

# MONTANA

## BOARD OF INVESTMENTS

REGULAR MEETING OF THE  
MONTANA BOARD OF INVESTMENTS  
2401 Colonial Drive, 3<sup>rd</sup> Floor, Helena, MT 59601  
Zoom Available for Guests and Staff  
June 1-2, 2021

### 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, 2021 Committee Minutes
  3. Executive Director Comments
  4. Accounting Review
  5. Charter Review – **Decision**
  6. Audit Checklist
  7. Governance Policy – **Decisions**
- B. Loan Committee – Jack Prothero, Chair** **10:15 AM**
1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
  2. Approval of April 20, 2021 Committee Meeting Minutes
  3. Executive Director Comments
  4. Master Loan Agreement, MFFA – Adam Gill, Executive Director, MFFA – **Decisions**
  5. INTERCAP Loan Requests – **Decisions**
  6. Loan Policy Revisions – **Decision**
- C. Human Resource Committee – Terry Cohea, Chair** **10:45 AM**
1. Public Comment – *Public Comment on issues with Committee Jurisdiction*
  2. Executive Director Comments – **CLOSED\*** -
  3. Staffing Level Review – **CLOSED\*** -
  4. Exempt Staff Job Descriptions, Performance & Compensation Review – **CLOSED\*** - **Decisions**

**LUNCH SERVED** **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, 2021 Meeting Minutes
- E. Administrative Business
  1. Audit Committee Report – **Decisions**
  2. Loan Committee Report - **Decisions**
  3. Human Resource Committee Report - **Decisions**
- F. Comments from TRS and PERS Board Members
- G. Comments from Board Legislative Liaisons

**Tab 2 EXECUTIVE DIRECTOR REPORTS – Dan Villa** **1:15 PM**

- A. Member Requests from Prior Meeting
- B. Monthly Snapshot
- C. Monthly Website Traffic
- D. Budget Status YTD
- E. LPAC Cost Reports

<b>Tab 3</b>	<b>MONTANA LOAN PROGRAM – Doug Hill</b>	<b>1:45 PM</b>
	A. Commercial and Residential Portfolios Report	
<b>Tab 4</b>	<b>BOND PROGRAM – Louise Welsh</b>	<b>2:00 PM</b>
	A. INTERCAP	
	1. Activity Summary	
	2. Staff Approved Loans Report	
	3. Overview and Program Highlights	
<b>Tab 5</b>	<b>INVESTMENTS – NEW COMMITMENTS</b>	<b>2:15 PM</b>
	A. Real Estate/Real Assets – Ethan Hurley, CAIA	
	B. Private Investments – Thomas Winkler, CAIA	
	<b>BREAK</b>	<b>3:00 PM</b>
<b>Tab 6</b>	<b>WORK PLAN</b>	<b>3:15 PM</b>
	A. Policy Statement Review – <b>Decisions</b>	
	1. STIP IPS	
	2. Public Retirement Plans IPS	
	3. State Fund IPS	
	4. Permanent Coal Trust IPS	
<b>Tab 7</b>	<b>CORE FIXED INCOME ASSET CLASS REVIEW – John Romasko, CFA</b>	<b>3:45 PM</b>
	<b>RECESS</b>	<b>5:00 PM</b>
	<b>RECONVENE – DAY 2</b>	
	<b>CALL TO ORDER – Karl Englund, Chairman</b>	<b>9:30 AM</b>
	A. Notice of Video Recording of Meeting	
	B. Roll Call	
	C. Public Comment – <i>Public Comment on issues with Board Jurisdiction</i>	
<b>Tab 8</b>	<b>REAL ESTATE ASSET CLASS REVIEW – Ethan Hurley, CAIA</b>	<b>9:45 AM</b>
	<b>BREAK</b>	<b>11:00 AM</b>
<b>Tab 9</b>	<b>RVK, Inc.</b>	<b>11:15 AM</b>
	<b>LUNCH SERVED</b>	<b>12:15 PM</b>
<b>Tab 10</b>	<b>INVESTMENT UPDATE</b>	<b>1:15 PM</b>
	A. <b>CIO Update</b> – Jon Putnam, CFA, FRM, CAIA	
	B. <b>Macro Attribution</b> – Eron Krpan, CFA, CIPM	
	C. <b>Private Investments</b> – Michael Nguyen	
	D. <b>Real Estate</b> – Ethan Hurley, CAIA	
	E. <b>Real Assets</b> – Ethan Hurley, CAIA	
	F. <b>Core Fixed Income</b> – John Romasko, CFA	
	G. <b>Non-Core Fixed Income</b> – Jason Brent, CFA, CAIA	
	H. <b>Domestic Equity</b> – Rande Muffick, CFA	
	I. <b>International Equity</b> – Rande Muffick, CFA	
	J. <b>STIP</b> – Kirsten Haswell	
	K. <b>State Fund</b> – John Romasko, CFA	
	L. <b>Trust Funds Investment Pool</b> – John Romasko, CFA	
	<b>RECAP OF STAFF TO DO LIST AND ADJOURNMENT – Karl Englund, Chairman</b>	<b>3:00 PM</b>

**\* Under Montana Law, meetings may be closed to discuss litigation strategy protected by the attorney-client privilege, as well as human resource issues or investment strategy for the protection of confidential information and when the individual right to privacy exceeds the public's right know. No decisions are made in closed session and all motions will be and must be made and recorded during a public meeting.**

*The Board of Investments makes reasonable accommodations for any known disability that may interfere with a person's ability to participate in public meetings. Persons needing an accommodation must notify the Board (call 444-0001 or write to P.O. Box 200126, Helena, Montana 59620) no later than three days prior to the meeting to allow adequate time to make needed arrangements.*

# MONTANA

## BOARD OF INVESTMENTS

### REGULAR BOARD MEETING MINUTES April 20, 2021

#### Call to Order

The Board of Investment's meeting was called to order by Chairman Karl Englund at 11:15 a.m., on Tuesday, April 20, 2021.

#### Attendance

Board Members Present: Chairman Karl Englund, Jack Prothero, Jeff Greenfield, Bruce Nelson, Diane Fladmo, Maggie Peterson, Mark Barry, Jeff Meredith

Board Members Absent: Terry Cohea

Legislative Liaisons Present: None

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

Interested Parties Present: Mark Higgins, Becky Gratsinger, Jim Voytko – RVK; Joseph Schulman – JP Morgan; Mc Cyril Espanol – Pageant Media

#### **April 20, 2021**

##### **Tab 1 CALL TO ORDER (08:01:40)**

###### **A. Notice of Video Recording (08:01:55)**

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

###### **B. Roll Call (08:02:05)**

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

###### **C. Public Comment (08:02:45)**

Chairman Englund asked for public comment. None was given.

###### **D. Approval of Minutes (08:03:06)**

February 23-24, 2021, Regular Board Meeting

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

March 23, 2021, Special Board Meeting

Member Barry noted section 5 of the minutes were approved "as presented with changes". Member Nelson moved to approve with Member Barry's suggested edits. Member Fladmo seconded the motion which passed unanimously.

**E. Administrative Business**

**1. Audit Committee Report (08:05:49)**

Chair Peterson briefed the Board.

- Chair Peterson moved to approve the updated Continuation of Operations Manual as amended for editorial corrections. Member Prothero seconded the motion which passed unanimously.
- Chair Peterson moved to approve the updated Internal Control Policy as amended for editorial corrections. Member Barry seconded the motion which passed unanimously.

**2. Loan Committee Report (08:09:31)**

Chair Prothero briefed the Board.

**3. HR Committee Report (08:10:50)**

Acting Chair Fladmo briefed the Board.

**F. Comments from TRS and PERS Board Members (08:11:57)**

Member Greenfield and Member Peterson briefed the Board.

**G. Comments from Board Legislative Liaisons (08:14:39)**

None

**Tab 2 EXECUTIVE DIRECTOR REPORTS (08:15:01)**

**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. Monthly Web Traffic**

Executive Director Villa briefed the Board.

**D. Disaster Recovery and Emergency Preparedness**

Executive Director Villa briefed the Board.

**E. Legislative Update**

Executive Director Villa briefed the Board.

**F. Administrative Rule Review**

Executive Director Villa and Dan Whyte briefed the Board and answered questions.

Member Peterson moved to approve the Administrative Rules as presented. Member Fladmo seconded the motion which passed unanimously.

**Tab 5 INVESTMENT POLICY STATEMENTS (08:42:35)**

**A. Trust Funds Investment Policy**

John Romasko and Jon Putnam briefed the Board and answered questions. Member Prothero moved to approve the policy as presented. Member Fladmo seconded the motion which passed unanimously.

**B. Clark Fork River Reserve Investment Policy**

John Romasko briefed the Board and answered questions. Member Barry moved to approve the policy as presented. Member Peterson seconded the motion which passed unanimously.

**Tab 6 WORK PLAN (09:01:14)**

Rande Muffick, Steve Strong, and Jason Brent briefed the Board and answered questions.

**Tab 7 CAPITAL MARKET/ASSET ALLOCATION, RVK, Inc. (10:36:13)**

Jim Voytko, Mark Higgins, and Becky Gratsinger briefed the Board and answered questions.

**RECAP OF STAFF TO DO LIST AND ADJOURNMENT**

Chairman Englund and Executive Director Villa listed items to recap. Chairman Englund adjourned the meeting at 4:21 pm.

**MONTANA BOARD OF INVESTMENTS**

APPROVE: \_\_\_\_\_  
Karl J. Englund, Chairman

ATTEST: \_\_\_\_\_  
Dan Villa, Executive Director

DATE: April 20, 2021

# MONTANA

## BOARD OF INVESTMENTS

**TO:** Members of the Board  
**FROM:** Dan Villa, Executive Director  
**DATE:** May 21, 2021  
**RE:** June Executive Directors Report

- A. Member Requests from Prior Meeting
  - a. Updated copy of COOP/IC Plan sent to members in early May
- B. Monthly Snapshot – *attached*
- C. Monthly Website Traffic

Profile Snapshot <span>?</span> <span>AGF</span>							
3,116 Visits		5,075 Pageviews		78.00% Bounce Rate		45:04 Engagement	
	Pages	Pageviews	Unique Views	Landings	Exits	Time on Page	
1	/	1,167	1,038	1,013	672	11:46	
2	/2020meetings	473	466	436	451	26:39	
3	/loanprograms	380	325	226	207	05:13	
4	/meetings	333	277	131	217	13:13	
5	/stip	223	211	118	120	44:56	
6	/unifiedinvestments/quarterlyperformancereports	215	204	152	173	02:08	
7	/loanprograms/programs	190	127	45	91	17:52	
8	/annualreportsaudits	185	171	129	139	35:33	
9	/stip/dailyfactoryield	181	161	99	142	15:58	
10	/investments	177	144	54	48	03:25	

- D. Budget Status YTD – *attached*
- E. LPAC Cost Reports

Staff is required to report to the Board on the costs associated with Limited Partner Advisory Committees (LPAC) attendance. Given the pandemic, no costs were incurred in the prior fiscal year. I have attached some general information regarding LPAC's from the Institutional Limited Partners Association for your information.

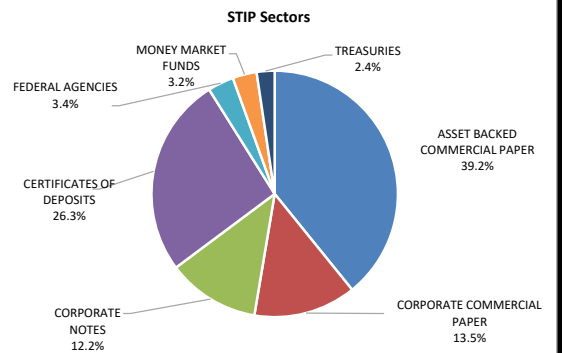
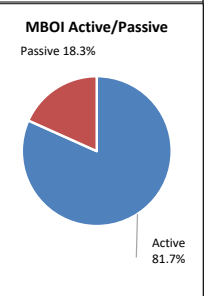
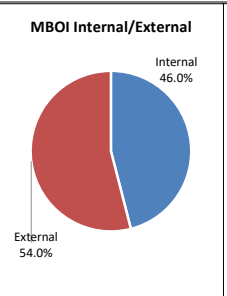
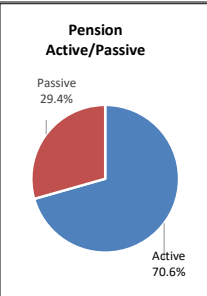
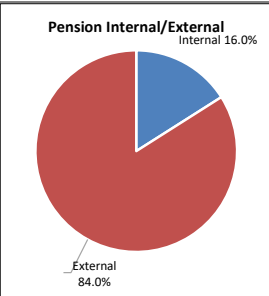
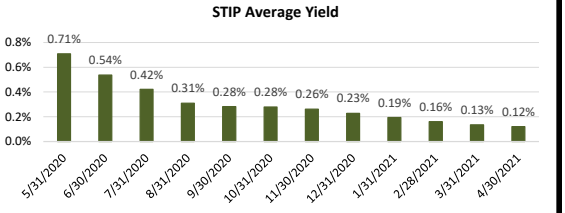
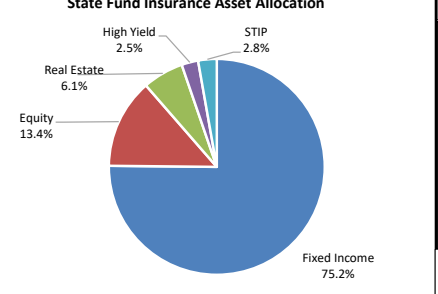
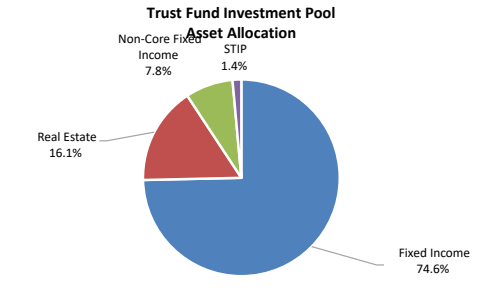
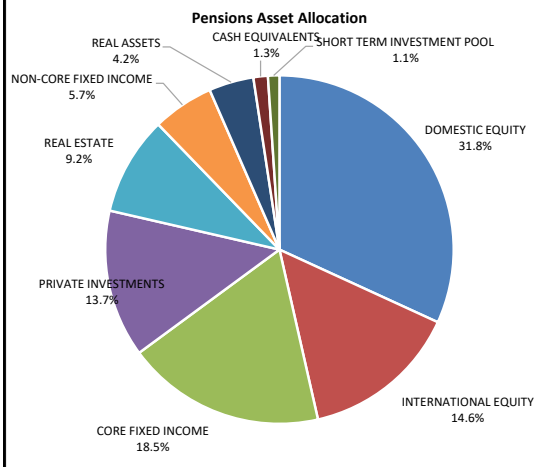
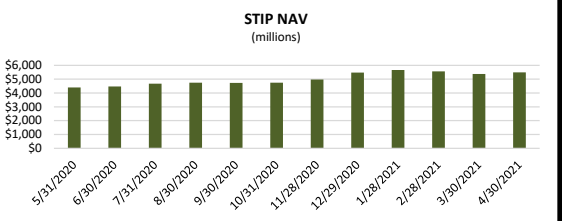
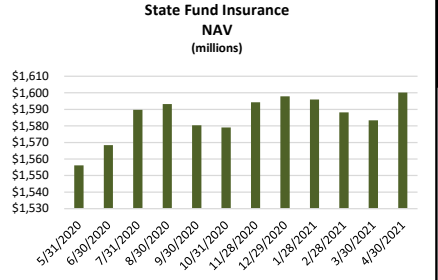
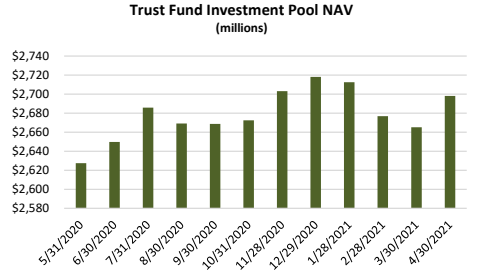
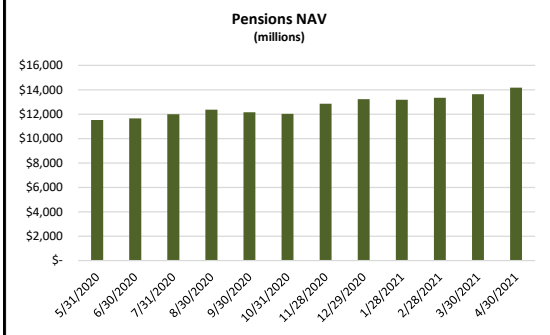
2401 COLONIAL DRIVE, HELENA, MT 59620  
P.O. BOX 200126, HELENA, MT 59620  
406-444-0001  
**INVESTMENTMT.COM**

MBOI Snapshot  
Asset Management View  
4/30/2021 Unaudited



Assets Under Management \$23,745,755,350

Pensions	NAV	%	TFIP	NAV	%	State Fund	NAV	%	Other Fixed Income & Pending	\$	(206,650,732)
DOMESTIC EQUITY	\$ 4,510,856,278	31.8%	Fixed Income	\$ 2,014,043,028	74.65%	Fixed Income	\$ 1,202,668,679	75.16%			
INTERNATIONAL EQUITY	\$ 2,614,906,692	18.5%	Real Estate	\$ 433,936,624	16.08%	Equity	\$ 215,114,912	13.44%	STIP*		
CORE FIXED INCOME	\$ 2,069,111,859	14.6%	Non-Core Fixed Income	\$ 211,246,544	7.83%	Real Estate	\$ 98,139,306	6.13%	ASSET BACKED COMMERCIAL PAPER	\$2,149,955,417	39.18%
PRIVATE INVESTMENTS	\$ 1,939,411,513	13.7%	STIP	\$ 38,814,392	1.44%	STIP	\$ 44,499,903	2.78%	CERTIFICATES OF DEPOSITS	\$1,442,064,709	26.28%
REAL ESTATE	\$ 1,297,701,824	9.2%	<b>Total</b>	<b>\$ 2,698,040,588</b>	<b>100.00%</b>	High Yield	\$ 39,771,349	2.49%	CORPORATE COMMERCIAL PAPER	\$739,157,511	13.47%
NON-CORE FIXED INCOME	\$ 805,554,414	5.7%				<b>State Fund Total</b>	<b>\$ 1,600,194,149</b>	<b>100.00%</b>	CORPORATE NOTES	\$666,802,251	12.15%
REAL ASSETS	\$ 589,214,956	4.2%						FEDERAL AGENCIES	\$187,526,487	3.42%	
CASH EQUIVALENTS	\$ 189,677,289	1.3%						MONEY MARKET FUNDS	\$173,170,129	3.16%	
SHORT TERM INVESTMENT POOL	\$ 149,962,889	1.1%						TREASURIES	\$129,097,128	2.35%	
<b>Pensions Total</b>	<b>\$ 14,166,397,713</b>	<b>100.0%</b>						<b>STIP Total</b>	<b>\$5,487,773,632</b>	<b>100.00%</b>	



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 \$227,488,080 is attributable the portion of STIP held within CAPP (\$188,677,284) and and TFIP (\$38,810,785) as a cash investment. Such value is represented in the NAV for the CAPP and STIP columns.





**65010 Department of Commerce**  
**Standard Budget Summary By Org, Account**

Data Selected for Month/FY: 01 (Jul)/2021 through 11 (May)/2021

Run 5/18/21

88% percent Through Year

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

[Return to Menu](#)

Subclass	Fund	Acct Lvl 1	Acct Lvl 2	Standard Budget	Actuals Amt	A Accrual Amt	Balance	
<b>765N1 INVESTMENTS DIVISION - HB576</b>				<b>7,616,457.00</b>	<b>6,096,268.66</b>	<b>(61,389.08)</b>	<b>1,581,577.42</b>	80%
<b>06014 BOI Municipal Finance Programs</b>				<b>655,560.00</b>	<b>521,893.96</b>	<b>(12,277.82)</b>	<b>145,943.86</b>	80%
<b>61000 Personal Services</b>				<b>460,299.00</b>	<b>350,173.30</b>	<b>0.00</b>	<b>110,125.70</b>	
61100 Salaries				340,154.00	261,056.89	0.00	79,097.11	
61300 Other Compensation				2,060.00	1,460.00	0.00	600.00	
61400 Employee Benefits				126,736.00	87,656.41	0.00	39,079.59	
61600 Vacancy Savings				(8,651.00)	0.00	0.00	(8,651.00)	
<b>62000 Operating Expenses</b>				<b>194,661.00</b>	<b>171,211.30</b>	<b>(12,277.82)</b>	<b>35,727.52</b>	
62100 Other Services				111,456.00	26,305.74	0.00	85,150.26	
62200 Supplies & Materials				6,320.00	36,605.48	(12,277.82)	(18,007.66)	
62300 Communications				2,521.00	6,882.00	0.00	(4,361.00)	
62400 Travel				4,280.00	795.98	0.00	3,484.02	
62500 Rent				14,983.00	49,116.32	0.00	(34,133.32)	
62700 Repair & Maintenance				75.00	247.00	0.00	(172.00)	
62800 Other Expenses				55,026.00	51,258.78	0.00	3,767.22	
<b>69000 Debt Service</b>				<b>600.00</b>	<b>509.36</b>	<b>0.00</b>	<b>90.64</b>	
69300 Capital Leases				600.00	509.36	0.00	90.64	
<b>06527 Investment Division</b>				<b>6,960,897.00</b>	<b>5,574,374.70</b>	<b>(49,111.26)</b>	<b>1,435,633.56</b>	80%
<b>61000 Personal Services</b>				<b>3,871,834.00</b>	<b>3,087,517.16</b>	<b>0.00</b>	<b>784,316.84</b>	
61100 Salaries				3,081,933.00	2,389,137.68	0.00	692,795.32	
61300 Other Compensation				7,960.00	5,840.00	0.00	2,120.00	
61400 Employee Benefits				858,892.00	692,539.48	0.00	166,352.52	
61600 Vacancy Savings				(76,951.00)	0.00	0.00	(76,951.00)	
<b>62000 Operating Expenses</b>				<b>3,086,463.00</b>	<b>2,484,480.45</b>	<b>(49,111.26)</b>	<b>651,093.81</b>	
62100 Other Services				1,966,125.00	1,612,008.10	0.00	354,116.90	
62200 Supplies & Materials				28,366.00	167,538.95	(49,111.26)	(90,061.69)	
62300 Communications				34,963.00	28,230.73	0.00	6,732.27	
62400 Travel				241,328.00	14,141.47	0.00	227,186.53	
62500 Rent				205,838.00	174,435.12	0.00	31,402.88	
62700 Repair & Maintenance				1,068.00	1,114.00	0.00	(46.00)	
62800 Other Expenses				608,775.00	487,012.08	0.00	121,762.92	
<b>69000 Debt Service</b>				<b>2,600.00</b>	<b>2,377.09</b>	<b>0.00</b>	<b>222.91</b>	
69300 Capital Leases				2,600.00	2,377.09	0.00	222.91	
<b>765N3 LEGISLATIVE AUDIT (RST/BIEN)</b>				<b>38,587.52</b>	<b>23,539.42</b>	<b>0.00</b>	<b>15,048.10</b>	61%
<b>06014 BOI Municipal Finance Programs</b>				<b>7,717.90</b>	<b>4,707.89</b>	<b>0.00</b>	<b>3,010.01</b>	
<b>62000 Operating Expenses</b>				<b>7,717.90</b>	<b>4,707.89</b>	<b>0.00</b>	<b>3,010.01</b>	
62100 Other Services				7,717.90	4,707.89	0.00	3,010.01	
<b>06527 Investment Division</b>				<b>30,869.62</b>	<b>18,831.53</b>	<b>0.00</b>	<b>12,038.09</b>	
<b>62000 Operating Expenses</b>				<b>30,869.62</b>	<b>18,831.53</b>	<b>0.00</b>	<b>12,038.09</b>	
62100 Other Services				30,869.62	18,831.53	0.00	12,038.09	
<b>765S1 MEDB DEBT SERVICE - SA</b>				<b>3,235,394.00</b>	<b>1,114,429.05</b>	<b>0.00</b>	<b>2,120,964.95</b>	
<b>06014 BOI Municipal Finance Programs</b>				<b>3,235,394.00</b>	<b>1,114,429.05</b>	<b>0.00</b>	<b>2,120,964.95</b>	
<b>62000 Operating Expenses</b>				<b>0.00</b>	<b>(4,254.14)</b>	<b>0.00</b>	<b>4,254.14</b>	
62800 Other Expenses				0.00	(4,254.14)	0.00	4,254.14	
<b>69000 Debt Service</b>				<b>3,235,394.00</b>	<b>1,118,683.19</b>	<b>0.00</b>	<b>2,116,710.81</b>	
69100 Bonds				3,235,394.00	1,118,683.19	0.00	2,116,710.81	
<b>Grand Total</b>				<b>10,890,438.52</b>	<b>7,235,058.43</b>	<b>(61,389.08)</b>	<b>3,716,769.17</b>	

# In-State Loan Program

Presented by:

Doug Hill

Director of In-State Loan Programs

Date: June 1, 2021

# In-State Loan Program

## Topics for Today's Discussion:

- Coal Tax Trust Loan Programs
- Residential Mortgage Program
- Performance
- Summary

# In-State Loan Program Coal Tax Trust

- Participation
- Infrastructure
- Value Added
- Intermediary Relending Program (IRP)
- Veterans Home Loans (VHLP)
- Multifamily Home Loans (MCHP)
- Montana Facility Finance Authority (MFFA)
- Science and Technology (MSTA)

# In-State Loan Program – Coal Tax Trust

## Participation Loans

- Loans made in participation with lenders who service loans
- Board participation up to 80% of loan or 100% of the government guaranteed amount
- Fixed-rate financing up to 25-years, 30-years if guaranteed
- Interest rates index is the Federal Home Loan Bank - Des Moines long-term interest rates. Rates change weekly
- Job creation credits may reduce interest rates up to 2.5%
- 48 loans totaling \$103.3 million principal outstanding as of 3-31-21. Yield is 2.47%

# In-State Loan Program Commercial Rates

<b>Commercial Loan Rate Sheet</b>				
<b>Interest Rates</b>		<b>29-Apr-21</b>	<b>Through</b>	<b>05-May-21</b>
<b><i>COMMERCIAL, MULTI-FAMILY, AND AGRICULTURE RATES</i></b>				
<b>Loan (5)</b>	<b>Fed Guarantee (1)(2)</b>		<b>Participation (1)(2)</b>	
	<b>RBS(4)/FSA/BIA/SBA(3)</b>		<b>Infrastructure (1)</b>	
<b>Term</b>	<b>Monthly</b>	<b>Annual</b>	<b>Monthly</b>	<b>Annual</b>
<u>5 Yrs.</u>	<u>2.530%</u>	<u>2.830%</u>	<u>2.930%</u>	<u>3.480%</u>
<u>10 Yrs.</u>	<u>3.220%</u>	<u>3.520%</u>	<u>3.620%</u>	<u>4.170%</u>
<u>15 Yrs.</u>	<u>3.620%</u>	<u>3.920%</u>	<u>4.020%</u>	<u>4.570%</u>
<u>20 Yrs.</u>	<u>4.160%</u>	<u>4.510%</u>	<u>4.560%</u>	<u>5.160%</u>
<u>25 Yrs.</u>	<u>4.605%</u>	<u>4.955%</u>	<u>5.005%</u>	<u>5.605%</u>
<u>30 Yrs.</u>	<u>5.100%</u>	<u>5.450%</u>		

Commercial interest rates adjust weekly and are indexed to the Federal Home Loan Bank – Des Moines long-term, fixed interest rates plus a spread ranging from 2.25% - 2.75% for non-guaranteed monthly participations. Guaranteed loans are priced 40 basis points lower than non-guaranteed rates.

# In-State Loan Program – Coal Tax Trust

## Infrastructure Loan Program

- Up to \$80.0 million of the Trust is available
- Maximum loan size = \$16,666 times jobs created
- Minimum loan size = \$250,000
- Board lends directly to local government entities
- Business for which infrastructure is provided must:
  - Create at least 15 full-time jobs
  - Be a “basic sector” business
- Business pays local government a use fee to repay loan
- Use fee is pledged to the Board
- Use fee is credited against the Montana income taxes of the business
- Job creation credits may reduce the interest rate up to 2.5%
- 9 loans totaling \$15 million outstanding as of 3-31-21. Yield is 3.94%



# In-State Loan Program – Coal Tax Trust

## Value-Added Loan Program

- Up to \$70.0 million of the Trust is available
- Minimum loan size = \$250,000
- Maximum 15-year loan term
- Jobs must be created by “value-added” businesses
- Interest rate 1st 5 years is 2% if 15 jobs are created
- Interest rate 1st 5 years is 4% if 10 jobs are created
- Interest rate 2nd 5 years is 6%
- Standard posted rate for the last 5 years
- Board participates at 75% with lenders by law
- No dividends or bonuses to owners while loan is outstanding
- No loans as of 3-31-21

# In-State Loan Program – Coal Tax Trust

## Intermediary Relending Loan Program

- Up to \$10.0 million of the Trust is available
- Maximum loan size = \$500,000
- No lenders involved – Board lends directly to Economic Development Organizations (EDO)
- EDO must match loan with other government funds, typically USDA, at 1 to 1 or greater.
- Interest capped at 2% for 30-year term
- Interest payments only for first 3 years
- Principal and interest next 27 years
- 34 loans totaling \$4.47 million principal outstanding as of 3-31-21. Yield is 2%

# In-State Loan Program – Coal Tax Trust

## Veterans Home Loan Mortgage Program (VHLP)

- Up to \$50.0 million of the Trust is available
- Montana Board of Housing administers program-servicing fee of 0.50%.
- Loans are guaranteed by VA or FHA
- Available to qualified veterans residing in Montana
- Veteran contributes a minimum of \$2,500
- Automated underwriting – approved eligible only
- 30-year term priced at 1% less than market rates, currently 1.41%
- 272 Loans totaling \$47.5 million principal outstanding as of 4-31-21. Yield is 1.75%

# In-State Loan Program – Coal Tax Trust

## Montana Multifamily Coal Trust Homes Program (MCHP)

- Up to \$15.0 million of the Trust is available
- Montana Board of Housing administers program-servicing fee of 0.25%
- The program provides loans for the development and preservation of homes and apartments to assist low-income applicants
- 30-year term priced at 0.5% less than the interest rate charged for a loan funded by the housing Montana fund
- 4 loans totaling \$5.2 million principal outstanding as of 4-31-21. Yield is 2.65%

# In-State Loan Program – Coal Tax Trust

## Montana Facility Finance Authority (MFFA)

- Up to \$15.0 million of the Trust is available
- Loans cannot exceed \$1.5 million
- MFFA administers program
- The program provides loans for capital projects to enhance Montana healthcare and community capabilities
- 5 to 20-year term priced at monthly average of the FHLB advance rate plus 0.55%. Floor rate range from 2.25% to 3.25%
- 11 Loans totaling \$9.6 million principal outstanding as of 3-31-21. Yield is 2.34%

# In-State Loan Program- Science and Technology

## Science and Technology (MSTA)

- MBOI becomes successor in interest in 1999

## Loans Currently Outstanding (3-31-21)

- |                                 |                 |
|---------------------------------|-----------------|
| ○ Montana University System     | \$7,588,760     |
| ○ Mycotech Inc.                 | \$475,479       |
| ○ McLaughlin Research Institute | <u>\$74,059</u> |
|                                 | Total MSTA:     |
|                                 | \$8,138,298     |
- Yield is 2.79%

# Residential Mortgage Program – Pension Funds

## Residential Loans

- Montana residential mortgages only
- Mortgages serviced by lender and/or Board of Housing
- Portfolio peaked in 2002 at \$324.0 million
- Program scaled down due to low mortgage interest rates
- 70 loans totaling \$2.45 million outstanding as of 4-31-21. Yield is 6.25%

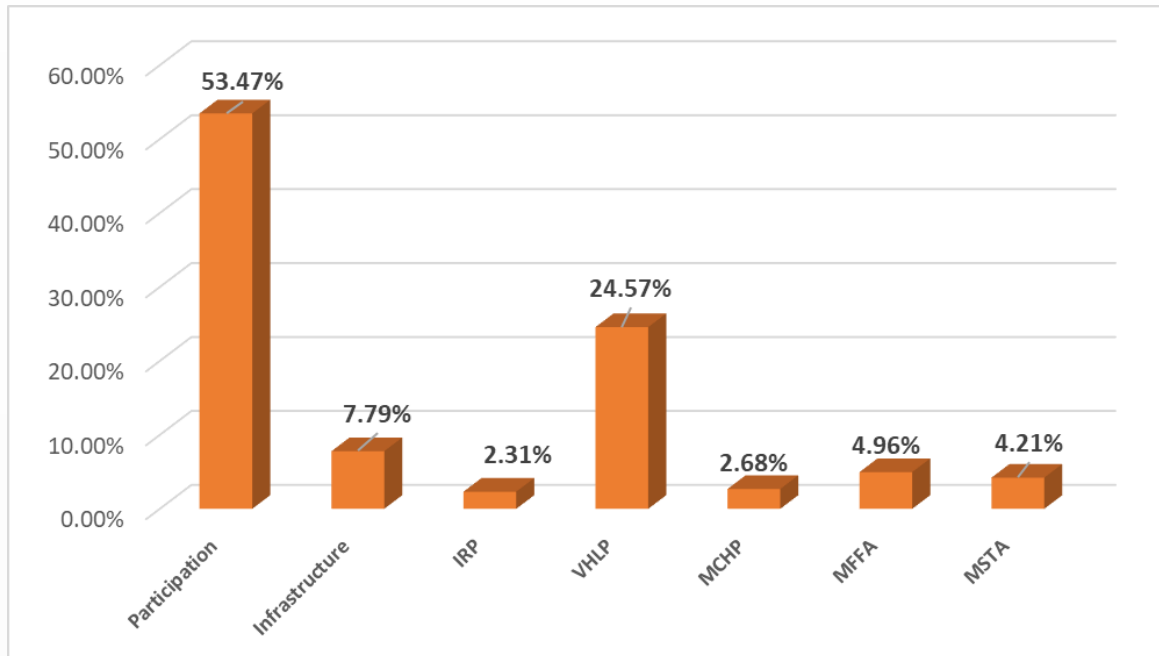
# In-State Loan Program- Residential Rates

<b>Residential Mortgage Rate Sheet</b>			
<b>Primary Residence <sup>(1)</sup></b>			
<b>Mandatory Delivery - Potential Penalty for Non-Delivery</b>			
<b>Interest Rates</b>	<b>29-Apr-21</b>	<b>Through</b>	<b>05-May-21</b>
<i>CONVENTIONAL MORTGAGE/FHA/VA RATES <sup>(3)</sup></i>			
<b>Reservation Period</b>	<b>15 Year</b>	<b>20 Year</b>	<b>30 Year</b>
<b>30 Days</b>	<b>6.500%</b>	<b>7.250%</b>	<b>7.350%</b>
<b>60 Days</b>	<b>6.550%</b>	<b>7.300%</b>	<b>7.400%</b>
<b>180 Days <sup>(2)</sup></b>	<b>6.800%</b>	<b>7.550%</b>	<b>7.650%</b>
<b>240 Days <sup>(2)</sup></b>	<b>6.950%</b>	<b>7.700%</b>	<b>7.800%</b>

Residential mortgages are funded through retirement funds which have an actuarial of 7.50-7.625%, which in today's residential interest rate environment of 2.50% to 3.35%, makes the use of our residential program an impractical consideration. As a result, staff has not changed the posted residential interest rates.

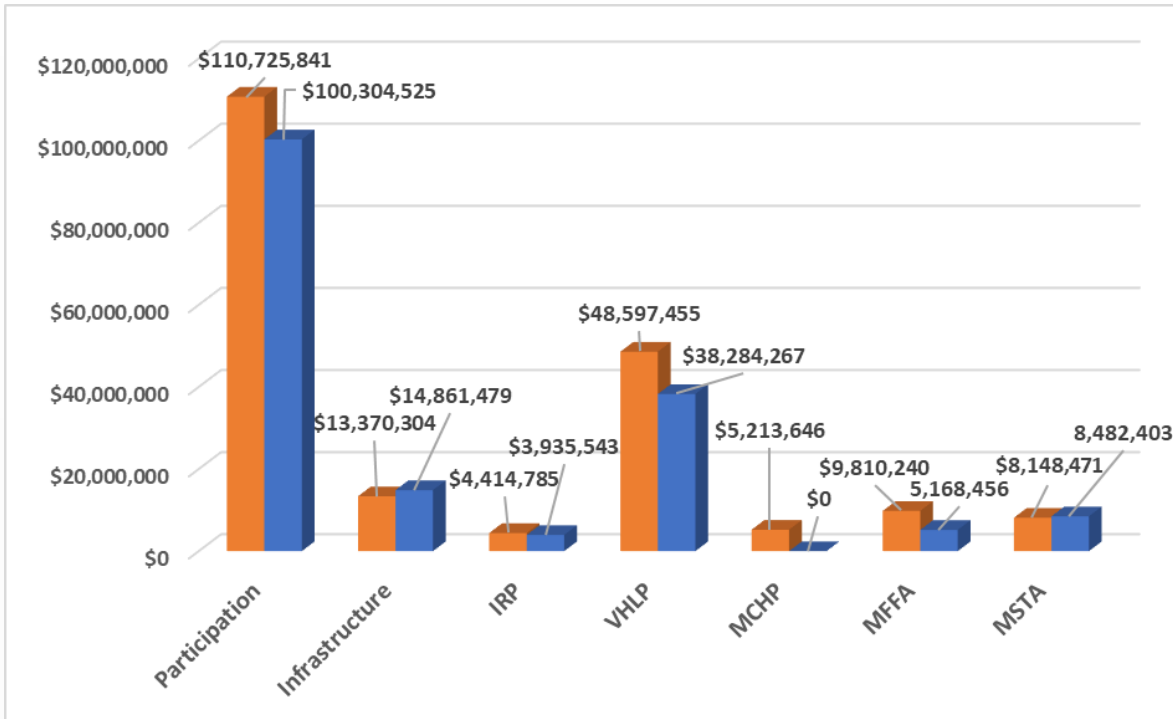


# In-State Loan Program- Portfolio Distribution



Participated loans comprise \$103.3M of the portfolio followed by Infrastructure loans at \$15M, IRP at \$4.7M, VHLP at \$47.5M, MCHP at \$5.2M, MFFA at \$9.6M, and Science & Tech at \$8.1M.

# In-State Loan Program Comparison 2020 vs 2018



Participation increased \$10.4M, Infrastructure decreased \$1.5M, IRP increased \$479k, VHLP increased \$10.3M, MFFA Increased \$4.6M, and MSTA decreased \$333k.

# Summary

- In-State Loan Programs created by the Legislature
  - Currently 6 Active Coal Tax loan programs
- Size of Program portfolio determined by economy and lender liquidity and willingness to use the programs
- Portfolio consists of high-quality credits
- Portfolio Yield is 2.41%
- Residential loan program is currently dormant due to very low residential market interest rates
- VA mortgage loan program will have limited use since it is near its maximum allocation
- Continue outreach with lenders, government agencies, and economic development

# MONTANA

BOARD OF INVESTMENTS

INTERCAP

Activity Summary

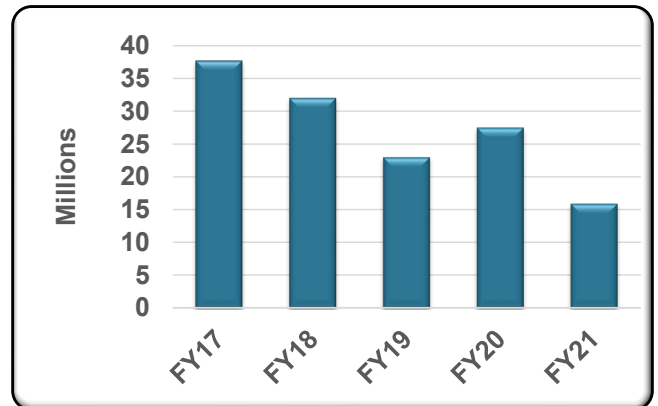
As of March 31, 2021

## Since Inception 1987 - March 2021

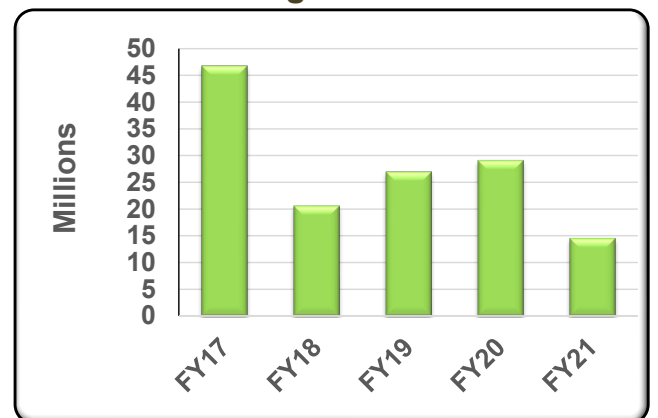
Total Bonds Issued	168,000,000
Total Loan Commitments	653,907,100
Total Loans Funded	624,563,890
Total Bonds Outstanding	90,600,000
Total Loans Outstanding	63,360,654
Loan Commitments Pending	29,343,210

FY2021		
Month	Commitments	Fundings
July-20	\$ 2,354,235	\$ 2,892,577
August	2,600,000	2,225,349
September	100,000	2,251,815
October	2,147,390	2,795,959
November	198,520	1,728,173
December	421,585	1,619,890
January	411,621	433,080
February	7,077,450	601,334
March	650,000	56,083
April		
May		
June-21		
<b>To Date</b>	<b>\$ 15,960,801</b>	<b>\$ 14,604,259</b>

Commitments FY17-FY21



Fundings FY17-FY21



Note: Commitments include withdrawn and expired loans.

## Variable Loan Rate History February 16, 2014 - February 15, 2022

February 16, 2014 - February 15, 2015	<u>1.00%</u>	February 16, 2018 - February 15, 2019	<u>3.15%</u>
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, 2010 - February 15, 2022	<u>1.65%</u>

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

# MONTANA

BOARD OF INVESTMENTS  
INTERCAP

**TO:** Members of the Board

**FROM:** Louise Welsh, Senior Bond Program Officer

**DATE:** June 1, 2021

**RE:** INTERCAP Staff Approved Loans Committed – Staff approved the following loans between January 1, 2021 to March 31, 2021.



<b>Borrower:</b>	City of Thompson Falls
<b>Purpose:</b>	Purchase police vehicle
<b>Staff Approval Date:</b>	January 15, 2021
<b>Board Loan Amount:</b>	\$51,621
<b>Other Funding Sources:</b>	\$ 0
<b>Total Project Cost:</b>	\$51,621
<b>Term:</b>	5 years

<b>Borrower:</b>	Town of Belt
<b>Purpose:</b>	Purchase home for Resident Sheriff Deputy Program
<b>Staff Approval Date:</b>	January 15, 2021
<b>Board Loan Amount:</b>	\$160,000
<b>Other Funding Sources:</b>	\$ 5,000
<b>Total Project Cost:</b>	\$165,000
<b>Term:</b>	10 years

Borrower:	Custer County
Purpose:	Purchase motor grader
Staff Approval Date:	January 19, 2021
Board Loan Amount:	\$200,000
Other Funding Sources:	\$118,000
Total Project Cost:	\$318,000
Term:	7 years

Borrower:	City of Polson
Purpose:	Purchase new police vehicles
Staff Approval Date:	February 10, 2021
Board Loan Amount:	\$177,450
Other Funding Sources:	\$ 0
Total Project Cost:	\$177,450
Term:	3 years

Borrower:	Lewis and Clark County
Purpose:	Law and Justice Center building capital improvements
Staff Approval Date:	March 11, 2021
Board Loan Amount:	\$650,000
Other Funding Sources:	\$ 0
Total Project Cost:	\$650,000
Term:	10 years

# MONTANA

BOARD OF INVESTMENTS  
I N T E R C A P

**TO:** Members of the Board

**FROM:** Louise Welsh, Senior Bond Program Officer

**DATE:** June 1, 2021

**RE:** Program Overview - What's in the headlights?

## Overview Brief

The Board administers several bond programs under the Montana Economic Development Bond and the Municipal Finance Consolidation Acts, created as part of the "Build Montana" program in 1984.

The INTERCAP Program (the "Program"), created in 1987, is the most active of the Board's bond programs and is used extensively by local government entities, the University System, and certain eligible state agencies. The Board issues tax-exempt bonds and lends the proceeds to eligible governmental entities for a variety of purposes. Although the bonds are issued as long-term, they are remarketed annually (investors are only required to hold the bonds for a one-year period). On average, over the past five fiscal years, the program committed to \$32.3 million and funded \$30.7 million in loans. In fiscal year 2020, the program committed to \$27.5 million and funded \$29.1 million in loans.

The bonds are backed by the Board in two different ways:

- If for any reason investors do not purchase the bonds when they are remarketed annually, the Board is legally obligated to purchase them.
- The Board guarantees payment to the bond holders.

The Board charges a fee for backing the bonds and since the Program's inception has never been required to purchase the bonds or make payments to the bondholders. The Program has never suffered a loss. When the bonds are remarketed annually, the bond interest rates are reset, and Board staff sets the borrower interest rates based on the reset bond interest rate plus up to 1.5 percent to cover administrative costs. The table to the right shows the Program's activity from when it started to accelerate to 3<sup>rd</sup> quarter FY21.

Fiscal Year	Borrower Loans Outstanding	INTERCAP Bonds Outstanding	Loan Interest Rate
3 <sup>rd</sup> Qtr-FY21	63,650,654	90,600,000	1.65%
FY20	69,002,636	90,670,000	2.50%
FY19	79,637,758	105,065,000	3.37%
FY18	81,018,625	105,110,000	3.15%
FY17	94,690,437	107,880,000	2.50%
FY16	80,521,314	97,340,000	1.55%
FY15	82,503,298	106,435,000	1.25%
FY14	79,037,404	106,450,000	1.00%
FY13	75,317,110	106,615,000	1.00%
FY12	79,858,293	95,030,000	1.25%
FY11	75,552,672	95,530,000	1.95%
FY10	79,423,267	96,075,000	1.95%
FY09	77,714,731	88,620,000	3.25%
FY08	77,344,278	98,045,000	4.25%
FY07	66,923,842	98,460,000	4.85%
FY06	69,638,926	83,620,000	4.75%
FY05	64,742,704	84,280,000	3.80%
FY04	64,920,841	90,555,000	2.70%
FY03	52,768,387	72,190,000	2.85%
FY02	48,541,101	57,290,000	3.15%
FY01	43,695,135	57,680,000	4.75%
FY00	43,292,502	47,610,000	5.60%
FY99	38,813,975	47,930,000	4.30%
FY98	38,512,977	48,000,000	4.85%
FY97	25,211,446	35,910,000	4.75%
FY96	17,450,000	26,060,000	4.85%
FY95	14,900,000	19,580,000	6.40%

There are various forms of debt obligations that make up the program's loan asset portfolio. The current loan application covers most scenarios of all the borrower types and repayment sources that may apply. Staff goes through a thorough loan review process that involves all duties related to an in-depth financial credit analysis and statutory authority verification. The loans are structured according to the type of revenue designated as repayment. An attorney's opinion with several representations is required and first position liens are placed on vehicles/equipment.

Normally, there are several occasions for in-person Program outreach to the local government demographic by means of a vendor booth and/or presentations at the annual conferences and workshops throughout the year. Beginning in May, these conferences are cautiously returning from the pandemic closures in the form of Zoom conferencing.

In 2022, INTERCAP will have been in service for 35 years thus its time look at a few areas wherein lies opportunity for a fresh new perspective.

### What's in the Headlights?

Board staff are looking at what programmatic adjustments may be made to better serve the customer, streamline processes, and potentially save on costs. Areas up for closer inspection are:

- Source of funds for the loans,
- Cash reinvestment process and costs,
- BOI's annual credit enhancement fee,
- Prepayment and short-term borrowing,
- Loan application form, submission and review process,
- Vehicle/equipment security liens; and
- A new concept to the Program, rotating loans under one commitment to accommodate the vehicle/equipment replacement plans common to standard government operations.

Depending on the findings of the work outlined above, there may be a future request that requires Board action to implement a change, but no action is necessary at this time.



# MONTANA

## BOARD OF INVESTMENTS

**TO:** Members of the Board  
**FROM:** Jon Putnam, Chief Investment Officer  
John Romasko, Director of Fixed Income  
**DATE:** June 1, 2021  
**RE:** Proposed Change to STIP Investment Policy

### **Short-Term Investment Pool (STIP) Investment Policy**

We are proposing to extend the allowable weighted average maturity (WAM) of the STIP portfolio from 60 days to 120 days.

Staff is asking for additional flexibility to better manage the low interest rate environment. Interest rates for Treasury and Agency securities are currently negative out to almost 60 days. In addition, flows into STIP have been significant due to Federal stimulus money. This change will help us maintain a positive yield in the STIP portfolio.

A redline change of the STIP Investment Policy is included behind this memo.

# SHORT-TERM INVESTMENT POOL (STIP) INVESTMENT POLICY

Approved ~~February 11, 2020~~ August 19, 2020  
Proposed ~~August 19, 2020~~ June 1, 2021

## Appendix I: Investment Objectives and Guidelines

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

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

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

#### **1. Statement of Purpose:**

The purpose of these objectives and guidelines is to:

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

#### **2. Investment Objective:**

##### Strategic:

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

##### Performance:

Success in achieving this objective will be measured by comparing the risk and the net of expenses return of 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-year, five-year, and ten-year annualized basis.

#### **3. Investment Guidelines:**

The Montana Board Investment Staff will have full discretion to manage 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 of Investments at the next scheduled quarterly Board meeting.

##### Permitted Investments:

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." 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 Chief Investment Officer and purchased and monitored by Staff; and
13. FDIC insured deposit accounts.

### Restrictions

#### Concentration restrictions (Concentration restrictions are at the time of purchase)

1. A maximum of 40% of the STIP Units Value shall be held ABCP ;
2. A maximum of 10% of the STIP Units Value shall be held in Repurchase Agreements;
3. A maximum of 15% of the STIP Units Value shall be held in permitted SEC registered 2a-7 Institutional Money Market Funds;
4. A maximum of 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 25% of the STIP Units Value in the aggregate shall be held in all non-Government Variable Rate securities with maturities greater than 397 days;

#### Issuer Restrictions (Issuer restrictions are at the time of purchase)

6. A maximum of 30% of the STIP Units Value shall be held in any single issuer of U.S. Agency securities;
7. A maximum of 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;
8. A maximum of 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;
9. A maximum of 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;
10. A maximum of 5% of the STIP Units Value shall be held in Repurchase Agreements with any single primary dealer or financial institution;

#### Rating Restrictions

11. ABCP, CP, BA or CD shall not have a Tier 2 or lower rating at any Nationally Recognized

- Statistical Rating Organization (NRSRO) at the time of purchase;
12. Corporate bonds, notes, or MTNs shall be rated a minimum of the sixth highest rating at any Nationally Recognized Statistical Rating Organization (NRSRO) at the time of purchase;
  13. All securities, with the exception of securities fully guaranteed by the U.S. Government and approved Institutional Money Market Funds, must be rated by at least two Nationally Recognized Statistical Rating Organizations (NRSROs) at the time of purchase.
  13. A maximum of 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;

#### Liquidity Restrictions

14. A minimum of 10% of the STIP Units Value shall qualify as “daily liquid assets.” For this guideline is it 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 business day, and a permitted SEC registered 2a-7 Institutional Money Market Fund;
15. A minimum of 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 60 days or less, securities that will mature or are subject to a demand feature that is exercisable and payable within five business days, and a permitted SEC registered 2a-7 Institutional Money Market Fund;
16. A maximum of 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 calendar days at approximately the value ascribed to it by STIP.”
17. STIP shall maintain a dollar-weighted average portfolio maturity of ~~60~~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);
18. ABCP purchases shall be limited to maturities of 90 days or less;
19. The maximum term of any Repurchase Agreement will be 30 days;
20. The maximum term of any Reverse Repurchase Agreement will be 90 days and must be matched to anticipated cash flows adequate to liquidate the transaction;
21. The maximum final maturity of any Permitted Investment shall not exceed 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);
22. A Variable Rate security shall have a maximum maturity of 2 years;

#### Other Restrictions

23. 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 dividend by 365 multiplied by 2.0% for securities maturing in less than one year and 3.5% for securities maturing in greater than one year.
24. 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 102% of the value of the Repurchase Agreement;

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

**TO:** Members of the Board  
**FROM:** Jon Putnam, Chief Investment Officer  
John Romasko, Director of Fixed Income  
**DATE:** June 1, 2021  
**RE:** Proposed Changes for the Pension, State Fund & Coal Severance Tax Trust 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**

We are proposing to add two additional restrictions to the Non-Core Fixed Income Asset Class. This will help ensure diversification within the Asset Class.

