

MONTANA

BOARD OF INVESTMENTS

REGULAR BOARD MEETING
Zoom Conference
May 25-26, 2022

COMMITTEE MEETINGS

- A. Audit Committee – Maggie Peterson, Chair** **9:30 AM**
1. Public Comment – *Public Comment on Issues with Committee Jurisdiction*
 2. Approval of April 20, 2022, Committee Meeting Minutes
 3. Executive Director Comments
 4. Audit Checklist
- B. Loan Committee – Jack Prothero, Chair** **10:00 AM**
1. Public Comment – *Public Comment on Issues with Committee Jurisdiction*
 2. Approval of April 20, 2022, Committee Meeting Minutes
 3. Executive Director Comments
 4. In-State Loan Requests – **Decisions**
 5. INTERCAP Loan Requests – **Decisions**
- C. Human Resource Committee – Terry Cohea, Chair** **11:00 AM**
1. Public Comment – *Public Comment on Issues with Committee Jurisdiction*
 2. Executive Director Comments
 3. Staffing Level Review – *Closed Session*
 4. Accounting Staff Review – *Closed Session*
 5. Exempt Staff Compensation Review – *Closed Session* – **Decisions**

BREAK FOR LUNCH **12:00 PM**

- Tab 1 CALL TO ORDER – Karl Englund, Chairman** **1:00 PM**
- A. Notice of Video Recording of Meeting
 - B. Roll Call
 - C. Public Comment – *Public Comment on issues with Board Jurisdiction*
 - D. Approval of the April 20, 2022, Board Meeting Minutes
 - E. Administrative Business
 1. Audit Committee Report
 2. Loan Committee Report – **Decisions**
 3. Human Resource Committee Report – **Decisions**
 - F. Comments from Pension Board Members
 - G. Comments from Board Legislative Liaisons

- Tab 2 EXECUTIVE DIRECTOR REPORTS – Dan Villa** **1:30 PM**
- A. Member Requests from Prior Meeting
 - B. Monthly Snapshot
 - C. Montana Buildings
 - D. Budget Status FYTD
 - E. Board Policy Manual Review - **Decisions**

- Tab 3 RVK** **2:00 PM**

MONTANA

BOARD OF INVESTMENTS

REGULAR BOARD MEETING MINUTES

April 20, 2022

Meeting recordings are posted at: <https://leg.mt.gov/lsc/>

Call to Order

The Board of Investment's meeting was called to order by Chairman Karl Englund at 11:00 a.m. on Wednesday, April 20, 2022.

Attendance

Board Members Present: Chairman Karl Englund, Diane Fladmo, Maggie Peterson, Mark Barry, Jeff Meredith, Terry Cohea, Jack Prothero

Board Members Absent: Bruce Nelson

Legislative Liaisons Present: Rep. Ken Walsh

Board Staff Present: Dan Villa, Dan Whyte, Dan Zarling, Doug Hill, Emily Kovarik, Eron Krpan, Jason Brent, John Carpenter, John Romasko, Jon Putnam, Julie Feldman, Kelsey Gauthier, Kirsten Haswell, Lindsay Ford, Louise Welsh, Mark Lodman, Michael Nguyen, Peggy MacEwen, Peggy Saarela, Polly Boutin, Roberta Diaz, Sam Holman, Savannah Morgan, Sheli Jacoby, Steve Strong, Tammy Lindgren, Teri Kolnik, Thomas Winkler, Tim House, Ian Horwood, Matt Hoffman

Interested Parties Present: Jim Voytko, Becky Gratsinger – RVK; Dore Schwinden, Bill Holahan – MPERA; Ben Carlin – With Intelligence; Rebecca Power – Legislative Services Division

April 20, 2022

Tab 1 CALL TO ORDER (00:01)

A. Notice of Video Recording (00:43)

Chairman Englund advised of audio and video recording of the meeting.

B. Roll Call (00:04)

Roll was taken: seven Board members were present, forming a quorum.

C. Public Comment (00:48)

Chairman Englund asked for public comment. None was given.

D. Approval of Minutes (01:03)

February 16-17, 2022, Regular Board Meeting

Member Fladmo moved to approve. Member Peterson seconded the motion which passed unanimously.

March 24, 2022, Special Board Meeting

Member Prothero moved to approve. Member Cohea seconded the motion which passed unanimously.

E. Administrative Business

1. Audit Committee Report (01:49)

Chair Peterson briefed the Board.

- Member Barry moved to acknowledge receipt of the COOP document as presented. Member Fladmo seconded the motion which passed unanimously.

2. Loan Committee Report (03:57)

Chair Prothero briefed the Board.

3. HR Committee Report (06:20)

Chair Cohea briefed the Board.

F. Comments from Pension Board Members (06:33)

Member Peterson briefed the Board.

G. Comments from Board Legislative Liaisons (09:43)

Rep. Walsh briefed the Board.

Tab 2 EXECUTIVE DIRECTOR REPORTS (10:23)

A. Member Requests or Follow up from Prior Meeting

Executive Director Villa briefed the Board.

B. Monthly Snapshot

Executive Director Villa briefed the Board.

C. Benchmarks Used by the Board

Executive Director Villa briefed the Board.

D. Board Policy Manual Sections 20, 30, and Policy 10.217

Executive Director Villa and Deputy Director MacEwen briefed the Board.

Member Barry moved to approve the revised policies as submitted. Member Prothero seconded the motion which passed unanimously.

E. Introduction of New Staff

Executive Director Villa introduced Matthew Hoffman as the Board's new Investment Analyst.

Tab 3 DEFINED CONTRIBUTION/DEFERRED COMPENSATION EDUCATION (53:06)

MPERA Executive Director Dore Schwinden and Deputy Director Bill Holahan and RVK's Jim Voytko and Becky Gratsinger briefed the Board and answered questions.

Tab 4 CAPITAL MARKET ASSUMPTIONS, RVK (01:39:47)

Jim Voytko and Becky Gratsinger briefed the Board and answered questions.

Tab 5 USE OF CAPITAL MARKET ASSUMPTIONS (02:24:00)

Jon Putnam briefed the Board and answered questions.

Tab 6 INVESTMENTS – NEW COMMITMENTS

A. Real Estate/Real Assets (21:40)

Thomas Winkler briefed the Board and answered questions.

B. Private Investments (29:15)

Michael Nguyen briefed the Board and answered questions.

C. Public Markets (39:20)

Steve Strong briefed the Board and answered questions.

Tab 7 DOMESTIC EQUITY ASSET CLASS REVIEW (02:47:07)

Jason Brent and Steve Strong briefed the Board and answered questions.

RECAP OF STAFF TO DO LIST AND ADJOURNMENT (03:30:00)

Chairman Englund and Executive Director Villa listed items to recap.

Chairman Englund adjourned the meeting at 3:55 p.m.

MONTANA BOARD OF INVESTMENTS

APPROVE: _____

Karl J. Englund, Chairman

ATTEST: _____

Dan Villa, Executive Director

DATE: _____

MONTANA

BOARD OF INVESTMENTS

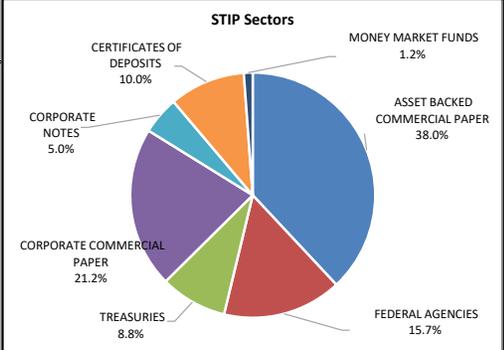
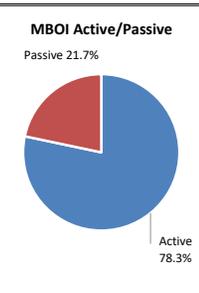
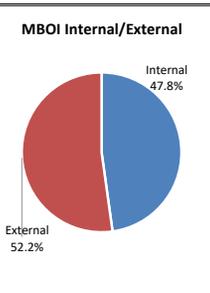
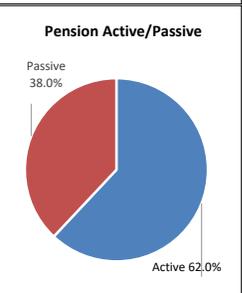
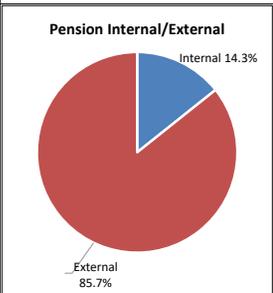
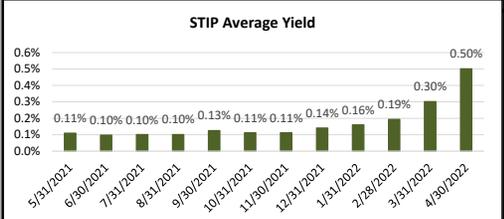
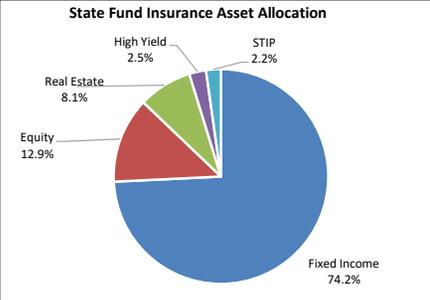
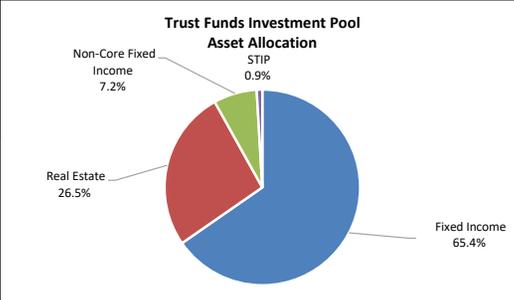
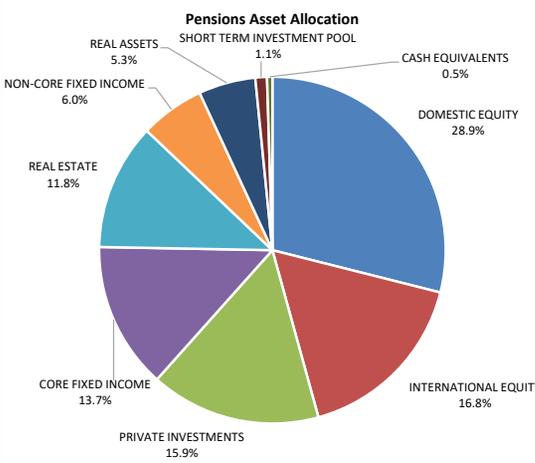
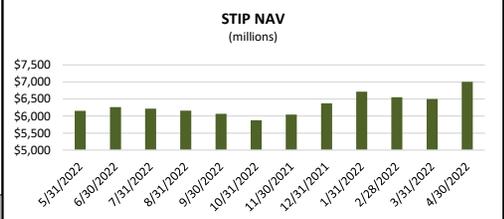
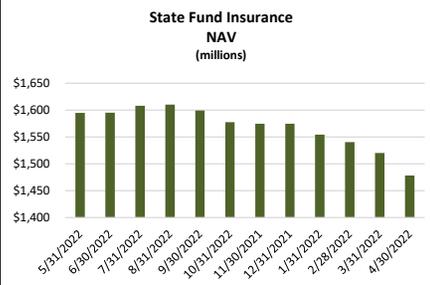
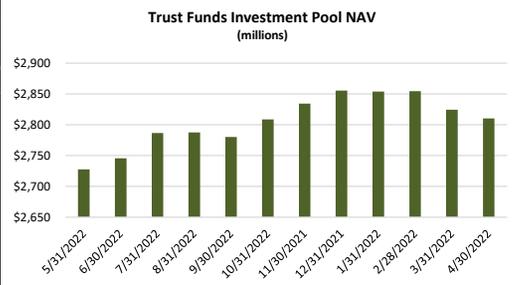
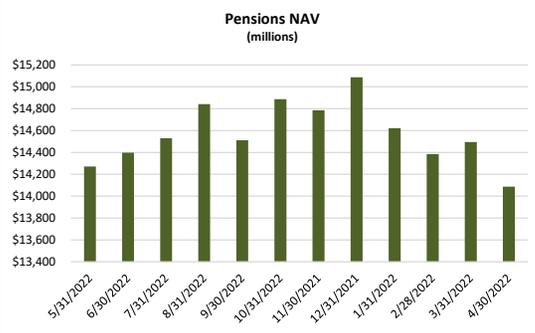
To: Members of the Board
From: Dan Villa, Executive Director
Date: May 25, 2022
Re: Executive Director Report

- A. Member Requests from Prior Meeting
- B. Monthly Snapshot – *attached*
- C. Montana Buildings – *attached*
- D. Budget Status FYTD – *attached*
- E. Board Policy Manual Review – **Decisions**

MBOI Snapshot
 Asset Management View
 4/30/2022 Unaudited
 Assets Under Management \$25,392,700,046



Pensions	NAV	%	TFIP	NAV	%	State Fund	NAV	%	Other Fixed Income & Pending	\$	
DOMESTIC EQUITY	\$4,074,572,442	28.93%	Fixed Income	\$ 1,836,700,143	65.36%	Fixed Income	\$ 1,097,419,903	74.23%		10,235,178	
INTERNATIONAL EQUITY	\$2,365,639,017	16.79%	Real Estate	\$ 746,128,841	26.55%	Equity	\$ 190,601,172	12.89%	STIP*		
PRIVATE INVESTMENTS	\$2,238,838,714	15.89%	Non-Core Fixed Income	\$ 201,459,452	7.17%	Real Estate	\$ 119,828,934	8.11%		NAV	
CORE FIXED INCOME	\$1,927,085,572	13.68%	STIP	\$ 26,016,784	0.93%	High Yield	\$ 37,427,189	2.53%		%	
REAL ESTATE	\$1,661,997,365	11.80%				STIP	\$ 33,071,165	2.24%	ASSET BACKED COMMERCIAL PAPER	\$2,665,157,634	38.03%
NON-CORE FIXED INCOME	\$846,091,057	6.01%	Total	\$ 2,810,305,220	100.00%	State Fund Total	\$ 1,478,348,363	100.00%	CORPORATE COMMERCIAL PAPER	\$1,488,257,777	21.24%
REAL ASSETS	\$749,398,128	5.32%							FEDERAL AGENCIES	\$1,102,559,626	15.73%
SHORT TERM INVESTMENT POOL	\$152,737,311	1.08%							CERTIFICATES OF DEPOSITS	\$702,343,619	10.02%
CASH EQUIVALENTS	\$70,132,653	0.50%							TREASURIES	\$617,843,062	8.82%
Pensions Total	\$14,086,492,260	100.00%							CORPORATE NOTES	\$349,398,760	4.99%
									MONEY MARKET FUNDS	\$81,758,548	1.17%
									STIP Total	\$7,007,319,025	100.00%



Definition of NAV: Net Asset Value is the total value of the account including assets held, adjusted for payables, receivables and liabilities

(1) Other Holdings column on page two represents the value of securities, receivables, payables and liabilities that comprise the Net Asset Value for the asset owner.

*Difference of \$95,133,819 is attributable the portion of STIP held within CAPP (\$69,132,266) and TFIP (\$26,001,552) as a cash investment. Such value is represented in the NAV for the CAPP and STIP columns.

MBOI Snapshot
Asset Ownership View
4/30/2022 Unaudited



	CAPP Holdings	CAPP %	STIP Holdings*	STIP %	TFIP Holdings	TFIP%	Other Holdings ¹	Other %	Total Net Asset Value
Total Funds \$(000)	\$13,933,755	54.87%	\$6,912,185	27.22%	\$2,810,302	11.07%	\$1,736,458	6.84%	\$25,392,700
Pensions	CAPP	%	STIP	%	TFIP	%	Other	%	Total
FIREFIGHTERS RETIREMENT	\$ 587,796	98.97%	\$ 6,117	1.03%	\$ -	0.00%	\$ -	0.00%	\$ 593,913
GAME WARDENS RETIREMENT	\$ 267,167	98.87%	\$ 3,051	1.13%	\$ -	0.00%	\$ -	0.00%	\$ 270,218
HIGHWAY PATROL RETIREMENT	\$ 180,522	98.74%	\$ 2,302	1.26%	\$ -	0.00%	\$ -	0.00%	\$ 182,824
JUDGES RETIREMENT	\$ 128,173	98.98%	\$ 1,320	1.02%	\$ -	0.00%	\$ -	0.00%	\$ 129,492
POLICE OFFICERS RETIREMENT	\$ 542,177	98.96%	\$ 5,693	1.04%	\$ -	0.00%	\$ -	0.00%	\$ 547,870
PUBLIC EMPLOYEES RETIREMENT	\$ 6,868,171	98.92%	\$ 75,254	1.08%	\$ -	0.00%	\$ -	0.00%	\$ 6,943,424
SHERIFFS RETIREMENT	\$ 472,705	98.94%	\$ 5,066	1.06%	\$ -	0.00%	\$ -	0.00%	\$ 477,772
TEACHERS RETIREMENT	\$ 4,840,964	98.91%	\$ 53,489	1.09%	\$ -	0.00%	\$ -	0.00%	\$ 4,894,452
VOL FIREFIGHTERS RETIREMENT	\$ 46,080	99.04%	\$ 446	0.96%	\$ -	0.00%	\$ -	0.00%	\$ 46,526
Total	\$ 13,933,755	98.92%	\$ 152,737	1.08%	\$ -	0.00%	\$ -	0.00%	\$ 14,086,492
Trust Funds	CAPP	%	STIP	%	TFIP	%	Other	%	Total
ABANDONED MINE RECLAMATION	\$ -	0.00%	\$ 6,670	99.96%	\$ -	0.00%	\$ 3	0.04%	\$ 6,672
BARKER HUGHESVILLE ST RESPONSE	\$ -	0.00%	\$ 845	9.30%	\$ 8,210	90.44%	\$ 24	0.26%	\$ 9,078
BELT WATER TREATMENT PLANT	\$ -	0.00%	\$ 3,135	11.68%	\$ 23,648	88.07%	\$ 68	0.25%	\$ 26,852
BUTTE AREA ONE REST	\$ -	0.00%	\$ 1,275	19.26%	\$ 5,328	80.50%	\$ 16	0.24%	\$ 6,618
BUTTE AREA REDEVELOP AUTHORITY	\$ -	0.00%	\$ 1,498	10.75%	\$ 12,399	89.00%	\$ 36	0.26%	\$ 13,932
CLARK FORK REST	\$ -	0.00%	\$ 6,139	21.13%	\$ 22,849	78.64%	\$ 67	0.23%	\$ 29,055
CLARK FORK SITE RESP ACTION	\$ -	0.00%	\$ 2,500	3.99%	\$ 60,027	95.74%	\$ 171	0.27%	\$ 62,699
COAL TAX PARK TRUST FUND	\$ -	0.00%	\$ 1,987	6.53%	\$ 28,351	93.20%	\$ 81	0.27%	\$ 30,419
CULTURAL TRUST FUND	\$ -	0.00%	\$ 730	4.47%	\$ 15,571	95.26%	\$ 44	0.27%	\$ 16,345
E HELENA GREENWAY TRAIL MAINT	\$ -	0.00%	\$ 272	27.17%	\$ 727	72.62%	\$ 2	0.22%	\$ 1,001
EAST HELENA COMPENSATION FUND	\$ -	0.00%	\$ 3,743	81.24%	\$ 860	18.67%	\$ 4	0.09%	\$ 4,607
ENDOWMENT FOR CHILDREN	\$ -	0.00%	\$ 89	6.31%	\$ 1,320	93.42%	\$ 4	0.27%	\$ 1,413
FLYING J CECRA FACILITIES FUND	\$ -	0.00%	\$ 254	9.65%	\$ 2,373	90.09%	\$ 7	0.26%	\$ 2,634
FWP MITIGATION TRUST	\$ -	0.00%	\$ 3,229	29.34%	\$ 7,290	66.23%	\$ 488	4.44%	\$ 11,007
HAROLD HAMM ENDOWMENT	\$ -	0.00%	\$ 4	8.14%	\$ 46	91.60%	\$ 0	0.26%	\$ 50
INVASIVE SPECIES TRUST FUND	\$ -	0.00%	\$ 80	2.91%	\$ 2,670	96.82%	\$ 8	0.28%	\$ 2,757
LIBBY ASBESTOS SITE STATE COST	\$ -	0.00%	\$ 690	13.74%	\$ 4,321	86.01%	\$ 13	0.25%	\$ 5,024
LUTTRELL PIT - OPER & MAINT	\$ -	0.00%	\$ 526	22.50%	\$ 1,806	77.27%	\$ 5	0.23%	\$ 2,337
MONTANA HISTORICAL SOCIETY	\$ -	0.00%	\$ 718	17.56%	\$ 3,358	82.20%	\$ 10	0.24%	\$ 4,086
MT POLE SUPERFUND SETTLEMENT	\$ -	0.00%	\$ 5,200	20.31%	\$ 20,340	79.45%	\$ 60	0.23%	\$ 25,599
NOXIOUS WEED MGMT TRUST FUND	\$ -	0.00%	\$ -	0.00%	\$ 10,924	99.72%	\$ 31	0.28%	\$ 10,955
OLDER MONTANANS TRUST FUND	\$ -	0.00%	\$ 14	4.33%	\$ 306	95.40%	\$ 1	0.27%	\$ 321
POTTER TRUST FUND	\$ -	0.00%	\$ 20	7.92%	\$ 228	91.82%	\$ 1	0.26%	\$ 248
PUBLIC SCHOOL TRUST	\$ -	0.00%	\$ 3,178	0.38%	\$ 836,727	99.34%	\$ 2,369	0.28%	\$ 842,274
REAL PROPERTY TRUST FUND	\$ -	0.00%	\$ 352	4.78%	\$ 6,991	94.95%	\$ 20	0.27%	\$ 7,363
RESOURCE INDEMNITY TRUST FUND	\$ -	0.00%	\$ 23	0.02%	\$ 112,135	99.70%	\$ 317	0.28%	\$ 112,475
SMELTER HILL UPLANDS REST FUND	\$ -	0.00%	\$ 1,334	14.75%	\$ 7,684	85.00%	\$ 22	0.25%	\$ 9,040
STREAMSIDE TAILINGS OU FUND	\$ -	0.00%	\$ 2,200	12.51%	\$ 15,347	87.24%	\$ 44	0.25%	\$ 17,591
TOBACCO TRUST FUND	\$ -	0.00%	\$ 14,835	4.95%	\$ 284,146	94.78%	\$ 807	0.27%	\$ 299,789
UPPER BLACKFT RESP ACT & REST	\$ -	0.00%	\$ 1,135	92.68%	\$ 89	7.26%	\$ 1	0.06%	\$ 1,225
UPPER CLRK FK RIVER BASIN RES	\$ -	0.00%	\$ 315	1.44%	\$ 21,482	98.28%	\$ 61	0.28%	\$ 21,858
UPPER CLRK FK RIVER BASIN REST	\$ -	0.00%	\$ 2,195	3.04%	\$ 69,829	96.69%	\$ 199	0.28%	\$ 72,223
WILDLIFE HABITAT TRUST FUND	\$ -	0.00%	\$ 781	4.90%	\$ 15,105	94.83%	\$ 43	0.27%	\$ 15,929
YELLOWSTONE PIPELINE CLEANUPFD	\$ -	0.00%	\$ 3,320	50.10%	\$ 3,296	49.74%	\$ 11	0.16%	\$ 6,627
ZORTMAN/LANDUSKY LT WATER	\$ -	0.00%	\$ 15,653	99.96%	\$ -	0.00%	\$ 6	0.04%	\$ 15,659
ZORTMANLANDUSKY LT WATER TRUST	\$ -	0.00%	\$ 20,357	99.96%	\$ -	0.00%	\$ 8	0.04%	\$ 20,366
Total	\$ -	0.00%	\$ 105,294	6.14%	\$ 1,605,783	93.57%	\$ 5,052	0.29%	\$ 1,716,130
Coal Severance	CAPP	%	STIP	%	TFIP	%	Other	%	Total
BIG SKY ECONOMIC DEV FUND	\$ -	0.00%	\$ 3,760	2.87%	\$ 127,018	96.86%	\$ 361	0.28%	\$ 131,138
COAL SEVERANCE TAX PERM FUND	\$ -	0.00%	\$ 14,500	2.76%	\$ 367,865	69.99%	\$ 143,234	27.25%	\$ 525,598
MONTANA COAL ENDOWMENT FUND	\$ -	0.00%	\$ 3,069	1.07%	\$ 283,552	98.65%	\$ 804	0.28%	\$ 287,425
SCHOOL FACILITIES FUND	\$ -	0.00%	\$ 3,002	3.37%	\$ 85,945	96.36%	\$ 244	0.27%	\$ 89,192
MT COAL ENDOWMENT REGIONAL WAT	\$ -	0.00%	\$ 1,192	0.80%	\$ 98,139	65.62%	\$ 50,229	33.58%	\$ 149,559
Total	\$ -	0.00%	\$ 25,522	2.16%	\$ 962,519	81.37%	\$ 194,872	16.47%	\$ 1,182,912
Operating Funds	CAPP	%	STIP	%	TFIP	%	Other	%	Total
FWP GENERAL LICENSE ACCOUNT	\$ -	0.00%	\$ 34,124	49.56%	\$ 31,594	45.88%	\$ 3,138	4.56%	\$ 68,856
MONTANA LOCAL GOVERNMENTS	\$ -	0.00%	\$ 1,682,976	99.96%	\$ -	0.00%	\$ 704	0.04%	\$ 1,683,680
MONTANA STATE AGENCIES	\$ -	0.00%	\$ 1,151,054	99.96%	\$ -	0.00%	\$ 471	0.04%	\$ 1,151,526
MONTANA STATE UNIVERSITY	\$ -	0.00%	\$ 207,583	78.84%	\$ 55,457	21.06%	\$ 246	0.09%	\$ 263,286
MONTANA TECH	\$ -	0.00%	\$ 7,846	94.22%	\$ 477	5.72%	\$ 5	0.06%	\$ 8,328
STATE TREASURER'S FUND	\$ -	0.00%	\$ 3,246,385	95.87%	\$ 67,366	1.99%	\$ 72,441	2.14%	\$ 3,386,192
UNIVERSITY OF MONTANA	\$ -	0.00%	\$ 86,640	70.86%	\$ 30,776	25.17%	\$ 4,846	3.96%	\$ 122,262
Total	\$ -	0.00%	\$ 6,416,608	96.00%	\$ 185,670	2.78%	\$ 81,850	1.22%	\$ 6,684,129
Insurance Reserves	CAPP	%	STIP	%	TFIP	%	Other	%	Total
SUBSEQUENT INJURY TRUST FUND	\$ -	0.00%	\$ 899	99.97%	\$ -	0.00%	\$ 0	0.03%	\$ 900
STATE EMPLOYEE GROUP BENEFITS	\$ -	0.00%	\$ 85,777	67.54%	\$ 38,786	30.54%	\$ 2,440	1.92%	\$ 127,003
PERS-DCRP LT DISABILITY PLAN	\$ -	0.00%	\$ 666	11.67%	\$ -	0.00%	\$ 5,038	88.33%	\$ 5,703
MUS WORKERS COMPENSATION	\$ -	0.00%	\$ 12,431	74.74%	\$ 4,184	25.16%	\$ 17	0.10%	\$ 16,632
MUS GROUP INSURANCE	\$ -	0.00%	\$ 79,188	83.84%	\$ 13,360	14.14%	\$ 1,903	2.02%	\$ 94,451
MONTANA STATE FUND	\$ -	0.00%	\$ 33,062	2.24%	\$ -	0.00%	\$ 1,445,286	97.76%	\$ 1,478,348
Total	\$ -	0.00%	\$ 212,023	12.31%	\$ 56,330	3.27%	\$ 1,454,684	84.43%	\$ 1,723,038

Short Term Investment Pool

Account	# Accounts	Total Market Value	%
Total State	347	5,324,342,938	76.0%
Total Local	180	1,682,976,088	24.0%
Total STIP	527	\$ 7,007,319,025	100.0%
STIP Reserve		\$ 55,997,836	
Prior month average STIP Yield		0.5016%	

Intercap Statistics

Loans Outstanding	\$ 68,807,684
Bonds Outstanding	\$ 68,706,869
Number of Borrowers	142
Loan Rate	1.50%

65010 Department of Commerce
Standard Budget Summary By Org, Account

Data Selected for Month/FY: 01 (Jul)/2022 through 12 (Jun)/2022

Run 5/6/22
 83% of Fiscal Year completed
 NOTE: Corrected Budget is Budget provided to DOC 8/3/2021.

Business Unit	(All)
Program Year	(All)
FY_BudPer	(All)
Month	(All)
Source of Auth	(All)
OBPP Program	75 BOARD OF INVESTMENTS
Fund Type	(All)
Subclass	(All)
Account	(All)
Account Type	(All)
Project	(All)
Ledger	(All)

[Return to Menu](#)

Fund	Org	Acct Lvl 1	Acct Lvl 2	Standard Budget	Actuals Amt	Balance	Correct Budget	Percent of Correct Budget Spent	Projections for Remaining Fiscal Year	Estimated Actual at Fiscal Year End	Estimated Percent of Correct Budget
06014 BOI Municipal Finance Programs											
		750200 STAND ALONE IDB PROG OPERTNS		637,415.00	428,278.55	209,136.45		67%	85,655.71	513,934.26	81%
		61000 Personal Services		436,015.00	344,328.79	91,686.21		79%	68,865.76	413,194.55	95%
			61100 Salaries	305,000.00	245,163.88	59,836.12					
			61400 Employee Benefits	150,000.00	99,164.91	50,835.09					
			61600 Vacancy Savings	(18,985.00)	0.00	(18,985.00)					
		62000 Operating Expenses		200,844.00	70,252.26	130,591.74		35%	14,050.45	84,302.71	42%
			62100 Other Services	109,444.00	8,652.31	100,791.69					
			62200 Supplies & Materials	8,200.00	1,917.83	6,282.17					
			62300 Communications	2,300.00	1,913.27	386.73					
			62400 Travel	2,300.00	35.81	2,264.19					
			62500 Rent	13,500.00	12,581.82	918.18					
			62700 Repair & Maintenance	100.00	199.83	(99.83)					
			62800 Other Expenses	65,000.00	44,951.39	20,048.61					
		69000 Debt Service		556.00	13,697.50	(13,141.50)			2,739.50	16,437.00	2956%
			69100 Bonds	0.00	13,697.50	(13,697.50)					
			69300 Capital Leases	556.00	0.00	556.00					
06527 Investment Division											
		750100 INVESTMENT OPERATIONS		7,262,559.00	6,262,911.90	999,647.10	7,471,401.00	84%	972,232.38	7,235,144.28	97%
		61000 Personal Services		4,201,559.00	3,523,960.20	677,598.80	4,223,918.61	83%	704,792.04	4,228,752.24	100%
			61100 Salaries	3,315,786.00	2,614,766.01	701,019.99					
			61400 Employee Benefits	1,046,829.00	909,194.19	137,634.81					
			61600 Vacancy Savings	(161,056.00)	0.00	(161,056.00)					
		62000 Operating Expenses		3,058,406.00	2,738,951.70	319,454.30	3,247,482.39	84%	267,440.34	3,006,392.04	93%
			62100 Other Services	1,907,406.00	1,872,249.56	35,156.44					
			62200 Supplies & Materials	100,000.00	37,836.68	62,163.32					
			62300 Communications	43,000.00	31,164.34	11,835.66					
			62400 Travel	179,000.00	64,211.80	114,788.20					
			62500 Rent	228,000.00	212,650.95	15,349.05					
			62700 Repair & Maintenance	1,000.00	3,358.07	(2,358.07)					
			62800 Other Expenses	600,000.00	517,480.30	82,519.70					
		69000 Debt Service		2,594.00	0.00	2,594.00			0	-	
			69300 Capital Leases	2,594.00	0.00	2,594.00					
Grand Total				10,137,297.00	7,075,734.97	3,061,562.03					

Working Capital Analysis

	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	FYE
Working Capital	1,986,075.19	2,061,027.85	1,956,197.25	1,912,817.99	1,788,628.93	1,828,236.07	1,750,484.41	1,720,435.83	1,882,396.14	1,973,281.36	-	0.00	0.00
60 Day Working Capital	836,745.12	966,013.90	1,128,961.67	1,129,726.41	1,242,494.75	1,229,742.25	1,254,163.83	1,260,554.25	1,222,856.37	1,206,912.69	0.00	-	-
Excess Working Capital	1,149,330.07	1,095,013.95	827,235.58	783,091.58	546,134.18	598,493.82	496,320.58	459,881.58	659,539.77	766,368.67	-	-	-
Months to rebate	2.747144961	2.267077006	1.465480375	1.38633845	0.879092933	0.973364662	0.791476472	0.729649814	1.078687219	1.269965386	#DIV/0!	#DIV/0!	#DIV/0!
Revenues	622,595.00	1,245,189.00	1,867,787.00	2,390,418.06	3,113,013.06	3,735,610.06	4,358,205.06	4,980,800.06	5,603,397.06	6,225,992.06	-	0.00	0.00
Expense	418,372.56	966,013.90	1,693,442.50	2,259,452.82	3,106,236.88	3,689,226.74	4,389,573.40	5,042,216.98	5,502,853.67	6,034,563.45	0.00	-	-
Revenue over Expense	204,222.44	279,175.10	174,344.50	130,965.24	6,776.18	46,383.32	(31,368.34)	(61,416.92)	100,543.39	191,428.61	-	-	-
Average Revenue	622,595.00	622,594.50	622,595.67	597,604.52	622,602.61	622,601.68	622,600.72	622,600.01	622,599.67	622,599.21	-	-	-
Average Expenses	418,372.56	483,006.95	564,480.83	564,863.21	621,247.38	614,871.12	627,081.91	630,277.12	611,428.19	603,456.35	-	-	-
Rev over Exp	204,222.44	139,587.55	58,114.83	32,741.31	1,355.24	7,730.55	(4,481.19)	(7,677.12)	11,171.49	19,142.86	-	-	-



Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: March 31, 2022



Montana Board of Investments
Comparative Performance
Retirement Plans

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2021	2020	2019	2018	2017
Public Employees' Retirement - Net	-2.99	2.96	9.73	11.60	9.87	8.63	9.27	7.34	17.61	11.94	16.77	-2.63	14.80
Public Employees' Benchmark	-2.62	1.53	6.83	10.69	9.32	8.42	9.44	N/A	14.31	11.58	20.45	-5.57	15.35
Difference	-0.37	1.43	2.90	0.91	0.55	0.21	-0.17	N/A	3.30	0.36	-3.68	2.94	-0.55
Public Employees' Retirement - Gross	-2.84	3.55	10.48	12.24	10.50	9.21	9.84	7.80	18.32	12.53	17.44	-2.03	15.34
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	16	10	44	31	40	43	44	67
Teachers' Retirement - Net	-3.00	2.95	9.71	11.60	9.86	8.62	9.27	7.33	17.61	11.93	16.78	-2.64	14.76
Teachers' Benchmark	-2.62	1.52	6.82	10.67	9.30	8.40	9.43	N/A	14.29	11.55	20.42	-5.57	15.32
Difference	-0.38	1.43	2.89	0.93	0.56	0.22	-0.16	N/A	3.32	0.38	-3.64	2.93	-0.56
Teachers' Retirement - Gross	-2.84	3.54	10.47	12.24	10.49	9.20	9.84	7.80	18.32	12.52	17.45	-2.03	15.31
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	16	10	44	31	40	43	44	67
Police Retirement - Net	-2.99	2.92	9.69	11.59	9.87	8.63	9.27	7.31	17.58	11.95	16.80	-2.63	14.79
Police Benchmark	-2.62	1.47	6.76	10.67	9.31	8.40	9.42	N/A	14.24	11.60	20.44	-5.57	15.33
Difference	-0.37	1.45	2.93	0.92	0.56	0.23	-0.15	N/A	3.34	0.35	-3.64	2.94	-0.54
Police Retirement - Gross	-2.84	3.51	10.44	12.24	10.50	9.20	9.84	7.77	18.28	12.54	17.47	-2.02	15.33
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	36	33	27	16	10	45	31	40	43	44	67

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.



Montana Board of Investments
Comparative Performance
Retirement Plans

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2021	2020	2019	2018	2017
Firefighters' Retirement - Net	-2.99	2.93	9.70	11.59	9.87	8.63	9.27	7.32	17.58	11.95	16.79	-2.62	14.79
Firefighters' Benchmark	-2.62	1.47	6.76	10.67	9.30	8.41	9.42	N/A	14.23	11.59	20.44	-5.57	15.33
Difference	-0.37	1.46	2.94	0.92	0.57	0.22	-0.15	N/A	3.35	0.36	-3.65	2.95	-0.54
Firefighters' Retirement - Gross	-2.84	3.51	10.44	12.24	10.50	9.21	9.84	7.79	18.28	12.53	17.46	-2.01	15.34
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	36	33	27	16	10	44	31	40	43	44	67
Sheriffs' Retirement - Net	-2.98	2.97	9.73	11.60	9.87	8.63	9.26	7.33	17.61	11.94	16.75	-2.62	14.80
Sheriffs' Benchmark	-2.62	1.54	6.83	10.69	9.32	8.42	9.43	N/A	14.30	11.58	20.43	-5.56	15.35
Difference	-0.36	1.43	2.90	0.91	0.55	0.21	-0.17	N/A	3.31	0.36	-3.68	2.94	-0.55
Sheriffs' Retirement - Gross	-2.83	3.56	10.49	12.24	10.50	9.21	9.83	7.80	18.32	12.53	17.42	-2.02	15.34
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	15	10	44	31	40	43	44	67
Highway Patrol Retirement - Net	-2.98	2.97	9.74	11.60	9.88	8.63	9.27	7.34	17.62	11.94	16.78	-2.62	14.79
Highway Patrol Benchmark	-2.60	1.55	6.85	10.71	9.33	8.42	9.45	N/A	14.31	11.60	20.45	-5.56	15.34
Difference	-0.38	1.42	2.89	0.89	0.55	0.21	-0.18	N/A	3.31	0.34	-3.67	2.94	-0.55
Highway Patrol Retirement - Gross	-2.83	3.55	10.49	12.25	10.50	9.21	9.84	7.80	18.33	12.53	17.45	-2.01	15.33
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	15	10	44	31	40	43	43	67

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.



Montana Board of Investments
Comparative Performance
Retirement Plans

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2021	2020	2019	2018	2017
Game Wardens' Retirement - Net	-2.99	2.96	9.73	11.59	9.87	8.63	9.26	7.32	17.62	11.91	16.77	-2.62	14.81
Game Wardens' Benchmark	-2.62	1.52	6.82	10.68	9.31	8.42	9.43	N/A	14.30	11.56	20.45	-5.56	15.36
Difference	-0.37	1.44	2.91	0.91	0.56	0.21	-0.17	N/A	3.32	0.35	-3.68	2.94	-0.55
Game Wardens' Retirement - Gross	-2.83	3.55	10.48	12.23	10.49	9.21	9.83	7.78	18.32	12.50	17.44	-2.01	15.35
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	16	10	45	31	42	43	44	66
Judges' Retirement - Net	-2.99	2.96	9.73	11.60	9.88	8.63	9.27	7.34	17.63	11.94	16.78	-2.64	14.82
Judges' Benchmark	-2.62	1.53	6.83	10.70	9.33	8.42	9.44	N/A	14.31	11.59	20.47	-5.57	15.37
Difference	-0.37	1.43	2.90	0.90	0.55	0.21	-0.17	N/A	3.32	0.35	-3.69	2.93	-0.55
Judges' Retirement - Gross	-2.84	3.55	10.49	12.25	10.50	9.21	9.84	7.80	18.34	12.53	17.45	-2.03	15.36
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	15	10	44	31	40	43	44	66
Volunteer Firefighters' Retirement - Net	-3.00	2.94	9.72	11.60	9.88	8.61	9.26	7.51	17.61	11.94	16.79	-2.64	14.79
Volunteer Firefighters' Benchmark	-2.62	1.59	6.89	10.71	9.33	8.42	9.44	N/A	14.37	11.59	20.47	-5.59	15.33
Difference	-0.38	1.35	2.83	0.89	0.55	0.19	-0.18	N/A	3.24	0.35	-3.68	2.95	-0.54
Volunteer Firefighters' Retirement - Gross	-2.84	3.53	10.47	12.24	10.50	9.19	9.83	7.97	18.31	12.53	17.46	-2.04	15.34
All Public Plans (>\$5B) Total Fund Median	-3.10	2.68	9.53	11.70	10.14	8.66	8.99	7.61	16.85	12.11	17.27	-2.58	16.17
Rank	48	32	35	33	27	16	10	24	31	40	43	44	67

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$5B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.

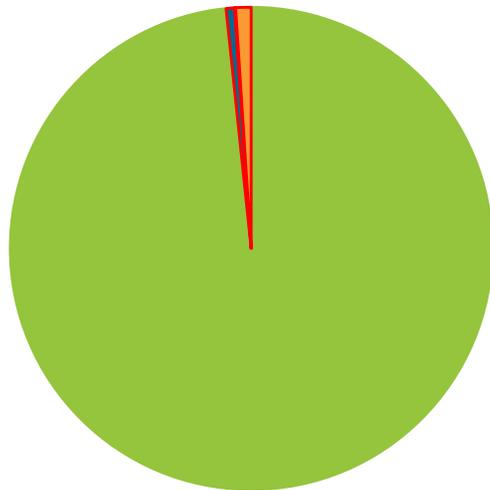


Montana Board of Investments
 Asset Allocation by Segment
 Retirement Plans

As of March 31, 2022

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	7,144,181,888	49.29	73,696,661	49.12	7,217,878,549	49.28
Teachers' Retirement	5,040,637,183	34.77	52,237,832	34.81	5,092,875,015	34.77
Firefighters' Retirement	610,660,378	4.21	6,399,684	4.27	617,060,062	4.21
Police Retirement	563,520,604	3.89	5,909,175	3.94	569,429,778	3.89
Sheriffs' Retirement	490,424,404	3.38	5,277,219	3.52	495,701,624	3.38
Game Wardens' Retirement	277,350,513	1.91	2,694,050	1.80	280,044,563	1.91
Highway Patrol Retirement	187,611,829	1.29	2,011,074	1.34	189,622,903	1.29
Judges' Retirement	133,181,437	0.92	1,338,571	0.89	134,520,008	0.92
Volunteer Firefighters' Retirement	48,029,634	0.33	482,817	0.32	48,512,451	0.33
Retirement Plans Total Fund Composite	14,495,597,870	98.98	150,047,084	1.02	14,645,644,954	100.00

March 31, 2022 : \$14,645,644,954

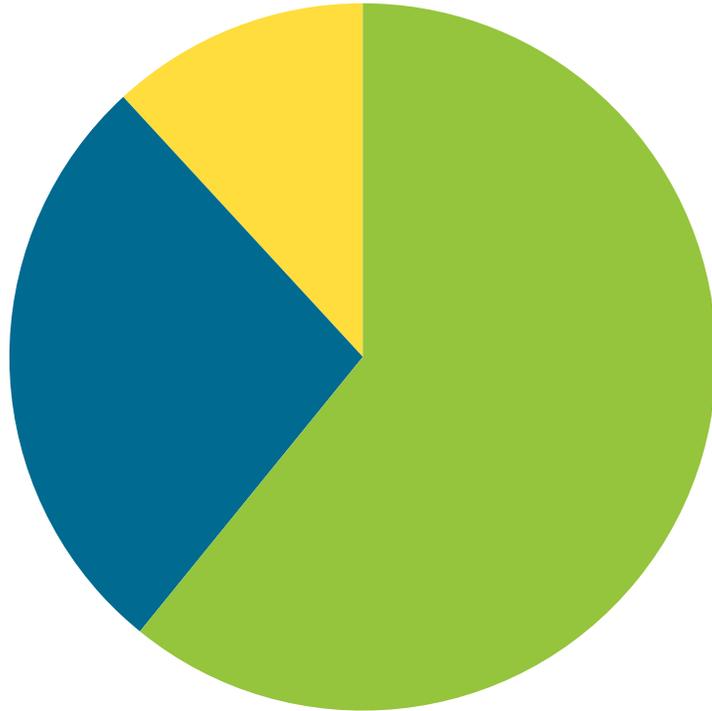


Segments	Market Value (\$)	Allocation (%)
CAPP Ex Cash	14,403,245,862	98.34
CAPP Cash Pension	83,126,896	0.57
CAPP Asset Class Cash	9,225,112	0.06
Short Term Investment Pool (STIP)	150,047,084	1.02
Total Cash	242,399,092	1.66

Allocations shown may not sum up to 100% exactly due to rounding. Retirement Plan market values may differ from State Street due to uninvested amounts not included in segment totals.



March 31, 2022 : \$23,818,171,136



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	14,495,597,889	60.86
Short Term Investment Pool	6,498,055,845	27.28
Trust Funds Investment Pool	2,824,517,402	11.86

Allocations shown may not sum up to 100% exactly due to rounding. Market values do not include pending transactions.

Montana Board of Investments
Comparative Performance
Investment Pools

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Consolidated Asset Pension Pool (CAPP)	-3.02	3.00	9.84	11.76	10.03	N/A	N/A	17.83	12.10	17.12	-2.74	N/A	10.03	04/01/2017
CAPP Custom Benchmark	-2.66	1.53	6.89	10.83	9.46	N/A	N/A	14.47	11.73	20.88	-5.73	N/A	9.46	
Difference	-0.36	1.47	2.95	0.93	0.57	N/A	N/A	3.36	0.37	-3.76	2.99	N/A	0.57	
Trust Funds Investment Pool	-2.62	-0.93	1.09	3.83	3.63	3.27	3.74	1.49	7.23	8.98	0.45	4.01	5.80	10/01/1995
Trust Fund Custom Benchmark	-2.60	-0.32	1.51	3.65	3.32	2.71	2.83	0.71	7.51	8.72	0.01	3.54	4.95	
Difference	-0.02	-0.61	-0.42	0.18	0.31	0.56	0.91	0.78	-0.28	0.26	0.44	0.47	0.85	
Short Term Investment Pool	0.05	0.11	0.12	0.84	1.20	1.00	0.76	0.11	0.73	2.28	1.98	1.11	2.27	04/01/1997
Short Term Custom Index	0.02	0.05	0.05	0.65	1.09	0.90	0.69	0.04	0.36	2.14	1.95	1.15	2.18	
Difference	0.03	0.06	0.07	0.19	0.11	0.10	0.07	0.07	0.37	0.14	0.03	-0.04	0.09	
iMoney.net Money Fund (Gross) Median	0.03	0.09	0.13	0.89	1.29	1.07	0.82	0.15	0.73	2.45	2.15	1.21	2.26	
Difference	0.02	0.02	-0.01	-0.05	-0.09	-0.07	-0.06	-0.04	0.00	-0.17	-0.17	-0.10	0.01	

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. See the Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
 Asset Allocation
 Consolidated Asset Pension Pool (CAPP)

As of March 31, 2022

March 31, 2022 : \$14,495,598,012



	Market Value (\$)	Allocation (%)
Domestic Equity	4,478,149,114	30.89
International Equity	2,532,324,629	17.47
Private Investments	2,190,479,165	15.11
Core Fixed Income	1,992,791,764	13.75
Real Estate	1,596,617,737	11.01
Non-Core Fixed Income	879,925,488	6.07
Real Assets*	742,183,219	5.12
Cash Pension	83,126,896	0.57

Allocations shown may not sum up to 100% due to rounding.
 *Formerly the Natural Resources pension asset class.



