

# STATE OF MICHIGAN INVESTMENT BOARD MEETING

## April 2, 2025

State of Michigan Retirement System  
Quarterly Investment Review



Rachael Eubanks, State Treasurer  
Prepared by Bureau of Investments  
Michigan Department of Treasury

# **STATE OF MICHIGAN INVESTMENT BOARD MEETING**

**APRIL 2, 2025**

## **Agenda**



- 9:30 a.m. Call to Order and Opening Remarks**
- 9:35 a.m. Approval of the 1/8/25 SMIB Meeting Minutes**
- 9:40 a.m. Executive Summary & Performance for Periods Ending 12/31/24**
- 9:45 a.m. Current Asset Allocation Review  
Markets Review and Outlook**
- 9:50 a.m. Review of Investment Reports**
- **Defined Contribution – Update**  
**Guest Speakers: State Street Global Advisors**  
**Mary Guy, Vice President and Account Executive**  
**Brendan Curran, Managing Director and Head of US Retirement**  
**Dan Farley, Executive VP and CIO of Investment Solutions**
  - **Fixed Income – Update**
  - **International Equity – Receive and File**
  - **Domestic Equity – Receive and File**
  - **Absolute Return – Receive and File**
  - **Private Equity – Receive and File**
  - **Real Estate & Infrastructure – Receive and File**
  - **Real Return & Opportunistic – Receive and File**
- 10:55 a.m. Public Comment**
- 11:00 a.m. Closing Remarks ~ Adjournment**



### **2025 Meeting Schedule**

**Wednesday, June 25, 2025**  
**Wednesday, October 1, 2025**  
**Wednesday, December 17, 2025**

**All meetings start at 9:30 a.m.**

# State of Michigan Retirement System

## MINUTES

State of Michigan Investment Board Meeting

April 2, 2025



Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments

# STATE OF MICHIGAN INVESTMENT BOARD

## January 8, 2025 Meeting Minutes

### Board Members Present:

Chairman – Treasurer Rachael Eubanks – Present  
Ms. Jennifer Flood – Present  
Ms. Dina Richard – Present via Teams  
Mr. Reginald Sanders – Present  
Ms. Denise Ilitch – Present via Teams

### Members of the Public and Bureau of Investments Staff in Attendance:

Jon Braeutigam	Greg Parker	Travis Haney
Janet Sudac	Allison Wardlaw	Anthony Estell
Aaron Haftl	John Sullivan, Jr.	Phil Kivarkis
Max Kotary	Ross Addison	Molly Jason

Many others attended via Microsoft Teams.

### Opening Remarks:

Chairman, Treasurer Rachael Eubanks, called the meeting to order at 9:30 am.

### Approval of Minutes:

Approval of June 12, 2024, SMIB Meeting Minutes – Motion to approve by Reggie Sanders.  
Seconded: Jennifer Flood.

Approval of October 1, 2024, SMIB Meeting Minutes – Motion to approve by Jennifer Flood.  
Seconded: Reggie Sanders.

## AGENDA

### Executive Summary

Mr. Jon Braeutigam, Chief Investment Officer of the Bureau of Investments, explained the SMRS 1-year rate of return of 16%, being pretty strong on an absolute basis. The 10-year rate of return, which is probably more indicative of the fund is 9.1%, versus the peer median return of 8%. The difference in return rates gives approximately \$14 billion in excess value compared to median returns over the past ten years. The higher rate of return also adds an estimated \$2 billion to the fiscal year 2026 budget, and for every year sooner the Funds become fully funded, a projected \$3.8 billion is added to the budget annually.

The SMRS portfolio is comprised of \$110.5 billion in assets with \$16.8 billion in unfunded commitments. The Fund had \$975 million in new commitments during the September 2024

quarter and \$1.3 billion net of contributions over the past year were paid out by the combined systems.

Mr. Braeutigam further discussed the Funds plan liquidity and ended by explaining the quarter's new commitments within Absolute Return, International Equity, Real Estate and Infrastructure, and Real Return and Opportunistic.

### **Asset Allocation Review**

Mr. Greg Parker, Director of Asset Allocation and Public Markets, presented a brief markets review. He discussed the U.S. interest rates increasing recently, even since September of 2024, making fixed income even more attractive. Investment grade credit spreads are very tight which is a concern when allocating to fixed income. High yield credit spreads are also very tight historically and currently.

Mr. Parker explained that U.S. equity valuations are more expensive than average and Non-U.S. equities are more of an average value. Equity markets relative valuations shows U.S. equities being expensive compared to the past 20 years and Non-U.S. equities being moderately expensive compared to the past 20 years.

Mr. Parker gave a brief overview of the asset liability study then introduced the Aon guest speakers to discuss further.

**Guest Speakers: Phil Kivarkis, Partner – U.S. Director of Investment Policy Services, Aon and John Sullivan, Jr., Associate Partner – Asset-Liability Management, Aon**

Topic: Asset Liability Analysis/Asset Allocation Discussion and Recommendation

Mr. Phil Kivarkis presented an overview of the asset liability study, stating the last study was completed in 2022. He explained the purpose of this analysis, the finance equation and ways to achieve this. He discussed some of the differences now versus 2022, such as the OPEB plan being 122% funded today, and the contribution policy which has changed.

Mr. John Sullivan did a thorough walk-through of the 2024 analysis of the study, stressing the importance of the awareness of the changes previously mentioned as well as others before completing this study.

Mr. Sullivan discussed the analysis of the MPSERS pension plan and the MPSERS OPEB plan explaining different asset mixes and options and ultimately proposing separate allocations for each. After the summary and conclusion of the study, many questions were presented and answered.

### **Action Item:**

Resolution Authorizing Asset Allocation Strategy

Motion to approve by Reggie Sanders. Seconded: Jennifer Flood. The motion to adopt the new policy was unanimously approved.

**Public Comment:**

Multiple individuals and representatives from advocacy groups were present who urged the SMRS policy makers to divest from Israel bonds.

**Adjournment:**

The meeting concluded at 11:57 am. The next meeting is April 2, 2025.

Approved:

---

Chairman, Treasurer Rachael Eubanks

State of Michigan Retirement System

# EXECUTIVE SUMMARY

State of Michigan Investment Board Meeting

April 2, 2025



Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments

# EXECUTIVE SUMMARY

December 31, 2024

## **Performance**

*Great long-term returns.*

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	11.0%	4.5%	9.2%	9.1%	9.0%
Policy Returns	14.5%	6.4%	9.4%	9.2%	9.2%
Peer Median Returns*	10.0%	3.9%	7.7%	7.6%	7.8%

\*State Street Universe greater than \$10 billion.

- Across longer time periods, the returns are significantly higher than peer median returns. The peers are defined as the State Street Universe of public pension plans greater than \$10 billion. Notably, the standard deviation of the monthly returns is below average for the longer time horizons.
- Over a very long horizon, since 1979, the annualized rate of return on the plan assets has been approximately 9.4%.
- Compounding at higher than peer returns can add significant value. For example, based on the \$60.6 billion December 2014 market value, a ten-year annualized return of 9.0% compared to the 7.8% peer median return added approximately \$15.0 billion in excess value. This equates to roughly an additional \$1.7 billion to the FY2026 budget.

## **Asset Allocation**

*Market and liquidity risk.*

- To earn the actuarial rates of return or higher, investment risks (primarily equity risk) must be assumed. The spread between the required rate of return and the risk-free rate is approximately 170 bps which is low by historical standards. At the end of December 2024, the equity (risk) beta was approximately 0.37; lower than peer median of approximately 0.55.
- Liquidity is another fundamental risk assumed and it is managed through asset allocation. The plans have outstanding capital commitments to fund approximately \$15.9 billion in illiquid assets. In the December 2024 quarter, \$405.5 million of new commitments were made. To meet the strategic asset allocation targets, the pace of new commitments will have to remain subdued for the next several years.
- The combined systems paid out approximately \$1.5 billion net of contributions over the past twelve months ending in December 2024. This compares to \$248 million a year ago and \$1.2 billion two years ago. Over the next several years, it is expected this figure will grow larger both in dollars and % AUM. A few reasons include MPSERS OPEB is now funded and will now require approximately \$700 million less in contributions, and as MPSERS and SERS pensions achieves fully funded status (estimated 50% probability to occur by 2031) an additional \$3.8 billion of contributions will no longer be required.



