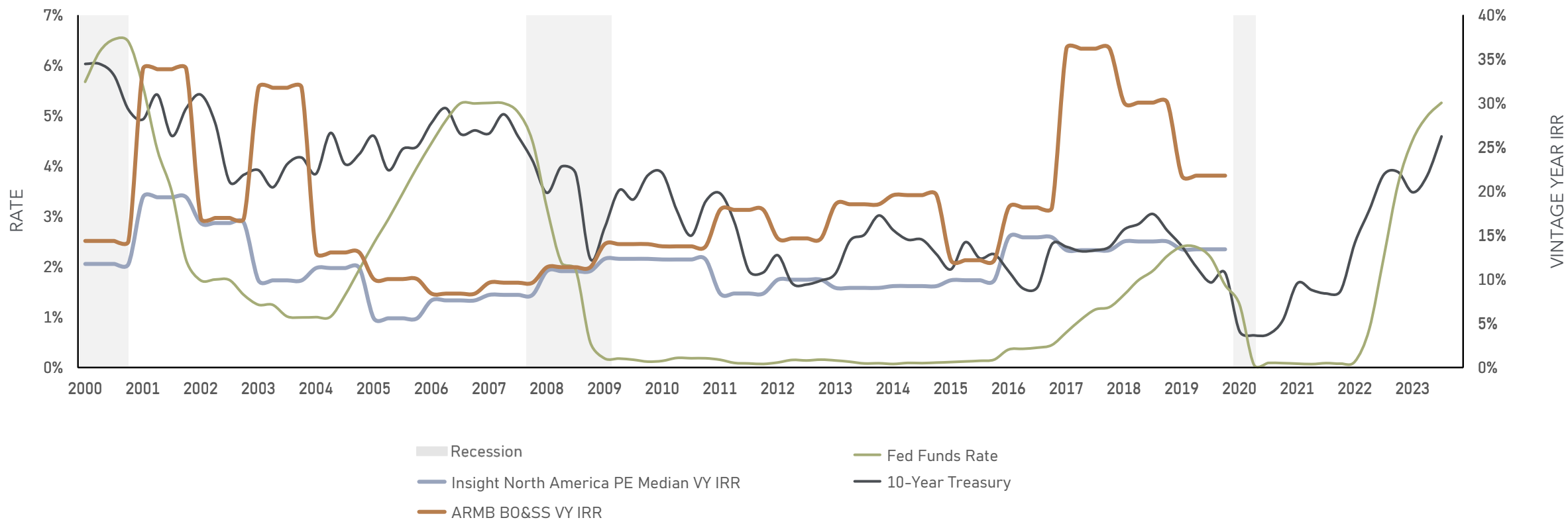
- European private equity fundraising activity continued to recover in terms of capital raised compared to 2022, with €86 billion raised across 79 funds year to date.
- Dealmaking slowed in Q3 2023 in terms of value compared to Q3 2022 but increased in terms of deal count. In total, €155 billion was recorded across 1,916 investments, representing a year-over-year a decrease of 2.8% and increase of 11.5%.
- Exit activity picked up significantly in Q3 2023 with 425 liquidity events totaling €97 billion of value, representing a year-over-year increase of 30% and 62%, relative to Q3 2022.



NAVIGATING WITH EXPERIENCE

Is the past prologue?

COVARIANCE AT INVESTMENT: BUYOUTS

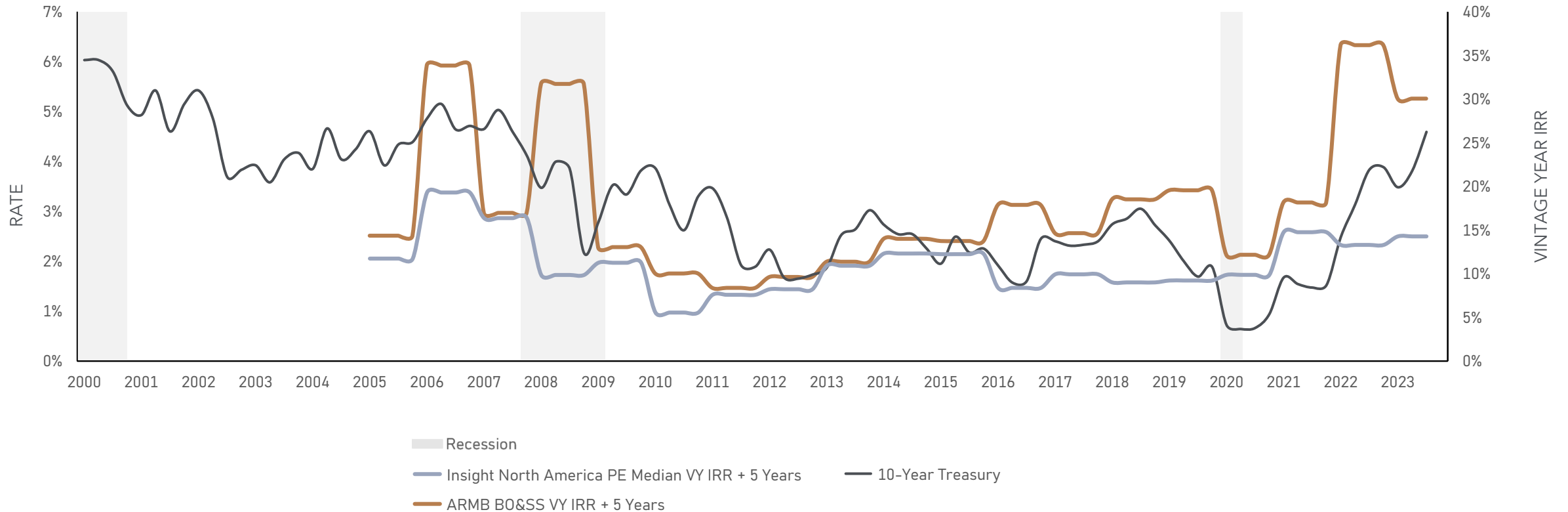


Insight Research and ARMB Vintage Year IRR as of Jun 30 2023.

ARMB VY IRR is shown gross of investment management fees charged by Abbott and gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions. Federal Funds Effective Rate, 10-Year U.S. Treasury Yield, and Recession Dates Source: Federal Reserve Bank of St. Louis.

Past performance is not a guide to future results and is not indicative of expected realized returns. See Important Information pages herein including [Vintage Year Performance](#).

COVARIANCE AT EXIT: BUYOUTS

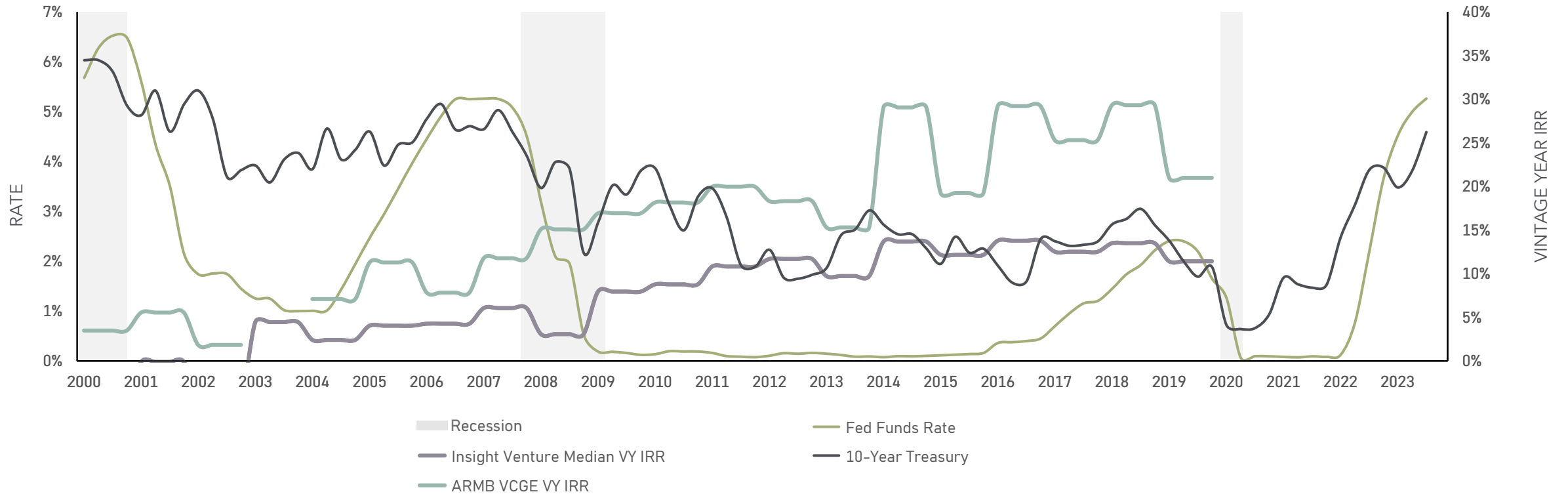


Insight Research and ARMB Vintage Year IRR as of Jun 30 2023.

ARMB VY IRR is shown gross of investment management fees charged by Abbott and gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions. Federal Funds Effective Rate, 10-Year U.S. Treasury Yield, and Recession Dates Source: Federal Reserve Bank of St. Louis.

Past performance is not a guide to future results and is not indicative of expected realized returns. See Important Information pages herein including [Vintage Year Performance](#).

COVARIANCE AT INVESTMENT: VCGE



Insight Research and ARMB Vintage Year IRR as of Jun 30 2023.

ARMB VY IRR is shown gross of investment management fees charged by Abbott and gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.

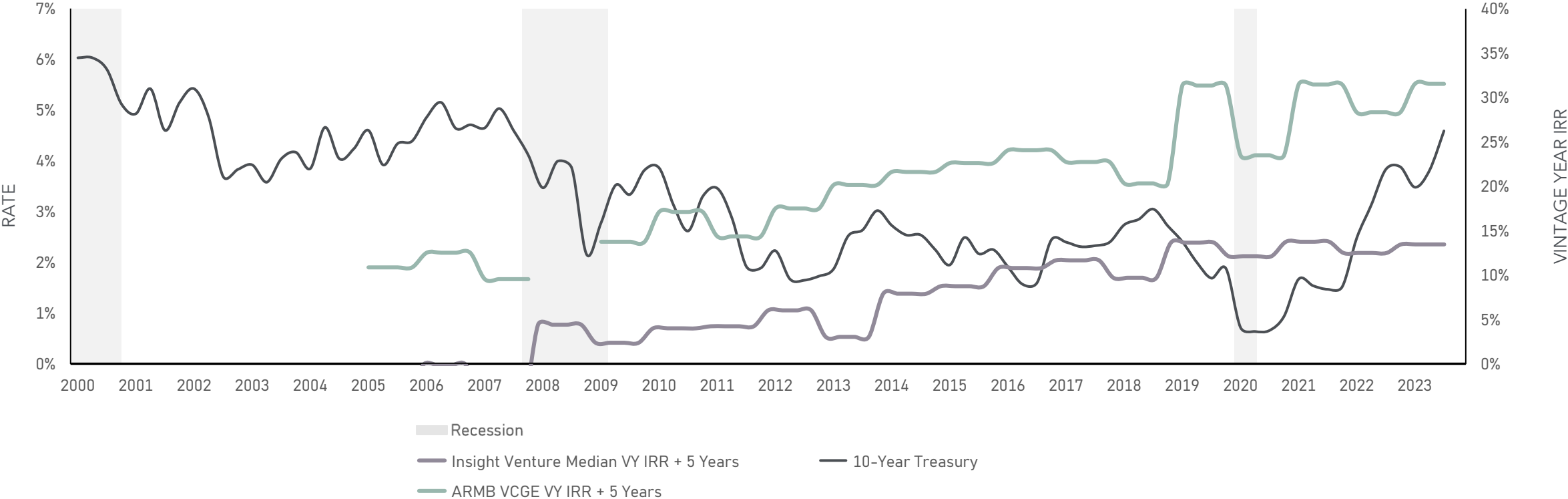
Note: Insight Venture Median Vintage Year IRRs for 2000 through 2002 are less than 0.0% and not shown. There are no 2003 vintage year VCGE funds in the ARMB portfolio.

Federal Funds Effective Rate, 10-Year U.S. Treasury Yield, and Recession Dates Source: Federal Reserve Bank of St. Louis.

Past performance is not a guide to future results and is not indicative of expected realized returns.

See Important Information pages herein including [Vintage Year Performance](#).

COVARIANCE AT EXIT: VCGE



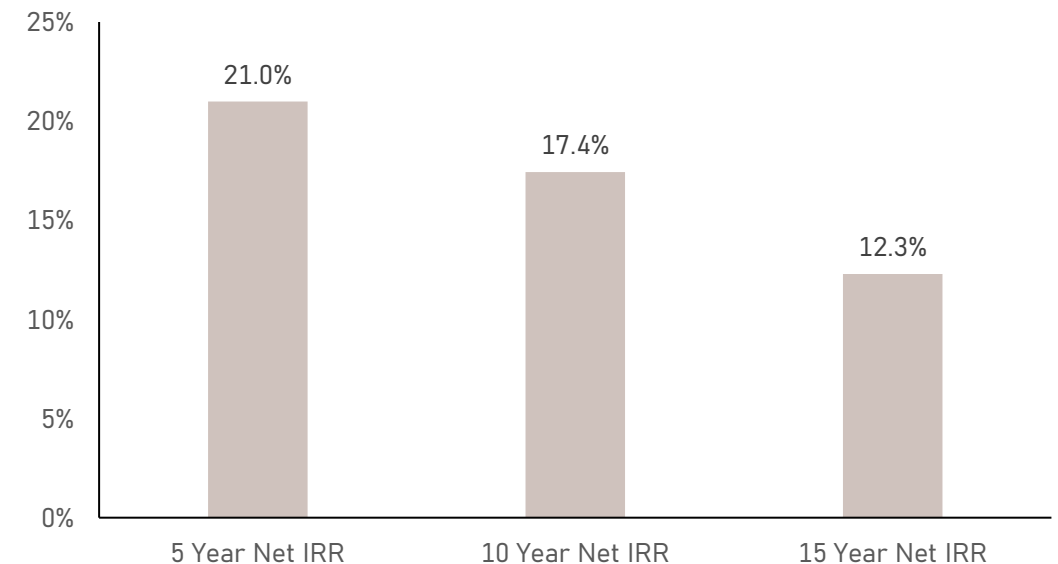
Insight Research and ARMB Vintage Year IRR as of Jun 30 2023.
 ARMB VY IRR is shown gross of investment management fees charged by Abbott and gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.
 Note: Insight Venture Median Vintage Year IRRs for 2000 through 2002 are less than 0.0% and not shown. There are no 2003 vintage year VCGE funds in the ARMB portfolio.
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Past performance is not a guide to future results and is not indicative of expected realized returns.
 See Important Information pages herein including [Vintage Year Performance](#).

LONG-TERM OUTLOOK

- Public markets are difficult to time
 - Private markets are harder
- Private equity is a long-term investment
 - Managers may benefit from some ability to time entry and exit
 - Buyout returns appear more tied to exit environment than entry
 - VCGE returns appear largely independent of GDP and rate environment
- Portfolio success can be driven by:
 - Ability to find and select top-performing managers
 - Not reacting to transient market conditions

ARMB NET PORTFOLIO HORIZON PERFORMANCE



Net IRR is shown net of investment management fees charged by Abbott and gross of gains and losses realized upon the sale of distributed stock, including brokerage and other related commissions.

As of Jun 30 2023.

Past performance is not a guide to future results and is not indicative of expected realized returns. See Important Information pages herein including [ARMB Account Performance Information](#).

IMPORTANT INFORMATION

IMPORTANT INFORMATION

ARMB Account Performance Information

Vintage year represents the year in which the portfolio fund made its initial capital call.

With respect to primary investments, **Commitment** represents the original commitment made to a portfolio fund plus any follow-on commitments and less any subsequent reductions in commitment declared by the general partner or managing entity of the portfolio fund. With respect to Co-investments and Secondaries, **Amount Committed** or **Invested Capital** represents the aggregate acquisition price of investments held, including any related transaction costs, plus any additional amounts identified at the time of purchase of the investment that may be required to be contributed to satisfy a capital commitment or any other contribution obligation. Invested Capital is not reduced for underlying realizations or distributions of proceeds. Except as otherwise noted, **Commitment** with respect to any portfolio fund denominated in non-U.S. currency reflects the amount paid (in U.S. dollars) plus the unfunded portion of the foreign-denominated commitment amount converted to U.S. dollars at the relevant foreign exchange rate as of the report date.

Amount Paid-In represents the cumulative amount of contributions paid to a portfolio fund by the Account as of the report date, including amounts paid for interest charges, management fees and/or other expenses, less any temporary returns of capital and other distributions identified by the general partner or managing entity as items that reduce paid-in capital. With respect to secondary interests, amount paid-in includes the purchase price of the portfolio fund purchased on the secondary market plus amounts paid-in subsequent to purchase date through the report date.

Distributions reflect all distributions of cash or stock from the portfolio fund to the Account as of the report date, excluding any temporary returns of capital and other distributions identified by the general partner or managing entity as offsets to paid-in capital. Net proceeds from sales of portfolio funds on the secondary market, if any, are also included in distributions. Unless otherwise noted, distributions of stock are valued as reported by the portfolio funds and such valuations do not take into account any net gains or losses realized upon the sale of such stock.