1. High Yield strategies will make up a minimum of 25% and a maximum of 75% of the Non-Core Fixed Income Asset Class.
2. No strategy other than High Yield will make up more than 50% of the Non-Core Fixed Income Asset Class.

### **Montana State Fund Investment Pool**

We are proposing to limit the maximum amount of Non-agency Residential Mortgage Backed Securities (RMBS) to 10% in the Montana State Fund Investment Pool. Currently, there is no limit aside from the 50% limit on mortgage backed securities. The 10% limit is consistent with other investment policy statements.

### **Coal Severance Tax Trust Fund**

We are proposing to change Funds titled Treasure State to Montana Coal. The change reflects those made to MCA 17-5-703, by the 2021 Legislature through SB 258.

# MONTANA PUBLIC RETIREMENT PLANS INVESTMENT POLICY

Approved April 5, 2017

Last Revised ~~November 19, 2020~~ June 1, 2021



## Schedule II-G: Investment Objectives and Guidelines Non-Core Fixed Income Asset Class

Approved Date of Schedule: ~~June 9, 2020~~ June 1, 2021

*This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Non-Core Fixed Income.*

### Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Non-Core Fixed Income Asset Class; and
2. Provide diversified exposure to the Non-Core Fixed Income markets in a prudent and cost-effective manner.

### Investment Objective:

#### Strategic:

The objective of the Non-Core Fixed Income Asset Class is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

#### Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of the Non-Core Fixed Income Asset Class to the **Bloomberg Barclays US High Yield - 2% Issuer Cap Index** (the "Benchmark"). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

### Investment Guidelines:

Staff will have full discretion to manage the Non-Core Fixed Income Asset Class consistent with the investment guidelines stated below. Non-Core Fixed Income is defined as strategies primarily invested in High Yield Corporate Debt, Emerging Market Debt, Convertible Debt, and Preferred Securities. 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.

### Permitted Investments:

The Non-Core Fixed Income Asset Class may invest only in the following:

1. Securities and derivatives held in separate accounts, commingled funds, limited partnerships, or limited liability companies managed by external investment managers and governed by their respective investment management contracts and investment guidelines;
2. 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.

### Other Restrictions:

1. A maximum of 10% of the Net Asset Value of the Non-Core Fixed Income Asset Class shall be held in Non-U.S. securities if they are denominated in a foreign currency;
2. The average duration of the Non-Core Fixed Income Asset Class will be maintained in a range of + or – 25% of the index duration.
3. High Yield strategies will make up a minimum of 25% and a maximum of 75% of the Non-Core Fixed Income Asset Class.
- 2-4. No strategy other than High Yield will make up more than 50% of the Non-Core Fixed Income Asset Class.

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 Non-Core Fixed Income Asset Class allocations were outside of the limits and either inform the Board of the actions that were taken to return the Non-Core Fixed Income Asset Class back within guidelines or a plan to do so.

# MONTANA STATE FUND INVESTMENT POOL INVESTMENT POLICY

Approved ~~April 14~~ June 9, 2020

Last Revised June ~~9~~, ~~2020~~ 2021

## Schedule II-D: Investment Objectives and Guidelines Investment Grade Fixed Income Asset Class

Effective Date of Schedule: April 14, 2020

*This Schedule is effective upon adoption by the Board and supersedes all previous Investment Objectives and Guidelines for Investment Grade Fixed Income Asset Class.*

### Statement of Purpose:

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the Investment Grade Fixed Income Asset Class; and
2. Provide diversified exposure to the Investment Grade Fixed Income markets in a prudent and cost-effective manner.

### Investment Objective:

#### Strategic:

The objective of the Investment Grade Fixed Income Asset Class is to attain the highest possible total return within the parameters of the Investment Guidelines set forth below.

#### Performance:

Success in achieving this objective will be measured by comparing the risk and after-fee return of Investment Grade Fixed Income Asset Class to the **Bloomberg Barclays Intermediate US Aggregate Bond Index** (the "Benchmark"). Performance results will be monitored and evaluated quarterly. However, the success in achieving the objective will be measured on a three-year, five-year, and ten-year annualized basis.

### Investment Guidelines:

Staff will have full discretion to manage the Investment Grade Fixed Income 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. State Fund will be notified of any exceptions or compliance violations within five days.

#### Permitted Investments:

The Investment Grade Fixed Income Asset Class may invest only in the following:

1. Debt obligations of the U.S. Government, including its agencies and instrumentalities;
2. Dollar denominated debt obligations of Quasi and Foreign Government entities;
3. Dollar denominated debt obligations of domestic and foreign corporations;

4. Dollar denominated securitized assets, including U.S. Agency mortgage backed securities (MBS), U.S. Agency collateralized mortgage obligations (CMOs), commercial mortgage backed securities (CMBS), and asset backed securities (ABS);
5. 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.

#### Other Restrictions:

1. A minimum of 20% of the market value must be held in U.S. Treasury/Agency securities;
2. A maximum of 10% of the market value may be held in dollar denominated quasi and foreign government securities;
  - a. Quasi and foreign government securities must be rated a minimum of the 7<sup>th</sup> highest rating by any nationally recognized statistical rating organization (NRSRO) at the time of purchase;
3. A maximum of 50% of the market value may be held in corporate bonds;
4. A maximum of 50% of the market value may be held in U.S. Agency mortgage backed securities (MBS & CMO);
5. A maximum of 5% of the market value may be held in asset backed securities (ABS);
6. A maximum of 10% of the market value may be held in commercial mortgage backed securities (CMBS);
- ~~7.~~ The average duration will be maintained in a range of + or – 20% of the index duration;
- ~~7-8.~~ A maximum of 10% of the Net Asset Value of any internally managed portfolio may be held in non-agency mortgage backed securities (RMBS);
- ~~8-9.~~ The average life for individual fixed income securities will be less than 12 years;
- ~~9-10.~~ A maximum of 3% of the market value may be held in a single parent company issuer, foreign/quasi government issuer or ABS specific pool at the time of purchase; there is no limit on U.S. Government/Agency securities;
  - a. Exposure to a single parent company issuer, foreign/quasi government issuer or ABS specific pool will be limited to 4% of the market value regardless of when securities were purchased;
- ~~10-11.~~ Securities must be rated investment grade by at least two nationally recognized statistical rating organizations (NRSRO), with the exception of securities issued or guaranteed by agencies or instrumentalities of the U.S. Government. In the case of split-rated securities, the lower rating is used;
- ~~11-12.~~ Securities that drop below investment grade as defined above may be held to maturity. However, the Investment Grade Fixed Income Asset Class may not hold more than 5% below investment grade;
- ~~12-13.~~ Fixed income securities rated lower than the 7<sup>th</sup> highest rating by any nationally recognized statistical rating organization (NRSRO) are limited to 30% of the market value of the Investment Grade Fixed Income Asset Class;
  - a. In the case of split rated securities, the lowest rating will apply;
- ~~13-14.~~ Securitized assets must be rated a minimum of the 4<sup>th</sup> highest rating by any nationally recognized statistical rating organization (NRSRO) at the time of purchase;
  - a. Securities that drop below the 4<sup>th</sup> highest rating by any NRSRO may be held to maturity. However, the Investment Grade Fixed Income Asset Class may not hold more than 4% in these securities;
- ~~14-15.~~ A minimum of 1% of the Investment Grade Fixed Income Asset Class will be held in cash investments;
- ~~15-16.~~ The use of derivatives is prohibited;
- ~~16-17.~~ The use of leverage is prohibited.

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 Investment Grade Fixed Income Asset Class allocations were outside of the limits and either inform

the Board of the actions that were taken to return the Investment Grade Fixed Income Asset Class back within guidelines or a plan to do so. State Fund will be notified of any exceptions or compliance violations within five days.

# COAL SEVERANCE TAX TRUST FUND INVESTMENT POLICY

Approved August 20, 2019

Last Revised June 1, 2021

**Schedule II-B**  
**Investment Objectives and Guidelines**  
**~~Treasure State~~Montana Coal Endowment Fund**

Effective Date of Schedule: ~~August 22, 2017~~ June 1, 2021

*This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.*

**Introduction:**

The purpose of the investment guidelines is to provide a framework for the ~~Treasure State~~Montana Coal Endowment Fund under the guidance of the board.

The ~~Treasure State~~Montana Coal Endowment Fund was established under MCA: 17-5-703 as a sub-fund of the Permanent Coal Severance Tax Trust. Income from the ~~Treasure State~~Montana Coal Endowment Fund is appropriated to the Department of Revenue by the legislature for local government infrastructure projects.

Funds for the ~~Treasure State~~Montana Coal Endowment Fund are held in MU65.

**Statement of Purpose:**

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the ~~Treasure State~~Montana Coal Endowment Fund; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

**Investment Objective:**

Strategic:

Attain above benchmark total return for all investments within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:

Success in achieving this objective will be measured by comparing the risk and return of the account to the **Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark**, each weighted proportionately to the portfolio's holdings, over a five-year moving average.

**Investment Guidelines:**

The Montana Board of Investments will have full discretion to manage the ~~Treasure State~~Montana Coal Endowment Fund 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 of Investments at the next scheduled quarterly Board meeting.

Permitted Investments:

~~Treasure State~~Montana Coal Endowment Fund may only invest in the following:

- Trust Fund Investment Pool (TFIP)
- Short-Term Investment Pool (STIP)



### Other Restrictions:

- A maximum of 99% of the market value of the portfolio will be held in the Trust Fund Investment Pool (TFIP).

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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.

**Schedule II-C**  
**Investment Objectives and Guidelines**  
**~~Treasure State~~Montana Coal Endowment Regional Water System Fund**

Effective Date of Schedule: ~~August 22, 2017~~ June 1, 2021

*This schedule is effective upon adoption by the Board of Investments and supersedes all previous Investment Objectives and Guidelines for this specific portfolio.*

**Introduction:**

The purpose of the investment guidelines is to provide a framework for the ~~Treasure State~~Montana Coal Endowment Regional Water System Fund under the guidance of the board.

The ~~Treasure State~~Montana Coal Endowment Regional Water System Fund was established under MCA: 17-5-703 as a sub-fund of the Permanent Coal Severance Tax Trust. Income from the ~~Treasure State~~Montana Coal Endowment Regional Water System Fund is appropriated to the Department of Revenue by the legislature to fund regional water system projects in northcentral and northeastern Montana.

Funds for the ~~Treasure State~~Montana Coal Endowment Regional Water System Fund are held in MU64.

**Statement of Purpose:**

The purpose of these objectives and guidelines is to:

1. Establish the investment objectives and performance standards of the ~~Treasure State~~Montana Coal Endowment Regional Water System Fund; and
2. Provide diversified investment exposure within the guidelines in a prudent and cost effective manner.

**Investment Objective:**

Strategic:

Attain above benchmark total return for all investments within the parameters of the Investment Guidelines set forth below with an emphasis on investment income and preservation of principal.

Performance:

Success in achieving this objective will be measured by comparing the risk and return of the account to the **Trust Funds Investment Pool benchmark and the Short-Term Investment Pool benchmark**, each weighted proportionately to the portfolio's holdings, over a five-year moving average.

**Investment Guidelines:**

The Montana Board of Investments will have full discretion to manage the ~~Treasure State~~Montana Coal Endowment Regional Water System Fund 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 of Investments at the next scheduled quarterly Board meeting.

Permitted Investments:

~~Treasure State~~Montana Coal Endowment Regional Water System Fund may only invest in the following:

- Trust Fund Investment Pool (TFIP)
- Short-Term Investment Pool (STIP)

Other Restrictions:

- A maximum of 99% of the market value of the portfolio will be held in the Trust Fund Investment Pool (TFIP).

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 allocations were outside the limits and either inform the Board of the actions that were taken to return the portfolio back within guidelines or a plan to do so.

# CORE FIXED INCOME ASSET CLASS REVIEW

Presented by: John Romasko, CFA, Kirsten Haswell, John  
Carpenter, CPA, and Kelsey Gauthier, CPA

Date: June 1, 2021

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- Fixed Income Resources
- Costs
- Competitive Advantage
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# Fixed Income Basics

## What is “Fixed Income”?

- A contractual obligation to pay principal and interest over time.
- Bonds are issued by government or corporate entities.
- Obligations represent a claim on assets that is senior to equity.
- Coupons are contractually driven and may be fixed or floating rate.
- Maturities are predefined and generally range from 1 day to 30 years.

# Fixed Income Basics

## Fixed Income Terminology

- Principal – The initial size of a bond or investment.
- Coupon – The interest rate paid on a bond. This can be either fixed rate or floating rate. A floating interest rate is typically tied to a benchmark such as U.S. T-Bills. Payments can be monthly, semi-annual, or annual.
- Maturity – The agreed date that the full amount of the bond or investment must be paid back to the lender plus interest.
- Interest – The amount that must be paid to compensate the lender/investor for the use of funds.
- Sector – An area of the economy in which businesses share the same or related products or services, an economic sector. Alternatively, a group of securities that exhibit similar characteristics, an asset type sector.

# Fixed Income Basics

## Fixed Income Terminology

- Ratings – An assessment of the creditworthiness of a borrower. Bond ratings from NRSROs between AAA and BBB- are investment grade. BB and below are below investment grade/high yield.
- Average Credit Quality – The average credit rating for each bond in the portfolio adjusted for its relative weight in the portfolio.
- Duration – A measure of a bond or portfolio's sensitivity to changes in interest rates. As duration increases, the bond or portfolio's sensitivity to interest rates increases.
- Weighted Average Maturity or Life – Measures of how quickly the outstanding principal will be repaid. The higher the number the longer it is expected to take for the debt to be paid.



# Fixed Income Basics

## Fixed Income Terminology

- Yield to Maturity (YTM) – The total return anticipated on a bond or portfolio if it is held until maturity and all coupon payments are reinvested at the YTM.
- Yield Curve – A curve that plots the prevailing interest rate for bonds at different maturities.
- Spread – A measurement of the difference in yield between a non-Treasury bond and a U.S. Treasury bond. The U.S. Treasury is considered the risk-free alternative. A higher spread represents greater uncertainty of repayment.
- Inflation – The rate at which the general level of prices for goods and services is increasing. As inflation increases, the purchasing power of money falls.

# Fixed Income Basics

## Objectives of Fixed Income

- Total Return = Income + Change in Market Value
  - Income is primarily generated from coupon payments paid at regular intervals
  - Market value is driven by movements in yields (U.S. Treasury rates and spreads)
- Diversification
  - Fixed income provides a different risk profile to the portfolio than other asset classes
  - More likely to preserve principal in a stressed market environment
- Liquidity
  - Ability to raise cash in times of extreme market stress
  - Varying degrees of liquidity for different types of bonds

# Fixed Income Basics

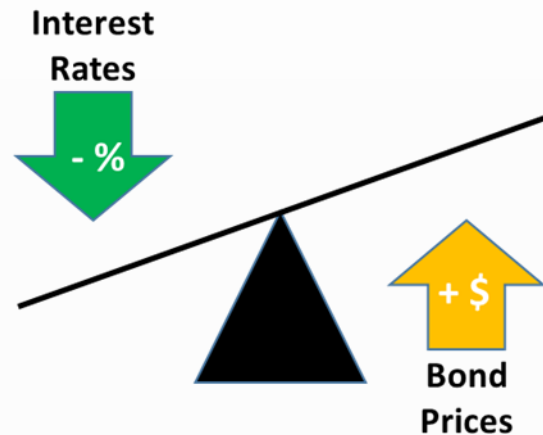
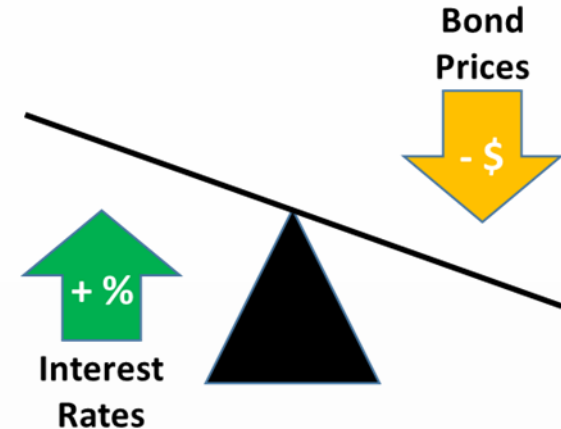
## Primary Fixed Income Risk Factors

- Interest Rates are composed of the following:
  - Real Risk-Free Rate – Compensation above inflation that a lender demands of an investment with zero risk. Changes with the preference to lend or spend.
  - Inflation Risk – Inflation can erode the purchasing power of cash flows received over the life of a bond.
  - Maturity Risk – All else being equal, the longer the maturity the greater the sensitivity to interest rate changes.
  - Default Risk – Borrower may have less ability or willingness to meet their contractual obligations and may default.
  - Liquidity Risk – Most bonds are traded over the counter (OTC). May not be a willing buyer/seller. Pricing may be opaque. In times of market stress, liquidity may be reduced.

# Fixed Income Basics

## Interest Rate Sensitivity

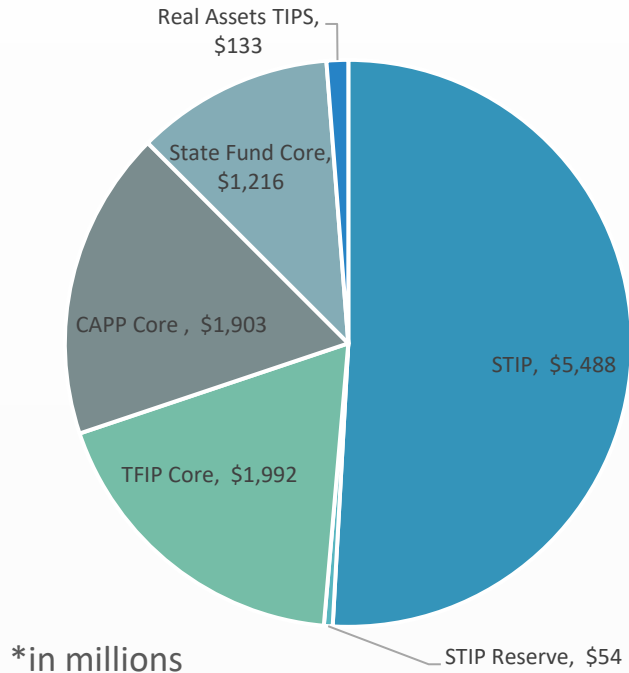
- When interest rates rise: the value of outstanding bonds falls because the income they pay is less than what investors could receive on a new bond with similar characteristics.
- When interest rates fall: the value of outstanding bonds rises because the income they pay is more than what investors could receive on a new bond with similar characteristics.



# Fixed Income Basics

## Core Internal Fixed Income Portfolios

- \$10.8 Billion as of 03/31/2021



Year Ended 03/31/21 PORTFOLIO	Transactions	
	\$	#
STIP	\$ 24,815,019,000	809
TREASURER'S FUND	\$ 6,015,000,000	155
STATE FUND	\$ 220,887,000	59
TFIP	\$ 199,737,596	56
STIP RESERVE	\$ 140,000,000	70
TIPS	\$ 39,000,000	14
<b>TOTAL</b>	<b>\$ 31,429,643,596</b>	<b>1163</b>

# Non-Pension Clients

## Assets Under Management 03/31/2021

Name	AUM Millions	Name	AUM Millions
<b>Trust Funds - Permanent</b>		Libby Asbestos Site State Cost	\$ 4.9
Coal Severance Tax Trust Fund	\$ 1,180.4	Luttrell Pit - Oper & Maint	\$ 2.3
FWP Mitigation Trust Fund	\$ 11.2	Montana Pole	\$ 28.7
Coal Tax Cultural Trust Fund	\$ 16.4	Smelter Hill Upland Restorative	\$ 9.4
Coal Tax Park Acquisition	\$ 30.6	Streamside Tailings Operable Unit	\$ 18.9
Endowment For Children	\$ 1.4	UCFRB Reserve	\$ 21.8
FWP Real Property Trust	\$ 7.4	UCFRB Restoration Fund	\$ 77.4
Harold Hamm Endowment	\$ 0.1	Upper Blackfoot Response	\$ 1.3
Montana Historical Society	\$ 4.1	Zortman Trust	\$ 20.3
Older Montanans Trust	\$ 0.3	Zortman Water	\$ 15.6
Potter Trust Fund	\$ 0.2	<b>Operating Funds</b>	
Resource Indemnity Trust	\$ 116.0	FWP License Account	\$ 85.1
Tobacco Trust Fund	\$ 283.2	Local Agencies	\$ 1,769.4
School Trust	\$ 830.9	Montana State University	\$ 235.1
Weed Control Trust	\$ 11.3	MT Tech-UM Agency Funds	\$ 11.3
Wildlife Habitat Trust	\$ 16.0	State Agencies	\$ 686.8
<b>Trust Funds - Expendable</b>		State Treasurer's Fund	\$ 1,787.2
Abandoned Mine Trust	\$ 6.7	University of Montana	\$ 100.4
Barker Hughesville St Response	\$ 9.1	<b>Insurance Funds</b>	
Belt Water Treatment Plant	\$ 26.7	MUS Workers' Compensation	\$ 16.6
Butte Area One Restoration	\$ 7.1	PERS Defined Cont Disability	\$ 7.3
Butte Redevelopment Trust	\$ 14.7	State Fund Insurance	\$ 1,583.3
Clark Fork River Restoration	\$ 30.1	Subsequent Injury Fund	\$ 0.5
Clark Fork Site Response	\$ 70.9	Group Benefits	\$ 147.1
East Helena Compensation	\$ 4.9	MUS Group Insurance	\$ 105.9
Flying J Cebra Facilities Fund	\$ 2.6		

# Non-Pension Clients

## Policy and Portfolio Construction

- Develop portfolio objectives and constraints in consultation with clients and investment staff
- Choose an appropriate benchmark and define the investment guidelines
- Construct portfolio based on guidelines
  - Duration based on interest rate and economic outlook versus market
  - Relative value between sectors / securities
- Monitor portfolio
  - Regular review of portfolio characteristics relative to the benchmark
  - Continual evaluation of current securities and potential opportunities
  - Regular meetings to discuss news, market events, portfolio structure, relative value, and market color

# Non-Pension Clients

## Policy and Portfolio Construction

- All team members participate in portfolio management
- Continual search for efficiency improvements
  - Electronic trading
  - Systematic credit research process
  - Bloomberg data



# Non-Pension Clients

## Types of Investments and Why We Use Them

- Short Term Investment Pool (STIP)
  - Similar to a short-term money market fund
  - Provides liquidity
  - Modest increase in yield
  - Default fund to all investments not otherwise allocated
- Trust Funds Investment Pool (TFIP)
  - Diversify investments
  - Increase yield
  - Enhance Total Return
- Individual Securities
  - Special circumstances

# Non-Pension Clients

## Trust Funds Investment Pool Objectives

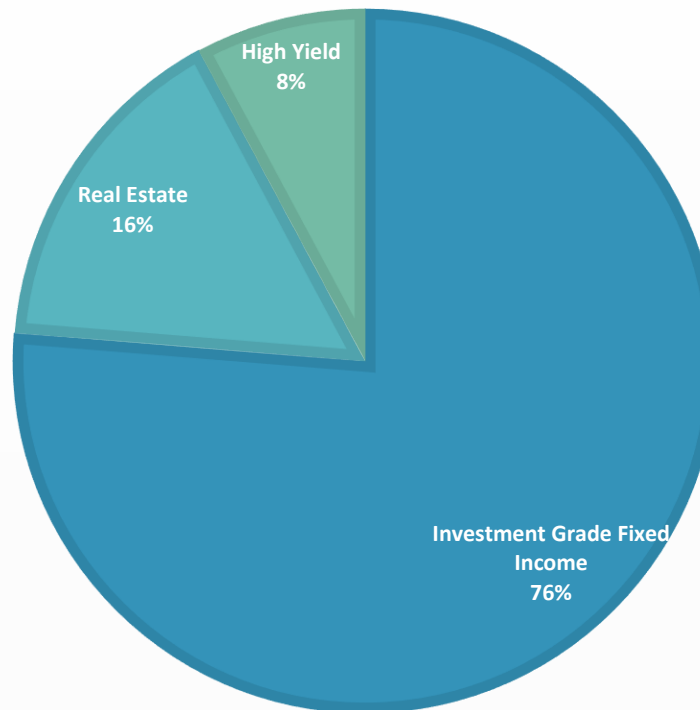
- Strategic Objective
  - Provide a diversified investment vehicle for participants that offers a return that assists in supporting client missions
- Investment Objectives
  - Provide investment income by assuming a prudent amount of risk
  - Preserve principal by diversifying the portfolio across risk factors

# Non-Pension Clients

## Trust Funds Investment Pool Characteristics 03/31/2021

- Total market value: \$2.67B

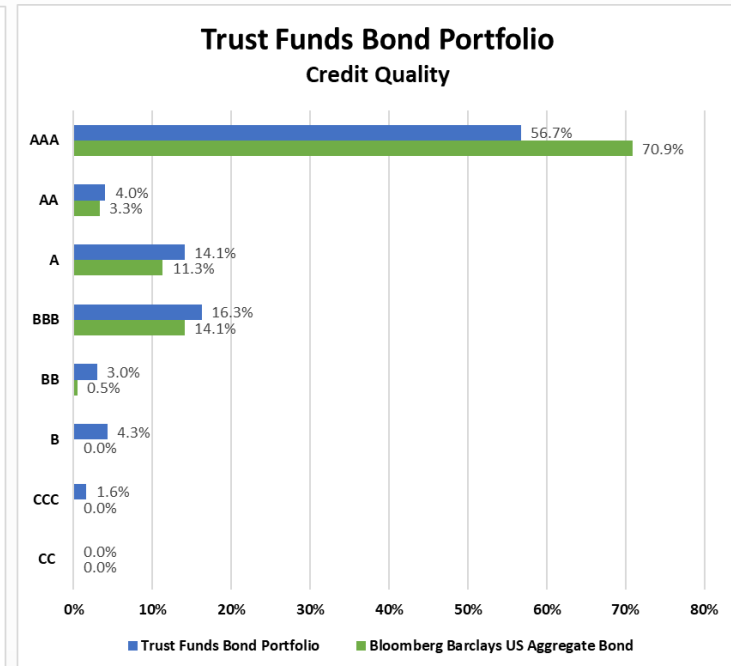
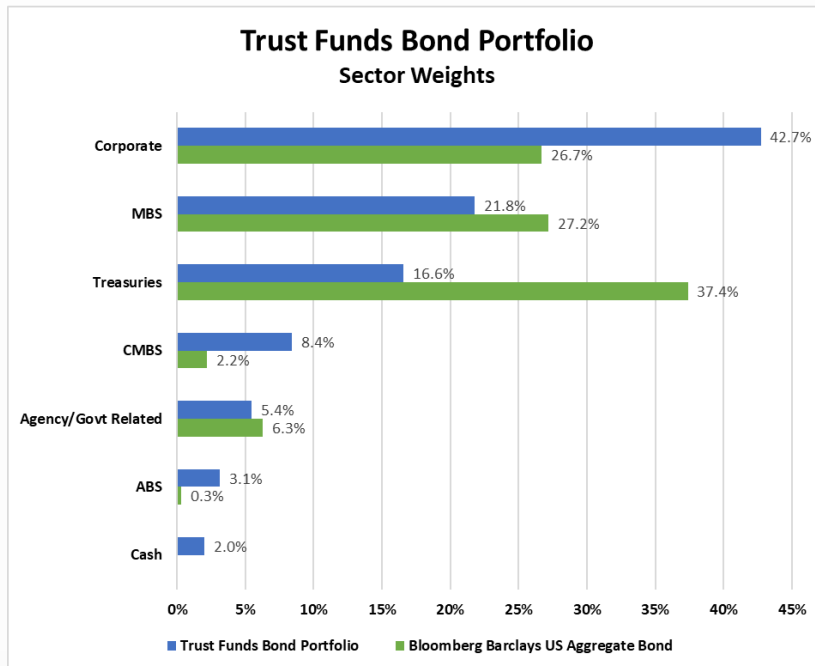
TFIP ASSET ALLOCATION



# Non-Pension Clients

## Trust Funds Bond Portfolio Characteristics 03/31/2021

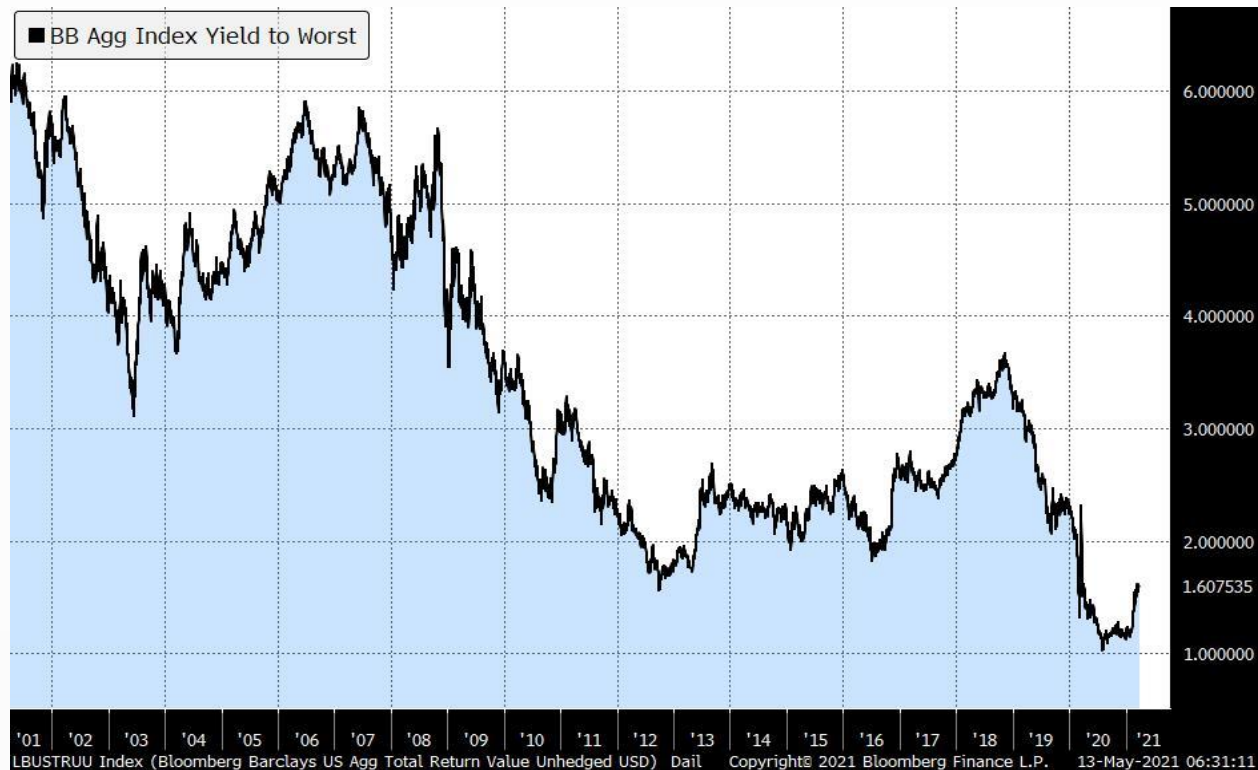
- Total market value: \$2.03B
- Portfolio Duration: 5.85 versus Bloomberg Barclays Aggregate duration: 6.27
- Portfolio Yield to Maturity: 1.63% versus Bloomberg Barclays Aggregate yield to maturity: 1.58%



# Non-Pension Clients

## TFIP Participant Distributions

- Cash distributed is an important factor to Separate Accounts
- Distributions have been pressured downward with the secular decline in interest rates over the last 30+ years
- Based on current market rates, distribution yields may continue to decline



# Non-Pension Clients

## Short Term Investment Pool Objectives

- STIP has three clearly defined objectives in order of importance:
  - Preservation of principal
  - Liquidity
  - Return

# Non-Pension Clients

## Short Term Investment Pool Characteristics 03/31/2021

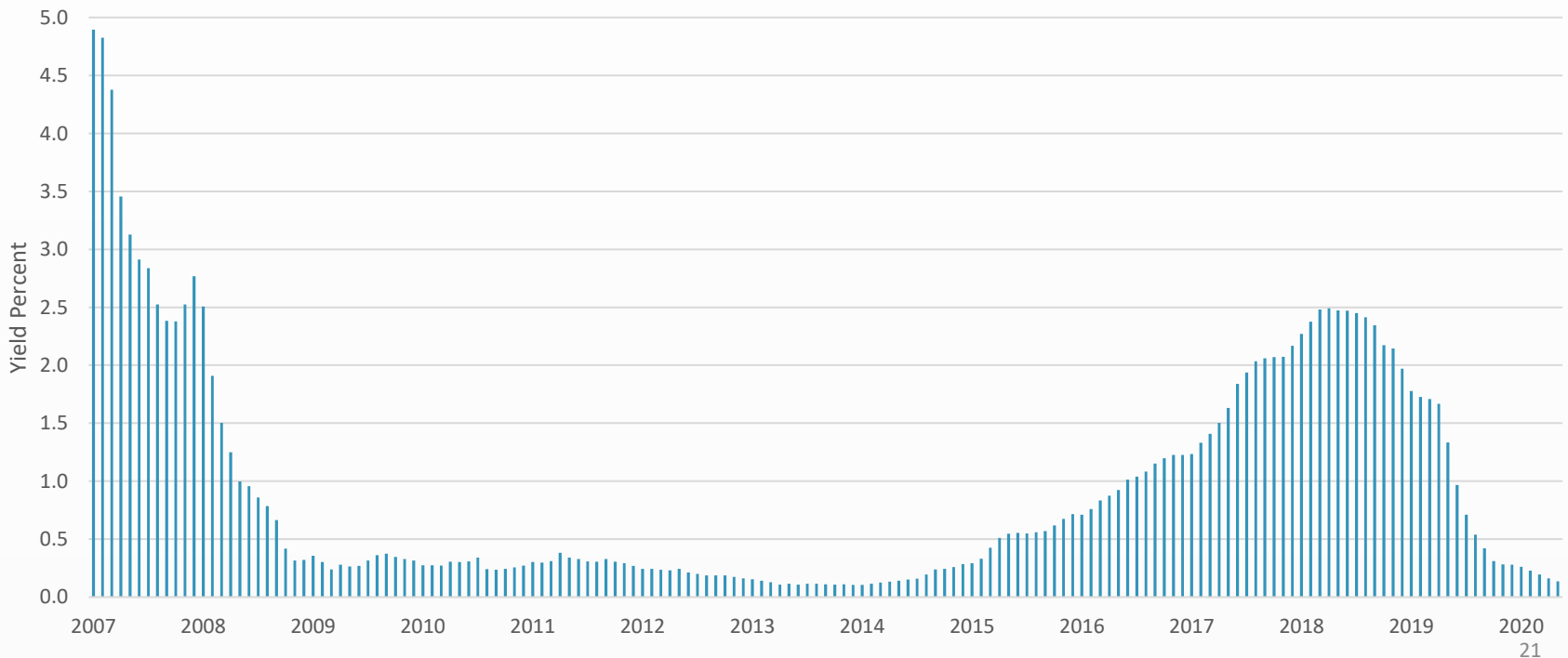
- All securities in STIP are highly rated
- STIP is diversified over asset classes
- Weighted Average Life 58 days, Duration 0.16 years
- 1 Day Liquidity 18.9%, over \$1 billion
- 1 Week Liquidity 22.9%, over \$1.2 billion
- Government/Agency allocation 28.9%, over \$1.5 billion
- Yield 0.11%

# Non-Pension Clients

## Short Term Investment Pool Net Yield

- STIP yield has seen a sharp decrease as the Federal Reserve cut short-term interest rates at the start of the pandemic.
- Based on current market expectations, STIP yield will remain low

STIP Net Yield





# Non-Pension Clients

## State Fund Investment Portfolio Objectives

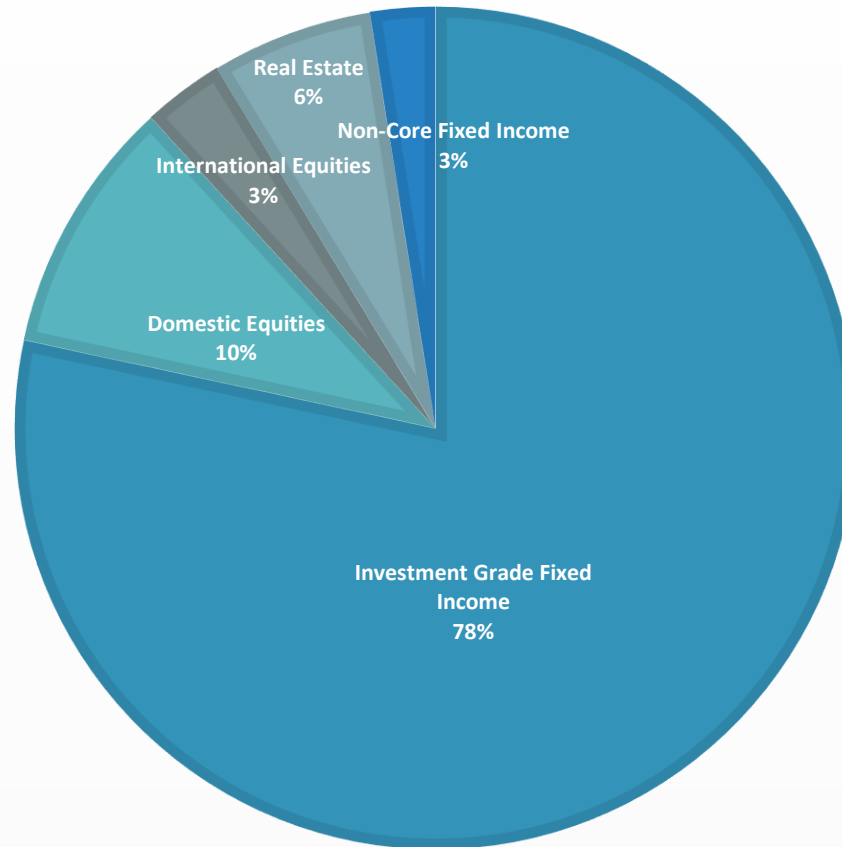
- Strategic Objective
  - Attain returns that assist MSF in meeting liabilities as well as maintaining stable, cost effective rates for workers' compensation insurance
- Primary Investment Objectives
  - Provide investment income by assuming a prudent amount of risk
  - Preserve principal by diversifying the portfolio across risk factors
- Secondary Investment Objectives
  - Long-term capital appreciation in excess of inflation

# Non-Pension Clients

## State Fund Investment Portfolio Characteristics 03/31/2021

- Total market value: \$1.58B

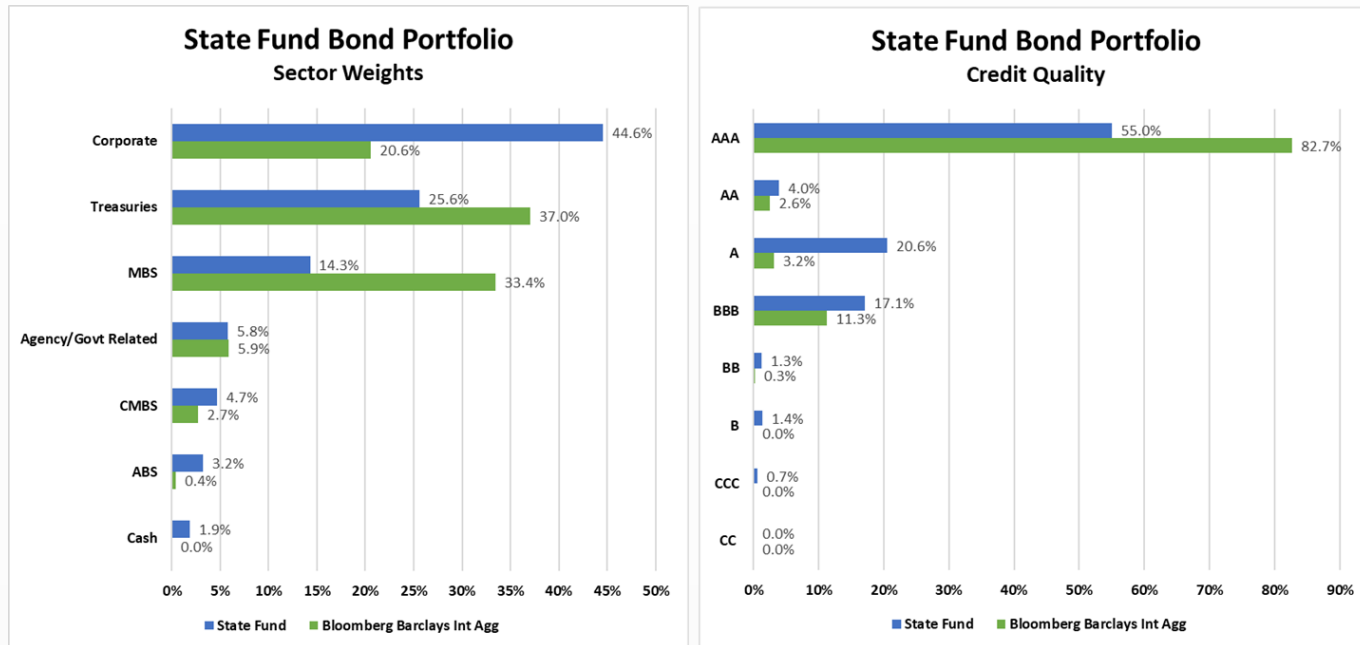
STATE FUND ASSET ALLOCATION



# Non-Pension Clients

## State Fund Bond Portfolio Characteristics 03/31/2021

- Total market value: \$1.24B
- Portfolio Duration: 4.07 versus Bloomberg Barclays Intermediate Aggregate duration: 4.09
- Portfolio Yield to Maturity: 1.14% versus Bloomberg Barclays Intermediate Aggregate yield to maturity: 1.26%



# Fixed Income Management

## Costs

- Costs are low relative to other methods of gaining exposure
  - Internal (Pension funds): 1.1 bps, average AUM of \$2.43B
    - Cost per the 2019 CEM Benchmark study
  - iShares IG Corporate Bond ETF (LQD): 14 bps, AUM \$41.1B
  - SPDR BB/Barclays Aggregate ETF (SPAB): 4 bps, AUM \$5.5B
  - External Manager IG Core Fixed Income: Median of 25 bps
    - Cost for \$100M separately managed account according to eVestment database per RVK

# Fixed Income Management

## Fixed Income Resources

- Fixed Income Team (John, Kirsten, John, Kelsey)
- Portfolio Analytics Systems
  - Bloomberg PORT+
- External Managers – a sounding board
- Operations, Accounting, & Risk Management

# Fixed Income Management

## Fixed Income Resources

- Trading Capabilities
  - Bloomberg AIM system
  - Bloomberg E-Trading (Treasuries/Agencies)
  - MarketAxess
  
- External Credit Research
  - CreditSights
  - Gimme Credit
  - S&P Capital IQ / Ratings Direct
  - Bloomberg
  - Brokerage contacts

# Fixed Income Management

## Competitive Advantage

- Experience - Extensive history of internally managing IG bonds. Experienced investment, operations, and accounting staff.
- Well-Defined Investment Process – Provides a stable, repeatable framework that applies to all investment accounts.
- Low-cost structure – Large asset base creates economies of scale.
- Control – Ability to tailor the characteristics of portfolios to meet the specific needs and risk tolerance of accounts.
- Solid long-term performance across portfolios vs. benchmarks.
- Internal Fixed Income Asset Management is a **Core Competency** of MBOI.