Montana Board of Investments
Comparative Performance
Consolidated Asset Pension Pool (CAPP)

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Domestic Equity	-5.22	3.70	12.16	18.24	14.94	12.95	13.97	27.17	20.09	30.75	-7.09	20.79	10.42	05/01/2003
Domestic Equity Custom Index	-5.28	3.62	12.39	18.45	15.54	13.67	14.43	26.12	21.10	31.14	-5.20	21.05	11.13	
Difference	0.06	0.08	-0.23	-0.21	-0.60	-0.72	-0.46	1.05	-1.01	-0.39	-1.89	-0.26	-0.71	
International Equity	-6.80	-7.91	-2.98	8.05	7.18	5.72	6.02	7.83	13.35	22.86	-14.99	28.67	5.02	04/01/1997
International Equity Custom Index	-5.60	-6.50	-1.27	7.87	6.92	5.46	5.75	8.53	11.12	21.63	-14.76	27.81	5.28	
Difference	-1.20	-1.41	-1.71	0.18	0.26	0.26	0.27	-0.70	2.23	1.23	-0.23	0.86	-0.26	
Core Fixed Income	-5.33	-5.33	-3.60	1.74	2.07	1.87	2.51	-1.54	8.25	6.90	0.95	2.29	5.49	04/01/1995
Core Fixed Income Custom Index	-5.93	-5.87	-4.15	1.17	1.65	1.52	1.99	-1.54	7.51	6.39	0.68	2.57	4.84	
Difference	0.60	0.54	0.55	0.57	0.42	0.35	0.52	0.00	0.74	0.51	0.27	-0.28	0.65	
Non-Core Fixed Income	-4.99	-4.35	-1.51	3.68	3.80	4.01	5.19	3.21	6.40	13.98	-2.27	5.99	7.18	06/01/2009
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	8.27	
Difference	-0.17	-1.04	-0.85	-0.88	-0.88	-1.01	-0.55	-2.05	-0.65	-0.34	-0.19	-1.51	-1.09	
Real Assets	5.87	10.45	21.06	2.63	4.01	N/A	N/A	21.24	-13.43	-2.18	5.55	N/A	4.01	04/01/2017
Real Assets Custom Index	6.70	10.67	15.11	1.91	4.09	3.07	0.07	13.32	-12.32	13.06	-11.75	13.70	4.09	
Difference	-0.83	-0.22	5.95	0.72	-0.08	N/A	N/A	7.92	-1.11	-15.24	17.30	N/A	-0.08	
Real Estate	2.72	15.82	19.42	8.67	8.55	9.51	9.88	20.00	-0.35	6.97	9.19	9.17	4.89	06/01/2006
Real Estate Custom Index	7.66	18.78	21.02	2.08	4.19	6.05	7.62	13.64	-19.66	25.84	-4.57	5.99	5.32	
Difference	-4.94	-2.96	-1.60	6.59	4.36	3.46	2.26	6.36	19.31	-18.87	13.76	3.18	-0.43	
Cash Pension	0.02	0.06	0.10	0.85	N/A	N/A	N/A	0.13	0.84	2.28	2.00	N/A	1.21	05/01/2017
Short Term Custom Index	0.02	0.05	0.05	0.65	1.09	0.90	0.69	0.04	0.36	2.14	1.95	1.15	1.09	
Difference	0.00	0.01	0.05	0.20	N/A	N/A	N/A	0.09	0.48	0.14	0.05	N/A	0.12	
Private Investments*	1.75	16.18	32.46	20.60	17.46	14.74	14.31	39.81	10.91	12.95	11.55	15.20	13.37	05/01/2002
Private Investments Custom Index	-4.75	-3.85	0.44	13.17	11.62	11.48	15.43	16.54	18.90	27.38	-9.99	20.59	11.52	
Difference	6.50	20.03	32.02	7.43	5.84	3.26	-1.12	23.27	-7.99	-14.43	21.54	-5.39	1.85	

For additional information on the Private Investments Custom Index, please see the Addendum.

*Performance is based on the prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Please see Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Investment Pools

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017
Domestic Equity	-5.22	3.82	12.37	18.51	15.25	13.25	14.28	27.47	20.37	31.13	-6.78	21.16
All Public Plans-US Equity Segment Median	-5.12	2.58	10.61	16.74	14.39	12.48	13.37	24.57	18.92	30.04	-5.83	20.31
Rank	52	32	28	21	26	23	22	30	32	28	74	31
Population	57	56	55	48	45	44	36	70	67	65	66	89
International Equity	-6.75	-7.70	-2.68	8.39	7.52	6.07	6.36	8.18	13.71	23.28	-14.72	29.06
All Public Plans-Intl. Equity Segment Median	-6.74	-6.60	-1.09	9.33	8.34	6.54	7.01	9.51	12.76	23.71	-13.63	28.75
Rank	51	56	56	71	71	71	78	74	45	62	78	46
Population	55	55	55	50	50	49	38	69	68	65	68	84
Core Fixed Income	-5.32	-5.30	-3.54	1.79	2.12	1.91	2.55	-1.48	8.31	6.94	1.00	2.34
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-5.81	-5.80	-3.88	2.24	2.66	2.37	2.75	-1.21	8.52	9.19	0.06	4.01
Rank	17	18	29	81	95	87	70	67	55	97	8	100
Population	133	133	132	131	128	125	120	140	150	152	158	163
Non-Core Fixed Income	-4.93	-4.09	-1.15	4.15	4.32	4.54	5.72	3.64	6.91	14.60	-1.71	6.58
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50
Rank	94	96	93	76	77	75	56	91	41	41	52	74
Population	143	143	143	142	139	131	114	150	169	184	194	198
Trust Funds Investment Pool	-2.56	-0.82	1.24	3.93	3.72	3.36	3.84	1.59	7.30	9.06	0.53	4.10
All Public Plans-US Fixed Income Segment Median	-5.19	-4.69	-2.56	2.79	2.96	2.74	3.14	-0.11	8.59	9.25	-0.25	4.59
Rank	7	1	6	11	12	14	21	12	78	53	22	62
Population	61	60	60	53	51	50	43	73	74	68	72	85
Real Estate	2.90	16.39	20.80	10.18	10.12	11.04	11.44	21.37	1.11	8.65	11.12	10.91
All Public Plans-Real Estate Segment Median	5.98	19.26	24.56	11.31	10.86	11.19	11.81	20.84	1.66	7.65	9.04	8.84
Rank	90	77	75	77	70	62	70	47	72	39	15	26
Population	43	41	39	28	22	19	14	41	38	35	27	32

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. The All Public Plans US Equity, Intl Equity, US Fixed Income, and Real Estate segments currently do not have enough members to calculate trailing period returns.



Montana Board of Investments
Comparative Performance
Equity Composites

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Domestic Large Cap Equity - Net	-5.14	5.15	14.22	19.52	16.16	14.08	14.71	28.39	21.44	31.06	-4.71	21.66	10.10	12/01/2006
S&P 500 Index (Cap Wtd)	-4.60	6.54	15.65	18.92	15.99	14.01	14.64	28.71	18.40	31.49	-4.38	21.83	10.18	
Difference	-0.54	-1.39	-1.43	0.60	0.17	0.07	0.07	-0.32	3.04	-0.43	-0.33	-0.17	-0.08	
Domestic Large Cap Equity - Gross	-5.13	5.23	14.37	19.71	16.36	14.26	14.90	28.61	21.66	31.29	-4.52	21.82	10.32	12/01/2006
IM U.S. Large Cap Equity (SA+CF) Median	-4.60	5.14	13.28	18.07	15.40	13.26	14.30	27.06	17.96	30.29	-4.99	21.74	10.23	
Rank	57	50	38	27	34	31	32	36	34	41	45	49	48	
Domestic Mid Cap Equity - Net	-4.91	1.24	4.81	14.31	11.80	9.74	11.71	25.15	13.53	28.03	-10.75	19.45	9.35	01/01/2005
Russell Mid Cap Index	-5.68	-0.54	6.92	14.89	12.62	10.68	12.85	22.58	17.10	30.54	-9.06	18.52	10.12	
Difference	0.77	1.78	-2.11	-0.58	-0.82	-0.94	-1.14	2.57	-3.57	-2.51	-1.69	0.93	-0.77	
Domestic Mid Cap Equity - Gross	-4.91	1.24	4.81	14.28	12.04	10.09	12.15	25.15	13.53	28.11	-10.28	20.18	9.79	01/01/2005
IM U.S. Mid Cap Equity (SA+CF) Median	-6.39	0.60	6.51	15.83	13.18	11.29	13.21	23.66	16.08	30.18	-9.03	19.38	10.73	
Rank	43	44	57	67	59	74	82	41	59	65	59	48	88	
Domestic Small Cap Equity - Net	-6.15	-1.39	4.34	13.86	11.38	10.17	12.22	27.56	13.07	25.76	-10.51	15.65	12.05	03/01/2003
Russell 2000 Index	-7.53	-9.66	-5.79	11.74	9.74	8.87	11.04	14.82	19.96	25.53	-11.01	14.65	11.04	
Difference	1.38	8.27	10.13	2.12	1.64	1.30	1.18	12.74	-6.89	0.23	0.50	1.00	1.01	
Domestic Small Cap Equity - Gross	-6.14	-1.25	4.60	14.25	11.81	10.67	12.80	28.00	13.50	26.25	-10.09	16.27	12.58	03/01/2003
IM U.S. Small Cap Equity (SA+CF) Median	-6.60	-2.44	1.52	14.41	11.56	10.50	12.59	23.76	16.83	25.82	-10.46	15.20	12.86	
Rank	47	45	33	53	47	48	47	32	58	47	49	45	57	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments
Comparative Performance
Equity Composites

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
International Large Cap Passive - Net	-5.62	-6.88	-1.81	7.49	6.84	5.49	5.76	7.76	10.81	21.59	-14.04	27.79	6.70	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	-5.44	-6.60	-1.48	7.51	6.76	5.19	5.55	7.82	10.65	21.51	-14.20	27.19	6.52	
Difference	-0.18	-0.28	-0.33	-0.02	0.08	0.30	0.21	-0.06	0.16	0.08	0.16	0.60	0.18	
International Large Cap Passive - Gross	-5.60	-6.84	-1.76	7.55	6.91	5.56	5.84	7.82	10.88	21.66	-13.98	27.88	6.77	06/01/2009
International Equity Active - Net	-7.87	-8.96	-4.19	8.91	7.90	6.61	6.95	7.77	15.91	25.83	-16.18	30.82	4.08	04/01/1997
MSCI ACW Ex US Index (USD) (Net)	-5.44	-6.60	-1.48	7.51	6.76	5.19	5.55	7.82	10.65	21.51	-14.20	27.19	5.33	
Difference	-2.43	-2.36	-2.71	1.40	1.14	1.42	1.40	-0.05	5.26	4.32	-1.98	3.63	-1.25	
International Equity Active - Gross	-7.75	-8.62	-3.72	9.46	8.46	7.16	7.48	8.30	16.50	26.48	-15.73	31.50	4.60	04/01/1997
IM International Large Cap Core Equity (SA+CF) Median	-6.26	-4.96	0.14	9.02	7.95	6.23	7.41	12.14	11.81	23.55	-14.47	26.41	6.77	
Rank	68	85	85	44	36	27	46	80	28	29	68	13	100	
International Value - Net	-2.45	-3.03	1.85	8.50	8.00	6.25	6.47	9.32	9.31	20.76	-13.97	30.72	3.21	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	0.13	-0.98	3.31	5.44	4.67	3.65	4.24	10.46	-0.77	15.72	-13.97	22.66	2.60	
Difference	-2.58	-2.05	-1.46	3.06	3.33	2.60	2.23	-1.14	10.08	5.04	0.00	8.06	0.61	
International Value - Gross	-2.34	-2.68	2.35	9.04	8.55	6.79	7.03	9.85	9.87	21.37	-13.52	31.39	3.78	11/01/2006
IM International Large Cap Value Equity (SA+CF) Median	-4.37	-4.47	-0.65	7.48	6.22	5.19	6.47	11.90	4.94	21.04	-14.52	26.13	4.58	
Rank	33	30	27	32	22	23	38	67	32	45	39	13	69	
International Growth - Net	-13.50	-15.76	-11.98	8.36	7.45	6.01	6.34	3.79	23.08	31.39	-16.09	28.01	3.86	11/01/2006
MSCI ACW Ex US Grth Index (USD) (Net)	-10.78	-11.97	-6.16	9.12	8.60	6.51	6.70	5.09	22.20	27.34	-14.43	32.01	4.74	
Difference	-2.72	-3.79	-5.82	-0.76	-1.15	-0.50	-0.36	-1.30	0.88	4.05	-1.66	-4.00	-0.88	
International Growth - Gross	-13.39	-15.43	-11.51	8.94	8.03	6.60	6.90	4.33	23.74	32.10	-15.61	28.74	4.41	11/01/2006
IM International Large Cap Growth Equity (SA+CF) Median	-10.21	-7.91	-2.38	10.89	10.07	7.62	8.19	11.05	21.14	28.44	-13.90	31.37	5.83	
Rank	72	85	92	74	77	73	85	84	42	19	68	68	89	
International Small Cap - Net	-7.95	-8.00	-1.97	9.42	7.62	7.12	7.67	11.57	14.63	23.91	-18.90	33.61	5.22	09/01/2006
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	-6.52	-5.94	0.03	10.22	7.89	7.24	7.28	12.93	14.24	22.42	-18.20	31.65	5.84	
Difference	-1.43	-2.06	-2.00	-0.80	-0.27	-0.12	0.39	-1.36	0.39	1.49	-0.70	1.96	-0.62	

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of BlackRock ACWI Ex-US Small Cap (CF), Templeton Investment Counsel (SA), American Century Investment Mgmt (SA), and Acadian Ex US Small Cap (SA).

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Domestic Large Cap Equity														
BlackRock MSCI US Equity Index (SA) - Net	-5.21	4.77	14.08	19.04	N/A	N/A	N/A	26.95	21.33	N/A	N/A	N/A	19.04	04/01/2019
MSCI US Index (USD) (Gross)	-5.21	4.78	14.10	19.07	16.08	13.97	14.63	26.97	21.37	31.64	-4.50	21.90	19.07	
Difference	0.00	-0.01	-0.02	-0.03	N/A	N/A	N/A	-0.02	-0.04	N/A	N/A	N/A	-0.03	
BlackRock MSCI US Equity Index (SA) - Gross	-5.20	4.78	14.09	19.05	N/A	N/A	N/A	26.96	21.34	N/A	N/A	N/A	19.05	04/01/2019
IM U.S. Large Cap Core Equity (SA+CF) Median	-4.58	5.48	13.98	17.92	15.39	13.14	14.30	27.89	17.25	30.03	-5.15	21.85	17.92	
Rank	62	58	49	29	N/A	N/A	N/A	56	28	N/A	N/A	N/A	29	
Northern Trust MSCI US Index (SA) - Net	-5.21	4.78	14.09	19.07	N/A	N/A	N/A	26.97	21.34	31.70	N/A	N/A	18.46	11/01/2018
MSCI US Index (USD) (Gross)	-5.21	4.78	14.10	19.07	16.08	13.97	14.63	26.97	21.37	31.64	-4.50	21.90	18.46	
Difference	0.00	0.00	-0.01	0.00	N/A	N/A	N/A	0.00	-0.03	0.06	N/A	N/A	0.00	
Northern Trust MSCI US Index (SA) - Gross	-5.20	4.79	14.10	19.09	N/A	N/A	N/A	26.98	21.36	31.71	N/A	N/A	18.47	11/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	-4.58	5.48	13.98	17.92	15.39	13.14	14.30	27.89	17.25	30.03	-5.15	21.85	17.33	
Rank	62	58	49	29	N/A	N/A	N/A	56	28	32	N/A	N/A	30	
iShares:Core S&P Tot USM (ITOT) - Net	-5.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.75	12/01/2021
S&P Tot Mkt Index	-5.40	3.12	11.67	18.12	15.31	13.31	14.21	25.66	20.79	30.90	-5.30	21.16	-1.80	
Difference	0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.05	
iShares:Core S&P 500 (IVV) - Net	-3.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.11	12/01/2021
S&P 500 Index (Cap Wtd)	-4.60	6.54	15.65	18.92	15.99	14.01	14.64	28.71	18.40	31.49	-4.38	21.83	-0.32	
Difference	1.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.43	
Domestic Mid Cap Equity														
iShares:Core S&P Md-Cp (IJH) - Net	-4.91	1.24	4.81	14.17	N/A	N/A	N/A	25.15	13.53	26.24	-13.95	N/A	10.56	07/01/2017
S&P Mid Cap 400 Index (Cap Wtd)	-4.88	0.92	4.59	14.14	11.10	10.20	12.20	24.76	13.66	26.20	-11.08	16.24	11.26	
Difference	-0.03	0.32	0.22	0.03	N/A	N/A	N/A	0.39	-0.13	0.04	-2.87	N/A	-0.70	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Domestic Small Cap Equity														
BlackRock MSCI US Sm Cap Equity Index (CF) - Net	-5.90	-5.15	-0.23	13.70	N/A	N/A	N/A	19.63	18.93	27.30	-9.96	N/A	11.79	07/01/2017
MSCI US Sm Cap Index (USD) (Net)	-6.01	-5.52	-0.70	13.17	11.14	9.73	11.85	19.11	18.32	26.74	-10.40	16.75	11.27	
Difference	0.11	0.37	0.47	0.53	N/A	N/A	N/A	0.52	0.61	0.56	0.44	N/A	0.52	
BlackRock MSCI US Sm Cap Equity Index (CF) - Gross	-5.89	-5.12	-0.20	13.73	N/A	N/A	N/A	19.66	18.96	27.34	-9.93	N/A	11.83	07/01/2017
iShares:Russ 2000 ETF (IWM) - Net	-7.55	-9.95	-6.38	11.80	N/A	N/A	N/A	14.32	20.90	25.52	N/A	N/A	9.26	05/01/2018
Russell 2000 Index	-7.53	-9.66	-5.79	11.74	9.74	8.87	11.04	14.82	19.96	25.53	-11.01	14.65	9.20	
Difference	-0.02	-0.29	-0.59	0.06	N/A	N/A	N/A	-0.50	0.94	-0.01	N/A	N/A	0.06	

Gross of fees performance is not available (N/A) for the following funds: iShares:Core S&P Tot USM (ITOT), iShares:Core S&P 500 (IVV), iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM).

The current annual expense ratios for the iShares:Core S&P Tot USM (ITOT), iShares:Core S&P 500 (IVV), iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM) are 0.03%, 0.03%, 0.05%, and 0.19%, respectively.

See the Addendum for custom index specification.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
International Developed Large Cap Equity														
Acadian Asset Non-US Equity (SA) - Net	-1.12	-0.48	5.98	10.74	9.88	8.70	8.52	16.67	8.89	19.38	-13.44	34.76	4.54	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	0.13	-0.98	3.31	5.44	4.67	3.65	4.24	10.46	-0.77	15.72	-13.97	22.66	2.60	
Difference	-1.25	0.50	2.67	5.30	5.21	5.05	4.28	6.21	9.66	3.66	0.53	12.10	1.94	
Acadian Asset Non-US Equity (SA) - Gross	-1.00	-0.13	6.49	11.29	10.44	9.26	9.08	17.23	9.45	19.98	-12.99	35.45	5.12	11/01/2006
IM ACWI Ex US Value (SA+CF) Median	-3.50	-5.10	-1.90	8.18	6.83	5.77	6.60	11.05	6.52	21.34	-14.78	26.02	4.53	
Rank	5	5	5	13	6	5	10	7	43	59	26	8	36	
Lazard Asset Management (SA) - Net	-4.00	-5.72	-1.96	6.60	6.39	N/A	N/A	4.11	9.59	21.70	-14.32	27.00	4.19	06/01/2015
Lazard Custom Index	-5.44	-6.60	-1.48	7.51	5.89	4.51	4.84	7.82	10.65	21.51	-15.55	22.66	4.09	
Difference	1.44	0.88	-0.48	-0.91	0.50	N/A	N/A	-3.71	-1.06	0.19	1.23	4.34	0.10	
Lazard Asset Management (SA) - Gross	-3.88	-5.37	-1.47	7.13	6.93	N/A	N/A	4.62	10.14	22.31	-13.88	27.65	4.73	06/01/2015
IM ACWI Ex US Value (SA+CF) Median	-3.50	-5.10	-1.90	8.18	6.83	5.77	6.60	11.13	6.52	21.34	-14.78	26.02	5.48	
Rank	54	53	46	59	48	N/A	N/A	93	41	43	35	38	64	
BlackRock ACW Ex US SuperFund A (CF) - Net	-5.39	-6.52	-1.34	7.70	6.97	5.40	5.76	8.00	10.81	21.77	-13.99	27.49	6.72	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	-5.44	-6.60	-1.48	7.51	6.76	5.19	5.55	7.82	10.65	21.51	-14.20	27.19	6.52	
Difference	0.05	0.08	0.14	0.19	0.21	0.21	0.21	0.18	0.16	0.26	0.21	0.30	0.20	
BlackRock ACW Ex US SuperFund A (CF) - Gross	-5.38	-6.47	-1.27	7.78	7.05	5.48	5.84	8.07	10.89	21.85	-13.93	27.58	6.81	06/01/2009
IM All ACWI Ex US (SA+CF) Median	-7.46	-7.24	-2.45	9.17	8.09	6.40	7.31	9.74	14.60	25.13	-14.73	28.74	8.26	
Rank	35	43	37	65	67	71	84	63	60	66	43	62	83	
iShares:MSCI EAFE ETF (EFA) - Net	-6.46	-4.85	0.27	7.49	N/A	N/A	N/A	11.47	7.71	22.03	-12.88	N/A	5.71	07/01/2017
MSCI EAFE Index (USD) (Net)	-5.91	-3.81	1.16	7.78	6.72	5.11	6.27	11.26	7.82	22.01	-13.79	25.03	5.75	
Difference	-0.55	-1.04	-0.89	-0.29	N/A	N/A	N/A	0.21	-0.11	0.02	0.91	N/A	-0.04	
Baillie Gifford (SA) - Net	-18.49	-22.40	-17.83	9.55	8.20	N/A	N/A	1.69	34.22	34.34	-17.35	31.99	6.37	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	-10.78	-11.97	-6.16	9.12	8.60	6.51	6.70	5.09	22.20	27.34	-14.43	32.01	6.17	
Difference	-7.71	-10.43	-11.67	0.43	-0.40	N/A	N/A	-3.40	12.02	7.00	-2.92	-0.02	0.20	
Baillie Gifford (SA) - Gross	-18.39	-22.12	-17.44	10.07	8.73	N/A	N/A	2.16	34.86	34.99	-16.93	32.66	6.90	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	-12.22	-10.15	-4.54	10.59	10.05	7.72	8.16	9.00	22.14	29.57	-13.78	32.56	7.29	
Rank	93	97	97	61	64	N/A	N/A	91	13	9	85	49	64	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.



Montana Board of Investments
Comparative Performance
International Equity Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Invesco (SA) - Net	-9.36	-10.01	-7.02	7.51	6.86	N/A	N/A	5.60	14.84	29.29	-15.17	24.92	4.87	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	-10.78	-11.97	-6.16	9.12	8.60	6.51	6.70	5.09	22.20	27.34	-14.43	32.01	6.17	
Difference	1.42	1.96	-0.86	-1.61	-1.74	N/A	N/A	0.51	-7.36	1.95	-0.74	-7.09	-1.30	
Invesco (SA) - Gross	-9.22	-9.62	-6.49	8.13	7.50	N/A	N/A	6.20	15.51	30.05	-14.64	25.70	5.51	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	-12.22	-10.15	-4.54	10.59	10.05	7.72	8.16	9.00	22.14	29.57	-13.78	32.56	7.29	
Rank	28	42	67	81	86	N/A	N/A	77	83	45	56	91	87	
International Developed Small Cap Equity														
American Century Investment Mgmt (SA) - Net	-14.52	-14.13	-9.48	10.99	9.76	8.34	N/A	6.24	31.60	29.44	-20.76	43.80	6.55	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (USD) (Net)	-10.38	-9.39	-3.28	11.36	9.07	7.96	7.78	11.53	23.69	24.61	-18.27	33.64	6.50	
Difference	-4.14	-4.74	-6.20	-0.37	0.69	0.38	N/A	-5.29	7.91	4.83	-2.49	10.16	0.05	
American Century Investment Mgmt (SA) - Gross	-14.33	-13.59	-8.73	11.90	10.67	9.24	N/A	7.10	32.68	30.50	-20.09	44.99	7.45	03/01/2014
IM ACWI Ex US Growth (SA+CF) Median	-12.22	-10.15	-4.54	10.59	10.05	7.72	8.16	9.00	22.14	29.57	-13.78	32.56	7.05	
Rank	72	75	87	30	36	26	N/A	65	26	42	100	6	39	
BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Net	-6.46	-5.93	0.11	10.35	8.11	7.47	7.49	12.84	14.45	22.68	-17.85	31.96	7.89	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	-6.52	-5.94	0.03	10.22	7.89	7.24	7.28	12.93	14.24	22.42	-18.20	31.65	7.68	
Difference	0.06	0.01	0.08	0.13	0.22	0.23	0.21	-0.09	0.21	0.26	0.35	0.31	0.21	
BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Gross	-6.43	-5.84	0.24	10.48	8.24	7.61	7.65	12.98	14.50	22.90	-17.74	32.15	8.05	02/01/2012
Templeton Investment Counsel (SA) - Net	-12.17	-13.38	-7.54	5.67	5.90	4.83	N/A	11.79	9.98	24.17	-18.48	33.07	4.29	03/01/2014
Templeton Custom Index	-6.52	-5.94	0.03	10.22	7.20	6.84	7.01	12.93	14.24	22.42	-19.75	29.72	5.33	
Difference	-5.65	-7.44	-7.57	-4.55	-1.30	-2.01	N/A	-1.14	-4.26	1.75	1.27	3.35	-1.04	
Templeton Investment Counsel (SA) - Gross	-11.98	-12.84	-6.77	6.55	6.79	5.73	N/A	12.71	10.91	25.20	-17.78	34.21	5.19	03/01/2014
IM ACWI Ex US Value (SA+CF) Median	-3.50	-5.10	-1.90	8.18	6.83	5.77	6.60	11.13	6.52	21.34	-14.78	26.02	4.73	
Rank	90	96	88	68	51	54	N/A	37	35	26	84	8	33	
Acadian Ex US Small Cap (SA) - Net	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.08	03/01/2022
MSCI ACW Ex US Sm Cap Index (USD) (Net)	-6.52	-5.94	0.03	10.22	7.89	7.24	7.28	12.93	14.24	22.42	-18.20	31.65	1.02	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.06	
Acadian Ex US Small Cap (SA) - Gross	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.02	03/01/2022
IM All ACWI Ex US (SA+CF) Median	-7.46	-7.24	-2.45	9.17	8.09	6.40	7.31	9.74	14.60	25.13	-14.73	28.74	-0.29	
Rank	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.



Montana Board of Investments
Comparative Performance
International Equity Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
International Emerging Equity														
BlackRock MSCI Emg Mkts Index NL (CF) - Net	-7.10	-15.86	-11.66	4.61	5.72	4.42	3.09	-2.82	17.92	18.12	-14.69	37.05	3.28	02/01/2012
MSCI Emg Mkts Index (USD) (Net)	-6.97	-15.62	-11.37	4.94	5.98	4.69	3.36	-2.54	18.31	18.44	-14.58	37.28	3.55	
Difference	-0.13	-0.24	-0.29	-0.33	-0.26	-0.27	-0.27	-0.28	-0.39	-0.32	-0.11	-0.23	-0.27	
BlackRock MSCI Emg Mkts Index NL (CF) - Gross	-7.08	-15.79	-11.57	4.73	5.82	4.55	3.25	-2.71	18.04	18.25	-14.60	37.16	3.44	02/01/2012
iShares:Core MSCI EmMkts (IEMG)	-9.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-9.46	01/01/2022
MSCI Emg Mkts IM Index (USD) (Net)	-6.65	-14.40	-9.49	5.74	6.19	4.85	3.59	-0.28	18.39	17.65	-15.05	36.83	-6.65	
Difference	-2.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.81	

Gross of fees performance is not available (N/A) for the following funds: iShares:MSCI EAFE ETF (EFA), International Equity Pool STIF, and iShares:Core MSCI Em Mkts (IEMG).

The current annual expense ratios for the iShares:MSCI EAFE ETF (EFA), and iShares:Core MSCI Em Mkts (IEMG): are 0.32%, and 0.09%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.

Montana Board of Investments
 Comparative Performance
 Core Fixed Income Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
US Fixed Income Aggregate - Net	-5.32	-5.32	-3.58	N/A	N/A	N/A	N/A	-1.52	7.65	N/A	N/A	N/A	0.13	12/01/2019
Bloomberg US Agg Bond Index	-5.93	-5.87	-4.15	1.69	2.14	1.87	2.24	-1.55	7.51	8.72	0.01	3.54	-0.22	
Difference	0.61	0.55	0.57	N/A	N/A	N/A	N/A	0.03	0.14	N/A	N/A	N/A	0.35	
Reams Asset Core Plus (SA) - Net	-5.49	-5.14	-3.39	4.77	4.16	3.44	3.49	-1.25	17.14	8.08	1.31	3.21	5.27	10/01/2008
Reams Custom Index	-6.11	-6.07	-4.23	1.80	2.21	2.10	2.52	-1.10	7.58	8.72	0.01	3.83	3.83	
Difference	0.62	0.93	0.84	2.97	1.95	1.34	0.97	-0.15	9.56	-0.64	1.30	-0.62	1.44	
Reams Asset Core Plus (SA) - Gross	-5.44	-5.00	-3.21	4.96	4.35	3.63	3.67	-1.07	17.35	8.28	1.49	3.38	5.45	10/01/2008
IM U.S. Broad Market Core+ FI (SA+CF) Median	-5.76	-5.55	-3.26	2.89	3.17	2.87	3.41	-0.26	8.96	9.88	-0.25	4.78	5.03	
Rank	32	26	45	4	8	19	31	87	2	93	4	95	32	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments
Comparative Performance
Non-Core Fixed Income Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Neuberger Berman High Yield (SA) - Net	-4.68	-3.52	-0.78	4.19	4.10	4.32	5.23	4.76	6.30	13.75	-1.99	5.80	6.33	01/01/2010
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	6.73	
Difference	0.14	-0.21	-0.12	-0.37	-0.58	-0.70	-0.51	-0.50	-0.75	-0.57	0.09	-1.70	-0.40	
Neuberger Berman High Yield (SA) - Gross	-4.64	-3.39	-0.64	4.54	4.49	4.73	5.67	4.96	6.75	14.26	-1.56	6.27	6.78	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.64	7.50	6.85	
Rank	89	90	84	63	69	65	59	59	43	50	49	79	54	
Oaktree US High Yield (SA) (CAPP) - Net	-4.09	-2.41	0.18	4.82	N/A	N/A	N/A	4.91	6.56	15.44	-3.99	N/A	4.14	01/01/2018
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	4.39	
Difference	0.73	0.90	0.84	0.26	N/A	N/A	N/A	-0.35	-0.49	1.12	-1.91	N/A	-0.25	
Oaktree US High Yield (SA) (CAPP) - Gross	-4.03	-2.16	0.54	5.28	N/A	N/A	N/A	5.34	7.07	16.02	-3.47	N/A	4.63	01/01/2018
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50	4.52	
Rank	57	49	46	34	N/A	N/A	N/A	49	39	16	92	N/A	46	
Shenkman High Yield Fixed Income (SA) (CAPP) - Net	-3.67	-2.42	0.04	4.49	N/A	N/A	N/A	4.24	6.32	13.65	-1.96	N/A	3.99	12/01/2017
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	4.38	
Difference	1.15	0.89	0.70	-0.07	N/A	N/A	N/A	-1.02	-0.73	-0.67	0.12	N/A	-0.39	
Shenkman High Yield Fixed Income (SA) (CAPP) - Gross	-3.58	-2.14	0.44	4.96	N/A	N/A	N/A	4.68	6.82	14.18	-1.46	N/A	4.47	12/01/2017
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50	4.55	
Rank	39	49	51	47	N/A	N/A	N/A	70	42	51	46	N/A	54	
Cohen & Steers Preferred Securities (SA) - Net	-5.36	-4.44	-1.60	N/A	N/A	N/A	N/A	3.70	N/A	N/A	N/A	N/A	1.88	11/01/2020
Cohen & Steers Preferred Securities Custom Benchmark	-5.72	-5.41	-2.65	N/A	N/A	N/A	N/A	2.72	N/A	N/A	N/A	N/A	0.56	
Difference	0.36	0.97	1.05	N/A	N/A	N/A	N/A	0.98	N/A	N/A	N/A	N/A	1.32	
Cohen & Steers Preferred Securities (SA) - Gross	-5.28	-4.19	-1.27	N/A	N/A	N/A	N/A	4.06	N/A	N/A	N/A	N/A	2.24	11/01/2020
Payden & Rygel EMD (SA) - Net	-7.63	-9.85	-5.90	N/A	N/A	N/A	N/A	-3.49	N/A	N/A	N/A	N/A	-8.78	01/01/2021
Payden & Rygel EMD Custom Benchmark	-8.96	-11.21	-7.74	N/A	N/A	N/A	N/A	-3.92	N/A	N/A	N/A	N/A	-10.15	
Difference	1.33	1.36	1.84	N/A	N/A	N/A	N/A	0.43	N/A	N/A	N/A	N/A	1.37	
Payden & Rygel EMD (SA) - Gross	-7.55	-9.60	-5.56	N/A	N/A	N/A	N/A	-3.14	N/A	N/A	N/A	N/A	-8.45	01/01/2021
IM Emerging Markets Debt (SA+CF) Median	-6.94	-9.85	-6.36	1.11	2.07	3.23	3.28	-2.54	6.71	14.27	-5.29	12.46	-8.76	
Rank	57	45	34	N/A	N/A	N/A	N/A	57	N/A	N/A	N/A	N/A	46	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. No peer group is shown for Cohen & Steers Preferred Securities (SA) due to the lack of suitable Preferred Securities peer groups.



Montana Board of Investments
Comparative Performance
TFIP Fixed Income Managers

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Trust Funds Investment Pool Fixed Income	-5.14	-4.75	-2.76	2.81	2.96	2.59	3.10	-0.47	8.84	9.12	0.25	3.83	5.56	10/01/1995
Bloomberg US Agg Bond Index	-5.93	-5.87	-4.15	1.69	2.14	1.87	2.24	-1.55	7.51	8.72	0.01	3.54	4.72	
Difference	0.79	1.12	1.39	1.12	0.82	0.72	0.86	1.08	1.33	0.40	0.24	0.29	0.84	
Trust Funds Investment Pool Fixed Income	-5.14	-4.75	-2.76	2.81	2.96	2.59	3.10	-0.47	8.84	9.12	0.25	3.83	5.56	10/01/1995
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-5.81	-5.80	-3.88	2.24	2.66	2.37	2.75	-1.21	8.52	9.19	0.06	4.01	5.11	
Rank	13	8	8	19	20	29	22	21	37	55	31	62	10	
Shenkman High Yield Fixed Income (SA) (TFIP) - Net	-3.73	-2.48	0.04	N/A	N/A	N/A	N/A	4.31	6.05	N/A	N/A	N/A	3.77	07/01/2019
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	4.04	
Difference	1.09	0.83	0.70	N/A	N/A	N/A	N/A	-0.95	-1.00	N/A	N/A	N/A	-0.27	
Shenkman High Yield Fixed Income (SA) (TFIP) - Gross	-3.64	-2.21	0.43	N/A	N/A	N/A	N/A	4.74	6.54	N/A	N/A	N/A	4.23	07/01/2019
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50	4.35	
Rank	42	51	51	N/A	N/A	N/A	N/A	67	49	N/A	N/A	N/A	56	
Oaktree US High Yield (SA) (TFIP) - Net	-3.96	-2.36	0.18	N/A	N/A	N/A	N/A	4.93	6.72	N/A	N/A	N/A	4.35	08/01/2019
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	3.95	
Difference	0.86	0.95	0.84	N/A	N/A	N/A	N/A	-0.33	-0.33	N/A	N/A	N/A	0.40	
Oaktree US High Yield (SA) (TFIP) - Gross	-3.90	-2.10	0.53	N/A	N/A	N/A	N/A	5.36	7.25	N/A	N/A	N/A	4.81	08/01/2019
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50	4.28	
Rank	53	46	47	N/A	N/A	N/A	N/A	49	35	N/A	N/A	N/A	24	
Neuberger Berman High Yield (SA) (TFIP) - Net	-4.64	-3.48	-0.81	N/A	N/A	N/A	N/A	4.62	N/A	N/A	N/A	N/A	9.40	04/01/2020
Bloomberg US HY 2% Issuer Cap Index	-4.82	-3.31	-0.66	4.56	4.68	5.02	5.74	5.26	7.05	14.32	-2.08	7.50	10.83	
Difference	0.18	-0.17	-0.15	N/A	N/A	N/A	N/A	-0.64	N/A	N/A	N/A	N/A	-1.43	
Neuberger Berman High Yield (SA) (TFIP) - Gross	-4.59	-3.35	-0.68	N/A	N/A	N/A	N/A	4.81	N/A	N/A	N/A	N/A	9.70	04/01/2020
IM U.S. High Yield Bonds (SA+CF) Median	-3.84	-2.20	0.45	4.88	4.83	5.07	5.85	5.31	6.50	14.23	-1.66	7.50	10.75	
Rank	87	89	84	N/A	N/A	N/A	N/A	64	N/A	N/A	N/A	N/A	70	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments
Comparative Performance
Trust Accounts

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Abandoned Mine Trust	0.05	0.11	0.14	0.88	1.19	1.08	1.22	0.13	0.73	2.41	1.85	1.04	3.71	12/01/1993
Barker Hughesville St Response	-2.39	-0.82	1.07	N/A	N/A	N/A	N/A	1.36	N/A	N/A	N/A	N/A	0.70	05/01/2020
Belt Water Treatment Plant Fund	-2.33	-0.79	1.06	3.65	N/A	N/A	N/A	1.34	6.80	8.56	N/A	N/A	3.95	03/01/2018
Big Sky Economic Development Fund	-2.56	-0.90	1.09	3.73	3.56	3.21	3.66	1.45	7.12	8.67	0.48	3.97	4.64	07/01/2005
Butte Area One Restoration	-2.10	-0.72	0.97	3.12	3.04	2.65	2.62	1.26	6.07	6.76	1.24	2.92	3.20	11/01/2008
Clark Fork River Restoration	-2.06	-0.71	0.88	3.07	2.94	2.59	2.72	1.19	5.65	7.04	0.96	2.85	3.45	11/01/2008
Coal Tax Cultural Trust Fund	-2.52	-0.89	1.05	3.69	3.53	3.19	3.65	1.43	6.99	8.64	0.47	3.96	5.77	12/01/1993
Coal Tax Park Acquisition	-2.46	-0.90	0.97	3.64	3.50	3.16	3.61	1.37	6.86	8.63	0.48	3.96	5.74	12/01/1993
East Helena Compensation Fund	-0.46	-0.09	0.30	2.05	2.24	1.99	N/A	0.42	2.65	5.52	1.20	2.56	1.91	01/01/2013
East Helena Greenway Trail Maintenance	-1.92	-0.64	0.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.65	03/01/2021
Endowment for Children	-2.47	-0.85	1.10	3.69	3.51	3.12	3.57	1.41	7.01	8.54	0.46	3.89	4.63	08/01/2007
Flying J CECRA Facilities Fund	-2.38	-0.82	1.06	N/A	N/A	N/A	N/A	1.36	N/A	N/A	N/A	N/A	0.74	05/01/2020
FWP License Account	-1.38	-0.71	0.12	1.05	1.30	1.13	1.03	0.46	1.85	3.33	1.50	1.11	2.74	11/01/1997
FWP Mitigation Trust Fund	-1.92	-0.80	0.59	2.12	2.03	1.64	1.59	0.98	3.84	5.46	1.14	1.15	3.71	12/01/1993
FWP Real Property Trust	-2.51	-0.94	0.93	3.62	3.47	3.12	3.54	1.38	6.83	8.62	0.51	3.80	5.17	12/01/1993
Group Benefits	-0.81	-0.31	0.15	1.50	1.64	1.43	1.38	0.63	2.05	4.01	1.37	1.30	3.67	12/01/1993
Harold Hamm Endowment	-2.42	-0.84	1.04	3.60	3.05	N/A	N/A	1.43	6.71	8.45	0.57	1.11	2.75	07/01/2016
Invasive Species Trust Fund	-2.56	-1.10	0.55	N/A	N/A	N/A	N/A	1.19	N/A	N/A	N/A	N/A	-0.44	10/01/2020
Libby Asbestos Site State Cost	-2.27	-0.76	1.05	N/A	N/A	N/A	N/A	1.25	N/A	N/A	N/A	N/A	0.73	05/01/2020
Luttrell Pit - Operational & Maintenance	-2.38	-0.82	1.06	N/A	N/A	N/A	N/A	1.36	N/A	N/A	N/A	N/A	0.68	05/01/2020
Montana Pole	-2.05	-0.78	0.71	3.10	3.05	2.74	3.07	1.14	5.61	7.48	0.74	3.38	4.88	09/01/1996
Montana State University	-0.41	-0.17	0.01	1.07	1.40	1.20	1.05	0.30	1.30	2.87	1.87	1.39	1.87	08/01/2004
Montana Tech-UM Agency Funds	-0.08	0.06	0.19	0.98	1.31	1.10	0.88	0.20	1.01	2.56	1.91	1.22	1.69	03/01/2003
MT BOI - Clark Fork Site	-2.46	-0.86	1.05	3.49	3.34	3.01	3.24	1.44	6.65	8.00	0.67	3.64	4.04	11/01/2008
MT BOI UOFM Other	-0.73	-0.05	0.64	2.16	2.20	1.99	1.95	0.73	3.47	4.54	1.42	2.15	2.83	08/01/2002
MUS Group Insurance	-0.43	-0.18	0.12	1.27	1.54	1.38	1.32	0.26	1.70	3.39	1.96	1.09	1.30	10/01/2011
MUS Workers Compensation	-0.64	-0.15	0.40	1.77	1.95	N/A	N/A	0.46	2.55	4.43	1.62	1.80	1.74	04/01/2016

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Trust Accounts

As of March 31, 2022

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	2018	2017	Since Incep.	Inception Date
Older Montanans Trust	-2.53	-0.91	1.04	3.74	3.55	3.19	3.56	1.41	7.19	8.62	0.49	3.87	4.49	08/01/2007
Permanent Coal Trust Excl Crp	-1.51	-0.13	1.51	3.38	3.29	3.08	3.55	1.82	5.57	6.81	1.28	3.49	5.49	12/01/1993
PERS Defined Cont Disability	-5.15	-1.36	4.13	10.60	9.16	N/A	N/A	13.16	14.06	20.77	-4.88	14.57	8.08	09/01/2015
Potter Trust Fund	-2.43	-0.84	1.06	3.61	3.46	N/A	N/A	1.41	6.78	8.47	0.51	3.87	3.14	06/01/2016
Resource Indemnity Trust	-2.62	-0.94	1.09	3.80	3.61	3.26	3.72	1.48	7.23	8.88	0.44	4.01	5.85	12/01/1993
School Facilities Fund	-2.62	-1.01	0.92	3.52	N/A	N/A	N/A	1.39	6.97	7.88	-0.13	N/A	3.09	01/01/2018
Smelter Hill Up Restorative	-2.24	-0.78	0.93	2.73	2.62	2.21	2.08	1.29	5.62	5.64	1.57	1.85	2.27	11/01/2008
State Fund Insurance	-3.55	-2.09	-0.08	4.19	4.03	3.68	4.01	3.04	7.62	9.65	0.38	5.05	5.41	12/01/1993
Streamside Tailings Operable Unit	-2.30	-0.86	0.85	3.42	3.28	2.96	3.37	1.27	6.47	7.92	0.57	3.69	5.07	02/01/1999
Subsequent Injury Fund	0.05	0.11	0.14	0.85	1.21	1.01	0.75	0.13	0.73	2.28	1.98	1.11	2.86	12/01/1993
Tobacco Trust Fund	-2.60	-0.92	1.04	3.72	3.55	3.21	3.67	1.51	7.10	8.67	0.46	3.96	5.32	01/01/2001
Treasurers	-0.09	-0.06	-0.03	0.76	1.15	0.97	0.75	0.10	0.63	2.28	1.97	1.07	2.70	12/01/1993
Treasure State Endowment	-2.59	-0.92	1.08	3.77	3.59	3.24	3.69	1.47	7.15	8.81	0.46	4.00	5.72	12/01/1993
Treasure State Reg. Water System	-2.59	-0.92	1.08	3.77	3.58	3.23	3.68	1.47	7.15	8.80	0.45	4.00	5.47	06/01/2000
Trust and Legacy Account	-2.62	-0.94	1.08	3.77	3.59	3.24	3.70	1.47	7.19	8.84	0.43	4.00	6.41	07/01/1991
UCFRB Assess/Litig Cost Rec	-2.56	-0.90	1.09	3.58	3.43	3.10	3.51	1.53	6.68	8.50	0.49	3.77	5.39	07/01/1999
UCFRB Restoration Fund	-2.53	-0.94	0.97	3.63	3.48	3.09	3.49	1.36	6.90	8.52	0.67	3.73	5.31	06/01/1999
Upper Blackfoot Response	-0.15	0.12	0.37	1.51	1.77	1.60	1.49	0.32	1.55	4.24	1.49	1.90	1.51	09/01/2010
Weed Control Trust	-2.62	-0.94	1.09	3.80	3.61	3.26	3.71	1.48	7.23	8.88	0.44	4.01	5.06	12/01/1993
Wildlife Habitat Trust	-2.49	-0.92	0.92	3.59	3.44	3.10	3.52	1.38	6.75	8.54	0.51	3.78	5.18	12/01/1993
Yellowstone Pipeline Cleanup Fund	-1.30	-0.46	0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.20	04/01/2021
Zortman/Landusky LT H2O	0.05	0.11	0.14	0.85	1.20	1.07	1.44	0.13	0.73	2.28	1.98	1.01	5.93	09/01/1999
Z/L Long Term H2O Trust Fund	0.05	0.11	0.14	0.85	1.20	1.11	1.35	0.13	0.73	2.28	1.98	1.08	3.85	09/01/2005

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Performance Notes

- All gross and net performance data is provided by State Street Analytics (SSA). Reported gross returns for the retirement plans prior to 07/01/2002 are net of all fees.
- Gross performance for the retirement plans is calculated with fee accruals provided by Montana's Accounting department.
- Gross of fees performance is not available (N/A) for the following funds: SPDR S&P 500 ETF (SPY), Domestic Equity Pool STIF, iShares:Core S&P Md-Cp (IJH), iShares:Russ 2000 ETF (IWM), iShares:MSCI EAFE ETF (EFA), and International Equity Pool STIF. The current annual expense ratios are as listed below.

Index Notes

- Retirement plan custom benchmarks are provided by State Street Bank and are calculated daily using actual allocations.
- The CAPP Custom Benchmark consists of the portfolio weighted average of the primary benchmark for each CAPP asset class.
- The Short Term Custom Benchmark consists of 100% ICE 1 Mo LIBOR Index (USD) through 4/30/2018, and 100% Federal Reserve US Treasury 1 Mo Constant Maturity Index thereafter.
- The Domestic Equity Custom Index consists of 100% S&P 1500 Comp Index through 04/30/2017 and 100% MSCI USA IM Index (USD) (Gross) thereafter.
- The International Equity Custom Index consists of 100% MSCI EAFE Index (USD) (Net) through 10/31/2006, 100% MSCI ACW Ex US Index (USD) (Net) through 06/30/2007, 92.5% MSCI ACW Ex US Index (USD) (Net) and 7.5% MSCI ACW Ex US SC IM Index (USD) (Net) through 02/28/2014, and 100% MSCI ACW Ex-US IM Index thereafter.
- The Real Estate Custom Index consists of 100% NCREIF ODCE Index (AWA) (Net) (1 Qtr Lag) through 03/31/2017, 100% MSCI US REIT Index (USD) (Gross) through 06/30/2020, and 100% NCREIF ODCE (AWA) (1 Qtr Lag) Index thereafter.
- The Private Investments Custom Index consists of 100% S&P 1500 Comp Index+4% (1 Qtr Lag) through 03/31/2017, 100% MSCI US Small Cap Index (USD) (Gross) through 12/31/2020, and the portfolio weighted MSCI US SC / S&P LSTA US Leverage Loan 100 Index for PE / PC thereafter.
- The Lazard Custom Index consists of 100% MSCI ACW Ex US Value Index (USD) (Net) through 6/30/2018 and 100% MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Templeton Custom Index consists of 100% MSCI ACW Ex US Small Cap Value Index (USD) (Net) through 5/31/2018, and 100% MSCI ACW Ex US Small Cap Index (USD) (Net) thereafter.
- The Reams Custom Index consists of 100% Bloomberg US Unv Bond Index through 03/31/2017, 100% Bloomberg US Agg Bond Index through 12/31/2019, and 100% Bloomberg US Unv Bond Index thereafter.
- The Cohen & Steers Custom Index consists of 60% ICE BofAML US IG Institutional Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index.
- The Payden & Rygel Custom Index consists of 70% JP Morgan EMBI Global Diversified Index, 30% JP Morgan GBI-EM Global Diversified Index.
- The JPM US Equity Custom Benchmark consists of 100% S&P 500 Index (Cap Weighted) through 06/30/2019 and 100% MSCI US Index (USD) (Gross) thereafter.
- The Real Assets Custom Index consists of 100% MSCI All Country World Commodity Producers Index (USD) (Net) through 12/31/2020 and 33.33% MSCI All Country World Commodity Producers Index (USD) (Net), 33.33% MSCI All Country World Infrastructure Index, 33.33% Bloomberg Barclays Global Inflation Linked US TIPS Index thereafter.
- The Core Fixed Income Custom Index consists of 100% Bloomberg US Agg Bond Index through 03/31/2017, the portfolio weighted average of Broad Fixed Income - PAC Custom Blend, Bloomberg US Corp Inv Grade Index, Bloomberg US MBS Index, Bloomberg US Int TIPS Index, Bloomberg US Trsy Int Trm Index through 11/30/2019, and 100% Bloomberg US Agg Bond Index thereafter.
- The plan sponsor peer group was updated from All Public Plans >\$3B Total Fund Median to All Public Plans >\$5B Total Fund Median.
- As of 07/01/2021, the Trust Fund Custom Index Benchmark is the portfolio weighted averaged of the primary benchmark, consisting of NCREIF ODCE Index (1Q lag), Bloomberg US High Yield - 2% Issuer Cap Index, and Bloomberg US Aggregate Bond Index.