The **Valuation** for a portfolio fund investment is net of any management fees, carried interest, and other expenses of the portfolio fund and reflects fair value of the portfolio fund at the report date. Fair Value is based on the most recent available net asset value provided by the general partner or managing entity of the portfolio fund, including allocations of unrealized gains and losses on the underlying portfolio company investments, and may be adjusted by other amounts necessary to reflect the fair value of the portfolio fund as determined by Abbott during its most recently completed valuation review. If the most recent available net asset value is as of a date other than the report date, the valuation is adjusted by net cash flows, other than contributions identified by the general partner or managing entity as contributions for management fees and/or other expenses, from the date of the most recent available net asset value through the report date. Net asset values reported in non-U.S. currencies are translated at the relevant exchange rate at the close of business on the report date. The valuation of distributed stock held is based on the last publicly reported closing sale price as of the report date.

Total Value equals total distributions plus valuation.

TVPI represents total value divided by amount paid-In. TVPI is net of management fees, carried interest and other expenses of the portfolio funds but does not reflect any deduction for management fees or carried interest, if any, paid by the Account to Abbott. Except as otherwise noted, TVPI does not take into account net gains and losses realized on the sale of distributed stock. TVPI for the active and/or liquidated portfolio is net of gains and losses realized on the sale of distributed stock.

IRR represents the internal rate of return for a portfolio fund or the pooled internal rate of return for a strategy, vintage year and portfolio. IRR was calculated based on the actual due dates of the net cash flows between the portfolio funds and the Account since inception and the valuation of the portfolio fund investments at the report date. IRR is net of management fees, carried interest, and other expenses of the portfolio funds, but does not take into account management fees and carried interest, if any, paid by the Account to Abbott. Except as otherwise noted, IRR does not take into account net gains and losses realized on the sale of distributed stock. IRR for the Total ARMB portfolio is net of gains and losses realized on the sale of distributed stock.

IMPORTANT INFORMATION

Public Market Equivalent and Indices

Where indicated, returns are calculated as a **Public Market Equivalent (PME or PME+)** as described in “A Private Investment Benchmark”, a 1996 white paper by Austin M. Long III and Craig J. Nickels, and PME+ as described in “Private Equity Benchmarking with PME+”, published in the Venture Capital Journal (August 2003) by Christophe Rouvinez of Capital Dynamics. PME analysis/return is calculated without adjustment for management fee and carried interest paid to Abbott. PME is an internal rate of return calculated as if investor cash flows were used to purchase and sell shares of a public market index. PME+ scales distributions by a constant proportion such that the net remaining investment in the index equals the actual net asset value at the measurement date. PME+ is provided because if a portfolio significantly outperforms the public market index due to a high level of distributions, the net remaining investment in the index may be in a short position. A PME+ return calculation permits the net remaining investment in the index to equal the net asset value of the private equity portfolio at the measurement date. Any PME (or PME+) analysis is based on illiquid and unrealized values which will vary considerably over the life of an investment, thus making this type of comparison more relevant with respect to mature funds (i.e., where net asset value is a small fraction of total distributions).

Market indices, benchmarks or other measures of relative market performance are provided for information only and do not imply that an Abbott Client will achieve, or should expect, similar returns, volatility or results, or that these are appropriate benchmarks to be used for comparison. The market volatility, liquidity and other characteristics of private equity investments are materially different from publicly-traded securities and the composition of these indices does not reflect the manner in which any Abbott Client portfolio is constructed with respect to expected or actual returns, portfolio guidelines/restrictions, investment strategies/sectors, or volatility, all of which change. Index returns will generally reflect the reinvestment of dividends, if any, but do not reflect the deduction of any fees or expenses which would reduce returns. An investor cannot invest directly in the indices.

S&P 500: Annualized time-weighted total returns of the S&P 500 (represents the 500 most widely-held large cap US stocks on the NYSE or NASDAQ) includes the reinvestment of dividends and income.

Vintage Year Performance

Abbott’s Vintage Year returns are hypothetical pooled returns by vintage year for all primary portfolio investments made by Abbott since inception on behalf of ARMB.

Portfolio funds identified as 1) Buyouts and Special Situations funds are benchmarked against funds in Insight Research’s North America Mid-Large-Mega Buyouts benchmark and 2) VCGE funds are benchmarked against funds in Insight Research’s Global Venture benchmark.

Private equity indices return data is provided for informational purposes only, is continually updated and subject to change, is based on only a limited number of private equity funds when compared to the entire private equity industry, and does not reflect a consistent benchmark or basis for comparison for private equity investments. Insight Research data is compiled using fund cash flows contributed by limited partners representing net to LP performance from over 5,500 global private equity funds, including fully liquidated funds. Funds with a vintage year of prior to 1991 are aggregated into a single benchmark.

Insight Research and Abbott define vintage year differently; Insight Research defines VY as the year the fund made its initial investment while Abbott defines VY as the year the fund made its initial capital call. Vintage Year for portfolio funds that have not yet called capital may change depending on when the portfolio fund first calls capital. Differences in active vintages between preliminary and final cash flow could be material due to account valuation and capital account value adjustments, use of credit facilities, and other factors.

Insight Research data set forth herein is preliminary as of the report date. Preliminary data by its nature and final results are likely to differ, perhaps materially, from these estimates. Preliminary cash flows may be materially different from final cash flows due to late arriving, updated, or refined information received after preliminary performance is published.

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Insight Partners

Mandate: Private Equity

Hired: 2005

Firm Information	Investment Approach	Total ARMB Mandate
<p>Founded in 1995 and based in New York, Insight Partners (“Insight”) is an investment manager of 25 private investment funds (each, an “Insight Fund”) with aggregate capital commitments of over \$53 billion, all focused primarily on investing in growth-stage software, software-enabled services, and internet businesses. The Firm has a particular focus on Software as a Service subscription-based business models with a high degree of recurring revenue. Since the Firm’s inception in 1995, the Insight Funds have invested in over 650 companies in the software sector. The firm’s assets under management are \$81 billion as of 3/31/23.</p> <p>Key Executives: Jeffrey Horing, Co-Founder & MD Deven Parekh, Managing Director Jeffrey Lieberman, Managing Director Michael Triplett, Managing Director Ryan Hinkle, Managing Director Richard Wells, Managing Director</p>	<p>Insight Focuses on SaaS companies that have homogenous business models and a high degree of recurring revenue. Insight executes a consistent playbook for value creation post-investment. Insight’s investment strategy has four core elements:</p> <ul style="list-style-type: none"> • Deep Domain Expertise in Software • Advantages of a Scaled Platform • Proprietary Deal Sourcing Engine • Insight Onsite Team of Software Experts <p>Insight has deep expertise across the software industry and has strong deal flow. The investment committee (IC) reviewed over 500 new investment opportunities where only the strongest sourced deals made it to IC. Deals are sourced by a proprietary outbound deal origination team through:</p> <ul style="list-style-type: none"> • Market Research and Lead Generation • Outbound Calling • Industry Relationships <p>Benchmark: Cambridge vintage year peer comparison.</p>	<p>Assets Under Management: 6/30/23 Commitments: \$188 million</p>

Concerns: None

Performance

Mature funds have consistently delivered 1st or 2nd quartile performance by vintage year.

The ScaleUp of Artificial Intelligence

Q4 2023

Recipients are urged to review the Important Legal Information at the beginning of this presentation (the "Presentation"). Investment in securities involves risk and value of investments and income derived from such investments may fluctuate. Past performance is not an indication or guarantee of future results. All funds referred to in this Presentation include their respective co-investment funds as well, unless otherwise specified.

Data as of 6.30.2023 unless otherwise noted — Confidential and Proprietary

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FORWARD LOOKING STATEMENTS
Certain statements made throughout this Presentation that are not historical facts may contain forward-looking statements regarding the intentions, expectations, objectives and targets of the relevant funds. Any such forward-looking statements are based on assumptions that Insight believes to be reasonable, but are subject to a wide range of risks and uncertainties and, therefore, there can be no assurance that actual results may not differ from those expressed or implied by such forward-looking statements.

INVESTMENT RISKS
All securities investments risk the loss of capital. No guarantee or representation is made that a partnership will achieve its investment objective. An investment in a partnership is speculative and involves certain risk factors which potential investors should consider before investing. Potential investors should be able to afford a complete loss of all capital invested in a partnership.

CASE STUDIES
The case studies included in this Presentation are for illustrative purposes only. There is no guarantee that future Insight funds will have access to similar investment opportunities or that such investment opportunities will be profitable or as profitable.

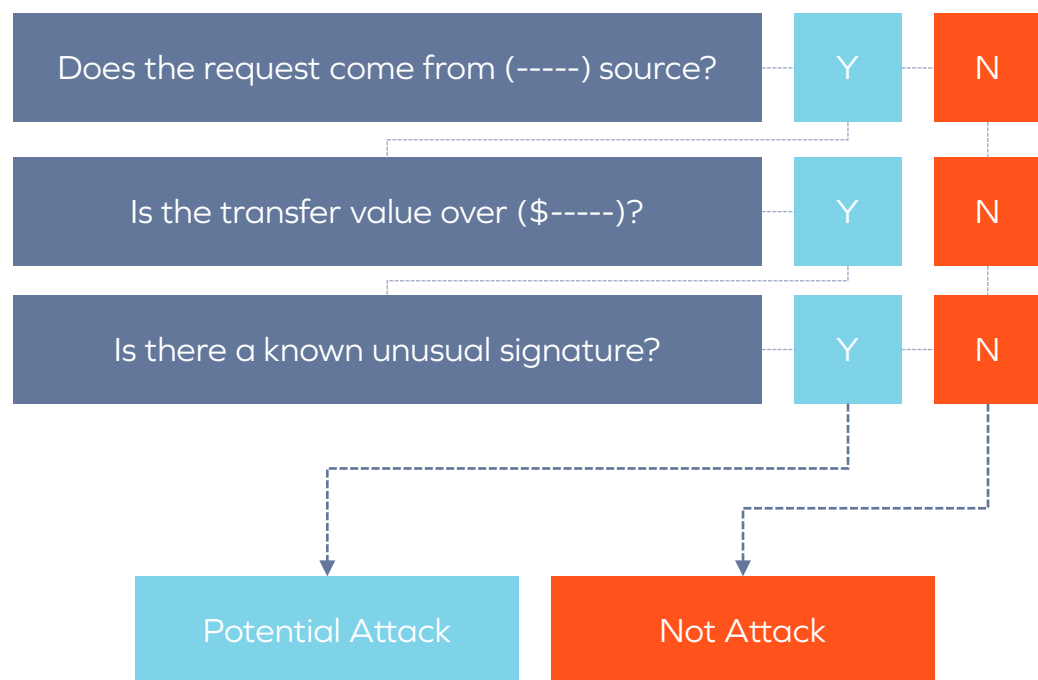
TRADEMARKS
Trademarks and trade names may be used in this Presentation to refer to either the entities claiming the marks and/or names or their products and are the property of their respective owners. Insight disclaims proprietary interest in the marks and names of others.

What is Artificial Intelligence (AI)?

OLD APPROACH

Humans write software

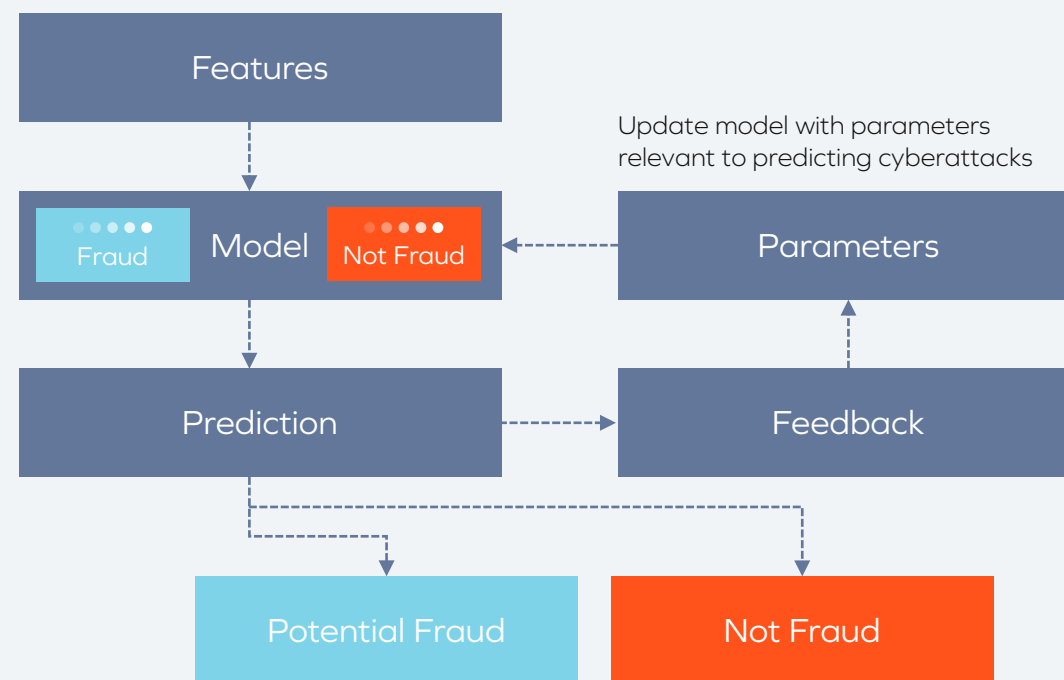
(now with first draft from Github Copilot?)



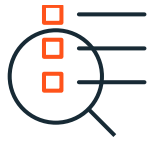
NEW OPTION

AI

Machines write software, using data, often paired with human-written software.



2017 breakthroughs and generative AI



Systems of prediction and classification

Non-generative AI

EXAMPLES

- Identifying polyps in a scan
- Analyzing a dental x-ray to see if a dental crown or filling is needed
- Finding manufacturing defects

APRIL 5, 2017

“Learning to Generate Reviews and Discovering Sentiment”

OpenAI’s “Sentiment Neuron” paper

JUNE 12, 2017

“Attention is all you need”

Google’s “Transformer” paper



Systems of creation

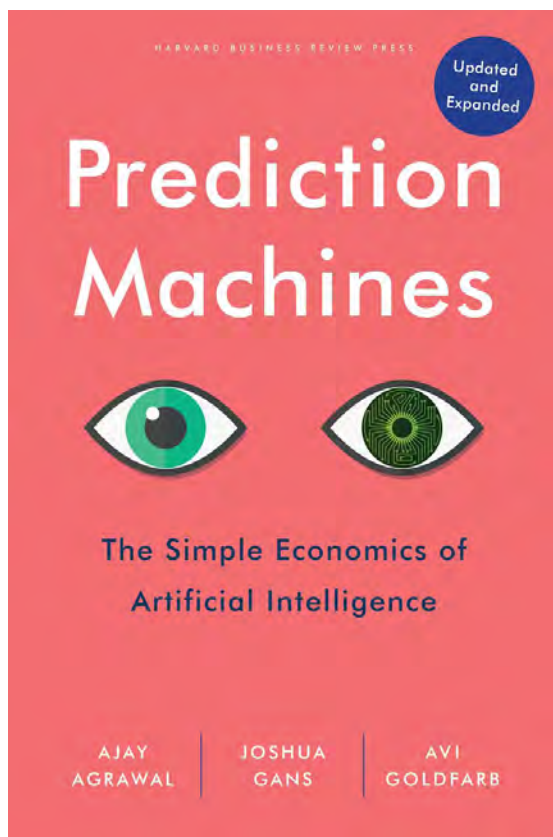
Generative AI

EXAMPLES

- Writing code (and lots of other “Copilots”)
- Generating images, videos
- Drafting blog posts

Broader impact of AI: price/cost declines

Some things are economic substitutes and go down in value; other things are economic complements and go up in value.



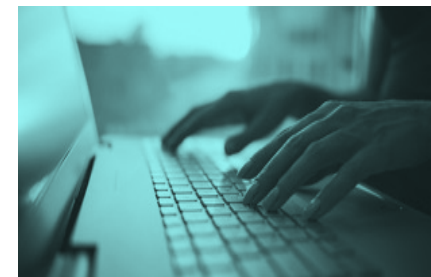
New business models, moats and talent can be unlocked



ELECTRICITY



**CARS /
PLANES**



**COMPUTERS
/ INTERNET**



AI

How much of the value created by AI will be captured by the companies using it vs. software companies delivering it?