# Fixed Income Management

## Bloomberg/MarketAxess/Internal Tools

- Macroeconomic information
  - Yield Curve, Federal Reserve, Interest Rate Probability, Inflation, Spreads, Market Volume
- Benchmark comparison and analysis
  - Bloomberg Portfolio and Risk Analytics (PORT)
- Company financial analysis
  - Internal credit matrix, Bloomberg Financial Analysis, CreditSights
- Individual bond analysis
  - New Issue Monitor, Bond Description, Current and Historical Pricing, Credit Curve
- Trading platforms
  - Bloomberg AIM, Bloomberg E-trading, MarketAxess
- Demonstration of capabilities



# REAL ESTATE ASSET CLASS REVIEW

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Director of Real Estate/Real Assets

Date: June 2, 2021

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# 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 – 6/1/2006
- Benchmark
  - NCREIF Fund Index – Open-End Diversified Core Equity (Since 7/1/2020)
- Approved Allocation Range - 5% to 13% 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 – 20% - 50%
    - Core-Plus/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

Owens a residual interest in  
the property

## Debt

Lends funds to an owner of  
real estate or purchase of  
real estate-backed bonds

### (A) Public Equity

- Separately managed account holds common stock of publicly traded Real Estate Investment Trusts (REITs) (active)

### (B) Private Equity

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

### (C) Public Debt

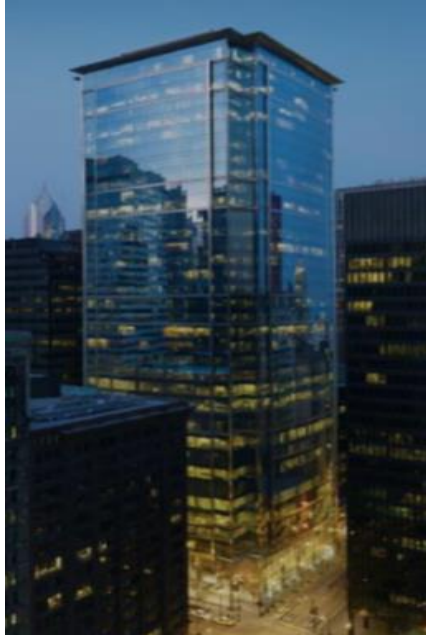
- Mutual Fund (active)

### (D) Private Debt

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

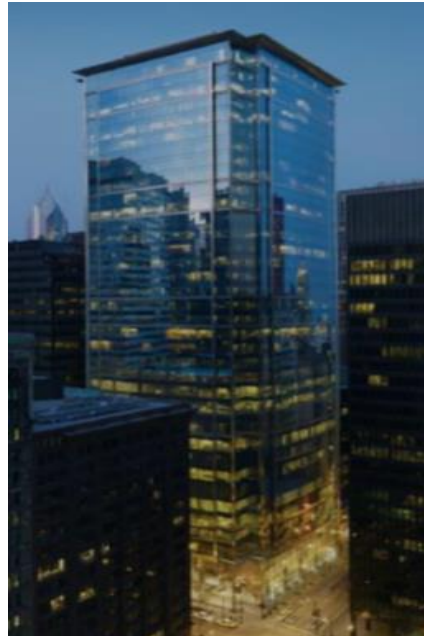
# Styles of Private Real Estate Equity/Debt Investing

## CORE



- ✓ 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

## CORE-PLUS



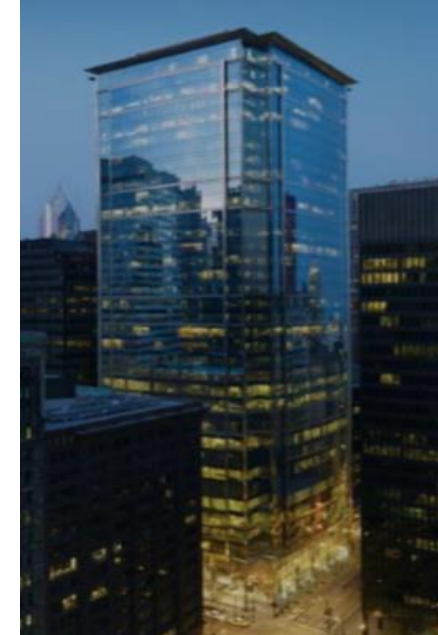
- ✓ Investors own equity or debt
- ✓ High occupancy
- ✓ Generally higher leverage than Core (35 – 65%)
- ✓ Good tenant credit
- ✓ Very liquid
- ✓ Numerous buyers and sellers
- ✓ Higher expected return than Core, but mostly from rental income, limited ground-up development

## NON-CORE: VALUE-ADDED



- ✓ 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

## NON-CORE: OPPORTUNISTIC



- ✓ 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 in the Real Estate Asset Class

## **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. Hammes 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)**

- Manages an Investment Act of 1940 registered mutual fund that buys and sells high-yield CMBS bonds

# 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

# Pacing

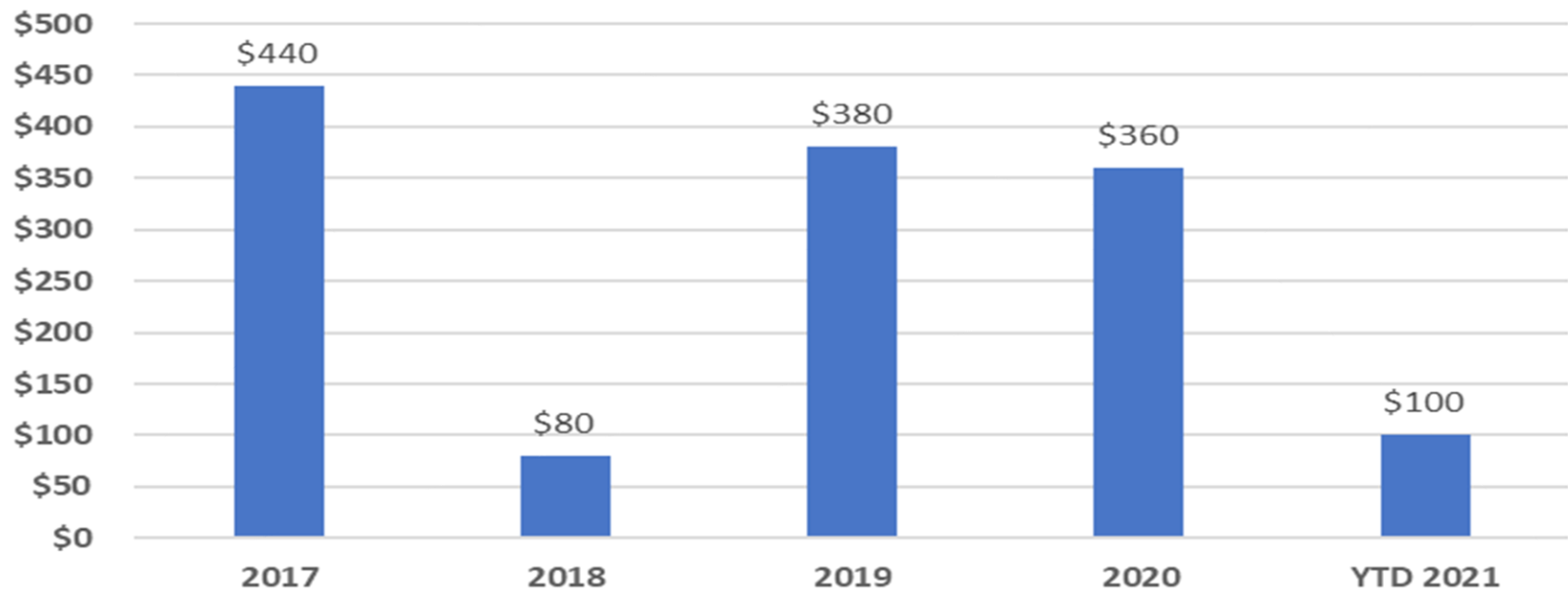
**Commitment plan on when and how much to invest in real estate to reach and/or maintain an allocation target within the approved ranges**

## Items to consider

- Current portfolio valuation
- Considers annualized growth rate of the total plan assets (CAPP)
- Provides flexibility to explore different scenarios
- Forecasted timing of when commitments are drawn down
- Forecasted timing of distributions received as funds mature
- 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

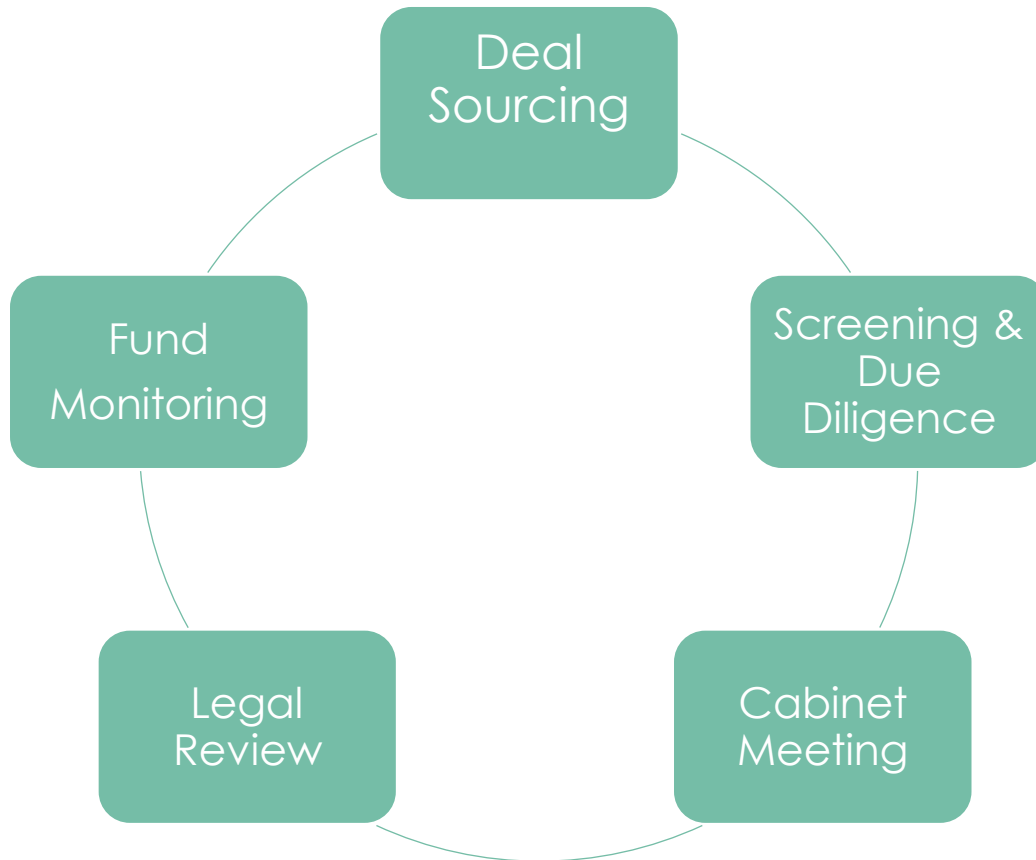
# Actual Pacing – Commitments Past 5 Years

## Real Estate Private Fund Commitments



# MBOI Real Estate Investment Process

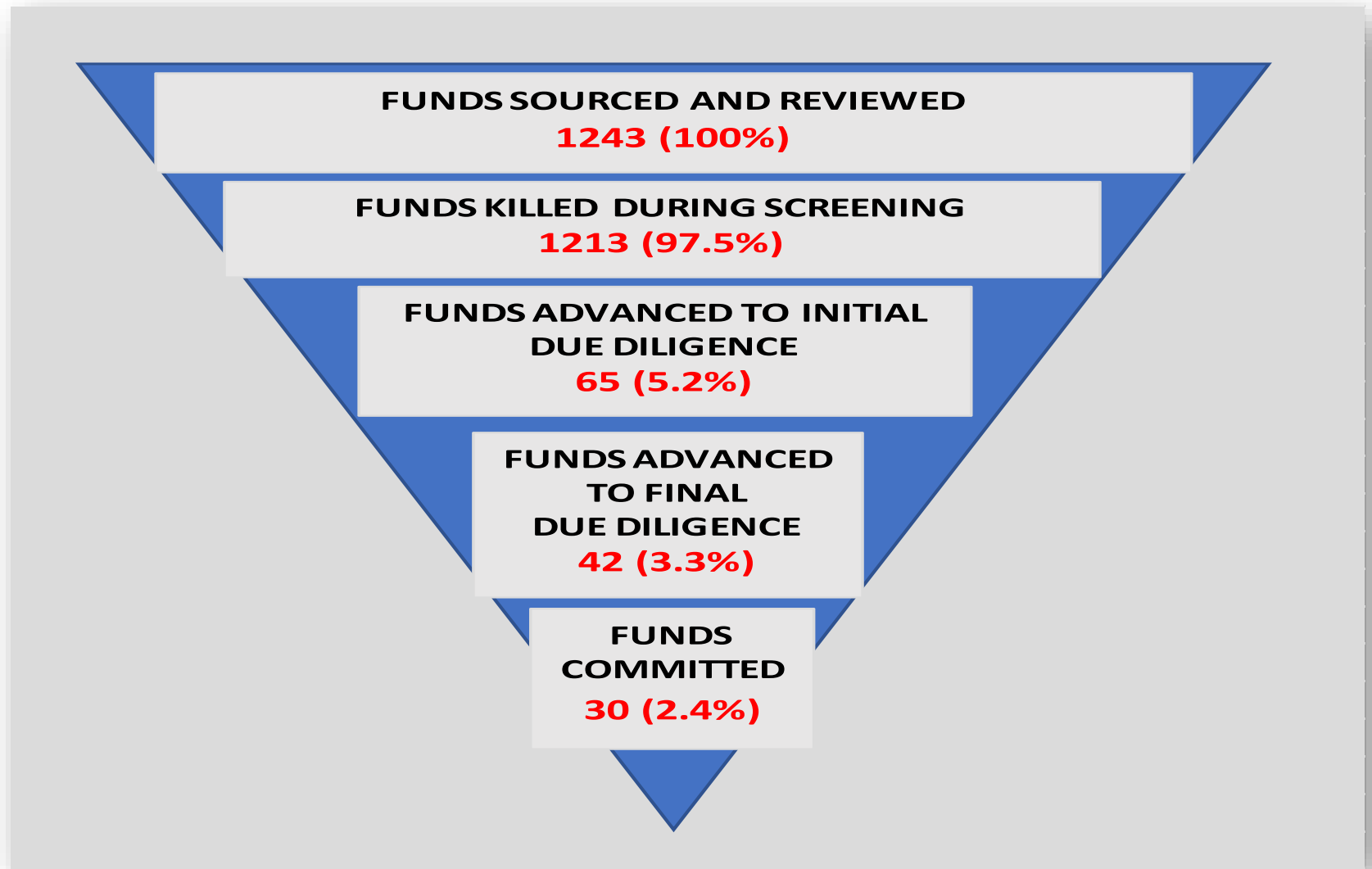
# Investment Process



# Deal Sourcing

- Network of Contacts
  - Limited Partners
  - Plan Sponsors
  - General Partners
  - Placement Agents
  - Consultants
  - Service Providers
- Periodicals
- Preqin (external online database provider)

# Real Estate Deal Flow (2016 - YTD 2021)



# Screening & Due Diligence

## Initial Review

- Determine portfolio fit
- Hold initial call with GP
- Submit MBOI Part A DDQ for completion by GP and ascertain critical due diligence points/deal killers
- Introductory meeting with GP in Helena
- Decision point to proceed to further diligence

## Continuing Diligence

- Submit much more comprehensive MBOI Part B DDQ for completion by GP (*modeled after ILPA DDQ/best practices*)
  - Analysis of firm, strategy, investment process, philosophy, ESG, risk, compliance
- Review of historical record, net cash flows, performance, other data points
- Interviews and reference calls
- Build out GP/Fund Profiles
- Onsite due diligence at GP offices



# Cabinet Decision - Investment Commitment

- Meeting with Cabinet – Executive Director, Chief Investment Officer, Investment Directors, Director of Operations, Director of Risk
- Final commitment decision
  - Yes/No
  - How much to commit, adherence to IPS, other risk parameters
  - Chief Investment Officer in consultation with the Executive Director gives final approval for all commitments

# Legal Review

- Staff conducts initial review of PPM/limited partnership agreement and communicates any pre-identified and pre-negotiated terms with GP to external counsel
- External counsel reviews legal documents and presents comments to staff for review
  - Focuses on compliance with ILPA Principles/best practices
  - Collaborative/iterative process with staff
- Comments/changes negotiated with GP
- Upon final negotiation/consensus and settlement on terms, legal counsel submits final copies of closing legal documents for execution by MBOI staff
- Legal counsel will later review any Most Favored Nations provisions MBOI is eligible to elect for approval

# Fund Monitoring

- Set up fund internally with MBOI accounting and externally with third-party administrator, State Street
- Review Quarterly/Annual Reports & Financials
  - Formal review of real estate managers done bi-annually
  - Participate in quarterly calls with managers
- In-person fund update meetings, typically annually
- Attend Annual General Meetings (AGMs)
- Limited Partnership Advisory Committee membership participation as applicable
- Visit real estate GPs and fund properties as travel plans allow

# Real Estate Strategy & Rationale

# 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 core real estate exposure
- Continued focus on existing high conviction GPs
- Separate Accounts
- Tactically add to existing public REIT exposure



## Why

- Well understood, deepest, most liquid, ample diversification, known “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

# Property Views on Google Earth

Property Type	Manager/Asset	Address/MSA	Style & Strategy
Multifamily	Bell Partners Bell Capital Hill	1717 E Capitol St SE Washington, DC	Non-Core/Value Add Operator
Medical Office	Hammes Partners HP III Salt Lake City	1159 East 200 N Salt Lake City, UT	Non-Core/Value Add Operator
Retail	Sterling Organization Langston Landing	210-406 Washington Ave S Seattle, WA	Core-Plus Operator

# Appendix

# Real Estate Asset Class – Performance and Composition



# Performance and Net Asset Value

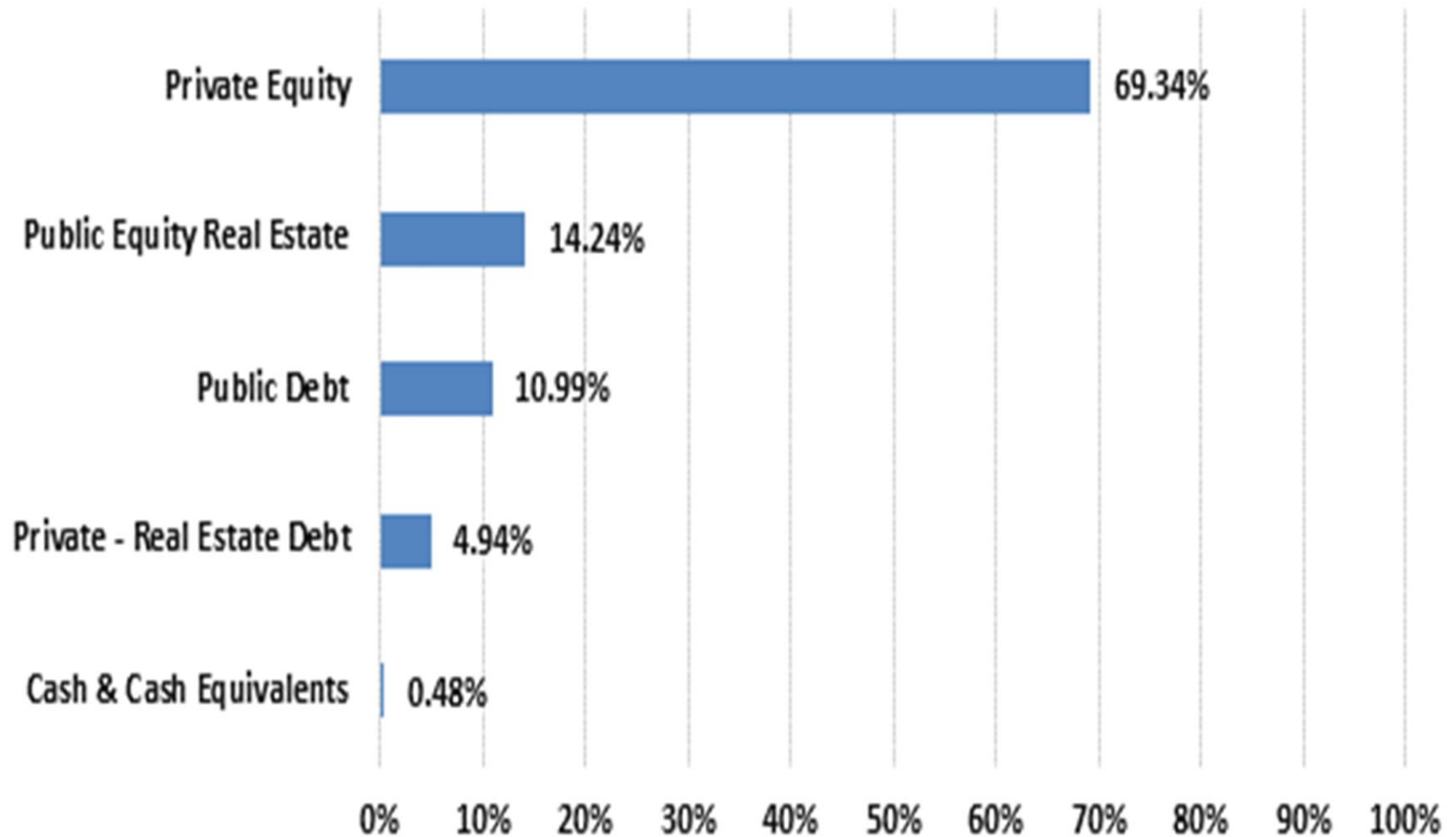
Time-Weighted Return (TWR) Performance as of 3/31/21, net of fees

- 1 year 5.68%
- 5 year 6.77%
- 10 year 9.24%
- Since inception 3.98%

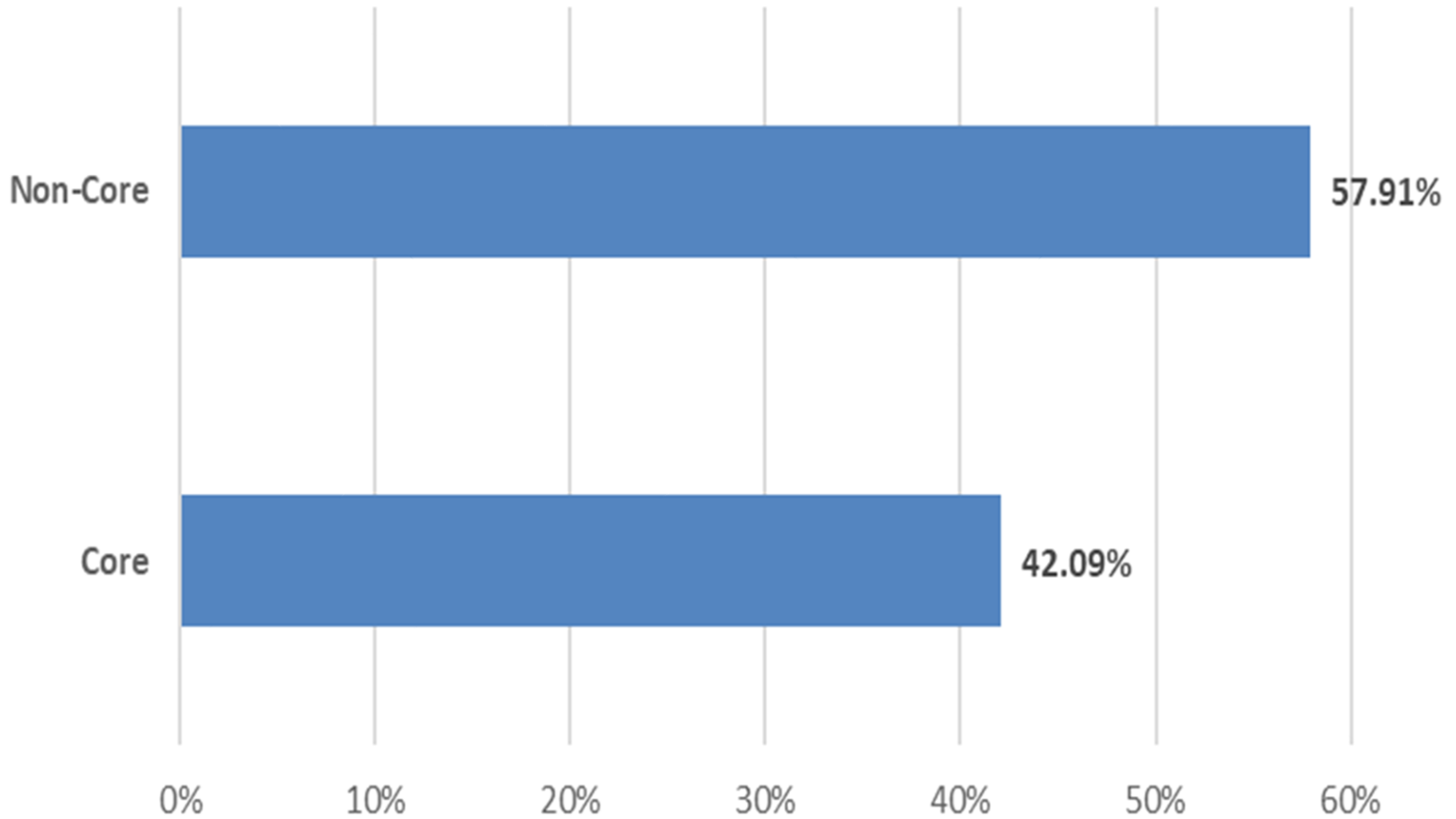
Sizing as of 3/31/21 - \$1.24B

- % of CAPP 9.13%

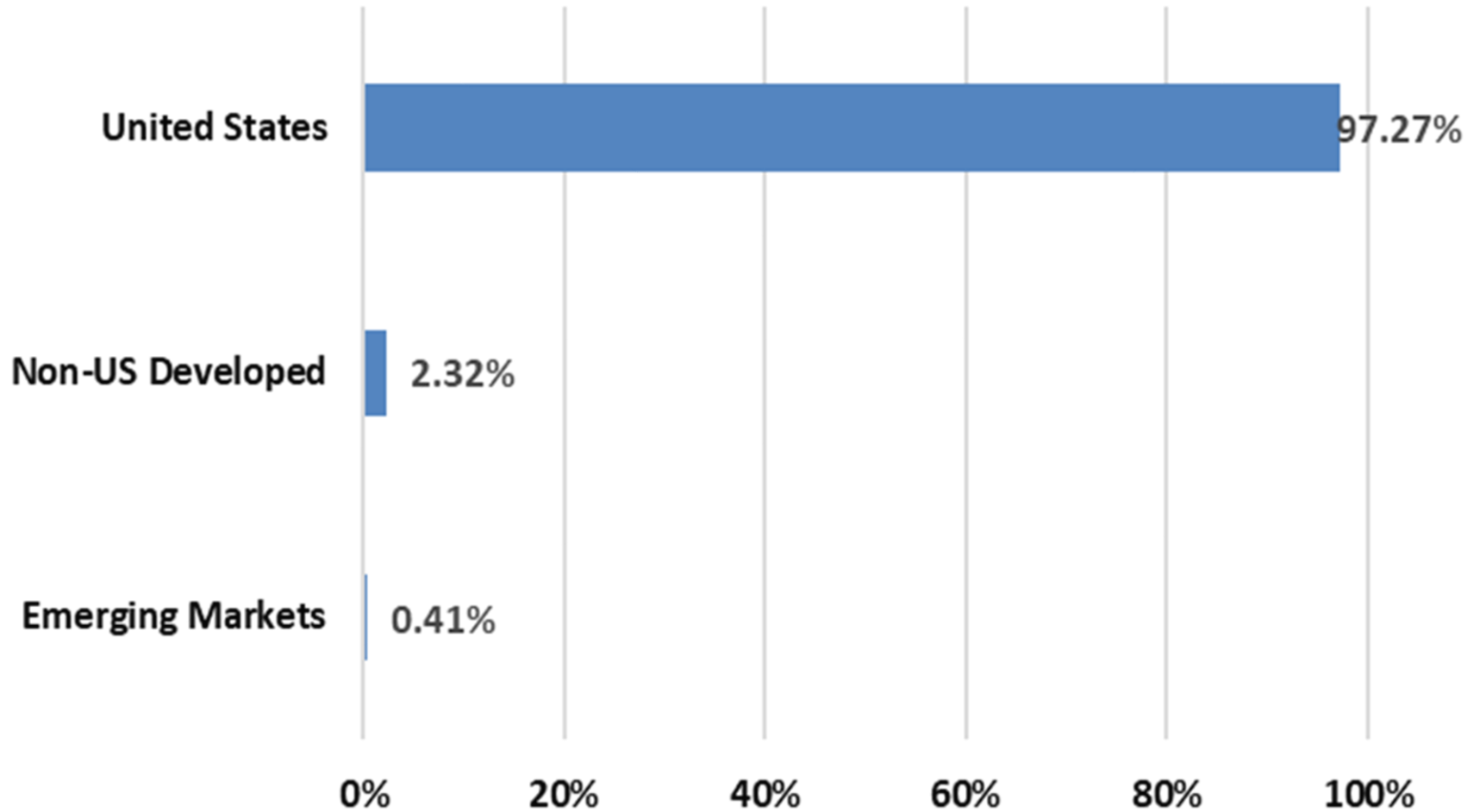
## Real Estate: Asset Class by Type



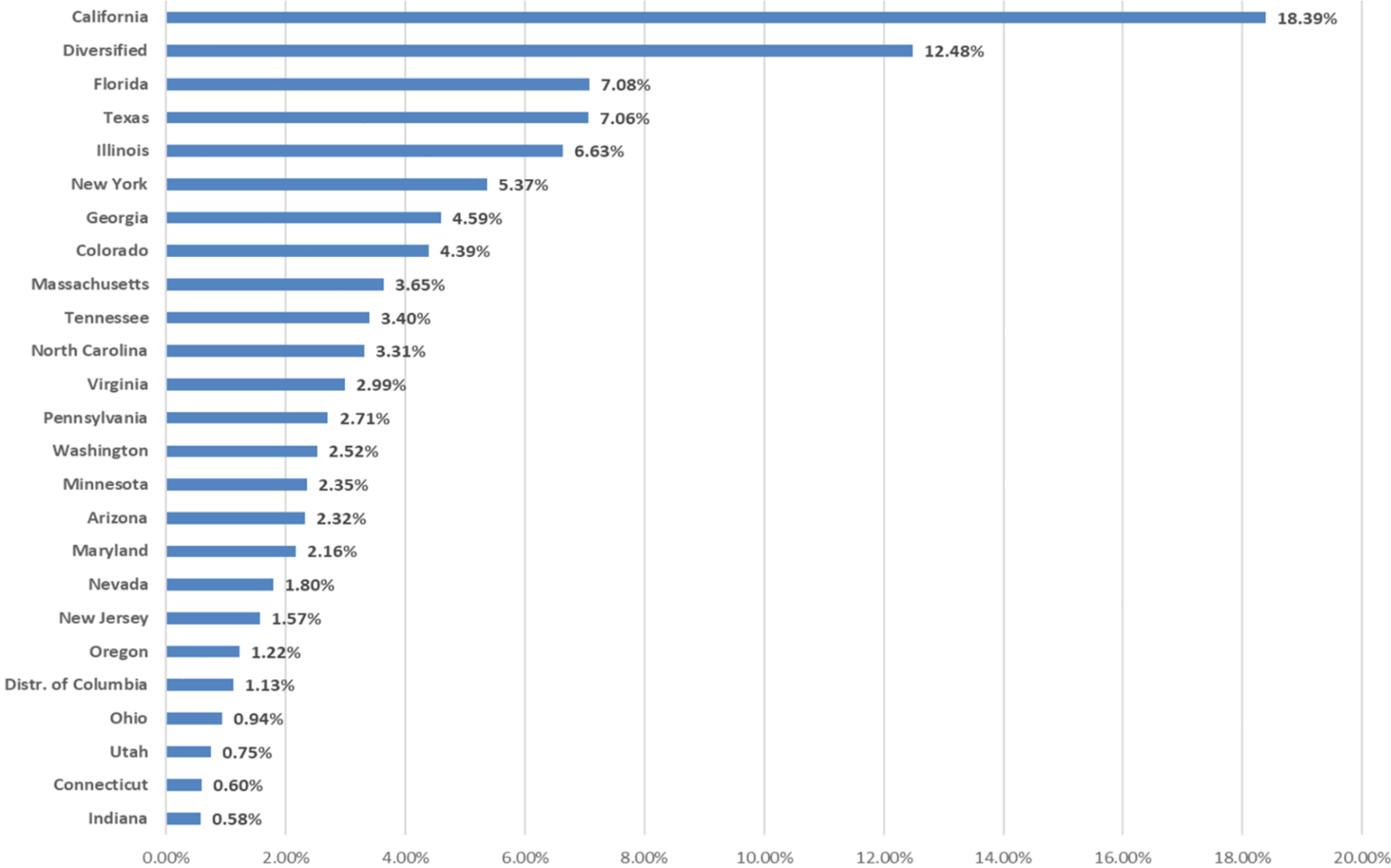
## Private Real Estate Funds by Style



# Real Estate: Asset Class by Global Region

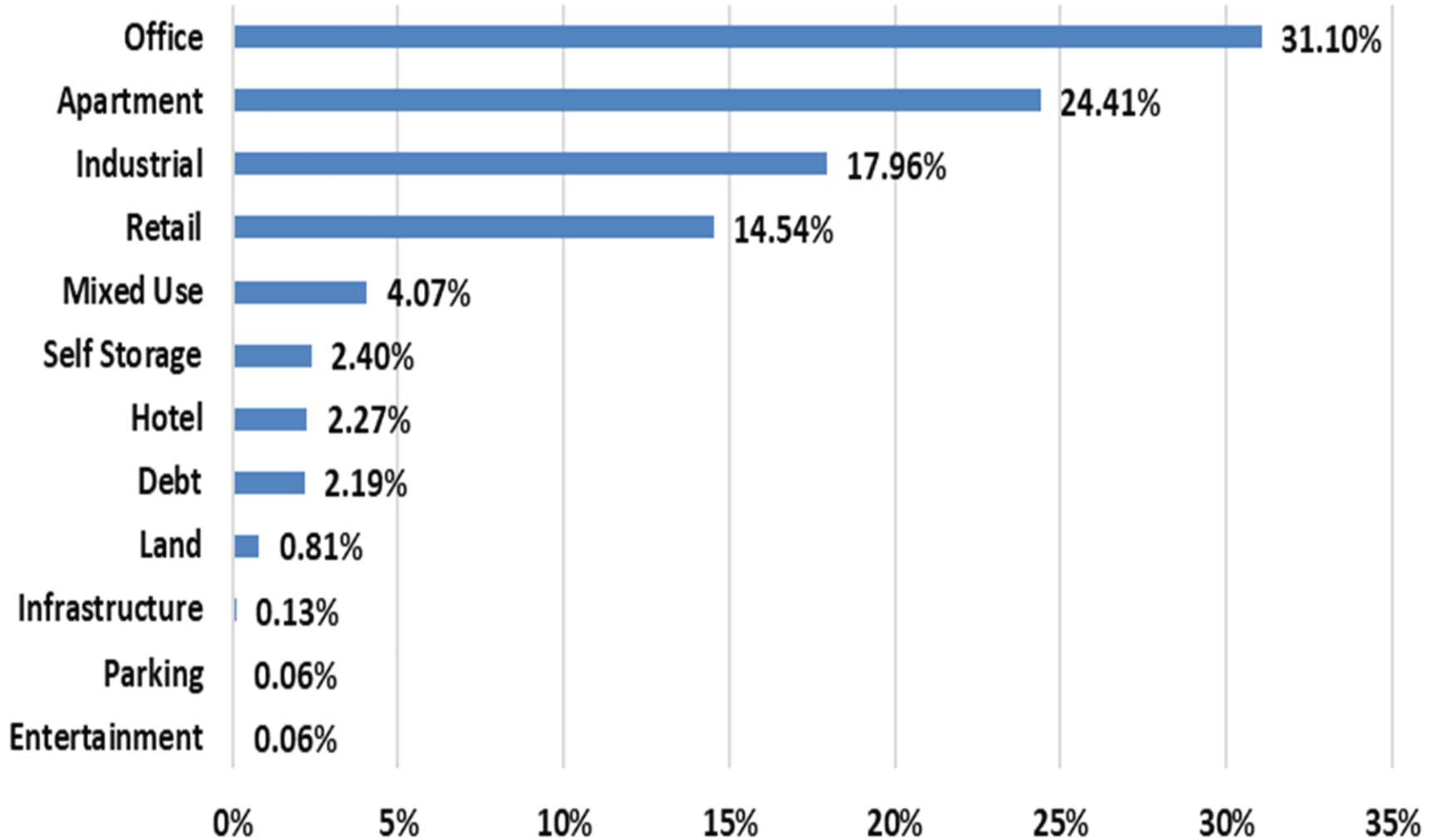


### Private Real Estate Funds by U.S. State



Data reflects most recent GP reported holdings as of 12/31/20

# Private Real Estate Funds by Property Type





# Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: March 31, 2021



# 2020 Greenwich *Quality Leader* Award

Coalition Greenwich recently announced that RVK is 1 of 3 firms among large US consultants to receive the 2020 Greenwich *Quality Leader* award.\* RVK is proud to receive this recognition for the 4<sup>th</sup> consecutive year.

**RVK ranked first (or tied for first) in 11 out of 14 key criteria:**

- Advice on Long-term Asset Allocation (#1)
- Communication of Philosophy and Beliefs (#1)
- Proactive Advice and Innovative Ideas (#1)
- Usefulness of Written Investment Reviews (#1)
- Client Satisfaction with Manager Recommendations (#1)
- Responsiveness to Client Requests (#1)
- Sufficient Professional Resources to Meet Client Needs (#1)
- Reasonable Fees Relative to Services Delivered (#1)
- Timeliness in Providing Written Info/Reports (#1)
- Advice on DC Plan Structure and Design (tied for #1)
- Usefulness of Personal Meetings (tied for #1)



***We are deeply grateful for your continued confidence and support.  
From all of us here at RVK, thank you for the opportunity to serve you!***

\*Between July and October 2020, Coalition Greenwich (formerly known as Greenwich Associates) conducted in-person and phone interviews and online surveys with 856 individuals at 704 of the largest tax-exempt funds in the US—including corporate and union funds, public funds, endowments and foundations, insurance general accounts, and healthcare organizations, with either pension or investment pool assets greater than \$150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset managers and investment consultants, including qualitative assessments of those firms soliciting their business and detailed information on important market trends. RVK is one of three firms recognized in the large investment consultant category. The ratings may not be representative of any one client's experience with RVK; rather they are representative of those clients that chose to participate in the survey. The results are not indicative of RVK's future performance.

To read the Greenwich press release, please refer to the following URL: <https://www.greenwich.com/press-release/covid-19-crisis-put-investment-consultant-advisory-capabilities-test>





Montana Board of Investments  
Comparative Performance  
Retirement Plans

As of March 31, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Public Employees' Retirement - Net</b>	<b>3.98</b>	<b>19.85</b>	<b>31.08</b>	<b>9.75</b>	<b>10.00</b>	<b>8.40</b>	<b>8.84</b>	<b>6.89</b>	<b>11.94</b>	<b>16.77</b>	<b>-2.63</b>	<b>14.80</b>	<b>7.32</b>	<b>7.98</b>	<b>07/01/1994</b>
Public Employees' Benchmark	4.19	22.94	42.24	10.23	10.21	8.68	9.29	N/A	11.58	20.45	-5.57	15.35	9.12	N/A	
Difference	-0.21	-3.09	-11.16	-0.48	-0.21	-0.28	-0.45	N/A	0.36	-3.68	2.94	-0.55	-1.80	N/A	
<b>Public Employees' Retirement - Gross</b>	<b>4.06</b>	<b>20.24</b>	<b>31.68</b>	<b>10.35</b>	<b>10.57</b>	<b>8.94</b>	<b>9.40</b>	<b>7.32</b>	<b>12.53</b>	<b>17.44</b>	<b>-2.03</b>	<b>15.34</b>	<b>7.78</b>	<b>8.30</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	51	30	35	15	10	47	40	44	42	67	59	49	
<b>Teachers' Retirement - Net</b>	<b>3.99</b>	<b>19.84</b>	<b>31.08</b>	<b>9.75</b>	<b>9.99</b>	<b>8.40</b>	<b>8.84</b>	<b>6.89</b>	<b>11.93</b>	<b>16.78</b>	<b>-2.64</b>	<b>14.76</b>	<b>7.33</b>	<b>7.99</b>	<b>07/01/1994</b>
Teachers' Benchmark	4.19	22.91	42.19	10.21	10.19	8.67	9.28	N/A	11.55	20.42	-5.57	15.32	9.11	N/A	
Difference	-0.20	-3.07	-11.11	-0.46	-0.20	-0.27	-0.44	N/A	0.38	-3.64	2.93	-0.56	-1.78	N/A	
<b>Teachers' Retirement - Gross</b>	<b>4.06</b>	<b>20.23</b>	<b>31.67</b>	<b>10.35</b>	<b>10.56</b>	<b>8.94</b>	<b>9.40</b>	<b>7.32</b>	<b>12.52</b>	<b>17.45</b>	<b>-2.03</b>	<b>15.31</b>	<b>7.80</b>	<b>8.31</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	51	30	35	15	10	47	41	44	42	68	58	49	
<b>Police Retirement - Net</b>	<b>3.98</b>	<b>19.85</b>	<b>31.10</b>	<b>9.77</b>	<b>10.00</b>	<b>8.40</b>	<b>8.84</b>	<b>6.85</b>	<b>11.95</b>	<b>16.80</b>	<b>-2.63</b>	<b>14.79</b>	<b>7.32</b>	<b>7.85</b>	<b>07/01/1994</b>
Police Benchmark	4.20	22.97	42.28	10.23	10.21	8.68	9.28	N/A	11.60	20.44	-5.57	15.33	9.11	N/A	
Difference	-0.22	-3.12	-11.18	-0.46	-0.21	-0.28	-0.44	N/A	0.35	-3.64	2.94	-0.54	-1.79	N/A	
<b>Police Retirement - Gross</b>	<b>4.06</b>	<b>20.24</b>	<b>31.69</b>	<b>10.36</b>	<b>10.57</b>	<b>8.95</b>	<b>9.39</b>	<b>7.27</b>	<b>12.54</b>	<b>17.47</b>	<b>-2.02</b>	<b>15.33</b>	<b>7.78</b>	<b>8.17</b>	<b>07/01/1994</b>
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Rank	32	49	51	30	35	14	10	53	40	43	42	67	59	59	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B 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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Firefighters' Retirement - Net</b>	<b>3.98</b>	<b>19.85</b>	<b>31.10</b>	<b>9.77</b>	<b>10.00</b>	<b>8.40</b>	<b>8.84</b>	<b>6.86</b>	<b>11.95</b>	<b>16.79</b>	<b>-2.62</b>	<b>14.79</b>	<b>7.32</b>	<b>7.84</b>	<b>07/01/1994</b>
Firefighters' Benchmark	4.19	22.96	42.27	10.23	10.21	8.68	9.28	N/A	11.59	20.44	-5.57	15.33	9.12	N/A	
Difference	-0.21	-3.11	-11.17	-0.46	-0.21	-0.28	-0.44	N/A	0.36	-3.65	2.95	-0.54	-1.80	N/A	
<b>Firefighters' Retirement - Gross</b>	<b>4.06</b>	<b>20.24</b>	<b>31.70</b>	<b>10.36</b>	<b>10.58</b>	<b>8.95</b>	<b>9.40</b>	<b>7.28</b>	<b>12.53</b>	<b>17.46</b>	<b>-2.01</b>	<b>15.34</b>	<b>7.78</b>	<b>8.16</b>	<b>07/01/1994</b>
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Rank	32	49	51	30	35	14	10	51	40	43	42	67	59	59	
<b>Sheriffs' Retirement - Net</b>	<b>3.98</b>	<b>19.85</b>	<b>31.09</b>	<b>9.75</b>	<b>10.00</b>	<b>8.40</b>	<b>8.84</b>	<b>6.88</b>	<b>11.94</b>	<b>16.75</b>	<b>-2.62</b>	<b>14.80</b>	<b>7.33</b>	<b>7.88</b>	<b>07/01/1994</b>
Sheriffs' Benchmark	4.19	22.93	42.22	10.22	10.21	8.68	9.28	N/A	11.58	20.43	-5.56	15.35	9.13	N/A	
Difference	-0.21	-3.08	-11.13	-0.47	-0.21	-0.28	-0.44	N/A	0.36	-3.68	2.94	-0.55	-1.80	N/A	
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Rank	32	49	51	30	35	15	10	48	40	44	42	67	58	58	
<b>Highway Patrol Retirement - Net</b>	<b>3.99</b>	<b>19.85</b>	<b>31.08</b>	<b>9.76</b>	<b>10.00</b>	<b>8.40</b>	<b>8.85</b>	<b>6.88</b>	<b>11.94</b>	<b>16.78</b>	<b>-2.62</b>	<b>14.79</b>	<b>7.30</b>	<b>7.87</b>	<b>07/01/1994</b>
Highway Patrol Benchmark	4.21	22.94	42.24	10.24	10.22	8.69	9.29	N/A	11.60	20.45	-5.56	15.34	9.11	N/A	
Difference	-0.22	-3.09	-11.16	-0.48	-0.22	-0.29	-0.44	N/A	0.34	-3.67	2.94	-0.55	-1.81	N/A	
<b>Highway Patrol Retirement - Gross</b>	<b>4.07</b>	<b>20.24</b>	<b>31.67</b>	<b>10.36</b>	<b>10.57</b>	<b>8.95</b>	<b>9.40</b>	<b>7.31</b>	<b>12.53</b>	<b>17.45</b>	<b>-2.01</b>	<b>15.33</b>	<b>7.77</b>	<b>8.19</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	51	30	35	14	10	48	40	44	41	67	59	58	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B 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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Game Wardens' Retirement - Net</b>	<b>3.99</b>	<b>19.83</b>	<b>31.07</b>	<b>9.74</b>	<b>10.00</b>	<b>8.40</b>	<b>8.83</b>	<b>6.85</b>	<b>11.91</b>	<b>16.77</b>	<b>-2.62</b>	<b>14.81</b>	<b>7.31</b>	<b>7.89</b>	<b>07/01/1994</b>
Game Wardens' Benchmark	4.19	22.92	42.22	10.22	10.21	8.68	9.28	N/A	11.56	20.45	-5.56	15.36	9.14	N/A	
Difference	-0.20	-3.09	-11.15	-0.48	-0.21	-0.28	-0.45	N/A	0.35	-3.68	2.94	-0.55	-1.83	N/A	
<b>Game Wardens' Retirement - Gross</b>	<b>4.06</b>	<b>20.22</b>	<b>31.67</b>	<b>10.34</b>	<b>10.57</b>	<b>8.94</b>	<b>9.38</b>	<b>7.27</b>	<b>12.50</b>	<b>17.44</b>	<b>-2.01</b>	<b>15.35</b>	<b>7.78</b>	<b>8.21</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	51	30	35	15	10	52	42	44	42	66	59	57	
<b>Judges' Retirement - Net</b>	<b>3.99</b>	<b>19.85</b>	<b>31.11</b>	<b>9.75</b>	<b>10.00</b>	<b>8.40</b>	<b>8.84</b>	<b>6.89</b>	<b>11.94</b>	<b>16.78</b>	<b>-2.64</b>	<b>14.82</b>	<b>7.32</b>	<b>7.88</b>	<b>07/01/1994</b>
Judges' Benchmark	4.19	22.95	42.27	10.24	10.22	8.69	9.29	N/A	11.59	20.47	-5.57	15.37	9.13	N/A	
Difference	-0.20	-3.10	-11.16	-0.49	-0.22	-0.29	-0.45	N/A	0.35	-3.69	2.93	-0.55	-1.81	N/A	
<b>Judges' Retirement - Gross</b>	<b>4.06</b>	<b>20.24</b>	<b>31.70</b>	<b>10.35</b>	<b>10.58</b>	<b>8.95</b>	<b>9.39</b>	<b>7.31</b>	<b>12.53</b>	<b>17.45</b>	<b>-2.03</b>	<b>15.36</b>	<b>7.79</b>	<b>8.20</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	51	30	35	14	10	47	40	44	42	66	59	57	
<b>Volunteer Firefighters' Retirement - Net</b>	<b>3.98</b>	<b>19.85</b>	<b>31.11</b>	<b>9.76</b>	<b>9.97</b>	<b>8.39</b>	<b>8.83</b>	<b>7.13</b>	<b>11.94</b>	<b>16.79</b>	<b>-2.64</b>	<b>14.79</b>	<b>7.16</b>	<b>7.69</b>	<b>07/01/1994</b>
Volunteer Firefighters' Benchmark	4.20	22.97	42.31	10.23	10.21	8.68	9.29	N/A	11.59	20.47	-5.59	15.33	9.11	N/A	
Difference	-0.22	-3.12	-11.20	-0.47	-0.24	-0.29	-0.46	N/A	0.35	-3.68	2.95	-0.54	-1.95	N/A	
<b>Volunteer Firefighters' Retirement - Gross</b>	<b>4.06</b>	<b>20.24</b>	<b>31.70</b>	<b>10.35</b>	<b>10.54</b>	<b>8.93</b>	<b>9.38</b>	<b>7.55</b>	<b>12.53</b>	<b>17.46</b>	<b>-2.04</b>	<b>15.34</b>	<b>7.63</b>	<b>8.01</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	3.59	20.10	31.70	9.43	10.27	8.04	8.26	7.28	12.00	17.25	-2.79	16.11	8.01	8.29	
Rank	32	49	50	30	36	15	10	27	40	43	42	67	67	68	

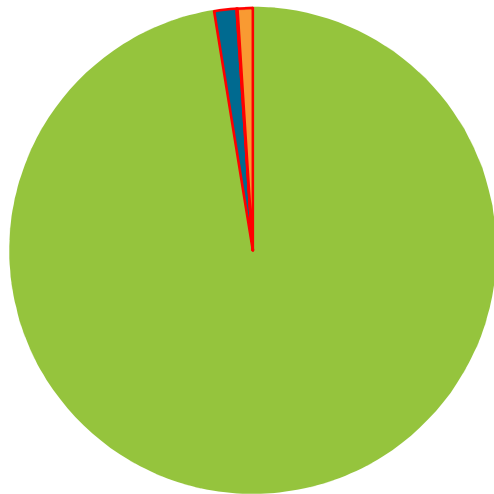
Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State 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, 2021

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	6,743,887,599	49.49	69,213,546	49.63	6,813,101,146	49.49
Teachers' Retirement	4,766,385,772	34.98	48,356,612	34.67	4,814,742,384	34.97
Firefighters' Retirement	553,706,927	4.06	5,796,799	4.16	559,503,726	4.06
Police Retirement	516,802,225	3.79	5,421,611	3.89	522,223,836	3.79
Sheriffs' Retirement	451,074,533	3.31	4,696,315	3.37	455,770,848	3.31
Game Wardens' Retirement	253,243,545	1.86	2,528,689	1.81	255,772,235	1.86
Highway Patrol Retirement	173,730,339	1.27	1,749,699	1.25	175,480,039	1.27
Judges' Retirement	124,153,562	0.91	1,247,869	0.89	125,401,431	0.91
Volunteer Firefighters' Retirement	44,488,790	0.33	447,086	0.32	44,935,877	0.33
<b>Retirement Plans Total Fund Composite</b>	<b>13,627,473,294</b>	<b>98.99</b>	<b>139,458,227</b>	<b>1.01</b>	<b>13,766,931,520</b>	<b>100.00</b>

March 31, 2021 : \$13,766,931,520

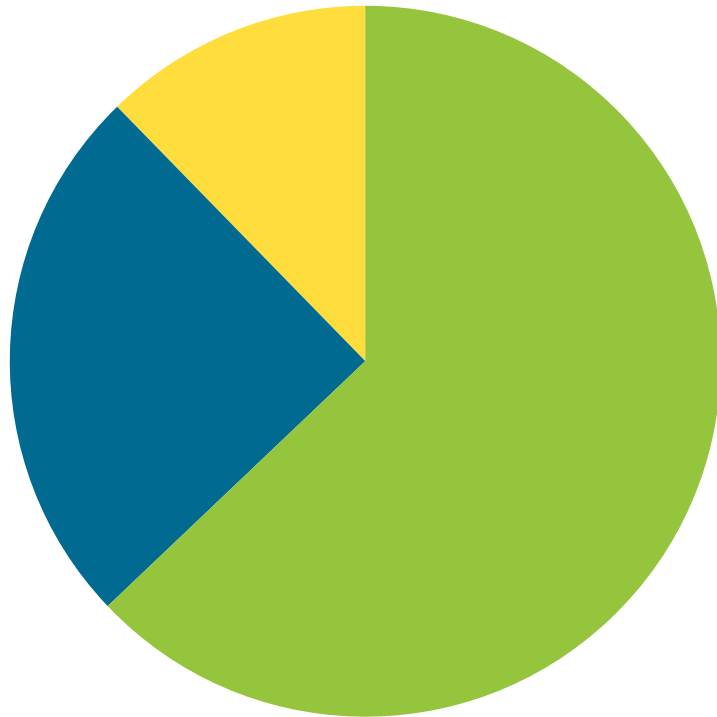


Segments	Market Value (\$)	Allocation (%)
CAPP Ex Cash	13,414,882,293	97.44
CAPP Cash Pension	203,250,493	1.48
CAPP Asset Class Cash	9,340,507	0.07
Short Term Investment Pool (STIP)	139,458,227	1.01
Total Cash	352,049,227	2.56

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, 2021 : \$21,664,238,303



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	13,627,473,325	62.90
Short Term Investment Pool	5,371,517,239	24.79
Trust Funds Investment Pool	2,665,247,739	12.30

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Consolidated Asset Pension Pool (CAPP)</b>	<b>4.03</b>	<b>20.09</b>	<b>31.50</b>	<b>9.89</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>12.10</b>	<b>17.12</b>	<b>-2.74</b>	<b>N/A</b>	<b>N/A</b>	<b>10.07</b>	<b>04/01/2017</b>
CAPP Custom Benchmark	4.24	23.22	42.81	10.37	N/A	N/A	N/A	11.73	20.88	-5.73	N/A	N/A	10.11	
Difference	-0.21	-3.13	-11.31	-0.48	N/A	N/A	N/A	0.37	-3.76	2.99	N/A	N/A	-0.04	
<b>Trust Funds Investment Pool</b>	<b>-2.24</b>	<b>-0.51</b>	<b>3.04</b>	<b>5.09</b>	<b>3.76</b>	<b>4.09</b>	<b>4.44</b>	<b>7.23</b>	<b>8.98</b>	<b>0.45</b>	<b>4.01</b>	<b>4.02</b>	<b>5.99</b>	<b>10/01/1995</b>
Bloomberg US Agg Bond Index	-3.38	-2.13	0.71	4.65	3.10	3.31	3.44	7.51	8.72	0.01	3.54	2.65	5.08	
Difference	1.14	1.62	2.33	0.44	0.66	0.78	1.00	-0.28	0.26	0.44	0.47	1.37	0.91	
<b>Short Term Investment Pool</b>	<b>0.04</b>	<b>0.19</b>	<b>0.38</b>	<b>1.55</b>	<b>1.32</b>	<b>1.00</b>	<b>0.77</b>	<b>0.73</b>	<b>2.28</b>	<b>1.98</b>	<b>1.11</b>	<b>0.61</b>	<b>2.36</b>	<b>04/01/1997</b>
Short Term Custom Index	0.01	0.06	0.09	1.34	1.20	0.92	0.71	0.36	2.14	1.95	1.15	0.52	2.27	
Difference	0.03	0.13	0.29	0.21	0.12	0.08	0.06	0.37	0.14	0.03	-0.04	0.09	0.09	
iMoney.net Money Fund (Gross) Median	0.05	0.16	0.42	1.65	1.41	1.08	0.83	0.73	2.45	2.15	1.21	0.61	2.35	
Difference	-0.01	0.03	-0.04	-0.10	-0.09	-0.08	-0.06	0.00	-0.17	-0.17	-0.10	0.00	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, 2021

March 31, 2021 : \$13,627,473,425



	Market Value (\$)	Allocation (%)
Domestic Equity	4,326,137,263	31.75
International Equity	2,538,817,396	18.63
Core Fixed Income	2,051,555,164	15.05
Private Investments	1,893,489,895	13.89
Real Estate	1,243,638,846	9.13
Non-Core Fixed Income	794,990,854	5.83
Real Assets*	575,593,514	4.22
Cash Pension	203,250,493	1.49