## NEW COMMITMENTS

October 1, 2024 – December 31, 2024

(\$ Millions)

<b>Asset class</b>	<b>Fund Name / (Managed By)</b>	<b>Commitment</b>
<b>Absolute Return</b>		
	Nuveen SMRS, LLC (Nuveen Asset Management, LLC)	\$100.5
	Blackstone Capital Opportunities Co-Investment Fund V, LP (Blackstone Private Credit Strategies, LLC)	50.0
<b>International Equity</b>		
	Blackstone Capital Opportunities Co-Investment Fund V, LP (Blackstone Private Credit Strategies, LLC)	25.0
<b>Private Equity</b>		
	Summit Partners Growth Equity Fund XII-A, LP (Summit Partners LP)	100.0
	Accel Growth Fund VII, LP (Accel Growth Fund VII Associates LP)	20.0
	Accel India VIII, LP (Accel India VIII Associates LP)	10.0
<b>Real Estate and Infrastructure</b>		
	Duration Transportation Infrastructure Capital Partners, LP (Duration Capital Partners LLC)	100.0
<b>TOTAL</b>		<b>\$405.5</b>

State of Michigan Retirement System

# PERFORMANCE

State of Michigan Investment Board Meeting

April 2, 2025



Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments

# ***Bureau of Investments***

## **Mission Statement**

*The Bureau of Investments continually strives to provide quality investment management services, broad professional expertise, and independent advice to the State of Michigan Investment Board as fiduciary of the State of Michigan Retirement System, and independent of the Board, to the State Treasurer for various Michigan trust funds and the State's common cash, for which the State Treasurer is the fiduciary.*

## **SMRS Goals**

*Maintain sufficient liquidity to pay benefits.*

*Meet or exceed the actuarial assumption  
over the long term.*

*Perform in the top half of the public plan  
universe over the long term.*

*Diversify assets to reduce risk.*

*Exceed individual asset class benchmarks  
over the long term.*

# MPSERS PENSION

## Time-Weighted Rates of Return

### Periods Ending December 31, 2024

	% of Portfolio 12/31/24	Ten Years <sup>1</sup>		Seven Years <sup>1</sup>		Five Years <sup>1</sup>		Three Years <sup>1</sup>		One Year		Current Quarter	
		Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>TOTAL PLAN</b>	<b>100.0</b>	<b>9.0</b>	<b>11</b>	<b>9.1</b>	<b>11</b>	<b>9.2</b>	<b>12</b>	<b>4.5</b>	<b>32</b>	<b>11.0</b>	<b>21</b>	<b>0.2</b>	<b>16</b>
Median - Greater than \$10 Billion <sup>2</sup>		7.8		7.6		7.7		3.9		10.0		-0.6	
MPSERS Total Plan Policy		9.2		9.2		9.4		6.4		14.5		0.5	
<b>DOMESTIC EQUITIES</b>	<b>22.0</b>	<b>12.6</b>	<b>11</b>	<b>13.4</b>	<b>5</b>	<b>13.6</b>	<b>6</b>	<b>8.9</b>	<b>5</b>	<b>29.0</b>	<b>7</b>	<b>3.1</b>	<b>3</b>
Median <sup>2</sup>		9.8		10.4		10.4		5.5		16.2		-0.1	
S&P 1500 Index		12.8		13.4		14.1		8.5		24.0		2.2	
<b>PRIVATE EQUITY AND VENTURE CAPITAL</b>	<b>21.6</b>	<b>13.3</b>	<b>8</b>	<b>13.7</b>	<b>11</b>	<b>13.9</b>	<b>11</b>	<b>2.5</b>	<b>76</b>	<b>8.0</b>	<b>27</b>	<b>2.4</b>	<b>11</b>
Median <sup>2</sup>		8.9		9.3		10.0		5.3		6.9		0.9	
Private Equity and VC Benchmark <sup>3</sup>		16.8		17.9		19.4		15.2		40.3		6.7	
<b>INTERNATIONAL EQUITIES</b>	<b>13.1</b>	<b>5.7</b>	<b>45</b>	<b>4.1</b>	<b>78</b>	<b>4.6</b>	<b>87</b>	<b>0.4</b>	<b>65</b>	<b>6.7</b>	<b>19</b>	<b>-7.5</b>	<b>73</b>
Median <sup>2</sup>		5.6		4.4		5.1		1.2		5.6		-7.3	
MSCI AC World ex USA Net Index		4.8		3.5		4.1		0.8		5.5		-7.6	
<b>ABSOLUTE RETURN</b>	<b>10.1</b>	<b>6.4</b>		<b>7.7</b>		<b>9.0</b>		<b>8.5</b>		<b>13.1</b>		<b>2.8</b>	
FTSE 1 Month T-Bill + 400 bps		5.7		6.3		6.5		8.0		9.4		5.2	
HFR Benchmark <sup>4</sup>		3.7		4.5		5.3		4.0		7.4		1.7	
<b>FIXED INCOME</b>	<b>9.8</b>	<b>2.9</b>	<b>27</b>	<b>2.4</b>	<b>22</b>	<b>1.3</b>	<b>28</b>	<b>-0.3</b>	<b>32</b>	<b>3.4</b>	<b>20</b>	<b>-2.8</b>	<b>48</b>
Median <sup>2</sup>		2.2		1.8		0.7		-1.3		2.0		-2.8	
Bloomberg US Aggregate Index		1.4		1.0		-0.3		-2.4		1.3		-3.1	
<b>REAL RETURN AND OPPORTUNISTIC</b>	<b>9.2</b>	<b>10.2</b>		<b>11.1</b>		<b>10.1</b>		<b>6.4</b>		<b>5.6</b>		<b>-0.2</b>	
50% (CPI + 4%) + 50% (actuarial rate) <sup>5</sup>		7.3		7.3		7.4		7.2		6.5		1.3	
<b>REAL ESTATE &amp; INFRASTRUCTURE</b>	<b>8.7</b>	<b>8.2</b>	<b>22</b>	<b>7.6</b>	<b>16</b>	<b>6.8</b>	<b>22</b>	<b>7.2</b>	<b>9</b>	<b>1.8</b>	<b>33</b>	<b>0.7</b>	<b>32</b>
Median <sup>2</sup>		7.0		4.9		3.8		1.4		-0.5		0.7	
NCREIF Property Index <sup>6</sup>		4.3		2.8		1.8		-2.1		-0.9		0.6	
NCREIF Open Fund Index Net		4.9		3.1		2.0		-3.1		-2.3		1.0	
<b>CASH EQUIVALENTS</b>	<b>5.5</b>	<b>2.1</b>		<b>2.6</b>		<b>2.7</b>		<b>4.1</b>		<b>5.5</b>		<b>1.3</b>	
FTSE 1 Month T-Bill		1.7		2.3		2.5		4.0		5.4		1.2	

<sup>1</sup> Annualized Returns and Percentile Rank.

<sup>2</sup> Comparison universe is the State Street Universe comprised of Public Funds greater than \$10 billion on the total plan level and greater than \$1 billion for asset classes.

<sup>3</sup> SP500 + 300 bps with a 3 month lag.

<sup>4</sup> FOF Conservative 1 month lagged.

<sup>5</sup> Current actuarial rate is 6%. History prior to 12/1/18 reflects 50% (CPI +5%) + 50% (actuarial rate).

<sup>6</sup> NCREIF Property Index is NPI minus 130 bps.