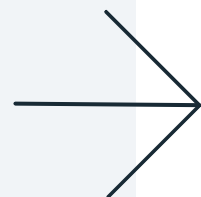
The S&P 500 generated
~\$3 trillion in EBITDA in
2022¹



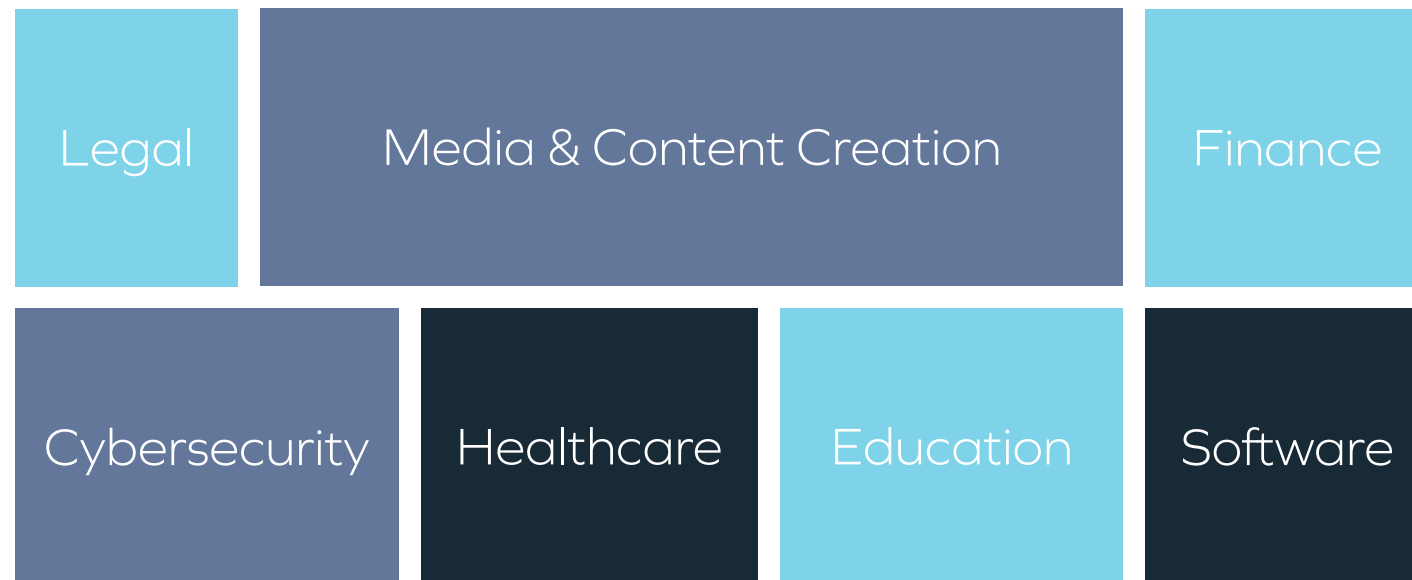
5% improvement in
EBITDA =
\$150 billion incremental
EBITDA



At 12x EBITDA =
\$1.8 trillion in
value



EXAMPLES



Generative AI is causing some structural shifts in the balance of economic power.

Shift 1

Powerful out-of-the-box AI capabilities are becoming part of the infrastructure layer

EXAMPLES OF COMPANIES BUILDING FOUNDATION MODELS



Text, code, image,
speech, video

stability.ai

Image, video, code

Adept

Text

Inflection

Text



Text, image, proteins



Code, text, image, proteins

ANTHROPIC

Text, image

co:here

Text, code

AI21labs

Text, code



Text, image

Shift 2

The democratizing force of Generative AI

Easier to implement than prior generations of AI

- 1 We have seen a shift in the balance of power between startups, incumbent software companies, and end customers / users, e.g. OpenAI, Adobe, Microsoft, Google
- 2 “Regular” (non-software) companies can get Generative AI applications into production more easily

EXAMPLES



Some early potential sources of scale defensibility for software companies with Generative AI

Trust

Usage demand-side economies of sale

Product craftsmanship

Infrastructure efficiency

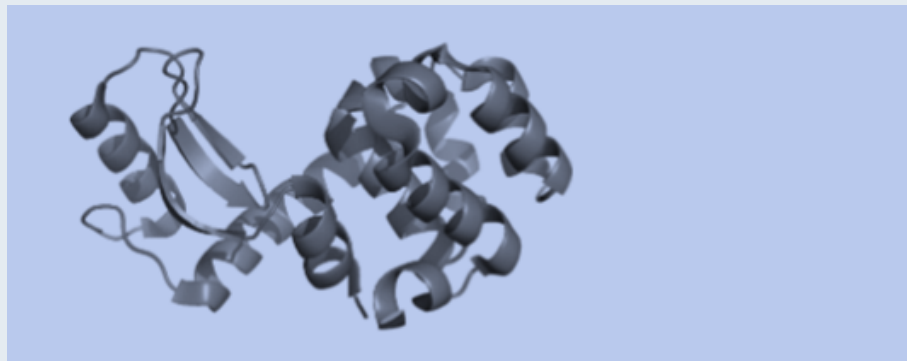
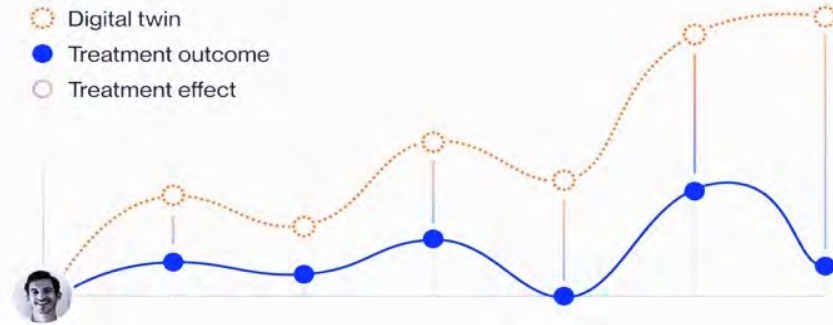
Investor permission to invest over longer-time horizons

Platform scale effects

Distribution, existing app depth, & partnerships

Adaptive internal cultures, and talent density

Examples of making the impossible → possible¹ (vs. making the easy → automated, or making the hard → easy)



¹ Examples above represent a list of Insight portfolio companies that Insight is aware are leveraging artificial intelligence in life sciences verticals.

Note: For illustrative purposes only. For a listing of all of Insight's investments please visit www.insightpartners.com/portfolio. Please refer to the Important Legal Information at the beginning of this Presentation for information regarding the use of trademarks and trade names. The above statements reflect Insight's beliefs, which are subjective and based on experience. Certain statements presented above that are not historical facts may contain forward-looking statements regarding the intentions, expectations, objectives and targets. Any such forward-looking statements are based on assumptions Insight believes to be reasonable but are subject to a wide range of risks and uncertainties and, therefore, there can be no assurance that actual results may not differ materially from those expressed or implied by such forward-looking statements.

New challenges with Generative AI

Hallucination and
reliability

Explainability &
causality

Privacy

Alignment &
threats

Legal questions

Training &
inference costs

There are many known unknowns

How should AI be regulated to balance between innovation and alignment?

Do countries that regulate more put themselves at a disadvantage vs. other countries that have less regulation?

What are the macro effects of AI?
e.g.: on labor productivity and inflation

Increase profitability and growth or drive down prices?
How to monetize longer term?

Fine tuning vs. using vector search and prompt enhancement?

Large Models

(e.g.: OpenAI)

vs.

Small / Open-Source Models

(e.g.: open-source models with fine tuning, prompt enhancement with data)

Startups vs. incumbents capturing more value?

INSIGHT
PARTNERS

Thank you

Pathway Capital Management

Mandate: Private Equity

Hired: 2002

Firm Information	Investment Approach	Total ARMB Mandate
<p>Founded in 1991, Pathway creates and manages private equity separate accounts and funds of funds for institutional investors. Pathway manages capital on behalf of some of the largest corporate and public pension plans, government entities, and financial institutions around the globe. The firm's assets under management are \$87.5 billion as of 06/30/2023.</p> <p>Pathway is registered as an investment advisor with the SEC in the United States and as a portfolio manager and exempt market dealer in Ontario, Quebec, and Saskatchewan, Canada. Pathway's wholly owned UK subsidiary is regulated in the UK by the Financial Services Authority. Pathway's wholly owned Hong Kong subsidiary is regulated in Hong Kong by the Securities and Futures Commission.</p> <p>Key Executives: Jim Chambliss, Managing Director Canyon Lew, Managing Director Wyatt Geiger, Principal</p>	<p>Pathway is extremely selective in choosing private equity investment funds. Every partnership must meet rigid standards regarding the overall quality of the investment opportunity, such as:</p> <ul style="list-style-type: none"> ▪ Target markets that can support private equity investing ▪ Long-term and proven private equity business model ▪ Stable management team operating under a consistent firm culture ▪ Proven access to high-quality investment opportunities and resources ▪ Strong track record <p>Pathway's decision-making process uses a team approach; no one individual has authority to make decisions regarding portfolio management without the input of other senior professionals.</p> <p>Final investment decisions are made by the Investment Committee comprised of three senior managing directors and eight managing directors.</p> <p>Benchmark: 1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE +200 basis points and the Cambridge vintage year peer comparison.</p>	<p>Assets Under Management: (6/30/23) Market Value: \$2.0 billion</p>

Concerns: None

Performance

The since inception internal rate of return (IRR) for ARMB's Pathway portfolio is 15.1% through 06/30/2023, which compares favorably against the public market equivalent return of ARMB's blended benchmark (1/3 S&P 500, 1/3 Russell 2000, 1/3 MSCI EAFE) of 8.6%.

ARMB's portfolio managed by Pathway has outperformed the Cambridge median over all vintage years with four vintage years in the top quartile and 16 in the second quartile when compared against the Cambridge database for vintage years 2001-2020.

Presentation Prepared For

Alaska Retirement Management Board

DECEMBER 2023



- Pathway Update
- Private Market Environment
- Portfolio Update
- Appendix



Pathway Update



Pathway at a Glance



PRIVATE MARKET SPECTRUM		GLOBAL REACH		FULL-SERVICE MODEL
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1991
Founded

100%
owned by its
22 partners

246
Staff

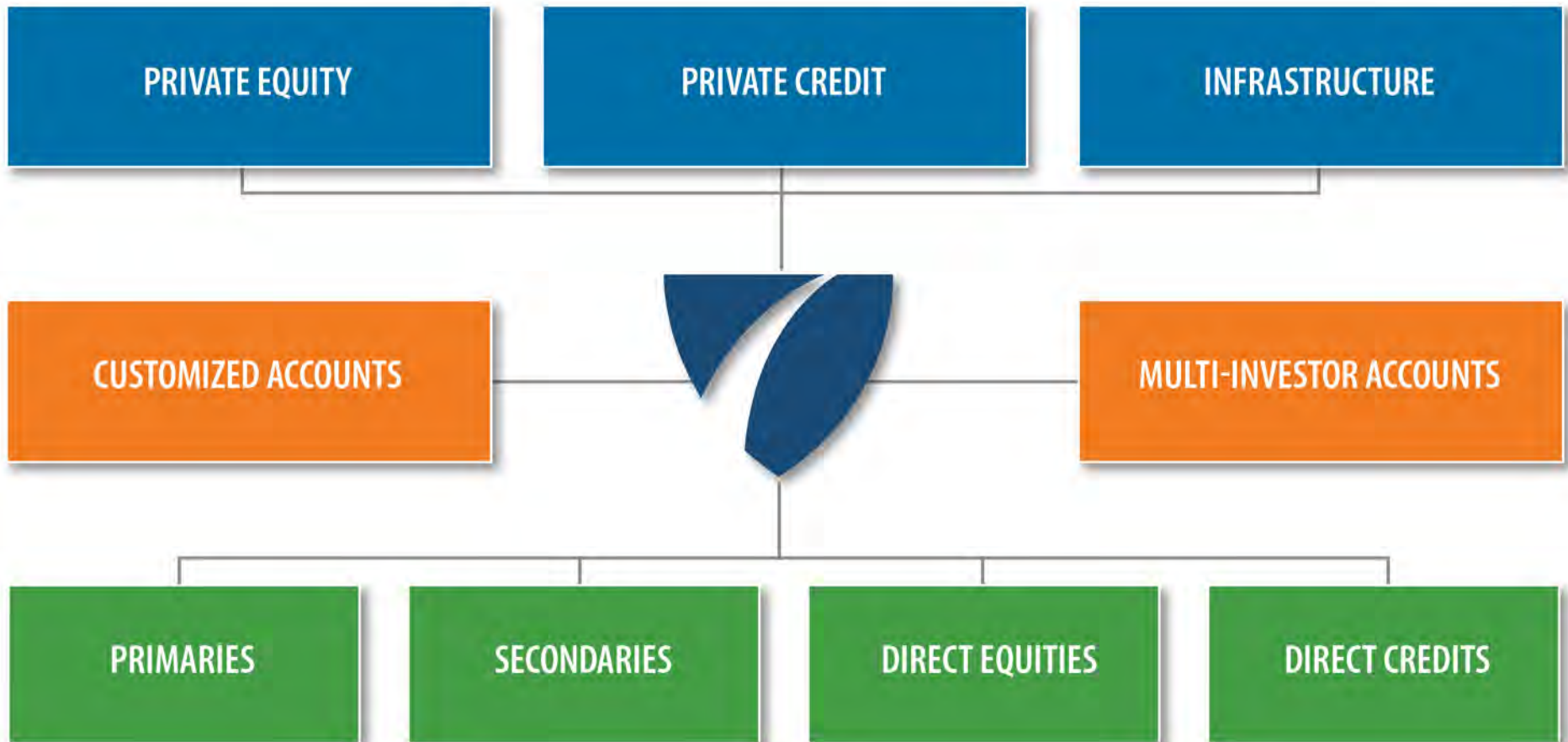
>\$85 billion
in global AUM^b

23 years'
average investment
experience^c

^aStrategic alliance with Tokio Marine Asset Management. ^bRepresents roll-forward market value plus undrawn capital as of September 30, 2023. ^cRepresents Pathway's 21 investment partners.



Global Provider of Private Market Solutions





Representative Investor List

Pathway carefully manages growth with an emphasis on building long-term relationships.

7-G's Investment Group
AAA Northern California, Nevada & Utah Insurance Exchange
Alaska Permanent Fund Corporation
Alaska Retirement Management Board
Anthem, Inc.
BB&T Corporation Pension Plan Trust
Beckman Research Institute of the City of Hope
BWXT Master Trust
The Carl and Roberta Deutsch Foundation
Concordia Retirement Plan
Dow Employees' Pension Plan Trust
East Riding Pension Fund
Employers Mutual Casualty Company
HSBC Bank Pension Trust (UK) Limited
Hydro One Pension Fund
International Staff Pension Corporation
Iowa Public Employees' Retirement System
The John Randolph Haynes and Dora Haynes Foundation
Kroger Master Retirement Trust
The Larry L. Hillblom Foundation
Lloyds Bank Pension Trust
Los Angeles County Employees Retirement Association
Marin County Employees' Retirement Association



Mississippi Public Employees' Retirement System
Nebraska Investment Council
Nevada Public Employees' Retirement System
North Slope Borough
Ohio Public Employees Retirement System
Oregon Public Employees Retirement Fund
Pathstone
PPL Services Corporation Master Trust
PPL Energy Supply, LLC Master Trust
The Public School and the Public Education ERS of Missouri
Royal Bank of Scotland Group Pension Fund
San Bernardino County Employees' Retirement Association
San Jose Federated City Employees' Retirement System
San Luis Obispo County Pension Trust
Schlumberger Master Pension Trust
Schneider Downs Wealth Management
Singapore Institute of Technology
Tennessee Consolidated Retirement System
Tokio Marine & Nichido Fire Insurance Co., Limited
Tulare County Employees' Retirement Association
UFCW Consolidated Pension Fund
University of Nevada, Las Vegas Foundation
Verdence Capital Advisors

NOTE: This list comprises clients/investors with assets of \$5.0 million or more (roll-forward market value plus undrawn capital) under Pathway's management; these assets collectively represent more than 90% of Pathway's total assets under management. The list excludes clients/investors that requested not to be named or that have a policy prohibiting being named, as well as all Japan-based investors, other than Tokio Marine and Nichido Fire Insurance Co., Ltd. Pathway has not used performance-based criteria to determine which clients/investors to include in this list. It is not known whether the clients/investors listed above approve or disapprove of Pathway or its services.