Trust Accounts Comments

- Barker Hughesville St Response, Libby Asbestos Site State Cost, Flying J CECRA Facilities Fund, and Luttrell Pit - Operations and Maintenance were added in 05/2020.
- The Belt Water Treatment Plant Fund was added in 03/2018.
- The School Facilities Fund was added in 01/2018.
- The Potter Trust Fund and the Harold Hamm Endowment were added in 06/2016.
- MUS Workers Compensation was added in 04/2016.
- The Invasive Species Trust Fund was added in 10/2020.
- The East Helena Greenway Trail Maintenance Fund was added in 03/2021.
- The Yellowstone Pipeline Cleanup Fund was added in 04/2021.

Manager Transition Comments

- Neuberger Berman High Yield (SA) and TFIP Private Real Estate were funded in the Trust Fund Investment Pool during Q1 2020.
- Post High Yield Plus (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were liquidated during Q3 2019.
- Oaktree US High Yield Fixed Income (SA) and Shenkman High Yield Fixed Income (SA) were funded in the Trust Fund Investment Pool during Q3 2019.

- Artisan Partners (SA), Iridian Asset Management (SA), Congress Mid Cap Growth (SA), TimeSquare Capital Management (SA), and Alliance Bernstein (SA) were liquidated in Q2 2019.
- BlackRock MSCI US Equity Index (CF) was transitioned into a separately managed account during Q1 2019.

Manager Transition Comments (cont.)

- Effective 05/2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.
- iShares S&P SmallCap 600 Index ETF (IJR) was liquidated in 01/2016.
- SPDR S&P 500 ETF (SPY) was initially funded in 09/2015, was then liquidated in 12/2015, and was re-funded in 10/2016.
- iShares:MSCI Em Mkts (EEM) was funded in 12/2016.
- SPDR S&P 500 ETF (SPY) was liquidated in 01/2017.
- DFA Emg Mkts Sm Cap;I (DEMSX) was funded in 02/2017.
- Wells Capital Management (SA), Domestic Equity Pool SPIF, and International Equity Pool SPIF were liquidated in 10/2016. Wells Capital Management (SA) residual assets from liquidation were distributed in 03/2017.
- Nicholas Investment Partners was liquidated in 07/2016. Residual assets from liquidation were distributed in 03/2017.
- BlackRock Equity Index Fund A (CF) and BlackRock Mid Cap Equity Index A (CF) were liquidated in 05/2017.
- BlackRock MSCI US Equity Index (CF), BlackRock MSCI US Sm Cap Equity Index (CF), and iShares:Core S&P Md-Cp (IJH) were funded in 06/2017.
- SPDR S&P 500 ETF (SPY) and iShares:MSCI EAFE ETF (EFA) were re-funded in 06/2017.
- INTECH Enhanced Plus was liquidated in 06/2017.
- Residual assets from the liquidation of AllianceBernstein Int'l Value (SA), Martin Currie (SA), Hansberger Global Investors (SA), and Aberdeen Total Return Bond Strategy (SA) were distributed in 06/2017.
- Effective 07/2016, the Metropolitan West Capital Management legal entity merged into the Wells Capital Management Incorporated legal entity. The Metropolitan West Capital Mgmt (SA) has been updated to Wells Capital Management (SA) to reflect the change.
- Analytic Investors 130/30 (SA) was liquidated in 09/2017.
- Oaktree US High Yield (SA) and Shenkman High Yield Fixed Income (SA) were funded in 12/2017.
- Congress Mid Cap Growth (SA) was funded in 02/2018.
- Jacobs Levy 130/30 Large Cap (SA) was funded in 03/2018.
- iShares:Russ 2000 ETF (IWM) was funded in 04/2018.
- Voya Investment Management (SA) was liquidated in 07/2018.
- Northern Trust MSCI US Equity Index (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were funded during Q4 2018.
- Cohen & Steers Preferred Securities (SA) was funded in 10/2020.
- Payden & Rygel EMD (SA) was funded in 12/2020.
- DFA US Sm Cap Tr (CF) was liquidated in 11/2021.
- Jacobs Levy 130/30 Large Cap (SA) was liquidated in 11/2021.
- J.P. Morgan 130/30 (SA) was liquidated in 11/2021.
- T. Rowe U.S. Structured Research (SA) was liquidated in 11/2021.
- Vaguhan Nelson Management (SA) was liquidated in 11/2021.
- iShares:Core S&P Tot USM (ITOT) was funded in 11/2021.
- iShares:Core S&P 500 (IVV) was funded in 11/2021.
- SPDR S&P 500 ETF (SPY) was liquidated in 12/2021.
- iShares:Core MSCI EmMkts (IEMG) was funded in 12/2021.
- iShares:MSCI Em Mkts (EEM) was liquidated in 01/2022.
- DFA Intl Sm Co;I (DFISX) was liquidated in 02/2022.
- DFA Emg Mkts Sm Cap;I (DEMSX) was liquidated in 02/2022.

Miscellaneous Comments

- Fiscal year ends on 06/30.
- During Q4 2019 Diversifying Strategies investments were liquidated and Investment Grade Credit, US Treasury & Agency, and TIPS were consolidated into the Core Fixed Income composite.
- Non-Core Fixed Income currently consists of High Yield and EMD.
- Private Investments currently consist of Private Equity, Private Credit, Venture Capital, and Passive ETFs.
- During Q1 2021 the Natural Resources PAC was renamed to the Real Assets PAC.

**Montana Board of Investments
Fee Schedule**

As of March 31, 2022

	Fee Schedule	Market Value As of 03/31/2022 (\$)
iShares:Core S&P Tot USM (ITOT)	0.03 % of Assets	278,693,321
iShares:Core S&P 500 (IVV)	0.03 % of Assets	147,063,614
iShares:Core S&P Md-Cp (IJH)	0.05 % of Assets	19,496,243
iShares:Russ 2000 ETF (IWM)	0.19 % of Assets	86,470,603
iShares:MSCI EAFE ETF (EFA)	0.32 % of Assets	152,646,400
iShares:Core MSCI EmMkts (IEMG)	0.09 % of Assets	77,972,369

ETF fees are sourced from Morningstar and/or the investment manager. Mutual fund fees are provided by staff. During 01/2022, iShares:MSCI Em Mkts (EEM) was liquidated. During 02/2022, DFA Intl Sm Co;I (DFISX), and DFA Emg Mkts Sm Cap;I (DEMSX) were liquidated.



PORTLAND

BOISE

CHICAGO

NEW YORK

Disclaimer of Warranties and Limitation of Liability - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.



Investment Update

Board Meeting: May 25-26, 2022

Information as of: March 31, 2022

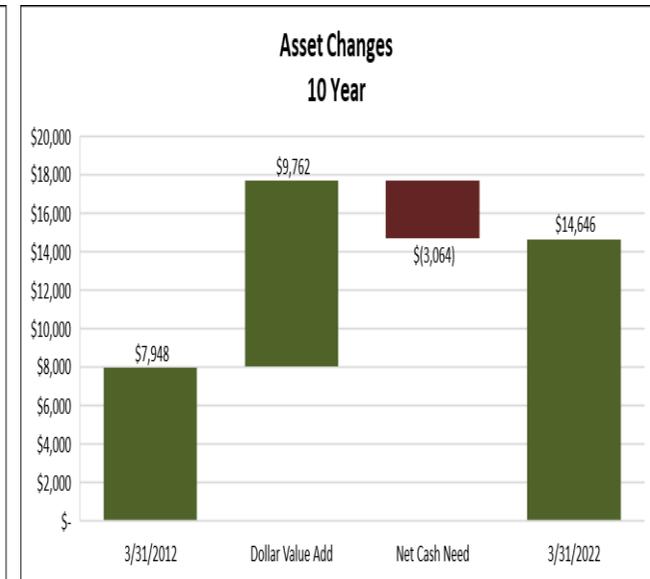
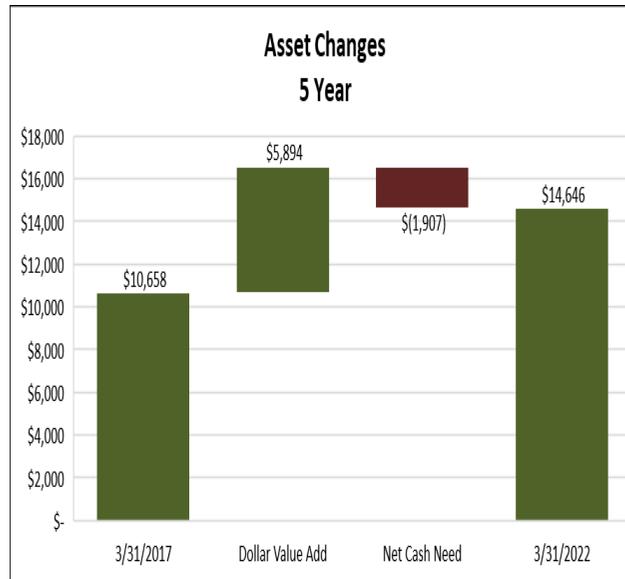
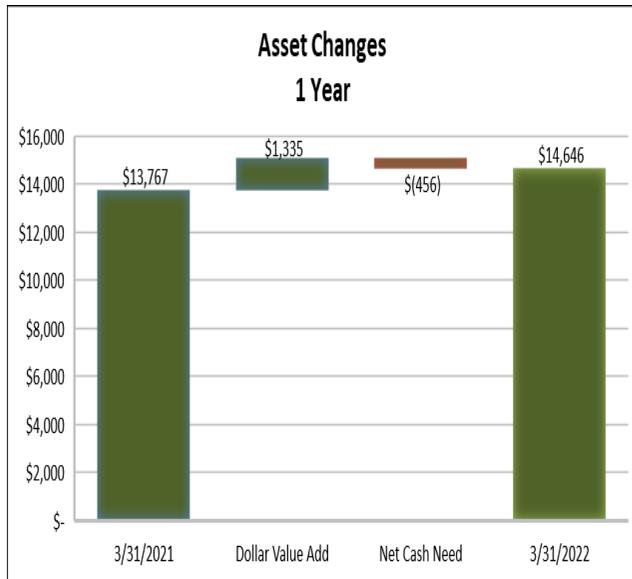
THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

CIO Update	4
Macro Attribution	16
Private Investments	19
Real Estate	22
Real Assets	25
Core Fixed Income	28
Non-Core Fixed Income	32
Domestic Equity	35
International Equity	39
STIP, State Fund & Trust Fund	
STIP	43
State Fund	45
Trust Funds Investment Pool	47
Appendix	50

CIO Update

Retirement Plans Net Performance



* Dollar values are in \$1,000,000

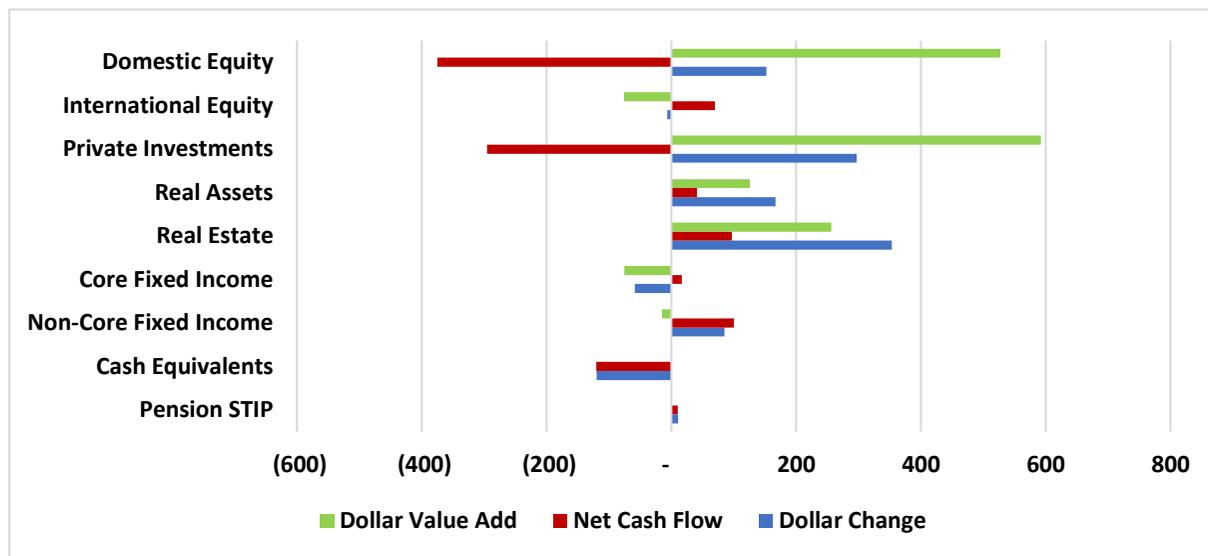
- Dollar Value Added – The total dollar return of the portfolio including income and capital gains.
- Net Cash Need - The total dollar amount distributed from portfolio assets to meet the deficit of contributions minus distributions.
 - A red bar indicates an aggregate net outflow by all plans even though some plans may have experienced net inflows.
 - Though aggregates are shown, each plan is independent and not able to rely on other plans to meet their respective liabilities.

CIO Update

Retirement Plans Net Performance

	3/31/2021 (NAV)	3/31/2022 (NAV)	Dollar Change	Net Cash Flow	Dollar Value Add
Domestic Equity	4,326.1	4,478.1	152.0	(375.2)	527.2
International Equity	2,538.8	2,532.3	(6.5)	69.7	(76.2)
Private Investments	1,893.5	2,190.5	297.0	(295.3)	592.3
Real Assets	575.6	742.2	166.6	40.9	125.7
Real Estate	1,243.6	1,596.6	353.0	97.0	256.0
Core Fixed Income	2,051.6	1,992.8	(58.8)	16.5	(75.3)
Non-Core Fixed Income	795.0	879.9	84.9	100.2	(15.2)
Cash Equivalents	203.3	83.1	(120.1)	(120.3)	0.2
Pension STIP	139.5	150.0	10.6	10.4	0.2
Grand Total	13,766.9	14,645.6	878.7	(456.1)	1,334.9

* Dollar values are in \$1,000,000



March 31, 2022

CIO Update

Retirement Plans Net Performance

	3/31/2021 (NAV)	3/31/2022 (NAV)	Dollar Change	Net Cash Flows	Dollar Value Added
Public Employees Retirement	6,813.1	7,217.9	404.8	(255.2)	659.9
Teachers Retirement	4,814.7	5,092.9	278.1	(189.1)	467.2
Firefighters Retirement	559.5	617.1	57.6	3.3	54.3
Police Officers Retirement	522.2	569.4	47.2	(3.3)	50.5
Sheriffs Retirement	455.8	495.7	39.9	(4.4)	44.3
Game Wardens Retirement	255.8	280.0	24.3	(0.6)	24.9
Highway Patrol Retirement	175.5	189.6	14.1	(2.9)	17.1
Judges Retirement	125.4	134.5	9.1	(3.1)	12.2
Vol Firefighters Retirement	44.9	48.5	3.6	(0.8)	4.4
Grand Total	13,766.9	14,645.6	878.7	(456.1)	1,334.9

* Dollar values are in \$1,000,000

CIO Update

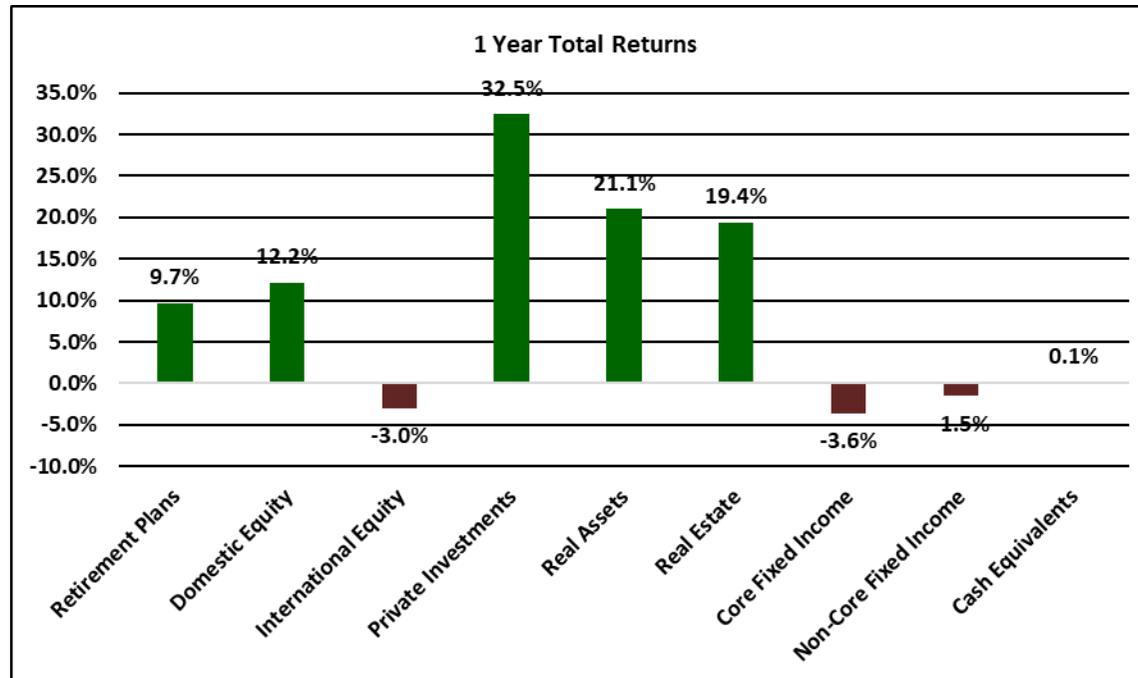
Retirement Plans Net Performance

Name	1 Year	3 Year	5 Year	10 Year	20 Year	Since Inception
PUBLIC EMPLOYEES RETIREMENT	9.73%	11.60%	9.87%	9.27%	7.34%	8.04%
TEACHERS RETIREMENT	9.71%	11.60%	9.86%	9.27%	7.33%	8.05%
FIREFIGHTERS RETIREMENT	9.69%	11.59%	9.87%	9.27%	7.32%	7.91%
POLICE OFFICERS RETIREMENT	9.69%	11.59%	9.87%	9.27%	7.31%	7.92%
SHERIFFS RETIREMENT	9.73%	11.60%	9.87%	9.26%	7.33%	7.94%
GAME WARDENS RETIREMENT	9.73%	11.59%	9.87%	9.26%	7.32%	7.95%
HIGHWAY PATROL RETIREMENT	9.73%	11.60%	9.88%	9.27%	7.34%	7.94%
JUDGES RETIREMENT	9.73%	11.60%	9.88%	9.27%	7.34%	7.95%
VOL FIREFIGHTERS RETIREMENT	9.72%	11.60%	9.88%	9.26%	7.51%	7.76%

Inception 7/1/1994

CIO Update

Retirement Plans Asset Class Net Performance



CIO Update

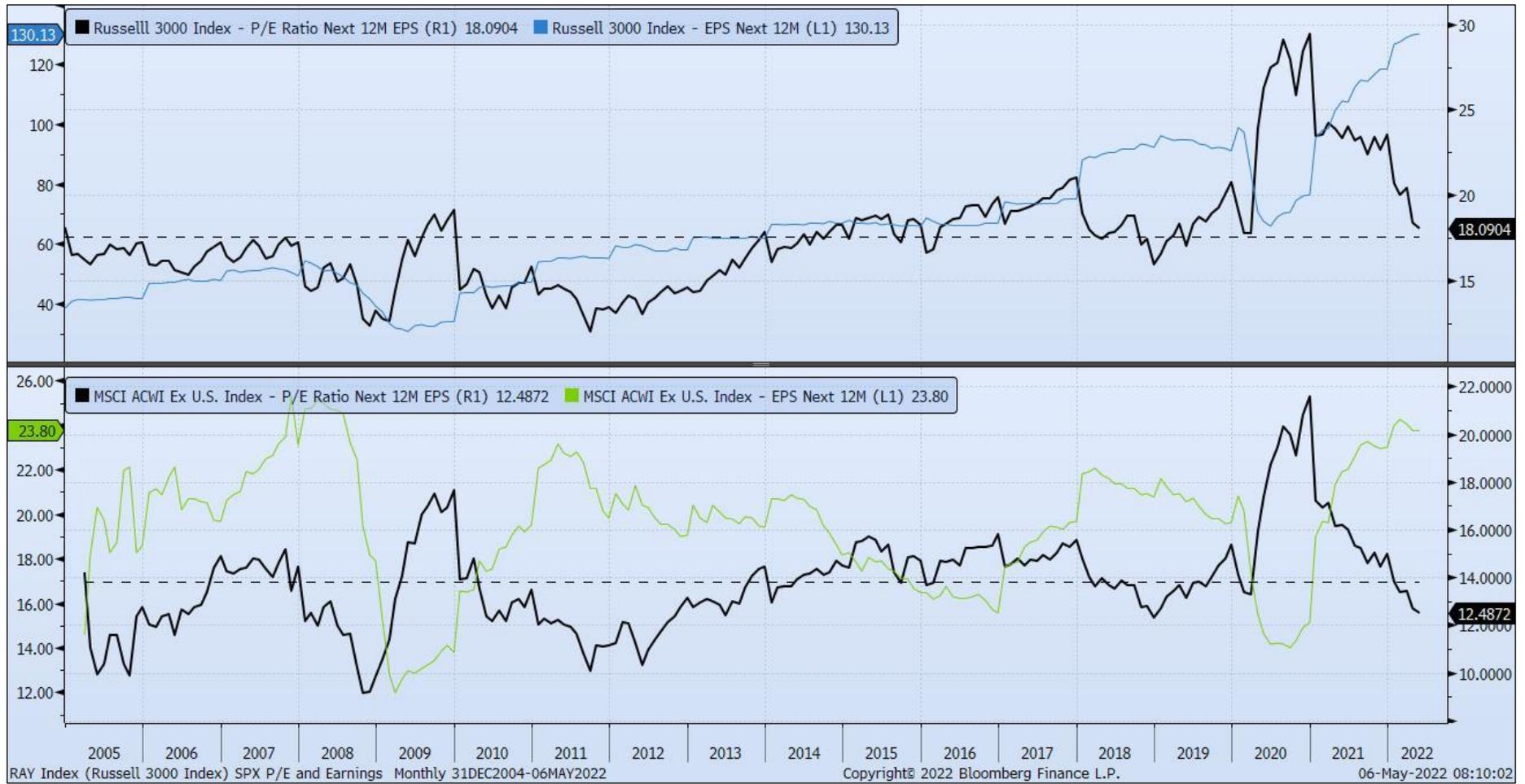
Retirement Plans Asset Class Allocation

	3/31/2022 (NAV)	% of Total	Mid Point	Deviation from Mid Point	Board Approved Ranges
Domestic Equity	\$4,478.15	30.6%	30.0%	0.6%	24%-36%
International Equity	\$2,532.32	17.3%	17.0%	0.3%	12%-22%
Private Investments	\$2,190.48	15.0%	15.0%	0.0%	11%-19%
Real Assets	\$742.18	5.1%	5.0%	0.1%	2%-8%
Real Estate	\$1,596.62	10.9%	10.0%	0.9%	5%-13%
Core Fixed Income	\$1,992.79	13.6%	14.0%	-0.4%	10%-20%
Non-Core Fixed Income	\$879.93	6.0%	7.0%	-1.0%	4%-8%
Cash Equivalents + Pension STIP	\$233.17	1.6%	2.0%	-0.4%	0%-6%
	\$14,645.64	100.0%	100.0%		

CIO Update

Economic Environment

Price Earnings ratio is near the long-term average. Company earnings remain strong.



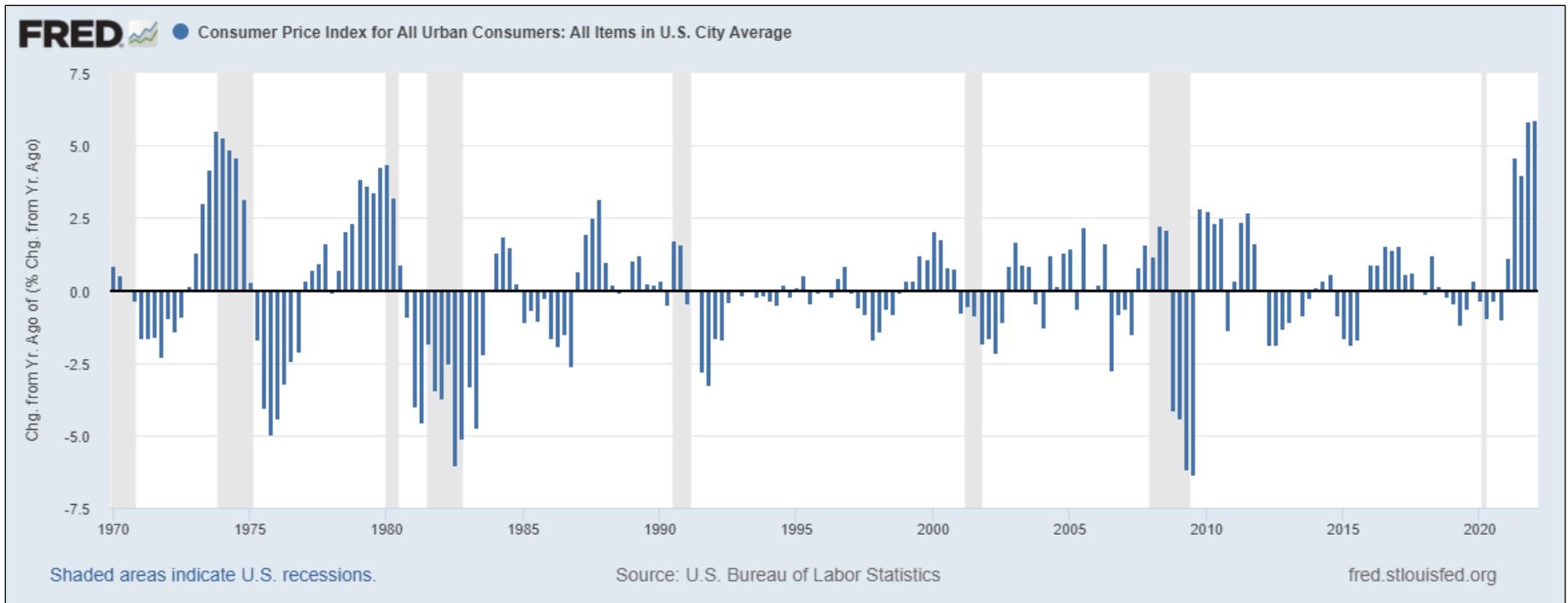
Source: Bloomberg

March 31, 2021

CIO Update

Economic Environment

Inflation has been running well above long-term Federal Reserve expectations

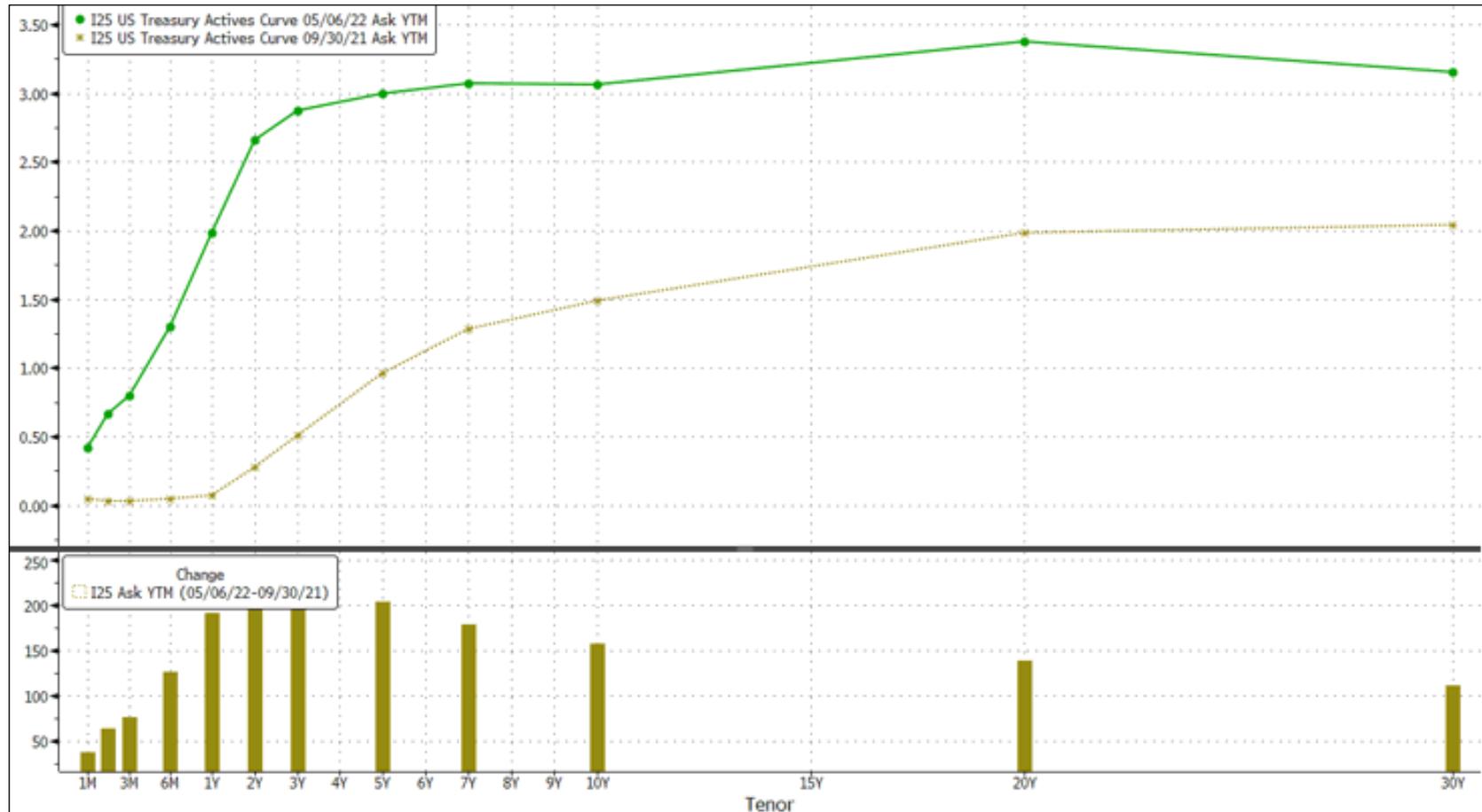


Source: Federal Reserve Economic Data (FRED)

CIO Update

Economic Environment

Interest rates have jumped, and the market is estimating 8 hikes by year-end



Source: Bloomberg

CIO Update

Economic Environment

Average hourly earnings are increasing at a strong rate but are losing ground to inflation



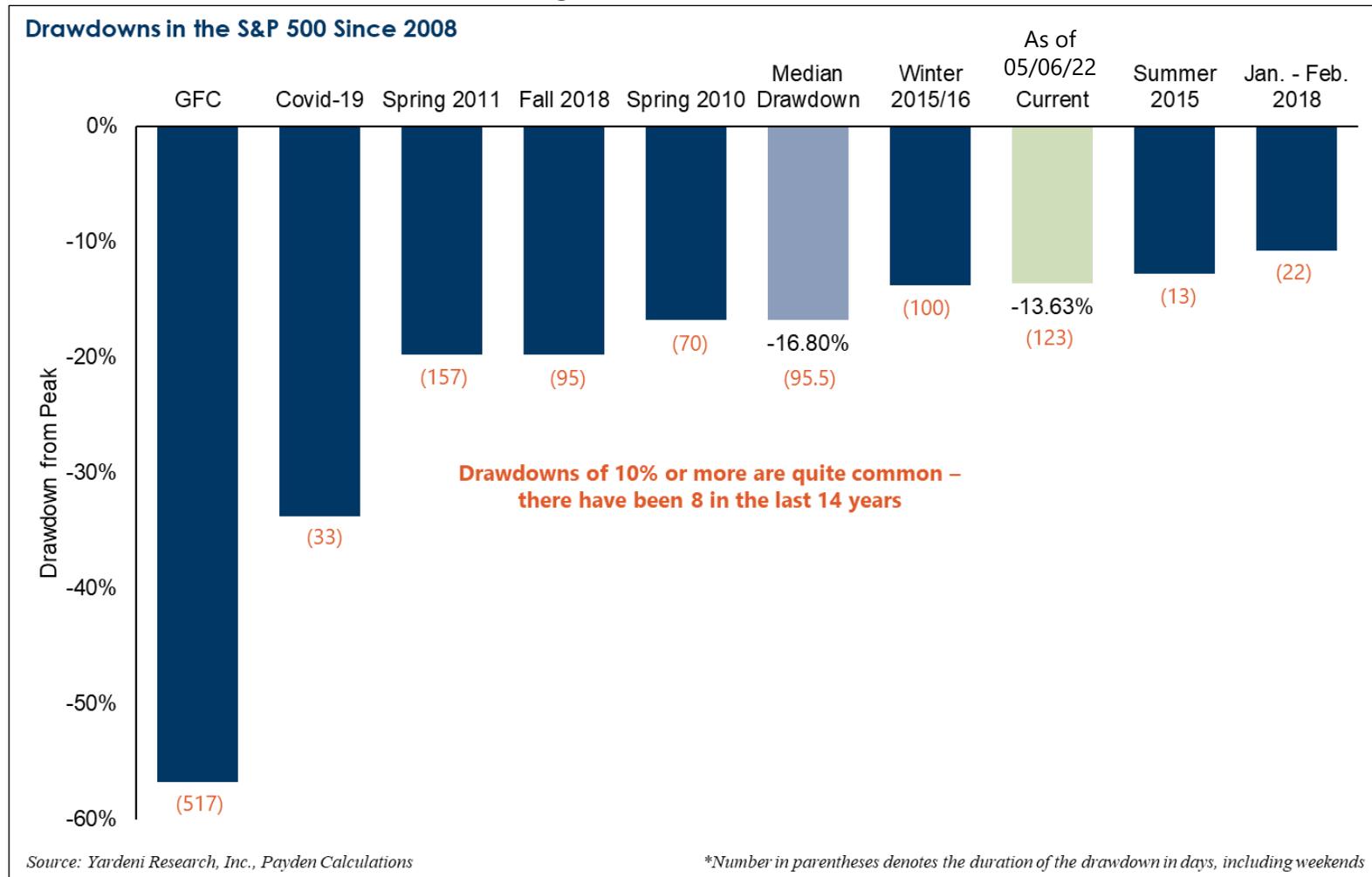
Source: Bloomberg

March 31, 2021

CIO Update

Economic Environment

Significant drawdowns in the market are not unusual and are not cause to shift our long-term asset allocation



CIO Update

- Investment challenges in the current environment
 - Uncertainty around global growth, inflation, and the path of monetary policy
 - Increased volatility
- Continual evaluation of asset class portfolios. Maintain pacing for illiquid asset classes, regular rebalance of public assets
- In person meetings / due diligence with investment managers has been picking up
- Added an Investment Analyst in Operations and hired two student interns
- Process improvements/projects
 - On boarding Solovis/Solovis Risk systems will be a multi-quarter project. Improved management and reporting of the portfolios

Macro Attribution

Key Takeaways – 1 Year

Strategic Asset Allocation - *What was the performance of our midpoint weighted benchmark portfolio?*

- Every benchmark with the exception of International Equity, Core Fixed Income, and Non-Core Fixed Income added positive contributions to the pension policy-neutral 6.0% return.
- The Domestic Equities asset class benchmark, the MSCI USA IMI, was the largest positive contributor.

Tactical Asset Allocation - *Did the actual asset class weights add additional return over the midpoint weighted benchmark portfolio?*

- On average, we were slightly overweight Domestic Equities, International Equities, and Real Estate while being slightly underweight or at the midpoint weight for the remaining asset classes.
- About \$463M of equity asset classes were sold and \$7M of fixed income/cash asset classes were bought during the year with the difference being the pension net cash need of \$-456M.
- In aggregate, the overweighting/underweighting of the asset classes relative to their benchmarks increased the pension portfolio's return by 9 bs.

Style Selection - *Did the portfolio benchmarks add additional return over their asset class benchmarks?*

- Higher exposure to small cap benchmarks led to Domestic Equity style underperformance of 16 bps.
- Higher exposure to developed growth benchmarks led to International style underperformance of 8 bps.
- The Real Assets portfolio has a significant overweight to commodities. The strong outperformance of the Commodity Producers Index relative to Infrastructure and TIPS was the main contributor to the style outperformance of about 29 bps.
- Our exposures to a CMBS index and REIT index within Real Estate led to a style underperformance of 49bps.
- Exposure to EMD and Preferred benchmarks within Non-Core Fixed Income led to a slight style underperformance of 11 bps.

Manager Selection - *Did the portfolio managers add additional return over their portfolio benchmarks?*

- Since we have been passive within Domestic Equity since November 2021, existing effects will diminish to 0 within the year.
- In International Equity, a growth manager was the primary contributor to the 28 bps of underperformance.
- Within Core Fixed Income, our internal portfolio was the main contributor to the 9 bps of manager selection outperformance.
- Within Non-Core Fixed Income, all 4 managers had modest contributions to the 6 bps of manager selection outperformance.
- Private Investments was by far the main contributor to manager selection outperformance. Much of this can be attributed to the lag in pricing of private investments.
- While Real Assets had manager selection effects of 12 bps, internally the contributions were mixed: Infrastructure was a very strong contributor whereas Timber and Energy had larger negative effects.
- Real Estate selection effects were positive for our LP's, REIT manager, and CMBS manager for an outperformance contribution of 20 bps.

Macro Attribution



Strategic Asset Allocation (SAA) - The return that would have been achieved if we had invested in our asset class benchmarks at the midpoint weights

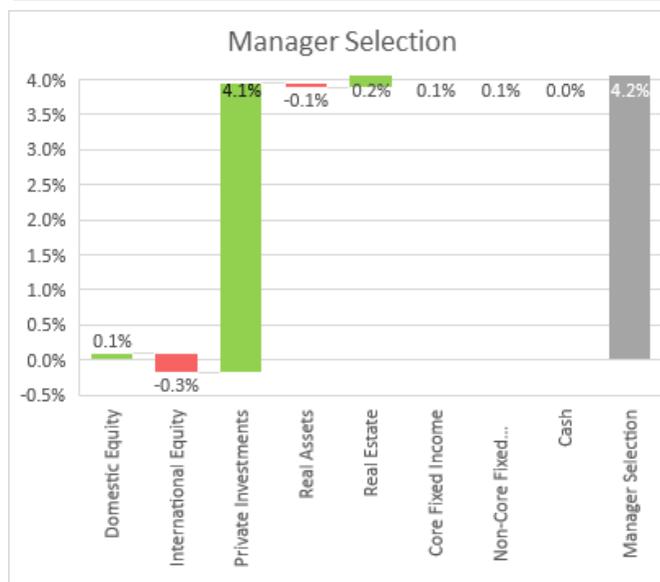
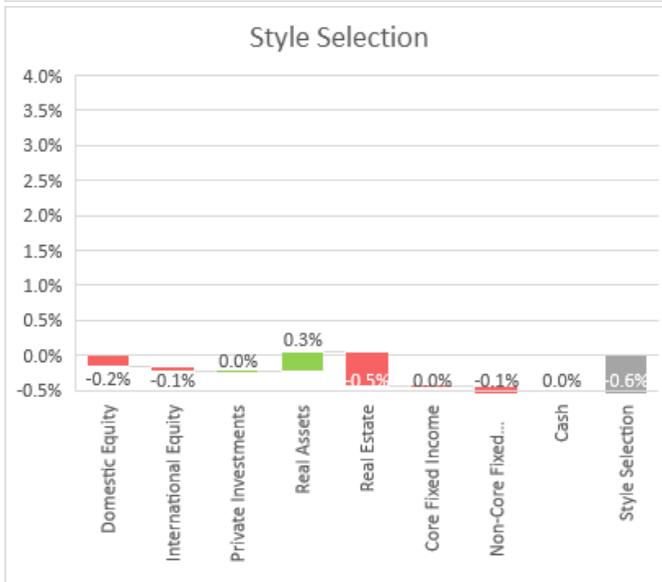
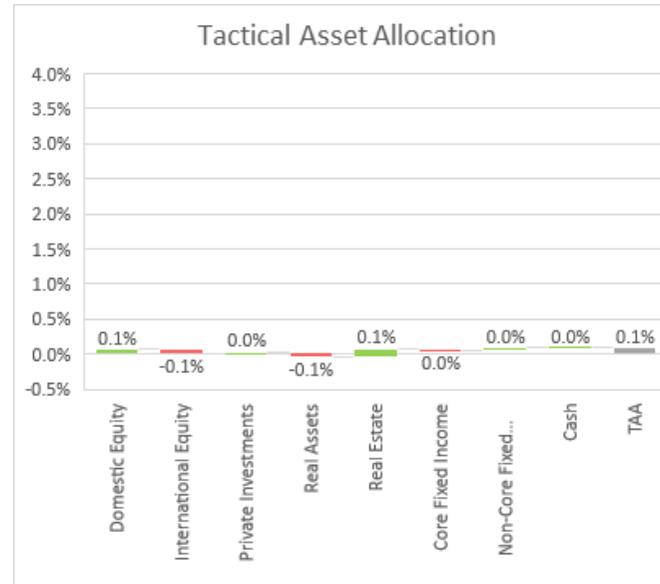
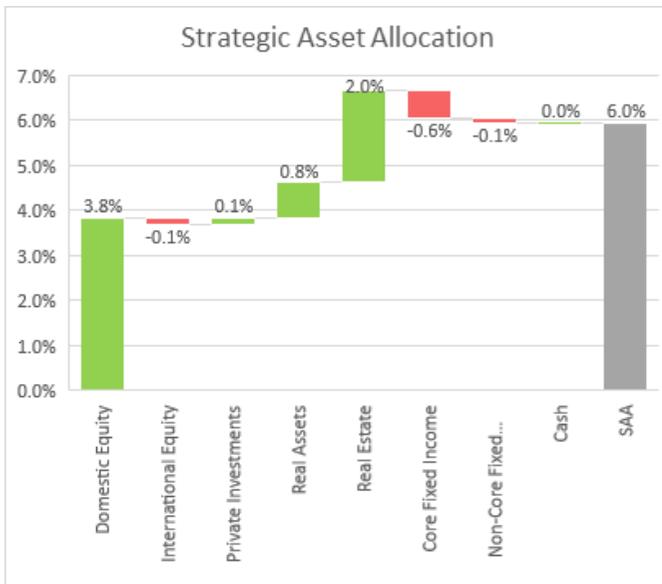
Tactical Asset Allocation (TAA) - The *additional* return earned by investing in the asset class benchmarks at our actual rather than midpoint weights.

Style Selection (SS) - The *additional* return earned by investing in the underlying manager benchmarks rather than the asset class benchmarks.

Manager Selection - The *additional* return earned by investing in the underlying managers rather than the underlying manager benchmarks.

* The valuation lag observed in Private Equity, Real Estate, and Natural Resources are likely to lead to large differences in returns between these asset classes and their benchmarks in short-mid term time periods. The manager selection component is therefore likely to be large for these asset class in the short and medium term.

Macro Attribution



Private Investments Environment

- Private equity deal flow continues its furious pace from 2021. In Q1 2022, 2,166 private equity-backed buyout deals were completed for a combined \$330.8 billion, representing an increase of over 50% and 16% above Q1 2021 by respective value and deal count.
- Intense competition for deals drove elevated valuations for buyouts last year, and 2022 is no different. Purchase price multiples came in at an average of 14.6x EV/EBITDA. For comparison, the rolling 10-year average is 11.8x EV/EBITDA.
- Leverage or debt usage for buyouts came in at 6.3x EBITDA, compared to the 10-year average of 6.0x EBITDA.
- Accelerated capital deployment and portfolio company realizations are allowing investment managers to return to the fundraising market more quickly than expected. The average years between funds is at the lowest level ever seen. Through Q1, private investment firms have closed 98 funds and raised a combined \$64.8 billion.
- Key takeaways – The entire Private Investments ecosystem appears to be firing on all cylinders from deal flow, performance, and fundraising. Valuations, debt usage, access to cheap credit, and dry powder all remain at elevated levels compared to longer term historical levels.