## Cumulative and Consecutive Total Fund Returns

### MPSERS

Cumulative For Years Ending 12/31/24

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MPSERS	11.0	10.4	4.5	8.7	9.2	10.2	9.1	10.0	9.7	9.0
Public Plan - Median (> \$10 billion)*	10.0	10.6	3.9	7.0	7.7	9.5	7.6	8.7	8.7	7.8
Rank	21	60	32	12	12	16	11	11	11	11
bp Difference - Median	98	-23	59	165	147	70	146	125	101	120

Consecutive For Years Ending

	12/24	12/23	12/22	12/21	12/20	12/19	12/18	12/17	12/16	12/15
MPSERS	11.0	9.8	-6.3	22.2	11.2	15.4	2.7	16.2	7.4	2.8
Public Plan - Median (> \$10 billion)*	10.0	11.5	-7.8	17.0	12.1	16.3	-2.1	15.5	7.8	0.5
Rank	21	67	21	6	69	62	6	42	61	4
bp Difference - Median	98	-177	148	519	-82	-94	477	71	-36	233

### MSERS

Cumulative For Years Ending 12/31/24

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSERS	11.0	10.4	4.5	8.7	9.2	10.2	9.1	10.0	9.7	9.0
Public Plan - Median (> \$1 billion)*	10.2	11.0	3.8	7.0	7.7	9.5	7.6	8.6	8.7	7.8
Rank	27	65	35	11	8	15	8	8	8	9
bp Difference - Median	75	-62	67	171	147	71	153	131	103	120

Consecutive For Years Ending

	12/24	12/23	12/22	12/21	12/20	12/19	12/18	12/17	12/16	12/15
MSERS	11.0	9.8	-6.4	22.3	11.2	15.4	2.7	16.2	7.5	2.8
Public Plan - Median (> \$1 billion)*	10.2	12.1	-9.0	16.5	12.1	17.3	-2.9	15.3	7.8	0.5
Rank	27	74	23	3	69	75	5	38	55	4
bp Difference - Median	75	-234	267	580	-89	-189	555	96	-31	234

\*State Street Public Funds Universe

## Cumulative and Consecutive Total Fund Returns

### MSPRS

#### Cumulative For Years Ending 12/31/24

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSPRS	11.0	10.4	4.5	8.7	9.2	10.2	9.1	9.9	9.7	9.0
Public Plan - Median (> \$1 billion)*	10.2	11.0	3.8	7.0	7.7	9.5	7.6	8.6	8.7	7.8
Rank	27	65	35	12	9	16	9	9	9	10
bp Difference - Median	75	-61	66	169	147	70	152	130	101	119

#### Consecutive For Years Ending

	12/24	12/23	12/22	12/21	12/20	12/19	12/18	12/17	12/16	12/15
MSPRS	11.0	9.8	-6.4	22.2	11.3	15.3	2.7	16.2	7.5	2.8
Public Plan - Median (> \$1 billion)*	10.2	12.1	-9.0	16.5	12.1	17.3	-2.9	15.3	7.8	0.5
Rank	27	74	23	4	68	76	5	38	56	5
bp Difference - Median	75	-232	266	575	-86	-194	554	96	-34	233

### MJRS

#### Cumulative For Years Ending 12/31/24

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MJRS	10.7	10.2	4.4	8.2	8.8	9.9	8.8	9.7	9.5	8.8
Public Plan - Median (> \$1 billion)*	10.2	11.0	3.8	7.0	7.7	9.5	7.6	8.6	8.7	7.8
Rank	32	68	36	23	18	32	11	14	14	12
bp Difference - Median	46	-77	58	123	108	37	124	107	80	100

#### Consecutive For Years Ending

	12/24	12/23	12/22	12/21	12/20	12/19	12/18	12/17	12/16	12/15
MJRS	10.7	9.8	-6.3	20.4	11.2	15.3	2.7	16.3	7.4	2.8
Public Plan - Median (> \$1 billion)*	10.2	12.1	-9.0	16.5	12.1	17.3	-2.9	15.3	7.8	0.5
Rank	32	75	22	11	69	76	5	36	57	5
bp Difference - Median	46	-235	271	394	-91	-195	551	105	-35	233

\*State Street Public Funds Universe

State of Michigan Retirement System

# ASSET ALLOCATION REVIEW

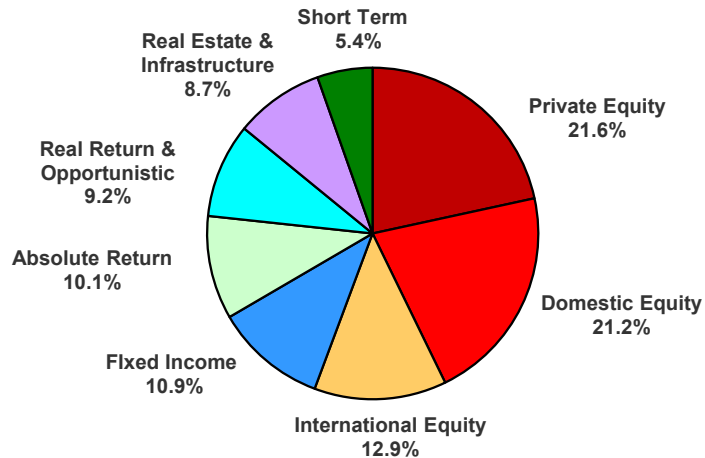
State of Michigan Investment Board Meeting  
April 2, 2025



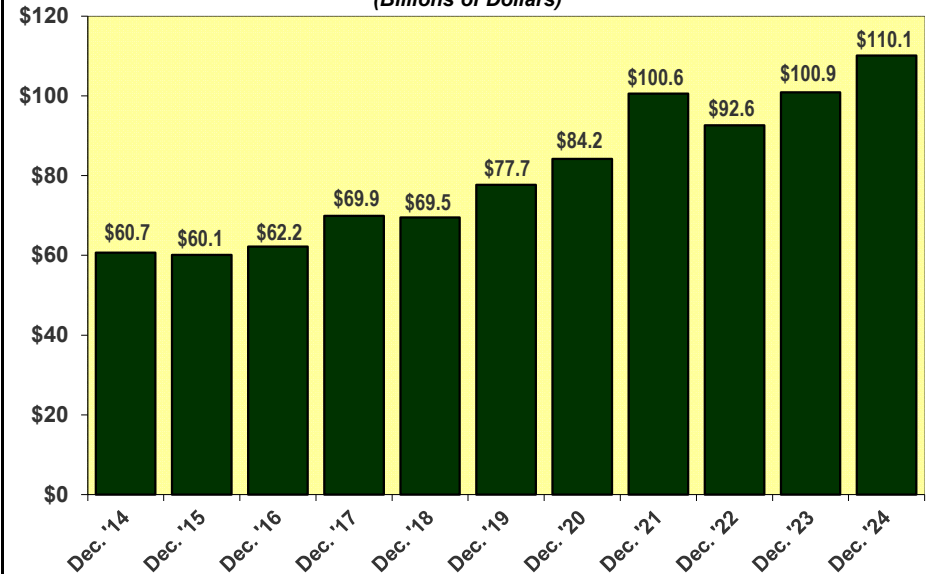
Gregory J. Parker, CFA  
Director of Investments – Public Markets  
Director of Asset Allocation  
Bureau of Investments

# STATE OF MICHIGAN RETIREMENT SYSTEM PROFILE - DECEMBER 2024

**Asset Allocation ~ 12/31/24**



**Market Value\***  
(Billions of Dollars)



**Asset Allocation By Market Value**  
(In Millions)

Investment Strategies	12/31/2024		12/31/2023	
Private Equity	\$23,807	21.6%	\$22,622	22.4%
Domestic Equity	23,346	21.2%	19,730	19.5%
International Equity	14,196	12.9%	13,708	13.6%
Fixed Income	11,971	10.9%	9,149	9.1%
Absolute Return	11,113	10.1%	10,213	10.1%
Real Return & Opportunistic	10,098	9.2%	10,551	10.5%
Real Estate & Infrastructure	9,631	8.7%	9,890	9.8%
Short Term	5,968	5.4%	5,084	5.0%
<b>TOTAL</b>	<b>\$110,130</b>	<b>100.0%</b>	<b>\$100,947</b>	<b>100.0%</b>

**Market Value By Plan ~ 12/31/24**  
(in Millions)

	Pension Plan Mkt. Value	OPEB** Mkt. Value	Combined Mkt. Value	%
MPERS	\$72,181	\$14,213	\$86,394	78.4%
MSERS - (closed)	14,360	6,570	20,930	19.0%
MSPRS	2,049	474	2,523	2.3%
MJRS - (closed)	269	14	283	0.3%
<b>TOTAL</b>	<b>\$88,859</b>	<b>\$21,271</b>	<b>\$110,130</b>	<b>100.0%</b>

MSERS includes the Military Pension Fund

**Short Term Equivalents** (in Billions)

Short Term Strategy	\$6.0	
Short Term in Other Inv. Strategies	1.6	
<b>TOTAL SHORT TERM</b>	<b>\$7.6</b>	<b>6.9% of Total Funds</b>

**12th Largest State Public Retirement System in the U.S.**

Pensions & Investments survey - February 12, 2024 issue

\*The combined net payout for the plans for FY 2022 was \$1.2 billion with \$25.6 billion paid out FY 2010 thru FY 2022 (Pension ACFRs). This represents the amount paid to beneficiaries in excess of employer and employee contributions.