Organizational Chart

Investment Team

Douglas K. Le Bon Senior Managing Director	James H. Reinhardt Senior Managing Director	Karen J. Jakobi Senior Managing Director	Alex M. Casbolt† Managing Director	James R. Chambliss Managing Director	Vincent P. Dee, CFA Managing Director	Jason C. Jenkins, CFA Managing Director
Simon Y.S. Lau† Managing Director	Canyon J. Lew Managing Director	Matthew M. Lugar* Managing Director	Richard S. Mazer Managing Director	Derrek I. Ransford, CFA Managing Director	Valerie A. Ruddick Managing Director	Wayne D. Smith, CFA* Managing Director
Pete Veravanich Managing Director	Kevin W. Bland Director	Stefan Goettl† Director	Bryan P. Nelson, CFA Director	John T. Ruggieri, CFA* Director	Mikael Sand, CFA† Director	Nicholas J. Siemsen, CFA Director

PRINCIPALS	SR. VICE PRESIDENTS	VICE PRESIDENTS	ASSOCIATES	SR. ANALYSTS	ANALYSTS		
Jeffrey L. Bures* Mitchell T. Clemente Wyatt H. Geiger, CFA Justin C. Maney, CFA Brett W. Richardson, CFA Jason K. Yu†	Adam A. Belkairous Brenton W. Croteau Jeremy N. Ebstein Blessie Hwang, CFA Veronica Norton† Gina Park Matthew R. Spader*	Timothy D. Berry, CFA, CAIA Jean-François L. Casanova† Nicholas R. Faulkner Michael Maddahi Taylor V. Pijl Jack Pong† Hunain Riaz Hiral G. Savani, CPA (inactive)	William A. Belmont* Jingyi Chang† Lexi Guess Joseph R. Hegan† Ross D. Hooper Dillon E. Jalbert* Jun Tae Park† Cameron T. Rinn* Daniel Willett	Mathias Burban† Paul Isoko† Spencer M. Knight Spencer Marocchini* Thomas R. McCarthy Jack Peterson Alfred Poon†	Timothy An Chris Bran Joanne Bui* Richard C. Chow Noah Conlon Jakob Feng Robert Gerschultz Daniel Gonzalez	Megan Gramling Sean Higgins Reid Johns Paolo Kapaj† Lauren Kim Kelly Lau† Cassidy Levine Braeden Lueken	Emily K. Moy* Shane H. Nantais Dev Pant Timothy Pham Jonas C. Schultz* John Shepherd Elliot V. Sooter

Client Services—12 Staff	Legal—8 Staff	Corporate & Fund Accounting & Tax—83 Staff	Compliance—7 Staff	Risk Mgmt.—1 Staff	
Gerard R. Branka* Sr. Vice President Ed Hoffman, CFA, FRM Sr. Vice President	Ben Dreyer† Sr. Vice President Andrea Mack, CFA* SVP—Head of Consultant Relations	Bruce Emken, CFA, CIMA, CAIA SVP—Head of Wealth Services Martin J. Wing, CAIA SVP—Consultant Relations	Ashok K. Tripathi, Esq. Sr. Vice President & General Counsel	Benjamin S. Brewster, CPA CFO—Corporate Raquel J. Nicolas, CPA CFO—Fund Accounting & Operations	Milt M. Best, CFA Director & CCO John Reynolds Sr. Vice President

Closing Operations—3 Staff	Systems Admin.—6 Staff	Software Dev.—8 Staff	Editorial & Production—4 Staff	HR & Admin.—33 Staff
Melanie Z. McKinley VP—Investment Closing	Brian M. Leyran VP—Systems Admin.	Michael C. Long SVP—Software Dev.	Christopher M. Lopez Editor & Production Manager	David J. Tosches Sr. Vice President of HR

NOTE: Bold type denotes Pathway partners. *Rhode Island staff. †London staff. ‡Hong Kong staff.



Private Market Environment



Overview

- The first-half rally in global equity markets sputtered during the third quarter in response to soaring bond yields and a growing market expectation that interest rates will remain elevated for longer than initially forecasted.
- Buyout activity has remained muted since the start of 2022, impacted by constrained financing markets, economic uncertainty, and wide bid–ask spreads.
- The decline in transaction activity worldwide has placed a strain on private equity managers' ability to exit investments.
- Leveraged credit market conditions continued to ease in the third quarter, driven by improving market sentiment and firmer secondary market trading levels.
- Market volatility has driven a substantial decline in venture capital investment activity in 2023 and impacted valuations, particularly for late-stage companies.
- Worldwide private equity fundraising remains highly competitive. Market uncertainty and limited partner allocation capacity have driven a flight to quality.

KEY MARKET STATISTICS

	YTD 3Q23 (\$B)	YoY Change
Global M&A Exit Value	302.9	-44%
PE-Backed U.S. IPO Proceeds	6.7	+320%
U.S. Buyout Activity	136.7	-21%
U.S. Inst. Leveraged Loan Issuance	178.9	-6%
U.S. VC Investment Activity	125.9	-39%
Global PE Fundraising	475.8	-20%



Private Equity Market Summary

GLOBAL PE-BACKED M&A EXIT ACTIVITY

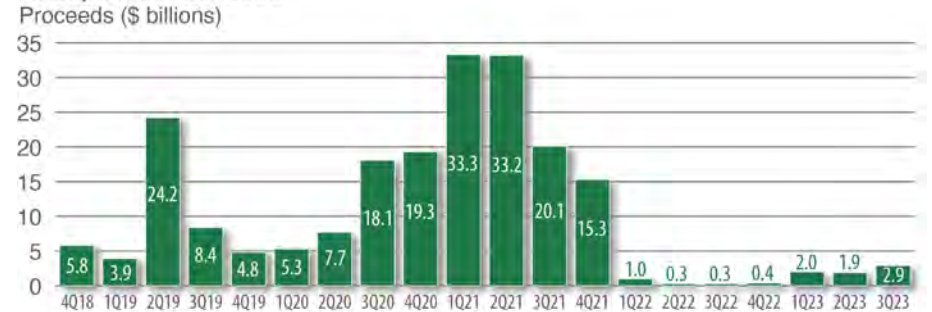
At September 30, 2023



SOURCE: Mergermarket, Dialogic, and Pathway Research.

U.S. PE-BACKED IPO ACTIVITY

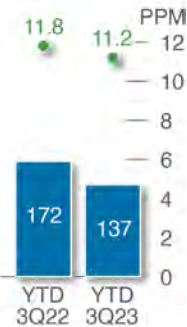
At September 30, 2023



SOURCE: Bloomberg, Renaissance Capital, and Pathway Research.

U.S. BUYOUT INVESTMENT ACTIVITY

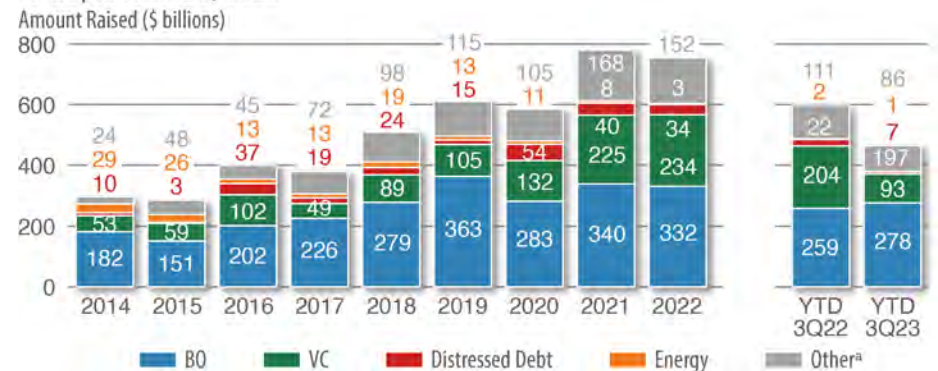
At September 30, 2023



SOURCE: Refinitiv, Pathway Research, and PitchBook LCD.
^aAverage PPM (as a multiple of trailing EBITDA) of all LBOs.

GLOBAL FUNDRAISING BY STRATEGY

At September 30, 2023



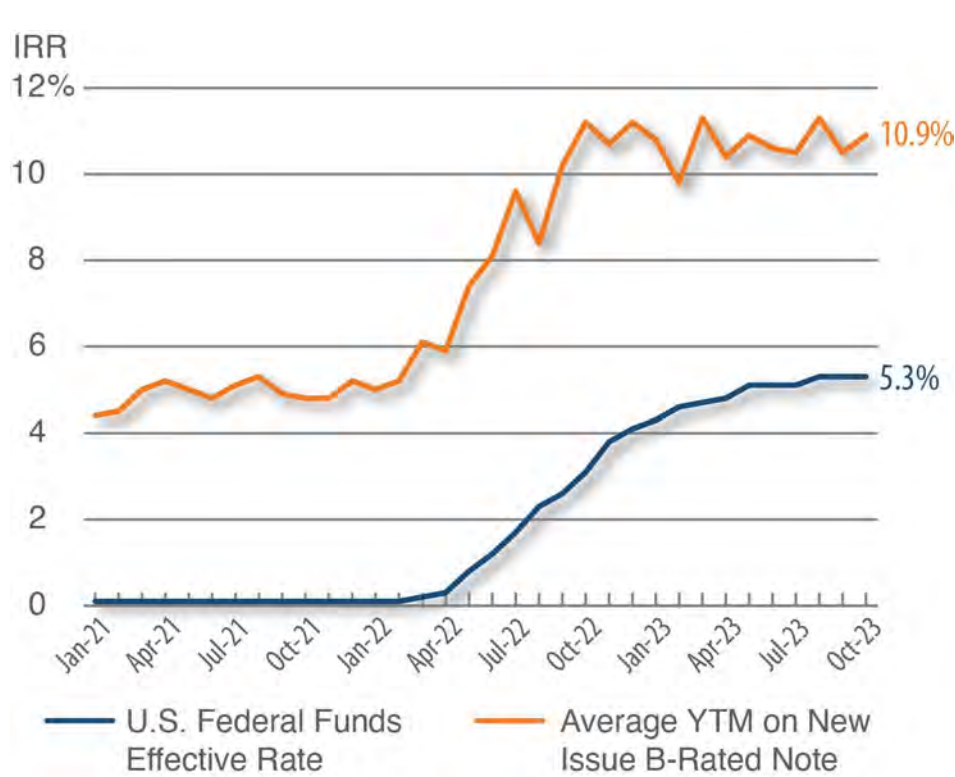
SOURCE: Refinitiv and Pathway Research.

NOTES: Fundraising amounts are based on net amounts raised, which are adjusted for fund size reductions. Data is continuously updated and is therefore subject to change. Amounts may not foot due to rounding.

^aComprises special situations and other fund strategies not classified as buyout-, venture capital-, credit-, or energy-focused.



Rising Interest Rates Have Impacted Buyout Deal Structures



SOURCE: PitchBook LCD, Federal Reserve Bank of St. Louis.

	2021	2022	YTD 3Q23
U.S. Buyout Average Purchase-Price Multiple	11.4x	11.9x	11.2x
Average EBITDA/Cash Interest Coverage Ratio	3.5x	2.9x	2.5x
Average Debt/EBITDA Ratio	5.8x	5.9x	5.1x
Average Equity Contribution as a % of Total Capital	45.9%	45.8%	50.8%

SOURCE: PitchBook LCD.



Looking Forward

- Capital markets are expected to remain volatile: despite improvement in many economic indicators, meaningful uncertainty remains regarding market conditions in coming quarters.
- Private market valuations have stabilized in recent quarters but remain susceptible to market shocks.
- Elevated interest rates and uncertain valuations continue to impede buyout volume, although recent months have demonstrated a small uptick in activity.
 - Buyout managers have adapted to these challenges by focusing on high-quality, resilient businesses and structuring their investments more conservatively.
- Declines in exit market activity have slowed the pace of distributions, but the portfolio has remained cash-flow positive.
- We continue to see a healthy set of high-quality opportunities in all investment strategies and types pursued by the ARMB private equity program.
- The uncertain macroeconomic outlook presents both challenges and opportunities for private equity firms.
 - The private equity asset class has performed well through recent market turmoil, highlighting the durable nature of the private equity model.



Portfolio Update



Portfolio Overview

At June 30, 2023





2023 Tactical Plan Review

At November 17, 2023

	2023 Plan	Actual to Date ^a
Commitments	\$235 million	\$227.3 million
Number of Investments	Up to 24 partnership, up to 22 co-investments	18 primary partnerships, 17 co-investments, 6 Secondaries
Size of Investments	\$10–\$15 million (primaries)	\$11.2 million avg. commitment ^b
Investment Strategies	Buyouts, Venture Capital, Special Situations, and Co-investments	Buyouts (12), Venture Capital (7), Special Situations (5), Co-investments (17)

Strategy	2023 Plan		Commitments to Date ^a	
	No. of Inv.	Targeted Commitments (\$MM)	No. of Inv.	Commitments (\$MM)
Buyouts	Up to 14	Up to 125	12	82.7
Venture Capital	Up to 10	Up to 100	7	52.7
Special Situations	Up to 10	Up to 100	5	59.0
Co-investments	Up to 22	Up to 35	17 ^c	32.9
Total		Up to 235	41	227.3

NOTE: Amounts may not foot due to rounding.

^aIncludes investments that have been approved by Pathway's Investment Committee but have not yet closed.

^bExcludes secondary partnership interests and co-investments. Combines aggregate primary commitments split across multiple fund strategies raised by one general partner.

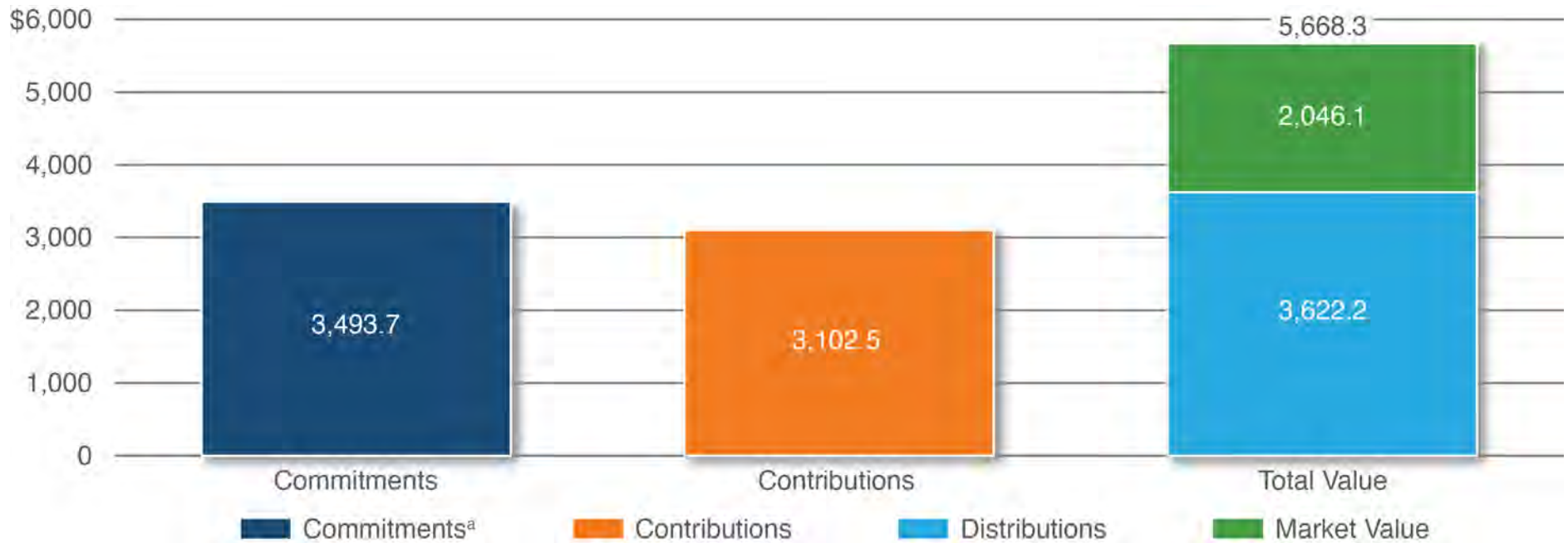
^cIncludes follow-on co-investment commitments.



Performance Summary

At June 30, 2023

(\$ in millions)



15.1% Since-Inception IRR ^a	\$2.6B Since-Inception Gain	\$3.6B Distributions	1.2x DPI ^b
--	---------------------------------------	--------------------------------	---------------------------------

NOTE: Amounts may not foot due to rounding.

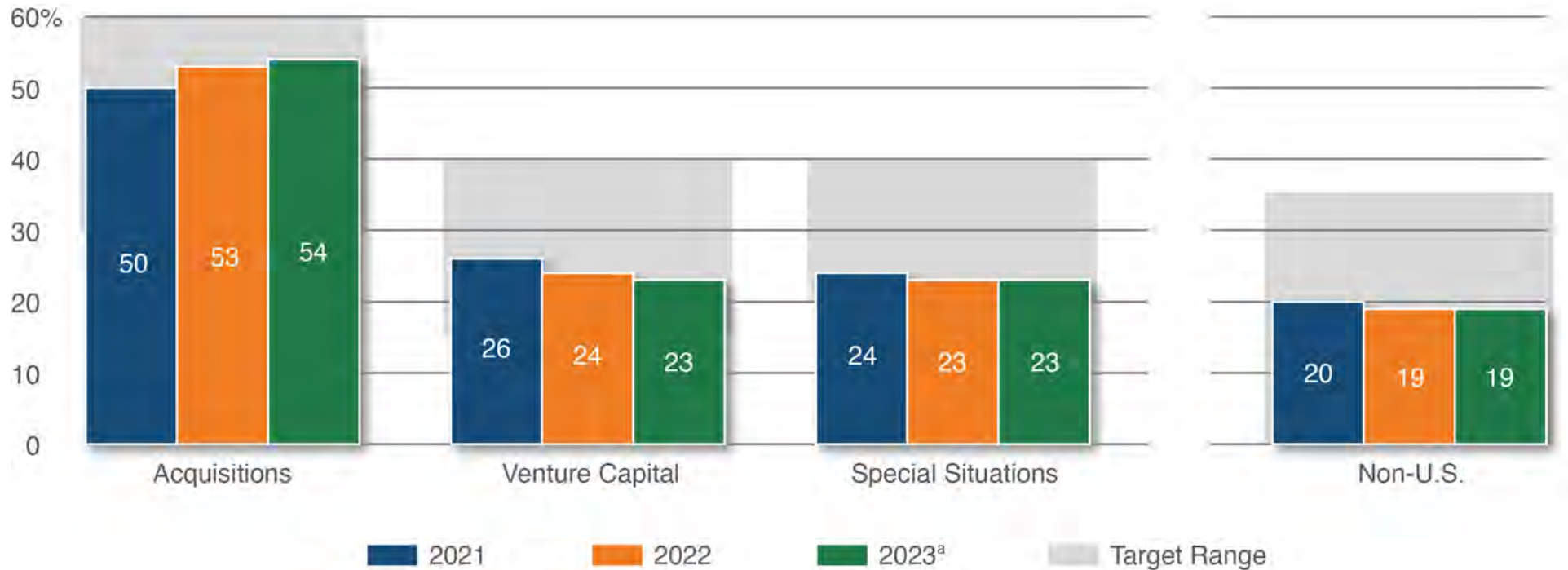
^aCommitments to non-USD-denominated investments are accounted for by multiplying unfunded commitments by the quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated investments to fluctuate quarterly.