Private Investments Net Performance



Private Investments Pension Asset Class (PAC) Custom Blend:

- From inception to 3/31/2017: S&P 1500 + 4% Qtr Lag
- 4/1/2017 to 12/31/2020: MSCI USA Small Cap Index
- 1/1/2021 to present: The portfolio weighted average of MSCI USA Small Cap Index and S&P LSTA US Leveraged Loan 100 Index
- Inception – 5/1/2002

Private Investments

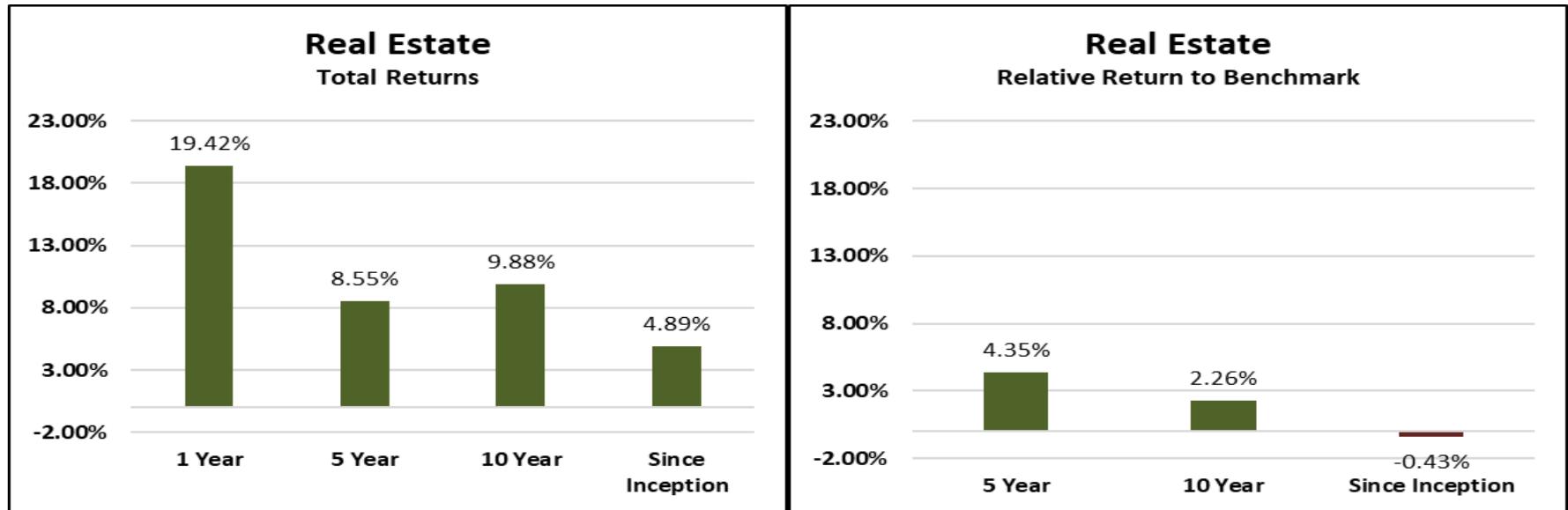
Characteristics and Activity

- Total Market Value of \$2.19 billion as of 3/31/22
- North American-centric at ~70%, ~16% non-US developed, and ~14% emerging markets
- Direct/primary fund exposure focus at ~84% vs. Fund-of-Funds at ~16%
- Primarily focused on existing Private Investments relationships
- Net Cash Flow Profile
 - \$103.62 million for quarter ending 3/31/22
- Three new commitments
 - Sumeru Equity Partners IV - \$60 million
 - Veritas Capital Fund VIII - \$60 million
 - Angeles Equity Partners II - \$60 million

Real Estate Environment

- Fundamentals remain healthy with positive momentum, demand outpacing supply
- Commercial property sales totaled a record \$809B in '21, trend expected to slow in '22
- Debt/lending markets are open, rates are on the rise
- CMBS delinquencies continue their downward trend YTD '22
- The Green Street Commercial Property Price Index increased 0.1% in March. The all-property index has increased 0.2% so far in '22 after gaining 24% in '21
- REITs down in '22, but outperforming the broader market
- Fundraising off to a strong start with \$40B raised through April
- Dry powder remains elevated, standing at approx. \$400B through April
- Summary points – Strong fundamentals, transaction volume expected to slow in '22, rates on the rise with debt markets open, delinquencies down, values stabilizing, REITs off to a slow start, strong fundraising, dry powder remains elevated

Real Estate Net Performance



Real Estate – Pension Asset Class (PAC) Custom Blend:

- From inception to 3/31/2017: NCREIF ODCE 1 Qtr Lag (Net)
- 4/1/2017 to 6/30/2020: MSCI US REIT Index Gross
- 7/1/2020 to present: NCREIF ODCE 1 Qtr Lag (Net)
- Inception – 6/1/2006

Real Estate

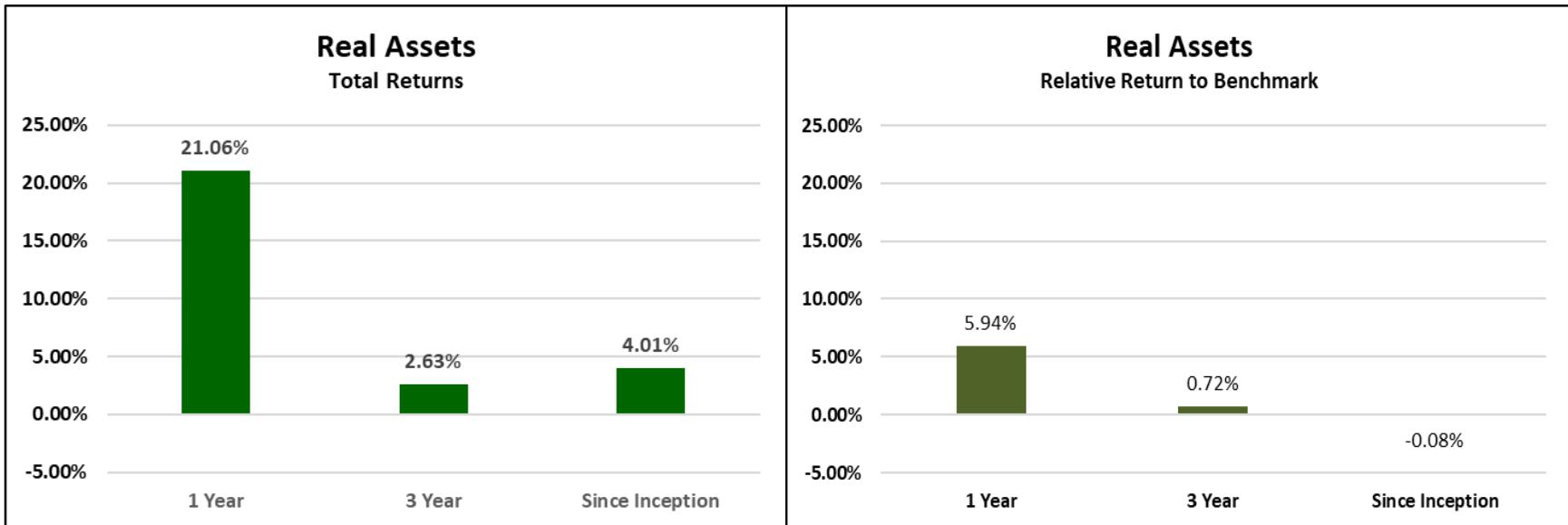
Characteristics and Activity

- Total Net Asset Value of approx. \$1.6B as of 3/31/22
- US-centric, broadly diversified across property types, markets and geographies
- Continued focus on operators with property and market specific expertise
- Looking to establish separate accounts for longer duration holds, cash flow
- Focus on existing, high conviction managers, reducing open-end core real estate exposure
- Cash Flow Profile
 - Negative cash flow of \$4.2M for the quarter ending 3/31/22
- One new investment commitment
 - AG Realty Value Fund XI (US), L.P. - \$50 million
- Total Leverage – 44.8% as of 12/31/21
 - Debt – 16.7%
 - Core/Core-plus – 31.9%
 - Non-Core – 52.8%

Real Assets Environment

- Uncertainty rising with slowing economy, China lockdowns, Russia sanction, prices up
- US production stands at 11.9M barrels per day through April
- Rig counts continue to increase, capex budgets up, but companies continuing to focus on cash flow and debt reduction vs. production growth
- MLPs up 19% through March, strong current yield play, capacity utilization at 92%
- Aggregates volume growth and price growth averaged 6.6% and 3.3% YOY with overall construction spending up 9.9% through 1Q22
- PNW/southern timber prices are high, strong start in '22, lumber remains elevated
- Housing starts in February were at a seasonally adjusted annual rate of 1.769M, up 6.8% above the revised January estimate of 1.657M and 22.3% above February '21
- Fund raising on track to surpass 2021 level with \$91B raised through April
- Real assets dry powder remains high, standing at approx. \$413B through April
- Summary points – Oil outlook uncertain, US production up, MLPs delivering, construction spending healthy, timber/lumber pricing elevated, housing market remains robust, plenty of dry powder in the system

Real Assets Net Performance



Real Assets – Pension Asset Class (PAC) Custom Blend:

- From inception to 12/31/2020: MSCI ACWI Commodity Producers Index
- 1/1/2021 to present: 33.33% MSCI ACWI Commodity Producers Index, 33.33% MSCI ACWI Infrastructure Index, 33.34% Bloomberg Barclays US TIPS Index
- Inception – 4/1/2017

Real Assets

Characteristics and Activity

- Total Net Asset Value of approx. \$742M as of 3/31/22
 - Commodities-Related Portfolio – approx. \$389M as of 3/31/22
 - Infrastructure-Related Portfolio – approx. \$216M as of 3/31/22
 - Inflation-linked Bonds (TIPs) Portfolio – approx. \$137M as of 3/31/22
- Portfolios are primarily North American-centric, international exposure continues to grow with recent infrastructure commitments
- Looking to establish separate accounts for longer duration holds, cash flow
- Exploring other types of strategies to further diversify and gain new exposures
- Cash Flow Profile
 - Positive cash flow of \$15.8M for the quarter ending 3/31/22
- No new investment commitments
- Timber Portfolio Total Leverage – 5.2% as of 12/31/21

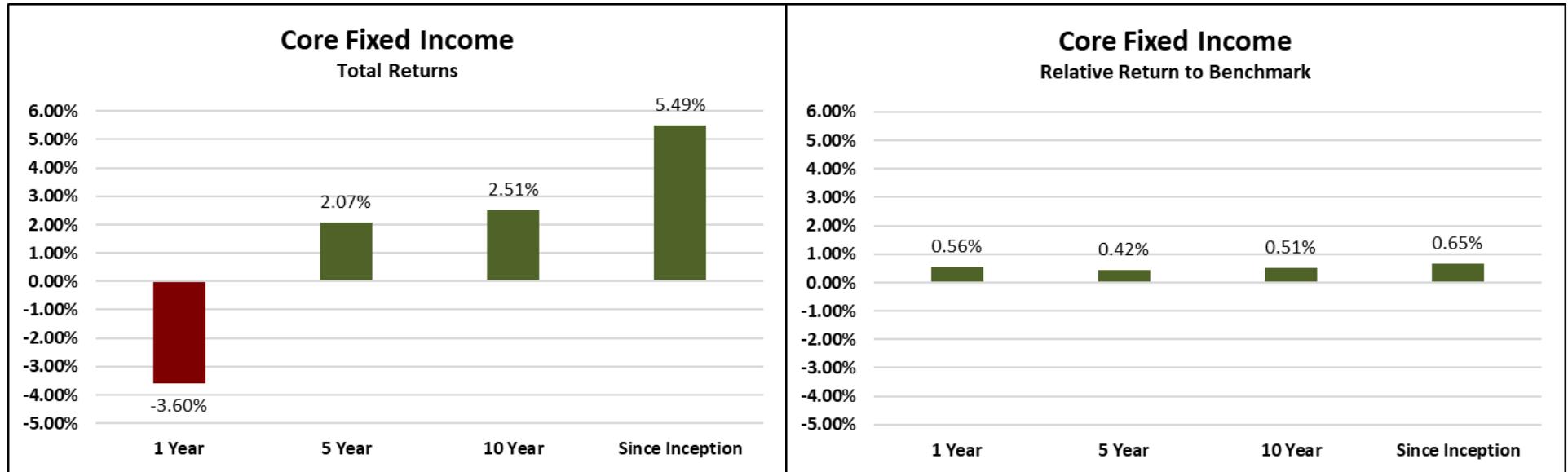
Core Fixed Income Environment

- The U.S. Treasury curve steepened over the last year, predominately in the shorter maturities. The 5-year yield increased 152 bps while the 10-year and 30-year increased by 59 bps and 3 bps, respectively.
- The Federal Reserve increased short-term rates 25 bps after having held the Effective Funds Rate near zero for two years.
- Headline inflation posted a dramatic increase of 8.5% year over year, with significant variability throughout the year. Core inflation was 6.5% year over year.
- Money market yields started to increase from very low levels with Ninety Day CP yields at 86 bps at period end.
- Spreads on corporate bonds saw significant volatility, finishing the year up 25 bps.

Core Fixed Income Environment

- Spreads on mortgage-backed securities (MBS) ended the quarter at 24 bps, up 12 bps from March 31, 2021. MBS spreads ranged from 7 bps to 38 bps during the year.
- The Barclays Aggregate returned -4.16% on the year. The loss was mainly due to higher interest rates along with increased risk spreads.
- Bond market liquidity continued to be strong with robust corporate new issuance. Bid/ask spreads saw increased volatility in February and March, related to market uncertainty around inflation, and the Federal Reserve's reaction to it.

Core Fixed Income Net Performance



Core Fixed Income - Pension Asset Class (PAC) Custom Blend:

- From Inception to 04/01/2017: Bloomberg Barclays U.S. Aggregate Bond Index
- 4/1/2017 to 11/29/2019: Intermediate TIPS, Intermediate US Treasury & Agency, Intermediate Investment Grade Credit, Mortgage Backed, and Diversified Strategies PACs.
- 11/29/2019 to present: Bloomberg Barclays U.S. Aggregate Bond Index
- Inception – 4/1/1995

Core Fixed Income

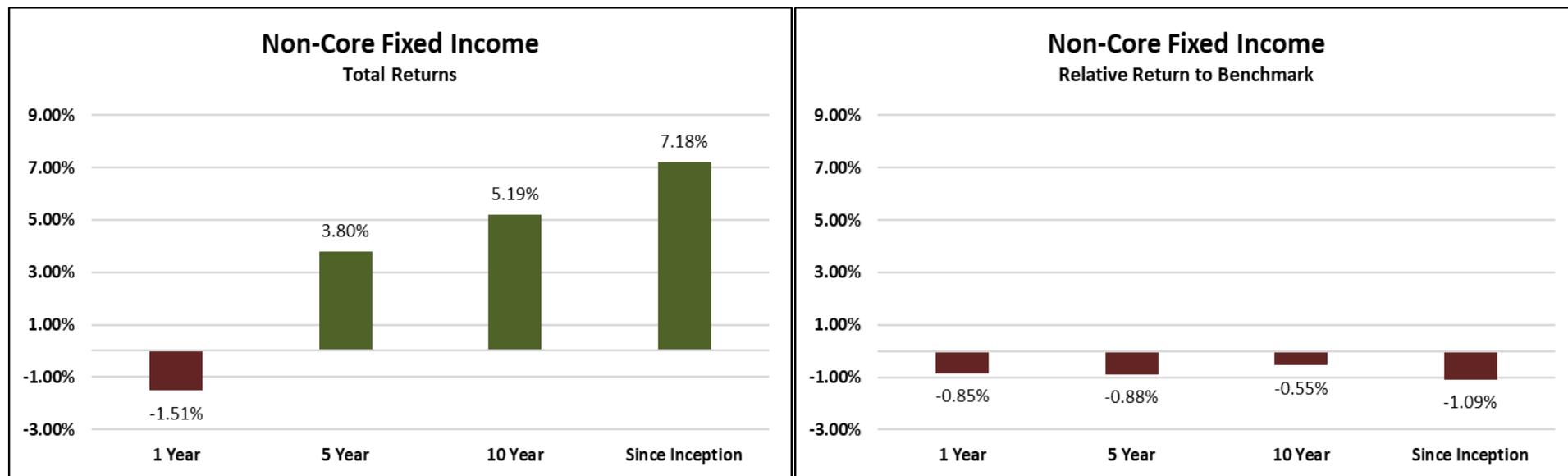
Performance, Characteristics, and Activity

- Negative total return of -3.60% on the year. The internal portfolio outperformed the index by 55 bps. Reams outperformed by 83 bps.
- Reams outperformed due to short duration partially offset by an overweight to credit. The internal portfolio outperformed the index on short duration and underweight to corporates, partially offset by unfavorable curve positions.
- Total market value of approx. \$2.05 billion at quarter end.
- Duration was approx. 91% of the benchmark at quarter end. Significantly underweight the long end of the curve.
- Portfolio was overweight Treasuries/Agencies and underweight spread product at the end of the quarter. The duration of corporate securities was significantly shorter than the index.

Non-Core Fixed Income Environment

- An environment with rising US Treasury yields, persistent and high inflation, expectations of an increasingly aggressive US Fed, and the Russian invasion of Ukraine weighed heavily on fixed income markets
- With rising bond yields, duration (i.e., interest rate sensitivity) was the primary driver of performance. US high yield bonds, despite higher credit risk, outperformed investment grade corporate bonds, largely due to high yield's shorter duration
- Spread volatility increased in the first quarter, but rising yields overwhelmed the impact of moderately higher high yield spreads
- Lower-rated high yield bonds outperformed higher-quality credits due to shorter duration, and preferred securities underperformed the asset class benchmark due to their longer duration
- Emerging market debt was hit particularly hard with the impact from the Russian invasion of Ukraine. Russia was removed from the JP Morgan Emerging Market Debt indices at the end of the quarter

Non-Core Fixed Income Net Performance



Non-Core Fixed Income - Pension Asset Class (PAC) Custom Blend:

- From Inception to present Bloomberg Barclays US High Yield – 2% Issuer Cap
- High Yield Asset Class name changed to Non-Core Fixed Income 11/30/19
- Inception Date: 6/1/2009

Non-Core Fixed Income

Performance, Characteristics, and Activity

- US high yield bonds had one of their worst quarters on record, posting a return of -4.82% for the period
- Each manager outperformed its respective benchmark, but the absolute returns of preferred securities and emerging market debt led to the Non-Core Fixed Income asset class underperforming its benchmark by -0.17%
- There were no changes to the roster of managers in the first quarter nor were there any contributions or withdrawals from managers in the asset class during the period

Domestic Equity Environment

- Volatility increased in the quarter as markets reacted to persistent inflation, expectations of a more aggressive Fed, the Russian invasion of Ukraine, and commodity price shocks. The S&P returned -4.60% for the period
- As US Treasury yields spiked, high-growth, high-P/E stocks fared the worst, and value stocks drastically outperformed growth equities. Large cap stocks outperformed small caps by about 2.5%
- At the end of March, the S&P 500 Index was valued at 19.5x next 12-month earnings estimates, down from its recent peak of almost 22x. The top 10 constituents of the S&P 500 are valued at 30.7x, compared to a long-term average of 19.9x and a current 16.6x P/E for the remaining stocks in the index
- The largest 10 stocks are 30.7% of the S&P 500, which compares to ~27% at the peak of the TMT bubble

Domestic Equity Net Performance



Domestic Equity - Pension Asset Class (PAC) Custom Blend:

- From inception to 4/30/2017: S&P 1500 Super Composite
- 5/1/2017 to present: MSCI USA IMI, Gross
- Inception Date: 5/1/2003

Domestic Equity Performance

- The domestic equities asset class outperformed its benchmark during the quarter by +0.06% and underperformed for the last twelve months by -0.23%
- The overweight to small caps was a modest drag on relative performance in the quarter
- Underperformance by former active managers in 2nd Quarter 2021 accounted for the shortfall vs. the asset class benchmark over the last twelve months
- The asset class has underperformed its benchmark for the 1-year period and has lagged slightly over the 5-year and 10-year periods ended March 31

Domestic Equity

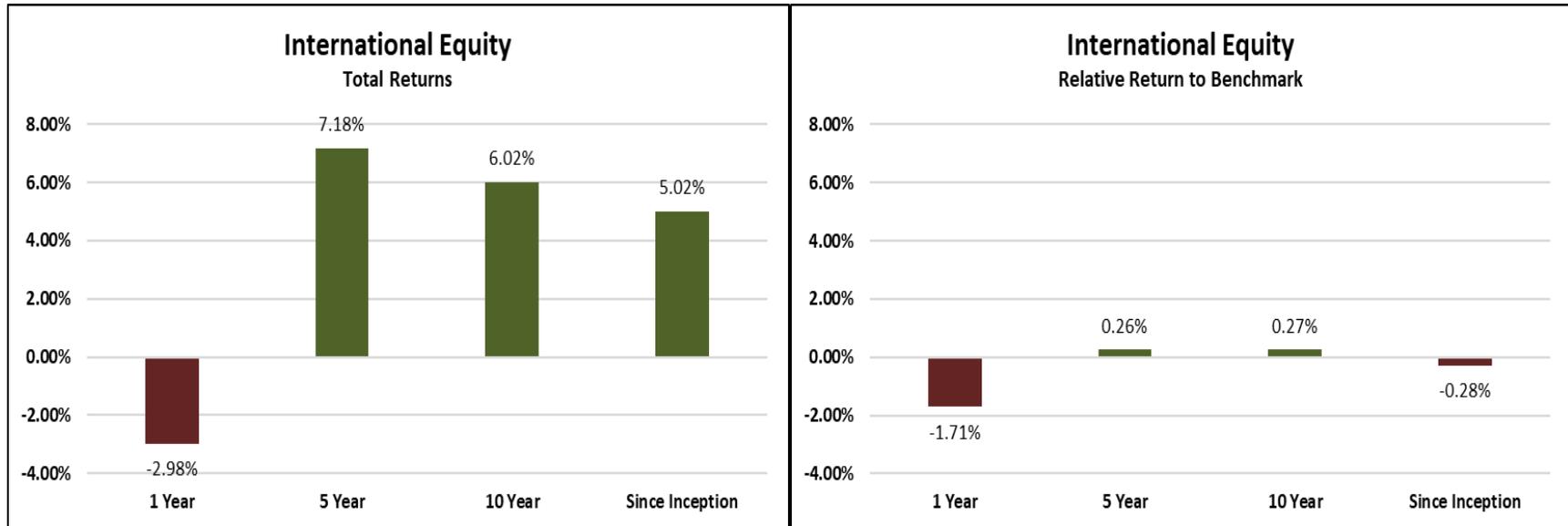
Characteristics and Activity

- The asset class consists entirely of indexed investments as of November 2021
- Small cap stocks are overweight to the benchmark weight
- Cash at the asset class level is minimal per policy
- There were no changes to the roster of managers during the quarter and flows were limited to minor rebalancing activity

International Equity Environment

- International equities posted a -5.60% return for the quarter as rising global interest rates, high inflation, and the Russian invasion of Ukraine created a strong risk-off sentiment. International equities have lagged US stocks for the quarter and for the trailing year
- Developed markets equities outperformed emerging market stocks, with the Russian invasion having a more direct impact on emerging markets. The MSCI World ex-US Index posted a -4.81% return, while emerging market stocks returned -6.97% (MSCI EM)
- At quarter end, the MSCI All Country World ex-US Index was valued at 13.3x estimated next 12-month earnings, roughly inline with its 20-year average, but at close to its largest discount to US stocks in the last 20 years

International Equity Net Performance



International Equity – Pension Asset Class (PAC) Custom Blend:

- From inception to 10/31/2006: MSCI EAFE, Net
- 11/1/2006 to 6/30/2007: MSCI ACWI ex-US, Net
- 7/1/2007 to 2/28/2014: 92.5% ACWI ex-US + 7.5% ACWI ex-US Small Cap
- 3/1/2014 to present: MSCI ACWI ex-US IMI, Net
- Inception Date: 4/1/1997

International Equity Performance

- The international equities asset class underperformed its benchmark during the quarter by -1.20% and underperformed for the last twelve months by -1.71%
- Manager performance was mixed, but one growth manager accounted for an outsized portion of the underperformance in the quarter
- A similar dynamic existed in international equities markets as in the US, with high-growth, high-momentum, high-P/E stocks underperforming. International large cap stocks posted modestly better performance than small caps
- The asset class has underperformed its benchmark for the 1-year period and has outperformed over the 5-year and 10-year periods ended March 31

International Equity

Characteristics and Activity

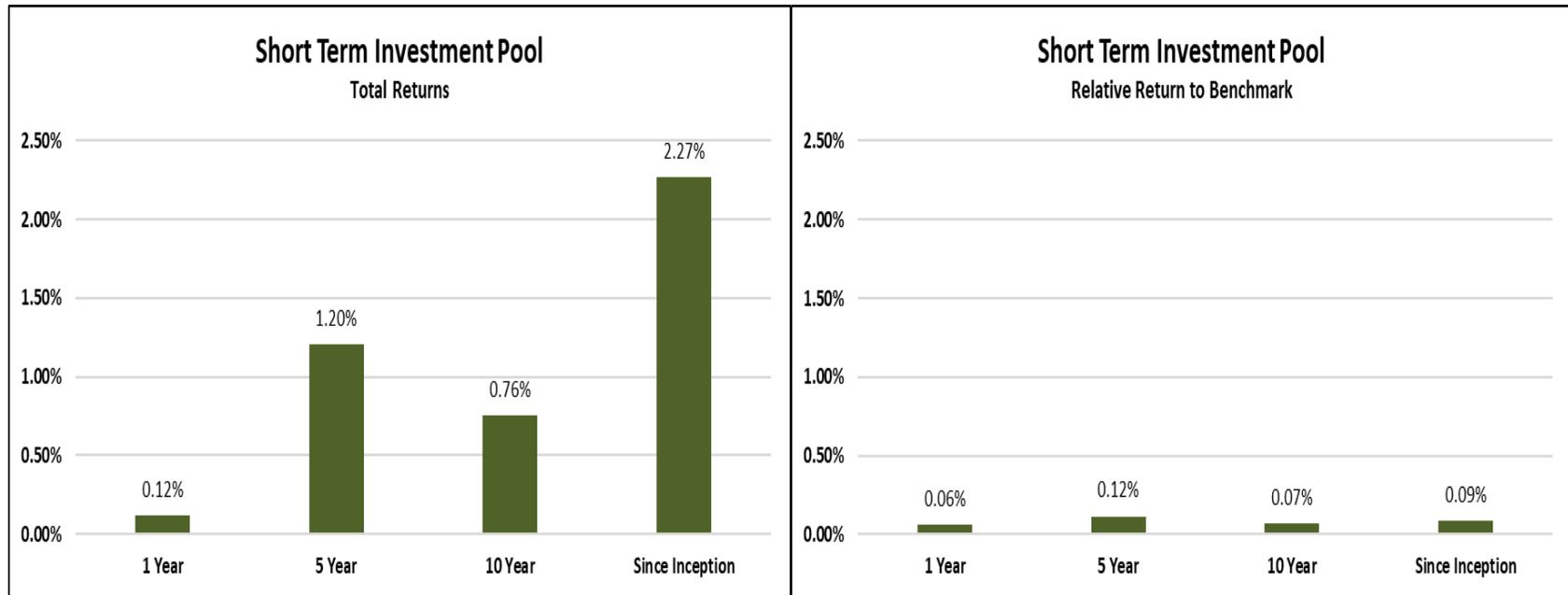
- The large cap allocation retains a significant weight to passive investments. The asset class has an approximately even split between active and indexed investments
- Small capitalization stocks are slightly overweight
- There is a slight overweight to emerging markets
- Cash at the asset class level is minimal per policy
- There was one manager terminated and one hired during the quarter
- Flows were limited to very slight rebalancing activity

Short Term Investment Pool

Performance, Characteristics, and Activity

- The yield on STIP was 0.40% at the end of March.
- Outperformed the index by 6 bps over the year, net of fees.
- Good performance versus the index over 3, 5, & 10 years.
- Treasuries, Agencies, and Government money market funds made up just under 30% of the Pool on 3/31/22, about the same as 3/31/21.
- Local Government participants' percentage was 26.7% on 3/31/22, down from 32.9% a year ago.
- The STIP assets were \$6.45 billion on 3/31/22, up over \$1 billion from 3/31/21.
- The STIP reserve was \$55.67 million on 3/31/22.

Short Term Investment Pool Net Performance



Short Term Investment Pool (STIP) Custom Blend:

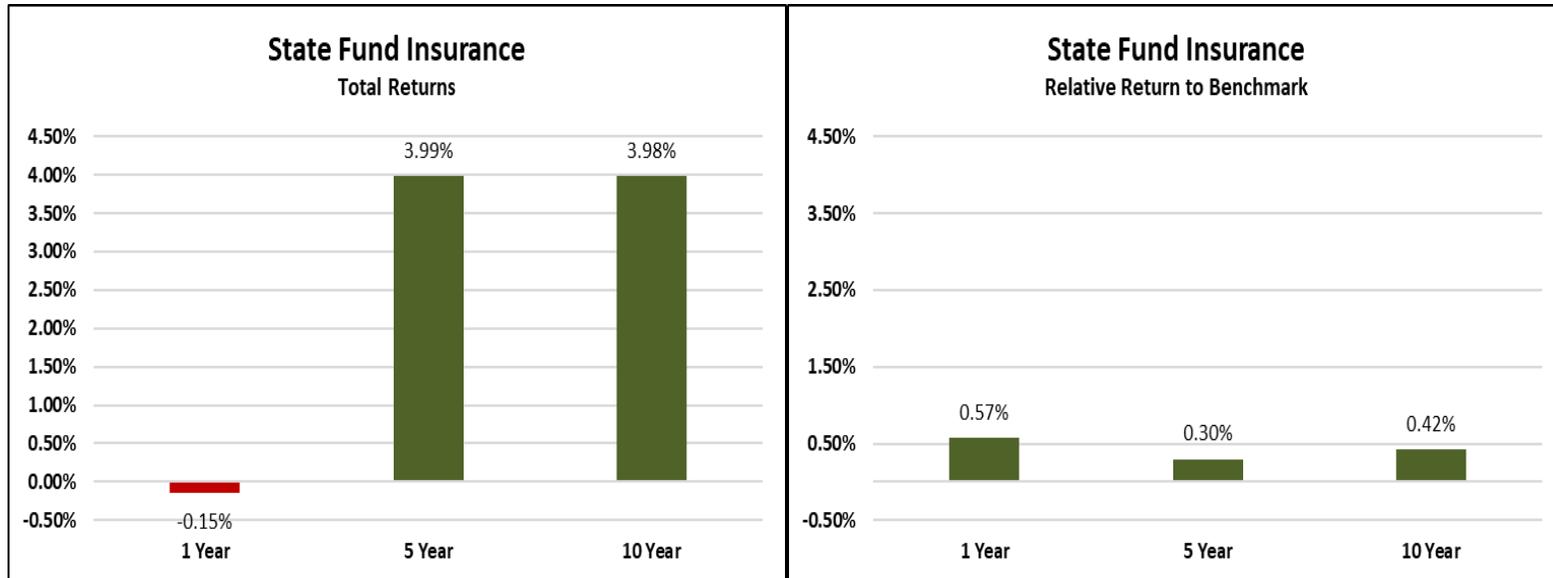
- Inception to 4/30/2018 - LIBOR 1 Month
- 5/1/2018 to present: Federal Reserve US Treasury 1M Constant Maturity Index
- Inception – 4/1/1997

State Fund Investment Portfolio

Performance, Characteristics, and Activity

- Total portfolio return was $-.15\%$ over the last year, led by Real Estate at 20.82%
- Portfolio outperformed the benchmark by 57 bps over the year
- The Investment Grade portfolio returned -3.56% over the year, outperforming its index by 82 bps due to short duration partially offset by overweight to spread product
- Total market value of approx. \$1.52B at quarter end
- Duration was short of the benchmark at quarter end
- Continued overweight to spread product and underweight to Treasuries. Continue to add to MBS over time
- Sold \$20 million of Equities during the year

State Fund Investment Pool Net Performance



Montana State Fund Investment Pool (SFIP) Custom Blend:

- Inception to 3/31/2020 - Bloomberg Barclays Intermediate Aggregate Bond Index
- 3/31/20 To present - State Fund Custom Benchmark: Proportionately weighted Bloomberg Barclays Intermediate Aggregate Bond Index, S&P 500 Index, MSCI ACWI ex U.S. Index, NCREIF ODCCE Index
- Inception – 12/1/1993

Trust Funds Investment Portfolio Performance

- The Pool underperformed the benchmark by 41 bps on the year. The underperformance was driven by the relative underperformance of Real Estate. Real Estate returned 17.28% on the year, 336 bps below its benchmark
- High Yield had a return of .28%
- The internal portfolio returned -3.37%, outperforming its benchmark by 78 bps due to short duration

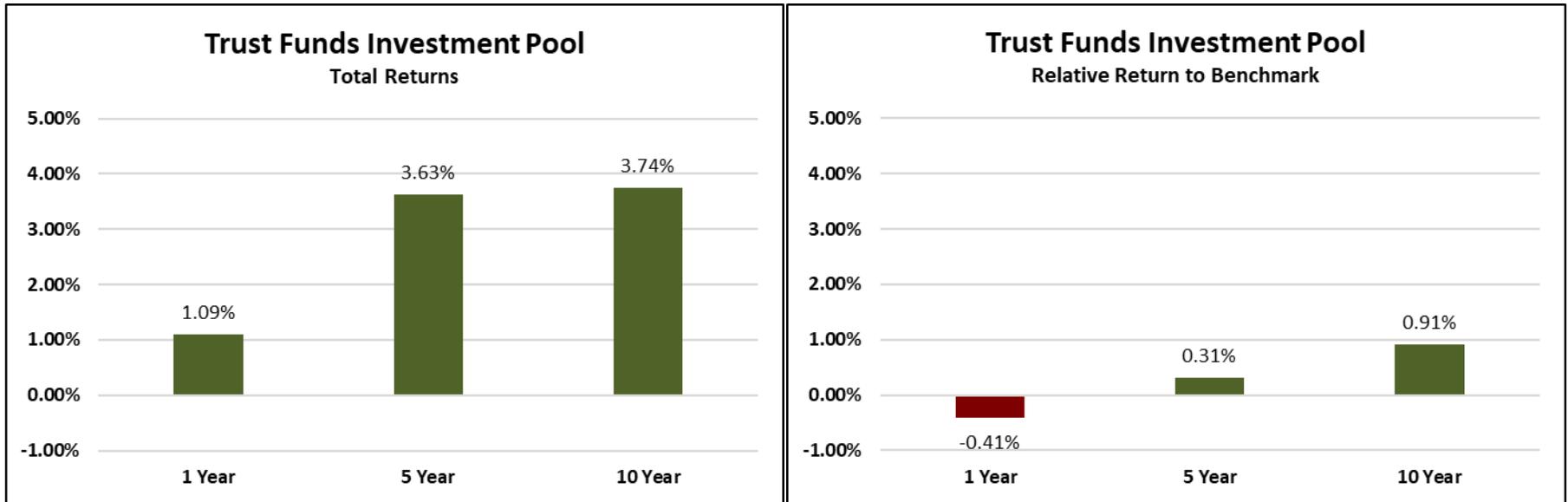
Trust Funds Investment Portfolio

Characteristics and Activity

- Total market value of approx. \$2.82B at quarter end
- TFBP duration was below the benchmark at quarter end. Portfolio remained significantly underweight the long end of the curve
- TFBP maintained overweight to Corporates, CMBS and ABS, and underweight to Treasuries and MBS
- TFIP purchased approximately \$200 million of Real Estate during the year. Real Estate was 25% of the TFIP at quarter end
- Staff continues to add to Real Estate in order to diversify and increase the yield of TFIP consistent with the 2020 change to the IPS

Trust Funds Investment Portfolio

Net Performance

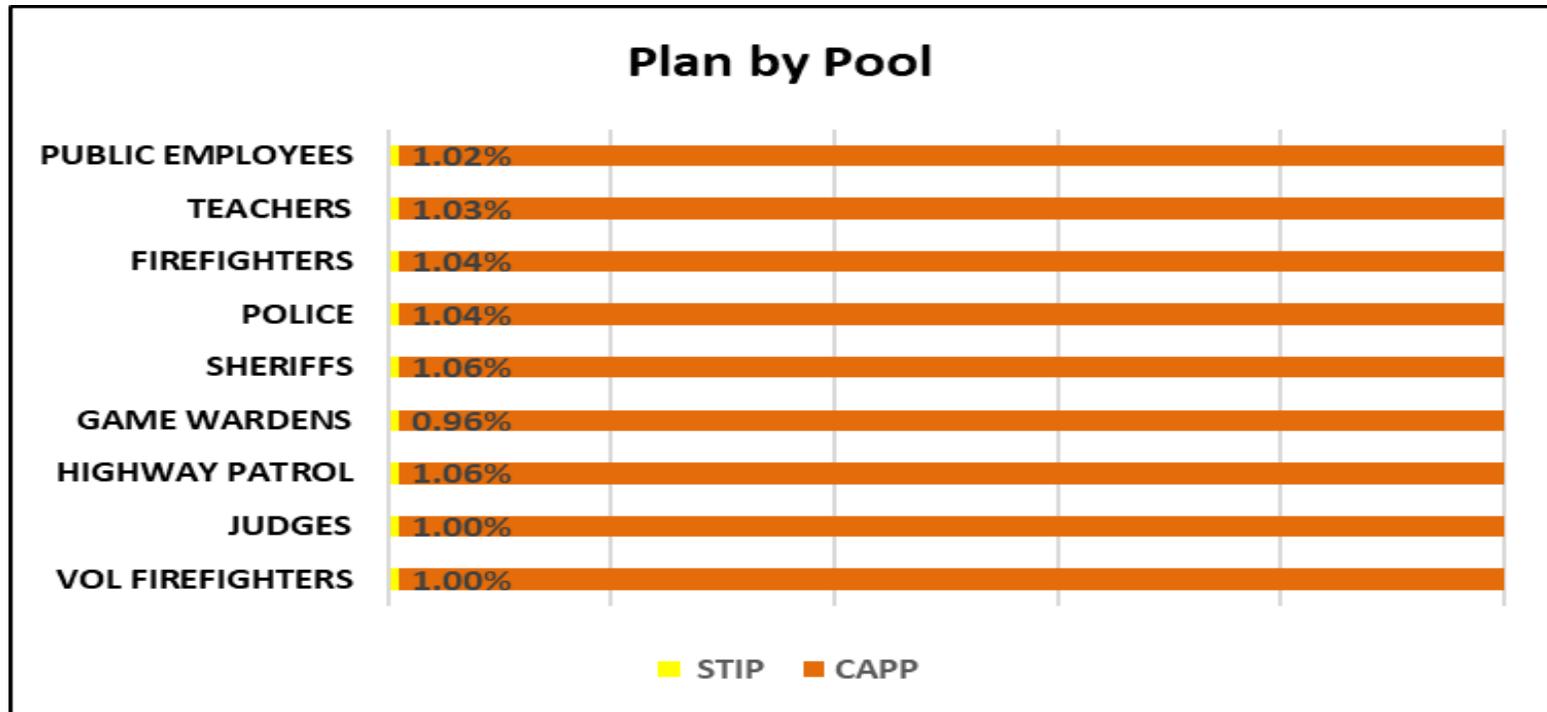


Trust Funds Investment Pool Custom Blend:

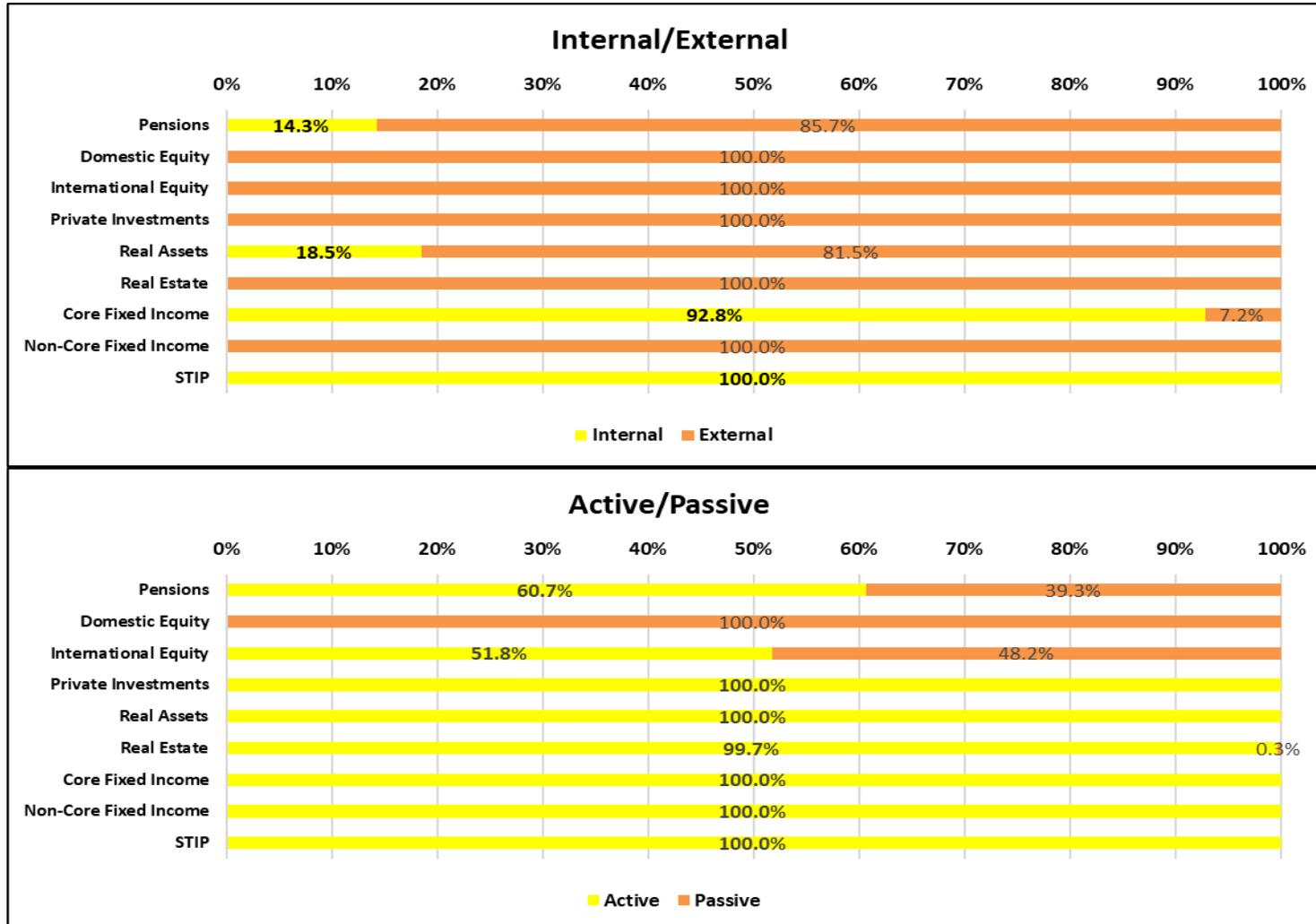
- Since Inception to 6/30/21 - Bloomberg Barclays U.S. Aggregate Bond Index
- 6/30/21 to present - Proportionately weighted Bloomberg Barclays US Aggregate Bond Index, Bloomberg Barclays US High Yield – 2% Issuer Cap Index and the NCREIF ODCE Index
- Inception - 10/1/1995