\*\*OPEB - Other Post Employment Benefits



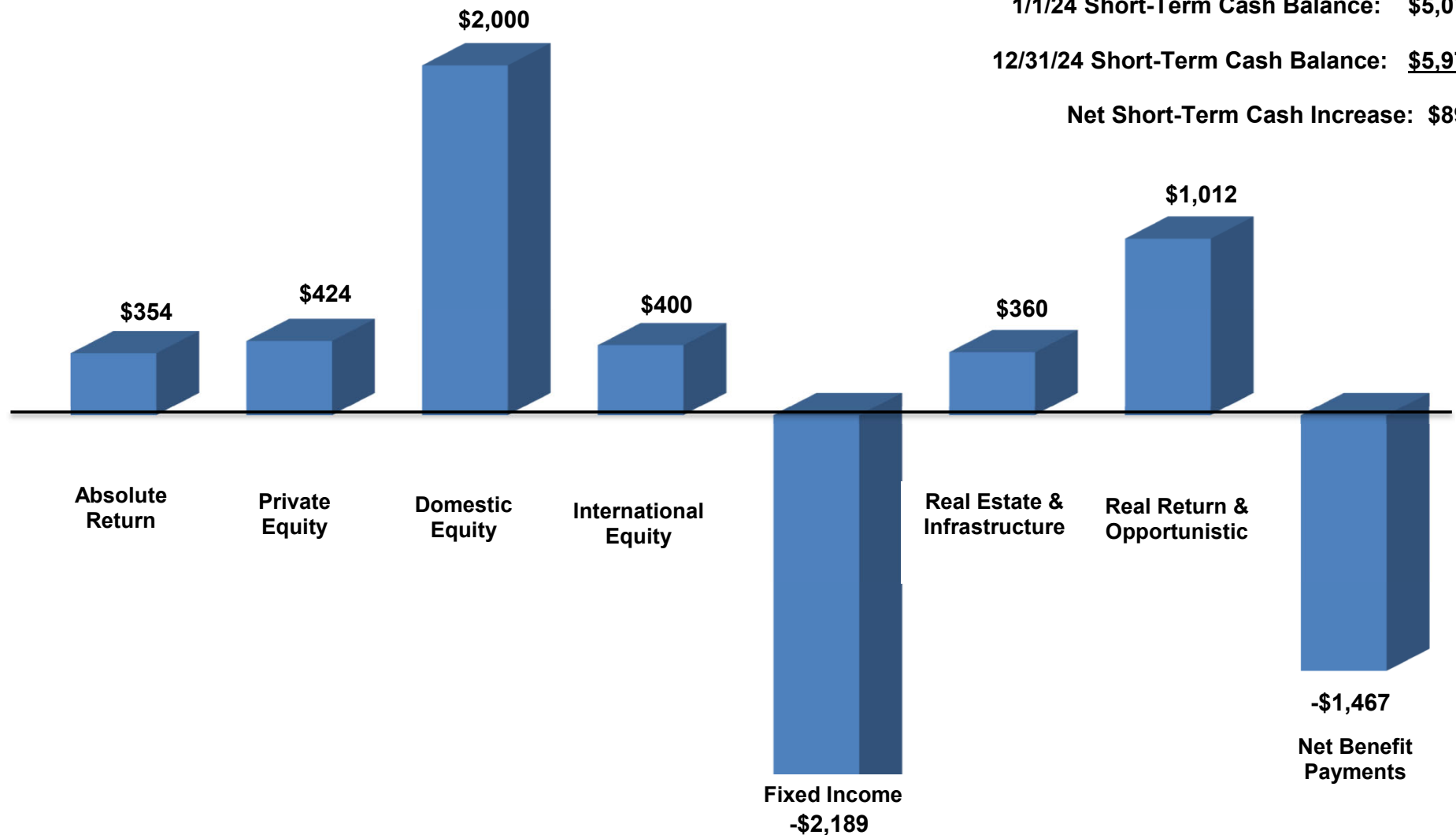
## Sources and Uses of Cash

January 2024 ~ December 2024

1/1/24 Short-Term Cash Balance: \$5,075

12/31/24 Short-Term Cash Balance: \$5,970

Net Short-Term Cash Increase: \$895



A negative number in an asset category indicates a use of cash, a positive number indicates a source of cash.

Dollars in millions

# Asset Allocation Targets

As of 12/31/24

	MPSERS, MSERS, MSPRS Pensions MSERS & MSPRS OPEBs			MPSERS & MJRS OPEBs MJRS Pension		
<i>Asset Class</i>	<i>Actual* 12/31/24</i>	<i>Target**</i>	<i>Ranges</i>	<i>Actual* 12/31/24</i>	<i>Target**</i>	<i>Ranges</i>
Domestic Equity	22.0%	21.0%	13% - 27%	15.5%	16.0%	10% - 20%
Private Equity	21.6%	16.0%	13% - 27%	21.6%	16.0%	13% - 27%
International Equity	13.1%	14.0%	10% - 20%	11.4%	11.0%	7% - 13%
Absolute Return	10.1%	13.0%	7% - 18%	10.1%	15.0%	10% - 20%
Long Term Fixed Income	9.8%	15.0%	10% - 20%	17.8%	26.0%	20% - 30%
Real Return & Opportunistic	9.2%	9.0%	5% - 15%	9.2%	7.0%	5% - 15%
Real Estate & Infrastructure	8.7%	8.0%	5% - 15%	8.8%	5.0%	5% - 15%
Short Term Fixed Income	5.5%	4.0%	1% - 8%	5.6%	4.0%	1% - 8%
<b>TOTAL</b>	100.0%	100.0%		100.0%	100.0%	

\*Individual Trust Allocations may vary slightly

\*\*Complies with basket clause and international restrictions

State of Michigan Retirement System

# MARKETS REVIEW AND OUTLOOK

State of Michigan Investment Board Meeting

April 2, 2025



Gregory J. Parker, CFA

Director of Investments – Public Markets

Director of Asset Allocation

Bureau of Investments

# CAPITAL MARKETS

## Return and Risk Assumptions, Benchmark and Outlook

*A starting point.*

<b>MPSERS Plan</b>	<b>Assumed Return* (Arithmetic)</b>	<b>Standard Deviation*</b>	<b>Trailing 10-Year 10-Year (Benchmark**)</b>
Private Equity	10.9%	20.0%	16.8%
Real Estate	9.5%	21.5%	4.3%
Real Ret / Opportunistic	9.2%	14.4%	7.3%
International Equity	8.5%	19.5%	4.8%
Domestic Equity	8.5%	19.1%	12.8%
Absolute Return	8.2%	11.3%	3.7%
Long-Term Fixed Income	5.4%	5.4%	1.3%
Short-Term	4.6%	1.4%	1.7%

\* Aon Investment Consultants 2024 Long-Term Return/Risk Assumptions

\*\* Investment Policy Statement; Annualized Returns

\*\*\* Actual investments may differ due to changing conditions and the availability of new information

## Overview

*A market update.*

- The Federal Reserve continued with reductions in its policy rates with two cuts occurring during the quarter. The effective Fed Funds rate has come down 100bps from peak levels, but interest rates remain above the year-over-year growth in CPI.
- U.S. equity markets initially reacted favorably to the U.S. presidential election results and the potential for pro-growth policies. However, the market retraced those gains into the end of the year on reduced expectations of the number of interest rates cuts by the Federal Reserve in 2025.
- Broad U.S. equity market valuations expanded throughout the year and were responsible for more than half of the index return of 23.9% and remain above historical averages.
- International markets remain subdued compared to the U.S., as the MSCI ACWI ex US Index delivered year-end performance of 5.5%. International markets valuations remain below historical averages.