^bDistributions to paid-in capital.



Investment Strategy Diversification

As a % of Partnership Market Value plus Unfunded Commitments



NOTE: Based on partnership market values and unfunded partnership commitments at December 31 of each year.

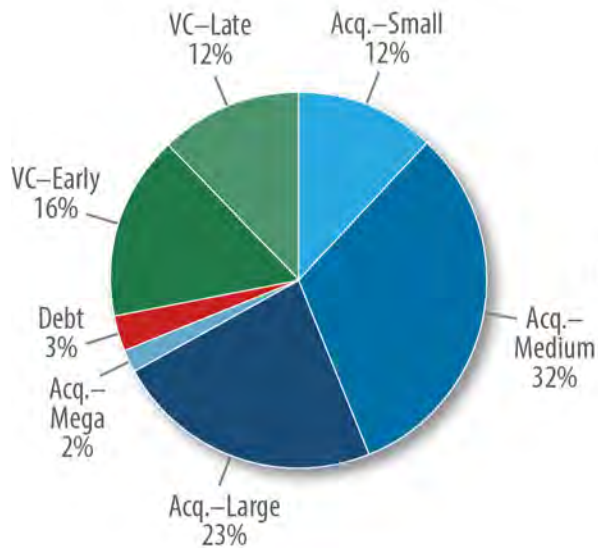
^aBased on partnership market values and unfunded partnership commitments at June 30, 2023, plus new commitments made or approved through November 17, 2023.



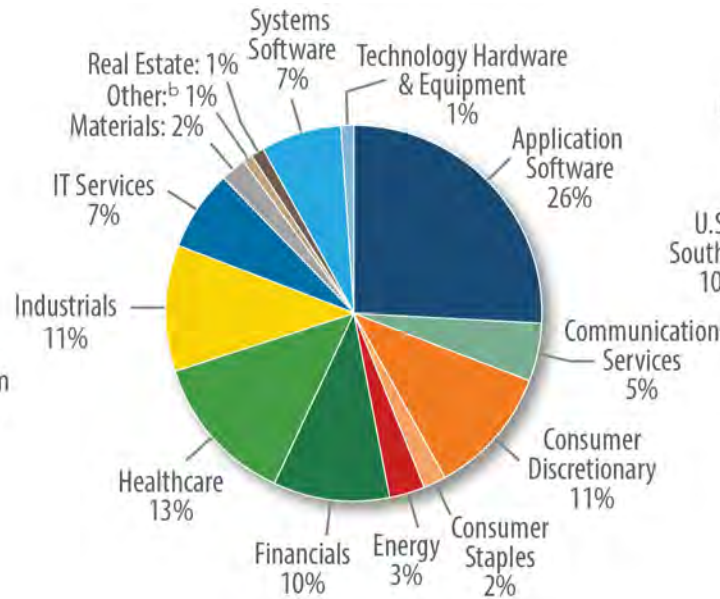
Portfolio Company Diversification

As a % of MV
At June 30, 2023

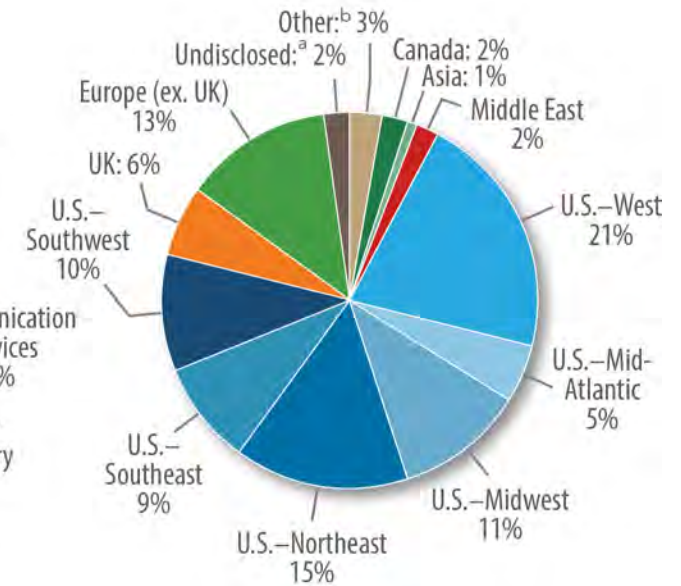
STRATEGY^a



INDUSTRY



GEOGRAPHIC REGION



^aAcquisition substrategies are based on the following ranges of total enterprise values: Mega >\$10 billion, Large \$1–\$10 billion, Medium \$200 million–\$1 billion, and Small <\$200 million.

^bComprises investments for which the general partners do not disclose industry classifications or geographic regions.

^cComprises investments that each represent less than 1% of market value.

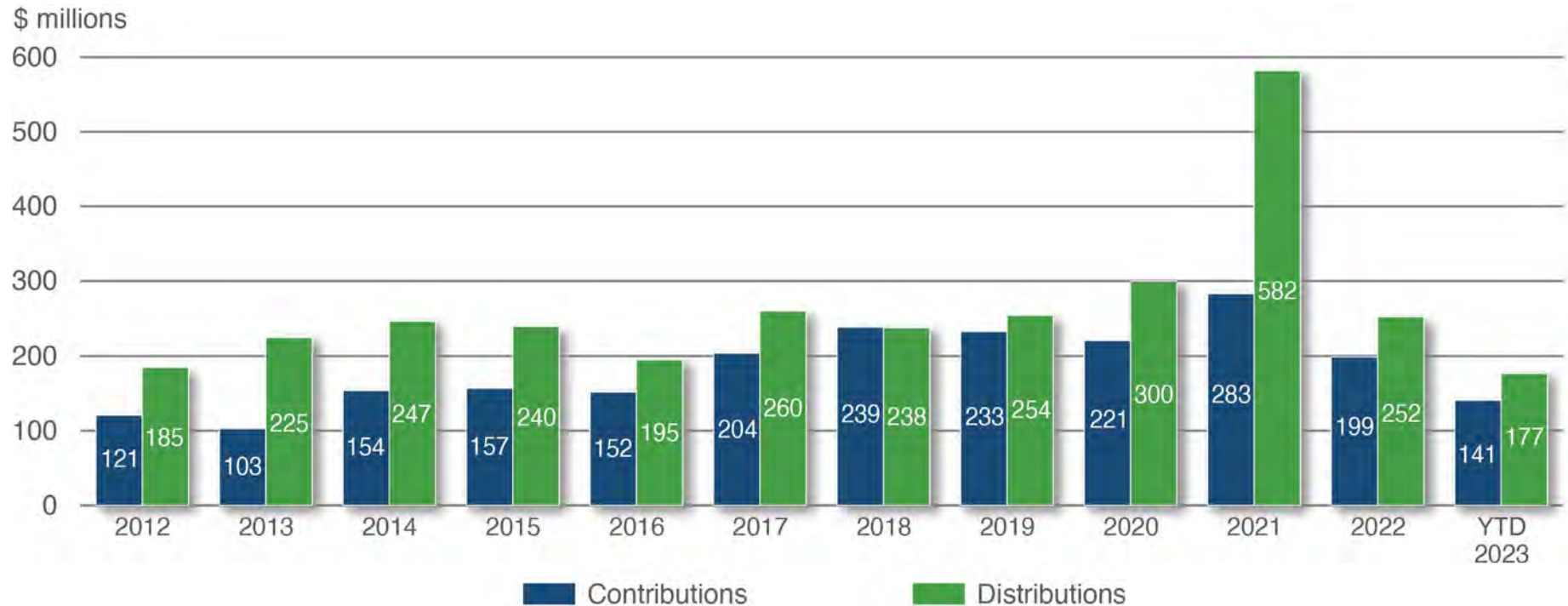
5,062 Active Companies	5.8% Largest Manager Exposure	3.0% Largest Investment Exposure	1.1% Largest Company Exposure
----------------------------------	---	--	---



Contribution and Distribution Activity

At November 17, 2023

ANNUAL CASH FLOWS



- Contribution and distribution activity have declined in each of the past 2 years, driven by a slowdown in global M&A activity.
- The portfolio has remained cash-flow positive in 2023, during which distributions have exceeded contributions by \$35.8 million.



Portfolio Performance

At June 30, 2023

(\$ in millions)

	No. of Investments	Commitments ^a	Contributions ^b	Distributions	Market Value	Total Value	Gain/ Loss	Since-Incep. Net IRR
Jun 30, 2023	385	\$3,493.7	\$3,102.5	\$3,622.2	\$2,046.1	\$5,668.3	\$2,565.8	15.1%
Jun 30, 2022	346	3,278.9	2,932.3	3,424.8	2,040.5	5,465.2	2,533.0	15.6%
YoY Change	39	\$214.8	\$170.3	\$197.5	\$5.6	\$203.1	\$32.8	-50bps

NOTE: Amounts may not foot due to rounding.

^aCommitments to non-USD-denominated investments are accounted for by multiplying the unfunded commitments by the quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated investments to fluctuate.

^bIncludes capital contributed for management fees called outside the total commitment.

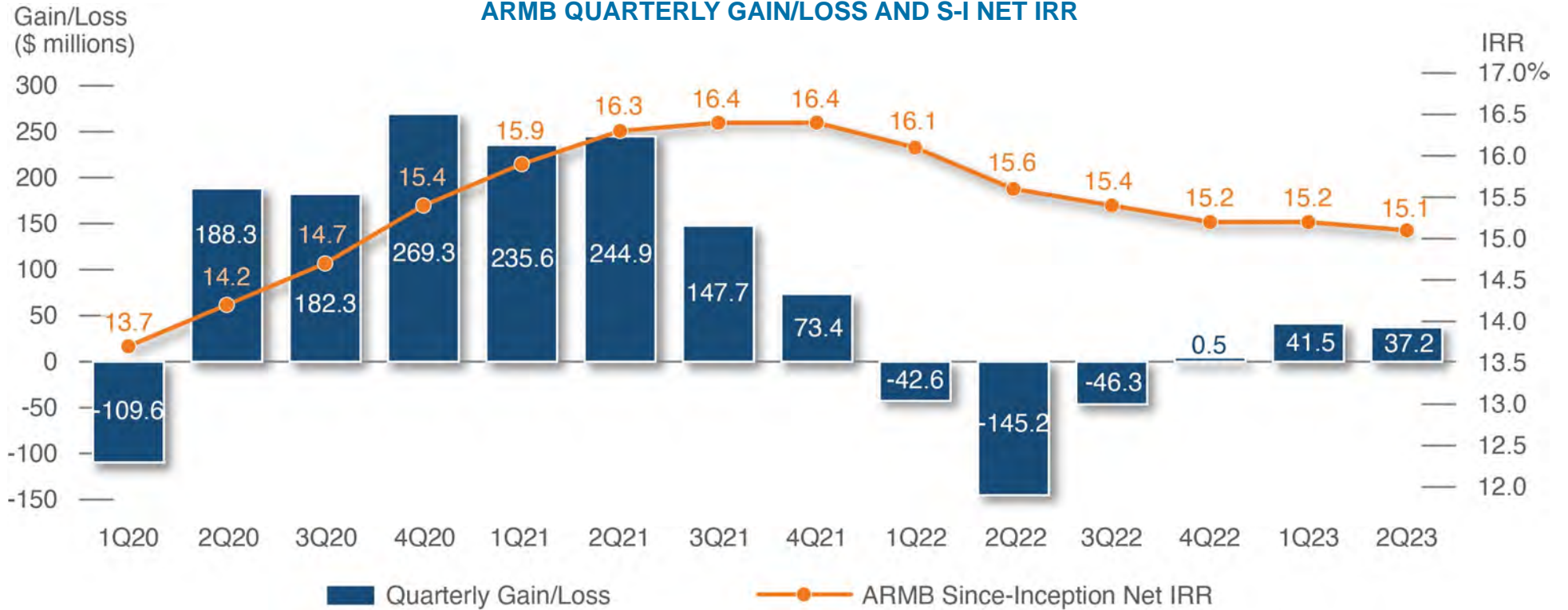
- The portfolio generated a 1-year return of 1.6% and a 1-year gain of \$33 million, which resulted in a 50-basis-point decrease in the portfolio's since-inception net IRR.
- Performance was driven by the portfolio's buyout and special situation investments, which were partially offset by declines in the venture capital portfolio.
- The portfolio is diversified across the economy and remains well-positioned to navigate current market challenges.



Recent Performance

At June 30, 2023

ARMB QUARTERLY GAIN/LOSS AND S-I NET IRR



Over the Past 14 Quarters:	20.1% NET IRR	\$1.1 BILLION Gains	\$1.2 BILLION Distributions to ARMB
----------------------------	-------------------------	----------------------------------	--