APPENDIX

Retirement Plans Allocations by Pool

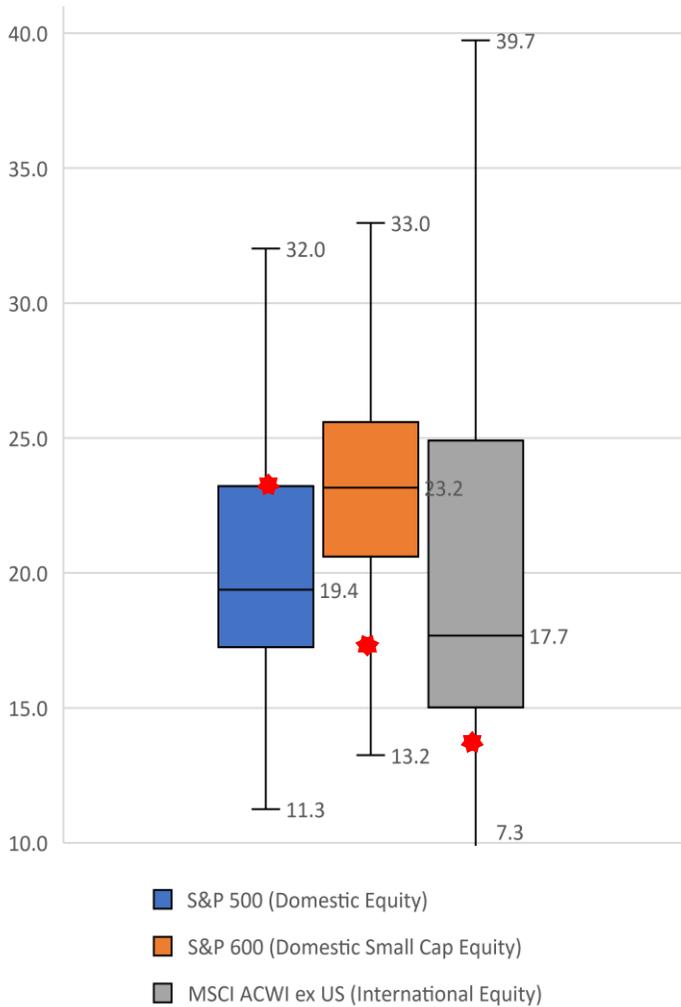


Retirement Plans Characteristics

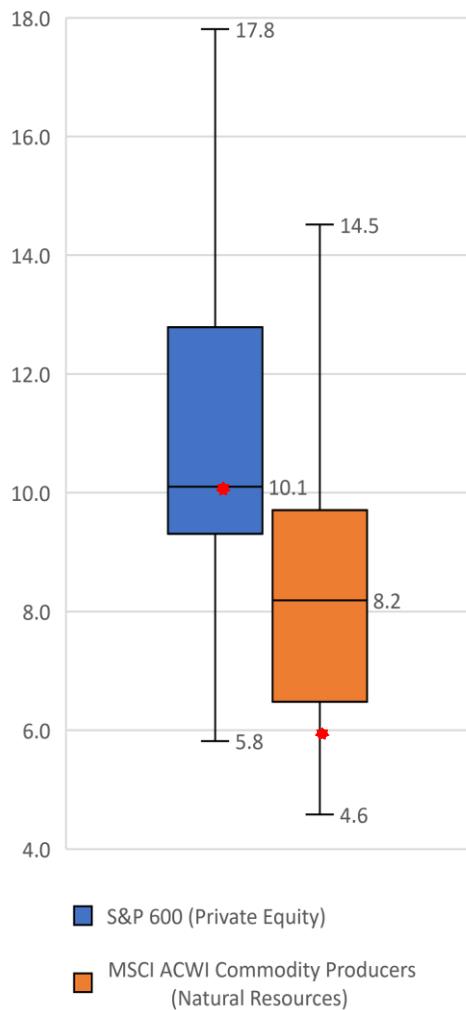


Risk Management Benchmark Valuation

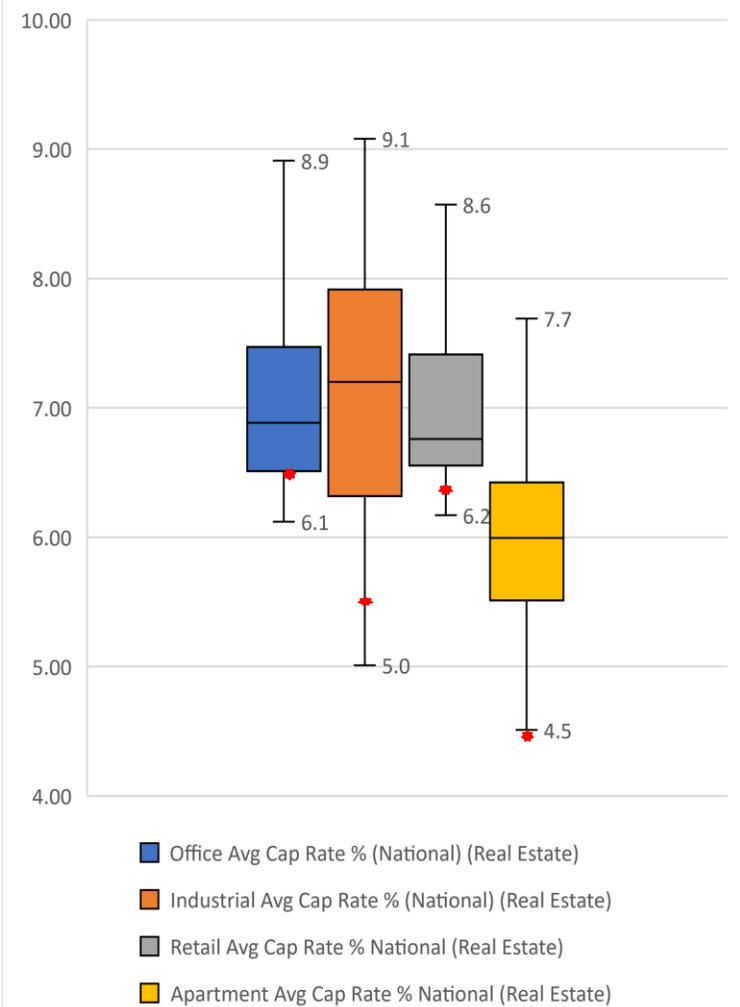
P/E



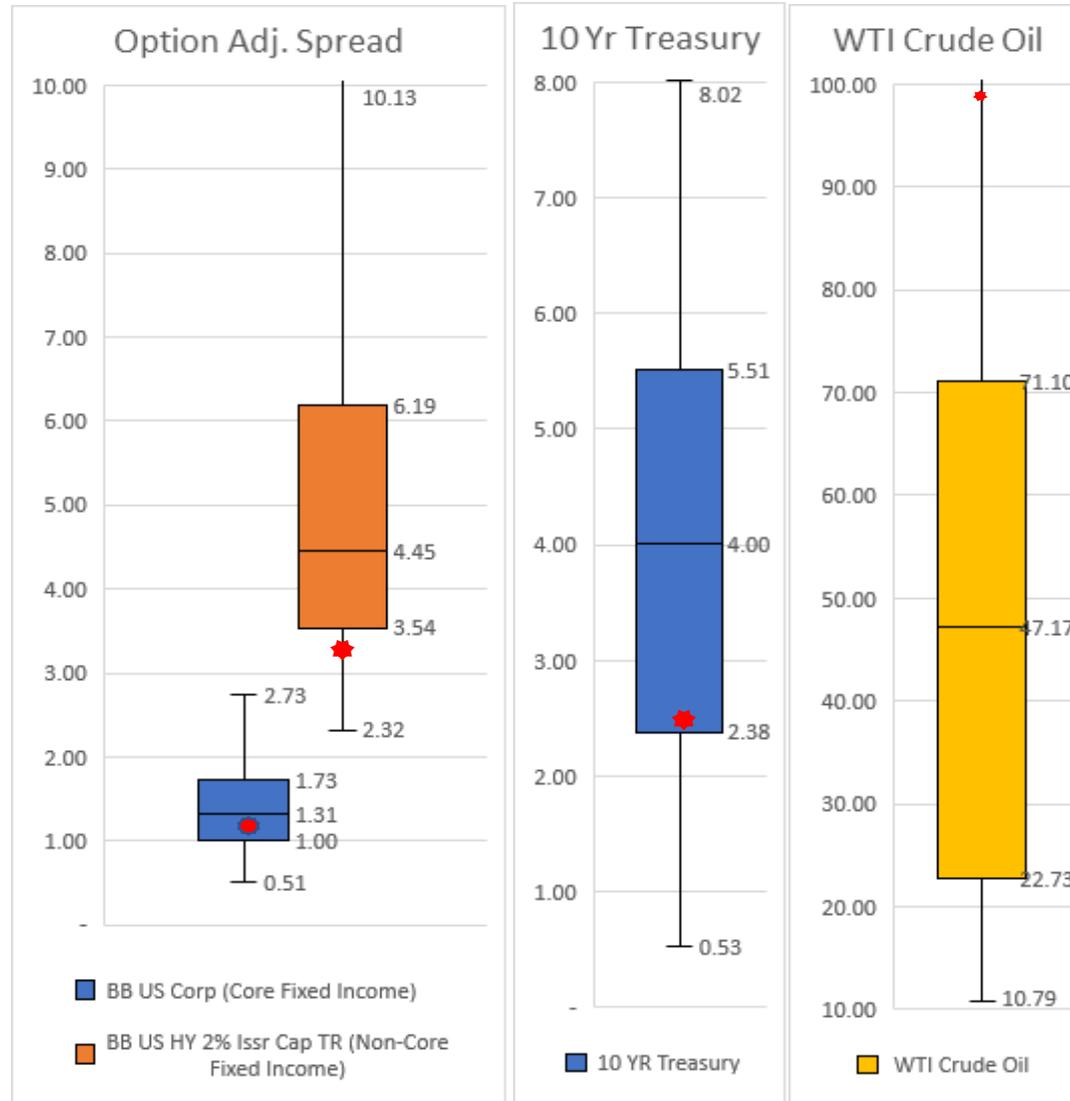
EV/EBITDA



Cap Rates



Risk Management Benchmark Valuation



Risk Management

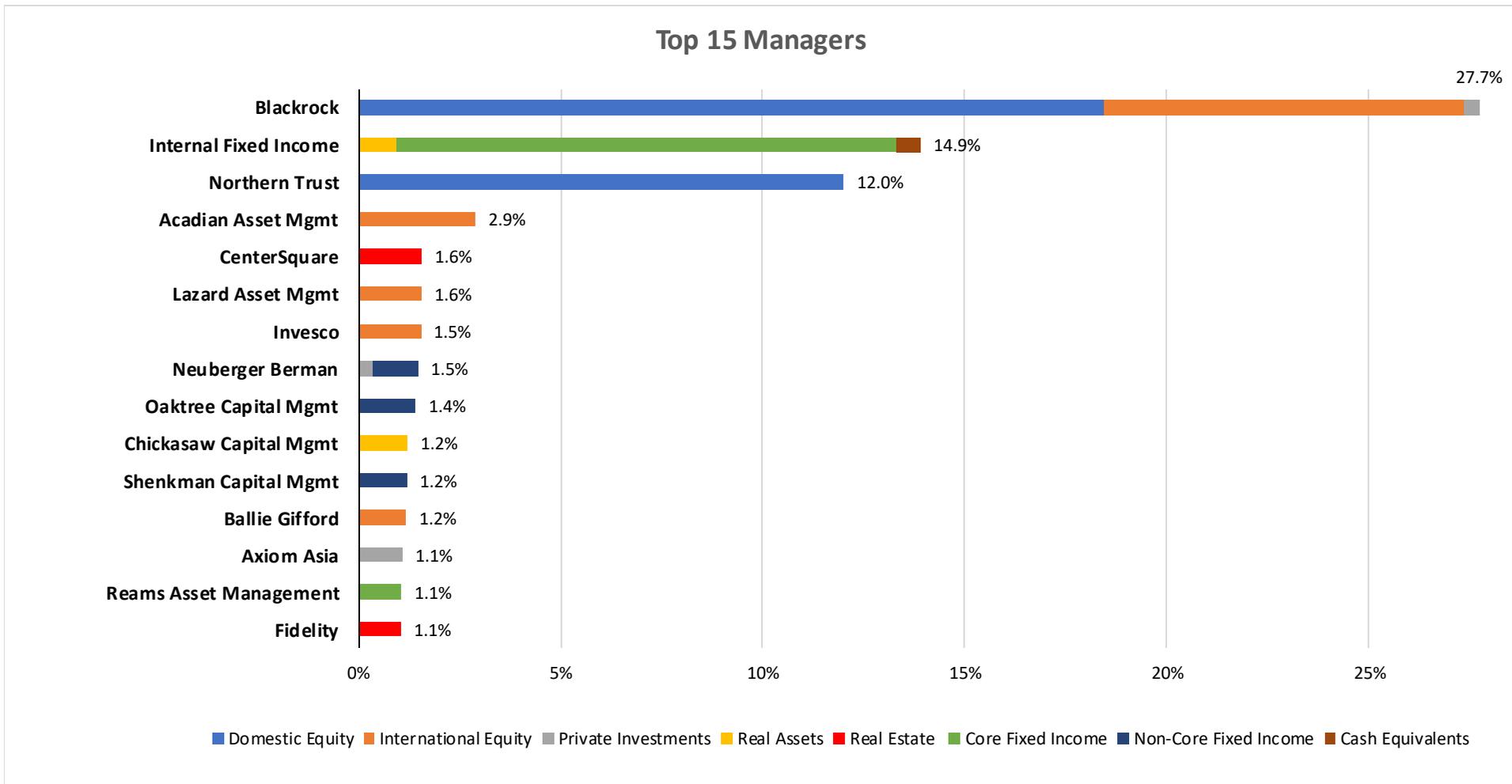
Pension Geographic

Country Exposure - Percent

Base Market Values
0.0% 80.8%



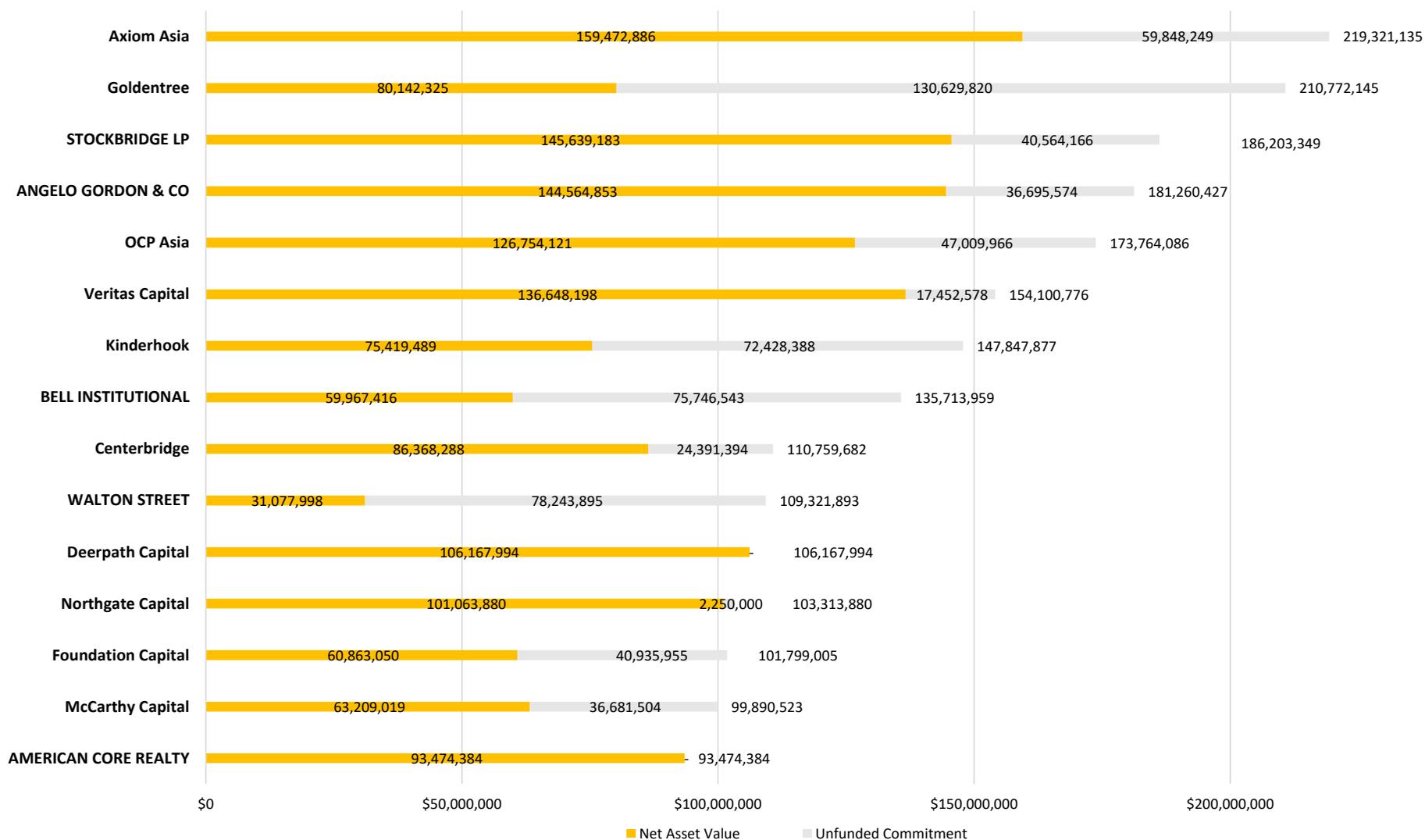
Risk Management Pension Holdings



*Montana Public Retirement Plans shall have no greater than 5% of its Net Asset Value managed by any one external manager using an active investment strategy

Risk Management Pension Holdings

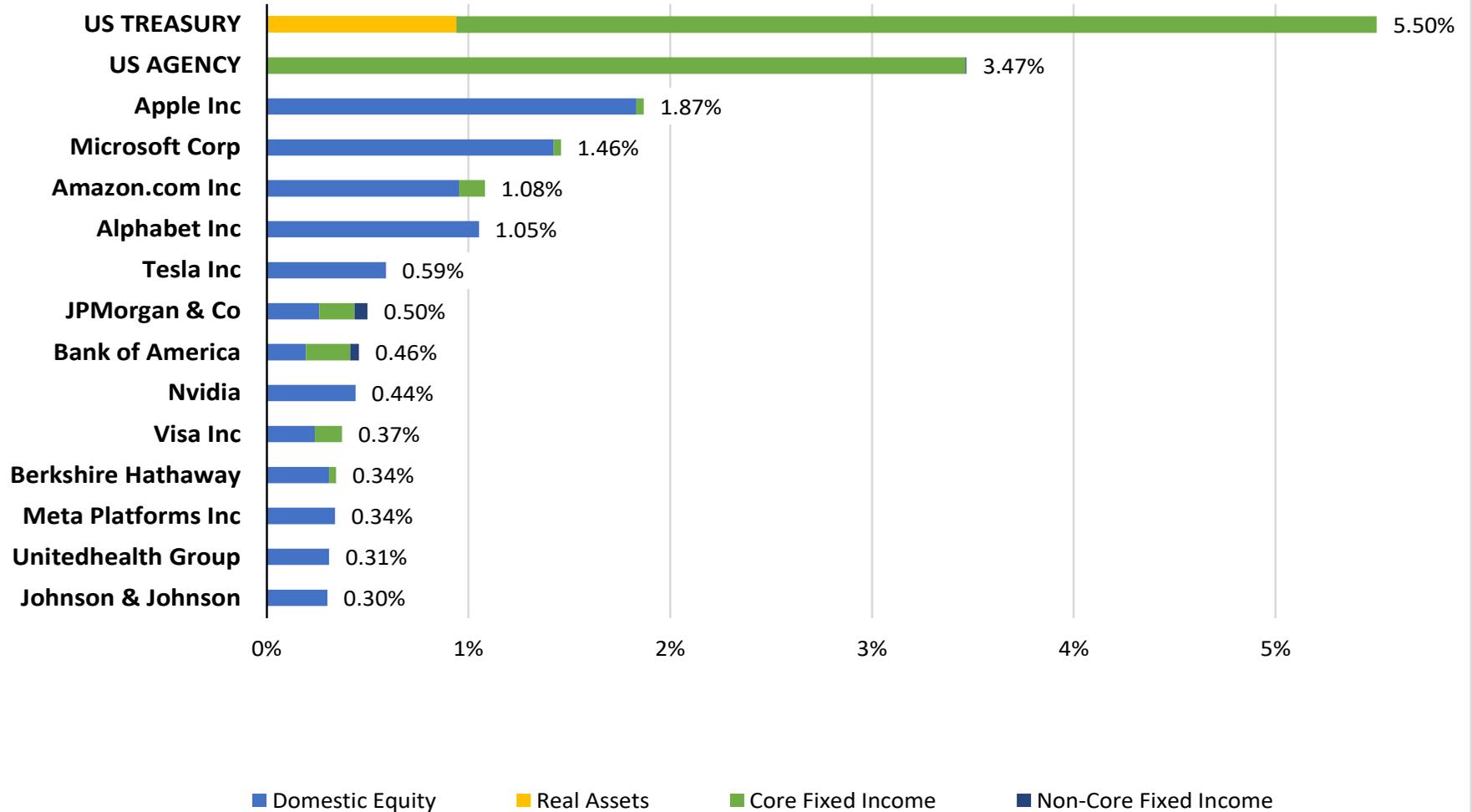
Top 15 Private Managers



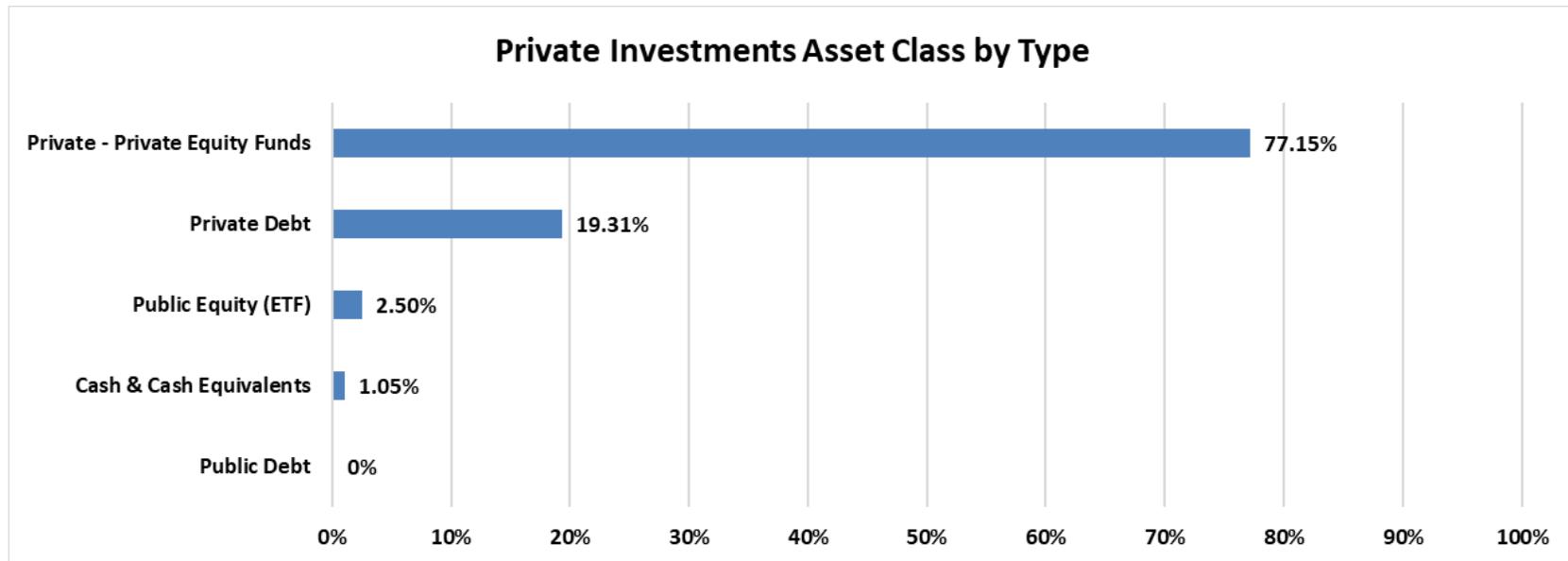
Risk Management

Pension Holdings

Top 15 Issuers

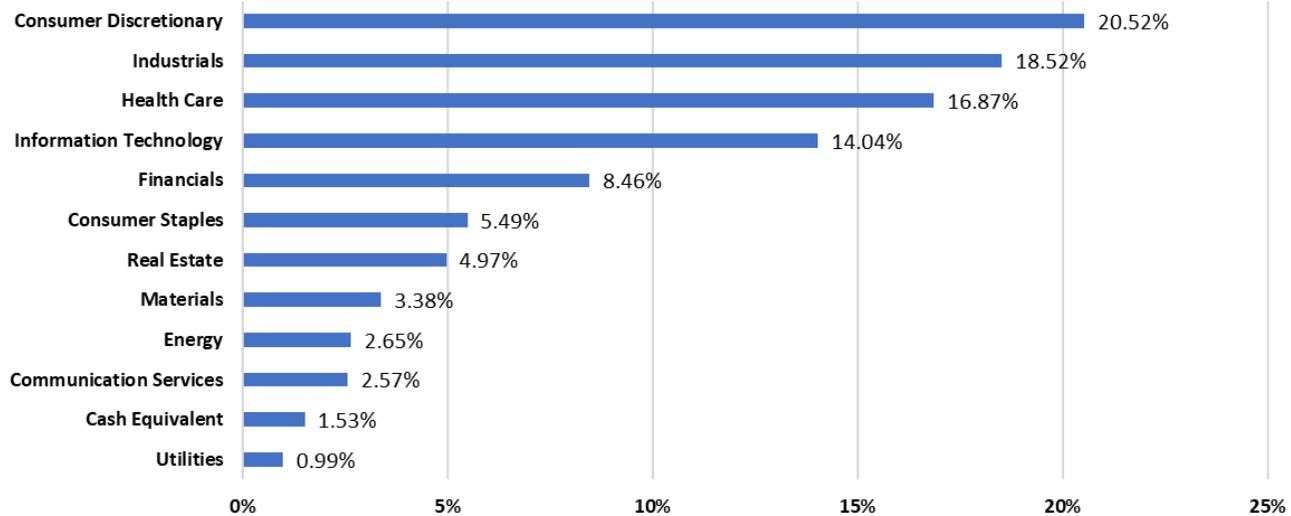


Private Investments Characteristics

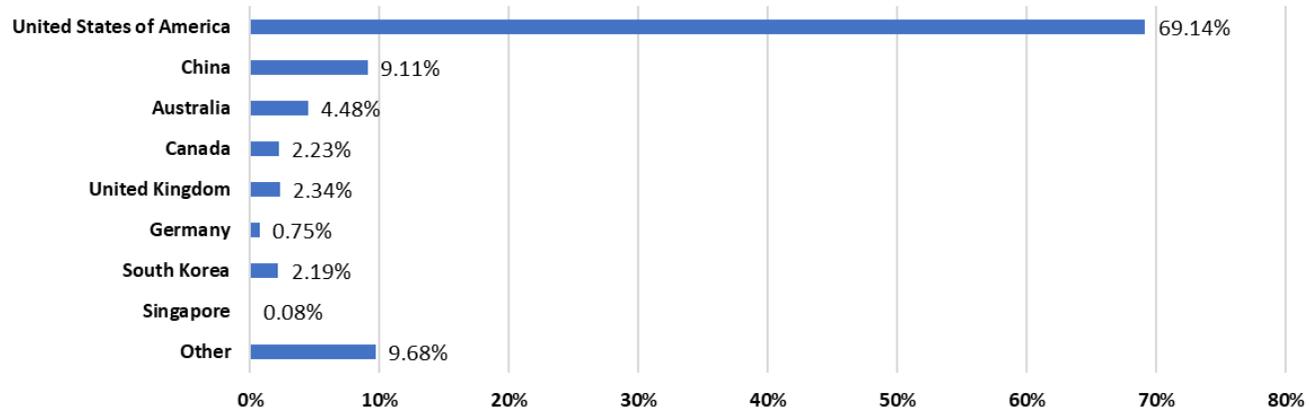


Private Investments Characteristics

Private Investment by GICS Sector

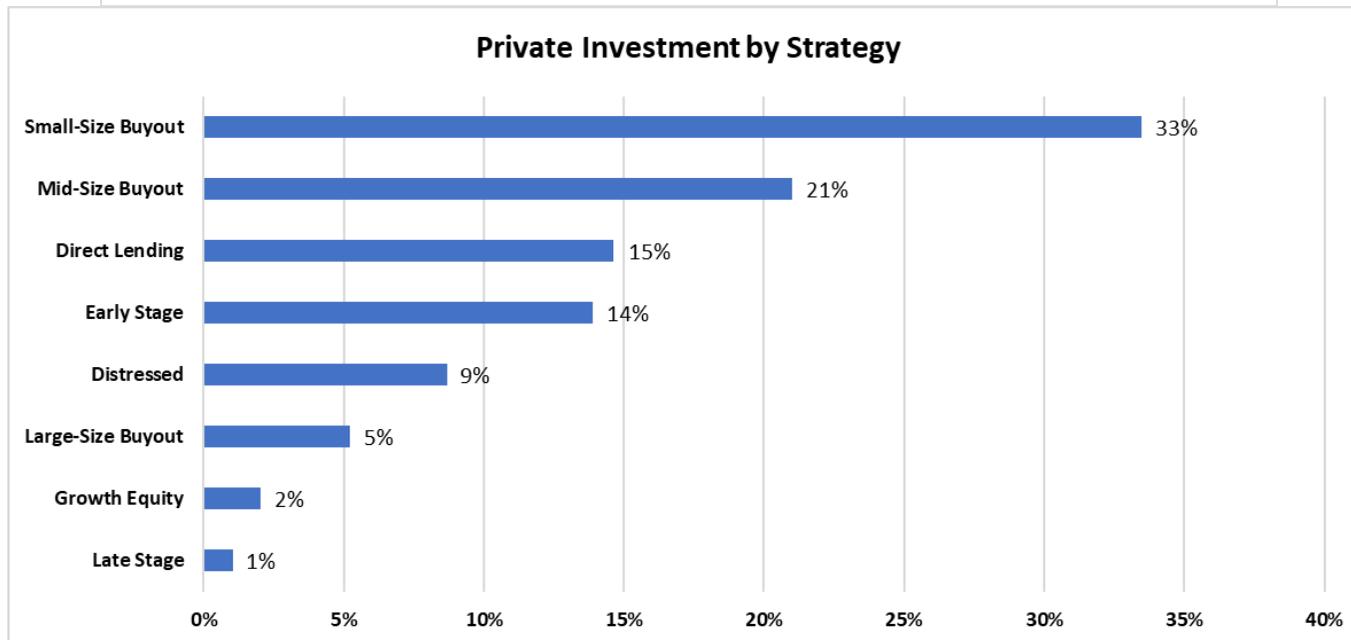
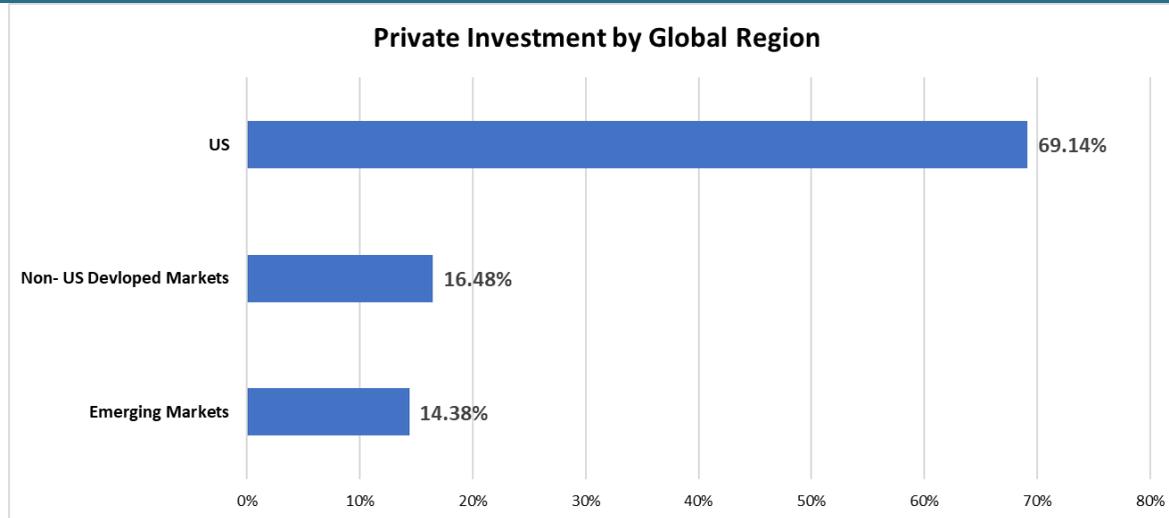


Private Investment - Worldwide Geography



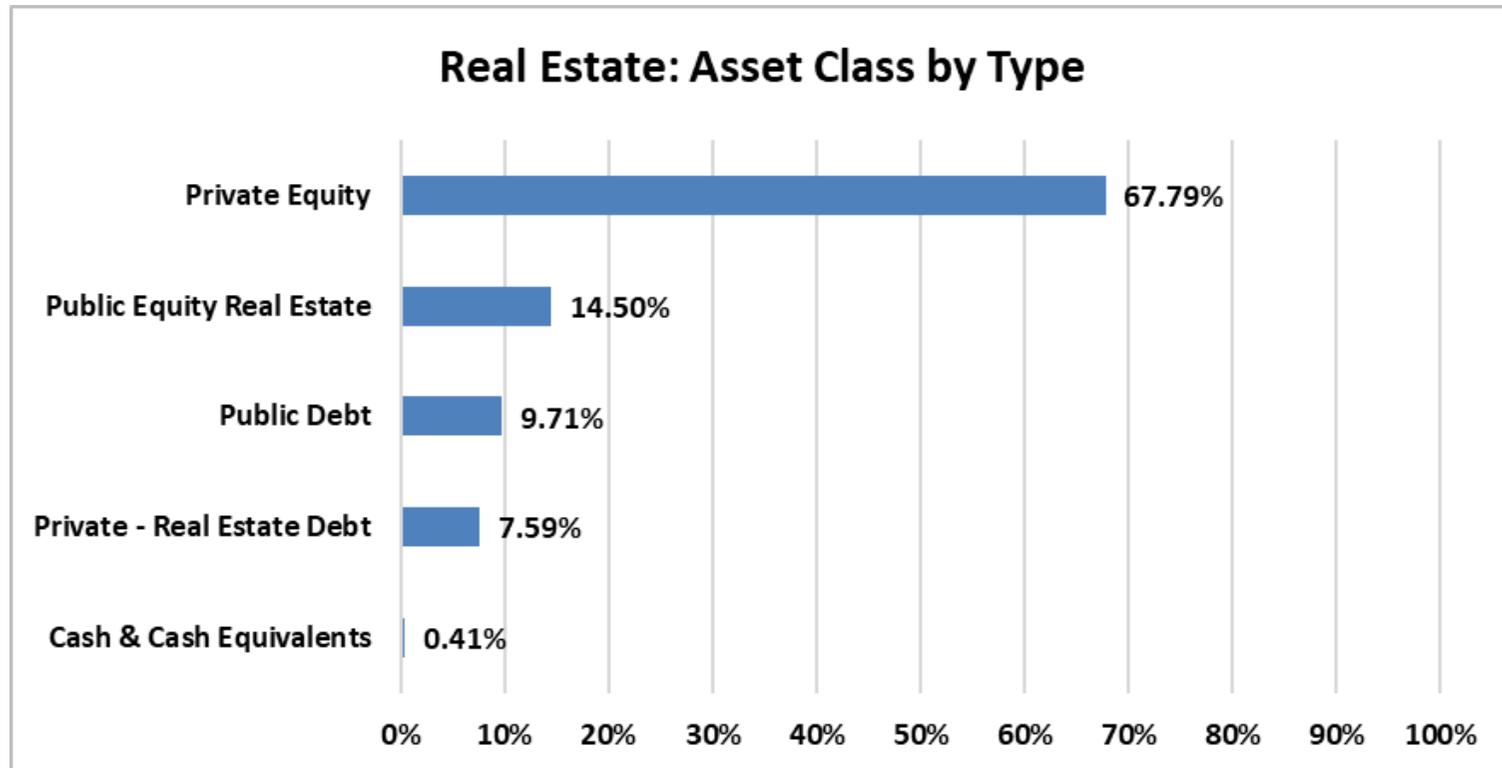
Note: Data reflects most recent GP-reported holdings as of 12/30/21
March 31, 2022

Private Investments Characteristics

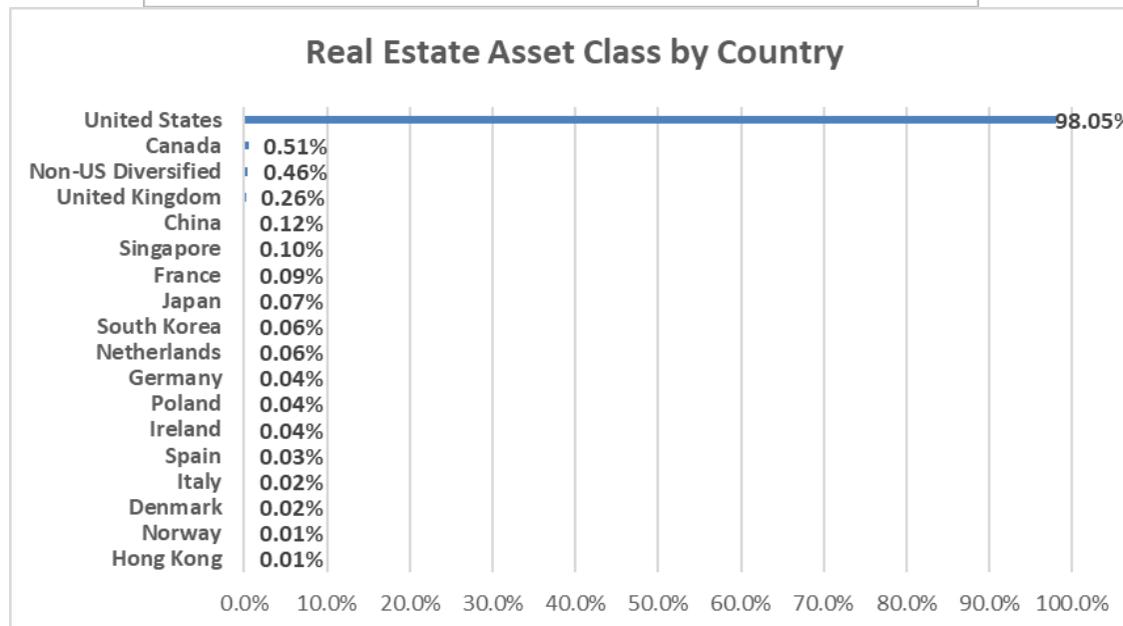
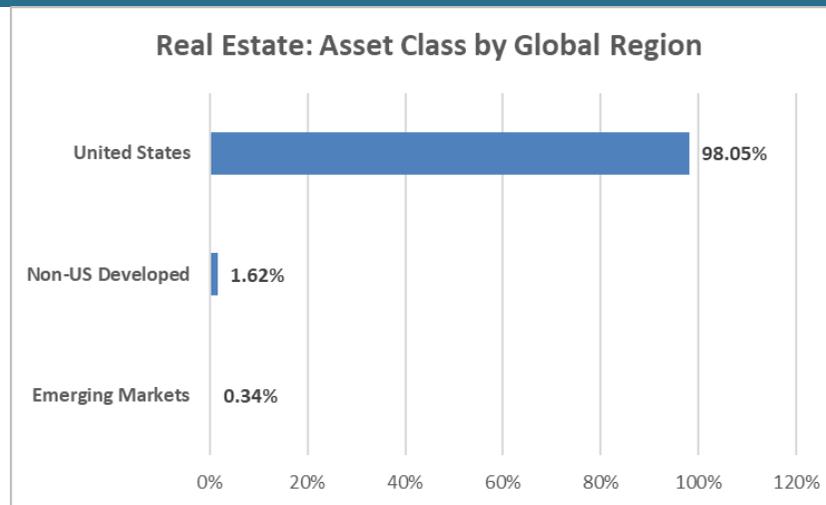


Note: Data reflects most recent GP-reported holdings as of 12/31/21
March 31, 2022

Real Estate Characteristics

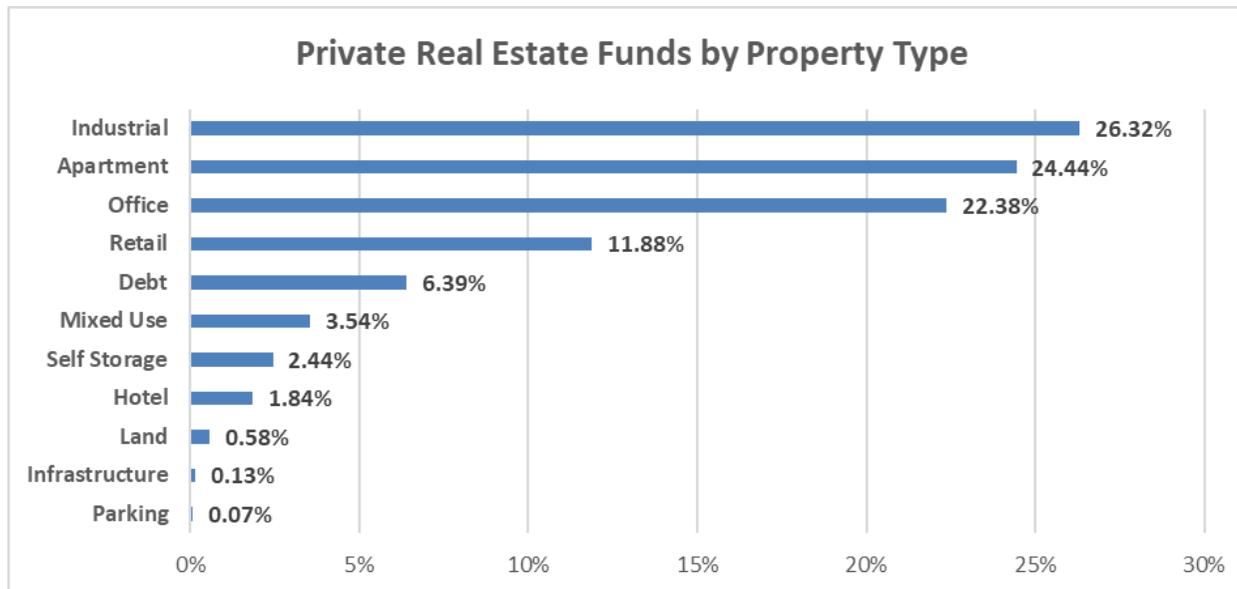
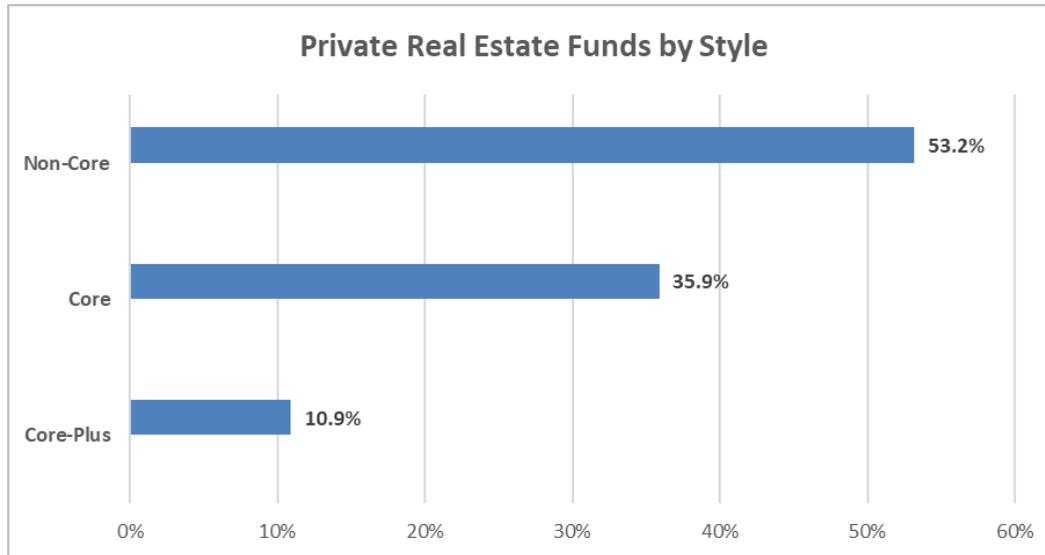


Real Estate Characteristics



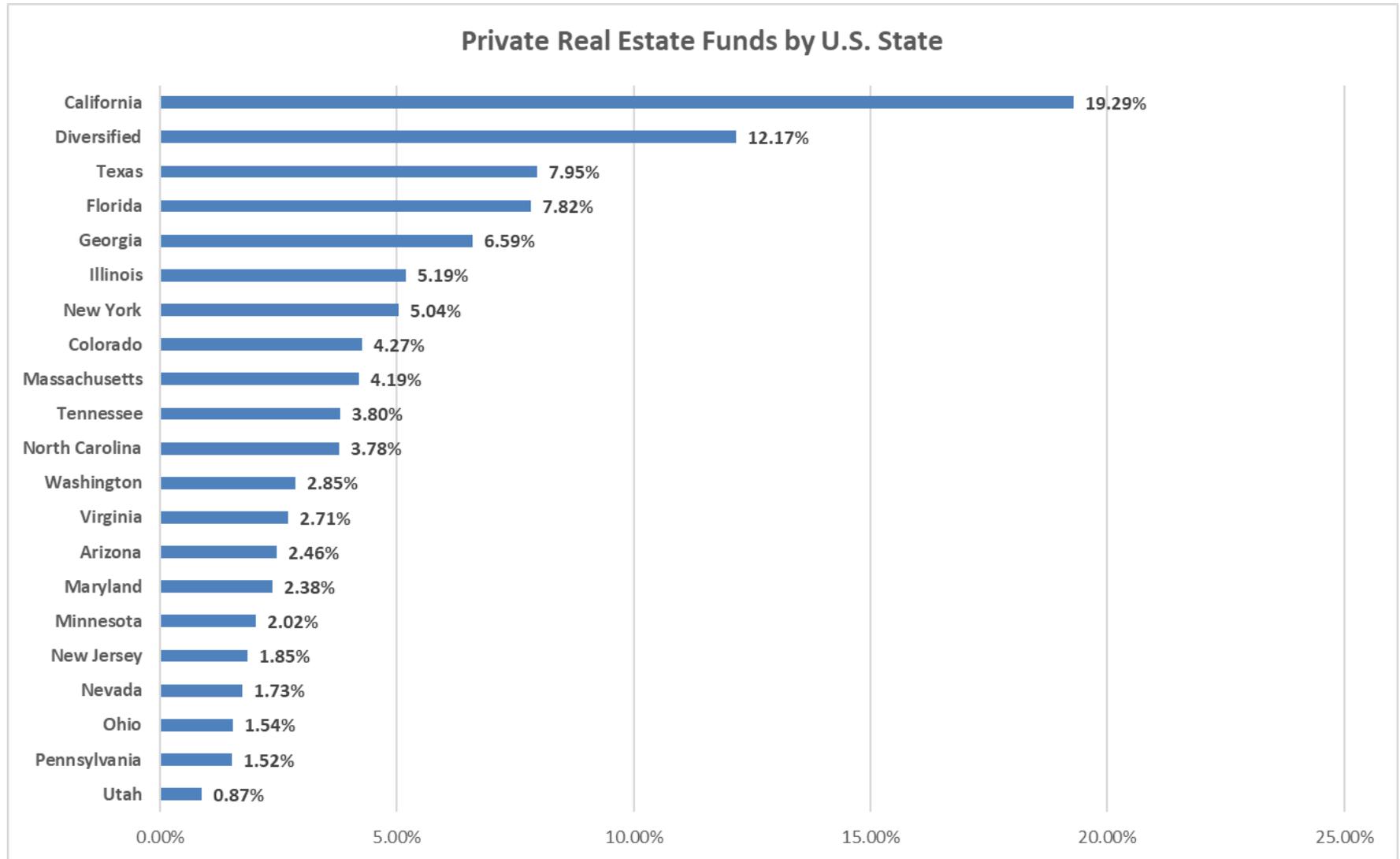
Note: Data reflects most recent GP-reported holdings as of 12/31/21
March 31, 2022

Real Estate Characteristics



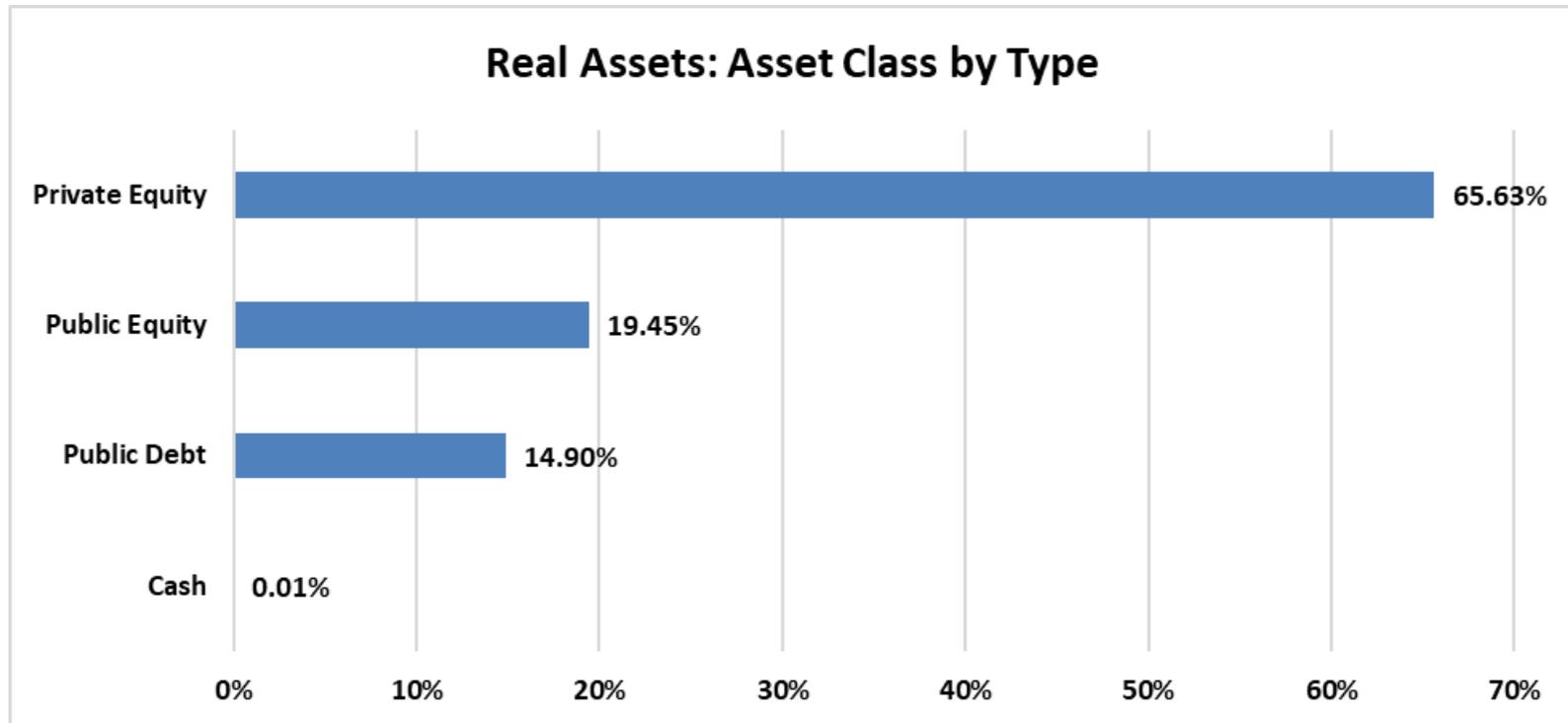
Note: Data reflects most recent GP-reported holdings as of 12/31/21
March 31, 2022

Real Estate Characteristics

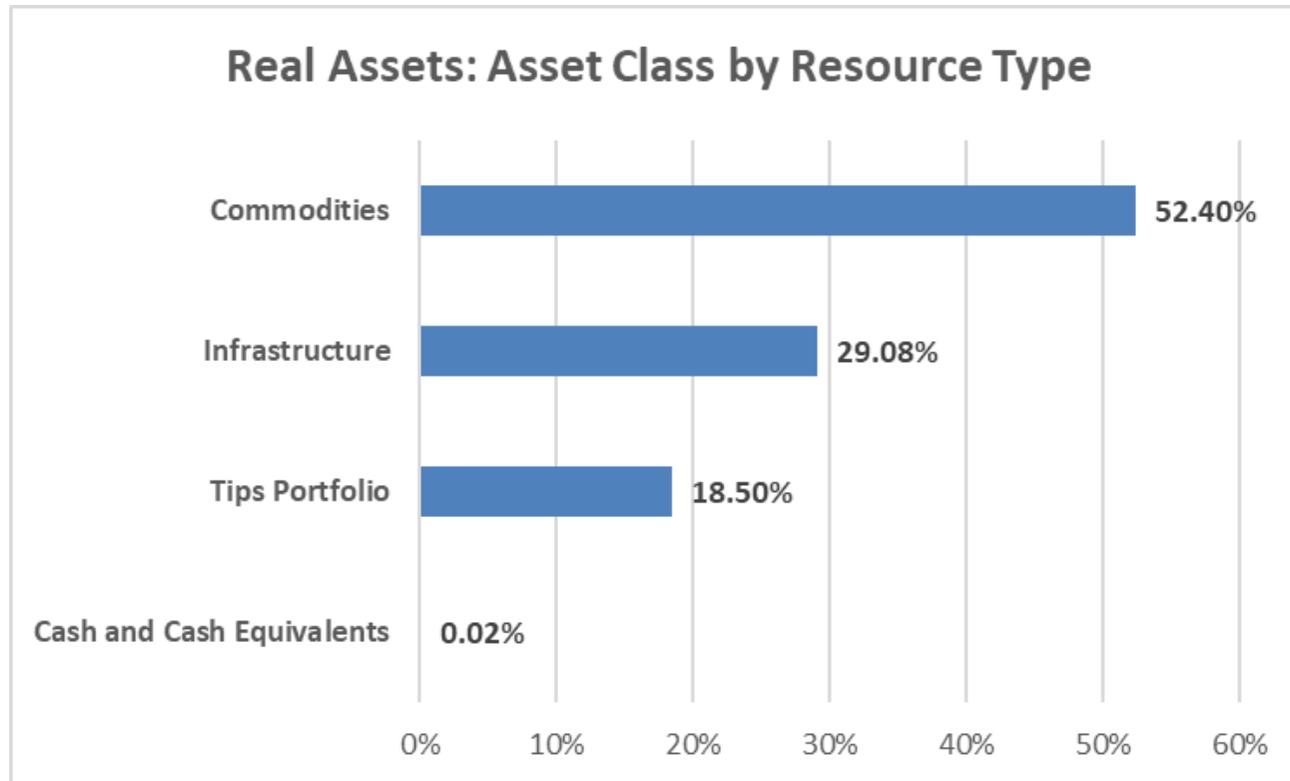


Note: Data reflects most recent GP-reported holdings as of 12/31/21
March 31, 2021

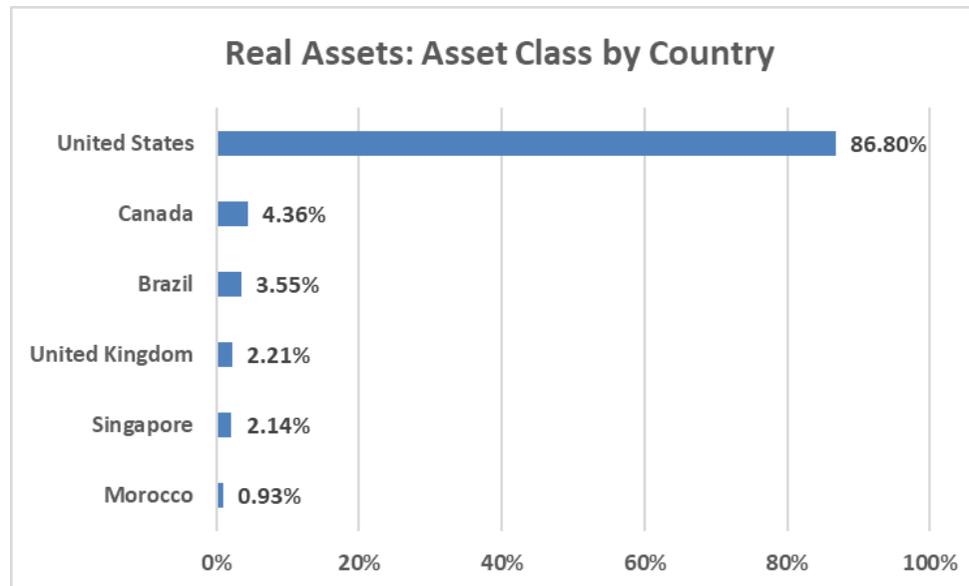
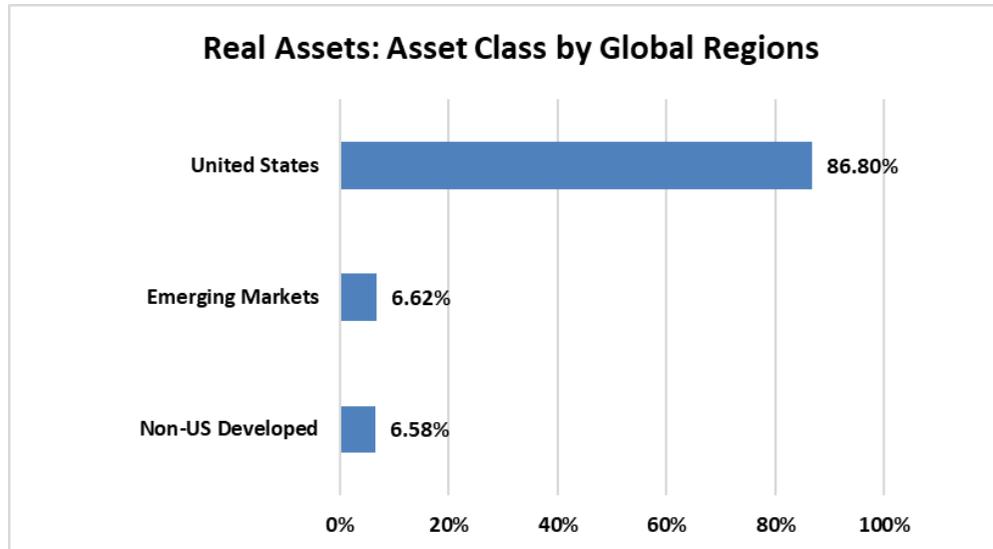
Real Assets Characteristics