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>7.46</b>	<b>34.72</b>	<b>63.74</b>	<b>16.32</b>	<b>15.97</b>	<b>12.96</b>	<b>13.43</b>	<b>20.09</b>	<b>30.75</b>	<b>-7.09</b>	<b>20.79</b>	<b>11.46</b>	<b>10.33</b>	<b>05/01/2003</b>
Domestic Equity Custom Index	6.29	33.16	62.82	17.20	16.60	13.69	13.96	21.10	31.14	-5.20	21.05	13.03	11.06	
Difference	1.17	1.56	0.92	-0.88	-0.63	-0.73	-0.53	-1.01	-0.39	-1.89	-0.26	-1.57	-0.73	
<b>International Equity</b>	<b>3.59</b>	<b>30.66</b>	<b>54.12</b>	<b>7.23</b>	<b>10.39</b>	<b>6.05</b>	<b>5.48</b>	<b>13.35</b>	<b>22.86</b>	<b>-14.99</b>	<b>28.67</b>	<b>3.87</b>	<b>5.36</b>	<b>04/01/1997</b>
International Equity Custom Index	3.77	29.91	51.94	6.51	9.84	5.45	5.09	11.12	21.63	-14.76	27.81	4.41	5.56	
Difference	-0.18	0.75	2.18	0.72	0.55	0.60	0.39	2.23	1.23	-0.23	0.86	-0.54	-0.20	
<b>Core Fixed Income</b>	<b>-3.32</b>	<b>-1.94</b>	<b>1.50</b>	<b>4.43</b>	<b>2.91</b>	<b>3.30</b>	<b>3.70</b>	<b>8.23</b>	<b>6.90</b>	<b>0.95</b>	<b>2.29</b>	<b>3.19</b>	<b>5.86</b>	<b>04/01/1995</b>
Core Fixed Income Custom Index	-3.37	-2.12	0.71	3.96	2.60	2.95	3.19	7.51	6.39	0.68	2.57	2.65	5.20	
Difference	0.05	0.18	0.79	0.47	0.31	0.35	0.51	0.72	0.51	0.27	-0.28	0.54	0.66	
<b>Non-Core Fixed Income</b>	<b>-0.44</b>	<b>9.91</b>	<b>19.83</b>	<b>6.03</b>	<b>6.36</b>	<b>4.62</b>	<b>5.87</b>	<b>6.37</b>	<b>13.98</b>	<b>-2.27</b>	<b>5.99</b>	<b>12.47</b>	<b>7.95</b>	<b>06/01/2009</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	9.06	
Difference	-1.30	-2.36	-3.82	-0.79	-1.68	-0.80	-0.60	-0.68	-0.34	-0.19	-1.51	-4.66	-1.11	
<b>Real Assets</b>	<b>6.03</b>	<b>9.87</b>	<b>9.71</b>	<b>-1.65</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-13.43</b>	<b>-2.18</b>	<b>5.55</b>	<b>N/A</b>	<b>N/A</b>	<b>0.13</b>	<b>04/01/2017</b>
Real Assets Custom Index	5.04	25.27	50.50	-1.84	4.99	-1.90	-2.82	-12.32	13.06	-11.75	13.70	32.44	1.50	
Difference	0.99	-15.40	-40.79	0.19	N/A	N/A	N/A	-1.11	-15.24	17.30	N/A	N/A	-1.37	
<b>Real Estate</b>	<b>3.22</b>	<b>5.35</b>	<b>5.68</b>	<b>5.59</b>	<b>6.77</b>	<b>8.56</b>	<b>9.24</b>	<b>-0.35</b>	<b>6.97</b>	<b>9.19</b>	<b>9.17</b>	<b>8.82</b>	<b>3.98</b>	<b>06/01/2006</b>
Real Estate Custom Index	1.10	-0.41	11.25	2.00	1.81	4.81	7.07	-19.66	25.84	-4.57	5.99	9.08	4.34	
Difference	2.12	5.76	-5.57	3.59	4.96	3.75	2.17	19.31	-18.87	13.76	3.18	-0.26	-0.36	
<b>Cash Pension</b>	<b>0.05</b>	<b>0.16</b>	<b>0.36</b>	<b>1.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.84</b>	<b>2.28</b>	<b>2.00</b>	<b>N/A</b>	<b>N/A</b>	<b>1.49</b>	<b>05/01/2017</b>
Short Term Custom Index	0.01	0.06	0.09	1.34	1.20	0.92	0.71	0.36	2.14	1.95	1.15	0.52	1.35	
Difference	0.04	0.10	0.27	0.22	N/A	N/A	N/A	0.48	0.14	0.05	N/A	N/A	0.14	
<b>Private Investments*</b>	<b>7.40</b>	<b>24.15</b>	<b>18.33</b>	<b>13.22</b>	<b>12.99</b>	<b>11.91</b>	<b>12.51</b>	<b>10.91</b>	<b>12.95</b>	<b>11.55</b>	<b>15.20</b>	<b>7.37</b>	<b>12.44</b>	<b>05/01/2002</b>
Private Investments Custom Index	10.52	50.45	91.17	14.83	15.18	14.02	16.03	18.90	27.38	-9.99	20.59	20.11	12.14	
Difference	-3.12	-26.30	-72.84	-1.61	-2.19	-2.11	-3.52	-7.99	-14.43	21.54	-5.39	-12.74	0.30	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>7.52</b>	<b>34.96</b>	<b>64.11</b>	<b>16.65</b>	<b>16.30</b>	<b>13.28</b>	<b>13.77</b>	<b>20.37</b>	<b>31.13</b>	<b>-6.78</b>	<b>21.16</b>	<b>11.77</b>	<b>10.62</b>	<b>05/01/2003</b>
All Public Plans-US Equity Segment Median	6.78	33.78	63.57	15.98	16.09	12.75	13.32	18.92	30.04	-5.83	20.31	12.78	11.02	
Rank	30	40	44	36	41	27	28	32	28	74	31	74	71	
Population	74	68	66	61	57	54	40	67	65	66	89	90	14	
<b>International Equity</b>	<b>3.67</b>	<b>30.96</b>	<b>54.59</b>	<b>7.58</b>	<b>10.74</b>	<b>6.39</b>	<b>5.83</b>	<b>13.71</b>	<b>23.28</b>	<b>-14.72</b>	<b>29.06</b>	<b>4.24</b>	<b>5.78</b>	<b>04/01/1997</b>
All Public Plans-Intl. Equity Segment Median	4.23	31.61	54.76	8.18	10.96	6.72	6.62	12.76	23.71	-13.63	28.75	4.00	N/A	
Rank	66	62	51	67	61	73	80	45	62	78	46	44	N/A	
Population	70	66	66	62	61	56	40	68	65	68	84	88	N/A	
<b>Core Fixed Income</b>	<b>-3.30</b>	<b>-1.89</b>	<b>1.56</b>	<b>4.48</b>	<b>2.95</b>	<b>3.34</b>	<b>3.74</b>	<b>8.29</b>	<b>6.94</b>	<b>1.00</b>	<b>2.34</b>	<b>3.21</b>	<b>5.99</b>	<b>04/01/1995</b>
All Public Plans-US Fixed Income Segment Median	-2.74	0.75	5.80	5.34	4.05	3.88	4.14	8.59	9.25	-0.25	4.59	4.61	N/A	
Rank	73	86	81	85	95	85	77	58	86	12	90	73	N/A	
Population	75	72	70	65	64	61	47	74	68	72	85	90	N/A	
<b>Trust Funds Investment Pool</b>	<b>-2.22</b>	<b>-0.45</b>	<b>3.12</b>	<b>5.17</b>	<b>3.84</b>	<b>4.17</b>	<b>4.53</b>	<b>7.30</b>	<b>9.06</b>	<b>0.53</b>	<b>4.10</b>	<b>4.12</b>	<b>6.05</b>	<b>10/01/1995</b>
All Public Plans-US Fixed Income Segment Median	-2.74	0.75	5.80	5.34	4.05	3.88	4.14	8.59	9.25	-0.25	4.59	4.61	N/A	
Rank	38	72	69	55	59	43	40	78	53	22	62	61	N/A	
Population	75	72	70	65	64	61	47	74	68	72	85	90	N/A	
<b>Real Estate</b>	<b>3.38</b>	<b>5.96</b>	<b>6.79</b>	<b>7.13</b>	<b>8.42</b>	<b>10.11</b>	<b>10.83</b>	<b>1.11</b>	<b>8.65</b>	<b>11.12</b>	<b>10.91</b>	<b>10.26</b>	<b>5.42</b>	<b>06/01/2006</b>
All Public Plans-Real Estate Segment Median	2.37	4.72	3.34	6.26	7.34	9.33	10.47	1.66	7.65	9.04	8.84	9.98	N/A	
Rank	22	30	14	29	29	24	40	72	39	15	26	47	N/A	
Population	46	40	39	30	25	18	14	38	35	27	32	28	N/A	

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  
Equity Composites

As of March 31, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Large Cap Equity - Net</b>	<b>6.63</b>	<b>32.50</b>	<b>60.97</b>	<b>17.65</b>	<b>16.79</b>	<b>13.93</b>	<b>14.05</b>	<b>21.44</b>	<b>31.06</b>	<b>-4.71</b>	<b>21.66</b>	<b>11.30</b>	<b>9.82</b>	<b>12/01/2006</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	9.80	
Difference	0.46	2.79	4.62	0.87	0.50	0.34	0.14	3.04	-0.43	-0.33	-0.17	-0.66	0.02	
<b>Domestic Large Cap Equity - Gross</b>	<b>6.68</b>	<b>32.67</b>	<b>61.25</b>	<b>17.87</b>	<b>16.98</b>	<b>14.12</b>	<b>14.25</b>	<b>21.66</b>	<b>31.29</b>	<b>-4.52</b>	<b>21.82</b>	<b>11.45</b>	<b>10.04</b>	<b>12/01/2006</b>
IM U.S. Large Cap Equity (SA+CF) Median	6.64	30.88	59.60	16.53	16.26	13.30	13.82	17.85	30.27	-5.01	21.73	11.07	10.03	
Rank	50	41	41	34	38	35	38	34	41	45	49	47	49	
<b>Domestic Large Cap Active - Net</b>	<b>8.23</b>	<b>34.74</b>	<b>63.18</b>	<b>17.79</b>	<b>16.85</b>	<b>13.90</b>	<b>14.08</b>	<b>21.48</b>	<b>31.03</b>	<b>-5.88</b>	<b>21.85</b>	<b>9.63</b>	<b>9.52</b>	<b>07/01/2007</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	9.59	
Difference	2.06	5.03	6.83	1.01	0.56	0.31	0.17	3.08	-0.46	-1.50	0.02	-2.33	-0.07	
<b>Domestic Large Cap Active - Gross</b>	<b>8.37</b>	<b>35.32</b>	<b>64.13</b>	<b>18.50</b>	<b>17.48</b>	<b>14.50</b>	<b>14.66</b>	<b>22.24</b>	<b>31.82</b>	<b>-5.34</b>	<b>22.40</b>	<b>10.12</b>	<b>10.05</b>	<b>07/01/2007</b>
IM U.S. Large Cap Equity (SA+CF) Median	6.64	30.88	59.60	16.56	16.26	13.31	13.84	17.90	30.27	-5.01	21.73	11.07	9.81	
Rank	40	29	29	31	33	30	32	33	34	55	43	58	42	
<b>Domestic Mid Cap Equity - Net</b>	<b>13.54</b>	<b>47.84</b>	<b>83.41</b>	<b>13.84</b>	<b>14.25</b>	<b>10.24</b>	<b>11.70</b>	<b>13.53</b>	<b>28.03</b>	<b>-10.75</b>	<b>19.45</b>	<b>12.30</b>	<b>9.64</b>	<b>01/01/2005</b>
Russell Mid Cap Index	8.14	39.35	73.64	14.73	14.67	11.65	12.47	17.10	30.54	-9.06	18.52	13.80	10.32	
Difference	5.40	8.49	9.77	-0.89	-0.42	-1.41	-0.77	-3.57	-2.51	-1.69	0.93	-1.50	-0.68	
<b>Domestic Mid Cap Equity - Gross</b>	<b>13.54</b>	<b>47.84</b>	<b>83.41</b>	<b>14.00</b>	<b>14.62</b>	<b>10.69</b>	<b>12.19</b>	<b>13.53</b>	<b>28.11</b>	<b>-10.28</b>	<b>20.18</b>	<b>12.97</b>	<b>10.11</b>	<b>01/01/2005</b>
IM U.S. Mid Cap Equity (SA+CF) Median	8.69	40.59	74.49	14.51	15.09	11.54	12.72	14.95	30.14	-9.08	19.52	12.76	10.92	
Rank	27	25	26	55	54	68	61	58	65	58	48	49	82	
<b>Domestic Small Cap Equity - Net</b>	<b>14.74</b>	<b>54.45</b>	<b>88.04</b>	<b>13.52</b>	<b>15.19</b>	<b>10.91</b>	<b>11.81</b>	<b>13.07</b>	<b>25.76</b>	<b>-10.51</b>	<b>15.65</b>	<b>19.31</b>	<b>12.49</b>	<b>03/01/2003</b>
Russell 2000 Index	12.70	55.36	94.85	14.76	16.35	11.05	11.68	19.96	25.53	-11.01	14.65	21.31	12.06	
Difference	2.04	-0.91	-6.81	-1.24	-1.16	-0.14	0.13	-6.89	0.23	0.50	1.00	-2.00	0.43	
<b>Domestic Small Cap Equity - Gross</b>	<b>14.86</b>	<b>54.92</b>	<b>88.75</b>	<b>13.97</b>	<b>15.74</b>	<b>11.49</b>	<b>12.45</b>	<b>13.50</b>	<b>26.25</b>	<b>-10.09</b>	<b>16.27</b>	<b>19.97</b>	<b>13.04</b>	<b>03/01/2003</b>
IM U.S. Small Cap Equity (SA+CF) Median	13.60	53.90	94.07	14.80	16.11	11.53	12.64	16.51	25.86	-10.62	15.16	20.87	13.40	
Rank	43	48	63	55	54	51	54	57	48	48	44	57	59	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>International Large Cap Passive - Net</b>	<b>3.59</b>	<b>28.71</b>	<b>49.65</b>	<b>6.62</b>	<b>10.00</b>	<b>5.64</b>	<b>5.18</b>	<b>10.81</b>	<b>21.59</b>	<b>-14.04</b>	<b>27.79</b>	<b>4.87</b>	<b>7.45</b>	<b>06/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	3.49	28.67	49.41	6.51	9.76	5.26	4.93	10.65	21.51	-14.20	27.19	4.50	7.23	
Difference	0.10	0.04	0.24	0.11	0.24	0.38	0.25	0.16	0.08	0.16	0.60	0.37	0.22	
<b>International Large Cap Passive - Gross</b>	<b>3.60</b>	<b>28.76</b>	<b>49.74</b>	<b>6.68</b>	<b>10.08</b>	<b>5.72</b>	<b>5.26</b>	<b>10.88</b>	<b>21.66</b>	<b>-13.98</b>	<b>27.88</b>	<b>4.96</b>	<b>7.53</b>	<b>06/01/2009</b>
<b>International Equity Active - Net</b>	<b>3.63</b>	<b>32.92</b>	<b>59.55</b>	<b>8.26</b>	<b>11.11</b>	<b>7.14</b>	<b>6.48</b>	<b>15.91</b>	<b>25.83</b>	<b>-16.18</b>	<b>30.82</b>	<b>2.63</b>	<b>4.44</b>	<b>04/01/1997</b>
MSCI ACW Ex US Index (USD) (Net)	3.49	28.67	49.41	6.51	9.76	5.26	4.93	10.65	21.51	-14.20	27.19	4.50	5.62	
Difference	0.14	4.25	10.14	1.75	1.35	1.88	1.55	5.26	4.32	-1.98	3.63	-1.87	-1.18	
<b>International Equity Active - Gross</b>	<b>3.76</b>	<b>33.42</b>	<b>60.34</b>	<b>8.81</b>	<b>11.69</b>	<b>7.69</b>	<b>7.00</b>	<b>16.50</b>	<b>26.48</b>	<b>-15.73</b>	<b>31.50</b>	<b>3.17</b>	<b>4.96</b>	<b>04/01/1997</b>
IM International Large Cap Core Equity (SA+CF) Median	4.04	28.41	50.45	7.02	9.80	6.21	6.83	10.83	23.88	-14.34	26.34	1.60	7.03	
Rank	55	18	14	29	25	19	46	28	29	68	12	31	100	
<b>International Value - Net</b>	<b>4.69</b>	<b>32.61</b>	<b>52.34</b>	<b>5.94</b>	<b>10.26</b>	<b>5.85</b>	<b>5.34</b>	<b>9.31</b>	<b>20.76</b>	<b>-13.97</b>	<b>30.72</b>	<b>5.59</b>	<b>3.30</b>	<b>11/01/2006</b>
MSCI ACW Ex US Val Index (USD) (Net)	7.06	31.85	48.68	2.40	7.25	2.61	3.02	-0.77	15.72	-13.97	22.66	8.92	2.55	
Difference	-2.37	0.76	3.66	3.54	3.01	3.24	2.32	10.08	5.04	0.00	8.06	-3.33	0.75	
<b>International Value - Gross</b>	<b>4.82</b>	<b>33.11</b>	<b>53.09</b>	<b>6.48</b>	<b>10.83</b>	<b>6.40</b>	<b>5.90</b>	<b>9.87</b>	<b>21.37</b>	<b>-13.52</b>	<b>31.39</b>	<b>6.17</b>	<b>3.88</b>	<b>11/01/2006</b>
IM International Large Cap Value Equity (SA+CF) Median	6.07	32.15	52.00	5.68	8.95	5.18	6.23	5.02	21.17	-14.58	26.02	4.29	4.89	
Rank	68	44	46	40	26	23	60	33	47	39	12	31	69	
<b>International Growth - Net</b>	<b>1.99</b>	<b>31.15</b>	<b>59.38</b>	<b>11.90</b>	<b>11.92</b>	<b>8.16</b>	<b>6.89</b>	<b>23.08</b>	<b>31.39</b>	<b>-16.09</b>	<b>28.01</b>	<b>0.51</b>	<b>5.06</b>	<b>11/01/2006</b>
MSCI ACW Ex US Grth Index (USD) (Net)	-0.08	25.40	49.36	10.31	12.03	7.74	6.69	22.20	27.34	-14.43	32.01	0.12	5.54	
Difference	2.07	5.75	10.02	1.59	-0.11	0.42	0.20	0.88	4.05	-1.66	-4.00	0.39	-0.48	
<b>International Growth - Gross</b>	<b>2.12</b>	<b>31.67</b>	<b>60.22</b>	<b>12.51</b>	<b>12.55</b>	<b>8.75</b>	<b>7.44</b>	<b>23.74</b>	<b>32.10</b>	<b>-15.61</b>	<b>28.74</b>	<b>1.12</b>	<b>5.61</b>	<b>11/01/2006</b>
IM International Large Cap Growth Equity (SA+CF) Median	1.15	28.46	54.48	10.86	12.61	8.33	8.44	20.41	28.38	-13.91	31.26	-0.04	6.49	
Rank	31	27	25	34	52	44	72	38	18	66	68	34	73	
<b>International Small Cap - Net</b>	<b>4.76</b>	<b>36.01</b>	<b>69.78</b>	<b>6.16</b>	<b>10.57</b>	<b>6.80</b>	<b>7.10</b>	<b>14.63</b>	<b>23.91</b>	<b>-18.90</b>	<b>33.61</b>	<b>1.84</b>	<b>5.73</b>	<b>09/01/2006</b>
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	5.53	38.25	69.82	6.61	10.40	6.67	6.32	14.24	22.42	-18.20	31.65	3.91	6.25	
Difference	-0.77	-2.24	-0.04	-0.45	0.17	0.13	0.78	0.39	1.49	-0.70	1.96	-2.07	-0.52	

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of DFA Intl Sm Co;I (DFISX), DFA Emg Mkts Sm Cap;I (DEMSX), BlackRock ACWI Ex-US Small Cap (CF), Templeton Investment Counsel (SA), and American Century Investment Mgmt (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  
Equity Sub Composites

As of March 31, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Large Cap Passive - Net</b>	<b>5.49</b>	<b>30.78</b>	<b>59.09</b>	<b>17.47</b>	<b>16.65</b>	<b>13.76</b>	<b>14.04</b>	<b>21.33</b>	<b>30.99</b>	<b>-3.94</b>	<b>21.34</b>	<b>12.01</b>	<b>7.06</b>	<b>05/01/2000</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	6.99	
Difference	-0.68	1.07	2.74	0.69	0.36	0.17	0.13	2.93	-0.50	0.44	-0.49	0.05	0.07	
<b>Domestic Large Cap Passive - Gross</b>	<b>5.50</b>	<b>30.79</b>	<b>59.11</b>	<b>17.48</b>	<b>16.66</b>	<b>13.77</b>	<b>14.05</b>	<b>21.35</b>	<b>31.00</b>	<b>-3.93</b>	<b>21.35</b>	<b>12.03</b>	<b>7.10</b>	<b>05/01/2000</b>
IM U.S. Large Cap Index Equity (SA+CF) Median	6.18	31.76	59.50	17.07	16.58	13.59	13.90	19.39	31.42	-4.75	21.74	12.02	7.19	
Rank	84	54	54	22	37	22	22	20	66	20	61	49	54	
<b>Domestic Large Cap Enhanced - Net</b>	<b>5.14</b>	<b>30.68</b>	<b>57.67</b>	<b>16.69</b>	<b>16.60</b>	<b>13.92</b>	<b>14.16</b>	<b>18.62</b>	<b>32.81</b>	<b>-4.20</b>	<b>24.21</b>	<b>9.73</b>	<b>9.97</b>	<b>06/01/2006</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	10.25	
Difference	-1.03	0.97	1.32	-0.09	0.31	0.33	0.25	0.22	1.32	0.18	2.38	-2.23	-0.28	
<b>Domestic Large Cap Enhanced - Gross</b>	<b>5.21</b>	<b>30.96</b>	<b>58.11</b>	<b>17.01</b>	<b>16.91</b>	<b>14.25</b>	<b>14.49</b>	<b>18.97</b>	<b>33.17</b>	<b>-3.96</b>	<b>24.53</b>	<b>10.05</b>	<b>10.29</b>	<b>06/01/2006</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.19	30.06	-5.17	21.85	10.63	10.38	
Rank	75	48	46	35	31	24	24	39	15	30	21	58	57	
<b>Domestic Large Cap 130/30 - Net</b>	<b>8.86</b>	<b>35.58</b>	<b>64.32</b>	<b>17.73</b>	<b>16.61</b>	<b>13.54</b>	<b>14.12</b>	<b>21.97</b>	<b>30.67</b>	<b>-7.10</b>	<b>20.28</b>	<b>9.54</b>	<b>11.28</b>	<b>03/01/2008</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	11.02	
Difference	2.69	5.87	7.97	0.95	0.32	-0.05	0.21	3.57	-0.82	-2.72	-1.55	-2.42	0.26	
<b>Domestic Large Cap 130/30 - Gross</b>	<b>9.02</b>	<b>36.22</b>	<b>65.36</b>	<b>18.57</b>	<b>17.42</b>	<b>14.31</b>	<b>14.89</b>	<b>22.79</b>	<b>31.57</b>	<b>-6.32</b>	<b>21.10</b>	<b>10.22</b>	<b>12.03</b>	<b>03/01/2008</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.13	30.06	-5.17	21.85	10.63	11.09	
Rank	27	18	17	15	24	21	16	24	33	71	63	56	20	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Large Cap Equity</b>														
<b>BlackRock MSCI US Equity Index (SA) - Net</b>	<b>5.49</b>	<b>30.85</b>	<b>59.29</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.33</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.60</b>	<b>04/01/2019</b>
MSCI US Index (USD) (Gross)	5.48	30.86	59.33	17.44	16.75	13.79	14.06	21.37	31.64	-4.50	21.90	11.61	21.64	
Difference	0.01	-0.01	-0.04	N/A	N/A	N/A	N/A	-0.04	N/A	N/A	N/A	N/A	-0.04	
<b>BlackRock MSCI US Equity Index (SA) - Gross</b>	<b>5.49</b>	<b>30.86</b>	<b>59.31</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.34</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.61</b>	<b>04/01/2019</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.19	30.06	-5.17	21.85	10.63	20.27	
Rank	72	49	41	N/A	N/A	N/A	N/A	28	N/A	N/A	N/A	N/A	31	
<b>SPDR S&amp;P 500 ETF (SPY) - Net</b>	<b>6.28</b>	<b>29.87</b>	<b>56.12</b>	<b>17.56</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>19.28</b>	<b>31.49</b>	<b>-5.30</b>	<b>N/A</b>	<b>N/A</b>	<b>16.26</b>	<b>07/01/2017</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	16.29	
Difference	0.11	0.16	-0.23	0.78	N/A	N/A	N/A	0.88	0.00	-0.92	N/A	N/A	-0.03	
<b>Northern Trust MSCI US Index (SA) - Net</b>	<b>5.49</b>	<b>30.84</b>	<b>59.30</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.34</b>	<b>31.70</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>20.32</b>	<b>11/01/2018</b>
MSCI US Index (USD) (Gross)	5.48	30.86	59.33	17.44	16.75	13.79	14.06	21.37	31.64	-4.50	21.90	11.61	20.31	
Difference	0.01	-0.02	-0.03	N/A	N/A	N/A	N/A	-0.03	0.06	N/A	N/A	N/A	0.01	
<b>Northern Trust MSCI US Index (SA) - Gross</b>	<b>5.49</b>	<b>30.85</b>	<b>59.31</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.36</b>	<b>31.71</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>20.33</b>	<b>11/01/2018</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.19	30.06	-5.17	21.85	10.63	18.93	
Rank	72	49	41	N/A	N/A	N/A	N/A	28	33	N/A	N/A	N/A	33	
<b>T. Rowe U.S. Structured Research (SA) - Net</b>	<b>5.55</b>	<b>31.18</b>	<b>58.28</b>	<b>16.84</b>	<b>16.85</b>	<b>14.05</b>	<b>14.25</b>	<b>18.62</b>	<b>32.81</b>	<b>-4.20</b>	<b>23.94</b>	<b>10.68</b>	<b>10.72</b>	<b>06/01/2006</b>
S&P 500 Index (Cap Wtd)	6.17	29.71	56.35	16.78	16.29	13.59	13.91	18.40	31.49	-4.38	21.83	11.96	10.25	
Difference	-0.62	1.47	1.93	0.06	0.56	0.46	0.34	0.22	1.32	0.18	2.11	-1.28	0.47	
<b>T. Rowe U.S. Structured Research (SA) - Gross</b>	<b>5.62</b>	<b>31.46</b>	<b>58.72</b>	<b>17.16</b>	<b>17.16</b>	<b>14.36</b>	<b>14.58</b>	<b>18.97</b>	<b>33.17</b>	<b>-3.96</b>	<b>24.24</b>	<b>10.98</b>	<b>11.05</b>	<b>06/01/2006</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.13	30.06	-5.17	21.85	10.63	10.38	
Rank	71	43	43	32	27	20	23	39	15	30	25	47	26	
<b>Jacobs Levy 130/30 (SA) - Net</b>	<b>11.13</b>	<b>37.83</b>	<b>64.38</b>	<b>16.67</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>17.03</b>	<b>31.63</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>16.67</b>	<b>04/01/2018</b>
MSCI US Index (USD) (Gross)	5.48	30.86	59.33	17.44	16.75	13.79	14.06	21.37	31.64	-4.50	21.90	11.61	17.44	
Difference	5.65	6.97	5.05	-0.77	N/A	N/A	N/A	-4.34	-0.01	N/A	N/A	N/A	-0.77	
<b>Jacobs Levy 130/30 (SA) - Gross</b>	<b>11.30</b>	<b>38.50</b>	<b>65.43</b>	<b>17.52</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>17.81</b>	<b>32.55</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>17.52</b>	<b>04/01/2018</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.19	30.06	-5.17	21.85	10.63	16.15	
Rank	15	12	17	26	N/A	N/A	N/A	47	22	N/A	N/A	N/A	26	

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	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>J.P. Morgan 130/30 (SA) - Net</b>	<b>6.16</b>	<b>32.28</b>	<b>63.14</b>	<b>18.62</b>	<b>17.85</b>	<b>14.10</b>	<b>14.51</b>	<b>27.16</b>	<b>30.55</b>	<b>-6.93</b>	<b>22.86</b>	<b>10.30</b>	<b>12.28</b>	<b>03/01/2008</b>
JPM US Equity Custom Benchmark	5.48	30.86	59.33	17.46	16.70	13.88	14.11	21.37	31.37	-4.38	21.83	11.96	11.17	
Difference	0.68	1.42	3.81	1.16	1.15	0.22	0.40	5.79	-0.82	-2.55	1.03	-1.66	1.11	
<b>J.P. Morgan 130/30 (SA) - Gross</b>	<b>6.29</b>	<b>32.88</b>	<b>64.14</b>	<b>19.45</b>	<b>18.70</b>	<b>14.92</b>	<b>15.34</b>	<b>28.00</b>	<b>31.42</b>	<b>-6.13</b>	<b>23.79</b>	<b>11.09</b>	<b>13.09</b>	<b>03/01/2008</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	6.74	30.56	57.18	16.15	16.14	13.25	13.77	17.13	30.06	-5.17	21.85	10.63	11.09	
Rank	61	32	20	7	11	11	7	5	36	67	28	46	3	
<b>Domestic Mid Cap Equity</b>														
<b>iShares:Core S&amp;P Md-Cp (IJH) - Net</b>	<b>13.54</b>	<b>47.84</b>	<b>83.41</b>	<b>13.20</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>13.53</b>	<b>26.24</b>	<b>-13.95</b>	<b>N/A</b>	<b>N/A</b>	<b>12.14</b>	<b>07/01/2017</b>
S&P Mid Cap 400 Index (Cap Wtd)	13.47	47.86	83.46	13.40	14.37	11.31	11.92	13.66	26.20	-11.08	16.24	20.74	13.11	
Difference	0.07	-0.02	-0.05	-0.20	N/A	N/A	N/A	-0.13	0.04	-2.87	N/A	N/A	-0.97	

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	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Domestic Small Cap Equity</b>														
<b>Vaughan Nelson Management (SA) - Net</b>	<b>12.65</b>	<b>50.88</b>	<b>75.58</b>	<b>10.88</b>	<b>11.44</b>	<b>9.12</b>	<b>10.29</b>	<b>9.83</b>	<b>25.34</b>	<b>-13.78</b>	<b>6.83</b>	<b>20.50</b>	<b>9.92</b>	<b>03/01/2007</b>
Russell 2000 Val Index	21.17	65.72	97.05	11.57	13.56	8.93	10.06	4.63	22.39	-12.86	7.84	31.74	7.22	
Difference	-8.52	-14.84	-21.47	-0.69	-2.12	0.19	0.23	5.20	2.95	-0.92	-1.01	-11.24	2.70	
<b>Vaughan Nelson Management (SA) - Gross</b>	<b>12.85</b>	<b>51.68</b>	<b>76.82</b>	<b>11.69</b>	<b>12.28</b>	<b>9.96</b>	<b>11.17</b>	<b>10.64</b>	<b>26.25</b>	<b>-13.13</b>	<b>7.66</b>	<b>21.49</b>	<b>10.82</b>	<b>03/01/2007</b>
IM U.S. Small Cap Value Equity (SA+CF) Median	18.86	59.27	92.55	11.17	13.22	9.42	11.11	5.19	25.07	-14.11	11.61	26.80	9.26	
Rank	87	74	81	43	66	41	48	28	35	38	77	76	19	
<b>BlackRock MSCI US Sm Cap Equity Index (CF) - Net</b>	<b>12.83</b>	<b>53.58</b>	<b>95.13</b>	<b>15.61</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.93</b>	<b>27.30</b>	<b>-9.96</b>	<b>N/A</b>	<b>N/A</b>	<b>15.24</b>	<b>07/01/2017</b>
MSCI US Sm Cap Index (USD) (Net)	12.75	53.12	94.35	15.08	15.91	11.28	12.02	18.32	26.74	-10.40	16.75	19.15	14.70	
Difference	0.08	0.46	0.78	0.53	N/A	N/A	N/A	0.61	0.56	0.44	N/A	N/A	0.54	
<b>BlackRock MSCI US Sm Cap Equity Index (CF) - Gross</b>	<b>12.84</b>	<b>53.61</b>	<b>95.18</b>	<b>15.65</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>18.96</b>	<b>27.34</b>	<b>-9.93</b>	<b>N/A</b>	<b>N/A</b>	<b>15.28</b>	<b>07/01/2017</b>
<b>DFA US Sm Cap Tr (CF) - Net</b>	<b>17.97</b>	<b>58.47</b>	<b>94.97</b>	<b>12.49</b>	<b>13.98</b>	<b>10.28</b>	<b>11.76</b>	<b>11.63</b>	<b>21.66</b>	<b>-12.27</b>	<b>11.86</b>	<b>24.42</b>	<b>12.57</b>	<b>03/01/2003</b>
Russell 2000 Index	12.70	55.36	94.85	14.76	16.35	11.05	11.68	19.96	25.53	-11.01	14.65	21.31	12.06	
Difference	5.27	3.11	0.12	-2.27	-2.37	-0.77	0.08	-8.33	-3.87	-1.26	-2.79	3.11	0.51	
<b>DFA US Sm Cap Tr (CF) - Gross</b>	<b>18.07</b>	<b>58.87</b>	<b>95.57</b>	<b>12.88</b>	<b>14.37</b>	<b>10.66</b>	<b>12.15</b>	<b>11.98</b>	<b>22.07</b>	<b>-11.95</b>	<b>12.25</b>	<b>24.85</b>	<b>12.90</b>	<b>03/01/2003</b>
IM U.S. Small Cap Core Equity (SA+CF) Median	13.83	53.92	92.88	15.00	16.11	12.06	12.74	17.76	25.11	-10.69	15.13	20.77	13.41	
Rank	23	29	40	68	78	75	66	73	73	64	72	21	61	
<b>iShares:Russ 2000 ETF (IWM) - Net</b>	<b>12.89</b>	<b>55.96</b>	<b>96.83</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>20.90</b>	<b>25.52</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>15.20</b>	<b>05/01/2018</b>
Russell 2000 Index	12.70	55.36	94.85	14.76	16.35	11.05	11.68	19.96	25.53	-11.01	14.65	21.31	14.87	
Difference	0.19	0.60	1.98	N/A	N/A	N/A	N/A	0.94	-0.01	N/A	N/A	N/A	0.33	

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

The current annual expense ratios for the SPDR S&P 500 ETF (SPY), iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM) are 0.09%, 0.05%, and 0.19%, respectively.

See the Addendum for custom index specification.

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<b>International Developed Large Cap Equity</b>														
<b>Acadian Asset Non-US Equity (SA) - Net</b>	<b>8.85</b>	<b>38.41</b>	<b>58.86</b>	<b>6.72</b>	<b>13.07</b>	<b>7.51</b>	<b>7.31</b>	<b>8.89</b>	<b>19.38</b>	<b>-13.44</b>	<b>34.76</b>	<b>12.40</b>	<b>4.45</b>	<b>11/01/2006</b>
MSCI ACW Ex US Val Index (USD) (Net)	7.06	31.85	48.68	2.40	7.25	2.61	3.02	-0.77	15.72	-13.97	22.66	8.92	2.55	
Difference	1.79	6.56	10.18	4.32	5.82	4.90	4.29	9.66	3.66	0.53	12.10	3.48	1.90	
<b>Acadian Asset Non-US Equity (SA) - Gross</b>	<b>8.99</b>	<b>38.93</b>	<b>59.65</b>	<b>7.27</b>	<b>13.65</b>	<b>8.07</b>	<b>7.88</b>	<b>9.45</b>	<b>19.98</b>	<b>-12.99</b>	<b>35.45</b>	<b>13.01</b>	<b>5.02</b>	<b>11/01/2006</b>
IM ACWI Ex US Value (SA+CF) Median	6.26	34.87	57.35	7.01	10.67	5.68	6.13	6.65	21.34	-14.78	26.02	4.87	4.87	
Rank	18	28	40	46	14	15	22	44	59	26	8	10	49	
<b>Lazard Asset Management (SA) - Net</b>	<b>1.93</b>	<b>28.79</b>	<b>48.03</b>	<b>5.40</b>	<b>7.98</b>	<b>N/A</b>	<b>N/A</b>	<b>9.59</b>	<b>21.70</b>	<b>-14.32</b>	<b>27.00</b>	<b>0.22</b>	<b>5.28</b>	<b>06/01/2015</b>
Lazard Custom Index	3.49	28.67	49.41	6.06	9.53	4.16	4.12	10.65	21.51	-15.55	22.66	8.92	5.08	
Difference	-1.56	0.12	-1.38	-0.66	-1.55	N/A	N/A	-1.06	0.19	1.23	4.34	-8.70	0.20	
<b>Lazard Asset Management (SA) - Gross</b>	<b>2.06</b>	<b>29.26</b>	<b>48.75</b>	<b>5.93</b>	<b>8.53</b>	<b>N/A</b>	<b>N/A</b>	<b>10.14</b>	<b>22.31</b>	<b>-13.88</b>	<b>27.65</b>	<b>0.77</b>	<b>5.83</b>	<b>06/01/2015</b>
IM ACWI Ex US Value (SA+CF) Median	6.26	34.87	57.35	7.01	10.67	5.68	6.13	6.65	21.34	-14.78	26.02	4.87	6.68	
Rank	92	81	75	63	69	N/A	N/A	42	43	35	38	86	67	
<b>BlackRock ACW Ex US SuperFund A (CF) - Net</b>	<b>3.56</b>	<b>28.76</b>	<b>49.66</b>	<b>6.78</b>	<b>10.00</b>	<b>5.48</b>	<b>5.14</b>	<b>10.81</b>	<b>21.77</b>	<b>-13.99</b>	<b>27.49</b>	<b>4.77</b>	<b>7.43</b>	<b>06/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	3.49	28.67	49.41	6.51	9.76	5.26	4.93	10.65	21.51	-14.20	27.19	4.50	7.23	
Difference	0.07	0.09	0.25	0.27	0.24	0.22	0.21	0.16	0.26	0.21	0.30	0.27	0.20	
<b>BlackRock ACW Ex US SuperFund A (CF) - Gross</b>	<b>3.58</b>	<b>28.83</b>	<b>49.77</b>	<b>6.85</b>	<b>10.08</b>	<b>5.56</b>	<b>5.22</b>	<b>10.89</b>	<b>21.85</b>	<b>-13.93</b>	<b>27.58</b>	<b>4.86</b>	<b>7.52</b>	<b>06/01/2009</b>
IM All ACWI Ex US (SA+CF) Median	3.25	31.26	55.53	8.34	10.85	6.50	7.00	14.60	24.97	-14.64	28.74	2.12	9.20	
Rank	45	66	73	64	63	70	91	60	66	43	62	25	86	
<b>iShares:MSCI EAFE ETF (EFA) - Net</b>	<b>3.99</b>	<b>25.82</b>	<b>45.38</b>	<b>5.97</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.71</b>	<b>22.03</b>	<b>-12.88</b>	<b>N/A</b>	<b>N/A</b>	<b>7.21</b>	<b>07/01/2017</b>
MSCI EAFE Index (USD) (Net)	3.48	25.84	44.57	6.02	8.85	4.80	5.52	7.82	22.01	-13.79	25.03	1.00	7.01	
Difference	0.51	-0.02	0.81	-0.05	N/A	N/A	N/A	-0.11	0.02	0.91	N/A	N/A	0.20	
<b>Baillie Gifford (SA) - Net</b>	<b>0.88</b>	<b>34.25</b>	<b>69.11</b>	<b>14.87</b>	<b>14.72</b>	<b>N/A</b>	<b>N/A</b>	<b>34.22</b>	<b>34.34</b>	<b>-17.35</b>	<b>31.99</b>	<b>0.73</b>	<b>11.18</b>	<b>06/01/2015</b>
MSCI ACW Ex US Grth Index (USD) (Net)	-0.08	25.40	49.36	10.31	12.03	7.74	6.69	22.20	27.34	-14.43	32.01	0.12	8.45	
Difference	0.96	8.85	19.75	4.56	2.69	N/A	N/A	12.02	7.00	-2.92	-0.02	0.61	2.73	
<b>Baillie Gifford (SA) - Gross</b>	<b>0.99</b>	<b>34.71</b>	<b>69.88</b>	<b>15.42</b>	<b>15.29</b>	<b>N/A</b>	<b>N/A</b>	<b>34.86</b>	<b>34.99</b>	<b>-16.93</b>	<b>32.66</b>	<b>1.28</b>	<b>11.74</b>	<b>06/01/2015</b>
IM ACWI Ex US Growth (SA+CF) Median	1.15	28.82	55.34	10.99	13.36	8.93	8.76	22.06	29.57	-13.78	32.56	-0.76	9.84	
Rank	54	9	10	13	22	N/A	N/A	12	9	85	49	33	22	

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	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Invesco (SA) - Net</b>	<b>2.95</b>	<b>28.64</b>	<b>51.98</b>	<b>9.61</b>	<b>9.73</b>	<b>N/A</b>	<b>N/A</b>	<b>14.84</b>	<b>29.29</b>	<b>-15.17</b>	<b>24.92</b>	<b>0.32</b>	<b>7.05</b>	<b>06/01/2015</b>
MSCI ACW Ex US Grth Index (USD) (Net)	-0.08	25.40	49.36	10.31	12.03	7.74	6.69	22.20	27.34	-14.43	32.01	0.12	8.45	
Difference	3.03	3.24	2.62	-0.70	-2.30	N/A	N/A	-7.36	1.95	-0.74	-7.09	0.20	-1.40	
<b>Invesco (SA) - Gross</b>	<b>3.09</b>	<b>29.19</b>	<b>52.84</b>	<b>10.26</b>	<b>10.40</b>	<b>N/A</b>	<b>N/A</b>	<b>15.51</b>	<b>30.05</b>	<b>-14.64</b>	<b>25.70</b>	<b>1.01</b>	<b>7.72</b>	<b>06/01/2015</b>
IM ACWI Ex US Growth (SA+CF) Median	1.15	28.82	55.34	10.99	13.36	8.93	8.76	22.06	29.57	-13.78	32.56	-0.76	9.84	
Rank	14	49	68	63	79	N/A	N/A	83	44	56	91	36	76	
<b>International Developed Small Cap Equity</b>														
<b>American Century Investment Mgmt (SA) - Net</b>	<b>0.33</b>	<b>30.10</b>	<b>71.93</b>	<b>9.23</b>	<b>13.82</b>	<b>9.25</b>	<b>N/A</b>	<b>31.60</b>	<b>29.44</b>	<b>-20.76</b>	<b>43.80</b>	<b>-5.31</b>	<b>9.03</b>	<b>03/01/2014</b>
MSCI ACW Ex US Sm Cap Grth Index (USD) (Net)	3.34	35.74	72.65	8.89	11.70	8.10	7.18	23.69	24.61	-18.27	33.64	-0.28	7.96	
Difference	-3.01	-5.64	-0.72	0.34	2.12	1.15	N/A	7.91	4.83	-2.49	10.16	-5.03	1.07	
<b>American Century Investment Mgmt (SA) - Gross</b>	<b>0.53</b>	<b>30.89</b>	<b>73.31</b>	<b>10.14</b>	<b>14.77</b>	<b>10.17</b>	<b>N/A</b>	<b>32.68</b>	<b>30.50</b>	<b>-20.09</b>	<b>44.99</b>	<b>-4.49</b>	<b>9.95</b>	<b>03/01/2014</b>
IM ACWI Ex US Growth (SA+CF) Median	1.15	28.82	55.34	10.99	13.36	8.93	8.76	22.06	29.57	-13.78	32.56	-0.76	8.78	
Rank	66	39	7	64	32	26	N/A	24	42	100	6	79	27	
<b>BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Net</b>	<b>5.43</b>	<b>38.04</b>	<b>69.65</b>	<b>6.91</b>	<b>10.68</b>	<b>6.95</b>	<b>N/A</b>	<b>14.45</b>	<b>22.68</b>	<b>-17.85</b>	<b>31.96</b>	<b>4.26</b>	<b>8.78</b>	<b>02/01/2012</b>
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	5.53	38.25	69.82	6.61	10.40	6.67	6.32	14.24	22.42	-18.20	31.65	3.91	8.55	
Difference	-0.10	-0.21	-0.17	0.30	0.28	0.28	N/A	0.21	0.26	0.35	0.31	0.35	0.23	
<b>BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Gross</b>	<b>5.47</b>	<b>38.16</b>	<b>69.85</b>	<b>7.04</b>	<b>10.83</b>	<b>7.10</b>	<b>N/A</b>	<b>14.50</b>	<b>22.90</b>	<b>-17.74</b>	<b>32.15</b>	<b>4.44</b>	<b>8.94</b>	<b>02/01/2012</b>
<b>DFA Intl Sm Co;l (DFISX) - Net</b>	<b>5.82</b>	<b>36.90</b>	<b>65.64</b>	<b>5.12</b>	<b>9.68</b>	<b>6.14</b>	<b>6.88</b>	<b>9.24</b>	<b>24.21</b>	<b>-19.41</b>	<b>30.24</b>	<b>5.74</b>	<b>8.15</b>	<b>11/01/2004</b>
MSCI Wrld Ex US Sm Cap Index (USD) (Net)	4.88	35.76	65.17	6.89	10.55	6.97	7.14	12.78	25.41	-18.07	31.04	4.32	7.94	
Difference	0.94	1.14	0.47	-1.77	-0.87	-0.83	-0.26	-3.54	-1.20	-1.34	-0.80	1.42	0.21	
<b>Templeton Investment Counsel (SA) - Net</b>	<b>6.19</b>	<b>37.86</b>	<b>70.25</b>	<b>5.30</b>	<b>9.53</b>	<b>6.13</b>	<b>N/A</b>	<b>9.98</b>	<b>24.17</b>	<b>-18.48</b>	<b>33.07</b>	<b>-1.13</b>	<b>6.08</b>	<b>03/01/2014</b>
Templeton Custom Index	5.53	38.25	69.82	6.36	10.36	6.09	6.05	14.24	22.42	-19.75	29.72	8.24	6.10	
Difference	0.66	-0.39	0.43	-1.06	-0.83	0.04	N/A	-4.26	1.75	1.27	3.35	-9.37	-0.02	
<b>Templeton Investment Counsel (SA) - Gross</b>	<b>6.41</b>	<b>38.71</b>	<b>71.63</b>	<b>6.18</b>	<b>10.47</b>	<b>7.05</b>	<b>N/A</b>	<b>10.91</b>	<b>25.20</b>	<b>-17.78</b>	<b>34.21</b>	<b>-0.23</b>	<b>7.00</b>	<b>03/01/2014</b>
IM ACWI Ex US Value (SA+CF) Median	6.26	34.87	57.35	7.01	10.67	5.68	6.13	6.65	21.34	-14.78	26.02	4.87	5.75	
Rank	49	28	13	62	54	26	N/A	36	26	84	8	89	25	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>International Emerging Equity</b>														
<b>BlackRock MSCI Emg Mkts Index NL (CF) - Net</b>	<b>2.19</b>	<b>33.62</b>	<b>57.71</b>	<b>6.25</b>	<b>11.80</b>	<b>6.32</b>	<b>N/A</b>	<b>17.92</b>	<b>18.12</b>	<b>-14.69</b>	<b>37.05</b>	<b>10.85</b>	<b>5.06</b>	<b>02/01/2012</b>
MSCI Emg Mkts Index (USD) (Net)	2.29	34.13	58.39	6.48	12.07	6.58	3.65	18.31	18.44	-14.58	37.28	11.19	5.32	
Difference	-0.10	-0.51	-0.68	-0.23	-0.27	-0.26	N/A	-0.39	-0.32	-0.11	-0.23	-0.34	-0.26	
<b>BlackRock MSCI Emg Mkts Index NL (CF) - Gross</b>	<b>2.22</b>	<b>33.73</b>	<b>57.88</b>	<b>6.37</b>	<b>11.93</b>	<b>6.47</b>	<b>N/A</b>	<b>18.04</b>	<b>18.25</b>	<b>-14.60</b>	<b>37.16</b>	<b>11.08</b>	<b>5.22</b>	<b>02/01/2012</b>
<b>iShares:MSCI Em Mkts (EEM) - Net</b>	<b>3.23</b>	<b>34.65</b>	<b>58.49</b>	<b>5.66</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>16.99</b>	<b>18.12</b>	<b>-16.45</b>	<b>36.86</b>	<b>N/A</b>	<b>12.20</b>	<b>01/01/2017</b>
MSCI Emg Mkts Index (USD) (Net)	2.29	34.13	58.39	6.48	12.07	6.58	3.65	18.31	18.44	-14.58	37.28	11.19	12.99	
Difference	0.94	0.52	0.10	-0.82	N/A	N/A	N/A	-1.32	-0.32	-1.87	-0.42	N/A	-0.79	
<b>DFA Emg Mkts Sm Cap;I (DEMSX) - Net</b>	<b>7.04</b>	<b>40.66</b>	<b>77.95</b>	<b>4.38</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>13.79</b>	<b>14.88</b>	<b>-17.56</b>	<b>N/A</b>	<b>N/A</b>	<b>9.76</b>	<b>02/01/2017</b>
MSCI Emg Mkts Sm Cap Index (USD) (Net)	7.67	47.18	87.13	5.19	9.59	5.46	3.33	19.29	11.51	-18.59	33.84	2.28	10.05	
Difference	-0.63	-6.52	-9.18	-0.81	N/A	N/A	N/A	-5.50	3.37	1.03	N/A	N/A	-0.29	

Gross of fees performance is not available (N/A) for the following funds: iShares:MSCI EAFE ETF (EFA), International Equity Pool STIF, DFA Intl Sm Co;I (DFISX), iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX).