Recent Significant Events within the ARMB Portfolio

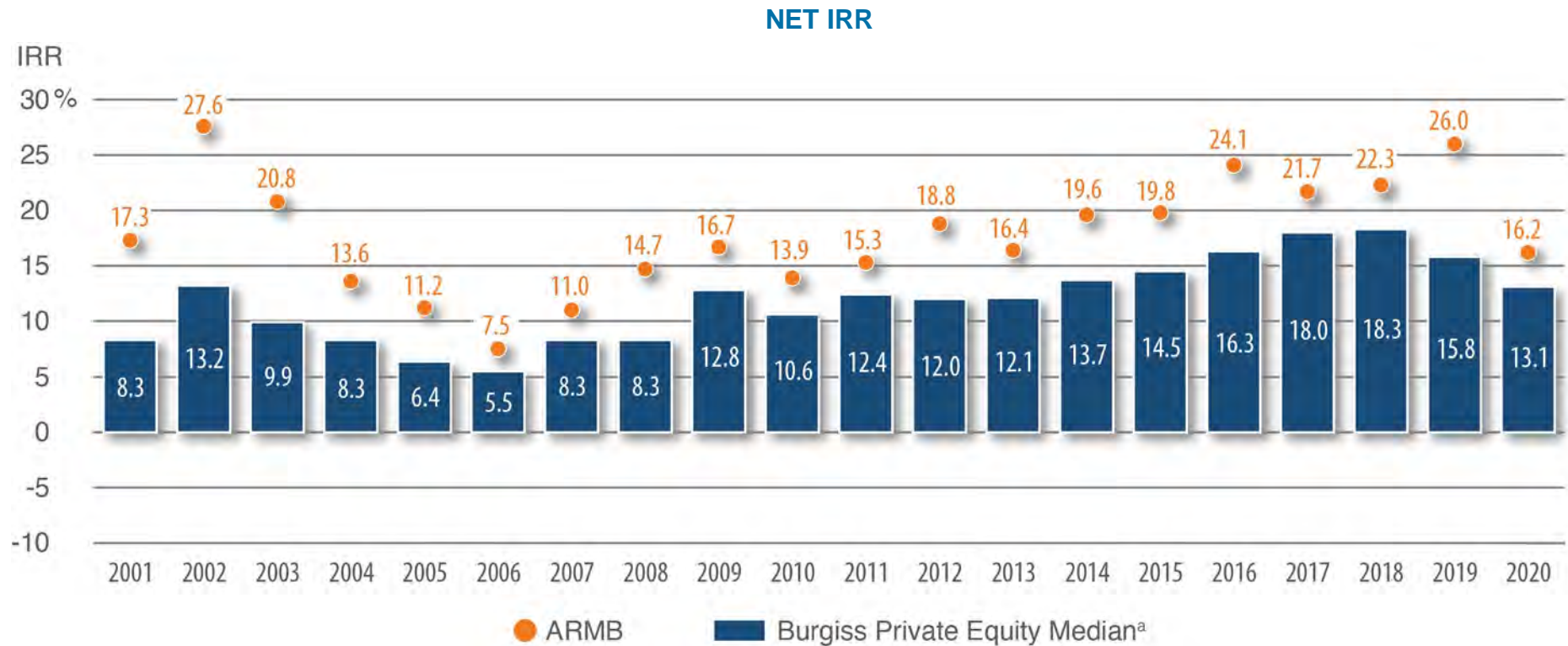
Since December 2022





Vintage Year Performance vs. Industry Benchmarks

At June 30, 2023



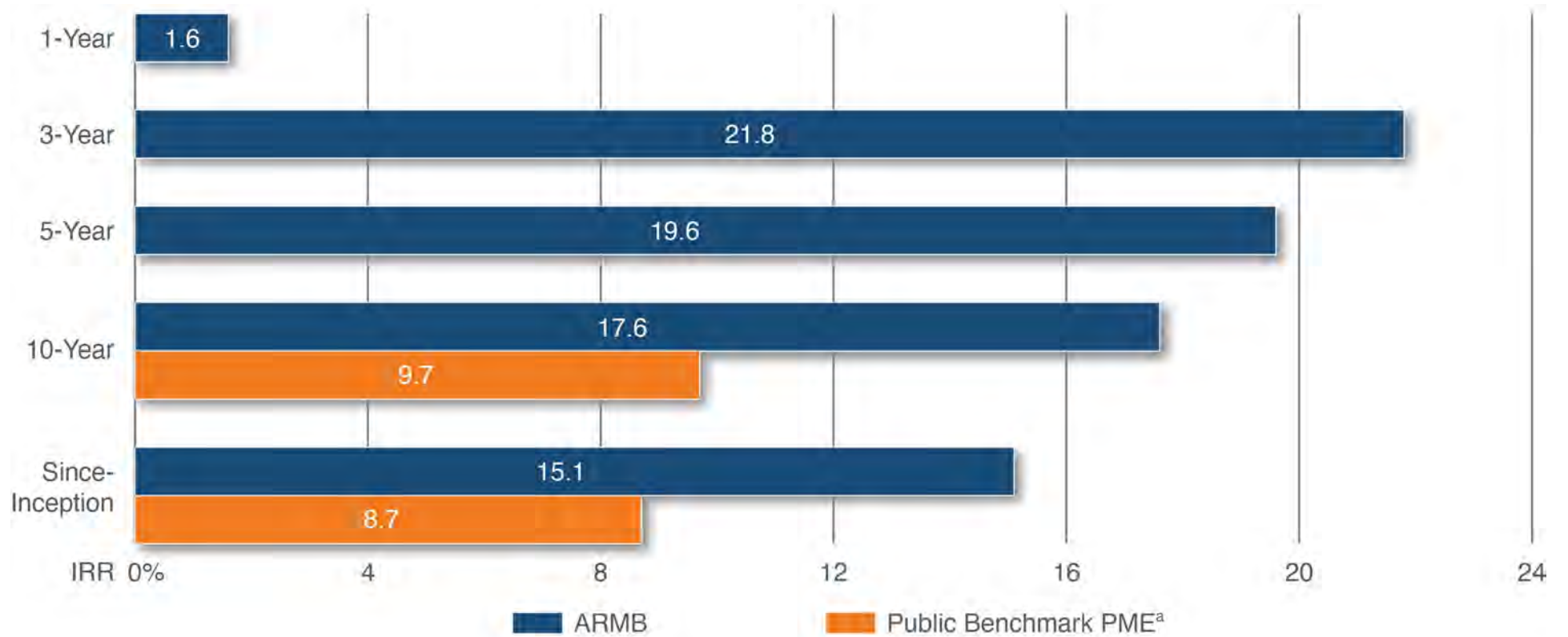
^aBurgiss Private i global all private equity median return benchmark, as of June 30, 2023, as produced using Burgiss data.

- All 20 of ARMB's more mature vintages (2001–2020) rank above the median for their vintages, collectively exceeding their median benchmarks by an average of 580 basis points.



Net Performance vs. Public Benchmark

At June 30, 2023



^aRepresents the dollar-weighted return (PME+) of the ARMB blended benchmark (1/3 S&P 500, 1/3 Russell 2000, and 1/3 MSCI EAFE). Performance was derived by applying ARMB's cash inflows and outflows to the index's daily returns.



Appendix



Biographies



James R. Chambliss
Managing Director

Mr. Chambliss joined Pathway in 1994 and is a managing director in the California office. He is responsible for investment analysis and conducting due diligence on primaries, secondaries, and co-investments; negotiating and reviewing investment vehicle documents; and client servicing. Mr. Chambliss is a member of various Pathway committees, including the firm's Management Committee, Investment Committee, and Co-investment Investment Subcommittee. Mr. Chambliss also serves on the advisory boards of several private market partnerships.

Mr. Chambliss received a BS in business administration, with an emphasis in finance, from Loyola Marymount University and an MBA from the Marshall School at the University of Southern California.



Canyon J. Lew
Managing Director

Mr. Lew joined Pathway in 2004 and is a managing director in the California office. He is responsible for investment analysis and conducting due diligence on primaries, secondaries, and co-investments; negotiating and reviewing investment vehicle documents; and client servicing. Mr. Lew is co-head of Pathway's co-investment team and is a member of the firm's Co-investment Investment Subcommittee and Portfolio Construction Committee. Mr. Lew also serves on the advisory boards of several private market partnerships.

Prior to joining Pathway, Mr. Lew worked for Fleet Fund Investors as an associate, where he monitored investments within Fleet Bank's private equity portfolio and reviewed new investment opportunities. Mr. Lew received an AB in economics and engineering from Brown University and an MS, with high honors, in investment management from Boston University.



Biographies (continued)



Wyatt H. Geiger, CFA
Principal

Mr. Geiger joined Pathway in 2014 and is a principal in the California office. His responsibilities include investment analysis and conducting due diligence on primaries, secondaries, and co-investments; investment monitoring; performance analysis; client reporting; and client servicing. Mr. Geiger also heads the firm's market research team, which tracks the data, trends, and issues impacting the private markets and also publishes Pathway's quarterly Private Market Environment reports and other periodic research reports and studies. He received a BS in business administration from the University of Southern California. Mr. Geiger is a CFA charterholder.



Pathway Contact Information

California

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18575 Jamboree Road, 7th Floor
Irvine, CA 92612
Tel: 949-622-1000

Bruce Emken—Senior Vice President—Head of
Wealth Services
Ed Hoffman—Senior Vice President
Martin Wing—Senior Vice President—Consultant
Relations

Hong Kong

Pathway Capital Management (HK) Limited
Suite 1602–1603, Three Exchange Square,
8 Connaught Place, Central, Hong Kong
Tel: +852-3107-8710
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Providence

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Sentinel Capital Partners

Mandate: Private Equity

Hired: 2009

Firm Information	Investment Approach	Total ARMB Mandate
<p>Founded in 1995 by David Lobel and John McCormack Sentinel is a value-oriented investor in the middle market. Mr. Lobel and Mr. McCormack have worked together for the past 33 years - previously at Smith Barney's private equity affiliate prior to founding Sentinel. The firm is based in New York City and now has 33 investment professionals and 70 total employees with an average tenure of 8 years. The firm is run by five senior partners who have worked together for an average of 26 years. In July 2021, Sentinel sold a passive minority stake (~10%) in their management company to Blackstone and RidgeLake Partners for the purpose of increasing GP commitments in future funds. As of 6/30/23 Sentinel had \$9.5B in asset under management.</p> <p>Key Executives: David S. Lobel, Managing Partner John F. McCormack, Senior Partner</p>	<p>At the core of Sentinel's investment strategy and deal generation efforts is an emphasis on value investing. Value investing has enabled Sentinel to reduce risk through lower entry pricing and to rely less on multiple expansion to achieve target returns. Sentinel believes that value investing also provides greater exit flexibility - investment objectives can be achieved sooner enabling a larger time window to pursue exits. Sentinel has consistently been able to invest at relatively low EBITDA purchase multiples by tackling complexity - financial complexity, operational complexity, and relationship complexity - and investing the time, effort, and skill to remove or greatly diminish the complexity present at the outset as quickly as possible.</p> <p>Sentinel concentrates on four industry Sectors: business services, consumer, healthcare services, and industrials. In these four sectors, Sentinel has considerable prior investment experience, an established record, and a well-established network of important value-added relationships. Sentinel believes specialized industry knowledge has enabled it to achieve an early mover advantage in sourcing deals, react quickly, and acting with greater conviction. Sentinel believes these four sectors allow for meaningful portfolio diversification and represent a generous opportunity set of potential investments.</p> <p>Benchmark: Cambridge vintage year peer comparison.</p>	<p>Assets Under Management: 6/30/23 Commitments: \$101 million</p>

Concerns: None

Performance

Mature funds have consistently delivered 1st or 2nd quartile performance by vintage year.



Alaska Retirement Management Board Presentation

December 8, 2023

Excellent Relationship History



~15-year partnership with Alaska Retirement Management Board

- Sentinel fund investments through Abbott Capital, Pathway Capital, and direct commitments
 - Sentinel VII: \$70.0 million
 - Sentinel VI: \$16.2 million
 - Sentinel V: \$11.3 million
 - Sentinel IV: \$4.0 million
- We are deeply grateful for your support and the confidence and trust you have placed in us

Achievements



28-year
track record

3.1x/2.5x
gross/net MOIC
across 64 realizations¹

30.1%/22.1%
gross/net IRR
across 64 realizations¹

\$11.2 billion
total capital raised

\$9.1 billion
equity capital raised
across 7 funds

\$1.3 billion
junior capital raised
across 2 funds

85+
platform investments

425+
add-on acquisitions

86
team members with
average tenure of ~9 years

Note: Data as of June 30, 2023 for all funds except SCP I (calculated and obtained as of December 31, 2008), SCP II (calculated and obtained as of December 31, 2013) and SCP III (calculated and obtained as of January 3, 2018). The hypothetical investment performance data presented herein does not represent performance achieved by any investor, and reflects investments that were made across multiple Sentinel Funds. Such stated performance reflects neither a specific Sentinel Fund nor a group of investments managed as a single portfolio. The actual return realized by any investor in an individual Sentinel Fund may differ materially from that presented herein. A full track record is available upon request.

1. Includes Sentinel equity funds only.

Strong, Consistent 28-Year Track Record



Fund Performance Metrics as of June 30, 2023

(\$ in millions)

Fund	Vintage	Committed Capital	DPI	Gross MOIC	Net MOIC	Gross IRR	Net IRR
Sentinel I	1995	\$48	1.6x	1.8x	1.6x	18.7%	13.7%
Sentinel II	1998	\$126	2.4x	2.8x	2.4x	28.0%	21.7%
Sentinel III	2005	\$319	3.0x	3.6x	3.0x	40.2%	32.7%
Sentinel IV	2009	\$765	2.7x	3.2x	2.7x	47.4%	38.6%
Sentinel V	2014	\$1,300	1.9x	2.6x	2.1x	26.6%	21.2%
Sentinel VI	2019	\$2,144	0.5x	1.7x	1.5x	32.6%	29.3%
Sentinel VII ¹	2022	\$4,403					
Sentinel Junior Capital I	2018	\$460	0.6x	1.4x	1.3x	18.0%	16.2%
Sentinel Junior Capital II ¹	2023	\$836					
Sentinel Continuation Fund I ¹	2021	\$770					

Note: Data as of June 30, 2023 for all funds except SCP I (calculated and obtained as of December 31, 2008), SCP II (calculated and obtained as of December 31, 2013), SCP III (calculated and obtained as of January 3, 2018), SCP VI (MCA was exited in October 2023), and SJC I (MCA was exited in October 2023). **Past performance is not necessarily indicative of future results.** There can be no assurance that any future investments will achieve comparable results, or that Sentinel will be able to implement its investment strategy and investment approach, or achieve its investment objectives. Returns show unrealized valuations. The actual realized return of such unrealized investment may differ materially from the returns indicated herein. See the Disclosures for additional considerations and definitions.

1. Too early for meaningful performance metrics.

Strong Performance Pre- and Post-Crises



Period Companies Acquired and Sold	# Companies	Investment (\$ in millions)		Gross / Net MOIC	Gross / Net IRR	EBITDA Multiples	
		Cost	Realized			Entry	Exit
Acquired After 9/11/2001 Crisis and Sold Before 2008 Financial Crisis	7	\$94	\$370	3.9x / 3.1x	100.1% / 77.7%	5.0x	8.9x
Acquired After 9/11/2001 Crisis and Sold After 2008 Financial Crisis	11	\$235	\$840	3.6x / 2.8x	31.6% / 24.6%	6.6x	8.3x
Acquired After the 2008 Financial Crisis and Sold Before COVID Pandemic	21	\$968	\$2,925	3.0x / 2.4x	52.9% / 41.1%	6.6x	9.7x
Acquired After the 2008 Financial Crisis and Sold After COVID Struck	15	\$1,014	\$3,199	3.2x / 2.5x	27.7% / 21.5%	8.6x	10.6x
Total	54	\$2,311	\$7,334	3.2x / 2.5x	73.3% / 57.0%	6.9x	9.5x

We have delivered excellent returns through starkly different investment environments

Note: The hypothetical investment performance data presented herein does not represent performance achieved by any investor and reflects investments that were made across multiple Sentinel Funds. Such stated performance reflects neither a specific Sentinel Fund nor a group of investments managed as a single portfolio. The actual return realized by any investor in an individual Sentinel Fund may differ materially from that presented herein. A full track record is available upon request. See the Disclosures for more information on calculation methodologies for net returns.

Our Investment Strategy Is Tried and True



Well-Defined Investment Strategy

- Focus on lower end of midmarket
- Target niche market leaders in four sectors
 - Business Services
 - Consumer
 - Healthcare Services
 - Industrials
- Disciplined construction of well-diversified fund portfolios
- Avoid seriously broken businesses or major turnarounds

Systematic Approach to Sourcing

- Experienced, dedicated business development team
- Leverage highly diverse intermediary network
- Systematically sort through large midmarket opportunity set
- Proven record of securing stalled auctions

Time-Tested Investment Approach

- Target deals with complexity not well suited to broad auctions
- Value-oriented control investments
- Buy-and-build platforms in fragmented industries with highly accretive add-ons
- Invest in building relationships with management
 - Use due diligence period to build relationships, trust
 - Establish credibility by doing more work up front

Has produced strong, consistent performance spanning 28+ years

Powerful, Dedicated Forensic Accounting Expertise



Independent team of 15 third-party forensic accounting experts drives Sentinel's differentiated diligence process and post-closing value-add

Enhanced due diligence

- Powerful ability to assess pre-closing complexity
- Speed with accuracy provides a meaningful competitive advantage



Provide sellers speed and enhanced closing certainty

Proprietary monthly reporting

- Monthly forensic process for each portfolio company confirms quality of earnings and balance sheet integrity



Enables fast identification of red flags; facilitates rapid, preemptive action

Real-time data room readiness

- Byproduct of monthly forensic process
- Detailed accounting information can be sent on short notice to potential buyers with minimal distraction to management

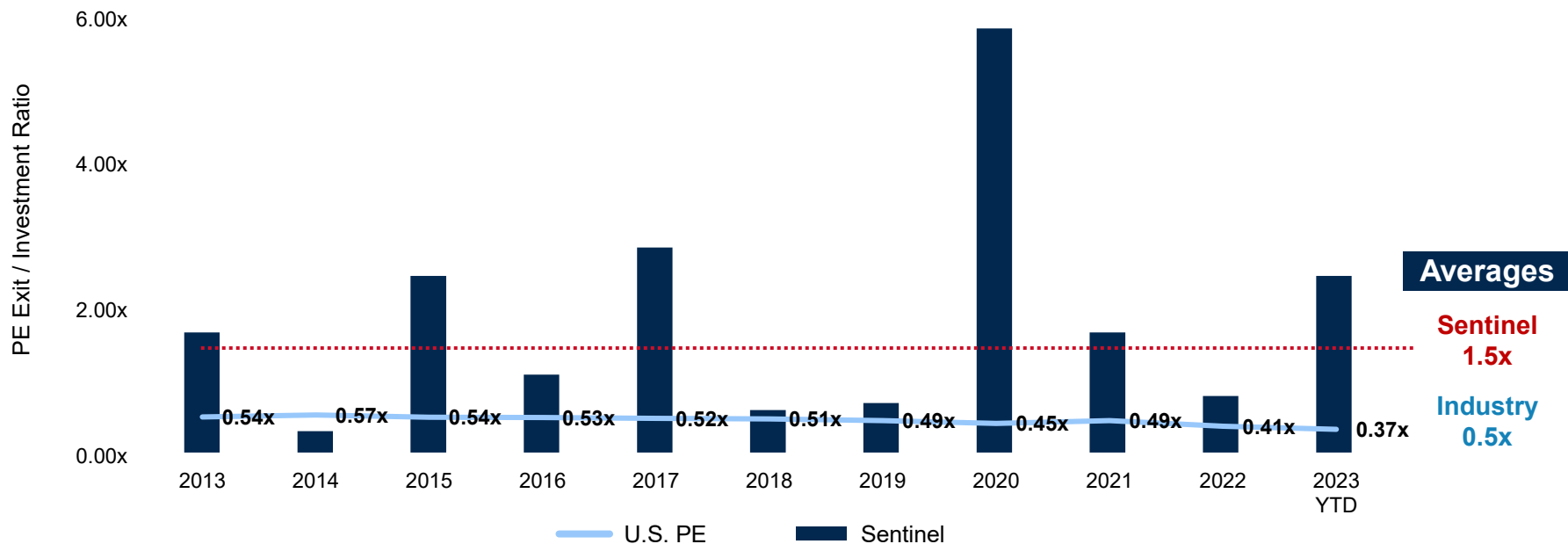


Fast-track exit timing and react to unsolicited offers quickly

PE Exit Activity Down Significantly



Returning capital has become a difficult challenge in PE



Sources: Pitchbook: Q3 2023 US PE Breakdown.