Real Assets Characteristics

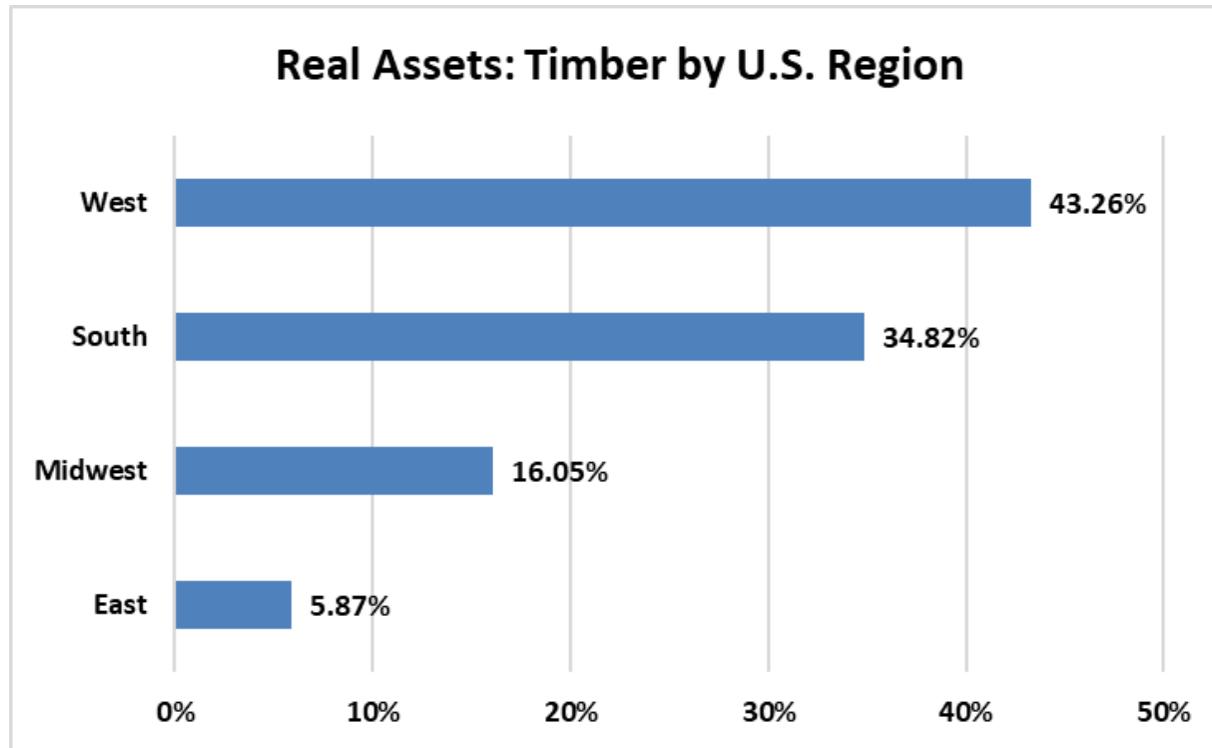


Real Assets Characteristics



Note: Data reflects most recent GP-reported holdings as of 12/30/21
March 31, 2022

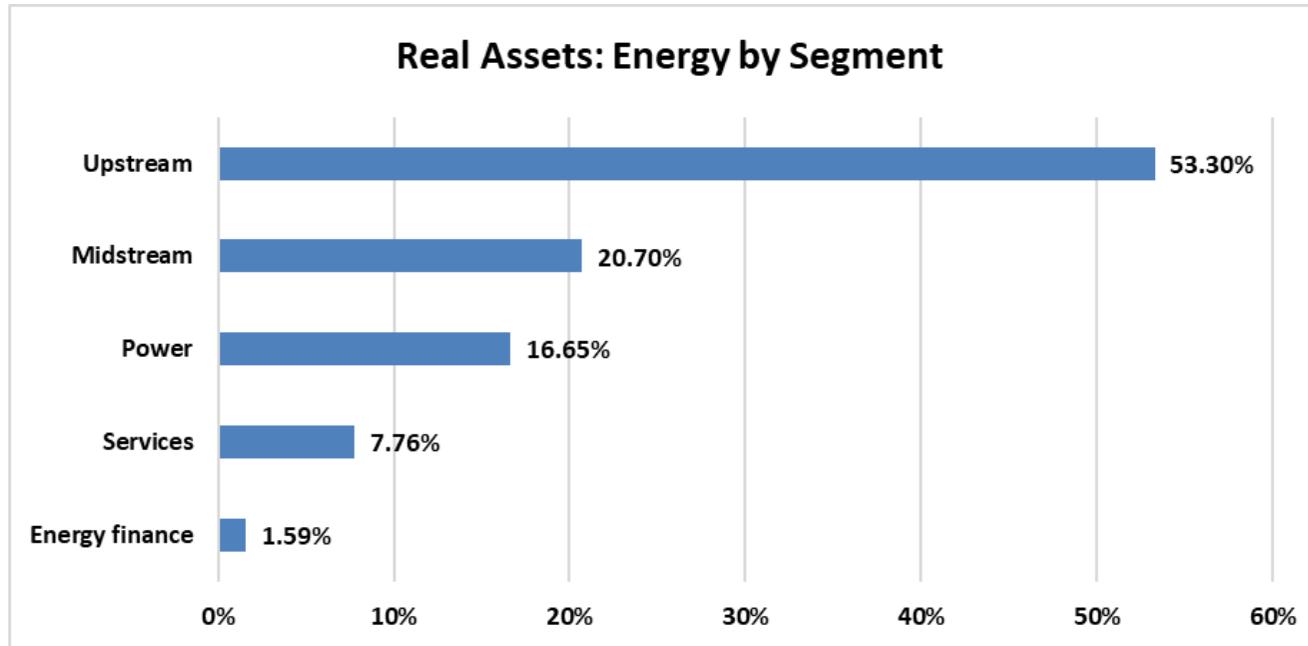
Real Assets Characteristics



Note: Data reflects most recent GP-reported holdings as of 12/31/21

March 31, 2022

Real Assets Characteristics

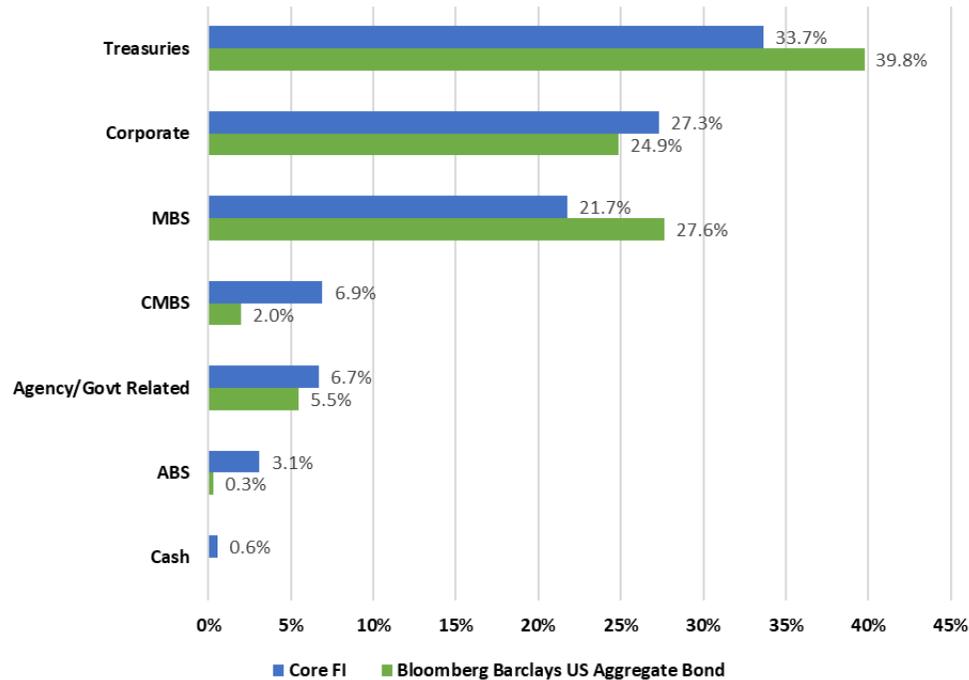


Upstream	Exploration and production
Services	Businesses that provide ancillary services and equipment required to explore for, produce and transport oil and gas
Power	Generation plants that create power
Midstream	Pipelines, terminals and storage of oil and gas and involves the transportation of oil and gas
Energy Finance	Investments in a portfolio of liquid or yield-oriented securities

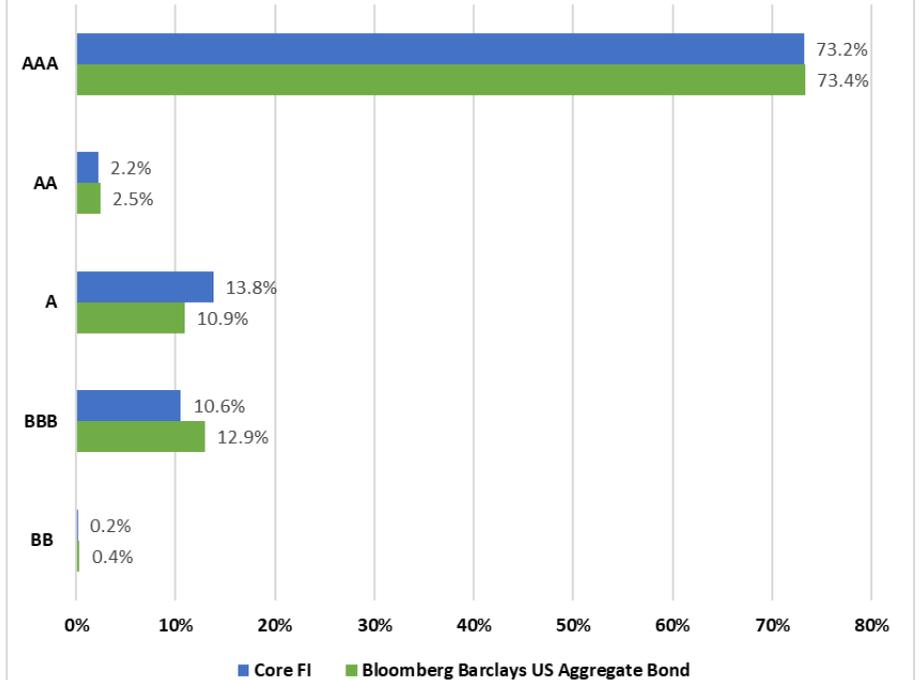
Note: Data reflects most recent GP-reported holdings as of 12/31/21
March 31, 2022

Core Fixed Income Characteristics

Core Fixed Income Sector Weights

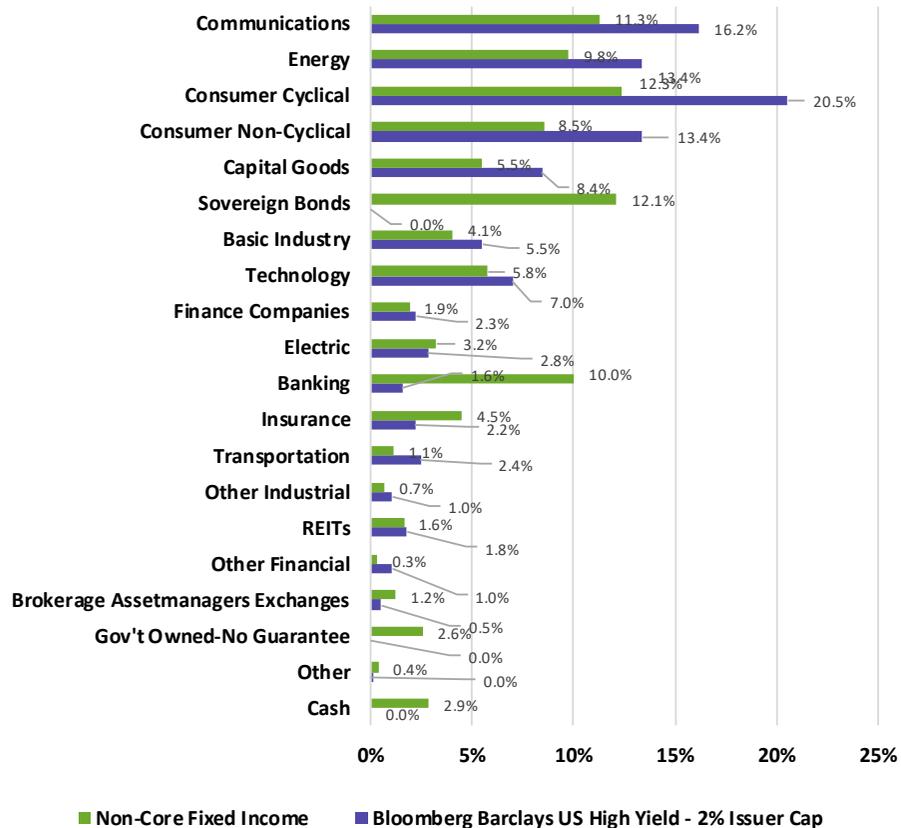


Core Fixed Income Credit Quality

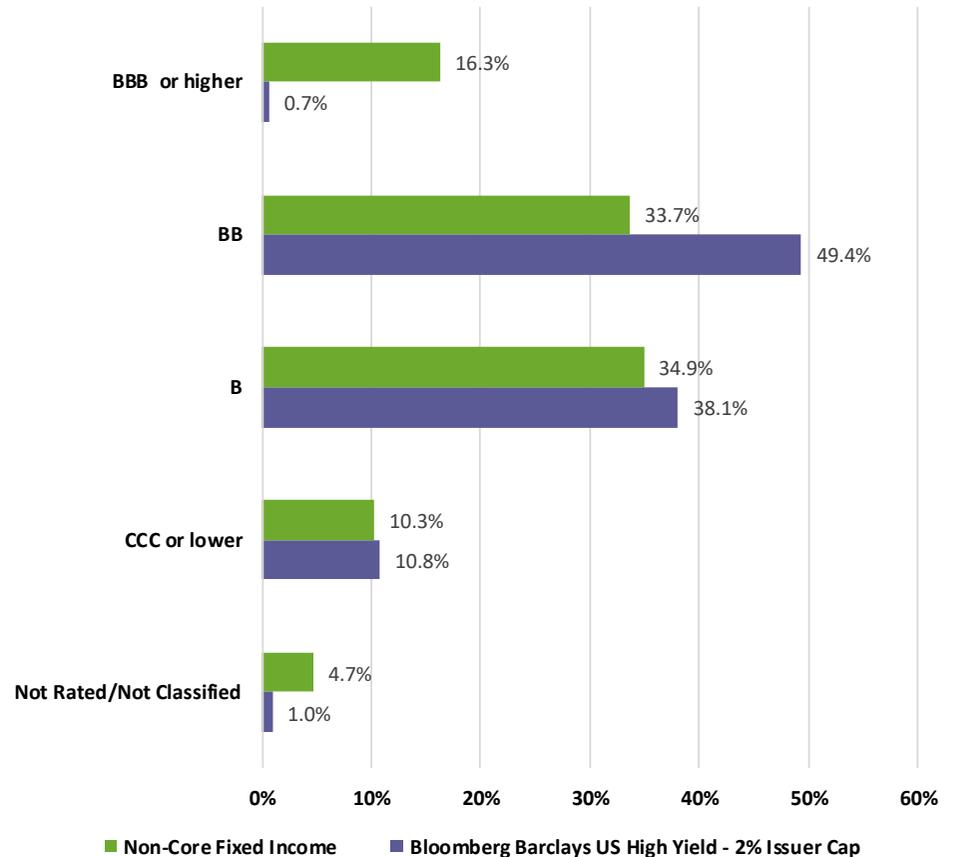


Non-Core Fixed Income Characteristics

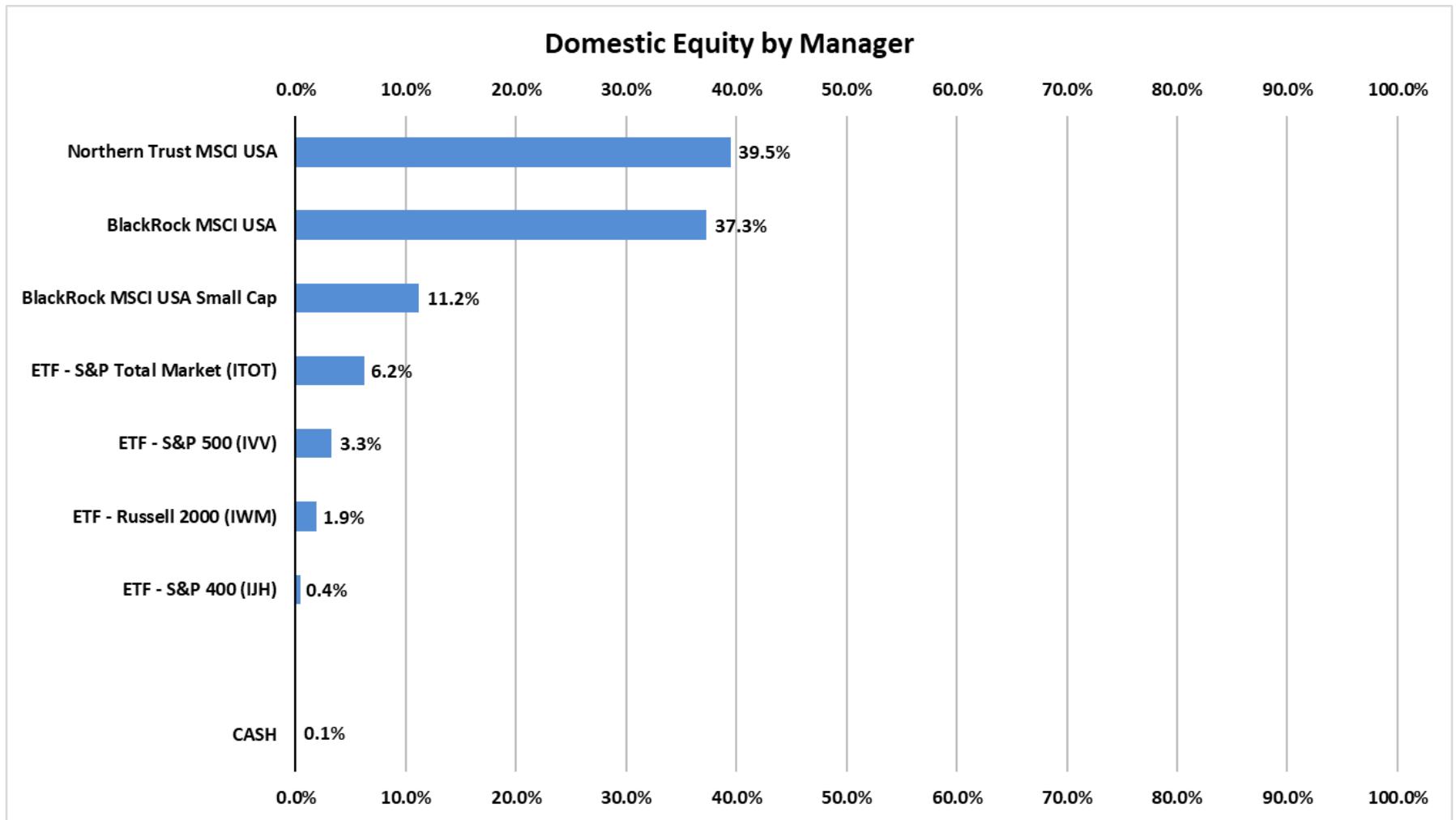
Non-Core Fixed Income Sector Weights



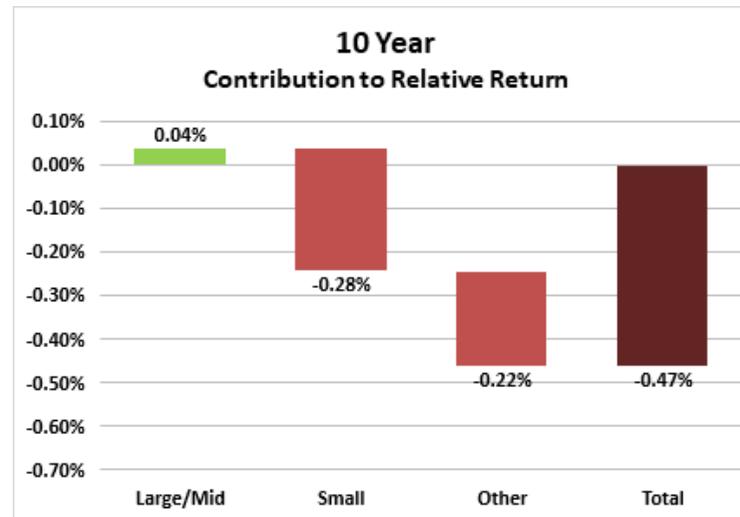
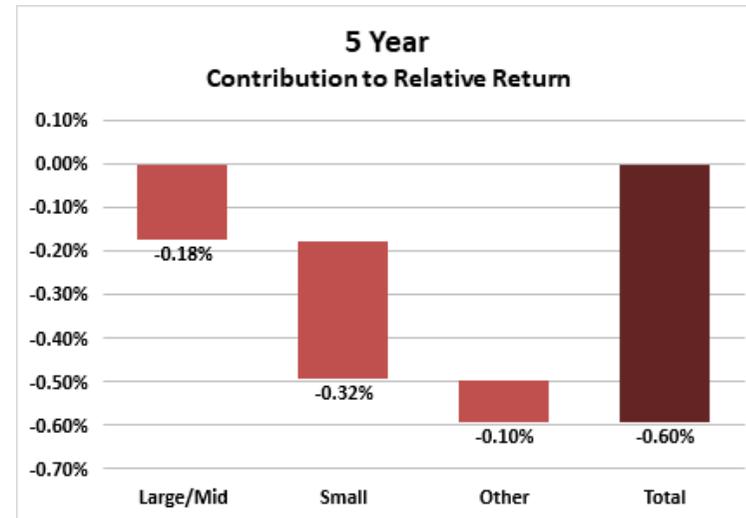
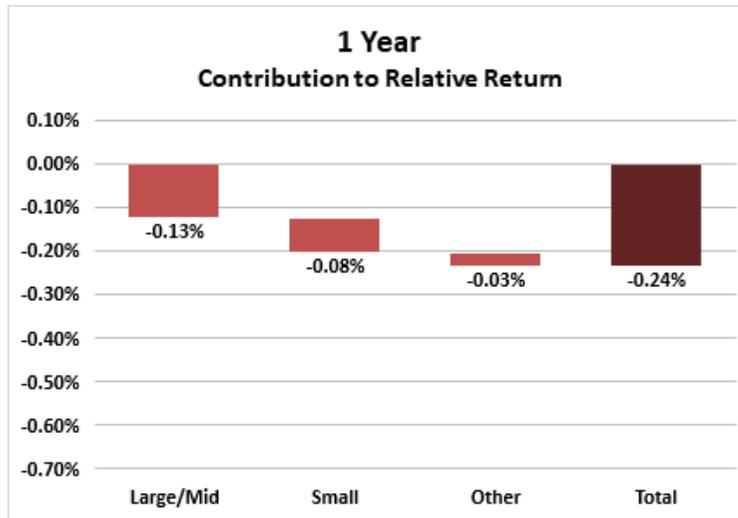
Non-Core Fixed Income Credit Quality



Domestic Equity Policy



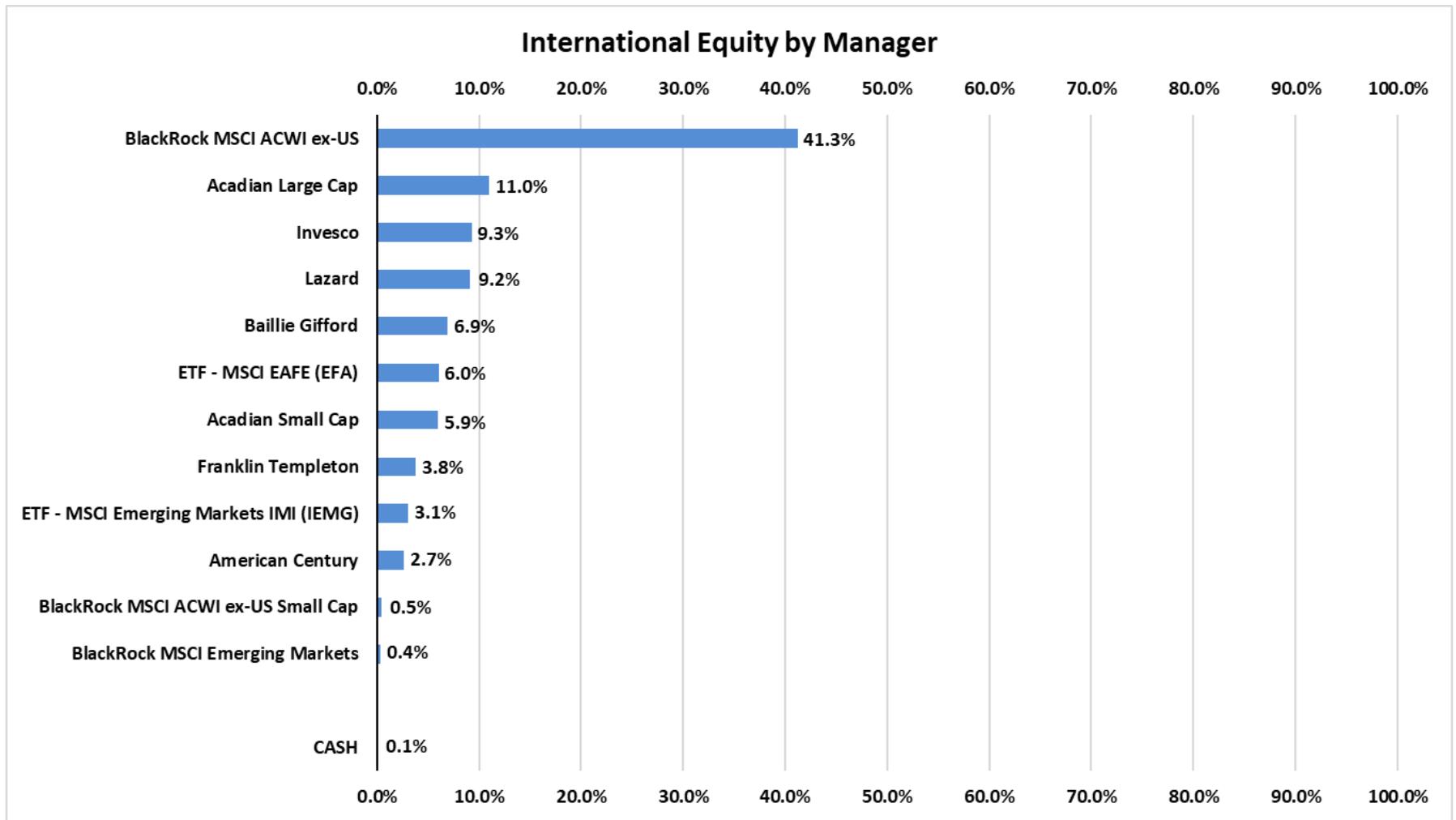
Domestic Equity Net Performance



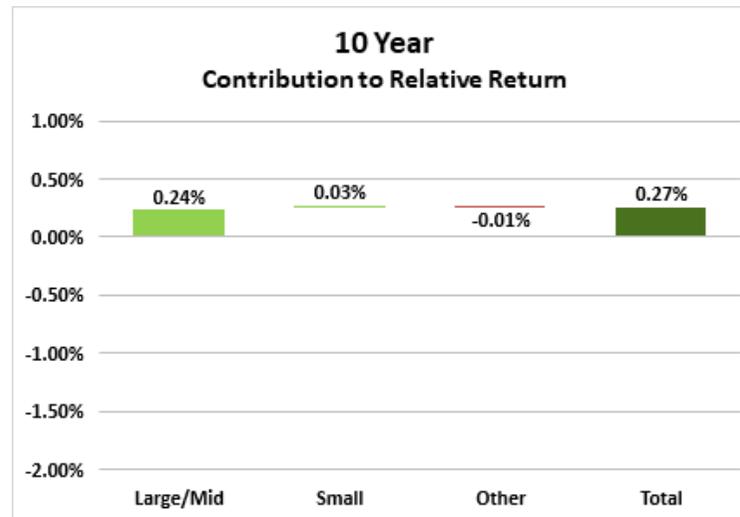
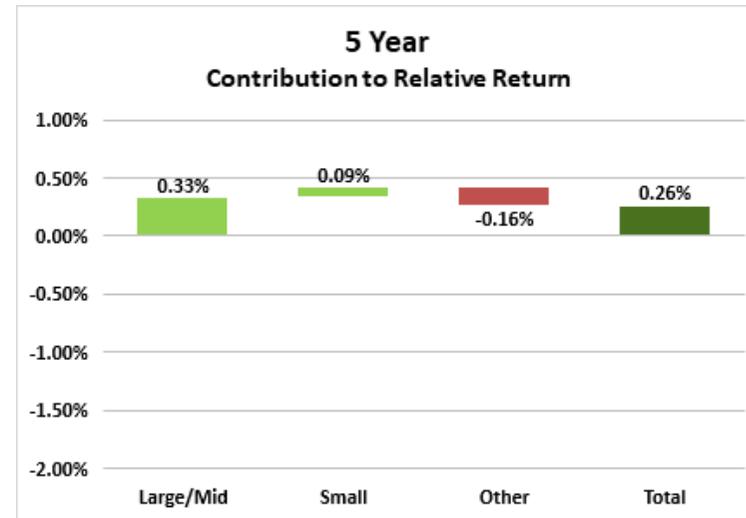
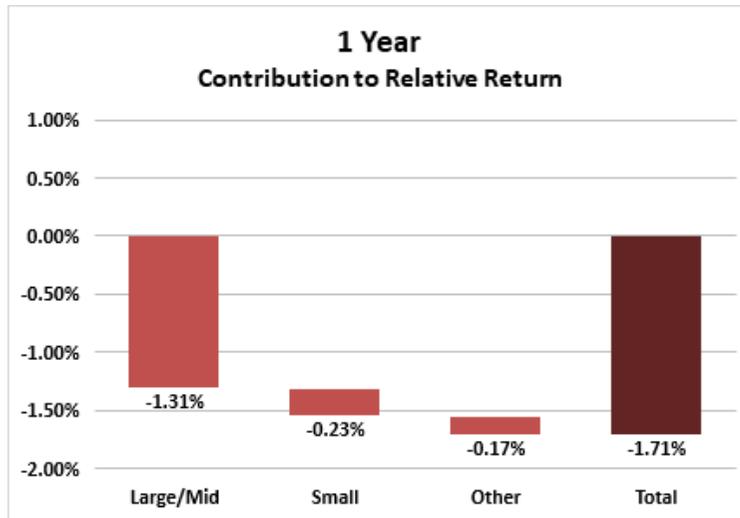
Benchmark: Domestic Equity – PAC Custom Blend

March 31, 2022

International Equity Policy



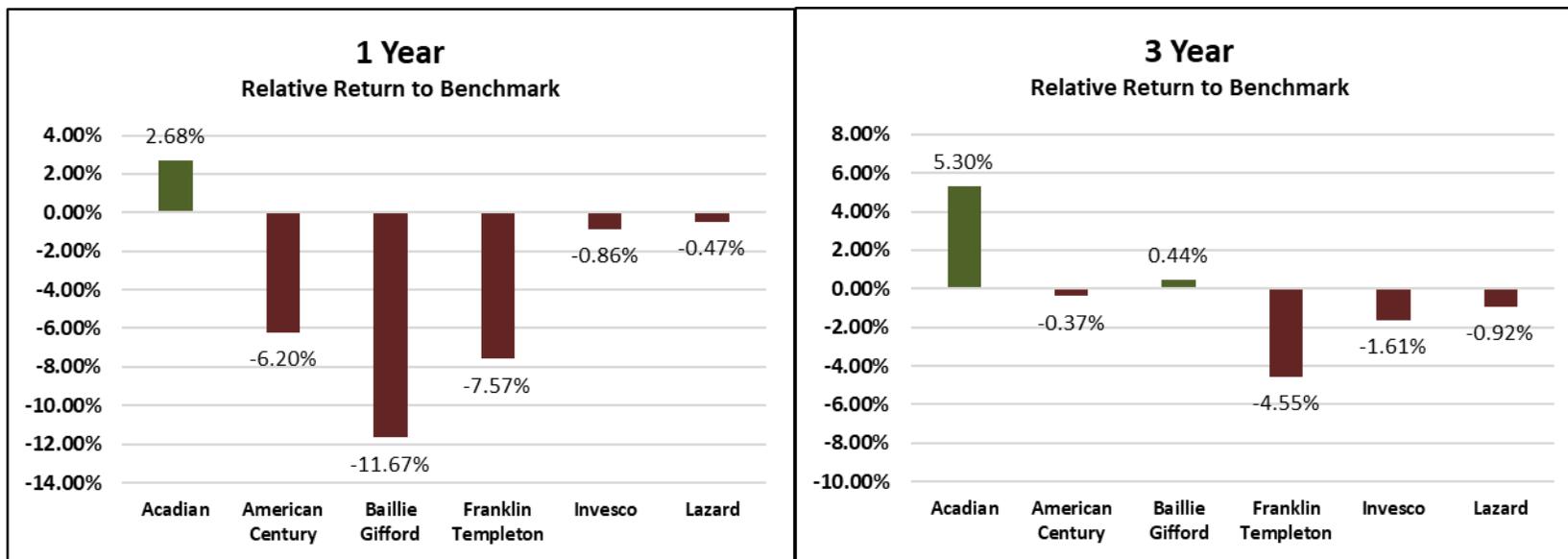
International Equity Net Performance



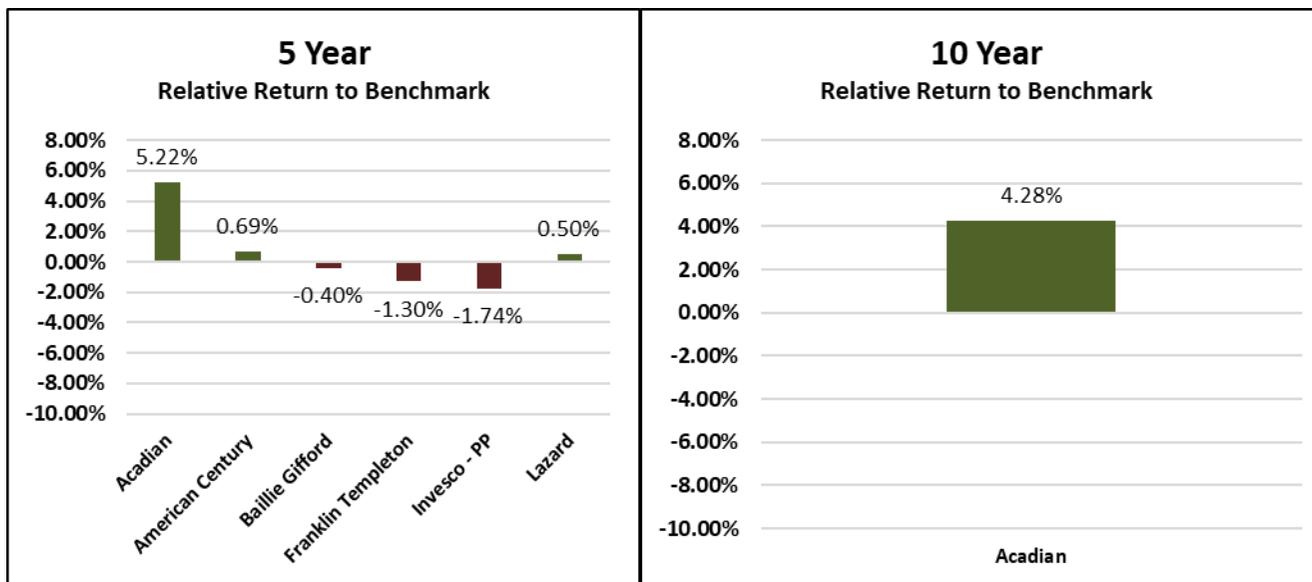
Benchmark: International Equity – PAC Custom Blend

March 31, 2022

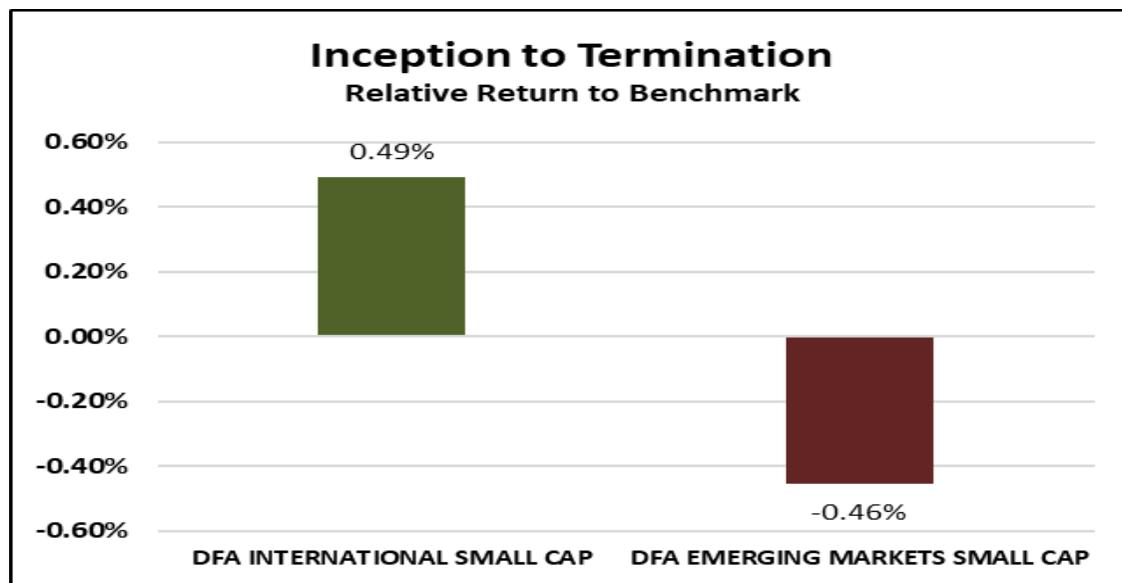
International Equity – Active Managers Net Performance



International Equity – Active Managers Net Performance



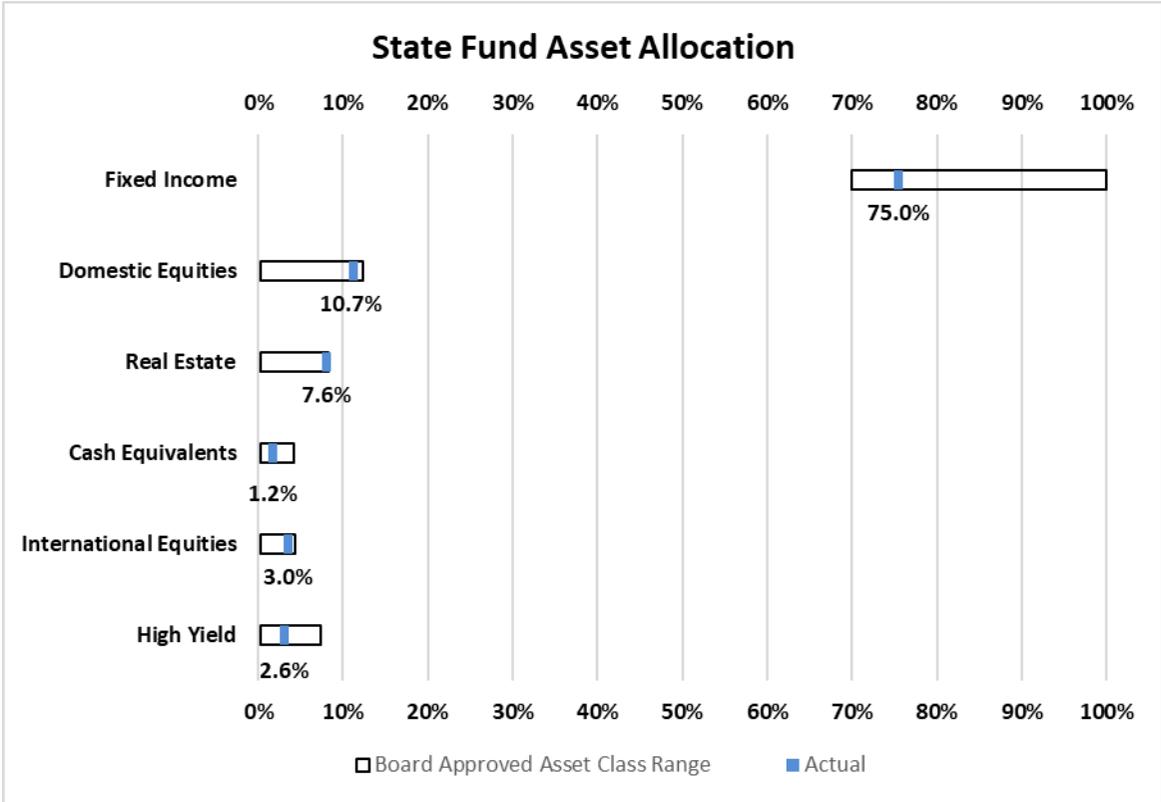
International Equity – Active Managers Net Performance



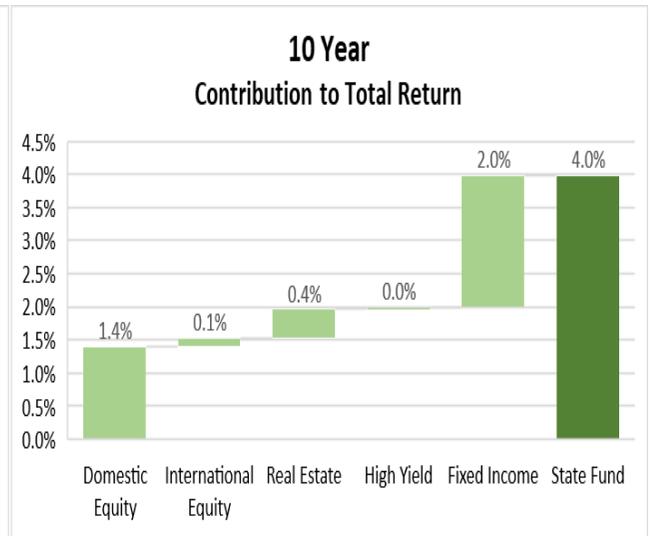
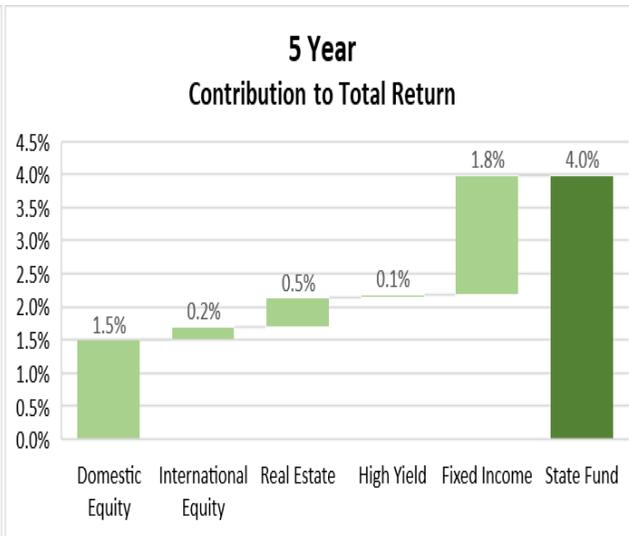
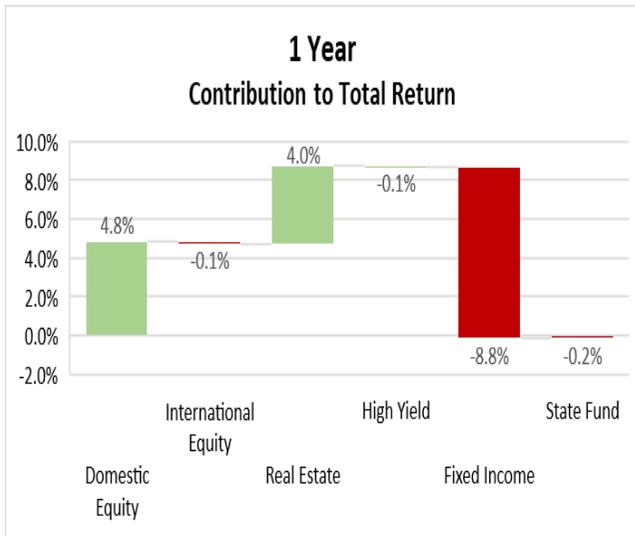
Inception Dates:
DFA INTERNATIONAL SMALL CAP – 11/1/2004
DFA EMERGING MARKETS SMALL CAP – 2/1/2017

Termination Dates:
DFA INTERNATIONAL SMALL CAP – 2/15/2022
DFA EMERGING MARKETS SMALL CAP – 2/15/2022