The current annual expense ratios for the iShares:MSCI EAFE ETF (EFA), DFA Intl Sm Co;I (DFISX), iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX) are 0.32%, 0.44%, 0.68%, and 0.60%, 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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>US Fixed Income Aggregate - Net</b>	<b>-3.30</b>	<b>-2.32</b>	<b>0.76</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.65</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.01</b>	<b>12/01/2019</b>
Bloomberg US Agg Bond Index	-3.38	-2.13	0.71	4.65	3.10	3.31	3.44	7.51	8.72	0.01	3.54	2.65	2.84	
Difference	0.08	-0.19	0.05	N/A	N/A	N/A	N/A	0.14	N/A	N/A	N/A	N/A	0.17	
<b>Reams Asset Core Plus (SA) - Net</b>	<b>-3.39</b>	<b>0.30</b>	<b>8.45</b>	<b>7.78</b>	<b>5.09</b>	<b>4.61</b>	<b>4.82</b>	<b>17.14</b>	<b>8.08</b>	<b>1.31</b>	<b>3.21</b>	<b>4.18</b>	<b>5.99</b>	<b>10/01/2008</b>
Reams Custom Index	-3.05	-0.83	2.95	4.79	3.49	3.50	3.72	7.58	8.72	0.01	3.83	3.91	4.50	
Difference	-0.34	1.13	5.50	2.99	1.60	1.11	1.10	9.56	-0.64	1.30	-0.62	0.27	1.49	
<b>Reams Asset Core Plus (SA) - Gross</b>	<b>-3.34</b>	<b>0.44</b>	<b>8.65</b>	<b>7.97</b>	<b>5.28</b>	<b>4.79</b>	<b>5.00</b>	<b>17.35</b>	<b>8.28</b>	<b>1.49</b>	<b>3.38</b>	<b>4.35</b>	<b>6.18</b>	<b>10/01/2008</b>
IM U.S. Broad Market Core+ FI (SA+CF) Median	-2.74	0.87	7.02	5.75	4.49	4.17	4.50	8.95	9.88	-0.25	4.79	4.68	5.73	
Rank	88	62	32	2	21	17	26	1	93	4	95	58	31	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Neuberger Berman High Yield (SA) - Net</b>	<b>0.64</b>	<b>11.64</b>	<b>21.82</b>	<b>6.42</b>	<b>6.93</b>	<b>4.68</b>	<b>5.83</b>	<b>6.30</b>	<b>13.75</b>	<b>-1.99</b>	<b>5.80</b>	<b>14.98</b>	<b>6.99</b>	<b>01/01/2010</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	7.41	
Difference	-0.22	-0.63	-1.83	-0.40	-1.11	-0.74	-0.64	-0.75	-0.57	0.09	-1.70	-2.15	-0.42	
<b>Neuberger Berman High Yield (SA) - Gross</b>	<b>0.74</b>	<b>11.97</b>	<b>22.32</b>	<b>6.88</b>	<b>7.40</b>	<b>5.14</b>	<b>6.30</b>	<b>6.75</b>	<b>14.26</b>	<b>-1.56</b>	<b>6.27</b>	<b>15.50</b>	<b>7.47</b>	<b>01/01/2010</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.64	7.49	14.07	7.49	
Rank	69	51	52	41	61	64	61	43	50	49	79	33	52	
<b>Oaktree US High Yield (SA) (CAPP) - Net</b>	<b>0.44</b>	<b>11.34</b>	<b>21.72</b>	<b>6.48</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.56</b>	<b>15.44</b>	<b>-3.99</b>	<b>N/A</b>	<b>N/A</b>	<b>5.40</b>	<b>01/01/2018</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	6.00	
Difference	-0.42	-0.93	-1.93	-0.34	N/A	N/A	N/A	-0.49	1.12	-1.91	N/A	N/A	-0.60	
<b>Oaktree US High Yield (SA) (CAPP) - Gross</b>	<b>0.56</b>	<b>11.75</b>	<b>22.29</b>	<b>7.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.07</b>	<b>16.02</b>	<b>-3.47</b>	<b>N/A</b>	<b>N/A</b>	<b>5.92</b>	<b>01/01/2018</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.66	7.49	14.07	5.93	
Rank	74	53	53	35	N/A	N/A	N/A	39	16	92	N/A	N/A	52	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Net</b>	<b>0.37</b>	<b>10.24</b>	<b>19.84</b>	<b>6.28</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.32</b>	<b>13.65</b>	<b>-1.96</b>	<b>N/A</b>	<b>N/A</b>	<b>5.21</b>	<b>12/01/2017</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	5.94	
Difference	-0.49	-2.03	-3.81	-0.54	N/A	N/A	N/A	-0.73	-0.67	0.12	N/A	N/A	-0.73	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Gross</b>	<b>0.49</b>	<b>10.62</b>	<b>20.39</b>	<b>6.78</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.82</b>	<b>14.18</b>	<b>-1.46</b>	<b>N/A</b>	<b>N/A</b>	<b>5.71</b>	<b>12/01/2017</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.66	7.49	14.07	5.90	
Rank	78	67	68	46	N/A	N/A	N/A	43	52	46	N/A	N/A	60	
<b>Cohen &amp; Steers Preferred Securities (SA) - Net</b>	<b>-0.26</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.35</b>	<b>11/01/2020</b>
Cohen & Steers Preferred Securities Custom Benchmark	-0.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.54	
Difference	0.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.81	
<b>Cohen &amp; Steers Preferred Securities (SA) - Gross</b>	<b>-0.17</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.51</b>	<b>11/01/2020</b>
<b>Payden &amp; Rygel EMD (SA) - Net</b>	<b>-5.27</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.27</b>	<b>01/01/2021</b>
Payden & Rygel EMD Custom Benchmark	-5.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-5.18	
Difference	-0.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.09	
<b>Payden &amp; Rygel EMD (SA) - Gross</b>	<b>-5.18</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-5.18</b>	<b>01/01/2021</b>
IM Emerging Markets Debt (SA+CF) Median	-4.55	5.62	19.05	3.52	5.56	4.60	5.17	6.71	14.24	-5.33	12.43	11.04	-4.55	
Rank	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
<b>Trust Funds Investment Pool Fixed Income</b>	<b>-2.91</b>	<b>-0.68</b>	<b>3.22</b>	<b>5.42</b>	<b>3.73</b>	<b>3.96</b>	<b>4.20</b>	<b>8.84</b>	<b>9.12</b>	<b>0.25</b>	<b>3.83</b>	<b>3.44</b>	<b>5.90</b>	<b>10/01/1995</b>
Bloomberg US Agg Bond Index	-3.38	-2.13	0.71	4.65	3.10	3.31	3.44	7.51	8.72	0.01	3.54	2.65	5.08	
Difference	0.47	1.45	2.51	0.77	0.63	0.65	0.76	1.33	0.40	0.24	0.29	0.79	0.82	
<b>Trust Funds Investment Pool Fixed Income</b>	<b>-2.91</b>	<b>-0.68</b>	<b>3.22</b>	<b>5.42</b>	<b>3.73</b>	<b>3.96</b>	<b>4.20</b>	<b>8.84</b>	<b>9.12</b>	<b>0.25</b>	<b>3.83</b>	<b>3.44</b>	<b>5.90</b>	<b>10/01/1995</b>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-3.18	-0.97	3.43	5.27	3.76	3.82	3.98	8.54	9.19	0.07	4.03	3.10	5.47	
Rank	30	40	52	39	53	40	33	37	55	32	62	42	11	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Net</b>	<b>0.37</b>	<b>10.22</b>	<b>19.71</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.05</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.97</b>	<b>07/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	6.83	
Difference	-0.49	-2.05	-3.94	N/A	N/A	N/A	N/A	-1.00	N/A	N/A	N/A	N/A	-0.86	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Gross</b>	<b>0.49</b>	<b>10.61</b>	<b>20.25</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.54</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.46</b>	<b>07/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.66	7.49	14.07	6.81	
Rank	78	67	69	N/A	N/A	N/A	N/A	49	N/A	N/A	N/A	N/A	64	
<b>Oaktree US High Yield (SA) (TFIP) - Net</b>	<b>0.59</b>	<b>11.46</b>	<b>22.14</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.72</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.94</b>	<b>08/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	6.83	
Difference	-0.27	-0.81	-1.51	N/A	N/A	N/A	N/A	-0.33	N/A	N/A	N/A	N/A	0.11	
<b>Oaktree US High Yield (SA) (TFIP) - Gross</b>	<b>0.71</b>	<b>11.87</b>	<b>22.72</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.25</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.46</b>	<b>08/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.66	7.49	14.07	6.83	
Rank	69	52	47	N/A	N/A	N/A	N/A	36	N/A	N/A	N/A	N/A	33	
<b>Neuberger Berman High Yield (SA) (TFIP) - Net</b>	<b>0.58</b>	<b>11.77</b>	<b>20.67</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>20.67</b>	<b>04/01/2020</b>
Bloomberg US HY 2% Issuer Cap Index	0.86	12.27	23.65	6.82	8.04	5.42	6.47	7.05	14.32	-2.08	7.50	17.13	23.65	
Difference	-0.28	-0.50	-2.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.98	
<b>Neuberger Berman High Yield (SA) (TFIP) - Gross</b>	<b>0.68</b>	<b>12.13</b>	<b>21.16</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>21.16</b>	<b>04/01/2020</b>
IM U.S. High Yield Bonds (SA+CF) Median	0.99	12.06	22.49	6.71	7.80	5.37	6.51	6.52	14.25	-1.66	7.49	14.07	22.49	
Rank	70	49	61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61	

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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
Abandoned Mine Trust	0.04	0.19	0.38	1.61	1.30	1.31	1.40	0.73	2.41	1.85	1.04	1.10	3.84	12/01/1993
Barker Hughesville St Response	-2.11	-0.55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.28	05/01/2020
Belt Water Treatment Plant Fund	-2.06	-0.44	2.90	4.97	N/A	N/A	N/A	6.80	8.56	N/A	N/A	N/A	4.90	03/01/2018
Big Sky Economic Development Fund	-2.20	-0.50	2.99	4.97	3.69	4.01	4.34	7.12	8.67	0.48	3.97	3.98	4.87	07/01/2005
Butte Area One Restoration	-1.81	-0.40	2.58	4.24	3.11	3.03	2.97	6.07	6.76	1.24	2.92	2.60	3.38	11/01/2008
Clark Fork River Restoration	-1.76	-0.38	2.36	4.12	3.03	3.08	3.15	5.65	7.04	0.96	2.85	2.72	3.66	11/01/2008
Coal Tax Cultural Trust Fund	-2.14	-0.46	2.98	4.94	3.67	3.99	4.33	6.99	8.64	0.47	3.96	3.95	5.95	12/01/1993
Coal Tax Park Acquisition	-2.08	-0.44	2.93	4.92	3.65	3.96	4.30	6.86	8.63	0.48	3.96	3.90	5.92	12/01/1993
East Helena Compensation Fund	-0.34	0.09	1.10	3.13	2.43	2.37	N/A	2.65	5.52	1.20	2.56	2.12	2.11	01/01/2013
East Helena Greenway Trail Maintenance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	03/01/2021
Endowment for Children	-2.17	-0.46	2.96	4.90	3.62	3.90	4.24	7.01	8.54	0.46	3.89	3.66	4.90	08/01/2007
Flying J CECRA Facilities Fund	-2.10	-0.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.35	05/01/2020
FWP License Account	-1.05	-0.48	0.17	1.87	1.42	1.22	1.17	1.85	3.33	1.50	1.11	0.84	2.86	11/01/1997
FWP Mitigation Trust Fund	-1.55	-0.50	1.22	3.09	1.99	1.78	1.73	3.84	5.46	1.14	1.15	0.67	3.83	12/01/1993
FWP Real Property Trust	-2.08	-0.45	2.90	4.91	3.62	3.90	4.20	6.83	8.62	0.51	3.80	3.82	5.33	12/01/1993
Group Benefits	-0.33	0.11	0.94	2.43	1.72	1.64	1.55	2.05	4.01	1.37	1.30	1.16	3.80	12/01/1993
Harold Hamm Endowment	-2.04	-0.44	2.86	4.83	N/A	N/A	N/A	6.71	8.45	0.57	1.11	N/A	3.11	07/01/2016
Invasive Species Trust Fund	-1.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.20	10/01/2020
Libby Asbestos Site State Cost	-2.08	-0.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.34	05/01/2020
Luttrell Pit - Operational & Maintenance	-2.10	-0.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.23	05/01/2020
Montana Pole	-1.64	-0.32	2.32	4.29	3.21	3.41	3.64	5.61	7.48	0.74	3.38	3.23	5.05	09/01/1996
Montana State University	-0.12	0.19	0.68	1.89	1.57	1.32	1.17	1.30	2.87	1.87	1.39	0.95	1.98	08/01/2004
Montana Tech-UM Agency Funds	-0.06	0.16	0.50	1.70	1.42	1.12	0.92	1.01	2.56	1.91	1.22	0.72	1.77	03/01/2003
MT BOI - Clark Fork Site	-2.10	-0.49	2.78	4.64	3.46	3.63	3.74	6.65	8.00	0.67	3.64	3.63	4.29	11/01/2008
MT BOI UOFM Other	-0.65	0.46	1.85	3.00	2.34	2.31	2.10	3.47	4.54	1.42	2.15	2.34	2.95	08/01/2002
MUS Group Insurance	-0.29	0.09	0.76	2.13	1.65	1.63	N/A	1.70	3.39	1.96	1.09	1.33	1.43	10/01/2011
MUS Workers Compensation	-0.58	0.02	1.16	2.66	2.01	N/A	N/A	2.55	4.43	1.62	1.80	N/A	2.01	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, 2021

	QTD/ CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	Since Incep.	Inception Date
Older Montanans Trust	-2.18	-0.50	2.93	4.98	3.68	3.96	4.01	7.19	8.62	0.49	3.87	3.86	4.75	08/01/2007
Permanent Coal Trust Excl Crp	-1.21	0.23	2.90	4.29	3.41	3.71	4.10	5.57	6.81	1.28	3.49	3.79	5.64	12/01/1993
PERS Defined Cont Disability	3.08	20.74	37.52	10.85	9.83	N/A	N/A	14.06	20.77	-4.88	14.57	3.42	8.81	09/01/2015
Potter Trust Fund	-2.09	-0.45	2.87	4.84	N/A	N/A	N/A	6.78	8.47	0.51	3.87	N/A	3.58	06/01/2016
Resource Indemnity Trust	-2.24	-0.51	3.04	5.06	3.74	4.07	4.40	7.23	8.88	0.44	4.01	4.02	6.03	12/01/1993
School Facilities Fund	-2.17	-0.49	2.92	4.51	N/A	N/A	N/A	6.97	7.88	-0.13	N/A	N/A	3.76	01/01/2018
Smelter Hill Up Restorative	-1.89	-0.45	2.30	3.65	2.63	2.43	2.27	5.62	5.64	1.57	1.85	1.79	2.38	11/01/2008
State Fund Insurance	-0.54	3.49	9.04	5.93	4.62	4.45	4.69	7.62	9.65	0.38	5.05	3.50	5.62	12/01/1993
Streamside Tailings Operable Unit	-1.88	-0.31	2.85	4.61	3.44	3.71	3.98	6.47	7.92	0.57	3.69	3.58	5.26	02/01/1999
Subsequent Injury Fund	0.04	0.19	0.38	1.55	1.32	1.00	0.78	0.73	2.28	1.98	1.11	0.61	2.96	12/01/1993
Tobacco Trust Fund	-2.14	-0.43	3.06	4.98	3.68	4.02	4.36	7.10	8.67	0.46	3.96	3.99	5.54	01/01/2001
Treasurers	0.04	0.16	0.27	1.51	1.29	1.01	0.79	0.63	2.28	1.97	1.07	0.68	2.80	12/01/1993
Treasure State Endowment	-2.22	-0.50	2.93	5.02	3.72	4.04	4.37	7.15	8.81	0.46	4.00	3.98	5.90	12/01/1993
Treasure State Reg. Water System	-2.22	-0.50	3.01	5.02	3.72	4.03	4.36	7.15	8.80	0.45	4.00	3.96	5.69	06/01/2000
Trust and Legacy Account	-2.23	-0.50	3.04	5.04	3.72	4.06	4.38	7.19	8.84	0.43	4.00	4.01	6.60	07/01/1991
UCFRB Assess/Litig Cost Rec	-2.14	-0.55	2.72	4.79	3.55	3.83	4.07	6.68	8.50	0.49	3.77	3.84	5.60	07/01/1999
UCFRB Restoration Fund	-2.15	-0.50	2.86	4.90	3.59	3.83	4.14	6.90	8.52	0.67	3.73	3.52	5.52	06/01/1999
Upper Blackfoot Response	-0.20	0.11	0.62	2.39	1.90	1.81	1.69	1.55	4.24	1.49	1.90	1.74	1.62	09/01/2010
Weed Control Trust	-2.24	-0.51	3.04	5.06	3.74	4.07	4.32	7.23	8.88	0.44	4.01	4.02	5.21	12/01/1993
Wildlife Habitat Trust	-2.04	-0.42	2.89	4.87	3.59	3.87	4.18	6.75	8.54	0.51	3.78	3.79	5.33	12/01/1993
Zortman/Landusky LT H2O	0.04	0.19	0.38	1.55	1.32	1.32	2.58	0.73	2.28	1.98	1.01	1.36	6.21	09/01/1999
Z/L Long Term H2O Trust Fund	0.04	0.19	0.38	1.55	1.33	1.41	2.47	0.73	2.28	1.98	1.08	1.39	4.09	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), DFA Intl Sm Co;I (DFISX), iShares:MSCI EAFE ETF (EFA), International Equity Pool STIF, iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX). 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 Value Weighted (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.

### 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.

### 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.
- Northern Trust MSCI US Equity Index (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were funded during Q4 2018.
- Voya Investment Management (SA) was liquidated in 07/2018.
- iShares:Russ 2000 ETF (IWM) was funded in 04/2018.



- Jacobs Levy 130/30 Large Cap (SA) was funded in 03/2018.
- Congress Mid Cap Growth (SA) was funded in 02/2018.
- Oaktree US High Yield (SA) and Shenkman High Yield Fixed Income (SA) were funded in 12/2017.
- Analytic Investors 130/30 (SA) was liquidated in 09/2017.
- 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.
- BlackRock Equity Index Fund A (CF) and BlackRock Mid Cap Equity Index A (CF) were liquidated in 05/2017.

**Manager Transition Comments (cont.)**

- DFA Emg Mkts Sm Cap;I (DEMSX) was funded in 02/2017.
- SPDR S&P 500 ETF (SPY) was liquidated in 01/2017.
- iShares:MSCI Em Mkts (EEM) was funded in 12/2016.
- 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.
- 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.
- 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.
- iShares S&P SmallCap 600 Index ETF (IJR) was liquidated in 01/2016.
- Effective 05/2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.
- Cohen & Steers Preferred Securities (SA) was funded in 10/2020.
- Payden & Rygel EMD (SA) was funded in 12/2020.

**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.

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# Investment Update

Board Meeting: June 1-2, 2021  
Information as of: March 31, 2021

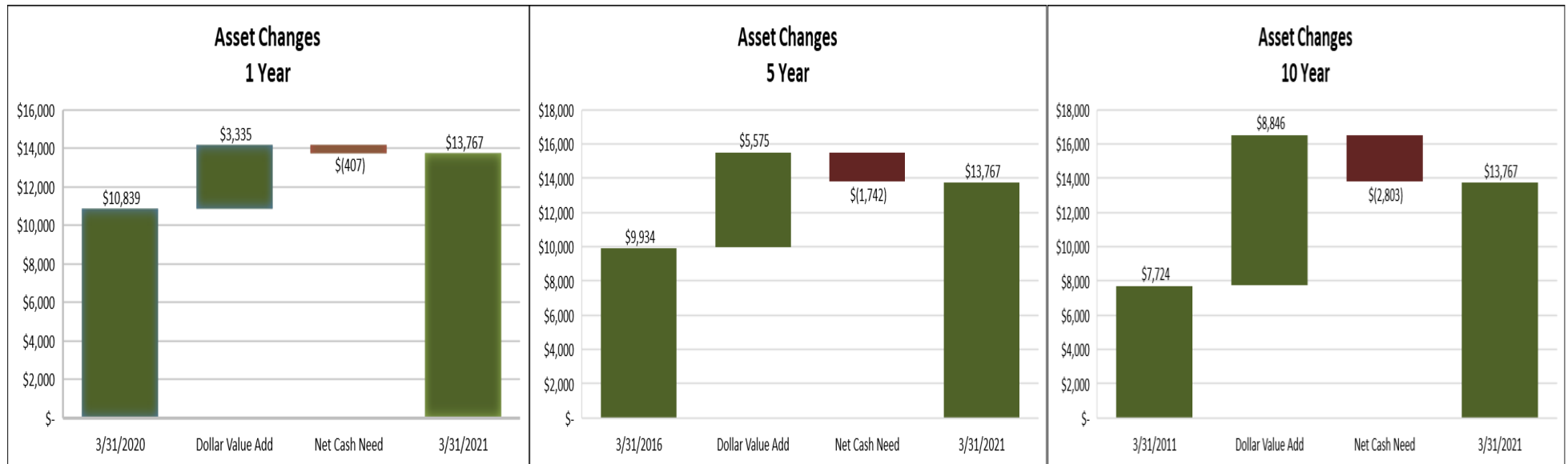
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# CIO Update

## Retirement Plans Net Performance



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

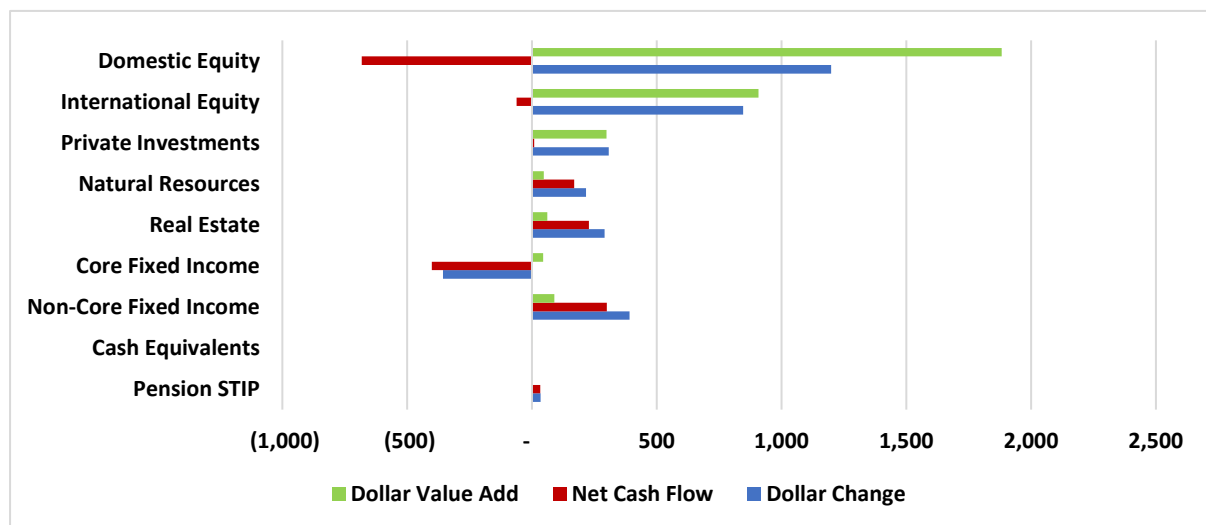
- Dollar Value Added – The total dollar return of the portfolio including income and capital gains.
- Net Cash Need - The total dollar amount distributed from portfolio assets to meet the deficit of contributions minus distributions.
  - A red bar indicates an aggregate net outflow by all plans even 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

	3/31/2020 (NAV)	3/31/2021 (NAV)	Dollar Change	Net Cash Flow	Dollar Value Add
<b>Domestic Equity</b>	3,126.7	4,326.1	1,199.4	(682.7)	1,882.1
<b>International Equity</b>	1,693.0	2,538.8	845.8	(62.1)	907.9
<b>Private Investments</b>	1,585.9	1,893.5	307.6	8.6	299.0
<b>Real Assets</b>	359.5	575.6	216.1	169.2	46.9
<b>Real Estate</b>	952.9	1,243.6	290.7	228.9	61.8
<b>Core Fixed Income</b>	2,407.5	2,051.6	(356.0)	(401.1)	45.2
<b>Non-Core Fixed Income</b>	404.5	795.0	390.5	300.1	90.3
<b>Cash Equivalents</b>	204.0	203.3	(0.7)	(1.4)	0.7
<b>Pension STIP</b>	105.3	139.5	34.2	33.5	0.6
<b>Grand Total</b>	<b>10,839.3</b>	<b>13,766.9</b>	<b>2,927.6</b>	<b>(406.9)</b>	<b>3,334.5</b>

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



# CIO Update

## Retirement Plans Net Performance

	3/31/2020 (NAV)	3/31/2021 (NAV)	Dollar Change	Net Cash Flows	Dollar Value Added
<b>Public Employees Retirement</b>	5,385.7	6,813.1	1,427.4	(224.3)	1,651.8
<b>Teachers Retirement</b>	3,813.6	4,814.7	1,001.1	(170.6)	1,171.8
<b>Firefighters Retirement</b>	423.3	559.5	136.2	3.6	132.7
<b>Police Officers Retirement</b>	400.4	522.2	121.8	(3.1)	124.9
<b>Sheriffs Retirement</b>	351.3	455.8	104.4	(4.6)	109.1
<b>Game Wardens Retirement</b>	193.9	255.8	61.8	1.3	60.5
<b>Highway Patrol Retirement</b>	139.1	175.5	36.4	(6.5)	42.8
<b>Judges Retirement</b>	97.0	125.4	28.4	(1.6)	30.0
<b>Vol Firefighters Retirement</b>	35.0	44.9	10.0	(1.0)	11.0
<b>Grand Total</b>	<b>10,839.3</b>	<b>13,766.9</b>	<b>2,927.6</b>	<b>(406.9)</b>	<b>3,334.5</b>

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



# CIO Update

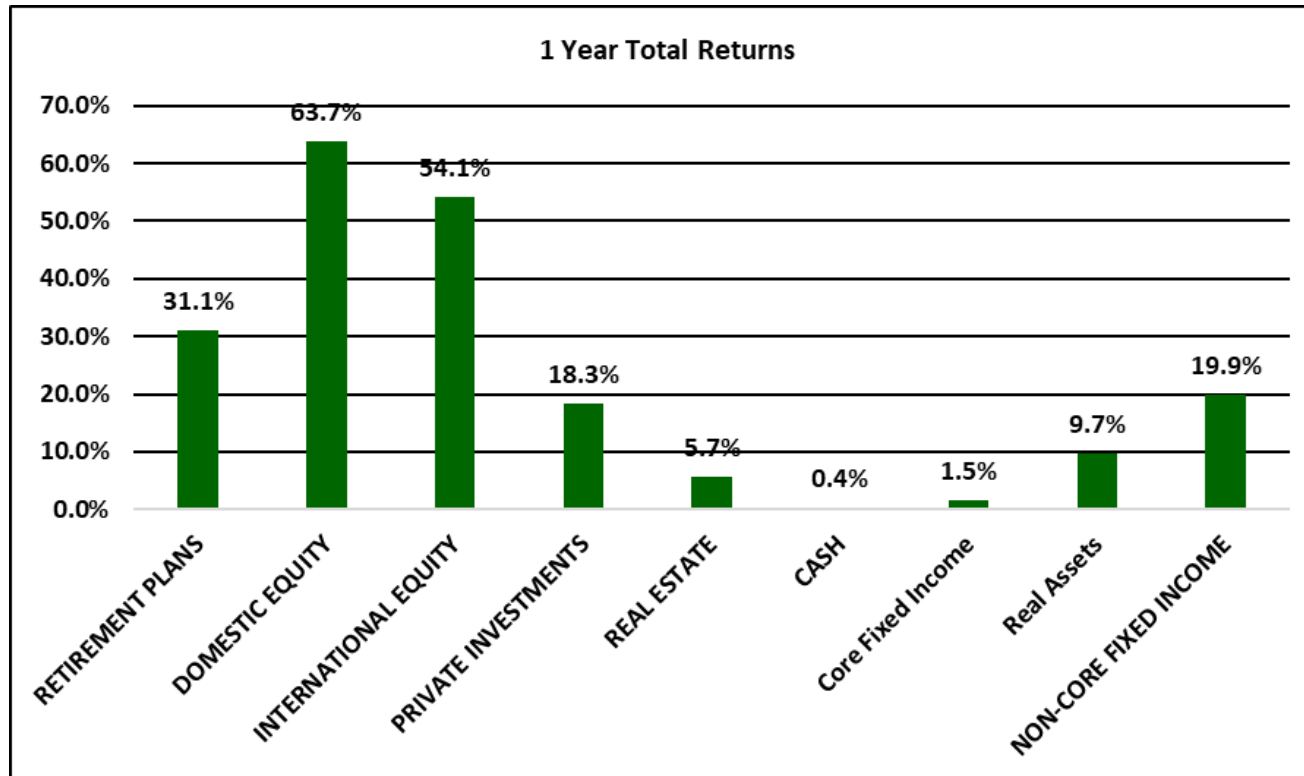
## Retirement Plans Net Performance

Name	1 Year	3 Year	5 Year	10 Year	20 Year	Since Inception
<b>PUBLIC EMPLOYEES RETIREMENT</b>	31.08%	9.75%	10.00%	8.84%	6.89%	7.98%
<b>TEACHERS RETIREMENT</b>	31.08%	9.75%	9.99%	8.84%	6.89%	7.99%
<b>FIREFIGHTERS RETIREMENT</b>	31.10%	9.77%	10.00%	8.84%	6.86%	7.84%
<b>POLICE OFFICERS RETIREMENT</b>	31.10%	9.77%	10.00%	8.84%	6.85%	7.85%
<b>SHERIFFS RETIREMENT</b>	31.09%	9.75%	10.00%	8.84%	6.88%	7.88%
<b>GAME WARDENS RETIREMENT</b>	31.07%	9.74%	10.00%	8.83%	6.85%	7.89%
<b>HIGHWAY PATROL RETIREMENT</b>	31.08%	9.76%	10.00%	8.85%	6.88%	7.87%
<b>JUDGES RETIREMENT</b>	31.11%	9.75%	10.00%	8.84%	6.89%	7.88%
<b>VOL FIREFIGHTERS RETIREMENT</b>	31.11%	9.76%	9.97%	8.83%	7.13%	7.69%

Inception 7/1/1994

# CIO Update

## Retirement Plans Asset Class Net Performance



# CIO Update

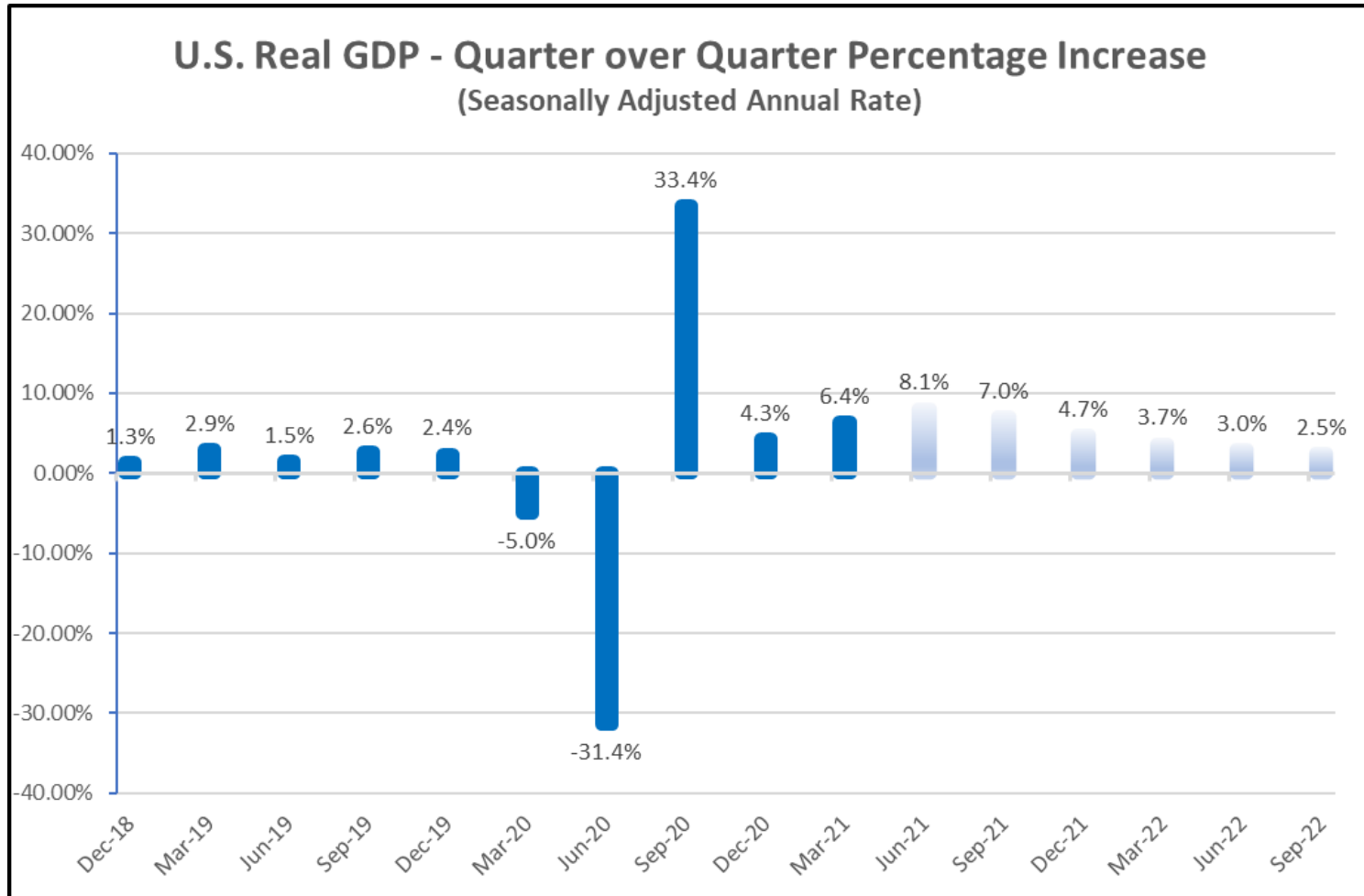
## Retirement Plans Asset Class Allocation

	3/31/2021 (NAV)	% of Total	Mid Point	Deviation from Mid Point	Board Approved Ranges
<b>Domestic Equity</b>	4,326.1	31.4%	30.0%	1.4%	24% - 36%
<b>International Equity</b>	2,538.8	18.4%	17.0%	1.4%	12% - 22%
<b>Private Investments</b>	1,893.5	13.8%	15.0%	-1.2%	11% - 19%
<b>Real Assets</b>	575.6	4.2%	5.0%	-0.8%	2% - 8%
<b>Real Estate</b>	1,243.6	9.0%	9.0%	0.0%	5% - 13%
<b>Core Fixed Income</b>	2,051.6	14.9%	15.0%	-0.1%	10% - 20%
<b>Non-Core Fixed Income</b>	795.0	5.8%	6.0%	-0.2%	4% - 8%
<b>Cash Equivalents + Pension STIP</b>	342.7	2.5%	3.0%	-0.5%	0% - 6%
	<b>13,766.9</b>	<b>100.0%</b>	<b>100.0%</b>		

# CIO Update

## Economic Environment

- Strong GDP growth exiting the COVID recession

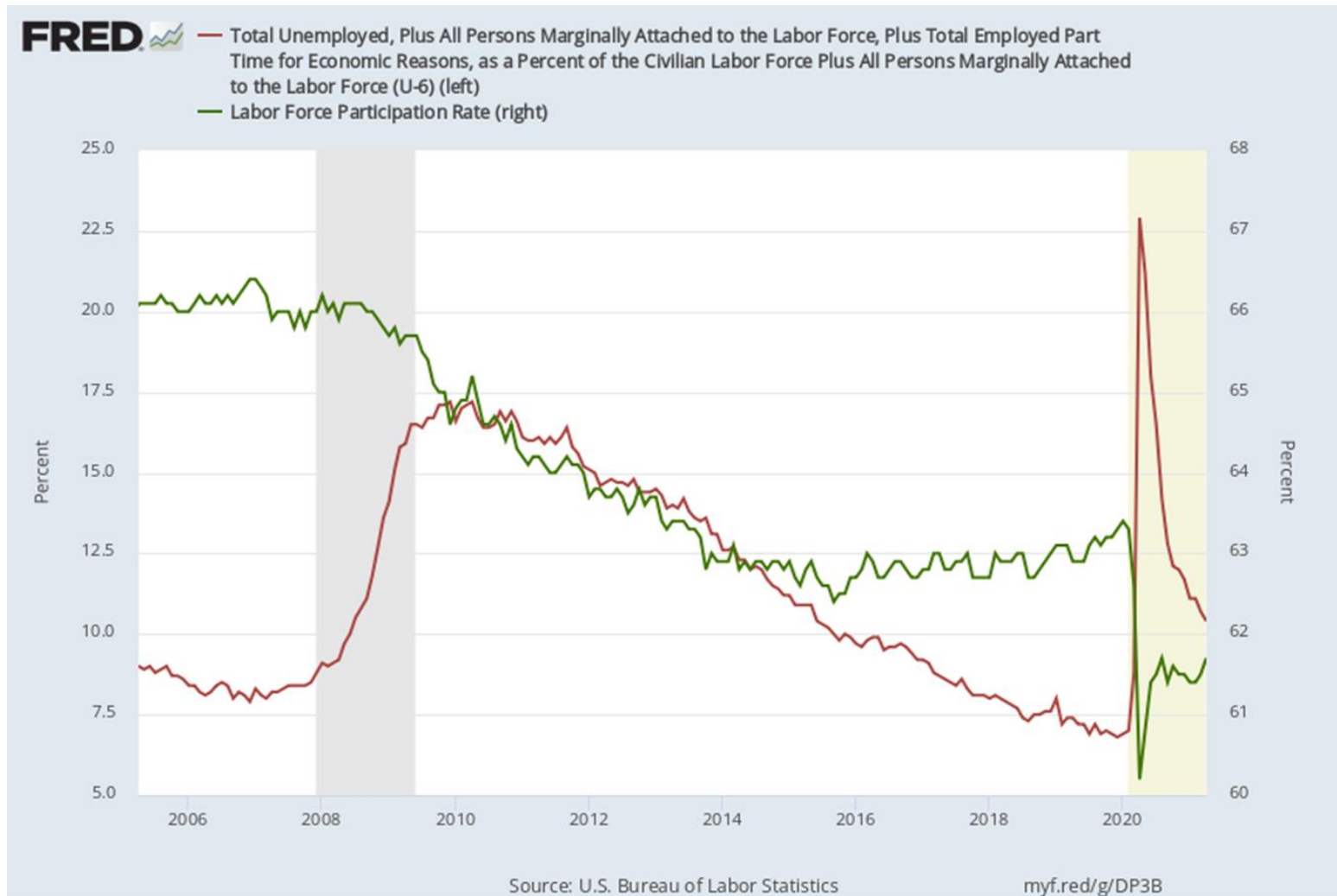


Source: Bloomberg, Median Survey of Economic Forecasts

# CIO Update

## Economic Environment

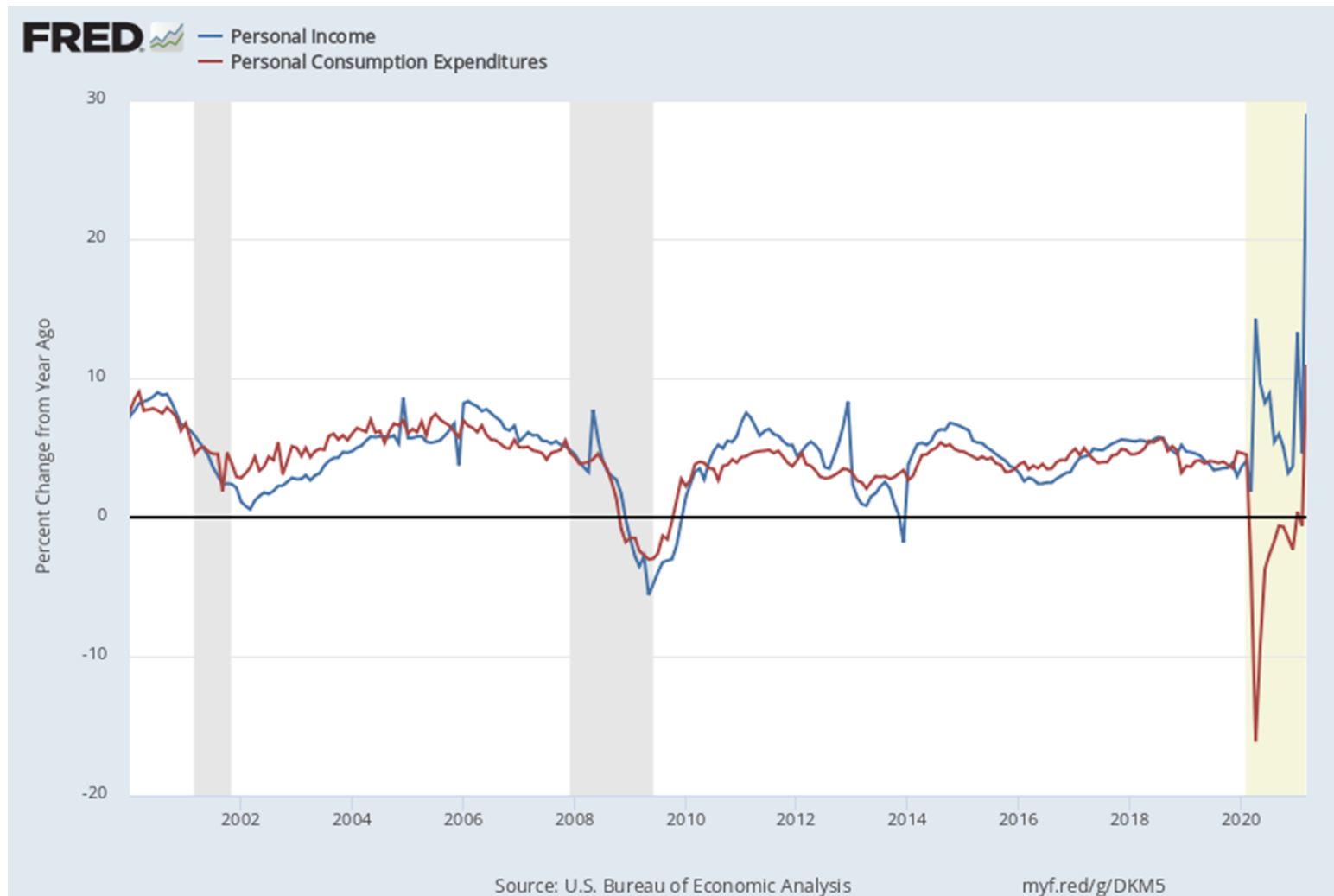
- U.S. unemployment and labor force participation improving but gap remains



# CIO Update

## Economic Environment

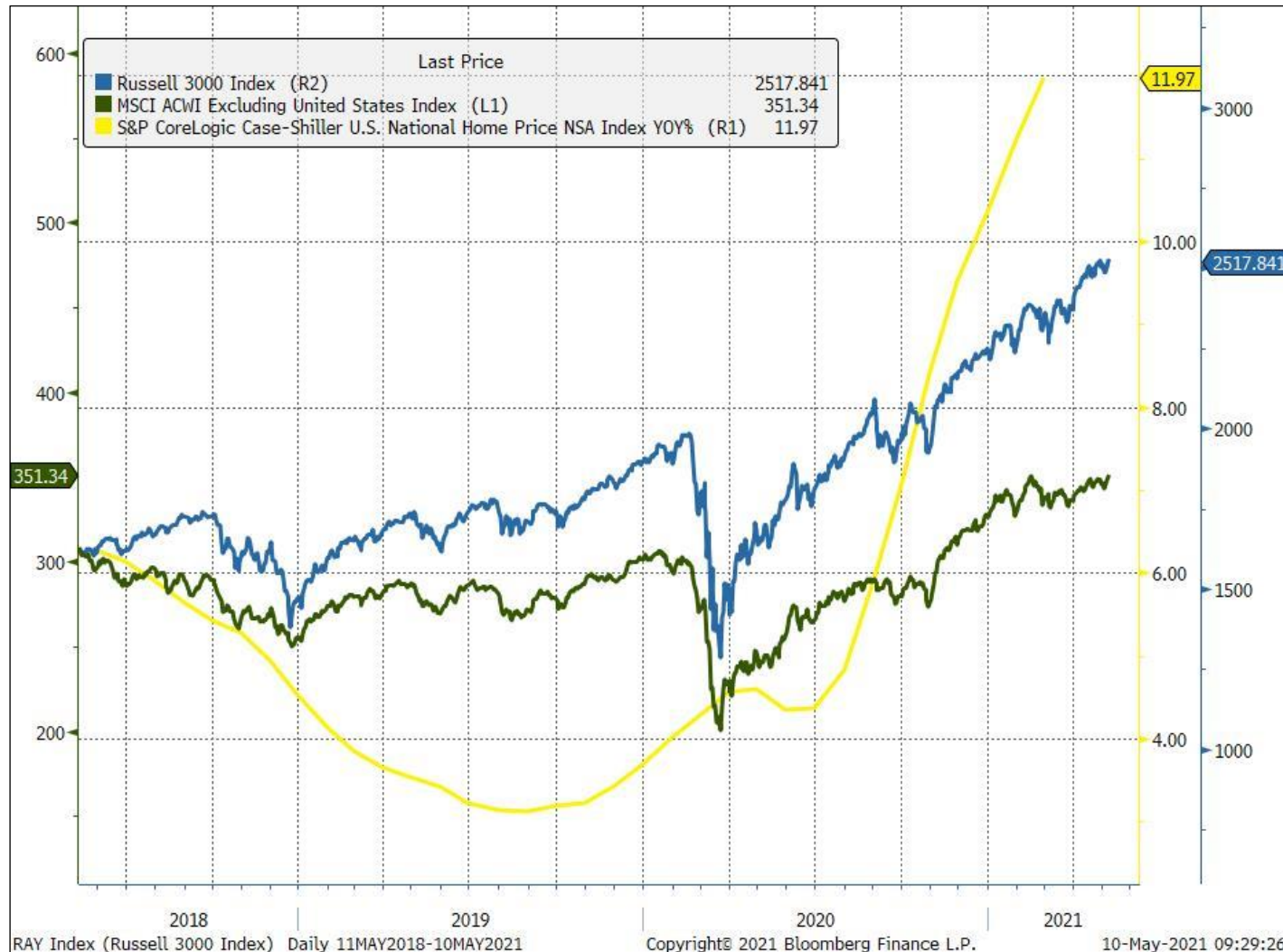
- Change in personal income typically tracks changes in consumption



# CIO Update

## Economic Environment

- All types of asset prices rising sharply driven by monetary and fiscal stimulus

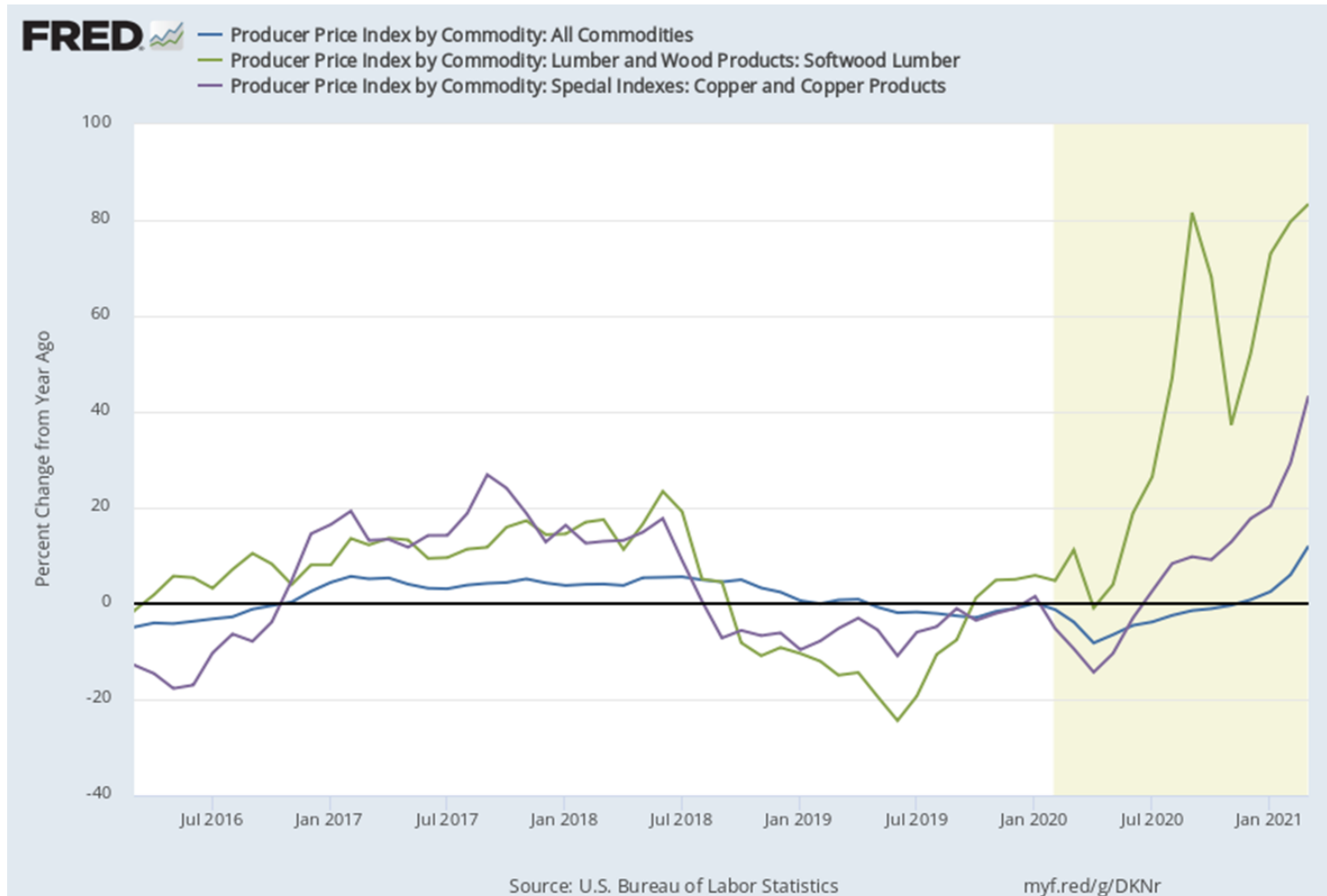


March 31, 2021

# CIO Update

## Economic Environment

- Commodity prices increasing as economy reopens





# CIO Update

- Investment challenges in the current environment
  - Global monetary and fiscal policy
  - Inflation expectations
  - High valuations/low yields in most areas
- Transitioning back to the office / Manager due diligence
- Continue to build our manager bench/relationships and evaluate new opportunities
- Continued focus on manager fees
- Process improvement
  - Electronic trading of passive equity portfolios
  - Manager contract updates

# Macro Attribution

## Key Takeaways – 1 Year

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

- Every benchmark added positive contributions to the pension policy-neutral 40.1% return.
- The Domestic Equities asset class benchmark, the MSCI USA IML, 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 Cash while being slightly underweight or at the midpoint weight for the remaining asset classes.
- About \$338M of equity asset classes were sold and \$68.9M of fixed income/cash asset classes were sold during the year to fund the pension net cash need of \$-406.9M
- In aggregate, the overweighting/underweighting of the asset classes relative to their benchmarks increased the pension portfolio's return by 28bps. Most of the active weights were caused by market movements.

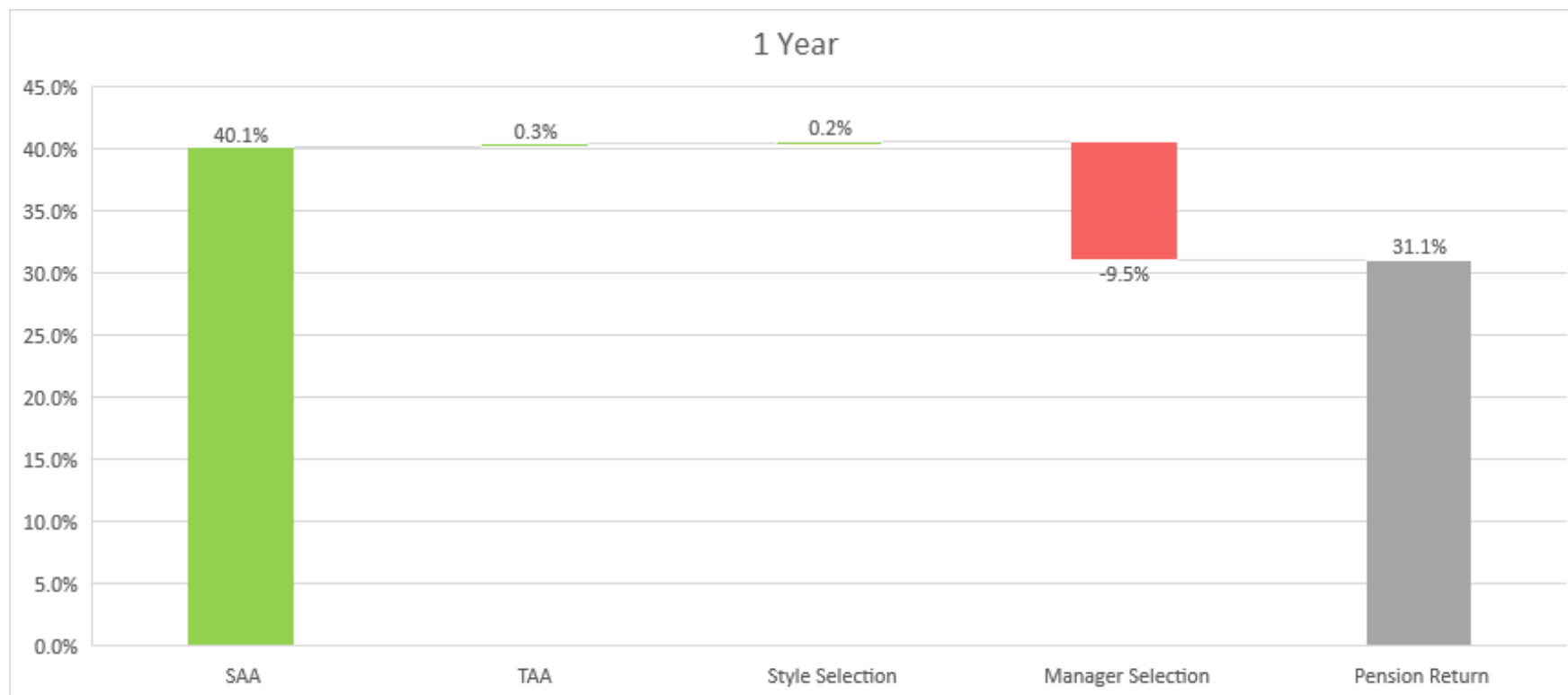
### **Style Selection** - *Did the portfolio benchmarks add additional return over their asset class benchmarks?*

- Exposure to Small Cap and Small Cap Value benchmarks were the reasons for Domestic style outperformance of 15 bps.
- Positive contributions from Small Cap and Emerging Market indexes were offset by negative contributions from Large Cap.
- As of 12/31/20 the Real Assets benchmark consists of 33% ACWI Commodity Producers Index, 33% ACWI Infrastructure, 33% BBG BARC Global Inflation Linked US TIPS whereas the current exposure of Real Assets portfolios is about 55% to ACWI Commodity Producers Index. The strong outperformance of the Commodity Producers Index relative to Infrastructure and TIPS was the main contributor to the style outperformance of about 22 bps.

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

- In Domestic Equity, the 130/30 managers were the primary contributors to manager selection outperformance. Their positive contributions were dampened by a small cap value manager which led to a net 13 bps in manager selection outperformance. The remaining managers did not materially contribute to manager selection effects.
- In International Equity, there was a notable well performing growth manager and value manager with the remaining managers having returns similar to their benchmarks. In total, there was about 28 bps of manager selection outperformance.
- Our external Core Fixed Income manager was the primary contributor to CFI manager selection outperformance of 8 bps.
- Our three High Yield managers were the main contributors to the Non-Core Fixed Income manager selection underperformance of 10 bps.
- Private Investments was the primary contributor to manager selection underperformance in our non-publicly traded investments. The publicly traded benchmarks for these asset classes are an imperfect proxy for actual holdings. In addition, the pricing of private assets lags the publicly traded benchmarks. Thus, short term performance differentials may not reflect the actual value of assets at quarter end.