## **U.S. Fixed Income**

*Re-emerging term premium.*

- Although the U.S. Federal Reserve lowered policy rates during the quarter, U.S. bond markets came under pressure as the Fed communicated it may not cut interest rates as much as markets expected in 2025. Persistently higher than expected inflation figures are the reason for the Fed's change in mindset.
- The U.S. Treasury yield curve steepened in Q4, with the 2-year Treasury rising 60bps to finish the year at 4.24% and the 10-year Treasury moving a notable 79bps higher to finish at 4.57%. Resilient economic growth, inflation expectations, and a potential trade war between the U.S. and its major trading partners are drivers of this move in yields.
- U.S. bonds in general had a rough period to close the year. The Bloomberg U.S. Aggregate Index lost -3.1% as yields rose, while the Bloomberg U.S. Corporate IG Index lost -3.0%. The Bloomberg U.S. Corporate High Yield, however, managed to achieve a gain of 0.2% in the fourth quarter.
- Credit spreads for investment grade and high yield corporate bonds narrowed slightly and are close to historic levels of tightness. That said, the absolute level of yields remains attractive relative to what could be earned in bonds post the Global Financial Crisis.

## **International Equity**

*Economic weakness and political instability.*

- While international equities, as measured by the MSCI ACWI ex-US Index, fell -7.6% in the fourth quarter, the index did manage to gain 5.5% in 2024. From a valuation perspective, the index is at a PE ratio of 15.5x as of year-end on an LTM basis; slightly below the 20-year average of 15.8x.
- Stock markets across Europe fell in the fourth quarter over concerns of economic weakness and unstable political environments in France and Germany, with equities in the United Kingdom and Japan also declining on pessimistic macro-economic outlooks.
- The MSCI Emerging Markets Index fell -8.0% in the fourth quarter. Efforts to stimulate China's economy is proving to be difficult, while investor concerns over potential new tariffs by the U.S. increase. India's stock market fell in the quarter on slowing economic growth.
- The U.S. dollar rose sharply against the euro, the yen and most other major currencies with a gain of more than 7% during the quarter and for 2024.

## **Domestic Equity**

*Information technology stocks drive market gains.*

- The broad U.S. market, measured by the S&P 1500 Index, grew 23.9% in 2024 led by mega cap technology companies driven by the artificial intelligence theme. In terms of valuation, the market is trading at a PE ratio of 26.3x at year-end, which is well above the 20-year average of 17.9x.
- According to Factset, estimates for next year's earnings growth are 14.6%. While this level of growth in earnings is elevated compared to history, it does highlight the favorable growth outlook in the U.S. relative to many global markets.
- The broad market rallied post the presidential election on expectations of higher growth, lower taxes and less regulation before weakening into year-end after the Federal Reserve signaled fewer cuts to policy rates in 2025.
- The S&P 500 hit 57 all-time highs in 2024, the fifth most of any year in history. Valuation across many metrics for the S&P 500 are at levels much higher than historical averages, indicating investors have priced significant good news into the market. With estimated earnings growth of 14.6% in 2025, any misstep in corporate fundamentals could lead to increased volatility given elevated market multiples.

## **Real Estate**

*REIT dividend yields below U.S. Treasuries.*

- The FTSE NAREIT All Equity REITs Index rose 4.9% in 2024, including dividends. Cap rates at the end of the fourth quarter 2024 were 7.0%, in line with the average cap rate since 1982 at 7.0%.
- At year end, the dividend yield on the FTSE NAREIT All Equity REITs Index was 4.0%, 61 basis points less than the yield on the 10-year U.S. Treasury.

## **Commodities**

*Inflation concerns.*

- Core CPI, excluding food and energy, increased 3.2% year over year in December, slowing from the 3.3% rate in November and marking the first drop since July. Unless there is a further slowing in this measure in the coming months, the Federal Reserve is unlikely to continue with aggressive cuts in policy rates in the coming year.
- In 2024, WTI oil prices were essentially unchanged ending the year at \$71.72, as growth in global oil production and weaker economic demand were offset by increased geopolitical risks.
- Gold had a strong year, returning 27.2% to end the year at \$2,624.50, driven by geopolitical issues, central bank buying, and investor concern on inflation returning in 2025.
- The broad Bloomberg Commodity Index largely remained unchanged over the year, increasing 0.11%.

# Annual Total Returns of Key Asset Classes 2005 - 2024

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Best ↑  ↓ Worst	Real Estate	Int'l Equity	Int'l Equity	Gov't Bonds	Int'l Equity	U.S. Equity	Real Estate	Int'l Equity	U.S. Equity	U.S. Equity	Real Estate	U.S. Equity	Int'l Equity	Real Estate	U.S. Equity	U.S. Equity	U.S. Equity	Inflation	U.S. Equity	U.S. Equity	Best ↑  ↓ Worst
	20.06%	26.65%	16.65%	12.38%	41.44%	16.38%	14.26%	16.83%	32.80%	13.08%	13.32%	11.93%	27.19%	6.71%	30.90%	17.92%	28.45%	6.50%	25.47%	23.95%	
	Int'l Equity	Real Estate	Real Estate	Cash	U.S. Equity	Real Estate	Gov't Bonds	U.S. Equity	Int'l Equity	Real Estate	U.S. Equity	Real Estate	U.S. Equity	Inflation	Int'l Equity	Int'l Equity	Real Estate	Real Estate	Int'l Equity	Hedge Funds	
	16.62%	16.59%	15.84%	2.05%	27.24%	13.11%	9.02%	16.17%	15.29%	11.81%	1.01%	7.97%	21.13%	1.91%	22.13%	10.65%	17.70%	5.50%	16.08%	7.41%	
	U.S. Equity	U.S. Equity	Gov't Bonds	Inflation	Corp. Bonds	Int'l Equity	Corp. Bonds	Real Estate	Real Estate	Corp. Bonds	Gov't Bonds	Corp. Bonds	Real Estate	Cash	Corp. Bonds	Corp. Bonds	Int'l Equity	Cash	Corp. Bonds	Int'l Equity	
	5.65%	15.34%	8.67%	0.10%	16.05%	11.15%	8.35%	10.54%	10.99%	7.53%	0.86%	5.63%	6.96%	1.88%	14.54%	9.89%	8.29%	1.46%	8.52%	5.53%	
	Hedge Funds	Hedge Funds	Hedge Funds	Corp. Bonds	Hedge Funds	Corp. Bonds	Inflation	Corp. Bonds	Hedge Funds	Gov't Bonds	Inflation	Int'l Equity	Corp. Bonds	Gov't Bonds	Gov't Bonds	Gov't Bonds	Hedge Funds	Hedge Funds	Cash	Cash	
	5.13%	9.21%	7.68%	-3.07%	9.65%	8.46%	2.96%	9.37%	7.70%	4.92%	0.66%	4.50%	6.42%	0.88%	6.83%	7.94%	7.56%	0.12%	5.13%	5.38%	
	Inflation	Cash	U.S. Equity	Real Estate	Inflation	Gov't Bonds	U.S. Equity	Hedge Funds	Inflation	Hedge Funds	Hedge Funds	Inflation	Hedge Funds	Hedge Funds	Real Estate	Hedge Funds	Inflation	Gov't Bonds	Hedge Funds	Inflation	
	3.42%	4.81%	5.47%	-6.46%	2.72%	5.52%	1.75%	4.22%	1.49%	3.14%	0.37%	2.09%	3.88%	-1.05%	6.42%	4.75%	7.12%	-12.32%	4.50%	2.90%	
4	Cash	Corp. Bonds	Corp. Bonds	Hedge Funds	Cash	Hedge Funds	Cash	Gov't Bonds	Cash	Inflation	Cash	Hedge Funds	Gov't Bonds	Corp. Bonds	Hedge Funds	Real Estate	Cash	Int'l Equity	Gov't Bonds	Corp. Bonds	
	3.06%	4.27%	5.10%	-19.86%	0.19%	5.07%	0.10%	2.02%	0.07%	0.68%	0.01%	1.89%	2.30%	-2.51%	4.40%	1.60%	0.05%	-15.57%	4.09%	2.13%	
	Gov't Bonds	Gov't Bonds	Cash	U.S. Equity	Gov't Bonds	Inflation	Hedge Funds	Inflation	Corp. Bonds	Cash	Corp. Bonds	Gov't Bonds	Inflation	U.S. Equity	Inflation	Inflation	Corp. Bonds	Corp. Bonds	Inflation	Gov't Bonds	
	2.65%	3.46%	5.03%	-36.72%	-2.19%	1.50%	-3.55%	1.70%	-2.01%	0.04%	-0.77%	1.05%	2.12%	-4.96%	2.29%	1.40%	-1.04%	-15.76%	3.40%	0.62%	
	Corp. Bonds	Inflation	Inflation	Int'l Equity	Real Estate	Cash	Int'l Equity	Cash	Gov't Bonds	Int'l Equity	Int'l Equity	Cash	Cash	Int'l Equity	Cash	Cash	Gov't Bonds	U.S. Equity	Real Estate	Real Estate	
	1.95%	2.55%	4.06%	-45.52%	-16.86%	0.13%	-13.71%	0.11%	-2.60%	-3.87%	-5.67%	0.27%	0.84%	-14.20%	2.28%	0.45%	-2.28%	-17.78%	-7.94%	0.43%	