Deep Commitment to Our Core Values



Everyone expected to be culture ambassador

- Full access to all information
- Open book/open door policy
- Teamwork and firmwide engagement enhances performance

Everyone's opinion counts

- Any investment professional can veto deals
- Junior professionals speak first
- Zero tolerance for big egos

Apprenticeship method

- All partners/principals joined as associates/VPs
- Minimal unplanned turnover
- Take ownership for mistakes
- Deep bench of future leaders

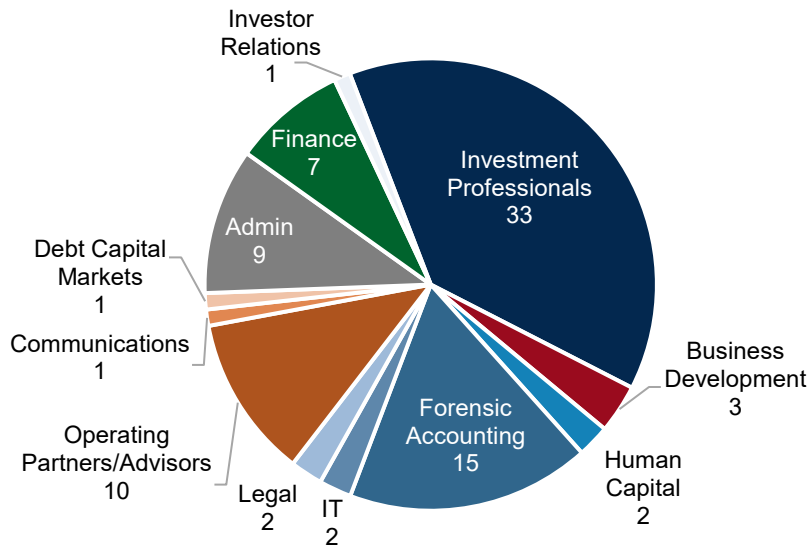
Transparency, teamwork, and humility – foundation for investment success

Highly Capable, Experienced, Stable Team



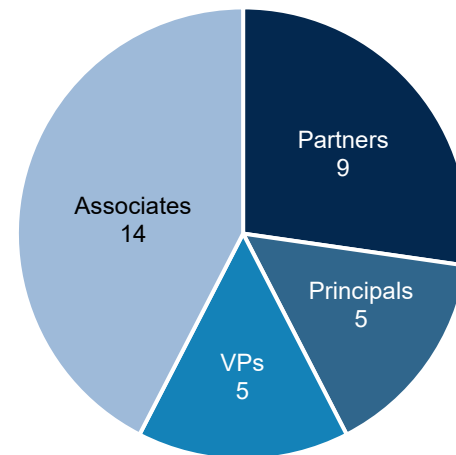
Deep, fully integrated 86-person team with minimal unintended turnover

Total Sentinel Team



~9-Year Average Tenure

Investment Professionals



~10-Year Average Tenure

Note: As of September 30, 2023. Forensic Accounting and IT employees are not Sentinel employees. Two of the six operating partners are not Sentinel employees.

Challenges Impacting Our Portfolio Companies



**Rising Cost
of Debt**

**Longer Product
Lead Times**

**Input Cost
Increases
Persist**

**Labor
Shortages /
Wage Inflation**

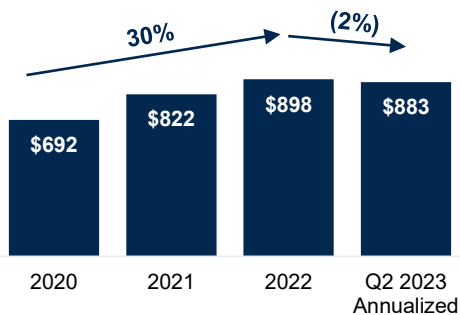
**Not Easy to
Raise Prices**

Note: Presenter's point of view and market commentary.

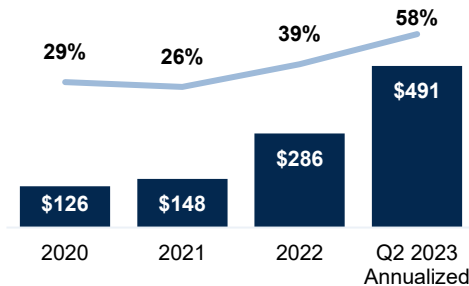
Impact on Our Portfolio Companies



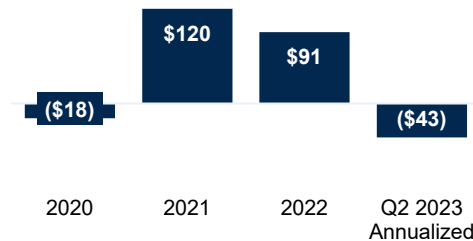
Total Portfolio Pro Forma EBITDA
(\$ in millions)



Total Portfolio Interest Expense
and % of EBITDA¹
(\$ in millions)



Total Portfolio Change in
Working Capital
(\$ in millions)



- EBITDA growth now trending down
- Interest expense consuming outsized level of cash flow
- But, with supply chain issues now easing, saturated balance sheets are beginning to unwind

Note: As of June 30, 2023. Includes all portfolio companies in SCP V, SCP VI, and SCP VII, except for Holley.

1. Adjusted EBITDA less Pre-Acquisition Results.

Mid-Range Outlook



On the one hand...

- Inflation is under better control and interest rates might have peaked
- Supply chain constraints and labor shortages have abated
- Backlog of businesses ready for sale is unusually high
- Debt financing is widely available, albeit much more expensive and at more conservative levels

On the other hand...

- Concerns remain about business performance holding up and a possible recession
- Geopolitical risk is significantly elevated

We expect next 12 months to be choppy

Disclosures

Disclosures



Risk of Loss; Past Performance is Not a Guarantee: Investments in private equity funds such as the Funds (as defined below) are speculative and involve substantial risk of loss. No assurance can be given that the Funds will achieve their investment objectives or avoid substantial losses. Information about the Funds and investments made by the Funds, including past performance of the Funds, is provided solely to illustrate Sentinel's investment experience, and processes and strategies used by Sentinel in the past with respect to the Funds. The performance information relating to Sentinel's previous investments is not intended to be indicative of any Fund's future results. **Past performance is not necessarily indicative, or a guarantee, of future results.** There can be no assurance that any Fund will achieve comparable results as those presented or that investors in a Fund will not lose any of their invested capital.

Not Investment Advice: This Presentation (this "Presentation") is not an offer or sale, or a solicitation to any person to buy, of any security or investment product or investment advice. The information presented in this Presentation is not provided with a view to providing investment advice with respect to any security, or making any claim as to the past, current or future performance thereof, and Sentinel expressly disclaims the use of this Presentation for such purposes. All investments are subject to substantial risks, including those set forth in the Private Placement Memorandum of the applicable Fund.

Forward-looking Information: This Presentation may contain forward-looking statements that are based upon certain assumptions that may change. Other events which were not taken into account, including general economic factors which are not predictable, may occur and may significantly affect the actual returns or performance of a Fund and/or any of the portfolio companies in which a Fund has invested. Any assumptions should not be construed to be indicative of the actual events which will occur. Actual events are difficult to project and depend upon factors that are beyond the control of the Funds, Sentinel or their respective affiliates, members, partners, stockholders, managers, directors, officers, employees and agents. Certain assumptions have been made to simplify the Presentation and, accordingly, actual results may differ, perhaps materially, from those presented herein. All information with respect to portfolio companies and industry data has been obtained from sources believed to be reliable and current, but accuracy cannot be guaranteed.

Statements contained in this Presentation are based on current expectations, estimates, projections, opinions and beliefs of the investment team of the Fund or portfolio company management on the date hereof. Such statements involve known and unknown risks and uncertainties, and undue reliance should not be placed thereon. Additionally, some of the matters discussed in this Presentation include forward looking statements. Sentinel has tried to identify forward looking statements by use of terminology such as "may," "will," "should," "could," "would," "predicts," "potential," "continue," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates" and similar expressions. Forward looking statements are subject to a number of risks and uncertainties, some of which are beyond the control of Sentinel, including among other things, the risks listed in the "Certain Risk Factors" section of each Sentinel Fund's Private Placement Memorandum. The forward looking events discussed in this Presentation may not occur. Sentinel undertakes no obligation to update or revise any information in this Presentation, whether as a result of new information, future events or otherwise.

Actual results, performance, prospects or opportunities could differ materially from those expressed in or implied by the forward looking statements. No representation or warranty is made as to future performance or such forward-looking statements. Additional risks of which Sentinel is not currently aware also could cause actual results to differ.

Financial, market, economic or legal conditions, the performance of individual investments, regulatory developments and other factors could cause actual results to differ materially from those set forth in the forward-looking statements, hypotheticals, forecasts, projections and estimates of Sentinel and/or any third parties set forth in this Presentation. Accordingly, there can be no assurance that actual outcomes, including but not limited to investment results, will be consistent with the projections, hypotheticals, forecasts and estimates herein. Investors should conduct their own analysis and draw their own conclusion, using such assumptions as they deem appropriate and should fully consider other available information.

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There are numerous factors related to the markets in general or the implementation of any specific investment program that cannot be fully accounted for in the preparation of projected performance results, all of which can adversely affect actual investment results. Any projected returns are therefore subject to a number of important risks, qualifications, limitations, and exceptions.

Certain of the information contained herein, particularly in respect of market data, economic and other forecasts and performance data, is from third-party sources. While Sentinel believes such sources to be reliable, neither Sentinel nor any of its affiliates nor employees have updated any such information through the date hereof or undertaken any independent review of such information. Sentinel does not make any representation or warranty, express or implied, with respect to the fairness, correctness, accuracy, reasonableness or completeness of any of the information contained herein (including but not limited to economic, market or other information obtained from third parties), and it expressly disclaims any responsibility or liability therefor. Certain third-party names, logos, tradenames and trademarks included in this Presentation are strictly for identification and informational purposes only, and no claim is made that any such company or person has sponsored or endorsed the use of such names, logos, tradenames and trademarks.

In considering any performance information contained herein, recipients should bear in mind that past performance is not necessarily indicative of future results, and there can be no assurance that the Funds or investments by the Funds, as the context requires, will achieve comparable results or that projected returns, if any, will be met. There can be no assurances or guarantees that (i) any Fund's investment objectives will be realized, (ii) any Fund's investment strategy will prove successful or (iii) investors will not lose all or a portion of their investment in the relevant Fund. The performance information summarized herein has not been audited. For purposes of this Disclosures, the "Sentinel Funds" or the "Funds" are defined to include collectively Sentinel I, Sentinel II, Sentinel III, Sentinel IV, Sentinel V, Sentinel VI, Sentinel VII, Sentinel Junior Capital I, Sentinel Junior Capital II, and Sentinel Continuation Fund I.

All data included herein is as of **June 30, 2023**, unless noted otherwise.

Disclosures (Cont'd)



Performance Information

1. The information presented herein contains performance information (both realized and unrealized) with respect to the Funds as well as their respective underlying investments. The unrealized IRRs and Multiples are presented for informational purposes only. The information presented herein with respect to Sentinel Capital Partners, L.P. ("Sentinel I") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners II, L.P. ("Sentinel II") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners III, L.P. and Sentinel Capital Investors III, L.P. (collectively, "Sentinel III") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners IV, L.P., Sentinel Capital Partners IV-A, L.P. and Sentinel Capital Investors IV, L.P. (collectively, "Sentinel IV") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners V, L.P., Sentinel Capital Partners V-A, L.P., and Sentinel Capital Investors V, L.P. (collectively, "Sentinel V") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners VI, L.P., Sentinel Capital Partners VI-A, L.P., and Sentinel Capital Investors VI, L.P. (collectively, "Sentinel VI") includes such information in the aggregate. The information presented herein with respect to Sentinel Capital Partners VII, L.P., Sentinel Capital Partners VII-A, L.P., and Sentinel Capital Investors VII, L.P. (collectively, "Sentinel VII") includes such information in the aggregate. The information presented herein with respect to Sentinel Junior Capital I, L.P. ("Sentinel Junior Capital I") and Sentinel Junior Capital II, L.P. ("Sentinel Junior Capital II") includes such information in the aggregate. The information presented herein with respect to Sentinel Continuation Fund I, L.P. and Sentinel Continuation Fund I-A, L.P. (collectively, "Sentinel Continuation Fund I") includes such information in the aggregate.

2. Unless otherwise indicated, all performance figures were calculated and obtained as of December 31, 2008 with respect to Sentinel I, December 31, 2013 with respect to Sentinel II, January 3, 2018 with respect to Sentinel III, and **June 30, 2023** with respect to Sentinel IV, Sentinel V, Sentinel VI, Sentinel Junior Capital I, and Sentinel Continuation Fund I. Certain figures have been rounded and accordingly certain information may not foot due to such rounding.

3. The cumulative and hypothetical composite investment performance data presented herein does not necessarily represent performance achieved by any investor, and reflects investments that were made across multiple Funds during different economic cycles. Such stated performance reflects neither a specific Fund nor a group of investments managed as a single portfolio. The actual return realized by any investor in an individual Fund may differ materially from those reflected or contemplated in the data presented herein. Net performance for individual investments also cannot be calculated without making arbitrary assumptions, and for that reason, the performance of individual investments herein is presented on a gross basis.

Any net investment performance shown herein is generally in respect of limited partners in the aggregate at the applicable fund or funds-level. The performance of an individual investor in a fund may also differ from fund-level returns due to factors including (i) the timing of an investor's capital contributions, including as a result of a later subscription and related charges, (ii) the use of one or more blocker entities on a particular transaction that were not common to all investors or other tax determinations, (iii) differences in fees or expenses allocable to certain investors as a result of fee rebates, taxes or other considerations and (iv) the excuse or exclusion of an investor for one or more of such fund's investments. Accordingly, no investor, even if participating in a fund, necessarily achieved the exact net returns shown. Investment-level net IRRs with respect to a particular Fund are calculated as follows unless otherwise noted: (i) calculate a Fund-level expense ratio (which reflects the Fund's management fees, carry, and other expenses) and (ii) apply such expense ratio across individual investments. Sub-portfolio net IRRs across multiple Funds are calculated as follows unless otherwise noted: (i) identify the highest Fund-level expense ratio among the Funds represented in the sub-portfolio (which reflects such Fund's management fees, carry, and other expenses) and (ii) apply such highest expense ratio across the sub-portfolio. Sentinel believes this provides a reasonable method of estimating net IRR performance with respect to individual investments and sub-portfolios, notwithstanding that the net performance of the Fund is ultimately based on the performance of the Fund taken as a whole. This method may understate or overstate the effect of operating expenses, profits interest, and/or management fees, as applicable, to individual investments and/or sub-portfolios and is presented for informational purposes only. No such returns have actually been or will actually be generated by any individual investment or subportfolio and no investor has achieved or will achieve any such net returns on any such basis. In addition, calculations of net and gross IRRs in respect of investment and performance data included and/or referred to herein, and with respect to a Fund, as reported to limited partners from time to time, is based on the payment date of capital contributions received from limited partners. This treatment also applies in instances where a Fund utilizes borrowings under the Fund's subscription-based credit facility in advance of receiving capital contributions from limited partners to repay any such borrowings and related interest expense. As a result, use of a subscription-based credit facility will result in a higher reported net and gross IRR than if the facility had not been utilized and instead such limited partners' capital had been contributed at the inception of an investment.

Representation of net performance information for subsets (realized and unrealized) of a Fund is a hypothetical estimate of net performance because actual net returns cannot be calculated for a subset of portfolio investments due to the collective nature of fund fees and expenses. Net performance figure for this subset of a Fund is estimated and does not represent actual performance experienced by investors. Sentinel has used (i) the gross-net spread at the Fund-level to calculate such net performance for investments in an individual Fund and (ii) the highest gross-net spread at the Fund-level to calculate such net performance for investments in a sub-portfolio comprised of multiple Funds. These figures illustrate the potentially substantial impact of fees, carried interest and expenses on the gross returns of extracted performance, even though these amounts are charged or allocated at the Fund level.

4. In certain instances where a portfolio company of an equity fund or junior capital fund is sold to a continuation fund pursuant and subject to the terms of their respective governing agreements, a portion of such portfolio company may have been "rolled over" to Sentinel Continuation Fund I (including amounts attributable to Sentinel and its affiliates). Any such amounts rolled over are treated as a realization for purposes of any such investment and the related performance data presented herein and is valued based on the proportionate amount that would have been distributed in cash but for such rollover returns shown.

5. Sentinel seeks to integrate certain ESG factors into its investment process in accordance with its policy and subject to its fiduciary duty and any applicable legal, regulatory or contractual requirements. There is no guarantee that Sentinel will be able to successfully implement its ESG policy or make investments in companies that create a positive ESG impact while achieving its investment strategy. In addition, applying ESG factors to investment decisions is qualitative and subjective by nature, and there is no guarantee that the criteria utilized by Sentinel or any judgment exercised by Sentinel, will reflect the beliefs or values of any particular investor. There are also significant differences in interpretations of what positive ESG characteristics mean by region, industry and topic. Sentinel's interpretations and decisions may differ from others' views and could also evolve over time. In addition, in evaluating an investment, Sentinel expects to depend upon information and data provided by a number of sources, including the relevant investments and/or various reporting sources which could be incomplete, inaccurate or unavailable, and which could cause Sentinel to incorrectly assess a company's ESG practices and/or related risks and opportunities. Sentinel does not intend independently to verify all ESG information reported by investments or third parties.