# 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

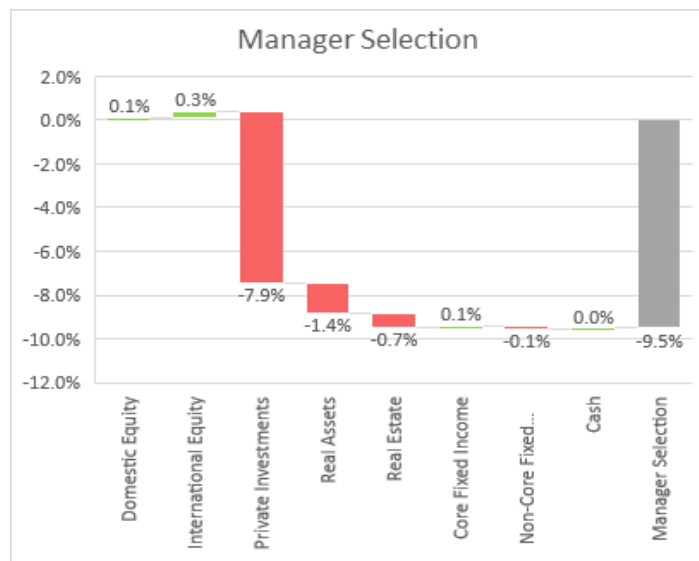
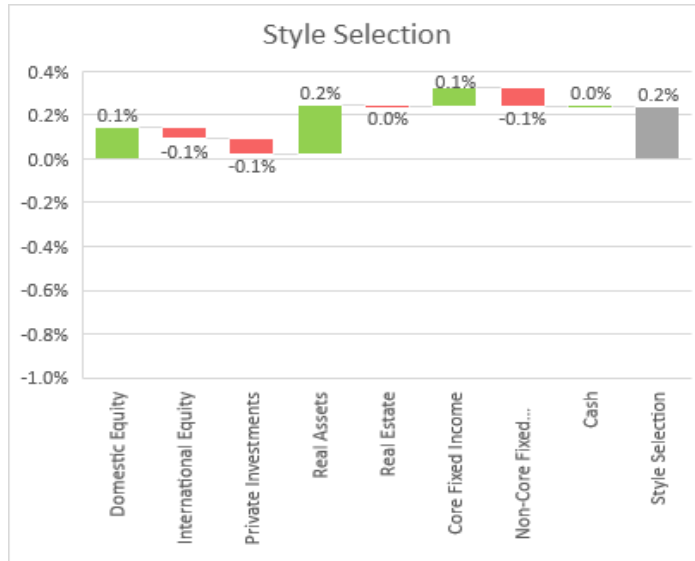
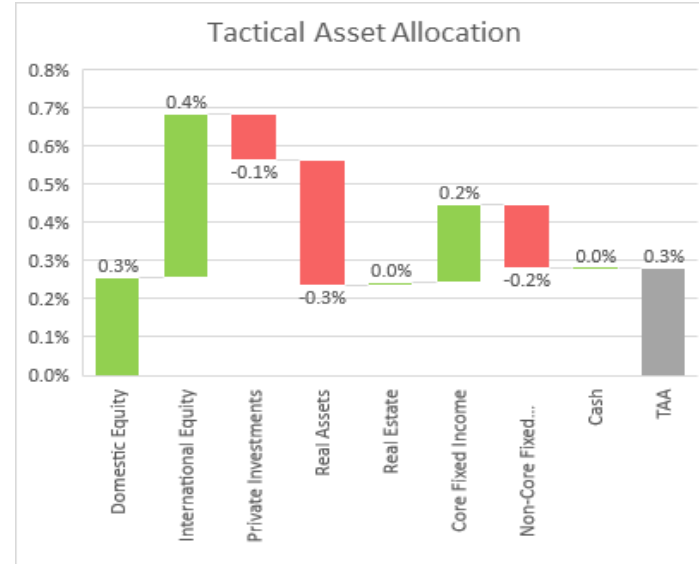
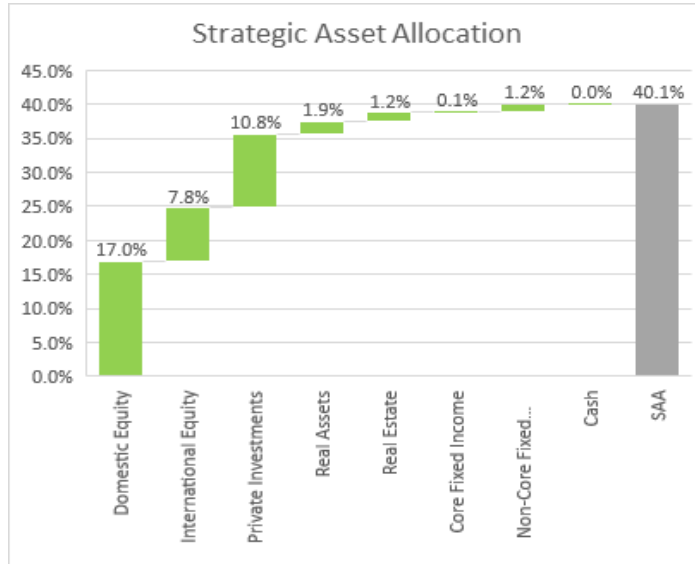
Tactical Asset Allocation (TAA) - The *additional* return earned by investing in the asset class benchmarks at our actual rather than midpoint weights.

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.

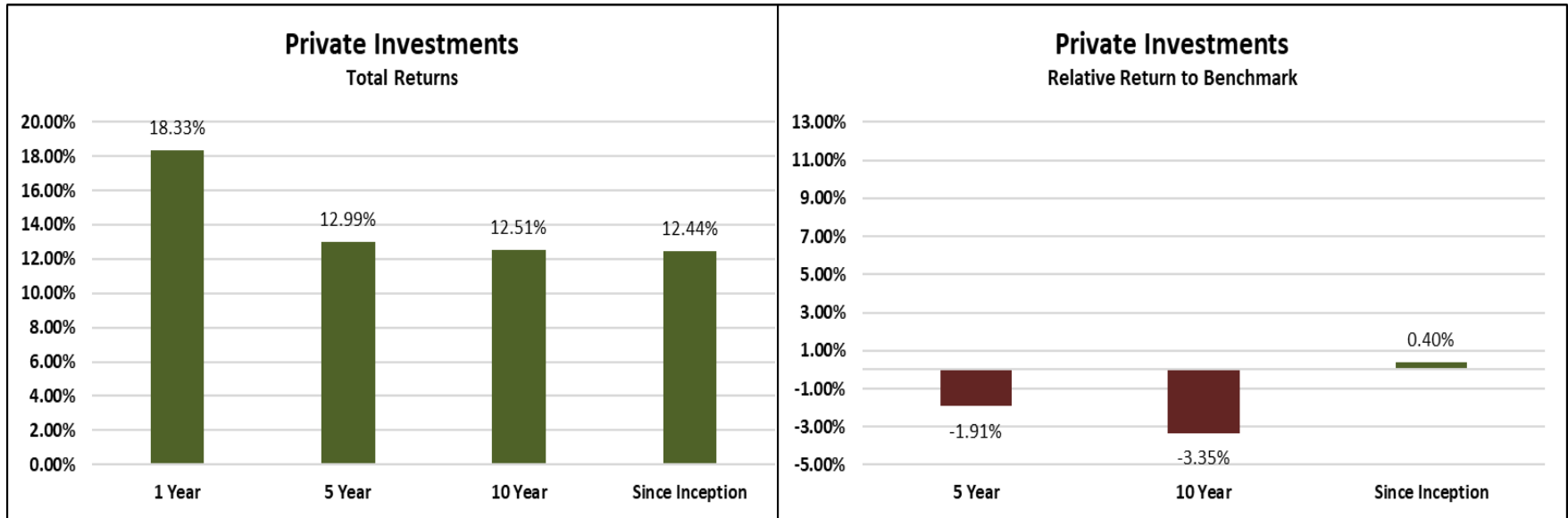
# Macro Attribution



# Private Investments Environment

- Private equity deal flow continues to rebound. 1,763 private equity-backed buyout deals were completed in Q1 2021 with an aggregate deal value of \$200 billion, representing a 20% increase in volume from a rolling 20 quarter average.
- Valuations for buyouts in the first quarter of 2021 seemed to cool off, coming in at a purchase price multiple of 11.1x EV/EBITDA compared to 13.2x EV/EBITDA for 2020. For comparison, 10-year average is 11.7x EV/EBITDA.
- Leverage or debt usage for buyouts came in at 6.0x EBITDA, slightly compressed compared to the rolling 20 quarter average of 6.2x.
- The pace of fundraising in 2020 was tepid with the restrictions in travel. As expected, US private equity fundraising rebounded in the first quarter of 2021. While the headline fundraising numbers were strong, much of the capital raised was from mega-buyout firms.
- Key takeaways – Private equity activity continues to further bifurcate into the haves and the have nots. 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

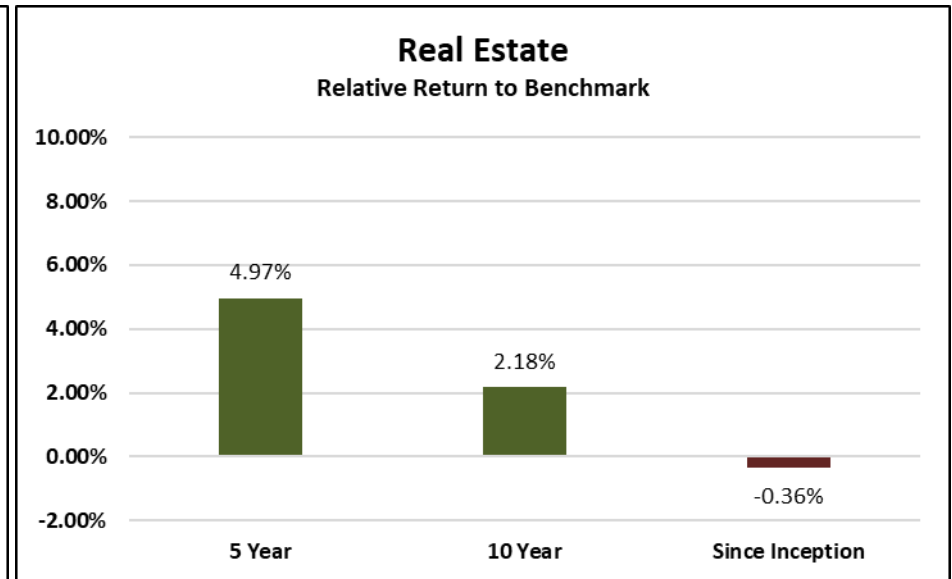
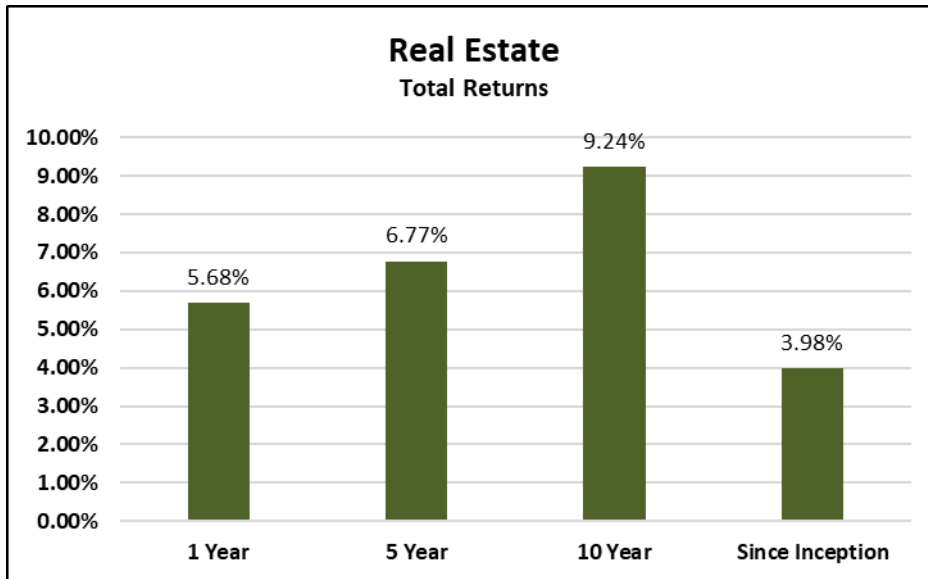
- Total Market Value of \$1.89 billion as of 3/31/21
- North American-centric at ~75%, ~14% non-US developed, and ~11% emerging markets
- Direct/primary fund exposure focus at ~81% vs. Fund-of-Funds at ~19%
- Primarily focused on existing buy-out and venture capital relationships
- Selectively increasing allocation to credit strategies and sector specialists
- Net Cash Flow Profile
  - \$21.36 million for quarter ending 3/31/21
- Two new commitments
  - EQT Infrastructure V - \$50 million (Real Assets Asset Class)
  - CapitalSpring Investment Partners VI - \$50 million

# Real Estate Environment

- Mixed occupancy and rent trends seen across markets with considerable variation across property types, geographies and quality
- Transaction volumes rebounded in 4Q20 after having plunged during the early months of the pandemic, 1Q21 volume still down 30% relative to 1Q20
- Though lending standards have tightened over the last year, debt remains affordable and accommodative for most sectors
- Commercial property prices have been surprisingly resilient, considering the declines in demand and rents in 2020
- REITs have delivered strong gains YTD 2021
- CMBS loan delinquencies continued their steady drift lower through 1Q21
- Fundraising through April 2021 is down slightly relative to the same period in 2020
- Dry powder increased and remains elevated at approx. \$372B through April 2021
- Rent collections across MBOI portfolio remain strong
- Summary points – Fundamentals vary, transactions rebounding, debt markets remain cautious, values resilient, REITs fighting back, delinquencies dropping, fundraising is strong, 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

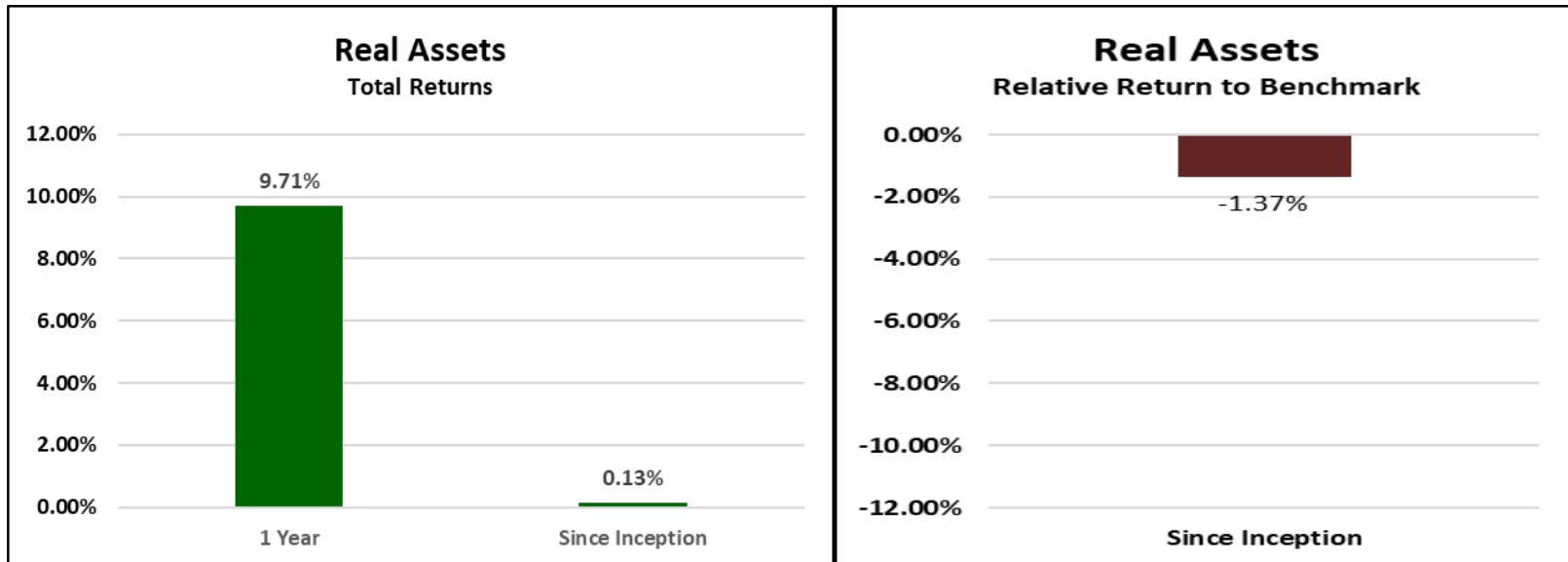
## Characteristics and Activity

- Total Net Asset Value of approx. \$1.24B as of 3/31/21
- US-centric, broadly diversified across property types, markets, and geographies
- Continued focus on property type specific operators
- Looking to establish separate accounts for longer duration holds, cash flow
- Focus on existing, high conviction managers, reducing core equity exposure, may continue to opportunistically add to existing REIT and high yield CMBS exposure
- Cash Flow Profile
  - Negative cash flow of approx. \$27.5M for quarter ending 3/31/21
- New investment commitments/additions
  - New \$80M commitment to Bell Core Fund I, LP
  - Additional \$30M investment in Fidelity Real Estate High Income fund
  - Additional \$25M investment in publicly traded REITs
- Total Leverage – 48.9% as of 12/31/20
  - Debt – 27.4%
  - Core – 25.9%
  - Core-Plus/Non-Core – 59.44%

# Real Assets Environment

- Cautious production increases by OPEC+ and a business cycle upturn have encouraged bullish sentiment about downward pressure on oil inventories and upward pressure on prices in 2H21
- US production stable around 11M barrels per day through April 2021
- Operating rig counts continue their upward trajectory with sustained higher prices
- MLP prices up with refinery throughout rebounding, continue to be a strong current yield play
- Aggregates prove resilient, volumes decreased only 1-3%, prices up 3-4% in 2020
- Demand and prices for sawlogs up across the US South and PNW relative to 4Q20
- Lumber and panel prices continue their record setting highs
- March housing starts were 1.7M, 22.4% above February and 37.0% above March 2020
- Real Assets dry powder stood at approx. \$299B through April 2021
- Summary points – Positive outlook for oil, MLPs rebounding, aggregates remain resilient, log demand and prices up, housing market robust, dry powder remains healthy

# 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. \$576M as of 3/31/21
  - Commodities-Related Portfolio – approx. \$320M as of 3/31/21
  - Infrastructure-Related Portfolio – approx. \$125M as of 3/31/21
  - Inflation-linked Bonds (TIPs) Portfolio – approx. \$131M as of 3/31/21
- Portfolios are primarily North American-centric, international exposure continues to grow with recent infrastructure commitments
- Exploring other types of strategies to further diversify and gain new exposures
- Cash Flow Profile
  - Negative cash flow of approx. \$5M for quarter ending 3/31/21
- New investment commitments/additions
  - New \$50M commitment to EQT Infrastructure V, LP
  - New €75M commitment to Copenhagen Infrastructure IV, SCSp
- Timber Portfolio Total Leverage – 6.1% as of 12/31/20

# Core Fixed Income Environment

- The U.S. Treasury curve steepened over the last year. The yield on the 10-year Treasury increased 107bps year over year. There was little change in yields for maturities less than 4 years.
- The Federal Reserve held short-term rates steady with the Effective Rate in a tight range around 5 bps.
- Headline inflation posted a significant increase to 2.6% year over year, at the end of the quarter with significant variability throughout the year. Core inflation was 1.6% year over year.
- Money market yields continue to be very low. Commercial paper snapped in after the market volatility in April and remains near record lows.
- Spreads on corporate bonds narrowed dramatically throughout the year, finishing 191 bps tighter to a near record low of 87 bps.

# Core Fixed Income Environment

- Spreads on mortgage-backed securities (MBS) ended the year at 11 bps again near record lows.
- The Barclays Aggregate returned .71% on the year, driven by risk premiums, partially offset by higher interest rates.
- Bond market liquidity improved dramatically after April with very strong Corporate new issuance. Bid/ask spreads improved significantly as confidence returned to the bond market.

# 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

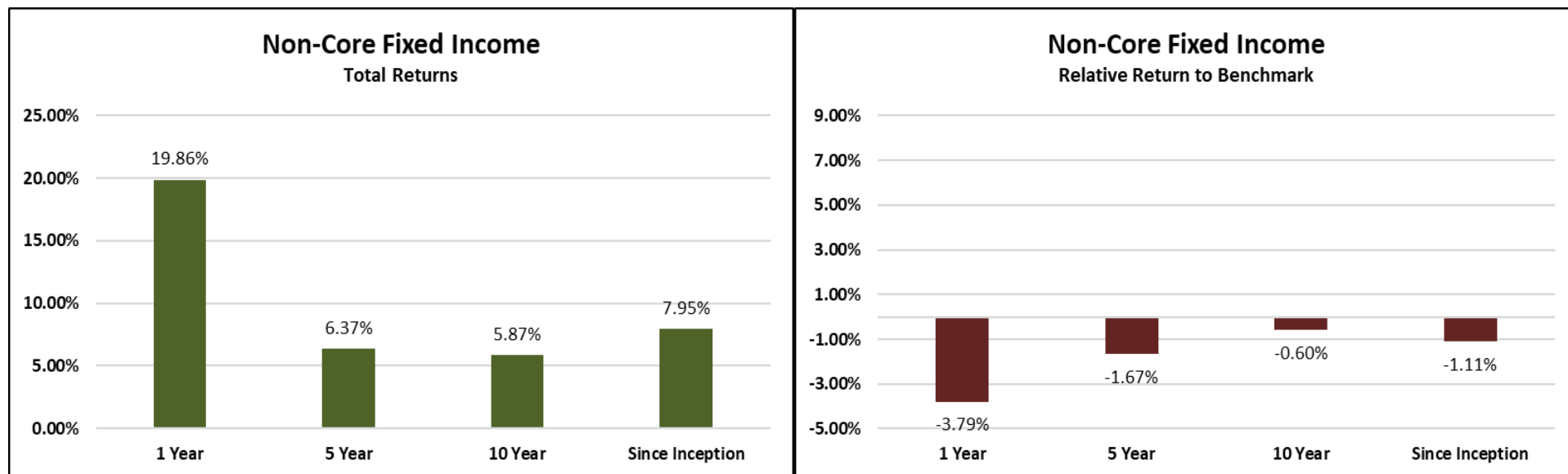
## Performance, Characteristics, and Activity

- Positive total return of 1.48% on the year, led by Reams at 8.45% . The internal portfolio returned .76%.
- Reams outperformed on an overweight to credit. The internal portfolio outperformed slightly on short duration offset by an underweight to credit.
- Total market value of approx. \$2.05 billion at quarter end.
- Duration was approx. 93% of the benchmark at year end. Significantly underweight the long end of the curve.
- Portfolio was underweight Treasuries/Agencies and overweight spread product at the end of the year.

# Non-Core Fixed Income Environment

- High yield spreads compressed further in the first quarter, dropping below +300 bps over Treasuries and retreating to below pre-COVID levels.
- High yield investors continue to show an appetite for risk, with lower-quality credits outperforming high-quality credits in the period.
- The portion of the high yield market trading at distressed levels (1000+ bps over Treasuries) dropped to just over 2% after having reached 32% in April 2020.
- Default rate expectations continue to decline and are currently around 2% for 2021, as access to capital markets has allowed companies to extend maturities, and a rebounding economy and commodity prices have provided a boost to companies' prospects.
- Fundamentals remain strong in the financials-heavy preferred securities asset class, with bank capital levels at historically high levels.
- Although rising Treasury yields and a stronger US Dollar have put pressure on emerging market debt recently, a stronger global economy is expected to provide solid footing for the asset class in 2021.

# 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

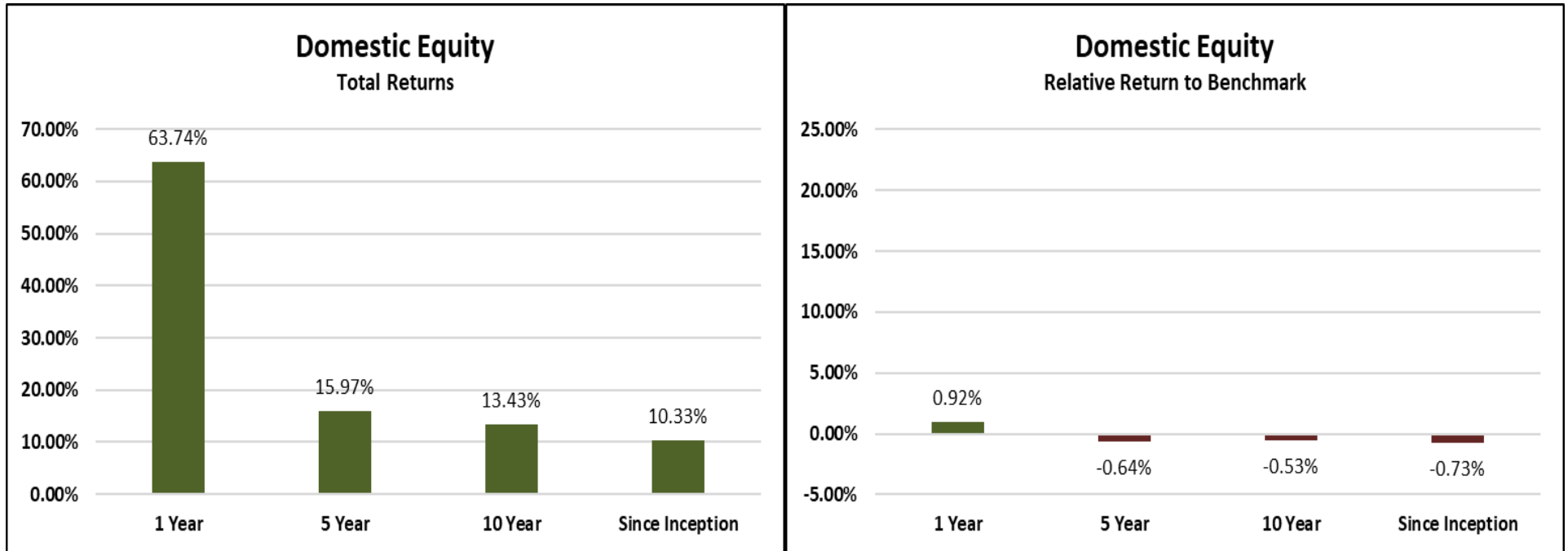
## Performance, Characteristics, and Activity

- The high yield benchmark posted a +0.86% return in the quarter, but the conservative bias of the high yield portfolios, combined with negative absolute returns in emerging market debt and preferred securities, led to the Non-Core Fixed Income asset class trailing the asset class benchmark in the period.
- Although the preferred securities portfolio outperformed its benchmark in the quarter and the emerging market debt portfolio lagged only slightly, the negative absolute returns of both asset classes weighed on the Non-Core Fixed Income returns vs. the asset class benchmark.
- The asset class underperformed by -1.30% and -3.79% for the quarter and for the trailing twelve months, respectively.
- \$75 million was added to the asset class in the quarter: \$50 million to emerging market debt and \$25 million to preferred securities.

# Domestic Equity Environment

- US equities continued their rally which basically began on vaccine approvals and distribution in late 2020. Large cap stocks generated positive returns of 6.2% (S&P 500), while small cap stocks returned 12.7% (Russell 2000).
- The performance of stocks within the US market continued to be a broad advance with value stocks and cyclical stocks leading. Investors continued to favor those stocks for a strong economic recovery in 2021, attracted by the cheaper valuations and perceived stronger upside.
- At the end of March, the S&P 500 Index was valued at 22.0x generous next 12-month earnings estimates.
- Confidence in earnings estimates for 2021 and 2022 is improving, but still somewhat uncertain. It is important that earnings growth improve given the lofty forward valuation of the market and interest rates gradually rising.

# Domestic Equity Net Performance



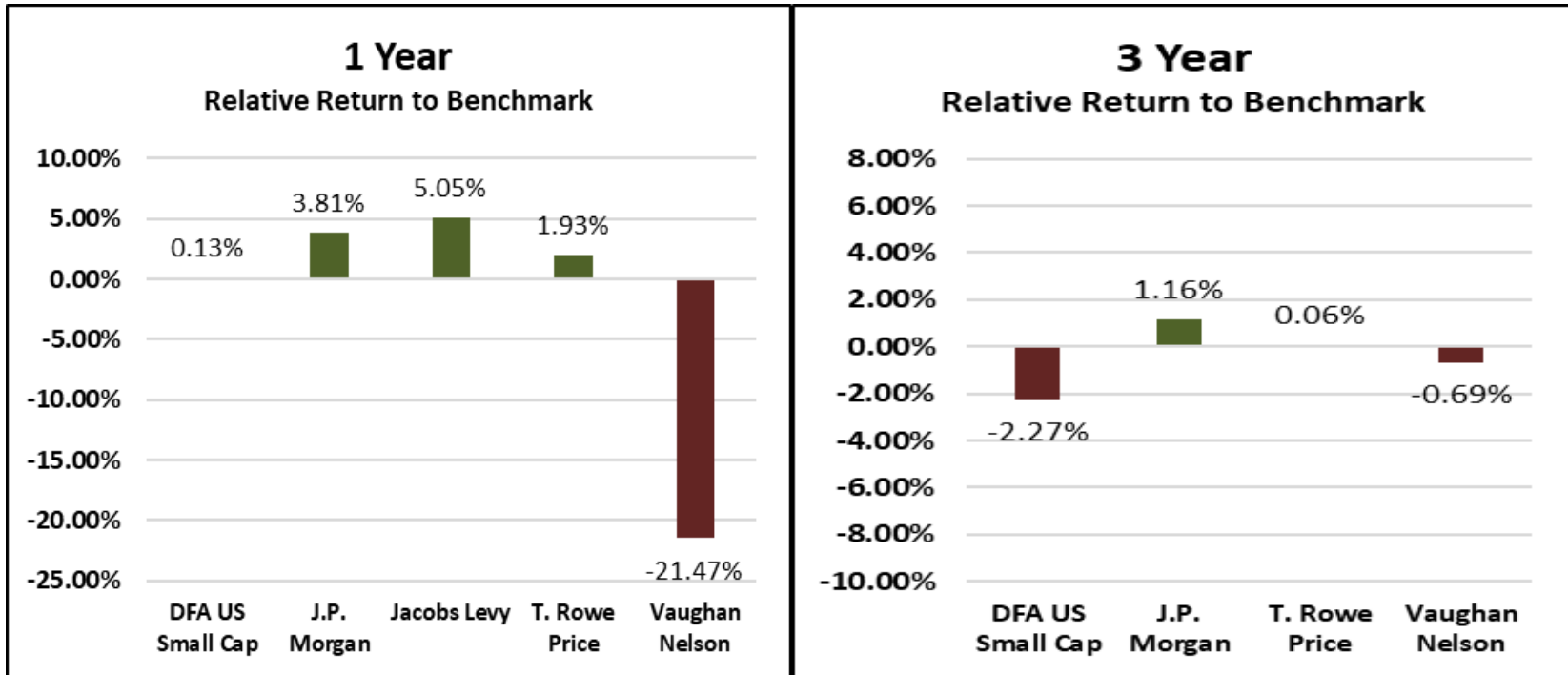
## Domestic Equity - Pension Asset Class (PAC) Custom Blend:

- 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

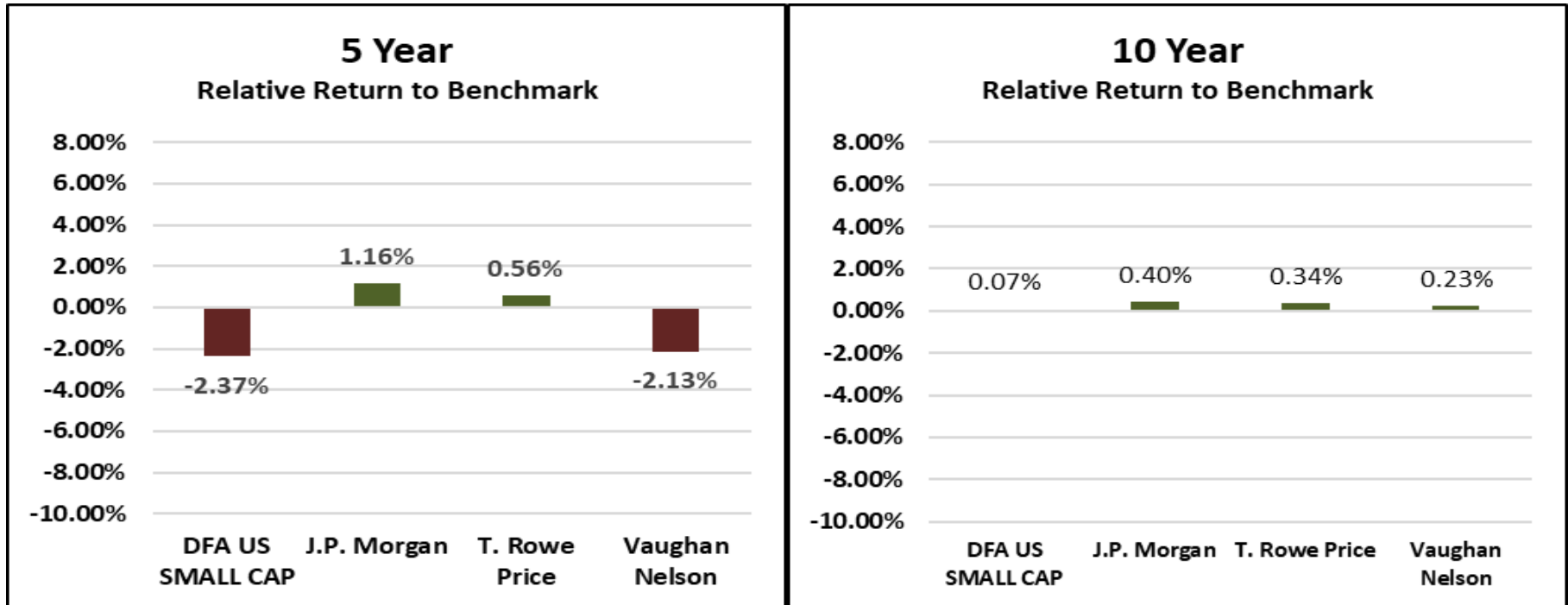
- The domestic equities asset class outperformed its benchmark during the quarter by 117 basis points and outperformed for the last twelve months by 92 basis points. This was continued evidence of a broadening market. Value stocks outperformed growth stocks.
- Attribution for the quarter showed a benefit from the small cap overweight, value exposure, and from manager selection, particularly from the Jacobs Levy and DFA portfolios.
- For the last twelve months, there was a benefit from the small cap overweight, value exposure and from manager selection, particularly the Jacobs Levy and DFA portfolios.
- The asset class has outperformed its benchmark for the 1-year period and has lagged slightly over the 5 year and 10-year periods ended March 31.

# Domestic Equity – Active Managers Net Performance





# Domestic Equity – Active Managers Net Performance



# Domestic Equity

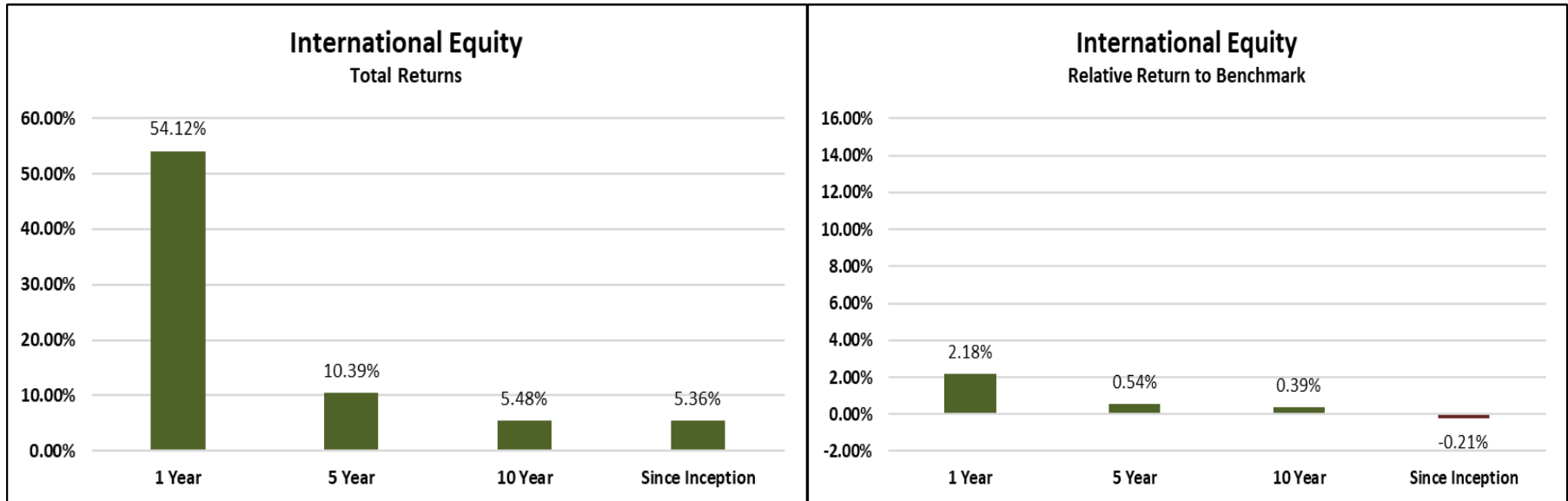
## Characteristics and Activity

- Index funds account for the majority of the allocation to large cap stocks.
- Small cap stocks are slightly overweight to the benchmark weight at 13.6%.
- Cash at the asset class level is minimal per policy.
- There were no changes to the manager lineup during the quarter.
- There were \$295 million in outflows for CAPP asset allocation purposes - \$70 million from the BlackRock portfolio, \$100 million from the Northern Trust portfolio, \$50 million from the Jacobs Levy portfolio, and \$75 million from sales of the S&P 500 ETF (SPY).
- Staff invested an additional \$40 million into the T Rowe portfolio in January, using the BlackRock portfolio as a source of funds.

# International Equity Environment

- International stocks turned in another solid quarter. Developed market stocks returned 4.0% (MSCI World ex-US) and emerging market stocks returned 2.3% (MSCI EM). Small caps outperformed large caps within developed markets by returning 4.9% (MSCI World ex-US SC).
- The broadening of markets continued with value stocks and cyclical stocks leading, as investors continued to favor those stocks as part of the reopening trade.
- The US dollar rose by over 3% in the quarter as a stronger economy and higher interest rates strengthened its value compared to the major world currencies. This reversed the trend of a weak dollar that was the result of monetary and fiscal stimulus experienced in calendar year 2020.
- At quarter end, the MSCI World ex-US Index (developed markets) was valued at 16.5x estimated next 12-month earnings, while the MSCI Emerging Markets Index was valued at 13.9x estimated next 12-month earnings. Yet as with the US valuations based upon estimates, the level of confidence in the accuracy of these levels is relatively low.

# International Equity Net Performance



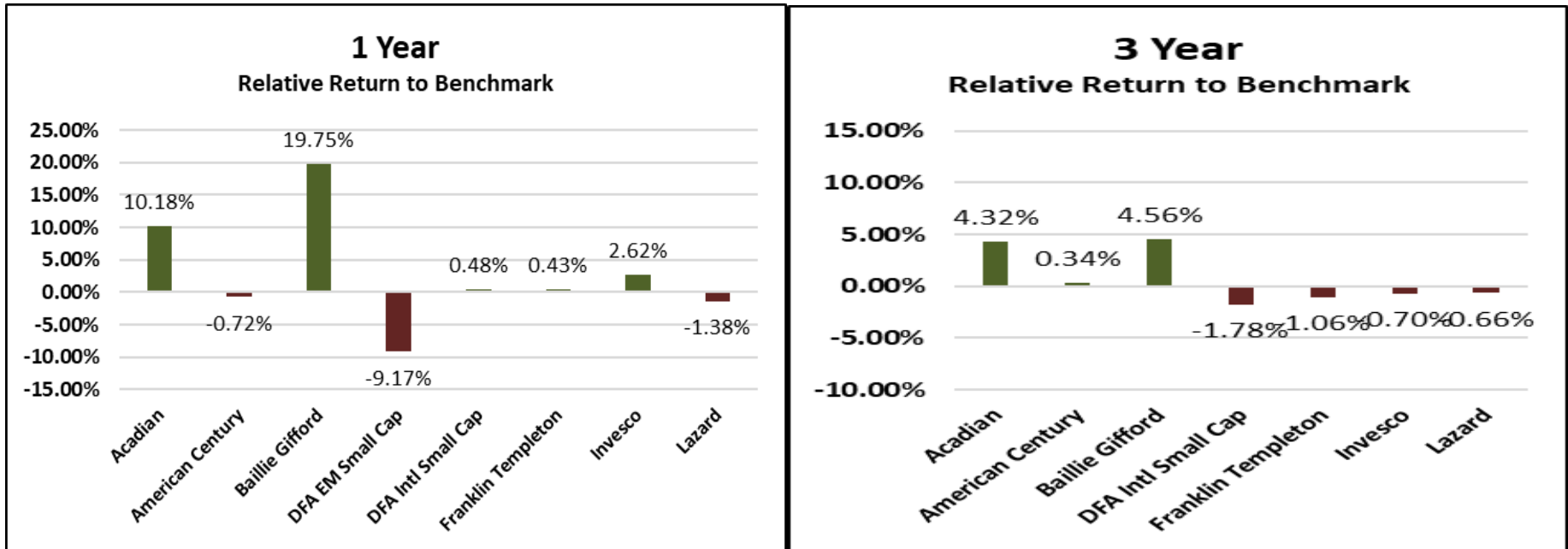
## International Equity – Pension Asset Class (PAC) Custom Blend:

- 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

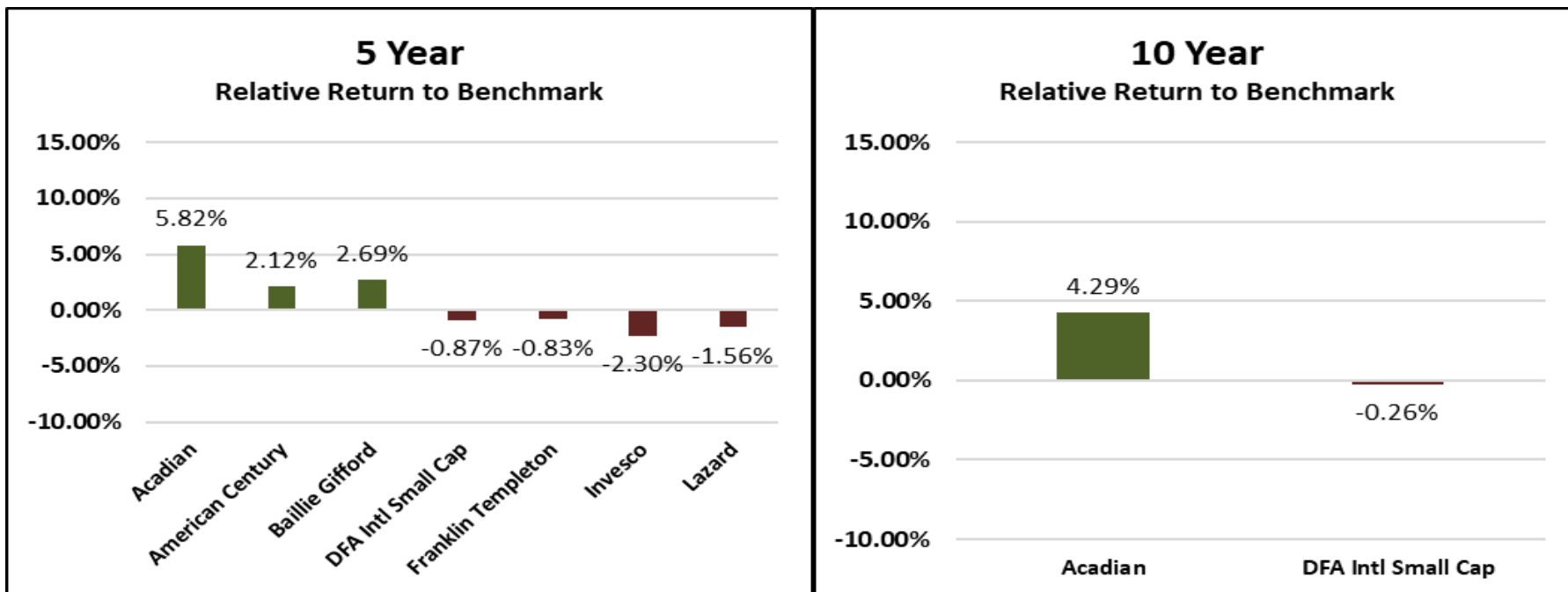
# International Equity Performance

- The international equities asset class underperformed its benchmark during the quarter by -18 basis points but outperformed for the last twelve months by +218 basis points.
- For the quarter there was a benefit from manager selection, particularly from the Acadian and Invesco portfolios. The slight underweight in small caps and a slight growth tilt were detractors.
- For the last twelve months, there was a benefit from manager selection, particularly from the Baillie Gifford and Acadian portfolios. The slight underweight in small caps and a slight growth tilt were detractors.
- The asset class has outperformed its benchmark for the 1 year, 5 year, and 10-year periods ended March 31.

# International Equity – Active Managers Net Performance



# International Equity – Active Managers Net Performance



# International Equity Characteristics and Activity

- The large cap allocation retains a significant weight to index funds.
- Small capitalization stocks are slightly underweight at 13.2%.
- There is a slight underweight to emerging markets of -0.8%.
- Cash at the asset class level is minimal per policy.
- There were no changes to the manager lineup during the quarter.
- There were \$25 million in outflows for CAPP asset allocation purposes, sourced from the BlackRock large cap portfolio.

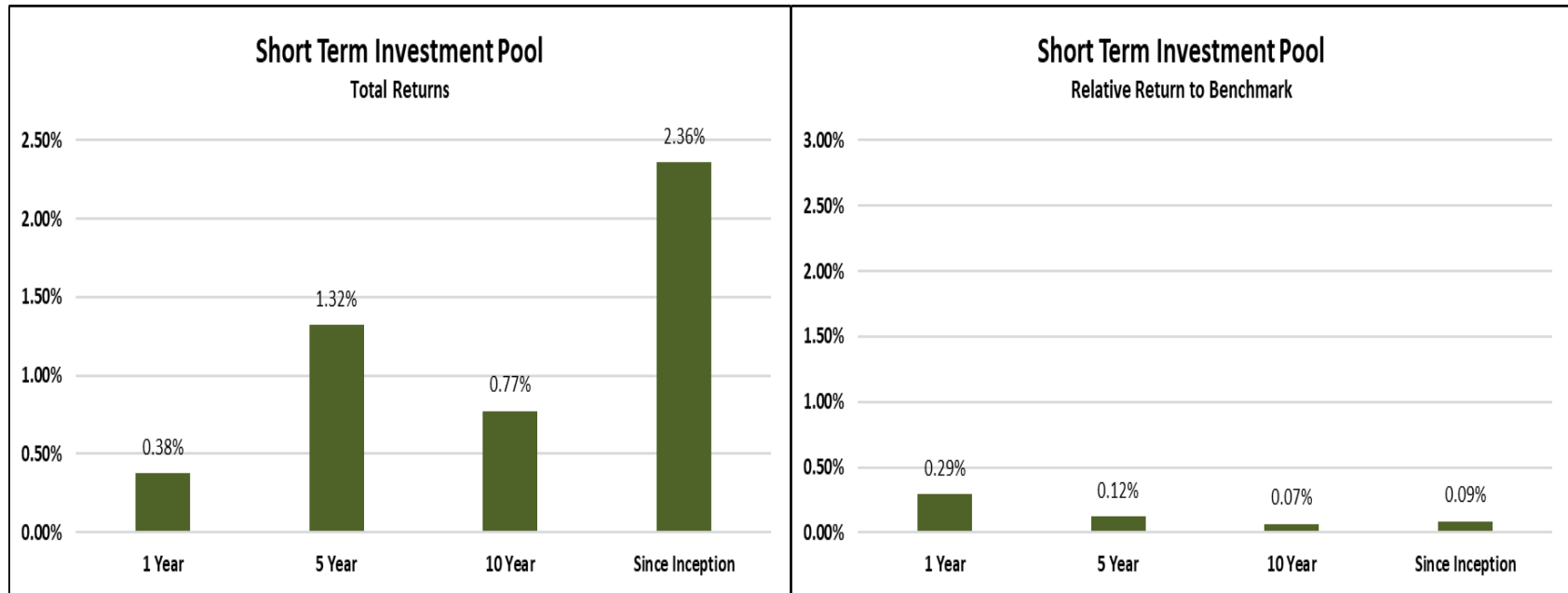


# Short Term Investment Pool

## Performance, Characteristics, and Activity

- The yield on STIP was 0.12% at the end of March.
- Outperformed the index by 29 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 over 30% of the Pool on 03/31/21, down slightly from 36% on 03/31/20.
- Local Government participants' percentage was 32.9% on 03/31/21, down slightly compared to the prior year.
- The STIP assets were \$5.37 billion on 03/31/21, up over \$1.10 billion since 03/31/20.
- The STIP reserve was \$53.72 million on 03/31/21.

# Short Term Investment Pool Net Performance



## Short Term Investment Pool (STIP) Custom Blend:

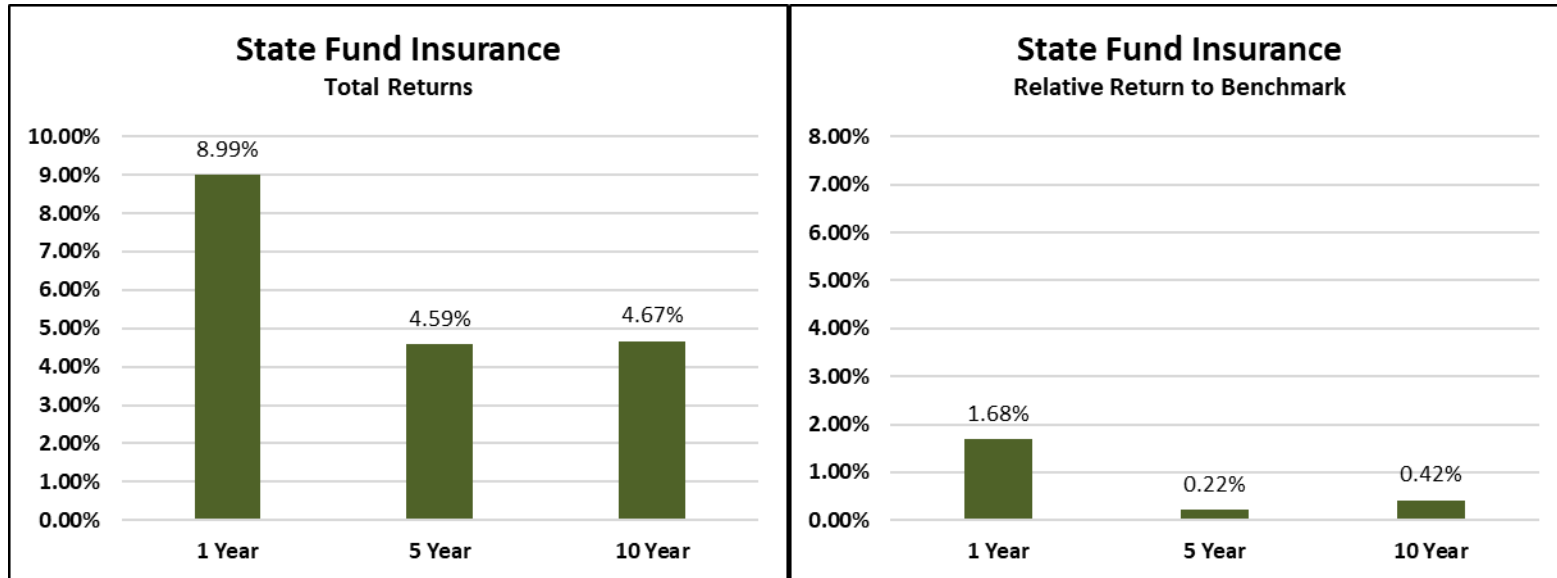
- Inception to 4/30/2018 - LIBOR 1 Month
- 5/1/2018 to present: Federal Reserve US Treasury 1M Constant Maturity Index
- Inception – 4/1/1997

# State Fund Investment Portfolio

## Performance, Characteristics, and Activity

- Total portfolio return was 8.99% over the last year. Led by equities at 54.06%.
- Portfolio outperformed the benchmark by 168 bps over the year.
- The Investment Grade portfolio returned 3.43% on the year, outperforming its index by 177 bps due to a credit overweight.
- Total market value of approx. \$1.58B at quarter end.
- Duration was equal to the benchmark at quarter end.
- Continued overweight to spread product and underweight to Treasuries. Adding to MBS over time.
- Sold \$25 million in Domestic Equities.