Annualized Returns 2005 - 2024																				
		Cash		Gov't.		Inflat.		Hedge		Corp.		Int'l.		R.E.		US Eq.				
Return		1.53%		2.55%		2.57%		3.14%		3.97%		4.97%		7.01%		10.32%				Return
Risk		0.53%		4.34%		0.54%		3.94%		6.48%		16.97%		5.28%		15.20%				Risk

- Hedge Funds are represented by the HFRI FOF Conservative Index
- Inflation is represented by the U.S. Consumer Price Index (SA)
- International Equity is represented by the MSCI AC World ex USA Index
- Cash is represented by FTSE 1 Month T-Bill Index
- U.S. Equity is represented by the S&P 1500 Index
- Real Estate is represented by the NCREIF National Property Index
- Corporate Bonds are represented by the Bloomberg U.S. Corp. Inv. Grade Index
- Government Bonds are represented by the Bloomberg U.S. Government Index

State of Michigan Retirement System

# DEFINED CONTRIBUTION REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Lan Hue Chen, CFA, CAIA  
Senior Investment Manager  
Defined Contribution, Trusts & Agencies Division



# EXECUTIVE SUMMARY

## **Market Environment and Outlook**

U.S. stocks continued their upward trajectory during the fourth quarter following Donald Trump's presidential victory, with the S&P 500 Index rising by 2.41% and the Nasdaq Composite advancing by 6.17%. The consumer discretionary and communication services sectors led, while materials and healthcare lagged. Large cap stocks outperformed small caps, and growth stocks significantly beat value stocks.

The U.S. bond market struggled during the quarter on concerns about sticky inflation and the U.S. Federal Reserve's more conservative rate-cut path. The Bloomberg U.S. Aggregate Bond Index declined by -3.06% and the 10-year U.S. Treasury yield rose by more than 80 basis points, ending the quarter at 4.58%. The Fed cut rates by 0.25% in both November and December. However, the central bank now projects just two rate cuts in 2025, reflecting a more cautious stance in response to strong economic data.

After months of noise surrounding the U.S. presidential election, markets have now refocused on macroeconomic data, which offer mixed signals. Key concerns include global geopolitical tensions, especially around tariffs, and deteriorating sentiment tied to mega-cap positioning and broader market weakness.

## **Legislative Update**

**The Social Security Fairness Act was signed into law.** Having been passed with bi-partisan support, President Biden signed The Social Security Fairness Act into law on January 5, 2025.

The Act repealed two federal policies which reduced Social Security benefits for certain federal annuitants. Specifically, the Act:

- **Eliminates the Windfall Elimination Provision (WEP)**, which reduced Social Security benefits for individuals who worked in jobs not covered by Social Security (e.g., some state or local government positions) and later worked in jobs that were covered.
- **Repeals the Government Pension Offset (GPO)**, which reduces Social Security spousal or survivor benefits for individuals who receive a pension from work not covered by Social Security.

The Act particularly benefits public sector employees, including teachers, police officers, and firefighters, who were often affected by the WEP and GPO.

The Congressional Budget Office estimated that eliminating WEP will increase monthly Social Security payments of impacted individuals by \$360, on average, by December 2025. Eliminating GPO will increase monthly payments by \$700 for impacted spouses and \$1,190 for impacted surviving spouses, on average, by December 2025.

## **Regulatory Update**

**The Department of Labor's (DOL's) Retirement Savings Lost and Found Database has gone live.** The DOL's Retirement Savings Lost and Found Database for retirement plans

governed by ERISA came online in the fourth quarter. Established under the SECURE 2.0 Act of 2022, the database serves as a centralized platform where individuals or beneficiaries can search for unclaimed or forgotten accounts and receive instructions on how to access their funds.

A 2023 report from the Department of Labor indicated that late Baby Boomers (born 1957 to 1964) held an average of 12.7 jobs between the ages of 18 and 56. Each job change raises the likelihood of employees losing track of their employer-sponsored retirement accounts.

The Department of Labor (DOL) reported in November 2024 that the Employee Benefits Security Administration (EBSA) has recovered over \$7 billion in retirement benefits for participants and beneficiaries since 2017.

Users can locate accounts from previous employers by inputting personal details such as name and Social Security number. Individuals must verify their identity via Login.gov.

During the initial program rollout, plan sponsor participation is voluntary. The DOL has created a secure web portal where administrators may upload plan and participant information, including data previously reported on Form 5500 and details about separated participants who are entitled to benefits. The DOL offers liability protection for data submitted through the RSLF portal. Participants can request to have their information excluded from the database.

# SMRS

## Defined Contribution Strategies

### 12/31/24

Markets	Amount		% of Total	Fee per \$10,000
QDIA (\$ in Millions)				
	<u>12/31/24</u>	<u>12/31/23</u>		
Total Target Date Fund	\$5,753	\$4,631	35.8%	\$5.50
Tier I Index Funds				
State Street S&P 500 Index Fund	\$2,523	\$2,050		\$0.80
State Street Bond Market Index Fund	1,294	1,161		1.50
State Street Global All Cap Equity ex-U.S. Index Fund	1,060	949		4.00
State Street S&P Mid Cap Index Fund	892	812		1.50
BlackRock Government Short-Term Investment CL F	319	292		5.50
BlackRock S&P Small Cap 600 Equity Index CL F	181	180		2.30
BlackRock Emerging Markets Index CL F	112	110		7.00
Total Tier I Index	\$6,383	\$5,555	39.7%	\$1.96
Tier II Active Funds				
Stable Value Fund	\$1,080	\$1,154		\$21.18
Dodge & Cox Stock Fund	732	694		41.00
Jennison Large Cap Growth Fund	691	556		27.50
American Funds EuroPacific Growth R6	240	252		47.00
T. Rowe Price Mid-Cap Value Fund	189	162		51.00
Voya Small Cap Growth Equity Fund	168	141		33.30
Artisan Mid Cap Fund	136	136		68.50
PIMCO Total Return I Fund	115	104		25.00
Ceredex Small-Cap Value Eq I	75	74		48.90
Prudential High Yield Fund	50	43		36.00
Total Tier II Active	\$3,475	\$3,317	21.6%	\$33.39
Tier III				
Total Self Directed Brokerage Account	\$449	\$309	2.8%	NA
Total Defined Contribution Assets	\$16,060	\$13,812	100.0%	\$9.97

As of 12/31/24, the Loan Fund is \$193.8M. Total Defined Contribution Assets breakout: 22.9% defined benefit with defined contribution access, 67.5% defined contribution only, 9.5% hybrid and 0.2% forfeitures or stale dated assets.

NOTE: Totals may not be exact due to rounding.