State Fund Policy

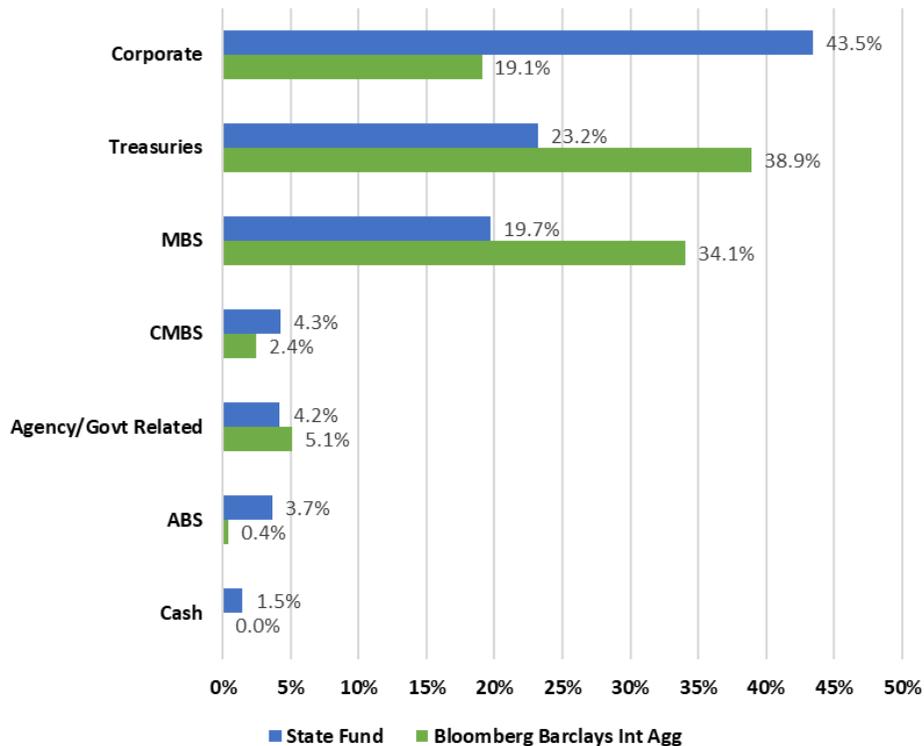


State Fund Performance

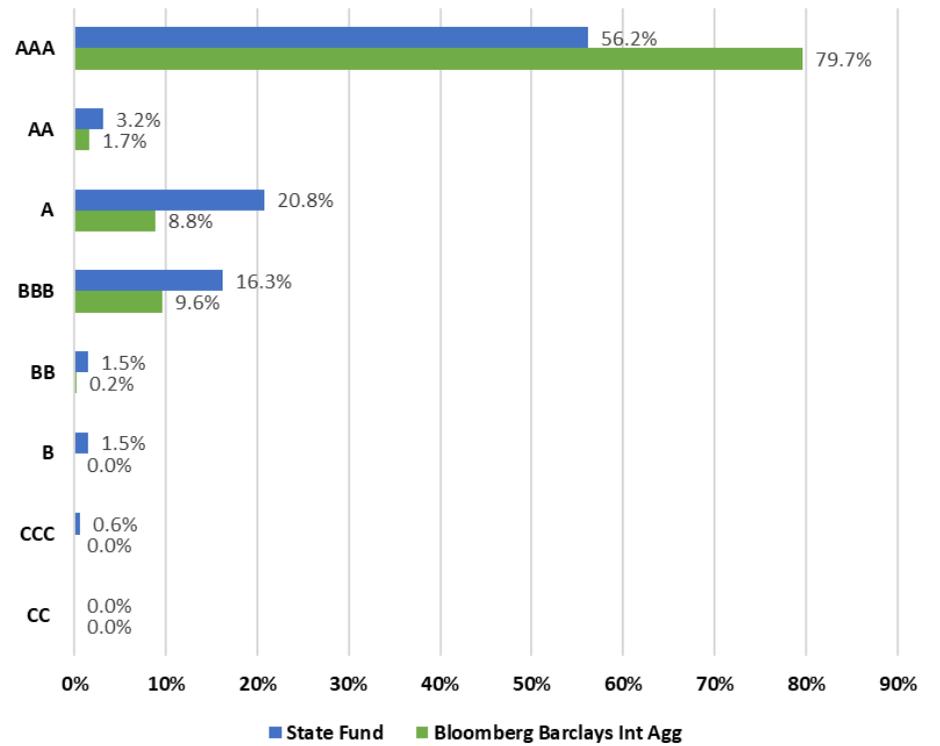


State Fund Investment Pool Characteristics

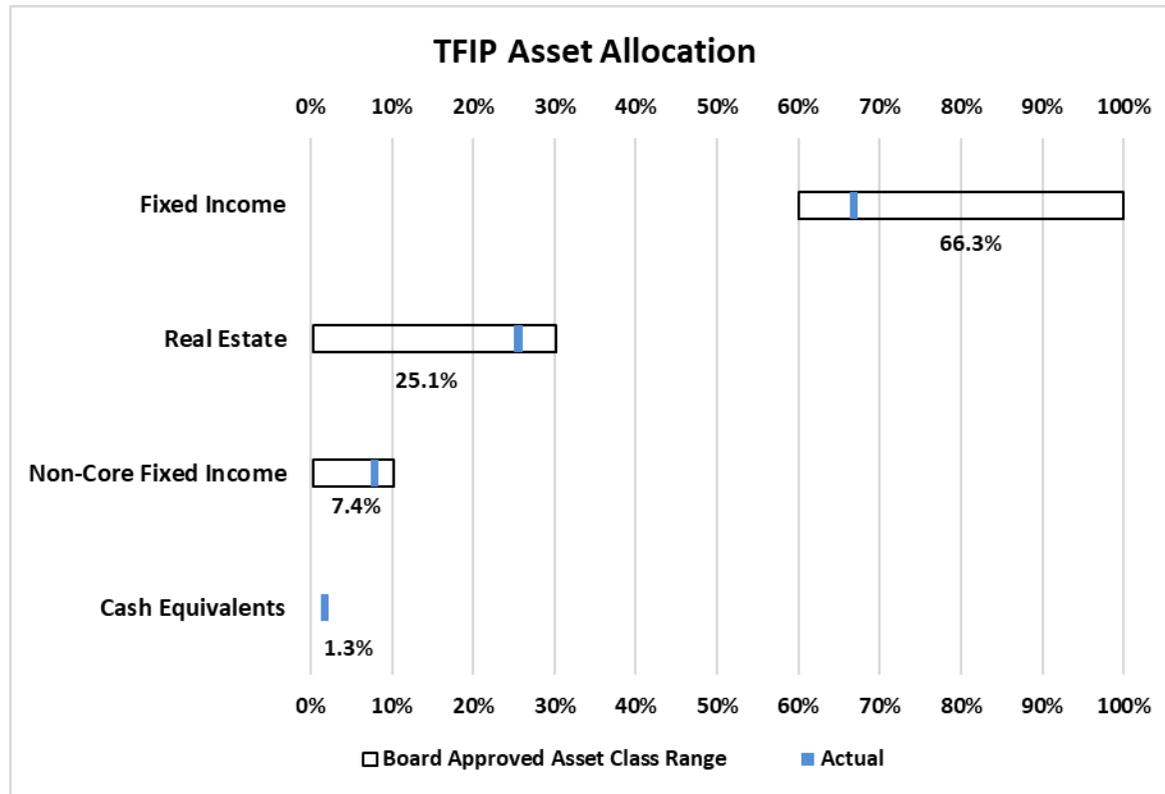
State Fund Bond Portfolio Sector Weights



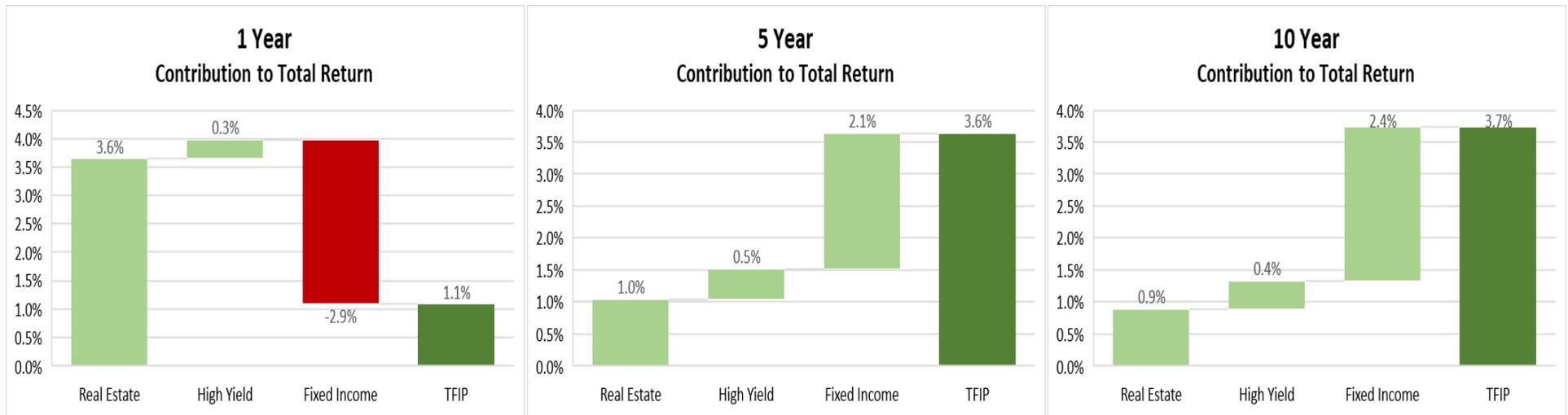
State Fund Bond Portfolio Credit Quality



Trust Funds Investment Pool Policy

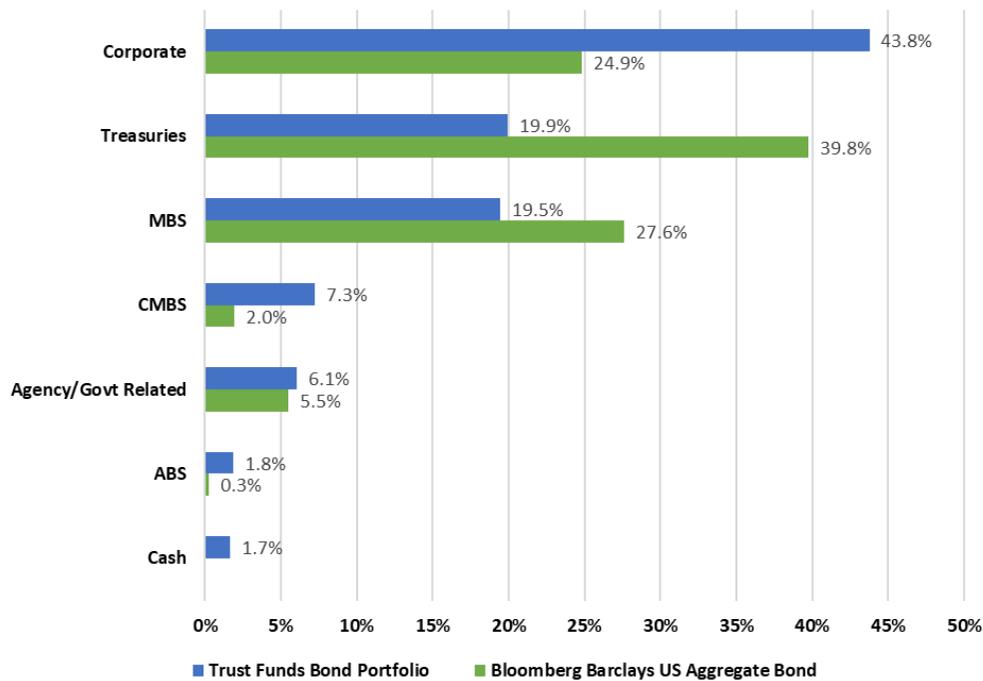


Trust Funds Investment Pool Performance

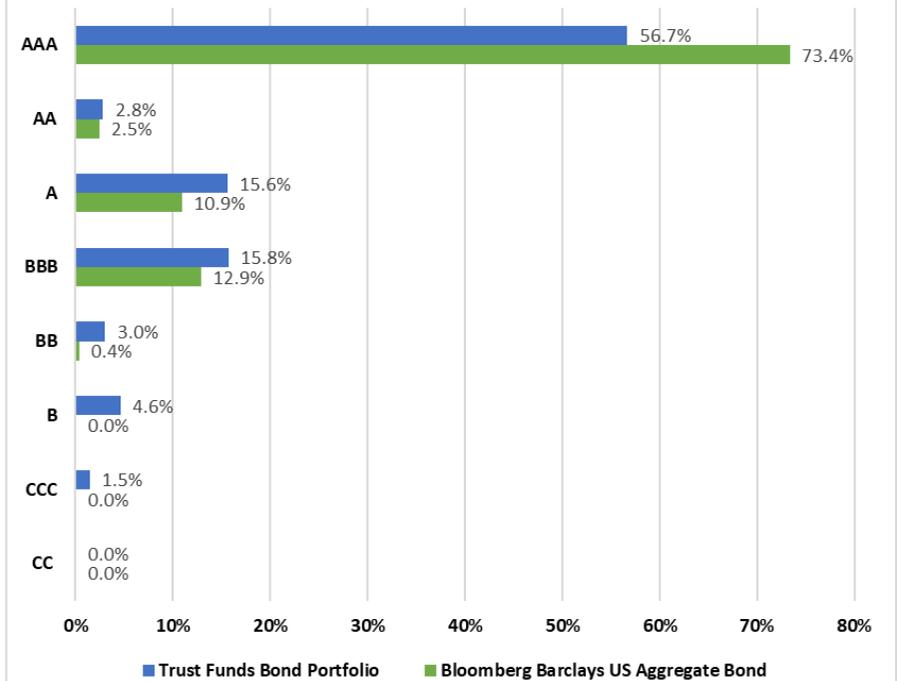


Trust Funds Investment Pool Characteristics

**Trust Funds Bond Portfolio
Sector Weights**

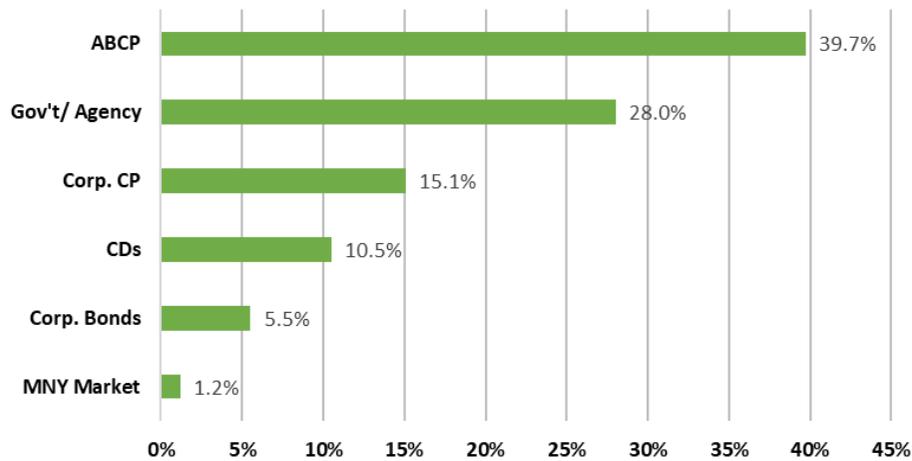


**Trust Funds Bond Portfolio
Credit Quality**

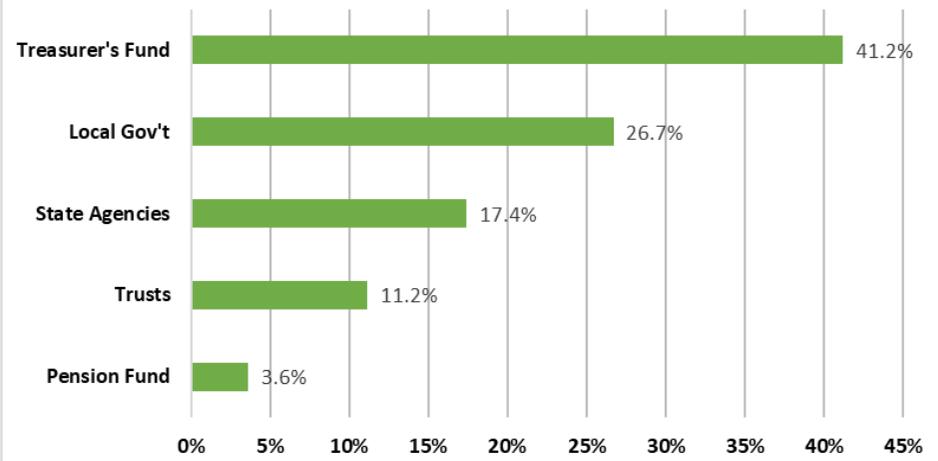


Short Term Investment Pool Characteristics

Assets by Type



Participant by Type



MONTANA

BOARD OF INVESTMENTS

TO: Members of the Board
FROM: Jon Putnam, Chief Investment Officer
John Romasko, Director of Fixed Income
DATE: May 26, 2022
RE: Proposed Changes to Investment Policy Statements

A summary of the proposed change(s) to each of the Investment Policy Statements is below. Redline changes of the affected sections are included behind this memo.

Montana Public Retirement Plans

Private Investments / Real Assets / Real Estate

We are proposing to eliminate the current requirement to consider uncalled, committed capital in the measurement of policy restrictions for the Private Investments, Real Assets and Real Estate Asset Classes.

The proposed policy restrictions would only focus on the Net Asset Value (NAV) of invested capital. NAV is easily measured by staff and is a precise amount. In contrast, staff makes assumptions about if, when and how uncommitted capital will be utilized by managers.

For example, we know the current NAV of our non-U.S. exposure in Private Equity. However, we don't know how much of our uncalled, committed capital will be invested in non-U.S. exposure in the future. Therefore, we must estimate a number from historical data.

Staff will continue to analyze and manage uncalled, committed capital to ensure the portfolio does not deviate from board approved ranges.

Private Investments

We are proposing to increase the limit on non-U.S. exposure from 30% to 40% of the Private Investments portfolio. We have been hovering near the top of the range.

We believe it is prudent for MBOI to maintain the flexibility to seek out attractive managers and for those managers to pursue the best global opportunities.

Real Assets

We are proposing to increase the limit on non-U.S. exposure from 30% to 40% of the Real Assets portfolio. Currently, approximately 11% of the portfolio is in non-U.S. investments with a projection that it grows to 19% given current capital commitments.

There are significant opportunities for infrastructure investments in developed countries outside the U.S., particularly in Europe. We expect this portion of the portfolio to continue to grow.

Trust Funds Investment Pool (TFIP)

We are proposing to add Real Assets as an approved asset class for TFIP with a range of 0-6%. We believe this is an appropriate addition to TFIP because it can provide long-term cash flows with uncorrelated return to other investments in the portfolio.

Dan Whyte has provided a legal opinion regarding the ability of TFIP to invest in this asset class which is included behind the proposed investment policy statement.

Like the Retirement Plans, we are proposing to eliminate the requirement to consider uncalled, committed capital in the measurement of the Real Estate Asset Class policy restrictions.

Finally, we are adding two restrictions. No more than 40% of the portfolio may be invested in non-U.S. real estate and no more than 10% of the portfolio may be invested in direct co-investments.

Short Term Investment Pool (STIP)

We are proposing to add fully collateralized, interest-bearing Demand Deposit Accounts with a Montana domiciled bank as an approved investment. This type of investment would be limited to 5% of the STIP portfolio.

This investment would provide staff an additional tool to meet cash flow needs if there were a disruption in the ability of Montana's custodial bank (State Street) to transmit a wire to Montana's depository bank (U.S. Bank).

DC Disability Fund

The DC Disability Fund does not have a benchmark incorporated into the current investment policy statement. We are proposing to add a benchmark consistent with the approved holdings in the portfolio.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.204
26, 2022

EFFECTIVE DATE: ~~November 30, 2021~~ May

TITLE: Investment Objectives and Guidelines
Private Investments Asset Class

SUPERSEDES: November ~~3019, 2021~~ 2020

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix II: Investment Objectives and Guidelines

- A. Schedule II-C: Investment Objectives and Guidelines Private Investments Asset Class.
- B. Approved Date of Schedule: November 19, 2020.
- C. This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Private Investments.

II. Statement of Purpose

- A. The purpose of these objectives and guidelines is to:
 - 1. Establish the investment objectives and performance standards of the Asset Class.
 - 2. Provide diversified exposure to the Private Investments markets in a prudent and cost-effective manner.

III. Investment Objective

- A. Strategic
 - 1. The objective of the Private Investments Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.
- B. Performance
 - 1. There is no generally accepted benchmark index for private investment performance comparisons. Characteristically, private partnership investments are impacted by the “J-curve” effect, in which fees and transaction costs create negative returns during the initial investment years before distributions are realized. Private investments require a long-time horizon to realize the value provided by the creation or restructuring of private companies
 - 2. The performance objective for the Private Investments Asset Class is the achievement of long-term net returns (after management fees and general partner’s carried interest) above a benchmark reflecting public equity market returns.
 - 3. Success in achieving this objective will be measured by comparing the net return of the Private Investments Asset Class to the weighted average of the MSCI USA Small Cap Index (Private Equity) and the S&P Leveraged Loan Index (Private Credit) (the Benchmark) on an annualized basis. Performance results will be monitored quarterly. However, the success in achieving the objective will be measured on a five (5) year and ten (10) year annualized basis.

C. Investment Guidelines

1. Staff will have full discretion to manage the Private Investments Asset Class consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.
2. Most of the Private Investments Asset Class investments will be managed by external investment managers via a partnership structure in which the Board will have a limited partnership interest.

D. Permitted Investments

1. The Private Investments Asset Class may invest only in the following:
 - a) Private Investment partnership interests. These private partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including Fund-of-Funds and Secondary Funds.
 - b) Investments held in separate accounts or commingled funds managed by external investment managers and governed by their respective investment management contracts and investment guidelines.
 - c) The Private Investments Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a private investment partnership.
 - d) Individual public or private securities received as distributions from funds.
 - e) Exchange-Traded Funds (ETFs) based on a public equity index that is approved by the CIO and purchased and monitored by Staff.
 - f) Cash – either an investment in the STIP, a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

E. Other Restrictions

1. The Montana Public Retirement Plan assets as a percentage of Net Asset Value invested in a single Direct Limited Partnership shall be no greater than two percent (2%).
2. No more than ~~thirty-fourty~~ percent (~~3040~~%) of the aggregate of the Private Investments Asset Class net asset value ~~plus uncalled committed capital~~ should be considered “Non-U.S.” exposure based on the primary objective of the Fund, Partnership, Separate Account, or Index.
3. No more than ten percent (10%) of the aggregate of the Private Investments Asset Class net asset value shall be invested in direct co-investments.
4. Individual public securities received as distributions will be liquidated over a reasonable time-period dependent on market conditions.

F. The following table provides a guideline range with respect to Private Investments strategy diversification. ~~It is important to note that these~~ These ranges reference ~~the sum of~~ the Private Investments Asset Class net asset value ~~and uncalled commitments.~~

<u>Strategy</u>	<u>Policy Range</u>
Buyout and all other private equity related strategies not related to Venture Capital or Private Credit	50% - 100%
Venture Capital	0% - 25%

Private Credit

0% - 50%

1. For the purpose of the ranges provided above, funds will be classified in the category that is most reflective of the underlying investments in the funds.
- G. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Private Investments Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Private Investments Asset Class back within guidelines or a plan to do so.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.205
26, 2022

EFFECTIVE DATE: ~~November 30, 2021~~ May

TITLE: Investment Objectives and Guidelines
Real Assets Asset Class

SUPERSEDES: November ~~3019, 2020~~ 2021

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix II: Investment Objectives and Guidelines

- A. Schedule II-D: Investment Objectives and Guidelines Real Assets Asset Class.
- B. Approved Date of Schedule: November 19, 2020.
- C. This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Real Assets.

II. Statement of Purpose

- A. The purpose of these objectives and guidelines is to:
 1. Establish the investment objectives and performance standards of the Real Assets Asset Class.
 2. Provide diversified exposure to the Real Assets markets in a prudent and cost-effective manner.

III. Investment Objective

- A. Strategic
 1. The objective of the Real Assets Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.
- B. Performance
 1. There is no generally accepted performance comparisons benchmark index for private partnership investments in Real Assets. Characteristically, private partnership investments are impacted by the "j-curve" effect, in which fees and transaction costs create negative returns during the initial investment years before distributions are realized. Private partnership investments usually require a long-time horizon to realize the value provided by the creation or enhancement of private companies.
 2. The long-term performance objective for the Real Assets Asset Class is the achievement of net returns (after management fees and general partner's carried interest) above a benchmark reflecting public equity Real Assets market returns.
 3. Success in achieving this objective will be measured by comparing the long-term net return of the Real Assets Asset Class to 1/3 MSCI ACWI Commodity Producers Index, 1/3 US TIPS Index, 1/3 MSCI ACWI Infrastructure Index (the Benchmark) on an annualized basis. Performance results will be monitored quarterly. However, the success in achieving the objective will be measured on a five (5) year and ten (10) year annualized basis.

C. Investment Guidelines

1. Staff will have full discretion to manage the Real Assets Asset Class consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.
2. Most of the Real Assets Asset Class investments will be managed by external investment managers via private investment partnerships in which the Board will have a limited partnership interest; however, the Real Assets Asset Class may also utilize public long-only and long/short strategies.

D. Permitted Investments

1. The Real Assets Asset Class (for the purpose of these guidelines, “Real Assets” includes investments in inflation linked bonds, infrastructure, timber, energy, agriculture, and other commodities) may invest only in the following:
 - a) Private investment partnership interests in Real Assets. These private investment partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including fund-of-funds and secondary funds.
 - b) The Real Assets Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a Real Assets private investment partnership.
 - c) Individual public or private securities received as distributions from funds.
 - d) Separately managed accounts, open-ended funds, closed-ended funds, or exchange-traded funds (ETFs), managing publicly traded Real Assets related investments, where the investments are approved by the CIO and purchased and monitored by Staff.
 - e) Inflation Linked Bonds.
 - f) Cash – either an investment in the Short-Term Investment Pool (STIP), a vehicle available through the custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

E. Other Restrictions

1. The Montana Public Retirement Plan assets as a percentage of Net Asset Value invested in a single investment within Real Assets Asset Class shall be no greater than two percent (2%).
2. No more than ~~thirty-four~~ percent (~~30~~40%) of the aggregate of the Real Assets Asset Class Net Asset Value ~~plus uncalled committed capital~~ should be considered “Non-U.S.” exposure based on the primary objective of the fund, partnership, separately managed account, or index.
3. No more than ten percent (10%) of the aggregate of the Real Assets Asset Class Net Asset Value shall be invested in direct co-investments.
4. Individual public securities received as distributions will be liquidated over a reasonable time-period dependent on market conditions.

- F. The following table provides a guideline range with respect to the Real Assets Asset Class strategy diversification. ~~It is important to note that these~~ ~~These~~ ranges reference ~~the sum of~~ the Real Assets Asset Class Net Asset Value ~~and uncalled commitments~~.

<u>Strategy</u>	<u>Policy Range</u>
Commodities Related	25% - 75%

Infrastructure Related	0% - 50%
Inflation Linked Bonds	0% - 50%

1. For funds with exposure across categories, the fund will be classified in the category that is most reflective of the underlying investments in the funds.

G. Timber Fund Leverage

1. Leverage is a significant risk factor. On an individual fund basis, the leverage level can range up to thirty percent (30%). Individual fund leverage may occasionally exceed thirty percent (30%) and will be monitored by staff to determine the cause and whether it is a temporary or persistent issue. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total timber fund investment leverage shall not exceed thirty percent (30%).

<u>Strategy</u>	<u>Leverage Policy Range</u>
Timber	0% - 30%

- H. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board’s next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases when the Real Assets allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Assets Asset Class back within guidelines or a plan to do so.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.206
26, 2022

EFFECTIVE DATE: ~~November 30, 2021~~ May

TITLE: Investment Objectives and Guidelines
Real Estate Asset Class

SUPERSEDES: November ~~30+9, 2021~~ 2020

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix II: Investment Objectives and Guidelines

- A. Schedule II-E: Investment Objectives and Guidelines Real Estate Asset Class.
- B. Approved Date of Schedule: June 9, 2020.
- C. This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Real Estate.

II. Statement of Purpose

- A. The purpose of these objectives and guidelines is to:
 1. Establish the investment objectives and performance standards of the Real Estate Asset Class.
 2. Provide diversified exposure to Real Estate in a prudent and cost-effective manner.

III. Investment Objective

- A. Strategic
 1. The objective of the Real Estate Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.
- B. Performance
 1. Success in achieving this objective will be measured by comparing the risk and after-fee return of the Real Estate Asset Class to the 1QTR LAGGED NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) (the Benchmark). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a five (5) year, and ten (10) year annualized basis.
- C. Investment Guidelines
 1. Staff will have full discretion to manage the Real Estate Asset Class consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.
 2. Most of the Real Estate Asset Class investments will be managed by external investment managers via private investment partnerships in which the Board will have a limited partnership interest; however, the Real Estate Asset Class may also utilize public long-only and long/short strategies.

D. Permitted Investments

1. The Real Estate Asset Class may invest only in the following:
 - a) Separate accounts, open-ended funds, closed-ended funds, ETFs, or real estate investment trusts managing publicly traded real estate, where the investments are approved by the CIO and purchased and monitored by Staff
 - b) Private investment partnership interests. These private partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including fund-of-funds and secondary funds
 - c) The Real Estate Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a private real estate investment partnership
 - d) Separate accounts investing in private real estate direct investments
 - e) Individual public or private securities received as distributions from funds are also permitted to be held in the Real Estate Asset Class
 - f) Cash – either an investment in STIP, a vehicle available through the custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations

E. Other Restrictions

1. The Montana Public Retirement Plan assets as a percentage of Net Asset Value invested in a single investment within the Real Estate Asset Class shall be no greater than two percent (2%).
 2. No more than thirty percent (30%) of the aggregate of the Real Estate Asset Class Net Asset Value ~~plus uncalled committed capital~~ should be considered “Non-U.S.” exposure based on the dominant geographic exposure of the Fund, Partnership, Separate Account, or Index.
 3. No more than ten percent (10%) of the aggregate of the Real Estate Asset Class Net Asset Value shall be invested in direct co-investments.
 4. Individual public securities received as distributions will be liquidated over a reasonable time-period dependent on market conditions.
- F. The following table provides a guideline range with respect to the Real Estate Asset Class strategy diversification. ~~It is important to note that these~~ These ranges reference ~~the sum of~~ the Real Estate Asset Class Net Asset Value ~~and uncalled commitments~~.

<u>Strategy</u>	<u>Policy Range</u>
Core and Core Plus Real Estate	20% - 50%
Non-Core Real Estate	25% - 65%
Real Estate Debt	10% - 40%
Public Real Estate Securities	0% - 40%

1. For funds with exposure across categories, the fund will be classified in the category that is most reflective of the underlying investments in the funds.

G. Leverage

1. Leverage is a significant risk factor. On an individual fund basis, the leverage level can range up to seventy-five percent (75%). Individual fund leverage may occasionally exceed seventy-five percent (75%) and will be monitored by staff to determine the cause and whether it is a temporary or persistent issue. Leverage for Core, Core plus and Non-Core Real Estate consists of the combined borrowing at the property level and the fund level. Leverage for Real Estate Debt is only measured at the fund level. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total Real Estate Asset Class leverage shall not exceed sixty percent (60%).

<u>Strategy</u>	<u>Leverage Policy</u>
Core Real Estate Investments	0% - 50%
Core-plus/Non-Core Real Estate	0% - 75%
Real Estate Debt	0% – 75%

2. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Real Estate Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Estate Asset Class back within guidelines or a plan to do so
3. While no formal diversification ranges are set forth for property type diversification or regional diversification within the United States, it is expected that the Real Estate Asset Class shall remain diversified across these factors. These and other factors shall be monitored and reported to the Board at least annually.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.501
~~2021~~ May 26, 2022

EFFECTIVE DATE: ~~November 30,~~

TITLE: Trust Funds Investment Pool
 2021
 Allocation Ranges

SUPERSEDES: ~~April 20~~ November 30,

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix I: Trust Funds Investment Pool Allocation Ranges

A. Permitted Ranges:

1. Approved February 11, 2020.

Trust Funds Investment Pool Asset Class Allocations		
Asset Class	Range Low	Range High
Real Estate	0	30
Non-Core Fixed Income	0	10
<u>Real Assets</u>	<u>0</u>	<u>6</u>
Investment Grade Fixed Income & Cash	60	100

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.502
26, 2022

EFFECTIVE DATE: ~~November 30, 2021~~ May

TITLE: Investment Objectives and Guidelines
2021

SUPERSEDES: ~~April 20, 2021~~ November 30,

Real Estate Asset Class

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix II: Investment Objectives and Guidelines

- A. Schedule II-A: Investment Objectives and Guidelines Real Estate Asset Class.
- B. Effective Date of Schedule: June 9, 2020.
- C. This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Real Estate.

II. Statement of Purpose

- A. The purpose of these objectives and guidelines is to:
 1. Establish the investment objectives and performance standards of the Real Estate Asset Class.
 2. Provide diversified exposure to Real Estate in a prudent and cost-effective manner.

III. Investment Objective

- A. Strategic
 1. The objective of the Real Estate Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.
- B. Performance
 1. Success in achieving this objective will be measured by comparing the risk and after-fee return of the Real Estate Asset Class to the NCREIF ODCE Index (the Benchmark). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a five (5) year, and ten (10) year annualized basis.
- C. Investment Guidelines
 1. Staff will have full discretion to manage the Real Estate Asset Class consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.
 2. Most of the Real Estate Asset Class investments will be managed by external investment managers.

D. Permitted Investments

1. The Real Estate Asset Class may invest only in the following:
 - a) Separate Accounts, Open-Ended Funds, Closed-Ended Funds, Exchange-Traded Funds (ETFs), Real Estate Investment Trusts or Master Limited Partnerships (MLPs) managing publicly traded Real Estate, where the investments are approved by the CIO and purchased and monitored by Staff.
 - b) Private Investment partnership interests. These private partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including Fund-of-Funds and Secondary Funds.
 - c) The Real Estate Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a private Real Estate investment partnership.
 - d) Individual public or private securities received as distributions from funds are also permitted to be held in the Real Estate Asset Class.
 - e) Cash – either an investment in STIP, a vehicle available through the Custodian, or an SEC registered money market fund that is considered a “US Treasury” or “US Government” money market fund per the SEC regulations.

E. Other Restrictions

1. No less than seventy-five percent (75%) of the aggregate of the Real Estate Asset Class net asset value ~~plus uncalled committed~~ capital shall be invested in “Core and Core-Plus” Real Estate
2. ~~No more than forty percent (40%) of the aggregate of the Real Estate Asset Class Net Asset Value should be considered “Non-U.S.” exposure based on the dominant geographic exposure of the Fund, Partnership, Separate Account, or Index.~~
3. ~~No more than ten percent (10%) of the aggregate of the Real Estate Asset Class Net Asset Value shall be invested in direct co-investments.~~
- 4.4. No more than thirty-five percent (35%) of the aggregate of the Real Estate Asset Class net asset value ~~plus uncalled committed capital~~ should be in a single Fund, Partnership, or Separate Account.
- 2.5. Individual public securities received as distributions will be liquidated over a reasonable time period dependent on market conditions.

F. The following table provides a guideline range with respect to the Real Estate Asset Class strategy diversification. ~~It is important to note that these~~ These ranges reference ~~the sum of~~ the Real Estate Asset Class Net Asset Value ~~and uncalled commitments~~.

<u>Strategy</u>	<u>Policy Range</u>
Core Real Estate	50% - 100%
Core-plus	0% - 25%
Real Estate Debt	0% - 25%

1. For funds with exposure across these categories, the fund will be classified in the category that is most reflective of the underlying investments in the funds.

G. Leverage

1. Leverage is a significant risk factor. On an individual fund basis, the leverage level can range up to fifty percent (50%). Leverage for Core and Core-plus Funds consists of the combined borrowing at the property level and the fund level. Leverage for Real Estate Debt is only

measured at the fund level. On a select basis, the leverage may exceed sixty-five percent (65%) for a given investment if it is determined to be reasonable to do so. Leverage shall be monitored on an individual fund level and new investments shall be made with the intention that the total Real Estate Asset Class leverage shall not exceed fifty percent (50%).

<u>Strategy</u>	<u>Leverage Policy</u>
Core Real Estate Investments	0% - 50%
Core-plus	0% - 65%
Real Estate Debt	0% - 50%

2. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases that the Real Estate Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Estate Asset Class back within guidelines or a plan to do so.
3. While no formal diversification ranges are set forth for property type diversification or regional diversification within the United States, it is expected that the Real Estate Asset Class shall remain diversified across these factors. These and other factors shall be monitored and reported to the Board at least annually.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.505

EFFECTIVE DATE: May 26, 2022

TITLE: Investment Objectives and Guidelines
Real Assets Asset Class

SUPERSEDES:

BOARD ADOPTION: May 26, 2022

REVIEWED:

I. Appendix II: Investment Objectives and Guidelines

- A. Schedule II-D: Investment Objectives and Guidelines Real Assets Asset Class.
- B. Approved Date of Schedule: May 26, 2022.
- C. This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Real Assets.

II. Statement of Purpose

- A. The purpose of these objectives and guidelines is to:
 1. Establish the investment objectives and performance standards of the Real Assets Asset Class.
 2. Provide diversified exposure to the Real Assets markets in a prudent and cost-effective manner.

III. Investment Objective

- A. Strategic
 1. The objective of the Real Assets Asset Class is to attain the highest possible return within the parameters of the Investment Guidelines set forth below.
- B. Performance
 1. There is no generally accepted performance comparisons benchmark index for private partnership investments in Real Assets. Characteristically, private partnership investments are impacted by the “j-curve” effect, in which fees and transaction costs create negative returns during the initial investment years before distributions are realized. Private partnership investments usually require a long time horizon to realize the value provided by the creation or enhancement of private companies.
 2. The long-term performance objective for the Real Assets Asset Class is the achievement of net returns (after management fees and general partner’s carried interest) above a benchmark reflecting public equity Real Assets market returns.
 3. Success in achieving this objective will be measured by comparing the long-term net return of the Real Assets Asset Class to 50% MSCI ACWI Commodity Producers Index, and 50% MSCI ACWI Infrastructure Index (the Benchmark) on an annualized basis. Performance results will be monitored quarterly. However, the success in achieving the objective will be measured on a five (5) year and ten (10) year annualized basis.

C. Investment Guidelines

1. Staff will have full discretion to manage the Real Assets Asset Class consistent with the investment guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.
2. Most of the Real Assets Asset Class investments will be managed by external investment managers via private investment partnerships in which the Board will have a limited partnership interest.

D. Permitted Investments

1. The Real Assets Asset Class (for the purpose of these guidelines, "Real Assets" includes investments in infrastructure, timber, energy, agriculture, and other commodities) may invest only in the following:
 - a) Private investment partnership interests in Real Assets. These private investment partnerships may be direct limited partnerships, limited liability companies, or vehicles that primarily invest in partnerships, including fund-of-funds and secondary funds.
 - b) The Real Assets Asset Class may co-invest with private investment managers in transactions that are suitable for inclusion into a Real Assets private investment partnership.
 - c) Individual securities received as distributions from funds.
 - d) Separately managed accounts, open-ended funds or closed-ended funds, managing Real Assets related investments, where the investments are approved by the CIO and purchased and monitored by Staff.

E. Other Restrictions

1. The Trust Funds Investment Pool assets as a percentage of Net Asset Value invested in a single investment within Real Assets Asset Class shall be no greater than three percent (3%).
2. No more than forty percent (40%) of the aggregate of the Real Assets Asset Class Net Asset Value should be considered "Non-U.S." exposure based on the primary objective of the fund, partnership, separately managed account, or index.
3. No more than ten percent (10%) of the aggregate of the Real Assets Asset Class Net Asset Value shall be invested in direct co-investments.
4. Individual securities received as distributions will be liquidated over a reasonable time period dependent on market conditions.
5. While no formal diversification ranges are set forth for Real Assets sub-asset classes, it is expected that the Real Assets portfolio will be diversified over time.

- F. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while considering current market conditions and the associated costs of rebalancing. At the Board's next regularly scheduled quarterly meeting, the CIO shall inform the Board of any cases when the Real Assets allocations were outside of the limits and either inform the Board of the actions that were taken to return the Real Assets Asset Class back within guidelines or a plan to do so.

MONTANA

BOARD OF INVESTMENTS

INTEROFFICE MEMORANDUM

To: Dan Villa, Executive Director
Jon Putnam, Chief Investment Officer

From: Dan Whyte, Chief Legal Counsel

Re: Montana Law's Private Corporate Capital Stock Investment Limitation

Date: April 15, 2022

Question Presented

Whether the Montana Constitution's prohibition on investment of state of Montana funds in private corporate capital stock includes real assets.

Short Answer

No. The Constitution's limitation on investment of state of Montana funds is restricted to common stock of a corporation. Real assets are not corporate common stock.

Discussion

The Montana Board of Investments ("BOI" or "Board") was created by the Montana Legislature in 1972, following the approval of the new Montana Constitution. MONT. CONST. Art. VIII, § 13. This provision and Title 17, chapter 6, part 2, MCA, grant the Board authority over its two major responsibilities: the Unified Investment Program (UIP) and the In-State Investment Program. The UIP was established by the legislature to create a single agency vested with the authority to invest and manage state funds in accordance with state law and the Montana Constitution. Under this authority, BOI invests essentially all the state of Montana's money from its pension funds, trust funds, insurance reserves, operating funds, and many local government funds. MONT. CONST. Art. VIII, § 13 and § 17-6-201, MCA, require the Board to administer the Unified Investment Program according to the "prudent expert principle." This requires and investment manager to:

(a) discharge the duties with the care, skill, prudence, and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity with the same resources and familiar with like matters exercises in the conduct of an enterprise of a like character with like aims;

(b) diversify the holdings of each fund within the unified investment program to minimize the risk of loss and to maximize the rate of return unless, under the circumstances, it is clearly prudent not to do so; . . .

Section 17-6-201(1), MCA.

The constitutional provision includes one limitation to the Board's investment authority: "[N]o public funds shall be invested in private corporate capital stock." MONT. CONST. Art. VIII, § 13(1). This limitation does not apply to investing public retirement system assets or state compensation insurance fund assets in private corporate capital stock. *Id.*, § 13(3) and (4), respectively. Section 7-6-201(2)(b), MCA, defines "private corporate capital stock as "only the common stock of a corporation."

The 1972 Constitutional Convention delegates debated at length the future of investment of Montana assets. The delegates wisely eliminated oversight of the state's public funds by eighteen separate boards or commissions, to be replaced by a unified state investment program where all public funds would be administered by a board of investments. Fitzgerald, *Montana's Constitutionally Established Investment Program*, 51 MONT. L. Rev. 380 (1990). However, the authority of the legislature and this new board did not come without restraints. The Constitutional Convention delegates' debates are instructive as to the purpose for ban on private corporate capital stock. The delegates were influenced by the U.S.'s economic history and the 1889 Constitution's investment restrictions as they debated and approved the investment restraint.

The majority report of the Convention's Revenue and Finance Committee recommended abolishing the 1889 Constitution's strict investment limitations in favor of legislative control of investments. Not all were in favor of total legislative control, however, and a minority proposal prohibiting investment in common stocks was ultimately adopted as part of Art. VIII, § 13. *Fitzgerald*, 382-83. The debate over those proposals is illuminating.

Whereas Revenue and Finance Committee members progressively recommended that the legislature have decision-making power for public funds investments (to be delegated to the Board of Investments), other constitutional delegates were prejudiced by the stock market crash of the Great Depression and the "homestead boom collapse" of the 1920s and 1930s which forced the state to repay School Land Trust Fund principal loaned under the Farm Loan Program. *Fitzgerald*, at 388. Acting on these concerns, Delegate Artz offered the minority proposal prohibiting investment in common stocks: "With the exception of moneys contributed by individuals to retirement funds, no public funds shall be invested in private corporate capital stock." V MONT. CONSTITUTIONAL CONVENTION VERBATIM TRANSCRIPT 1518 (1972) ("Trans.") Artz's testimony reveals why he proposed restricting investments:

We maintain that the criteria for investment of public funds is different than investing personal or private funds. We say that the priorities should be in the following order: number one, security; number two, that the funds should be invested in Montana as much as possible; and that the final consideration is the return on the investment.

* * *

We are violently opposed to gambling with state funds and taking a chance that this limb might break; and any time you put money in private corporate capital stock, you are gambling, because you are down at the very bottom of the balance sheet. You have no security except the earning power of that corporation. There is [sic] no assets to back it up unless they're left over after you've taken care of bonded indebtedness and all of the other liabilities. Common stock is the last item.

Id., 1519. Also underlying the creation of limitations on the unified investment program was a mistrust of the legislature. *Id.*, 1534. The delegates were unwilling to give *carte blanche* control over these assets. Some of the delegates were concerned that the new board’s “investment counselors” would invest poorly without audit protection that would only take place months later. *Id.*, 1533. Finally, the concern arose that the electorate would not vote for the new constitution if public funds could be invested in common stock. *Id.*, 1537. These concerns played a prominent role in rejection of the Committee’s majority report and the passage of the minority report prohibiting investment in private corporate capital stock.

A substitute motion to Artz’s motion was also debated that would have limited investment in only Montana businesses and government-backed bonds. *Id.*, 1521-32. While that ultra-conservative motion was defeated, its sponsor, Delegate Swanberg testified that he interpreted Artz’s minority proposal as allowing for investments in real estate, which Swanberg opposed. *Id.*, 1523.

Investments in retirement funds do not carry the same prohibition from investment in common stocks. MONT. CONST. Art. VIII, § 13(3). In the delegates’ opinion, public retirement system assets should not face the same constraint because:

. . . for the people in the Public Employees’ Retirement Fund or the Teachers’ Retirement Fund, for them to be limited in the method of investment of their funds—actually it is their money that is being put in; the state matches with a certain amount. These people should be given the opportunity to select how they wish their money to be invested. This is true in most all pension plans today. When a person signs up for a pension plan, in many areas—most, in fact—most teachers’ retirement funds throughout the country, they’re given an opportunity to say, “I’d like 20 percent of my money to go into common stocks, 20 percent into government bonds, and 50 percent in something else.” This is a growing thing; and for us here in the Constitution to limit the ability of the people that invest these people’s money, it just is not very practical, really.

Trans., 1529. This desire to allow public employees to determine their own retirement investments prevailed.

Upon final adoption by the electorate, the Montana Constitution prohibits the Board of Investments from directly investing in the private corporate capital stock of a corporation. The Montana Legislature subsequently defined “private corporate capital stock” as “only the common stock of a corporation.” § 17-6-201(2)(b), MCA (not including retirement assets).

Other than this single limitation, though, the Board is granted broad discretion to invest Montana’s public funds and to diversify the state’s portfolio. It is my opinion that the Board is not prohibited from investing in real assets.

“Common stock” is defined as “a security that represents ownership in a corporation.” <https://www.investopedia.com/terms/c/commonstock.asp> The Corporate Finance Institute has also defined common stock as “a type of security that represents ownership of equity in a company.” <https://corporatefinanceinstitute.com/resources/knowledge/finance/common-stock/> A shareholder’s ownership of common stock gives that person voting rights in the company, the opportunity to receive a portion of profits through dividends. On average, common shares offer a higher return than other ownership, such as preferred or bonds, but the risk is also higher. *Id.*

Alternatively, Nuveen, a TIAA Company, defines real assets as:

Broadly, real assets provide the framework and resources to facilitate everyday activity in the world economy. While numerous types of investments could be considered real assets, our definition includes:

- Real estate, including real estate investment trusts (REITs). Land and commercial properties including apartments, offices, warehouses, malls, etc.
- Infrastructure. Assets and networks used to transport, store and distribute goods, energy, people and information, such as toll roads, pipelines, airports and cellphone towers.
- Commodities. Basic goods such as oil, natural gas, precious metals, gold, corn and soybeans.

Weyandt, *Get Real with Income-producing Real Assets*, <https://www.nuveen.com/en-us/insights/income-oriented-investing/get-real-with-income-producing-real-assets> 20 August 2021. *Investopedia* provides three buckets for assets, generally: real, financial, or intangible.

Intangible assets are valuable property that is not physical in nature. Such assets include patents, copyrights, brand recognition, trademarks, and intellectual property. For a business, perhaps the most important intangible asset is a positive brand identity.

Financial assets are a liquid property that derives value from a contractual right or ownership claim. Stocks, bonds, mutual funds, bank deposits, investment accounts, and good old cash are all examples of financial assets. They can have a physical form, like a dollar bill or a bond certificate, or be nonphysical—like a money market account or mutual fund.

In contrast, a real asset has a tangible form, and its value derives from its physical qualities. It can be a natural substance, like gold or oil, or a man-made one, like machinery or buildings.

<https://www.investopedia.com/terms/r/realasset.asp>

Real assets are further defined by *Investopedia* as:

[P]hysical assets that have an intrinsic worth due to their substance and properties. Real assets include precious metals, commodities, real estate, land, equipment, and natural resources. They are appropriate for inclusion in most diversified portfolios because of their relatively low correlation with financial assets, such as stocks and bonds.

Id.

Finance Management defines real assets in a similar way:

We generally divide assets into two categories – Real and Financial. Real assets are the assets that a business or investor owns, such as land, building, and more.

A financial asset, on the other hand, are liquid assets that one can easily or quickly convert into cash, such as stock, bonds, and securities, etc.

<https://efinancemanagement.com/financial-accounting/real-vs-financial-assets#:~:text=We%20generally%20divide%20assets%20into,bonds%2C%20and%20securities%2C%20etc.>

Investopedia distinguishes common stocks and real assets.

Stocks are financial assets, not real assets. Financial assets are paper assets that can be easily converted to cash. Real assets are tangible and therefore have intrinsic value. Because the definition of a financial asset, rather than that of a real asset, best describes stock, this is the category into which it falls.

<https://www.investopedia.com/ask/answers/083115/are-stocks-real-assets.asp#:~:text=Key%20Takeaways,contractual%20right%20or%20ownership%20claim.>

Therefore, real assets, including real estate, are not “common stock.” As discussed previously it was also the general understanding of the constitutional delegates, as mentioned by Delegate Swanberg, that common stock does not include real estate.

It is important to note that in some circumstances, financial assets are invested in real assets, such as a mutual fund or an exchange-traded fund (ETF) that invests in commodities such as gold or silver. For real estate specifically, investment in real estate investment funds (REITs) is the investment in real estate properties, but the REITs themselves are financial assets. These pooled investments hold hard assets but are themselves financial assets. When the Board invests in a REIT or ETF, the important distinction that allows the Board to be true to the Montana Constitution is that the Board’s investment is in the real assets of a corporation and is not a direct purchase of stock in the corporation.

Conclusion

While the Montana Constitution bans the purchase of common stock from Montana’s public assets, there are no other limitations to the Board’s diversified holdings. Real assets are not restrained by Art. VIII, § 13 or by Montana statute.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.601
~~2021~~ May 26, 2022

EFFECTIVE DATE: ~~November 30,~~

TITLE: Investment Objectives and Guidelines
30, 2021

SUPERSEDES: ~~June 1, 2021~~ November

Short Term Investment Pool (STIP)

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Appendix I: Investment Objectives and Guidelines

A. Schedule I-A: Investment Objectives and Guidelines Short Term Investment Pool (STIP).

1. Effective Date of Schedule: June 1, 2021.

B. This Schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for the STIP.

II. Statement of Purpose

A. The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Pool.
2. Provide diversified exposure to Cash Equivalent and Short-Term Fixed Income Investments in a prudent and cost-effective manner.

III. Investment Objective

A. Strategic

1. The objective of the STIP is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

B. Performance

1. Success in achieving this objective will be measured by comparing the risk and the net of expenses return of the STIP to the Federal Reserve US Treasury Constant Maturity 1 Month Index (the Benchmark). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three (3) year, five (5) year, and ten (10) year annualized basis.