# 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 outperformed the benchmark by 233 bps on the year. Led by High Yield with a return of 26.10 %. The benchmark was changed after quarter end.
- Real Estate had a return of 4.24% .
- The internal portfolio returned 1.52%, outperforming its benchmark by 81 bps due to short duration.

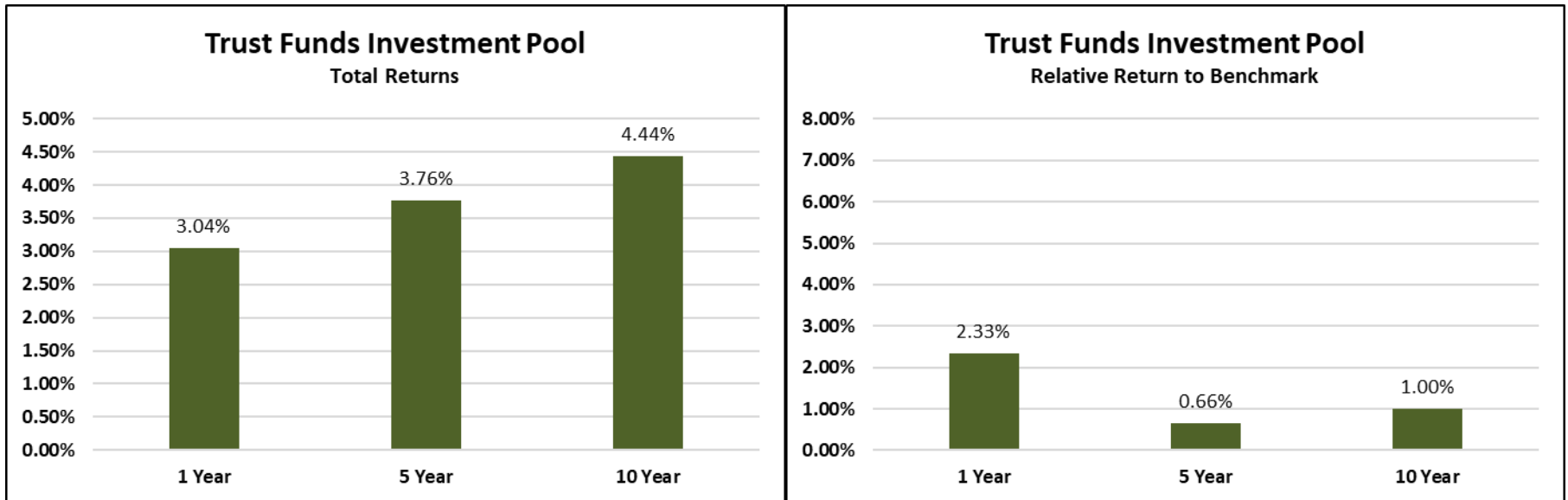
# Trust Funds Investment Portfolio

## Characteristics and Activity

- Total market value of approx. \$2.70B at quarter end.
- TFBP duration was below the benchmark at quarter end on an increase in cash. Significantly underweight the long end of the curve.
- TFBP maintained overweight to Corporates, CMBS and ABS, and underweight to Treasuries and MBS.
- TFIP purchased \$55.0 million of High Yield during the year. TFIP purchased \$215.0 million of Real Estate during the year.
- Staff continues to add to Real Estate in order to diversify and increase the yield of TFIP consistent with last year's change to the IPS.

# Trust Funds Investment Portfolio

## Net Performance



### Trust Funds Investment Pool Custom Blend:

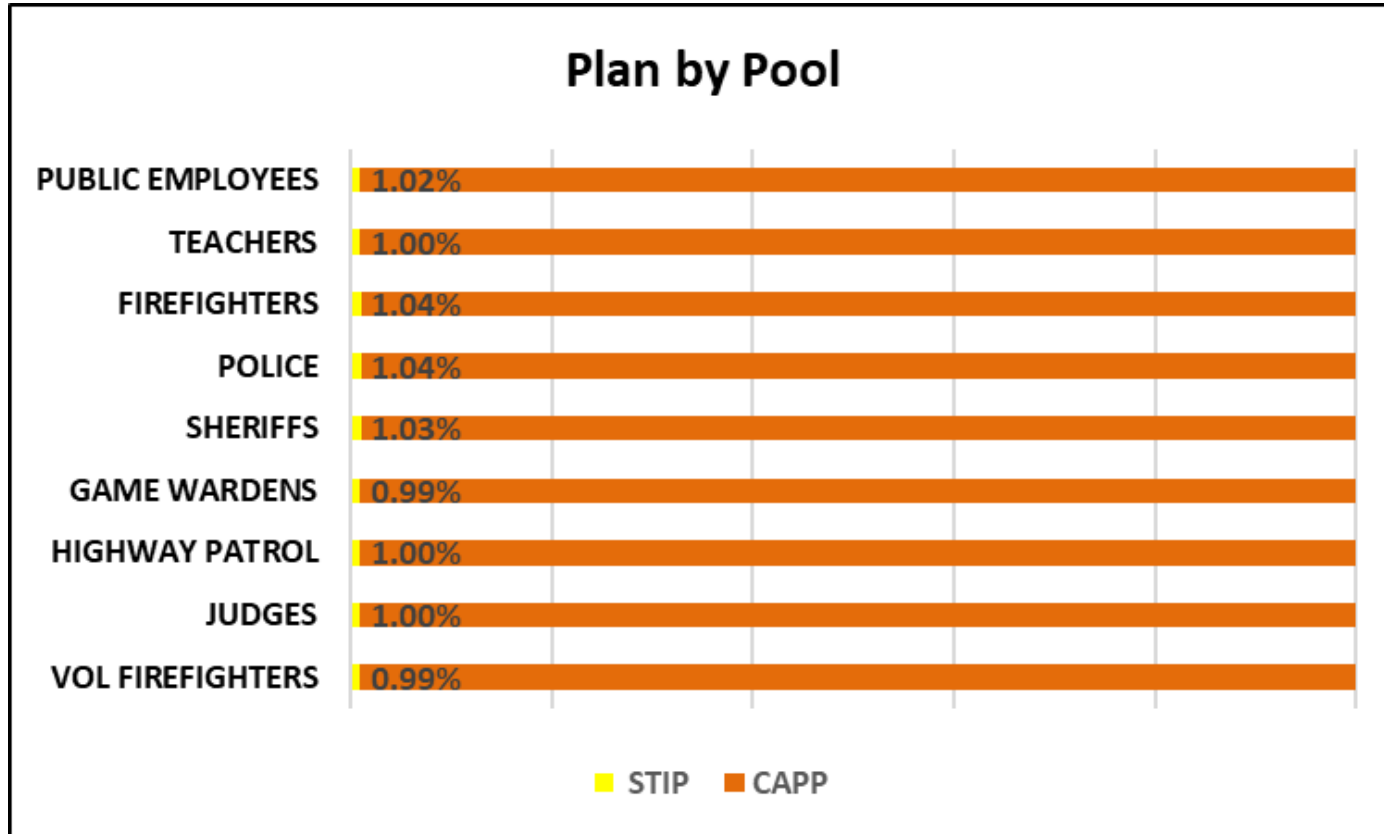
- Since Inception to 6/30/21 - Bloomberg Barclays U.S. Aggregate Bond Index
- 6/30/21 to present - Proportionately weighted Bloomberg Barclays US Aggregate Bond Index, Bloomberg Barclays US High Yield – 2% Issuer Cap Index and the NCREIF ODCE Index
- Inception - 10/1/1995

# APPENDIX

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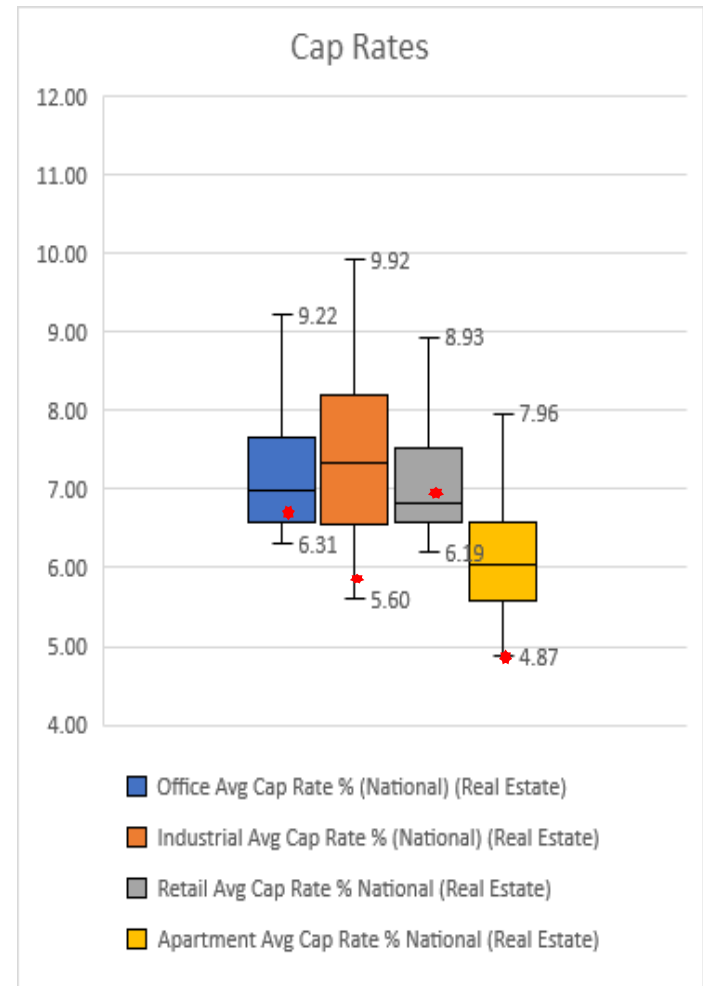
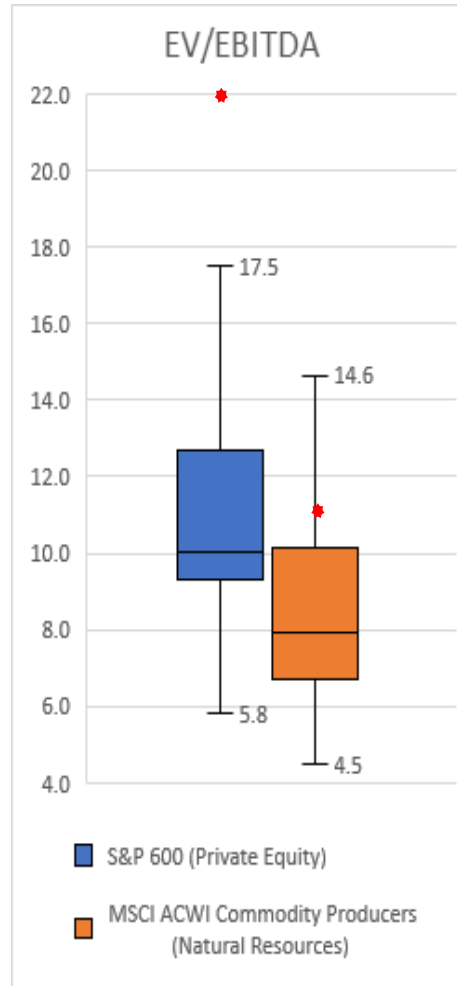
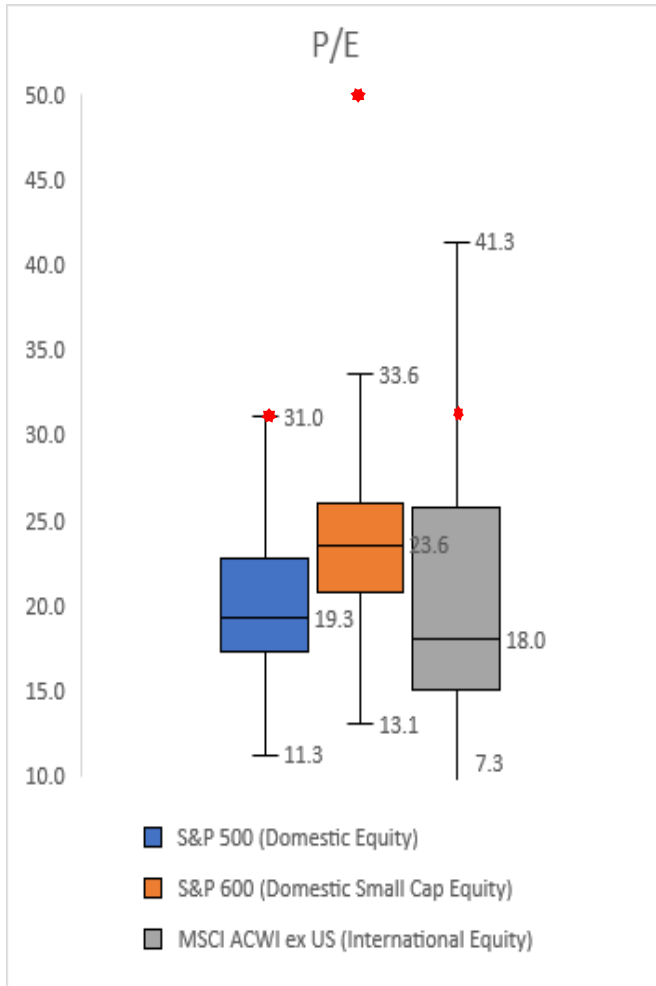
# Retirement Plans Allocations by Pool



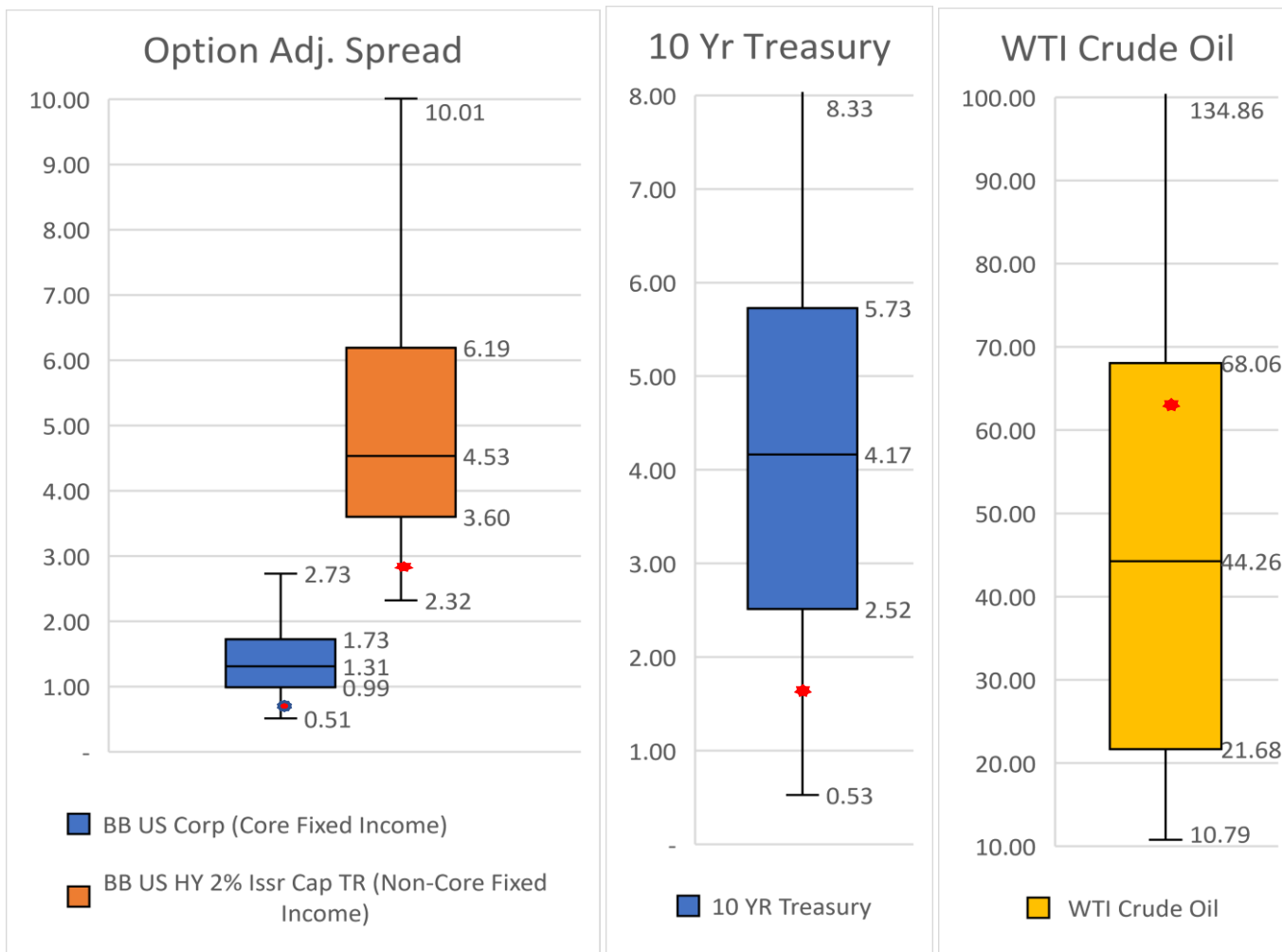
# Retirement Plans Characteristics



# Risk Management Benchmark Valuation

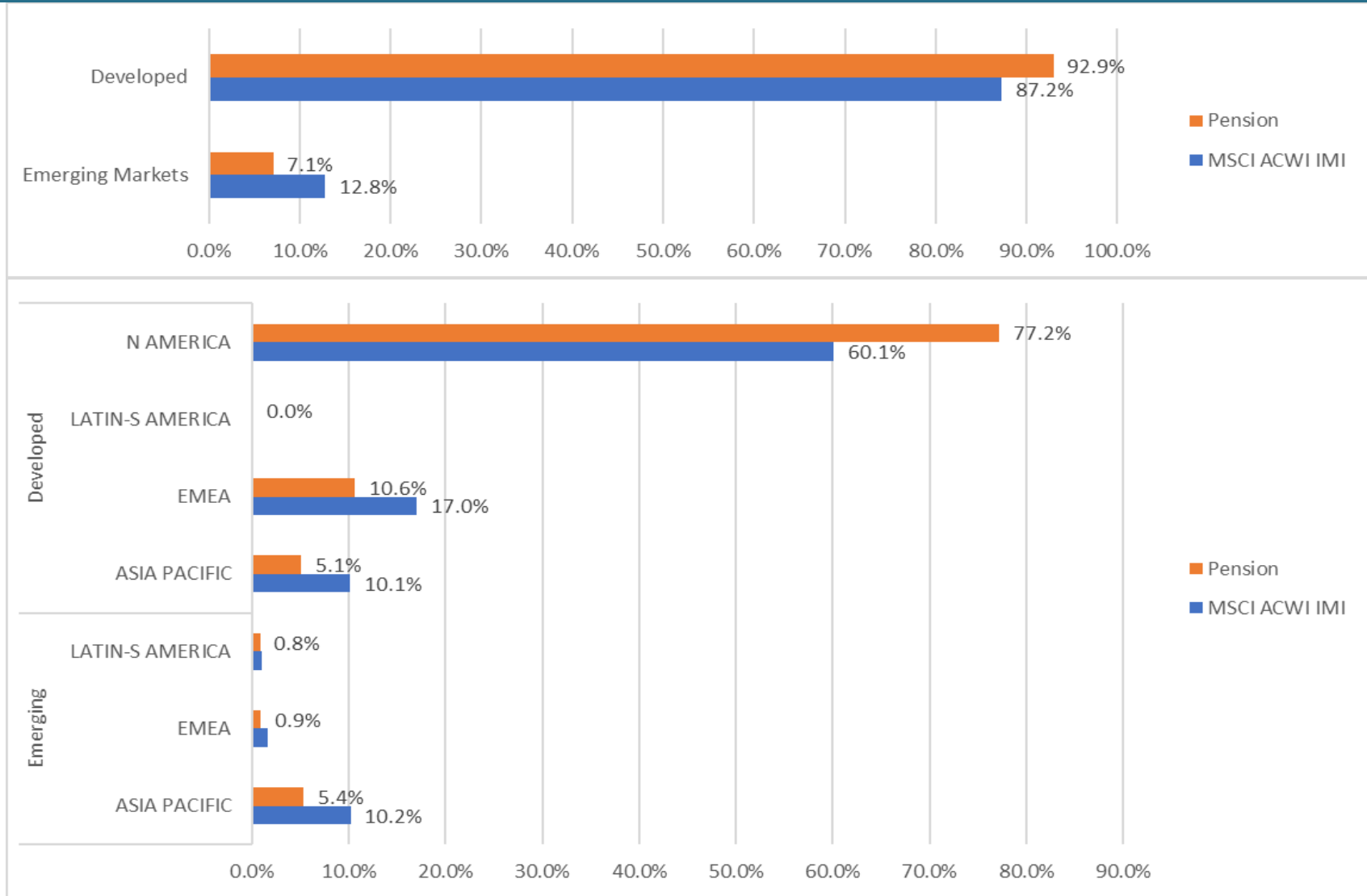


# Risk Management Benchmark Valuation

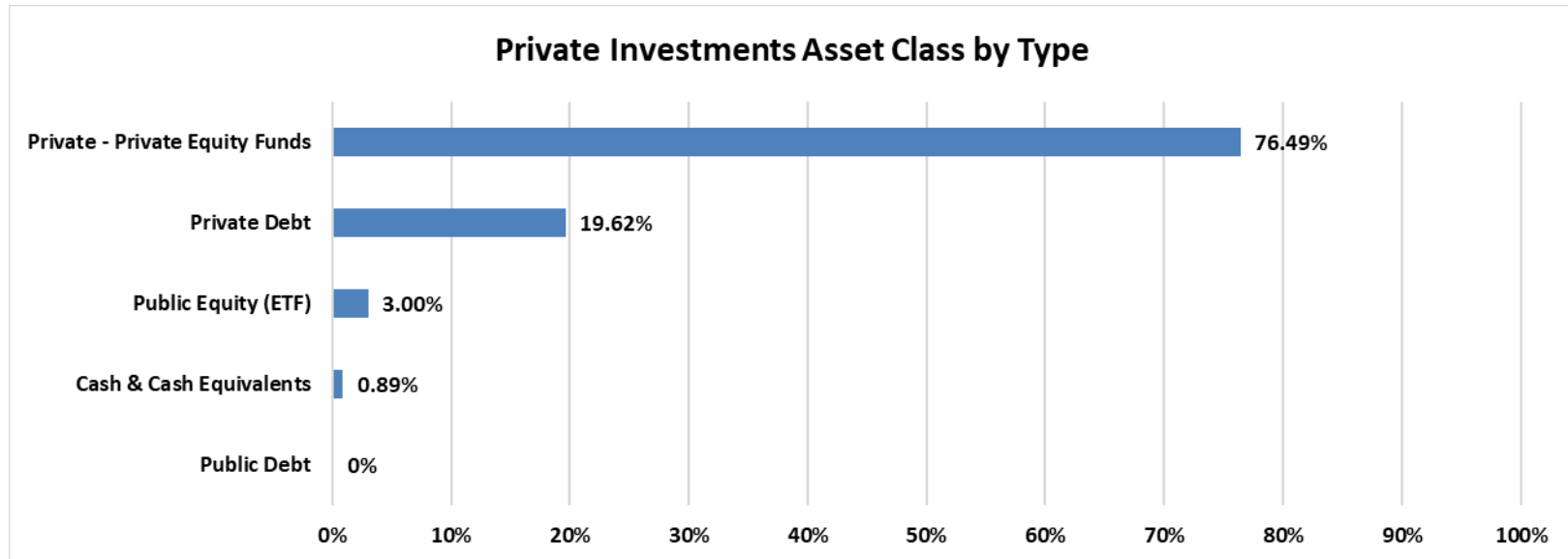


# Risk Management

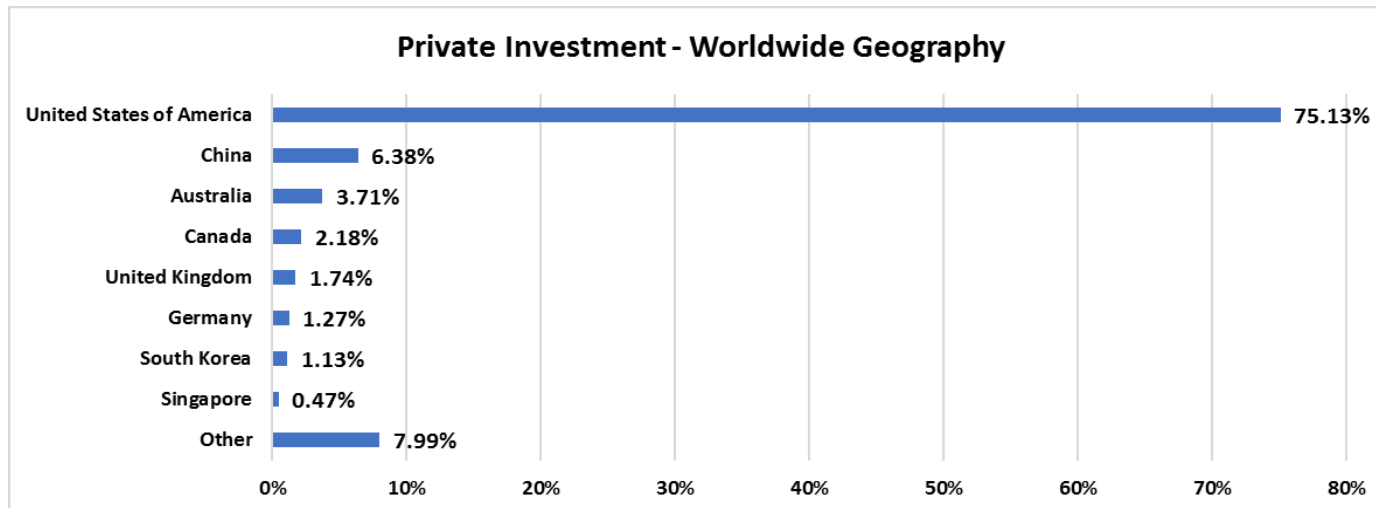
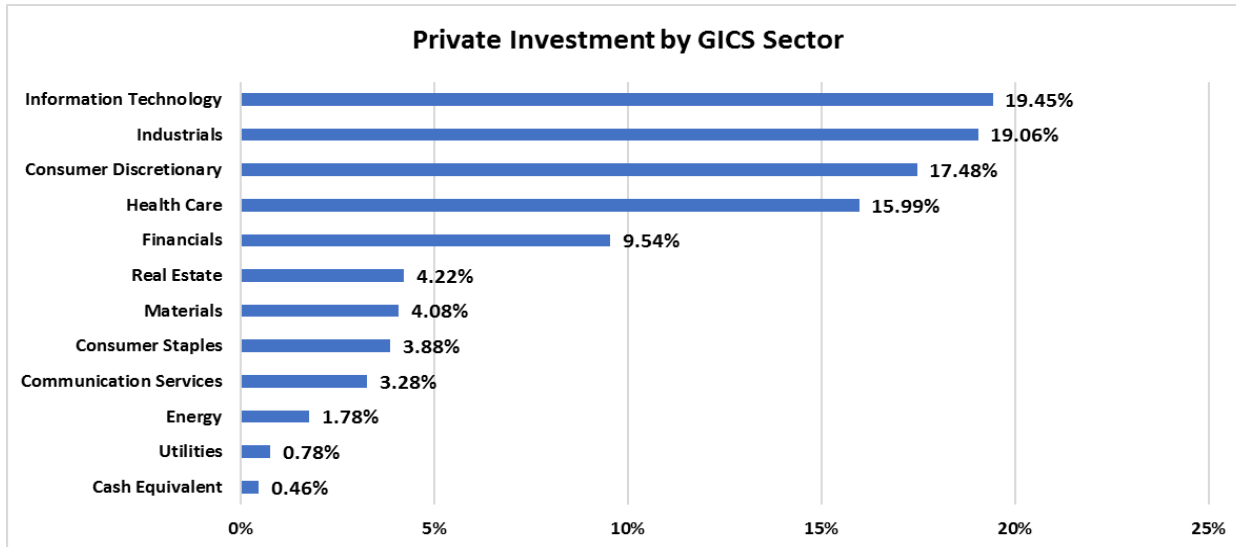
## Pension Geographic



# Private Investments Characteristics

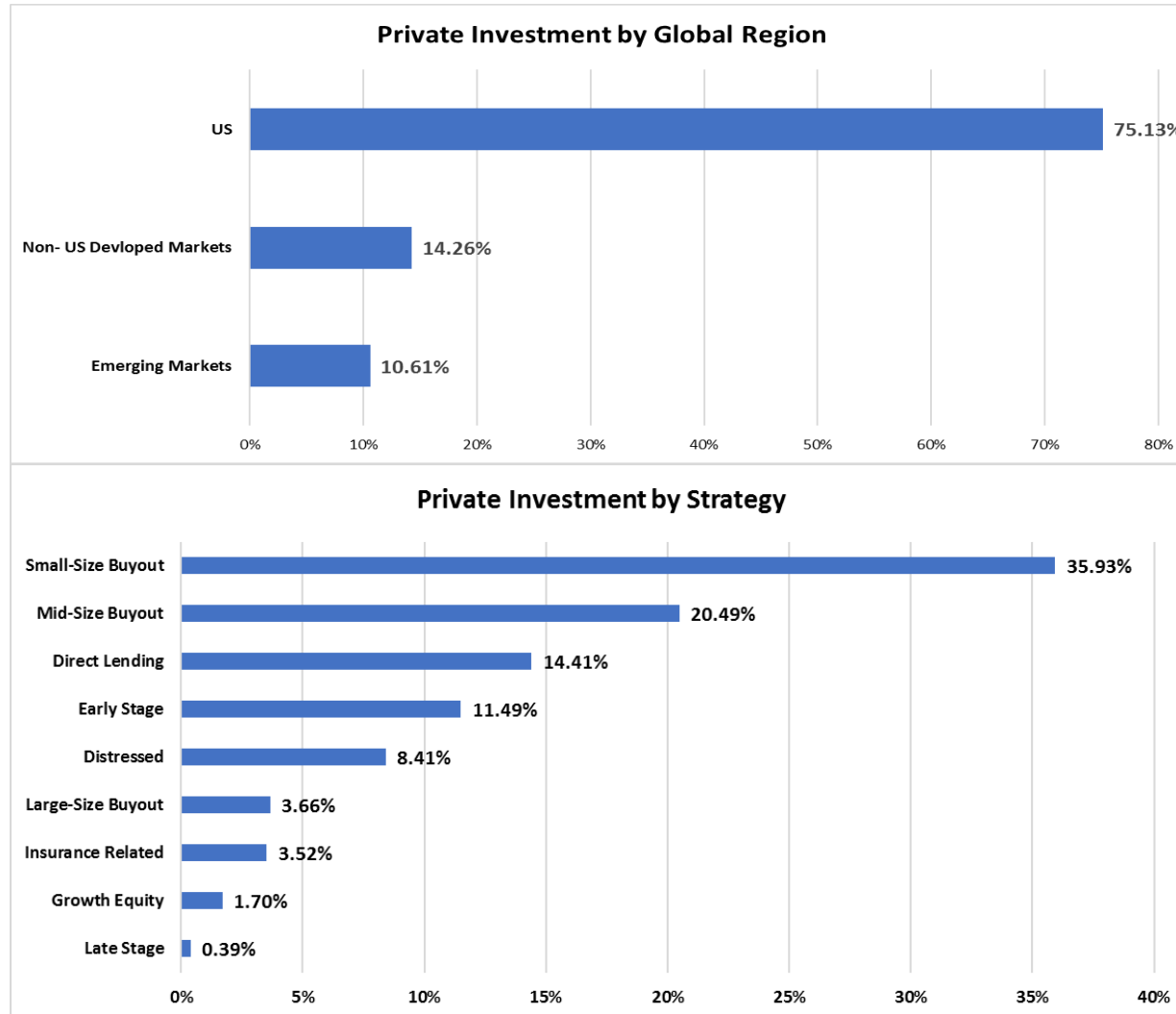


# Private Investments Characteristics



Note: Data reflects most recent GP-reported holdings as of 12/31/20  
March 31, 2021

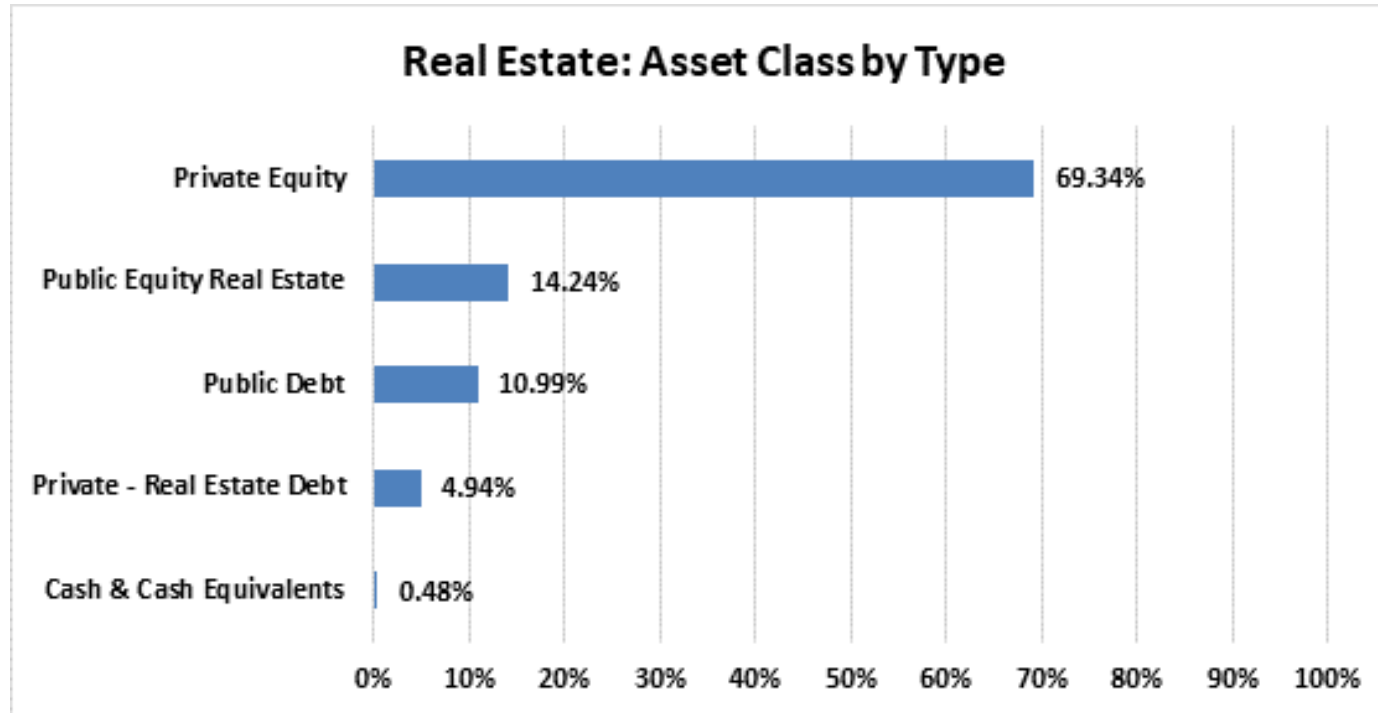
# Private Investments Characteristics



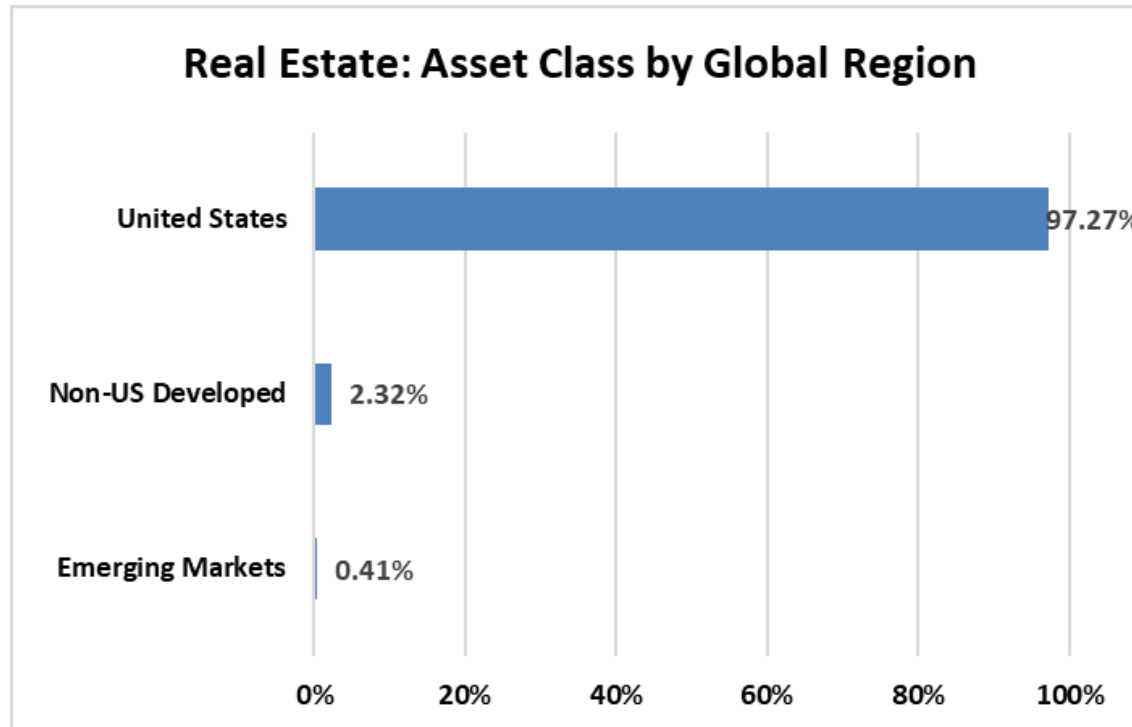
Note: Data reflects most recent GP-reported holdings as of 12/31/20  
March 31, 2021



# Real Estate Characteristics

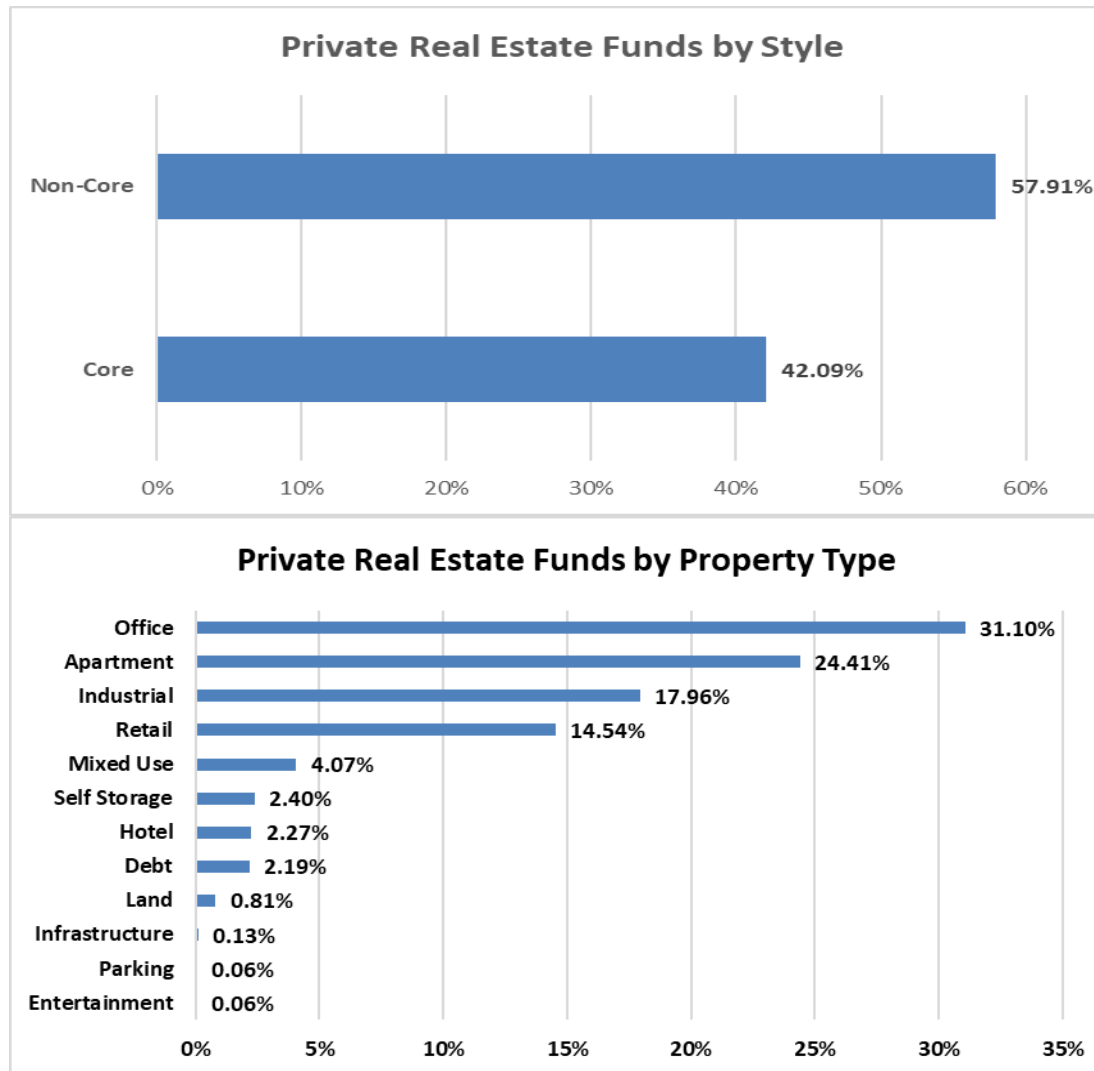


# Real Estate Characteristics



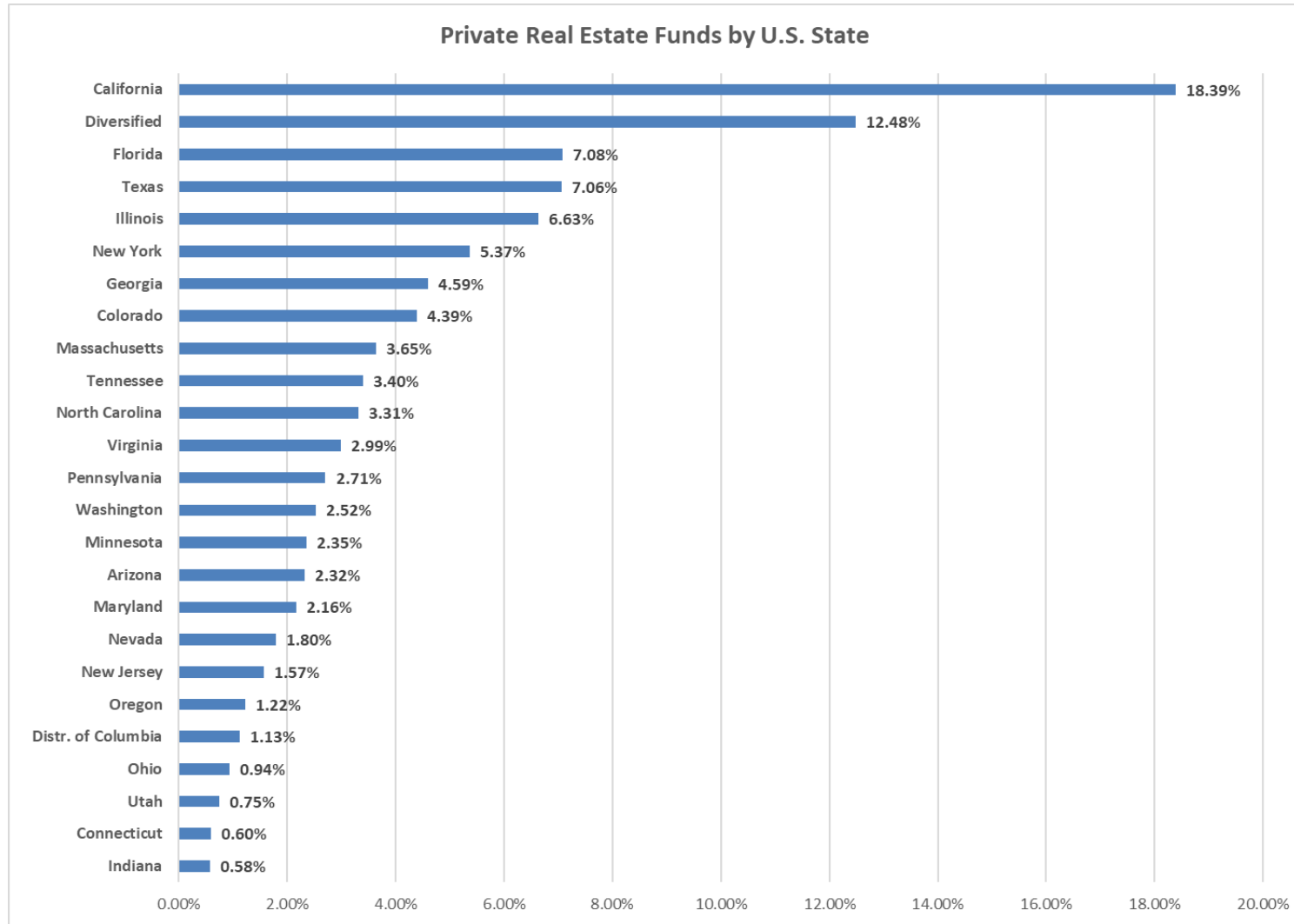
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March 31, 2021

# Real Estate Characteristics



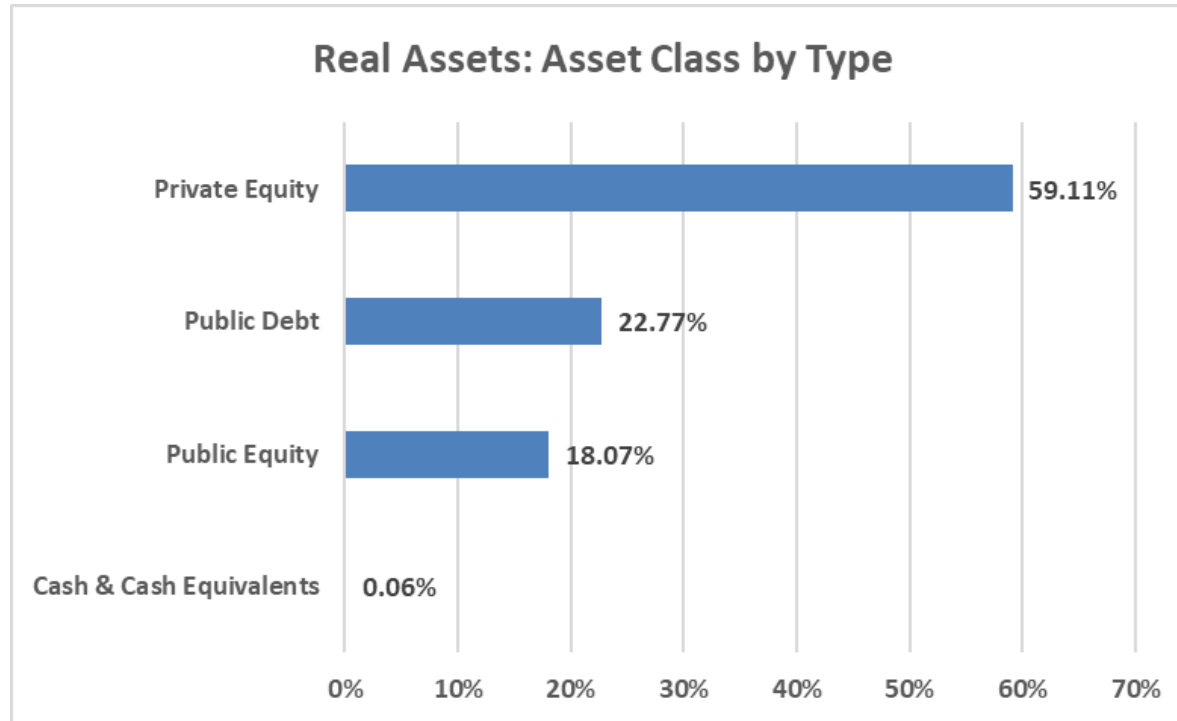
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March 31, 2021