## Defined Contribution Performance by Fund 12/31/24

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>10-Years</u>	<u>Since Inc</u>
<b>State Street Target Retirement Income Fund</b>	<b>\$ 113,948,243</b>	<b>6.9</b>	<b>1.5</b>	<b>4.4</b>	<b>4.4</b>	<b>N/A</b>
State Street Income Custom Index		6.9	1.4	4.3	4.4	N/A
Morningstar Target-Date Retirement		6.4	0.7	3.4	3.8	N/A
Variance State Street Income Custom Index		0.0	0.1	0.1	0.0	N/A
Variance Morningstar Target-Date Retirement		0.5	0.8	1.0	0.6	N/A
<b>State Street Target Retirement 2020 Fund</b>	<b>\$131,326,254</b>	<b>7.2</b>	<b>1.3</b>	<b>4.9</b>	<b>5.4</b>	<b>N/A</b>
State Street 2020 Custom Index		7.1	1.3	4.8	5.4	N/A
Morningstar Target-Date 2020		7.8	1.0	4.5	5.2	N/A
Variance State Street 2020 Custom Index		0.1	0.0	0.1	0.0	N/A
Variance Morningstar Target-Date 2020		(0.6)	0.3	0.4	0.2	N/A
<b>State Street Target Retirement 2025 Fund</b>	<b>\$310,688,019</b>	<b>8.6</b>	<b>1.5</b>	<b>5.9</b>	<b>6.4</b>	<b>N/A</b>
State Street 2025 Custom Index		8.6	1.4	5.9	6.4	N/A
Morningstar Target-Date 2025		8.2	1.1	5.0	5.7	N/A
Variance State Street 2025 Custom Index		0.0	0.1	0.0	0.0	N/A
Variance Morningstar Target-Date 2025		0.4	0.4	0.9	0.7	N/A
<b>State Street Target Retirement 2030 Fund</b>	<b>\$470,860,177</b>	<b>10.0</b>	<b>1.9</b>	<b>6.8</b>	<b>7.0</b>	<b>N/A</b>
State Street 2030 Custom Index		10.0	1.9	6.7	7.0	N/A
Morningstar Target-Date 2030		9.5	1.7	5.9	6.4	N/A
Variance State Street 2030 Custom Index		0.0	0.0	0.1	0.0	N/A
Variance Morningstar Target-Date 2030		0.5	0.2	0.9	0.6	N/A
<b>State Street Target Retirement 2035 Fund</b>	<b>\$616,935,579</b>	<b>10.7</b>	<b>2.1</b>	<b>7.2</b>	<b>7.4</b>	<b>N/A</b>
State Street 2035 Custom Index		10.7	2.1	7.2	7.4	N/A
Morningstar Target-Date 2035		11.1	2.4	7.0	7.2	N/A
Variance State Street 2035 Custom Index		0.0	0.0	0.0	0.0	N/A
Variance Morningstar Target-Date 2035		(0.4)	(0.3)	0.2	0.2	N/A
<b>State Street Target Retirement 2040 Fund</b>	<b>\$649,922,529</b>	<b>11.4</b>	<b>2.4</b>	<b>7.7</b>	<b>7.8</b>	<b>N/A</b>
State Street 2040 Custom Index		11.5	2.3	7.6	7.8	N/A
Morningstar Target-Date 2040		12.5	3.1	7.9	7.8	N/A
Variance State Street 2040 Custom Index		(0.1)	0.1	0.1	0.0	N/A
Variance Morningstar Target-Date 2040		(1.1)	(0.7)	(0.2)	0.0	N/A
<b>State Street Target Retirement 2045 Fund</b>	<b>\$733,669,986</b>	<b>12.1</b>	<b>2.6</b>	<b>8.1</b>	<b>8.1</b>	<b>N/A</b>
State Street 2045 Custom Index		12.1	2.6	8.0	8.1	N/A
Morningstar Target-Date 2045		13.7	3.6	8.5	8.1	N/A
Variance State Street 2045 Custom Index		0.0	0.0	0.1	0.0	N/A
Variance Morningstar Target-Date 2045		(1.6)	(1.0)	(0.4)	0.0	N/A
<b>State Street Target Retirement 2050 Fund</b>	<b>\$966,511,250</b>	<b>12.6</b>	<b>2.9</b>	<b>8.4</b>	<b>8.3</b>	<b>N/A</b>
State Street 2050 Custom Index		12.7	2.9	8.4	8.2	N/A
Morningstar Target-Date 2050		14.3	3.9	8.7	8.3	N/A
Variance State Street 2050 Custom Index		(0.1)	0.0	0.0	0.1	N/A
Variance Morningstar Target-Date 2050		(1.7)	(1.0)	(0.3)	0.0	N/A
<b>State Street Target Retirement 2055 Fund</b>	<b>\$1,039,343,483</b>	<b>12.8</b>	<b>2.9</b>	<b>8.4</b>	<b>8.3</b>	<b>N/A</b>
State Street 2055 Custom Index		12.8	2.9	8.4	8.3	N/A
Morningstar Target-Date 2055		14.5	4.0	8.8	8.4	N/A
Variance State Street 2055 Custom Index		0.0	0.0	0.0	0.0	N/A
Variance Morningstar Target-Date 2055		(1.7)	(1.1)	(0.4)	(0.1)	N/A
<b>State Street Target Retirement 2060 Fund</b>	<b>\$581,252,871</b>	<b>12.8</b>	<b>3.0</b>	<b>8.4</b>	<b>N/A</b>	<b>8.1</b>
State Street 2060 Custom Index		12.8	2.9	8.4	N/A	8.1
Morningstar Target-Date 2060		14.6	4.0	8.9	N/A	8.3
Variance State Street 2060 Custom Index		0.0	0.1	0.0	N/A	0.0
Variance Morningstar Target-Date 2060		(1.8)	(1.0)	(0.5)	N/A	(0.2)