Further, considering ESG qualities when evaluating an investment could result in the selection or exclusion of certain investments based on Sentinel's view of certain ESG related and other factors and could cause the relevant Funds not to make an investment that they would have made or to make a management decision with respect to an investment differently than they would have made in the absence of the ESG Policies, which could negatively impact a Fund's performance. For the avoidance of doubt, however, Sentinel does not expect to subordinate a Fund's investment returns or increase in the Fund's investment risks as a result of (or in connection with) the consideration of any ESG factors. Further, ESG practices are evolving rapidly and there are different principles, frameworks, methodologies, and tracking tools being implemented by other asset managers, and Sentinel's adoption and adherence to various such principles, frameworks, methodologies and tools is expected to vary over time. There is also a growing regulatory interest across jurisdictions in improving transparency regarding the definition, measurement and disclosure of ESG factors. Sentinel's ESG policies could become subject to additional regulation in the future, and Sentinel cannot guarantee that its current approach will meet future regulatory requirements.

Disclosures (Cont'd)



Definitions

"Cash received" includes all dividends, recapitalization proceeds, and interest income received from portfolio companies as well as distributions from the sale of securities as of the date indicated. All figures are gross and pre-tax, before deduction for expenses, management fees, and carried interest, if any. Realized investments, except where otherwise noted, are those where Sentinel has fully exited an investment.

"DPI" or "distributed/paid-in" means distributions received by limited partners relative to contributed capital. DPI is reflected on a net basis and reflects the deduction of management fees, partnership expenses, carried interest, and other expenses borne by limited partners. DPI calculations for Sentinel I, Sentinel II, Sentinel III, and Sentinel IV include the distributions received by certain investors, primarily affiliated with Sentinel (including the general partners thereof), who pay or paid reduced fees or, in some cases, no fees, in connection with their Fund investments and did not bear a carried interest; if such investors were excluded from such calculations, the relevant Fund's DPI would be lower. DPI calculations for Sentinel V, Sentinel VI and Sentinel Junior Capital I do not include the distributions received by such investors.

"Gross IRR" represents the gross compound annual rate of return based on realized and unrealized proceeds using quarterly cash flows and incorporates valuing the remaining debt positions at accreted cost and valuing the remaining equity positions based on EBITDA multiples at the date of investment. Gross IRR is calculated before the deduction of management fees, partnership expenses, carried interest, and other expenses borne by investors.

"Gross multiple of cost" and "gross multiple of investment" are reflected on a gross basis and do not reflect the deduction of management fees, partnership expenses, carried interest, and other expenses borne by investors.

"Investment Date" refers to the date of the Fund investment and excludes follow-ons.

"Net IRR" represents the compound annual rate of return based on realized and unrealized proceeds using quarterly cash flows, calculated after payment of applicable management fees, partnership expenses, carried interest, and other applicable expenses. An individual limited partner's net IRR may vary based on the timing of capital contributions and distributions, as well as other factors such as excuse rights, different terms, or limited partner characteristics. Net IRR calculations for Sentinel I, Sentinel II, Sentinel III, and Sentinel IV include the returns of certain investors, primarily affiliated with Sentinel (including the general partners thereof), who pay or paid reduced fees or, in some cases, no fees, in connection with their Fund investments and did not bear a carried interest; if such investors were excluded from such calculations, the relevant Fund's net IRR would be lower. Net IRR calculations for Sentinel V, Sentinel VI, Sentinel Junior Capital I, and Sentinel Continuation Fund I do not include the returns of such investors. Net IRR for Funds or groups of unrealized investments as a whole assumes unrealized investments are sold as of June 30, 2023 and proceeds are distributed through the relevant Fund's waterfall. Recipients of this Presentation should note that calculations of Net IRRs in respect of investment and performance data included and/or referred to herein is based on the payment date of capital contributions received from such limited partners. As a result, use of a subscription-based credit facility will result in a higher reported IRR than if the facility had not been utilized and instead such limited partners' capital had been contributed at the inception of an investment.

"Cost" refers to the cost of the applicable investment and excludes fund-level costs or expenses.

Unless otherwise indicated in this Presentation, the "Value" of a portfolio company refers to the "unrealized value" which in turn means the "fair value" of an investment that has not been realized in accordance with Sentinel's valuation policy. The "fair value" of an investment is an estimate of the price that would be received upon the sale of an investment in an orderly transaction between two parties at the measurement date under current market conditions. For unrealized investments, the valuations are derived by multiplying EBITDA by a valuation multiple that Sentinel determines based on observed companies or transactions that Sentinel considers to be comparable, adjusted for differences Sentinel observes between the investment and the referenced comparable, and then adjusting for debt and cash. The actual realized returns of unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs, and the timing and manner of sale, if applicable. Sentinel believes that such unrealized values are reasonable and appropriate; however, there can be no assurance that proceeds will actually be realized on these investments, or that, if and when realized, the proceeds will be equal to the values used. Accordingly, the actual realized returns on investments that are partially realized or unrealized may differ materially from the values indicated herein. No assurance, representation, or warranty is made by any person that any of the unrealized returns will be achieved, and no recipient of this Presentation should rely on such projections. Sentinel does not make any assurance, representation, or warranty as to the accuracy of any unrealized investment valuations.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Private Equity Annual Tactical Plan
Resolution 2023-19
DATE: December 7-8, 2023

ACTION: X
INFORMATION: _____

BACKGROUND:

The Alaska Retirement Management Board's (ARMB) "Private Equity Partnerships Portfolio Policies and Procedures" calls for the preparation and adoption of an "Annual Tactical Plan" (Plan).

STATUS:

Staff presented the Plan to the ARMB at the December 2023 board meeting.

The Plan reviewed the status of the portfolio, historical and prospective market conditions, and the annual investment strategy designed to further the ARMB's goals and objectives for the private equity program.

Staff is recommending the Board approve the Plan which includes forward commitment targets starting at \$700 million in 2024 and increasing over time to maintain the ARMB's long-term private equity allocation of 14%. The commitments will be allocated equally between Abbott, Pathway, and direct investments.

RECOMMENDATION:

The Alaska Retirement Management Board adopt Resolution 2023-19 approving the 2023 Private Equity Annual Tactical Plan.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Private Equity Annual Tactical Plan
Resolution 2023-19

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS, the Board has authorized investment in private equity assets for the State of Alaska Retirement and Benefits Plans; and

WHEREAS, the Board will establish, and on an annual basis review, an investment plan for private equity;

NOW THEREFORE, BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopts the 2023 Private Equity Annual Tactical Plan.

DATED at Anchorage, Alaska this _____ day of December 2023.

Chair

ATTEST:

Secretary



State Street Global Cybersecurity (GCS) Overview

Sean Bailey
Vice President

December 2023



Global Cybersecurity

Mission: To protect State Street and our clients from the impact of cyber-attacks against our systems by understanding the risks these attacks present and mitigating them via a robust, continuously evolving, cybersecurity program and control environment.

Global Cybersecurity defines and manages the enterprise-wide Information Security Program.

GCS partners with Information Technology, Corporate Offices, and Business Units to protect the confidentiality, integrity and availability of Corporate Information assets.



GCS identifies and employs information security best practices supporting a risk-based methodology consistent with government and regulator cyber security requirements.

GCS monitors State Street systems on a 24x7x365 basis, looking for and responding to suspicious cyber activity.

Global Cybersecurity – Organization

Cyber Fusion & Security Operations

Responsible for proactively identifying, understanding and managing cyber threats to our valued assets and business processes.

Architecture & Engineering

Responsible for security architecture and engineering to provide concepts, principles, structures and standards which are used in the deployment of the Bank's security measures at scale.



Office of the CISO

Responsible for strategic planning and program/project management, metrics & reporting, GCS communication and engagement, Cybersecurity education and awareness across the enterprise.

Client Engagement

Responsible for all client interactions including responding to due diligence inquiries with our Standard Information Gathering (SIG) document, supporting client due diligence visits, addressing ad-hoc inquiries and providing board presentations.

First Line Risk & Controls

Design and implement appropriate governance processes for IT and Cybersecurity. Assess and manage third-party risk. Work with all business units to implement appropriate controls and drive down cyber risk.

Cybersecurity

Program

Structure

Global Cybersecurity – Our Systematic Approach

State Street promotes Information Security by design in alignment with Industry Standards (NIST CSF*) to drive operational effectiveness and protect client data

Recover

And restore services impaired during cybersecurity incidents

Respond

To detected cybersecurity incidents to minimize impact



Identify

Cybersecurity risks to systems, people, assets, data and capabilities

Protect

Against the impact of potential cybersecurity events and outline safeguards for delivery of critical services

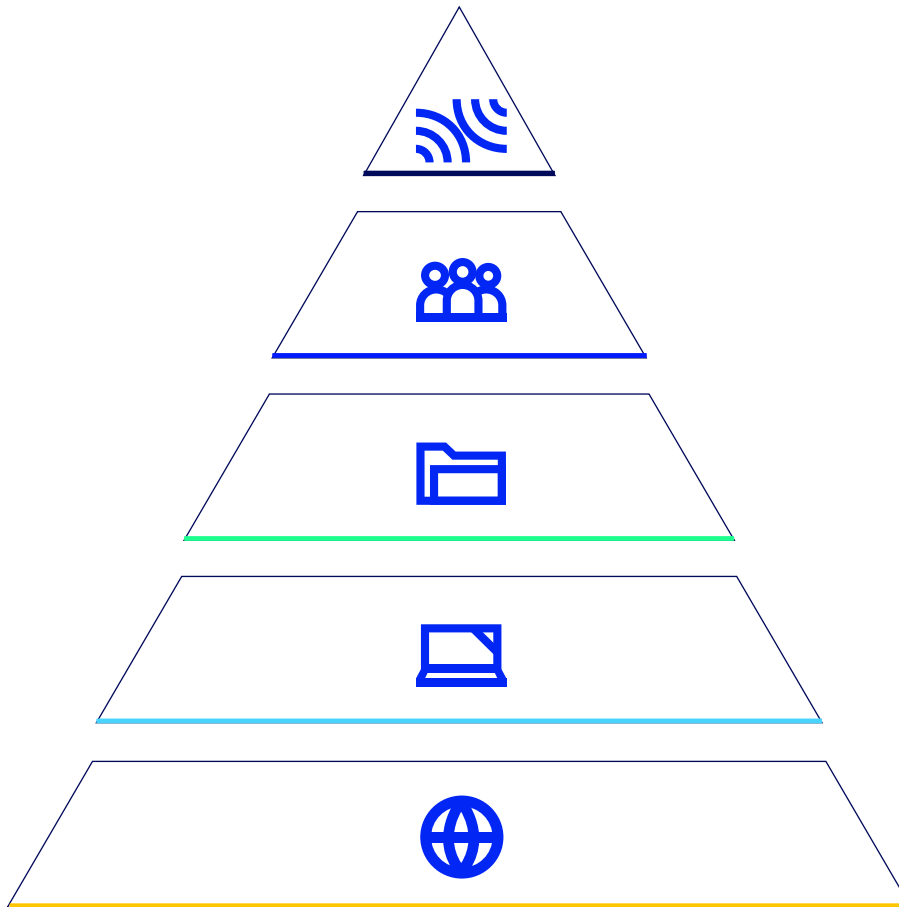
Detect

The occurrence of a cybersecurity event in a timely manner

* National Institute of Standards and Technology – Cybersecurity Framework

Global Cybersecurity – Governance Structure

We manage the GCS program through a tiered governance model to align cybersecurity with our strategic business goals and mitigate the risks involved with managing your information.



Technology & Operations Committee

- Appointed by the Company's Board of Directors to lead and assist in the Board's oversight of technology and operational risk management, as well as the role of these risks in executing our strategy in support of our global business requirements
- Approves GCS program and policy

Technology & Operational Risk Committee

- Provides independent oversight and assess the effectiveness of enterprise-wide technology and operational risk management programs/policy including Cybersecurity
- Cybersecurity strategic updates are discussed

Technology Risk Committee

- Assess the effectiveness of enterprise-wide technology risk management programs

Cybersecurity Risk Committee

- Serves as the senior oversight committee for operational and tactical risks related to cybersecurity globally within State Street

Global Cybersecurity

- Implements and maintains the Cybersecurity program and ensures the program aligns with the company's strategic goal(s)

Global Cybersecurity Priorities



Modernize Identity Management

Make improvements in user experience across all phases of Identity Management



Evolve Cyber Operations

Drive continuous improvement in incident detection and response capabilities



Mature The Client Interaction Model

Leverage automation and self-service to reduce time needed to respond to client inquiries



Support Talent Development

Prioritize talent growth via education and development plans for each member of the Cybersecurity team.



Advance Metrics and Reporting

Provide risk-based metrics and reporting for strengthened program governance

Global Cybersecurity – Third-Party Risk Management

Proactively addressing risk from third parties throughout the relationship life cycle

Risk Scoring

We send out questionnaires and risk scores, additional assessments for high-risk vendors. Third parties are assessed according to a tiered classification model for risk management.

Security Contracts

Security and risk management language are written into the contract agreements. Third-party contracts are centrally managed and reviewed.



Due Diligence

Due diligence is performed on clients prior to sharing critical data. We acknowledge third-party attestations and audits.

Risk Assessments

Regular risk assessments performed for real-time visibility of vulnerabilities and threats. Ongoing monitoring assessments of third parties are performed periodically based on identified risk.

Global Cybersecurity – State Street Corporate Initiatives

State Street Corporate Initiatives



Cloud Data Center Migration Technology Transformation

As we begin these transformation efforts, we will migrate certain data from our private data centers to proprietary solutions within our managed public cloud platforms, as well as other third-party systems, using a phased approach. By migrating to these platforms and solutions, we are able to optimize and modernize applications and scale enhancements across data sets consistently, allowing for faster, more current and innovative capabilities in terms of access and performance.



Digital Custody

Digital custody is an important pillar of our product roadmap. Crypto assets are a new asset class operating on a unique market structure different to securities. Subject to necessary product development and receipt of regulatory approvals and permissions, our vision is to offer a state-of-the-art safe, scalable and evolving solution to safekeep digital assets, as well as offering an ability to access liquidity pools and revenue enhancing strategies catering to the specific market structure of digital assets and blockchain.



New Security Operations Centers (Ireland & Arizona)

We have opened two new security operations centers in Arizona and Ireland. These new facilities will expand our ability to more effectively detect and respond to cyber events.

Our Cybersecurity team proactively supports these, and other major initiatives by working to ensure security is built in from design to execution.

Cybersecurity

Client

Engagement

Global Cybersecurity – Client Engagement

Supporting State Street’s client base in understanding our cybersecurity program

Client & Board Presentations

Upon request, provide our clients and internal State Street boards with annual presentations on our Global Cyber Security Program, which cover the program’s current state as well as future state enhancements.

Due Diligence Support

We respond to client due diligence requests with face-to-face meetings and program overview documents such as our Standard Information Gathering (SIG) and applicable third-party audit reports.

Projects and 2023 Roadmap

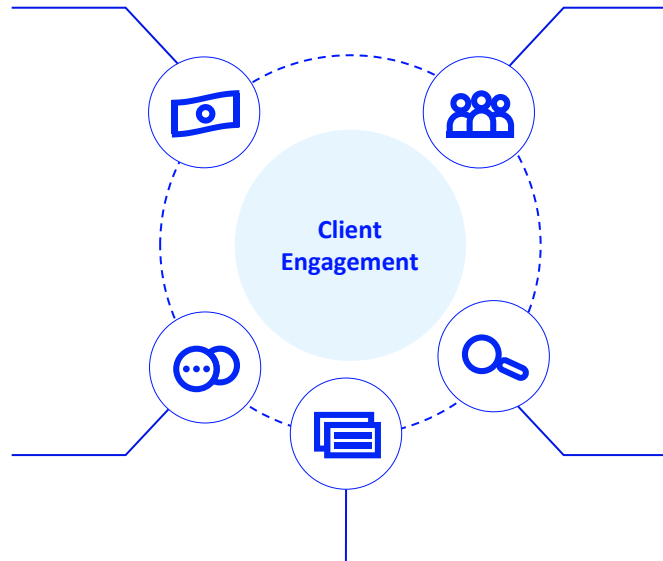
- Host a client facing cyber event
- Assist client due diligence via updated SIG document
- Improve client experience by exploring and implementing standardization and automation process improvements

Program Management

We host semi-annual information sharing forums for our client base to keep clients up-to-date on our Cyber Security program and transformation efforts.

Situational Updates

Our team manages and contributes to client communications related to emerging industry threats, vulnerabilities and geo-political scenarios.



Client Facing Collateral

We ensure Cyber Security program overview documents are kept up-to-date and periodically distributed, or made accessible, to our client base (e.g., SIG, SOC2 and Client Brochure).

Questions & Answers

Disclaimer

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PUBLIC COMMENT

The following individuals provided public comment during the ARMB's Board of Trustees Meeting, held Thursday, December 7 – Friday, December 8, 2023:

- Doug Woodby, Juneau350
- Wendy Woolf, Treasurer, Retired Public Employees Association
- Joshua Hartman
- James Simard, Juneau 350
- John Hudson, Juneau 350