# Real Estate Characteristics

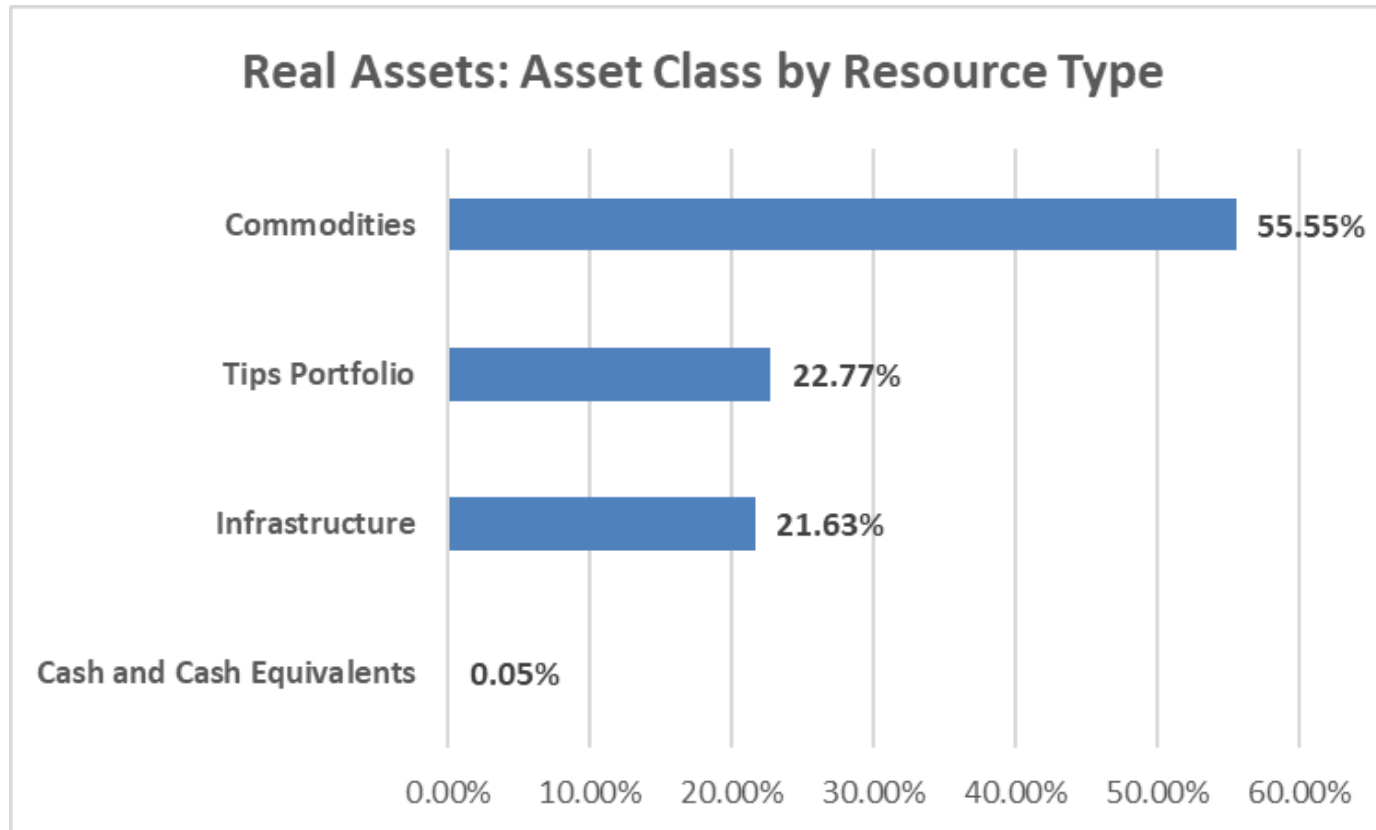


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March 31, 2021

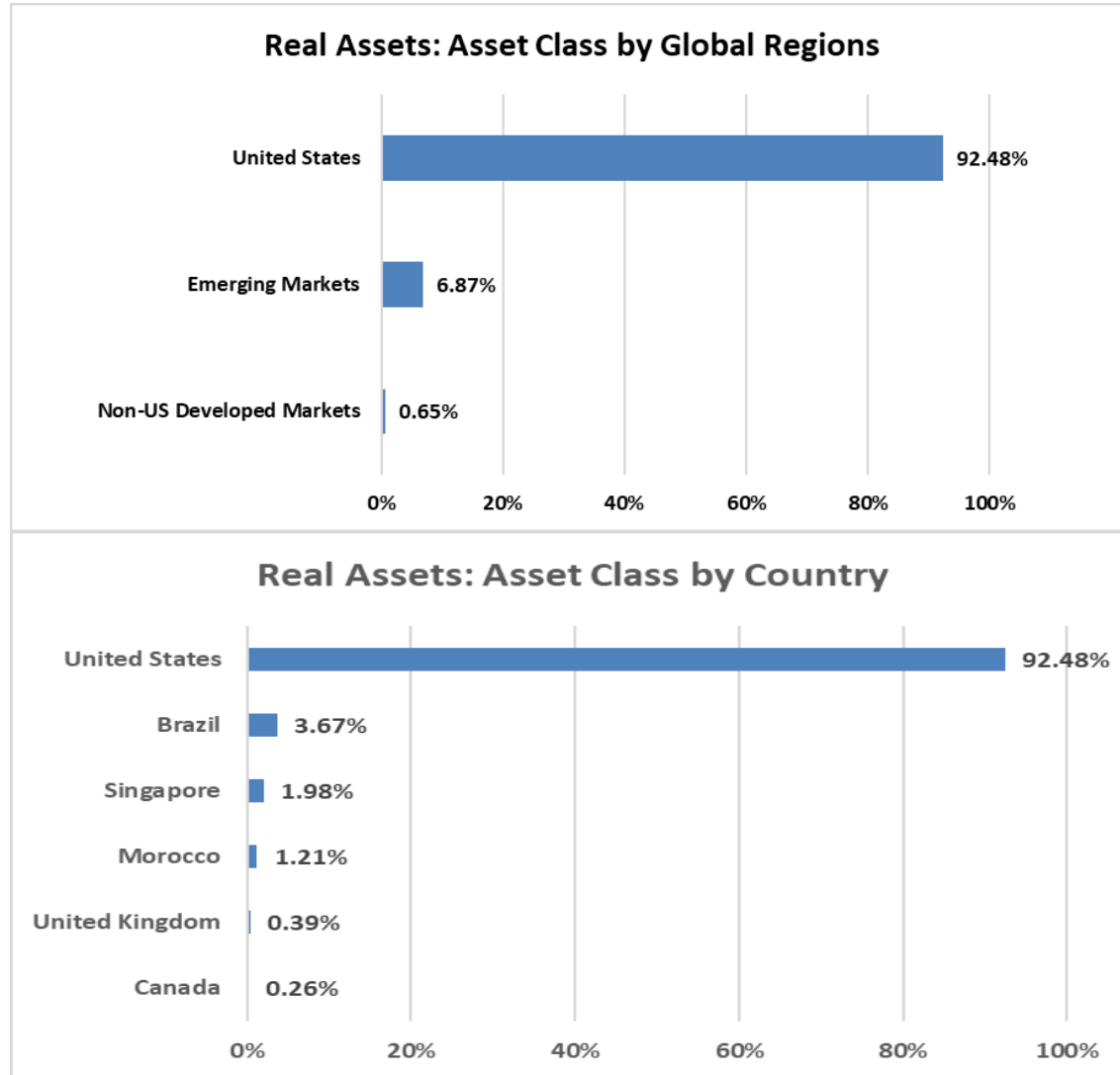
# Real Assets Characteristics



# Real Assets Characteristics

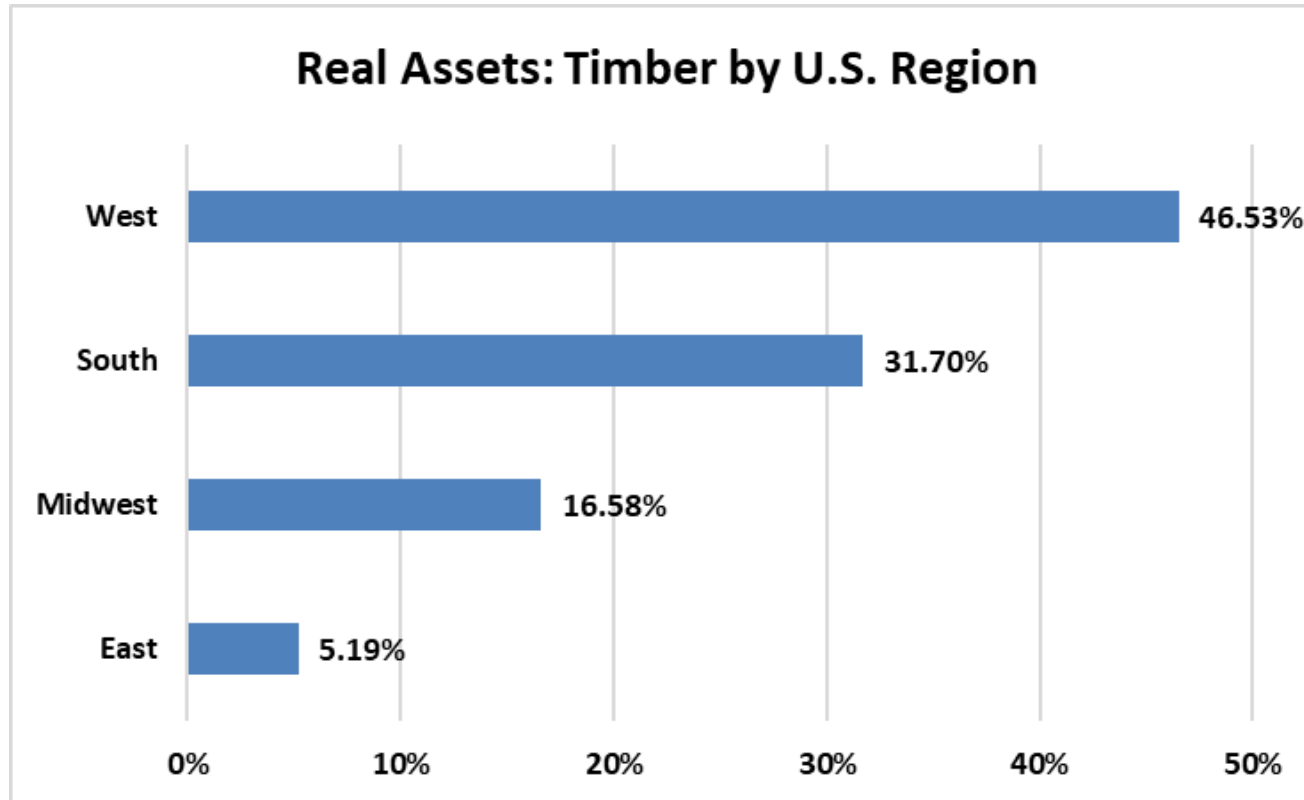


# Real Assets Characteristics



Note: Data reflects most recent GP-reported holdings as of 12/31/20  
March 31, 2021

# Real Assets Characteristics

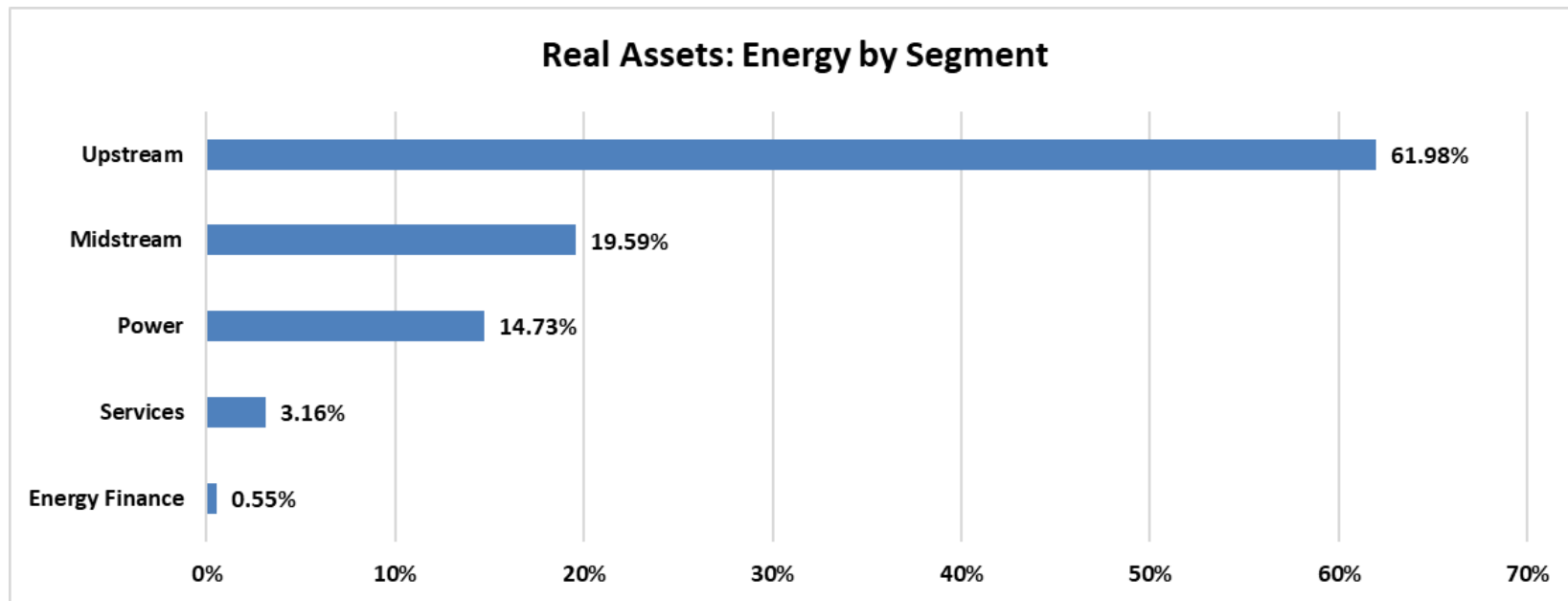


Note: Data reflects most recent GP-reported holdings as of 12/31/20

March 31, 2021



# 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**

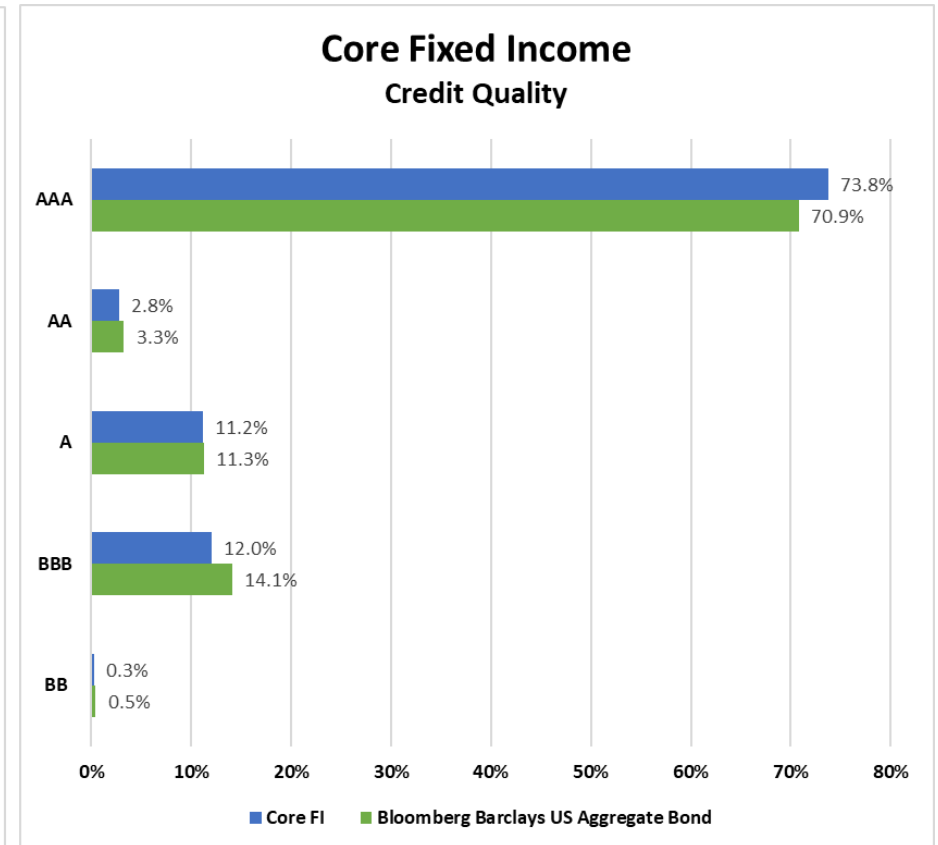
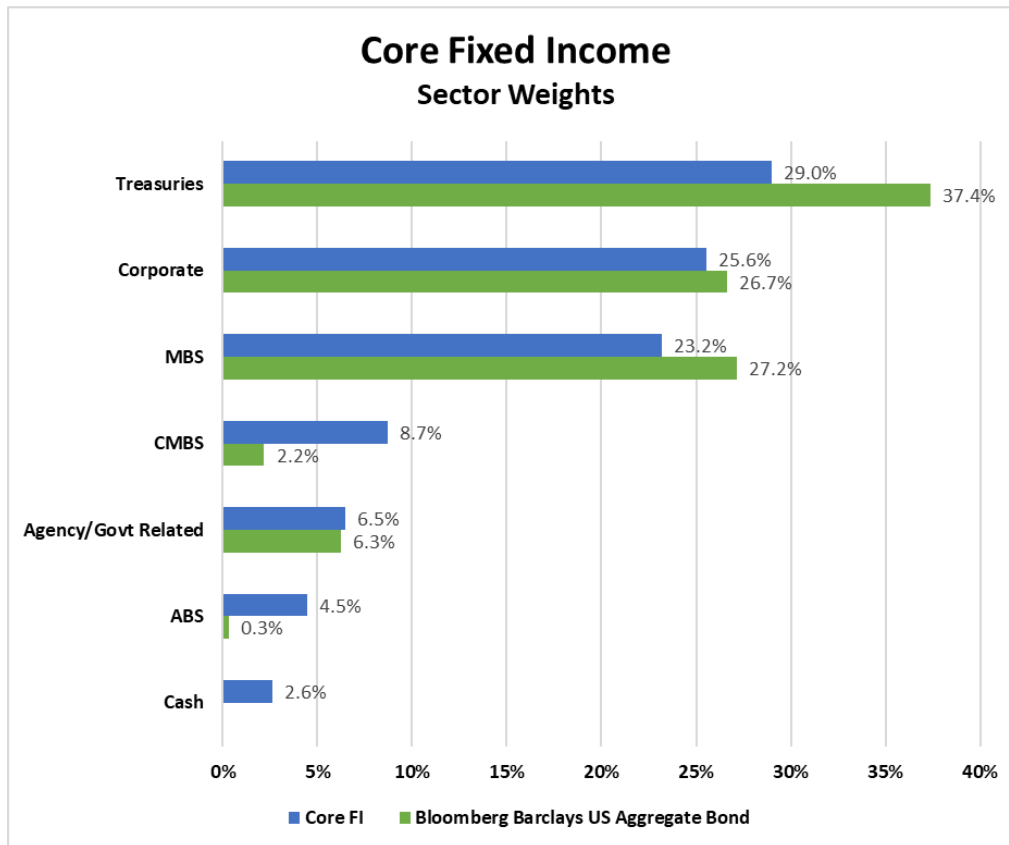
**Power**                         **Generation plants that create power**

**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**

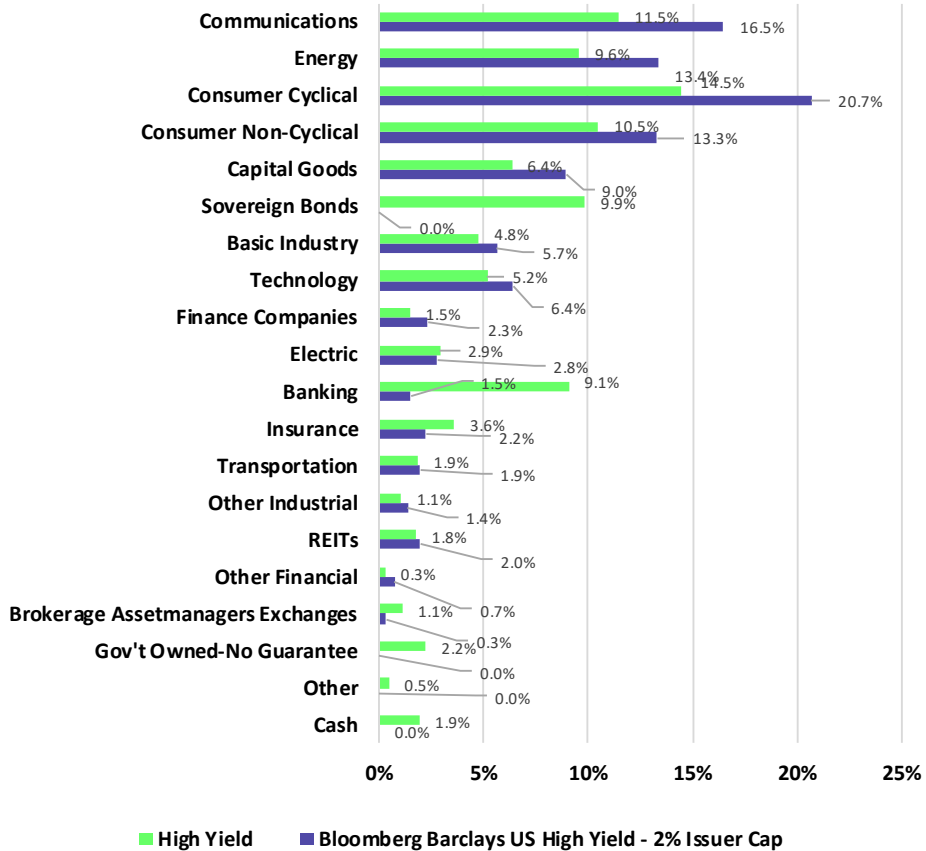
Note: Data reflects most recent GP-reported holdings as of 12/31/20  
March 31, 2021

# Core Fixed Income Characteristics

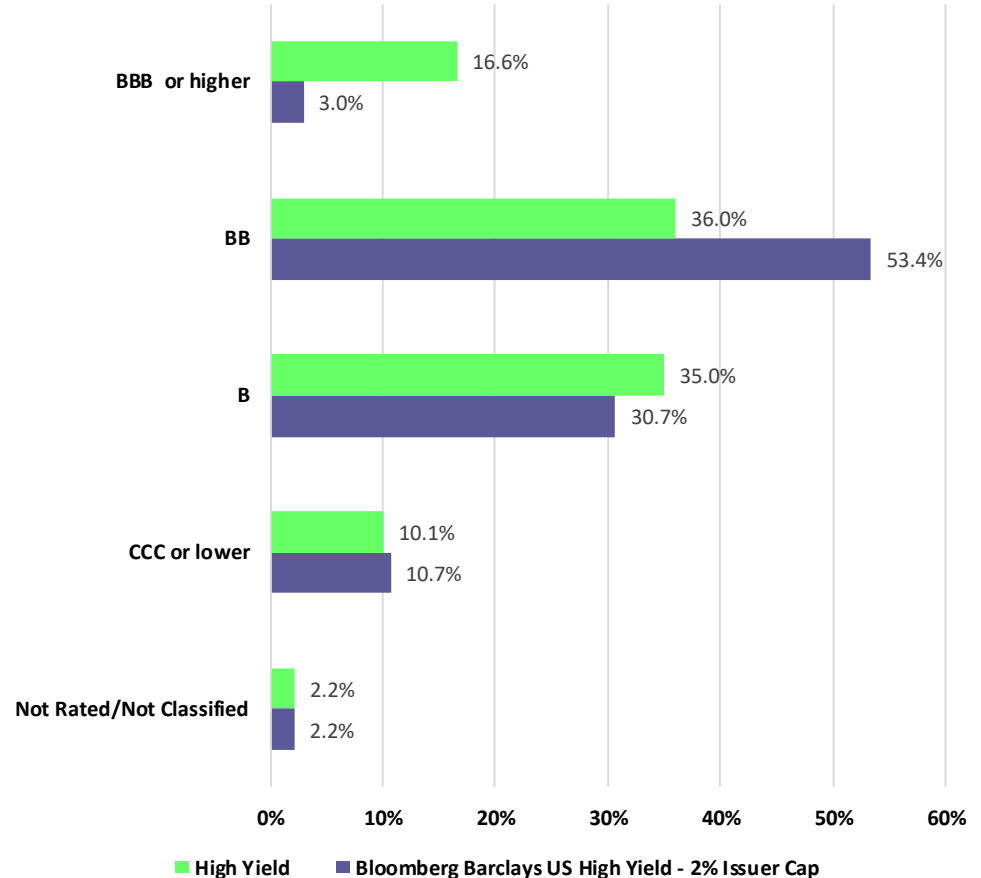


# Non-Core Fixed Income Characteristics

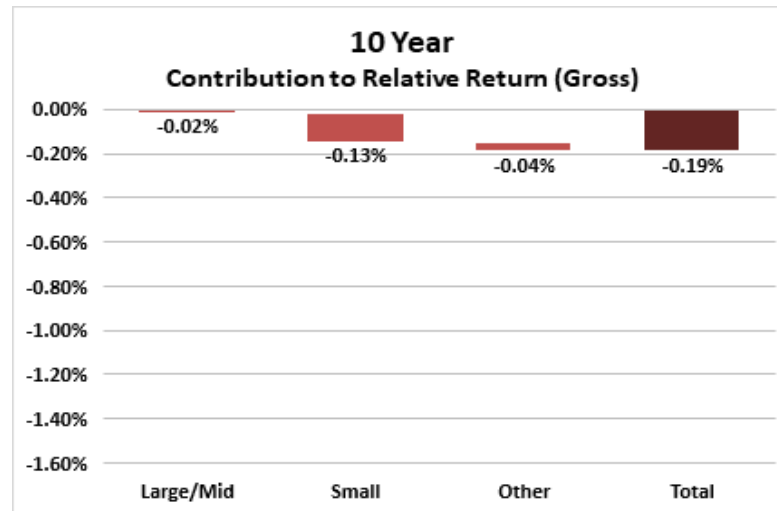
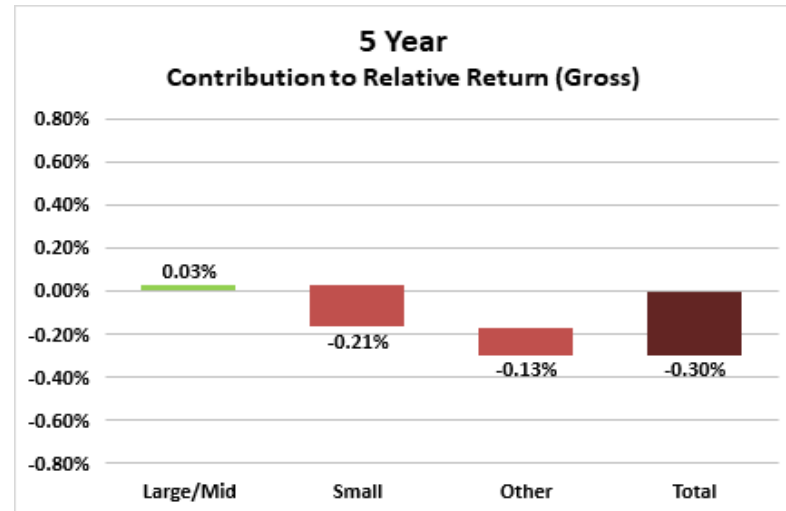
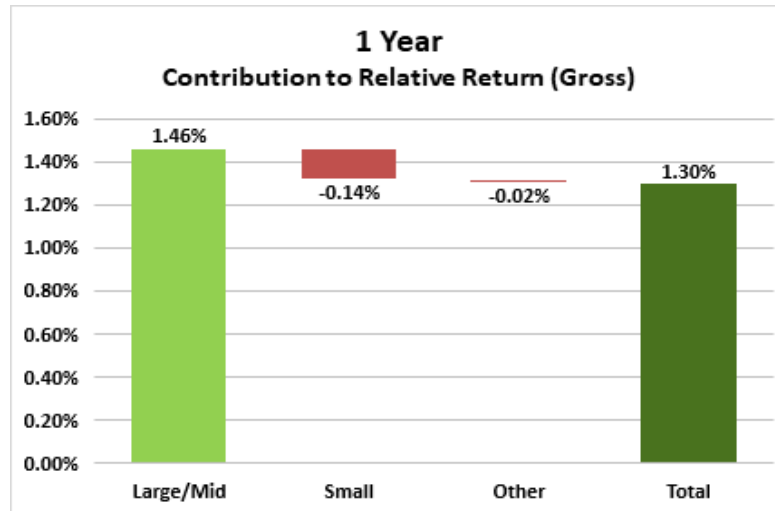
## Non-Core Fixed Income Sector Weights



## Non-Core Fixed Income Credit Quality

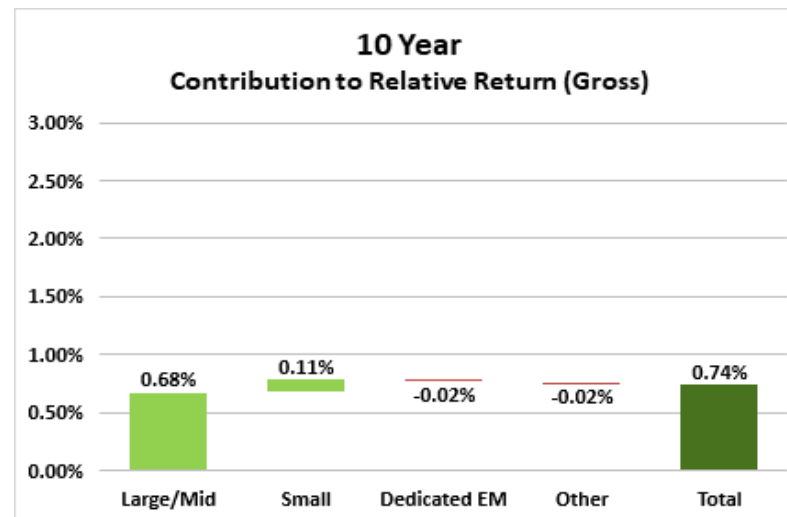
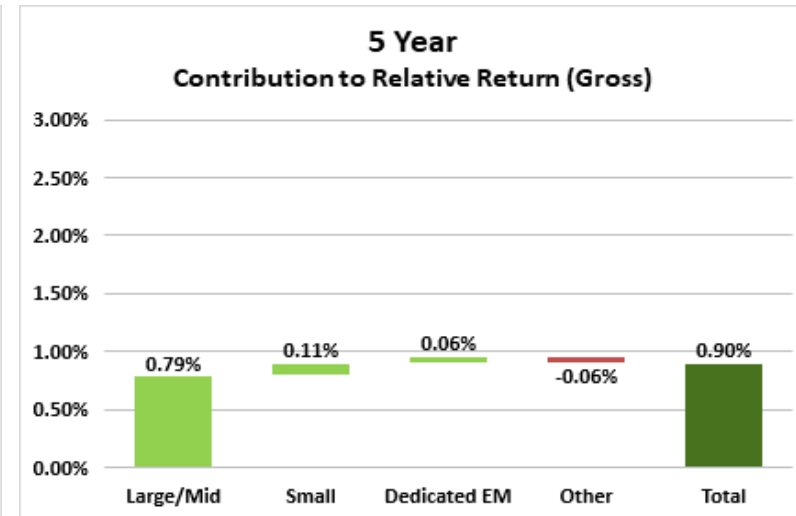
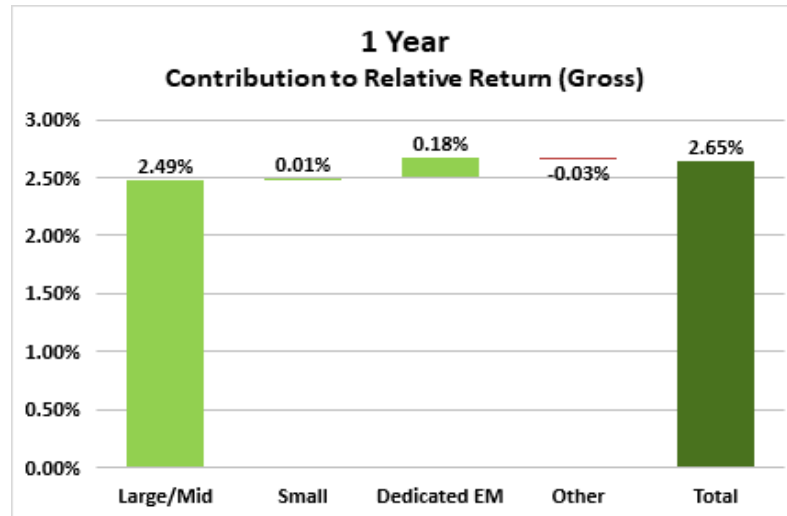


# Domestic Equity Performance



Benchmark: Domestic Equity – PAC Custom Blend

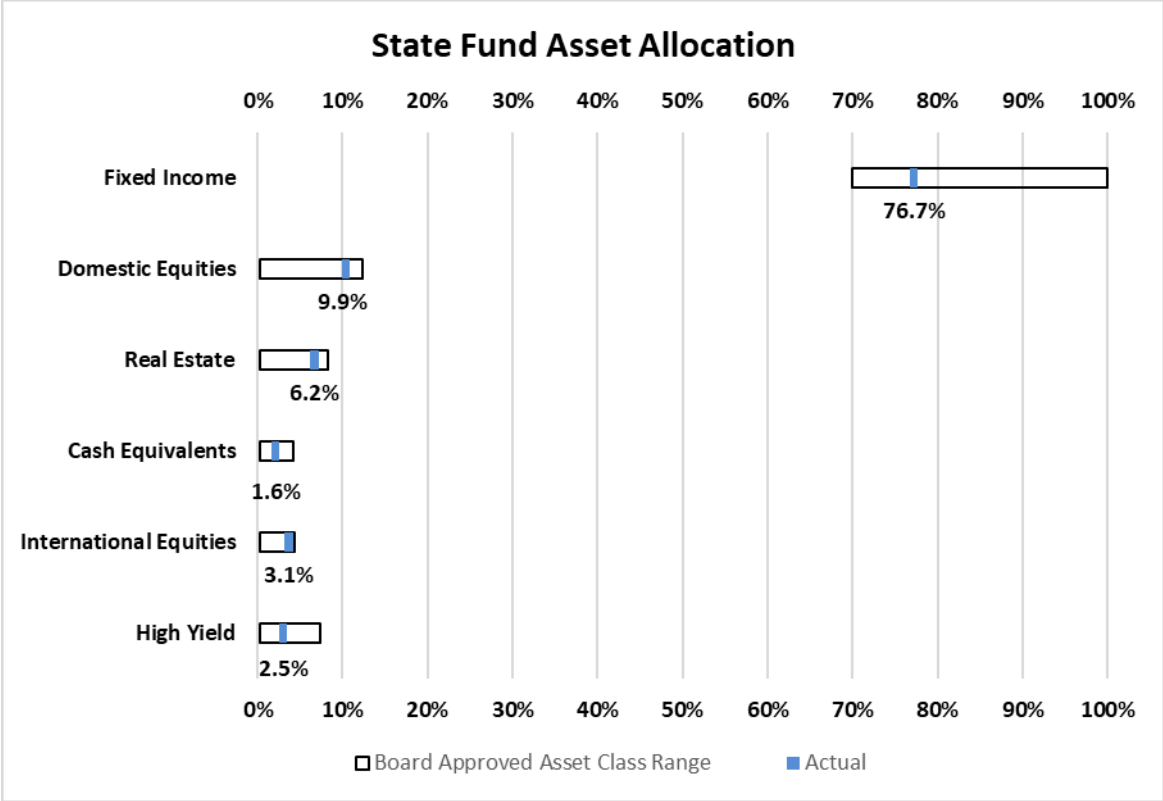
# International Equity Performance



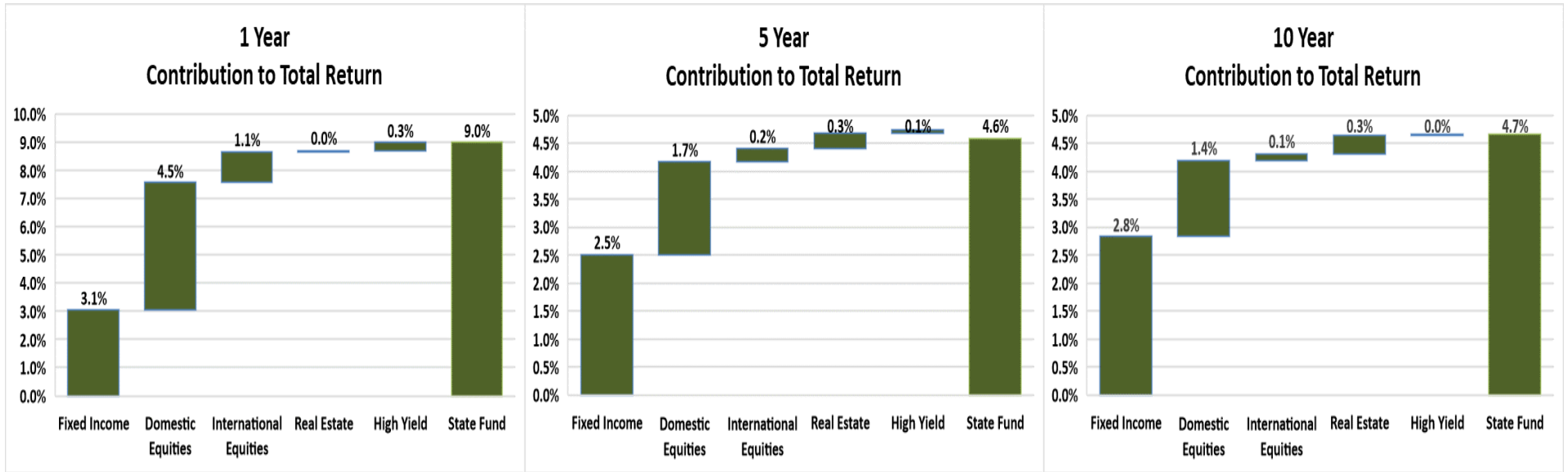
Benchmark: International Equity – PAC Custom Blend

March 31, 2021

# State Fund Policy

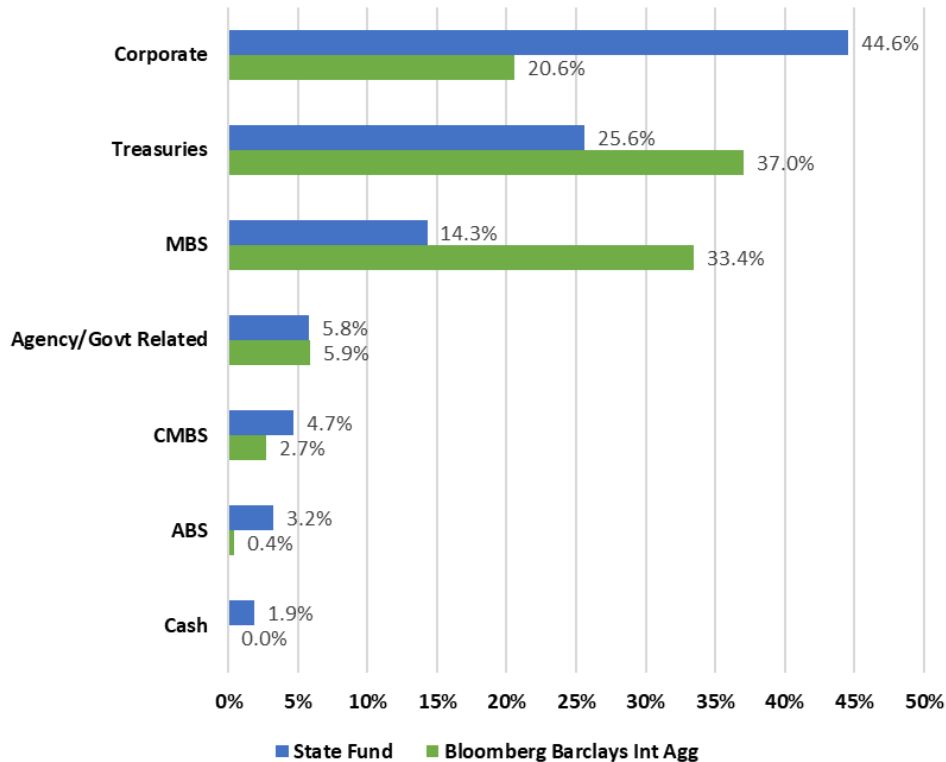


# State Fund Performance

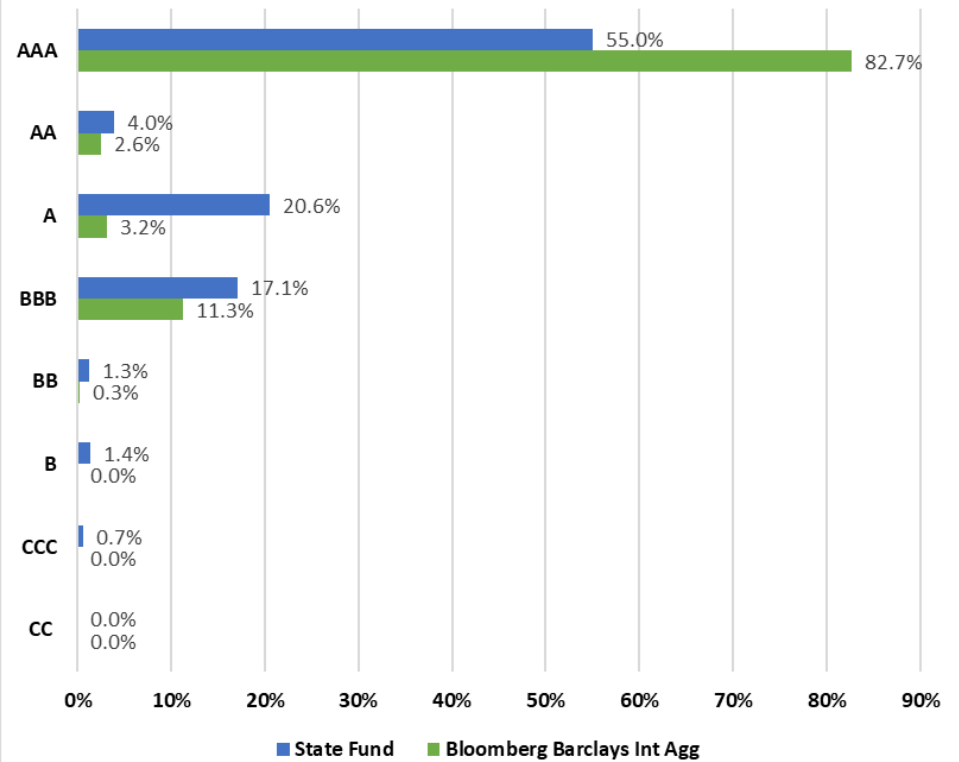


# State Fund Investment Pool Characteristics

### State Fund Bond Portfolio Sector Weights

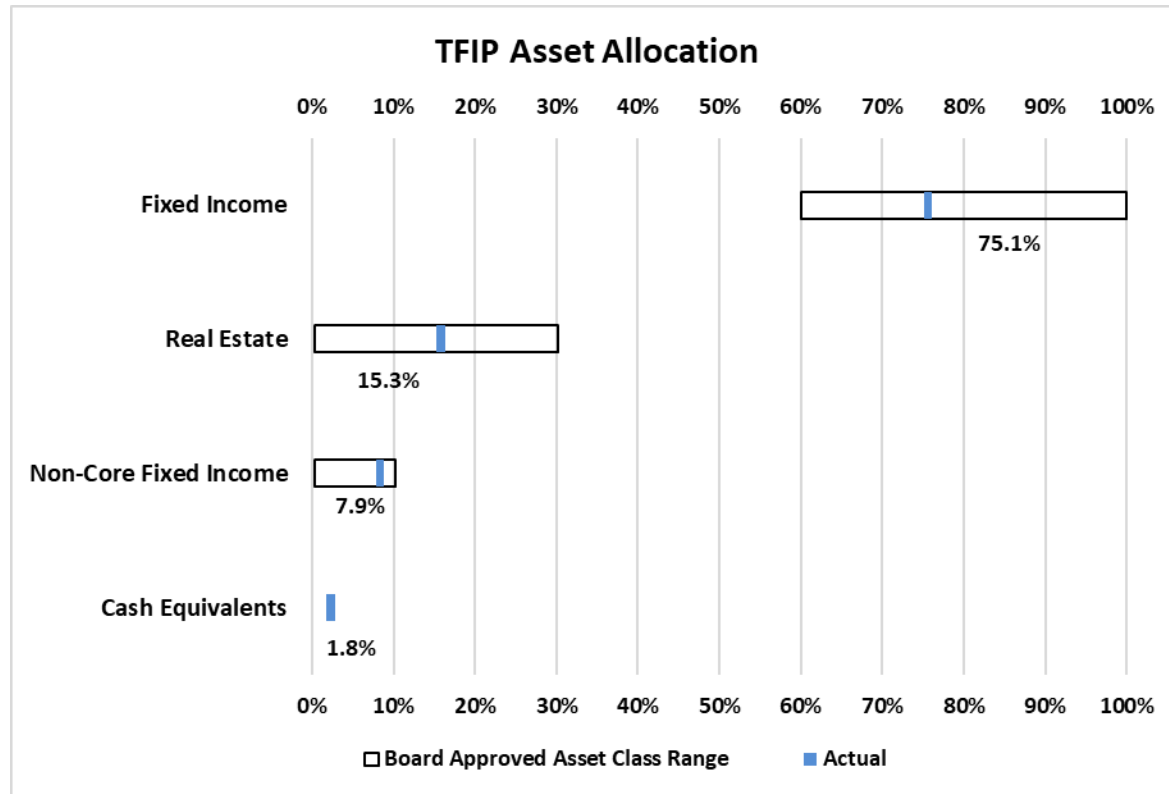


### State Fund Bond Portfolio Credit Quality

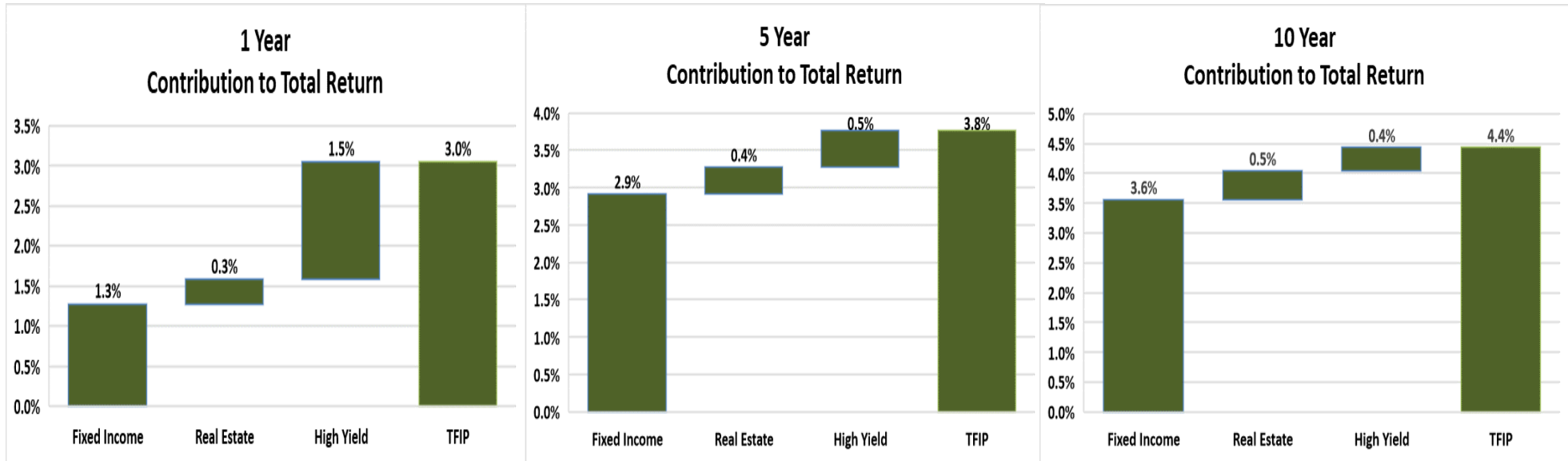




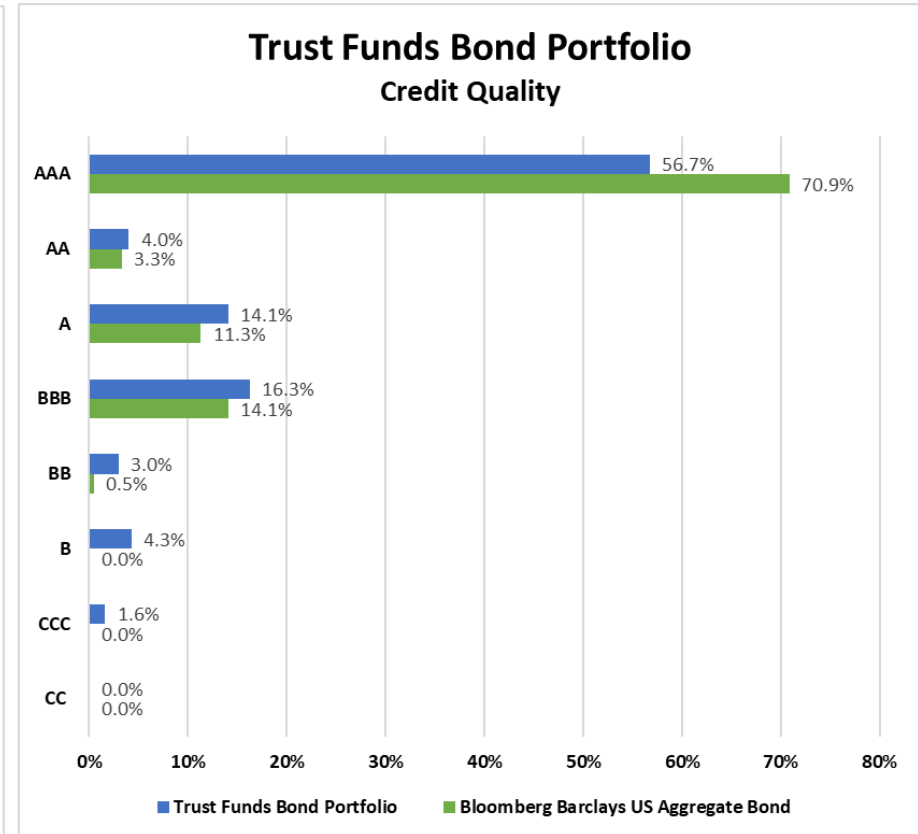
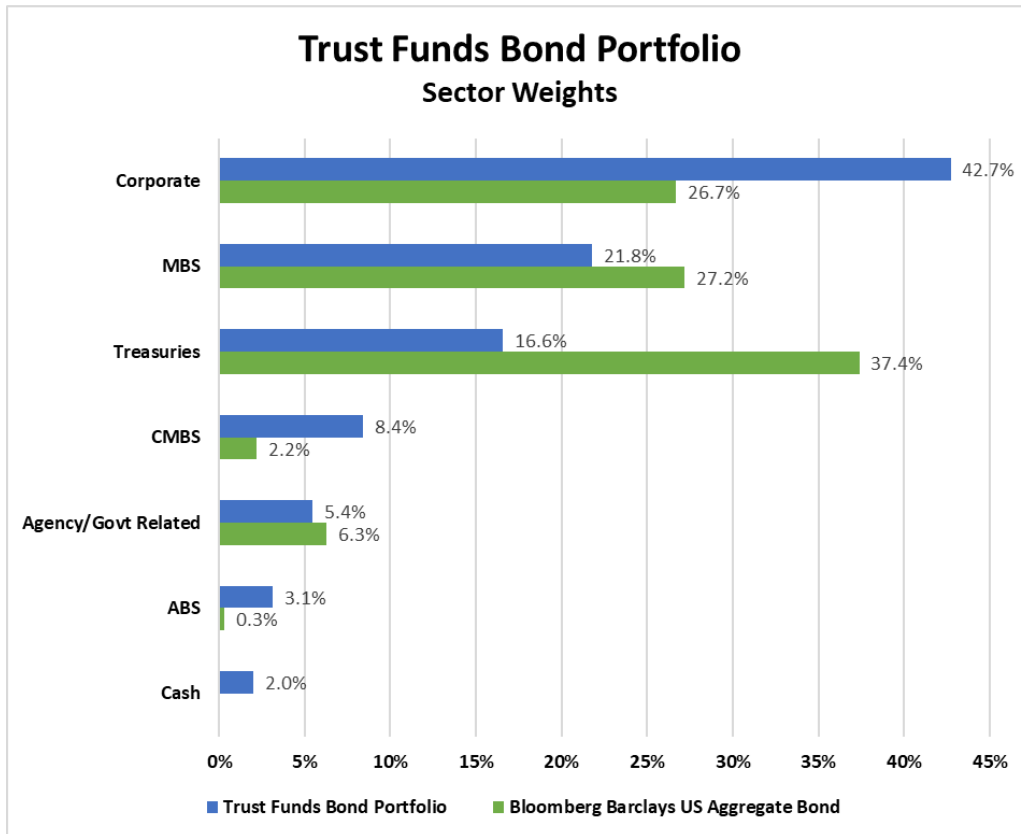
# Trust Funds Investment Pool Policy



# Trust Funds Investment Pool Performance

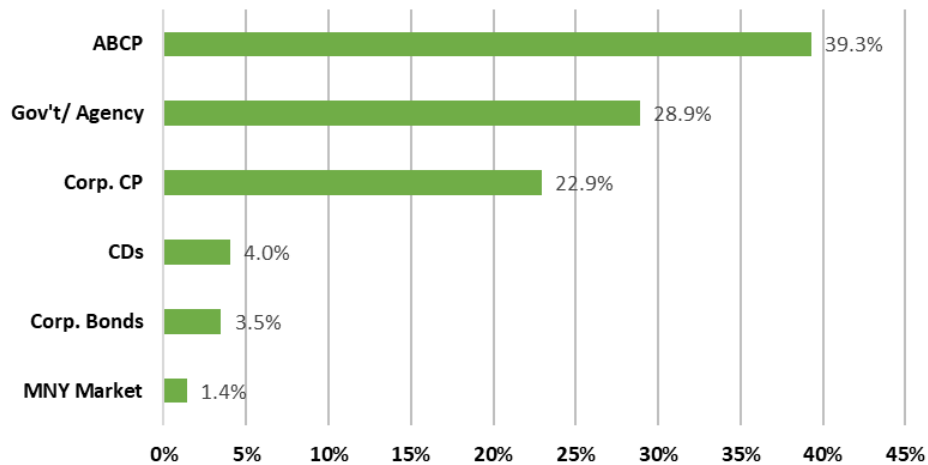


# Trust Funds Investment Pool Characteristics



# Short Term Investment Pool Characteristics

### Assets by Type



### Participant by Type