IV. Investment Guidelines

A. Board Staff will have full discretion to manage the STIP consistent with the Investment Guidelines stated below. Compliance with the following guidelines for permitted investments and other restrictions is the sole responsibility of the Staff. Any exceptions or compliance violations are to be reported to the Board at the next scheduled quarterly Board meeting.

V. Permitted Investments

A. Purchases of securities other than U.S. government or U.S. Agency obligations are restricted to those which are pre-approved and part of an "Approved List." The STIP may invest only in the following securities and investment vehicles:

1. U.S. Treasury or U.S. dollar denominated securities fully guaranteed by the U.S. Government.

2. U.S. Government Agency securities denominated in U.S. dollars.
3. Publicly traded U.S. dollar denominated corporate bonds, notes, and medium-term notes (MTNs).
4. U.S. dollar denominated Commercial Paper (CP).
5. U.S. dollar denominated Bankers' Acceptance (BA).
6. U.S. dollar denominated Certificates of Deposits (CD).
7. U.S. dollar denominated Asset-Backed Commercial Paper (ABCP).
8. Repurchase or Reverse Repurchase Agreements with an approved primary dealer or the custodial bank, and under the terms of a written master repurchase agreement.
9. Investments required to implement the bond credit enhancement authorized by Resolution 219.
10. SEC registered 2a-7 Institutional Money Market Funds that are considered "U.S. Treasury" or "U.S. Government" money market mutual funds according to the SEC regulations.
11. Short-term investment vehicle available through the custodial bank.
12. Variable rate securities based on an index that is approved by the CIO and purchased and monitored by Staff.
13. FDIC insured deposit accounts.
14. Fixed Income Investments in the State's INTERCAP program.
15. Fully collateralized, daily liquidity investment in an interest-bearing Demand Deposit Account with a Montana domiciled Bank.

VI. Restrictions

A. Concentration restrictions (Concentration restrictions are at the time of purchase)

1. A maximum of forty percent (40%) of the STIP Units Value shall be held ABCP.
2. A maximum of ten percent (10%) of the STIP Units Value shall be held in Repurchase Agreements.
3. A maximum of fifteen percent (15%) of the STIP Units Value shall be held in permitted SEC registered 2a-7 Institutional Money Market Funds.
4. A maximum of ten percent (10%) of the STIP Units Value shall be pledged to secure Reverse Repurchase Agreements. Transactions will be used only to secure borrowings for temporary or emergency purposes.
5. A maximum of twenty-five percent (25%) of the STIP Units Value in the aggregate shall be held in all non- Government Variable Rate securities with maturities greater than three hundred ninety-seven (397) days.

B. Issuer Restrictions (Issuer restrictions are at the time of purchase)

1. A maximum of thirty percent (30%) of the STIP Units Value shall be held in any single issuer of U.S. Agency securities.
2. A maximum of three percent (3%) of the STIP Units Value shall be invested in any one issuer with the exception of U.S. Treasury and U.S. Agency securities as well as any Repurchase Agreements with a financial institution.
3. A maximum of ten percent (10%) of the STIP Units Value in the aggregate shall be held in any one financial sponsor of ABCP as well as any direct obligations associated with the sponsor. Repurchase agreement obligations of a financial institution shall not be considered in this limit.
4. A maximum of five percent (5%) of the STIP Units Value shall be held in any single SEC registered 2a-7 Institutional Money Market Funds or as FDIC insured deposits.

5. A maximum of five percent (5%) of the STIP Units Value shall be held in Repurchase Agreements with any single primary dealer or financial institution.

6. A maximum of five percent (5%) of the STIP Units Value shall be held in fully collateralized, demand deposit accounts at Montana domiciled Banks.

C. Rating Restrictions

1. ABCP, CP, BA or CD shall not have a Tier 2 or lower rating at any NRSRO at the time of purchase.
2. Corporate bonds, notes, or MTNs shall be rated a minimum of the sixth highest rating at any NRSRO at the time of purchase.
3. All securities, with the exception of Fixed Income Investments in the State INTERCAP program, securities fully guaranteed by the U.S. Government, ~~and~~ approved Institutional Money Market Funds, and fully collateralized Demand Deposit Accounts at Montana domiciled Banks must be rated by at least two Nationally Recognized Statistical Rating Organizations (NRSROs) at the time of purchase.
4. A maximum of ten percent (10%) of the STIP Units Value shall be held in ABCP, CP, BA or CD rated with a Tier 2 or lower rating at any Nationally Recognized Statistical Rating Organization (NRSRO) at any time.

D. Liquidity Restrictions

1. A minimum of ten percent (10%) of the STIP Units Value shall qualify as “daily liquid assets.” For this guideline it is assumed that “daily liquid assets” is defined as cash, direct obligations of the U.S. government, securities that will mature or are subject to a demand feature that is exercisable and payable within one (1) ~~business~~ day, and a permitted SEC registered 2a-7 Institutional Money Market Fund.
2. A minimum of fifteen percent (15%) of the STIP Units Value shall qualify as “weekly liquid assets.” For the purpose of this guideline, it is assumed that “weekly liquid assets” is defined as “daily liquid assets” (as defined above), government agency discount notes with remaining maturities of sixty (60) days or less, securities that will mature or are subject to a demand feature that is exercisable and payable within five (5) business days, and a permitted SEC registered 2a-7 Institutional Money Market Fund.
3. A maximum of ten percent (10%) of the STIP Units Value shall be invested in Permitted Investments that are considered “illiquid.” For the purpose of this guideline, “illiquid” shall be defined as “a security that cannot be sold or disposed of in the ordinary course of business within seven (7) calendar days at approximately the value ascribed to it by STIP.”
4. STIP shall maintain a dollar-weighted average portfolio maturity of one hundred twenty (120) days or less (for this purpose, the date to the next coupon reset date will be used for all floating or variable rate securities).
5. ABCP purchases shall be limited to maturities of ninety (90) days or less.
6. The maximum term of any Repurchase Agreement will be thirty (30) days.
7. The maximum term of any Reverse Repurchase Agreement will be ninety (90) days and must be matched to anticipated cash flows adequate to liquidate the transaction.
8. The maximum final maturity of any Permitted Investment shall not exceed three hundred ninety-seven (397) days (not including securities used as collateral in Repurchase Agreements or Permitted Investments considered “Variable Rate” securities, which on any reset date can reasonably be expected to have a market value that approximates its amortized cost).
9. A Variable Rate security shall have a maximum maturity of two (2) years.

E. Other Restrictions

1. Risk assets will/may be purchased only when the estimated aggregate effect of a worst-case scenario spread widening event does not exceed the amount of the STIP Reserve. Risk assets are assets other than Treasuries, Agencies and Government money markets. The estimated worst-case scenario is a calculation equal to the days to maturity divided by three hundred sixty-five (365) multiplied by two percent (2.0%) for securities maturing in less than one (1) year and three and a half percent (3.5%) for securities maturing in greater than one (1) year.
2. Acceptable forms of collateral under Repurchase Agreements will consist of U.S. Treasury Securities which will be required to be maintained at a market value of one hundred two percent (102%) of the value of the Repurchase Agreement.
3. If at any time, due to market fluctuations or any other circumstances, any of the guidelines are not maintained, Staff will use its best efforts to conform to these limits in a timely manner, while taking into account current market conditions and the associated costs. At the Board's next regularly scheduled quarterly meeting, the CIO or Staff shall inform the Board of any cases that the Pool allocations were outside of the limits and either inform the Board of the actions that were taken to return the Pool back within guidelines or a plan to do so.

MONTANA

BOARD OF INVESTMENTS

BOARD ADOPTED POLICY

POLICY NUMBER: 40.300
26, 2022

EFFECTIVE DATE: ~~November 30, 2021~~ May

TITLE: Montana Public Employees Retirement
 Systems Defined Contribution Disability
 Plan Investment Policy Statement

SUPERSEDES: **November 30, 2021**

BOARD ADOPTION: November 30, 2021

REVIEWED:

I. Legal and Constitutional Authority

- A. The Montana Constitution, Article VIII, Section 13, requires that the Legislature provide for a Unified Investment Program for public funds. Section 17-6-201, MCA, established the Unified Investment Program, created the Board, and gave the Board sole authority to invest state funds in accordance with state law and the state constitution.

II. Introduction

- A. The purpose of this policy statement is to provide a broad strategic framework for the plan's investments under the guidance of the Board.
- B. Implemented July 1, 2002, the Defined Contribution Retirement Plan (DCRP) Disability Fund, as governed by Section 19-3-2117, MCA, provides disability benefits to eligible members who elect the Public Employees Retirement System (PERS) – DCRP.
- C. The DCRP Disability Fund receives three-tenths percent (0.3%) of the employers' contribution.
- D. Section 19-3-2141(7), MCA, states the PERS board shall establish a long-term disability plan trust fund from which disability benefit costs pursuant to this section must be paid.
- E. The trust fund must be entirely separate and distinct from the defined benefit plan trust fund.

III. Investment Objective

- A. The Board's overall objective is to achieve the highest level of investment performance that is compatible with its risk tolerance and prudent investment practices. Because of the long-term nature of the disability liabilities, the Board maintains a long-term perspective in formulating and implementing its investment policies, and in evaluating its investment performance.
- B. To meet the objective the investments will consist of the traditional long-term asset classes of stocks and bonds, as further described in the asset allocation section below. The vehicles used to obtain these exposures will consist of passive funds designed to track the following broad market indices:
 1. Standard and Poor's 1500 Index
 2. MSCI All Country World ex U.S. Index
 3. Barclay's U.S. Aggregate Bond Index
- C. The Short-Term Investment Pool (STIP) will be used at the cash alternative.
- D. The Board expects to meet or exceed these objectives over a long-term investment horizon. The expectation for return is reflective of the passive vehicles used in the allocation mix. The allocation mix is described below.

IV. Performance Measurement

- A. Success in achieving the investment objective will be measured by comparing the risk and return of the account to the return on the:
1. Standard and Poor's 1500 Index
 2. MSCI All Country World ex-U.S. Index
 3. Barclay's U.S. Aggregate Bond Index
- B. Each weighted proportionately to the portfolio's holdings.
- C. Performance will be monitored and evaluated quarterly.
- D. Success in achieving the objective will be measured on a three (3) year, five (5) year, and ten (10) year annualized basis.

IV.V. Asset Allocation

- A. The Board, as the investment fiduciary of the plan, is responsible for establishing the investment parameters for the plan. The Board has the authority to allocate portfolios to any previously board-approved asset class in the proportions it considers prudent, under the prudent expert rule. There are currently no statutory or constitutional restrictions on the investment of the plan. The target asset allocation is shown in the following table:

PERS-DC Disability Plan Asset Allocation	
Stocks	50-70%
Domestic	30-50%
International	10-30%
Bonds	20-40%
Cash	5-10%

V.VI. Liquidity Needs

- A. At this time, the plan is relatively young and there are few claimants receiving benefits under the plan. The plan is expected to grow as new participants are added and assets accumulate with additional contributions. Given the uncertainty of future claims, however, and given the relatively small size of the plan at this time, the cash allocation is targeted at five – ten percent (5-10%) of the account. Liquidity needs will be met with a combination of cash on hand, and potentially sales of investments.

V.VII. Rebalancing

The actual asset allocation mix may deviate on rare occasion from the approved asset allocation ranges due to unusual financial market volatility, cash flows, and rebalancing activity. Also, during the initial purchase of the long-term asset classes the allocation may deviate from the target range as cash is deployed, depending on market conditions. Any necessary rebalancing will be made in a timely manner and will take into consideration associated costs and current market conditions. The plan's asset allocation mix will be monitored on a regular basis and adjusted to stay within allocation guidelines, taking into consideration the deviation from the target allocation mix and current market conditions.

REAL ESTATE ASSET CLASS REVIEW

Presented by:

Ethan Hurley – Director of Real Estate/Real Assets
Thomas Winkler – Investment Officer

Date: May 26, 2022

Table of Contents

Real Estate Asset Class – Role, Allocation, and Constraints	3
Opportunity Set and Investment Approach	4
Styles of Real Estate Investing	5
Types of Managers in the Real Estate Asset Class	6
Real Estate Returns – Sources and Drivers	7
Benefits and Risks	8
Real Estate Portfolio Overview	10
Commitment Pacing	15
Strategy and Rationale	17
Investment Process	18
Deal Flow	19
Property Tours	20
Appendix	21
Top 10 Real Estate Investment	22
Real Estate Asset Class Schedule of Investments	23
Private Investment Process – Detail	27

Real Estate Asset Class – Role, Allocation and Constraints

- Provide the Consolidated Asset Pension Plan (CAPP) with exposure to diversified real estate opportunities, while achieving the highest possible return.
- Diversify across types of real estate investment strategies, vintage years, real estate types, and geographies for long-term capital gains and current income.
- Inception Date – 6/1/2006
- Benchmark
 - NCREIF Fund Index – Open-End Diversified Core Equity (Since 7/1/2020)
- Approved Allocation Range - 6% to 14% of CAPP
- Investment Policy Statement Constraints
 - No more than 2% of CAPP in any single real estate investment
 - No more than 30% of the asset class in international real estate
 - No more than 10% of the asset class in direct co-investments
 - Strategic Constraints
 - Core/Core Plus – 20% - 50%
 - Non-Core – 25% - 65%
 - Real Estate Debt – 10% - 40%
 - Public Real Estate Securities – 0% - 40%
 - Leverage limits
 - Individual fund basis up to 75%
 - Total Real Estate Asset Class up to 60%
 - Leverage policy range per strategy
 - Core – 0% - 50%
 - Core-Plus/Non-Core – 0% - 75%
 - Real Estate Debt – 0% - 75%

Opportunity Set and Investment Approach

Public

Publicly listed
and traded frequently

Private

Privately held
and infrequently traded

	Public	Private
Equity	A	B
Debt	C	D

Equity

Owns a residual interest in the
asset/project/company

Debt

Lends funds to an owner of an
asset/project/company or
purchase of real asset-backed
bonds

(A) Public Equity

- Separately Managed Account holds common stock of publicly traded companies(active)

(B) Private Equity

- Limited Partnerships - Open or Closed-End Funds (active)

(C) Public Debt

- Open or Closed-End Funds, Mutual Funds (active)

(D) Private Debt

- Limited Partnerships - Open or Closed-End Funds (active)

Styles of Private Real Estate Investing Equity & Debt

Core	Core-Plus	Non-Core Value-Add	Non-Core Opportunistic
<ul style="list-style-type: none"> ✓ Investors own equity or debt ✓ Highest occupancy ✓ Least leveraged (0 – 35%) ✓ Best locations (Main & Main) ✓ Good tenant credit ✓ Most liquid ✓ Numerous buyers and sellers ✓ Lowest expected return, mostly from rental income 	<ul style="list-style-type: none"> ✓ Investors own equity or debt ✓ High occupancy ✓ Generally higher leverage than Core (35 – 65%) ✓ Good tenant credit ✓ Very liquid ✓ Numerous buyers and sellers ✓ Higher expected return than Core, but mostly from rental income, limited ground-up development 	<ul style="list-style-type: none"> ✓ Investors own equity or debt ✓ Mid-range occupancy ✓ Higher leverage (65 – 75%) ✓ Needs operating improvements ✓ Needs minor renovations ✓ Expected return a combination of appreciation, income and leverage 	<ul style="list-style-type: none"> ✓ Investors own equity or debt ✓ Generally lower occupancy ✓ Higher leverage (70 – 85%) ✓ Needs major operating improvements, i.e., change of use, rezoning, variances ✓ Needs major renovations ✓ Investment return nearly all from appreciation and leverage

Types of Fund Managers

Private Equity Allocators (ex. Angelo Gordon)

- Create joint venture partnerships with local real estate operators, who:
 - Have local market expertise and networks, source new acquisitions
 - Charged with day-to-day operations of fund properties
 - Local operators typically invest equity alongside the fund manager and receive incentive compensation

Private Equity Operators (ex. Equus Capital Partners)

- Vertically integrated across all real estate investment activities, including acquisitions to dispositions, leasing, property and asset management, construction and development

Private Debt Managers (ex. Walton Street Capital)

- Range from those that strictly originate and extend loans to buyers of commercial real estate to those that do this in addition to buying real estate-backed bonds/loans

Public REIT Managers (ex. CenterSquare Investment Management)

- Manage separate accounts and buy and sell public equity securities in real estate investment trusts

Public Debt Managers (ex. Fidelity Real Estate High Income)

- Manage an Investment Act of 1940 registered mutual fund that buys and sells publicly traded bonds backed by real estate

Real Estate Returns – Sources and Drivers

Sources

Appreciation/Depreciation

- Increases or decreases in the market value of an asset

Income

- Rents received less capital expenditures and operating expenses
- Ancillary income (ex. rooftop cell tower rent, parking income, etc.)

Drivers

- Location
- Physical condition
- Supply/demand
- Credit quality of tenants
- Cap rate compression/expansion
- Employment
- Amenities
- Occupancy
- Square footage of property
- Rent roll – renewing rents at higher or lower rates
- Capital expenditures
- Market comparable sales
- Capital markets liquidity

Real Estate - Benefits



- ✓ Return enhancement
- ✓ Diversification
- ✓ Hard asset downside protection
- ✓ Inflation hedge
- ✓ Contractual income
- ✓ Ability to influence performance

Real Estate - Risks



- ✓ Business risk
- ✓ Financial risk
- ✓ Liquidity risk
- ✓ Inflation risk
- ✓ Operational risk
- ✓ Legal risk
- ✓ Counterparty risk

Portfolio Overview

Time-Weighted Return (TWR) Performance net of fees

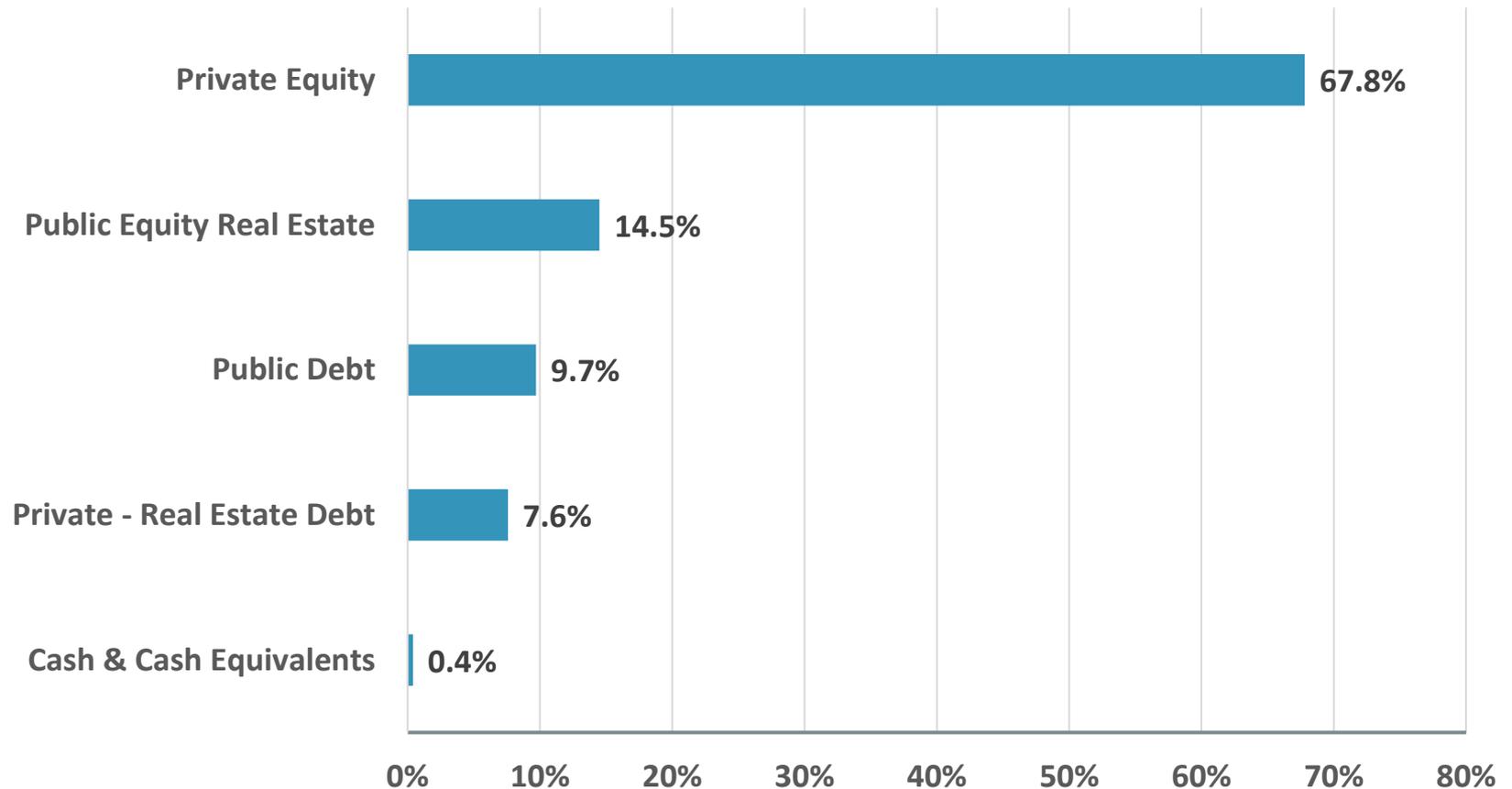
- 1 year 19.4%
- 5 year 8.6%
- 10 year 9.9%
- Since inception 4.9%

Net Asset Value

- \$1.6 billion
- 10.9% of CAPP

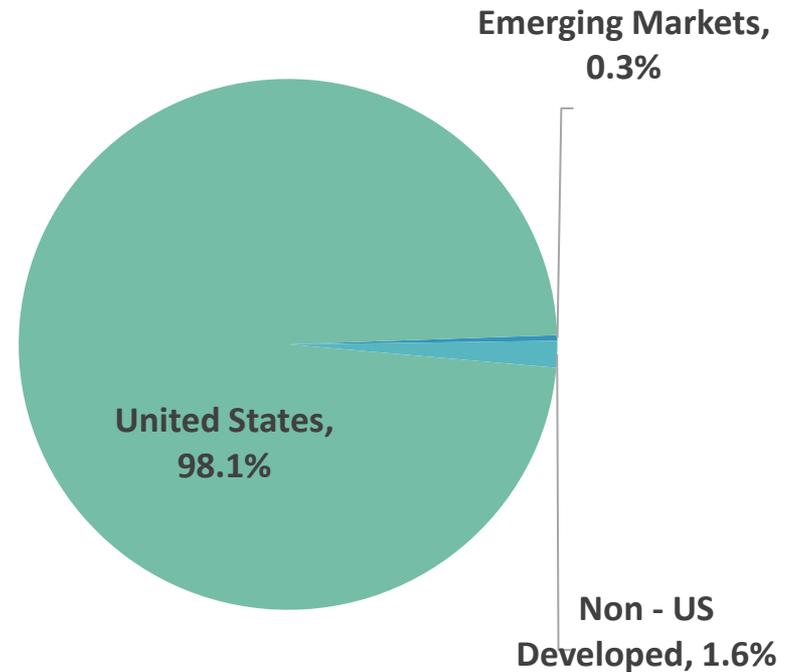
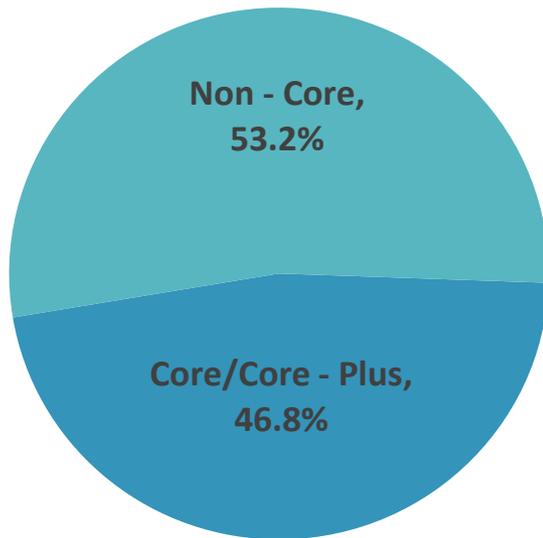
As of 3/31/22. Performance is based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period. Time weighted rate of return net of all manager fees and expenses.

Composition by Type



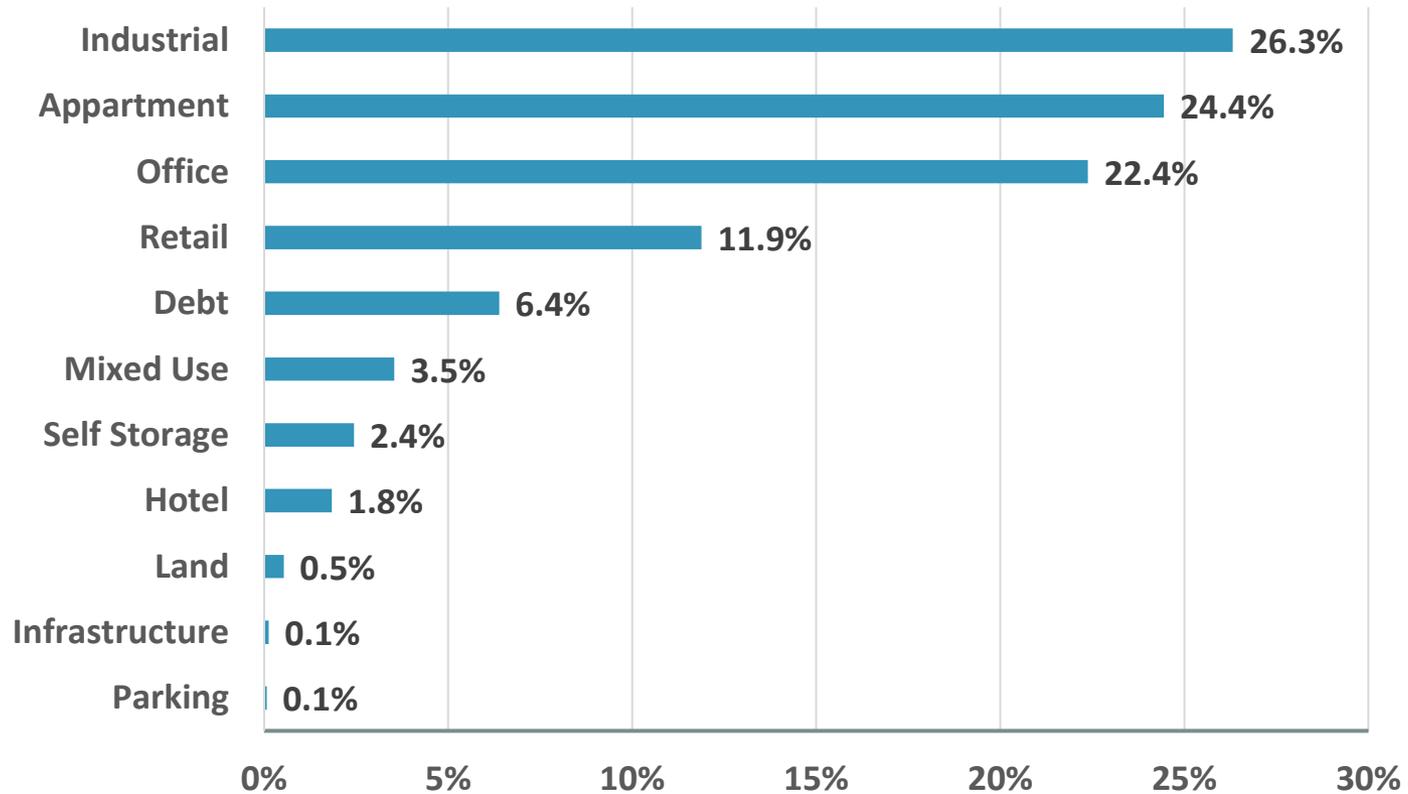
As of 3/31/22. Based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period. State Street

Composition by Style & Geography



As of 3/31/22. Based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period. State Street

Composition by Property Type

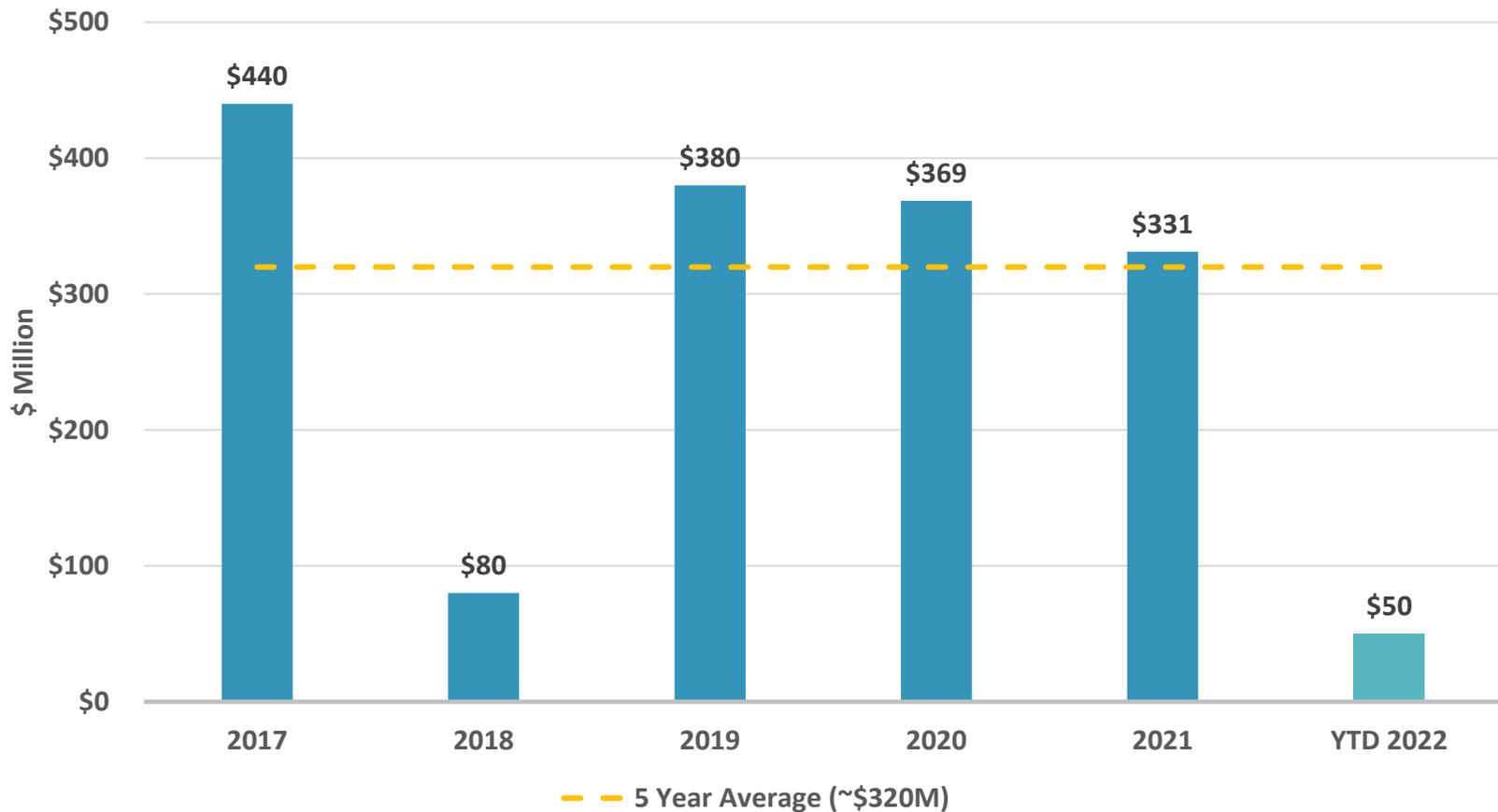


As of 3/31/22. Based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period. State Street

Pacing

- Evaluates the current private real estate exposure and commitment plan relative to total plan assets
- Considers the following factors:
 - Current portfolio valuation
 - Paid in Capital (Contributed Funds/Cash In)
 - Distributed Capital (Distributed Funds/Cash Out)
 - Allocation within the approved ranges
- Considers annualized growth rate of the total plan assets (CAPP)
- Provides flexibility to explore different scenarios
- How future commitments, capital calls, and distributions contribute to maintaining the allocation within approved ranges through time
- This is an arcane, inexact exercise
- The only controllable input/metric is how much we commit, or don't, in any given year
- RVK assists with periodic studies
- Expected long-term average annual allocation of ~\$200-\$400 million through four to six commitments.

Actual Pacing – Commitments Past 5 Years



As of 5/2/22.

Current Strategy and Rationale

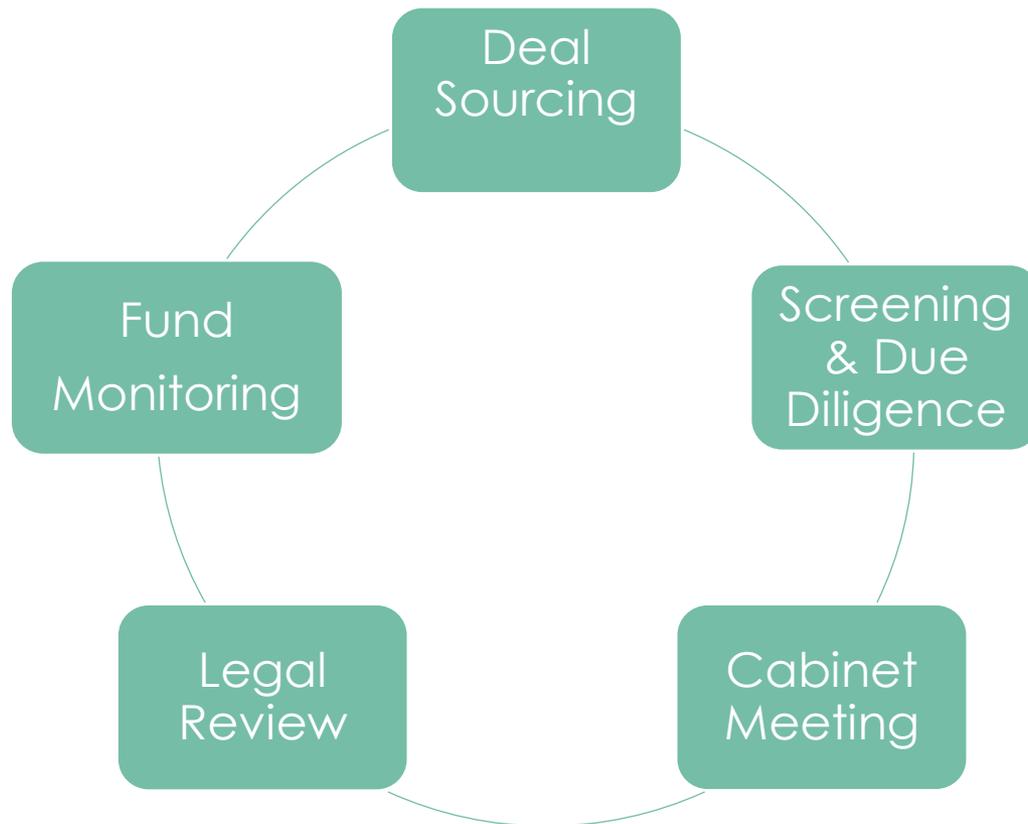
What

- Focus on US, but consider all opportunities
- Preference for pure-play, vertically integrated real estate operators
- Continued focus on growing existing real estate debt exposure
- Reduce open-end core real estate exposure
- Continued focus on existing high conviction GPs
- Separate Accounts
- Tactically add to existing public REIT exposure

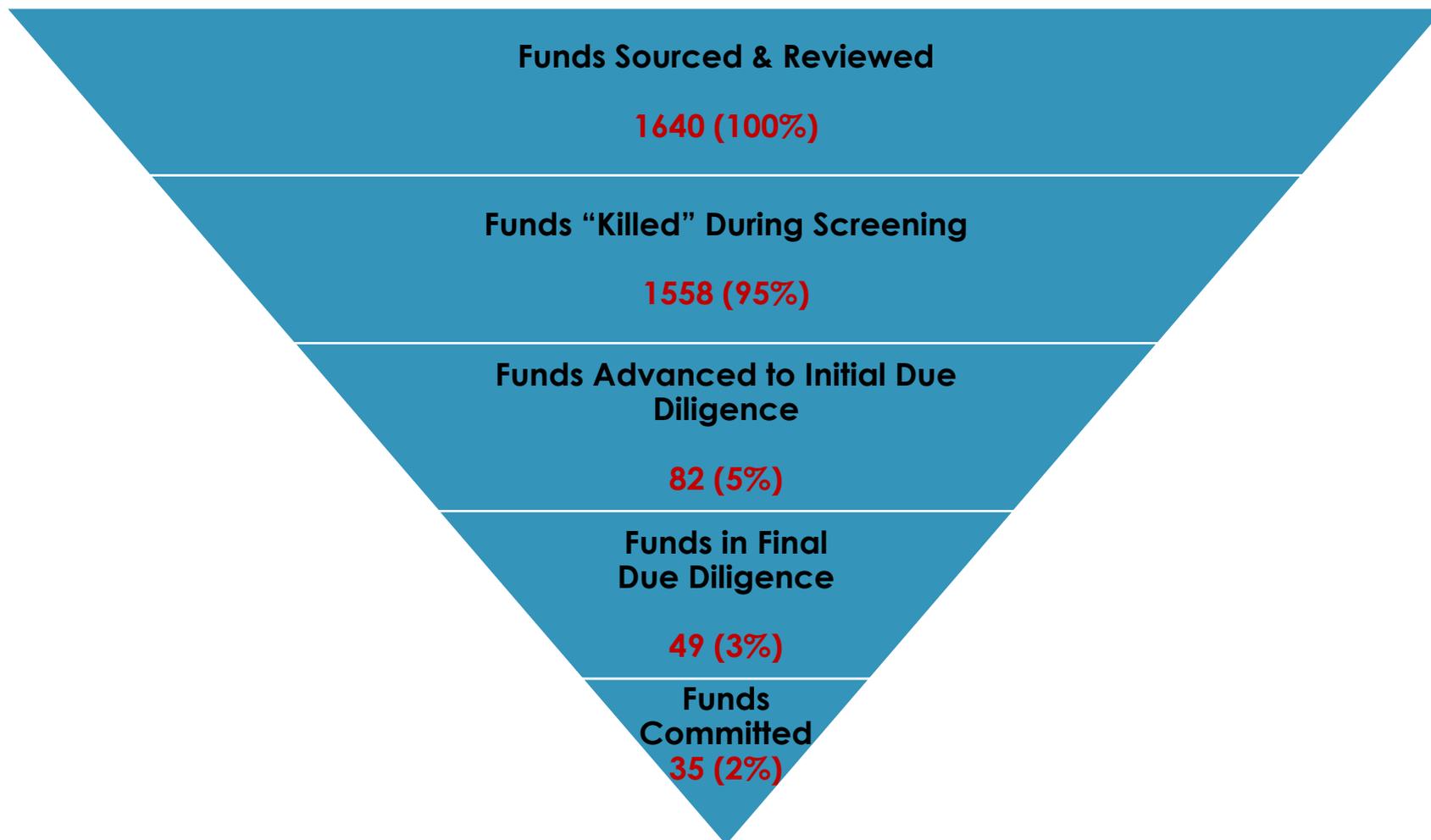
Why

- • Well understood, resource constraints, deepest, most liquid, “rules of the game”
- • More nimble and responsive to shifts in the market, closer to the asset, own their data, removes extra layer of fees
- • Diversify away from equity exposure, greater downside protection, current income
- • Generate liquidity to fund other real estate strategies
- • Good portfolio fit, known quantities, partnership orientation, more depth less breadth
- • Long duration holds, income streams
- • Diversification of current exposure beyond private real estate equity, higher long-term return profile relative to core real estate, lower cost, more liquid

Investment Process



Real Estate Deal Flow (2016 - YTD 2022)



Property Views on Google Earth

Property Type	Manager/Asset	Address/MSA	Style & Strategy
Multifamily	Angelo Gordon Grand Reserve	22101 Grand Corner Katy, TX	Non-Core/Value Add Allocator
Industrial	Stockbridge Redlands Corporate Center	1251 Research Dr. Redlands, CA	Non-Core/Value Add Operator

MONTANA

BOARD OF INVESTMENTS

TO: Board of Directors
FROM: Doug Hill-Director In-State Loan Programs
DATE: May 6, 2022
RE: Commercial and Residential Loan Portfolios

As of May 1, 2022, the Commercial loan portfolio balance was \$189,059,477 and represents 108 loans. There are currently eight loan reservations that total \$39,781,362 and five loans committed that total \$7,044,580. The commercial loan portfolio, excluding the Veterans Home Loan Program, Multifamily Coal Trust Homes Program, and Intermediary Relending Program, has a yield of 2.65%. There are no loans past due over 30 days.

The below table shows the breakdown of the Participation Loan Program by sector.

% of Portfolio	Sector	Business Type
0.08%	Agriculture/Forestry/Fishing	Farming
0.27%	Other Services	Auto Body Repair
3.19%	Administrative/Support	Correctional Institution
0.28%	Finance/Insurance	Commercial Office Space
0.66%	Arts/Entertainment/Recreation	Trampoline Park
1.21%	Education Services	Educational Supplies
1.56%	Accommodation and Food Services	RV Campground/Resort
4.69%	Real Estate Rental/Leasing	Low Income Housing /Self Storage Units
8.04%	Manufacturing	Steel Fabrication/Breweries/Distilleries
8.78%	Transportation/Warehousing	Firefighting- Airplane
9.47%	Mining	Garnet Mining
22.48%	Retail Trade	RV & Auto Dealership/Gas Station Convenience Store
39.29%	Health Care/Social Assistance	Retirement Facilities/Home Health
100.00%		

The Residential loan portfolio reflected an outstanding balance, as of April 22, 2022, of \$1,844,634 and represents 53 loans with a yield of 6.28%. There are no outstanding reservations. There are no loans past due over 30 days.

The Veterans Home Loan Mortgage portfolio reflected an outstanding balance, as of April 22, 2022, of \$48,027,940 and represents 275 loans with a yield of 1.65%. There are six reservations totaling \$1,508,616 with a projected yield of 1.82%. There are three loans over 90 days past due totaling \$670,068, or 1.40% of the portfolio. The remaining available funds is \$463,444.

The Multifamily Coal Trust Homes Program reflected an outstanding balance, as of April 22, 2022, of \$5,806,082 and represents five loans with a yield of 2.65%. There are three reservations totaling \$9,155,486 with a projected yield of 1.92%. There are no past due loans. The remaining available funds is \$38,432.

The Intermediary Relending Program reflected an outstanding balance, as of March 31, 2022, of \$4,943,715 and represents 38 loans with a yield of 2.00%. There is \$588,356 available to advance. There are two loans committed that totals \$1,000,000. There are no past due loans. The remaining available funds is \$3,467,928.

The Montana Down Payment Assistance Program has 37 reservation for \$27,498,573 and 18 loans committed that total \$9,871,259.

Bond Series 2022:

Issued	120,000,000
Outstanding	68,706,869

Loans:

Outstanding	69,792,402
Pending Commitments	23,601,681

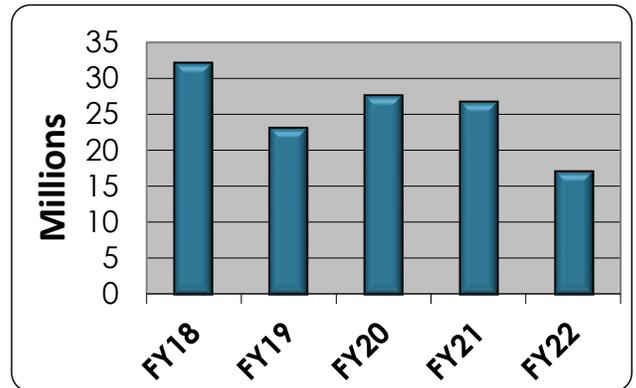
Total Committed	676,106,674
Total Funded	652,504,993

FY2022

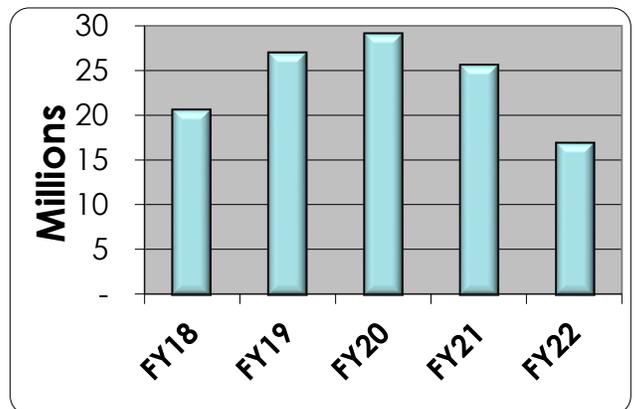
Month	Commitments	Fundings
July-21	33,390	1,815,374
August	8,116,340	300,927
September	480,000	861,242
October	250,000	1,627,988
November	4,954,072	2,067,150
December	702,087	1,201,519
January	998,134	810,000
February	1,075,000	2,333,162
March	818,736	5,918,674
April		
May		
June-22		
To Date	17,427,759	16,936,036

Note: Commitments include withdrawn and expired loans.

Commitments FY18-FY22



Fundings FY18-FY22



Variable Loan Rate History February 16, 2015 - February 15, 2023

February 16, 2015 - February 15, 2016	<u>1.25%</u>	February 16, 2019 - February 15, 2020	<u>3.37%</u>
February 16, 2016 - February 15, 2017	<u>1.55%</u>	February 16, 2020 - February 15, 2021	<u>2.50%**</u>
February 16, 2017 - February 15, 2018	<u>2.50%</u>	February 16, 2021 - February 15, 2022	<u>1.65%</u>
February 16, 2018 - February 15, 2019	<u>3.15%</u>	February 16, 2022 - February 15, 2023	<u>1.55%</u>

*BOI decreased interest rates for INTERCAP loans to 1.00% until August 15, 2020 in response to the COVID-19 pandemic.

**1.50% for borrowers set up with Autopay.

MONTANA

BOARD OF INVESTMENTS

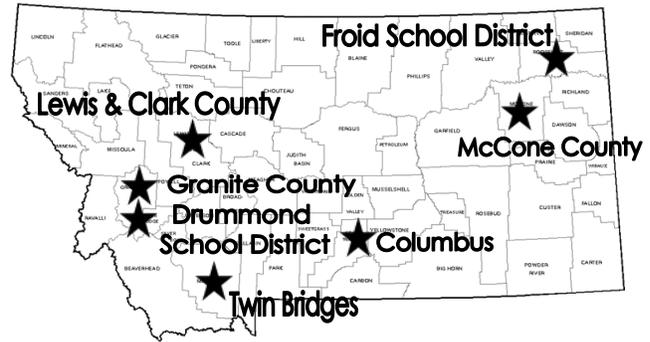
INTERCAP

TO: Members of the Board

FROM: Louise Welsh,
Sr. Bond Program Officer

DATE: May 25, 2022

RE: INTERCAP Staff Approved Loans Committed – Staff approved the following loans from January 1, 2022, to March 31, 2022.



Borrower:	Granite County
Purpose:	Consolidation of vehicle and equipment loan
Staff Approval Date:	January 11, 2022
Board Loan Amount:	\$ 998,134
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 998,134
Term:	5 years

Borrower:	Drummond Public School District
Purpose:	Bus
Staff Approval Date:	February 8, 2022
Board Loan Amount:	\$ 125,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 125,000
Term:	7 years

Borrower:	Columbus
Purpose:	Sewer main replacement
Staff Approval Date:	February 25, 2022
Board Loan Amount:	\$ 50,000
Other Funding Sources:	\$1,288,639
Total Project Cost:	\$1,338,639
Term:	15 years

Borrower:	Columbus
Purpose:	Ultraviolet system replacement
Staff Approval Date:	February 25, 2022
Board Loan Amount:	\$ 450,000
Other Funding Sources:	\$ 830,000
Total Project Cost:	\$1,280,000
Term:	15 years

Borrower:	Froid School District
Purpose:	Water heater purchase and install
Staff Approval Date:	February 28, 2022
Board Loan Amount:	\$ 450,000
Other Funding Sources:	\$ 100,000
Total Project Cost:	\$ 550,000
Term:	10 years

Borrower:	McCone County
Purpose:	Two Loader and graders
Staff Approval Date:	March 2, 2022
Board Loan Amount:	\$ 705,700
Other Funding Sources:	\$ 0
Total Project Cost:	\$ 705,700
Term:	7 years

Borrower:	Lewis and Clark County
Purpose:	Countryside Road RID
Staff Approval Date:	March 9, 2022
Board Loan Amount:	\$ 79,279
Other Funding Sources:	\$ 61,629
Total Project Cost:	\$ 140,908
Term:	15 years

Borrower:	Twin Bridges
Purpose:	Fire Truck
Staff Approval Date:	March 28, 2022
Board Loan Amount:	\$ 33,757
Other Funding Sources:	\$ 6,243
Total Project Cost:	\$ 40,000
Term:	5 years