## Defined Contribution Performance by Fund

### 12/31/24

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>10-Years</u>	<u>Since Inc</u>
<b>State Street Target Retirement 2065 Fund</b>	<b>\$138,611,575</b>	<b>12.8</b>	<b>3.0</b>	<b>8.4</b>	<b>N/A</b>	<b>8.4</b>
State Street 2065 Custom Index		12.8	2.9	8.4	N/A	8.4
Morningstar Target-Date 2065+		14.5	4.2	8.9	N/A	8.7
Variance State Street 2065 Custom Index		0.0	0.1	0.0	N/A	0.0
Variance Morningstar Target-Date 2065+		(1.7)	(1.2)	(0.5)	N/A	(0.3)
<b>TIER 1</b>						
<b>State Street S&amp;P 500 Index Fund</b>	<b>\$2,523,486,543</b>	<b>25.0</b>	<b>8.9</b>	<b>14.5</b>	<b>13.1</b>	<b>N/A</b>
S&P 500 Index		25.0	8.9	14.5	13.1	N/A
Morningstar Large Blend		21.4	7.2	12.9	11.6	N/A
Variance S&P 500 Index		0.0	0.0	0.0	0.0	N/A
Variance Morningstar Large Blend		3.6	1.7	1.6	1.5	N/A
<b>State Street US Bond Index Fund</b>	<b>\$1,294,284,528</b>	<b>1.4</b>	<b>(2.4)</b>	<b>(0.3)</b>	<b>1.3</b>	<b>N/A</b>
Bloomberg U.S. Aggregate Bond Index		1.3	(2.4)	(0.3)	1.3	N/A
Morningstar Intermediate Core Bond		1.7	(2.3)	(0.2)	1.3	N/A
Variance Bloomberg U.S. Aggregate Bond Index		0.1	0.0	0.0	0.0	N/A
Variance Morningstar Intermediate Core Bond		(0.3)	(0.1)	(0.1)	0.0	N/A
<b>State Street Global All Cap Equity ex-U.S. Index Fund</b>	<b>\$1,060,121,173</b>	<b>5.1</b>	<b>0.7</b>	<b>4.3</b>	<b>5.2</b>	<b>N/A</b>
MSCI ACWI ex USA IMI (Net)		5.2	0.5	4.1	4.9	N/A
Morningstar Foreign Large Blend		4.8	0.8	4.5	5.0	N/A
Variance MSCI ACWI ex USA IMI (Net)		(0.1)	0.2	0.2	0.3	N/A
Variance Morningstar Foreign Large Blend		0.3	(0.1)	(0.2)	0.2	N/A
<b>State Street S&amp;P Mid Cap Index Fund</b>	<b>\$892,355,698</b>	<b>13.9</b>	<b>4.9</b>	<b>10.3</b>	<b>9.7</b>	<b>N/A</b>
S&P 400 Index		13.9	4.9	10.3	9.7	N/A
Morningstar Mid-Cap Blend		14.4	4.1	9.8	8.9	N/A
Variance S&P 400 Index		0.0	0.0	0.0	0.0	N/A
Variance Morningstar Mid-Cap Blend		(0.5)	0.8	0.5	0.8	N/A
<b>BlackRock Government Short-Term Investment Fund</b>	<b>\$318,621,975</b>	<b>5.3</b>	<b>4.0</b>	<b>2.5</b>	<b>1.8</b>	<b>N/A</b>
FTSE Treasury Bill 1 Mon USD		5.4	4.0	2.5	1.7	N/A
Variance FTSE Treasury Bill 1 Mon USD		(0.1)	0.0	0.0	0.1	N/A
<b>BlackRock S&amp;P Small Cap 600 Equity Index Fund</b>	<b>\$181,496,705</b>	<b>8.9</b>	<b>2.1</b>	<b>8.5</b>	<b>N/A</b>	<b>N/A</b>
S&P SmallCap 600 Index		8.7	1.9	8.4	N/A	N/A
Morningstar Small Blend		11.1	2.6	8.6	N/A	N/A
Variance S&P SmallCap 600 Index		0.2	0.2	0.1	N/A	N/A
Variance Morningstar Small Blend		(2.2)	(0.5)	(0.1)	N/A	N/A
<b>BlackRock Emerging Markets Index Fund</b>	<b>\$112,209,619</b>	<b>7.1</b>	<b>(2.3)</b>	<b>1.4</b>	<b>3.5</b>	<b>N/A</b>
MSCI Emerging Market (Net)		7.5	(1.9)	1.7	3.6	N/A
Morningstar Diversified Emerging Mkts		6.0	(2.0)	2.3	3.6	N/A
Variance MSCI Emerging Market (Net)		(0.4)	(0.4)	(0.3)	(0.1)	N/A
Variance Morningstar Diversified Emerging Mkts		1.1	(0.3)	(0.9)	(0.1)	N/A
<b>TIER 2</b>						
<b>Stable Value Fund</b>	<b>\$1,079,882,559</b>	<b>2.5</b>	<b>2.2</b>	<b>2.1</b>	<b>2.2</b>	<b>N/A</b>
BofA Merrill Lynch US 3-Month Treasury Bill Index		5.3	3.9	2.5	1.8	N/A
Huebel Universe		0.0	0.0	0.0	0.0	N/A
Variance BofA Merrill Lynch US 3-Month Treasury Bill Index		(2.8)	(1.7)	(0.4)	0.4	N/A
Variance Huebel Universe		2.5	2.2	2.1	2.2	N/A
<b>Dodge &amp; Cox Stock Fund</b>	<b>\$731,764,658</b>	<b>14.7</b>	<b>7.8</b>	<b>11.9</b>	<b>10.8</b>	<b>N/A</b>
Russell 1000 Value Index		14.4	5.6	8.7	8.5	N/A
Morningstar Large Value		14.3	6.1	9.3	8.7	N/A
Variance Russell 1000 Value Index		0.3	2.2	3.2	2.3	N/A
Variance Morningstar Large Value		0.4	1.7	2.6	2.1	N/A

## Defined Contribution Performance by Fund

### 12/31/24

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>10-Years</u>	<u>Since Inc</u>
<b>Jennison Large Cap Growth Equity Fund</b>	<b>\$691,069,653</b>	<b>29.9</b>	<b>6.5</b>	<b>17.1</b>	<b>16.2</b>	<b>16.0</b>
<i>Russell 1000 Growth Index</i>		33.4	10.5	19.0	16.8	16.9
<i>Morningstar Large Growth</i>		29.0	6.7	15.4	14.0	13.4
<i>Variance Russell 1000 Growth Index</i>		(3.5)	(4.0)	(1.9)	(0.6)	(0.9)
<i>Variance Morningstar Large Growth</i>		0.9	(0.2)	1.7	2.2	2.6
<b>American Funds EuroPacific Growth R6 Fund</b>	<b>\$239,733,418</b>	<b>5.0</b>	<b>(2.0)</b>	<b>3.9</b>	<b>5.7</b>	<b>N/A</b>
<i>MSCI ACWI Ex USA NR USD</i>		5.5	0.8	4.1	4.8	N/A
<i>Morningstar Foreign Large Growth</i>		4.8	0.8	4.5	5.0	N/A
<i>Variance MSCI ACWI Ex USA NR USD</i>		(0.5)	(2.8)	(0.2)	0.9	N/A
<i>Variance Morningstar Foreign Large Growth</i>		0.2	(2.8)	(0.6)	0.7	N/A
<b>T. Rowe Price Mid-Cap Value Fund</b>	<b>\$188,634,386</b>	<b>16.6</b>	<b>10.0</b>	<b>12.7</b>	<b>10.2</b>	<b>N/A</b>
<i>Russell Midcap Value Index</i>		13.1	3.9	8.6	8.1	N/A
<i>Morningstar Mid-Cap Value</i>		11.4	5.2	9.0	8.0	N/A
<i>Variance Russell Midcap Value Index</i>		3.5	6.1	4.1	2.1	N/A
<i>Variance Morningstar Mid-Cap Value</i>		5.2	4.8	3.7	2.2	N/A
<b>Voya Small Cap Growth Equity Fund</b>	<b>\$167,720,099</b>	<b>19.4</b>	<b>3.0</b>	<b>7.8</b>	<b>7.6</b>	<b>N/A</b>
<i>Russell 2000 Growth Index</i>		15.2	0.2	6.9	8.1	N/A
<i>Morningstar Small Growth</i>		15.0	(1.3)	8.5	9.3	N/A
<i>Variance Russell 2000 Growth Index</i>		4.2	2.8	0.9	(0.5)	N/A
<i>Variance Morningstar Small Growth</i>		4.4	4.3	(0.7)	(1.7)	N/A
<b>Artisan Mid Cap Fund</b>	<b>\$135,976,893</b>	<b>12.8</b>	<b>(3.7)</b>	<b>9.3</b>	<b>10.0</b>	<b>N/A</b>
<i>Russell Midcap Growth Index</i>		22.1	4.0	11.5	11.5	N/A
<i>Morningstar Mid-Cap Growth</i>		16.5	(0.1)	9.3	10.1	N/A
<i>Variance Russell Midcap Growth Index</i>		(9.3)	(7.7)	(2.2)	(1.5)	N/A
<i>Variance Morningstar Mid-Cap Growth</i>		(3.7)	(3.6)	0.0	(0.1)	N/A
<b>PIMCO Total Return I Fund</b>	<b>\$115,471,383</b>	<b>2.6</b>	<b>(2.1)</b>	<b>0.2</b>	<b>1.7</b>	<b>N/A</b>
<i>Bloomberg U.S. Aggregate Bond Index</i>		1.3	(2.4)	(0.3)	1.3	N/A
<i>Morningstar Intermediate Core-Plus Bond</i>		2.4	(1.9)	0.2	1.6	N/A
<i>Variance Bloomberg U.S. Aggregate Bond Index</i>		1.3	0.3	0.5	0.4	N/A
<i>Variance Morningstar Intermediate Core-Plus Bond</i>		0.2	(0.2)	0.0	0.1	N/A
<b>Virtus Ceredex Small-Cap Value Eq I Fund</b>	<b>\$75,274,438</b>	<b>10.0</b>	<b>4.6</b>	<b>8.2</b>	<b>7.7</b>	<b>N/A</b>
<i>Russell 2000 Value Index</i>		8.1	1.9	7.3	7.1	N/A
<i>Morningstar Small Blend</i>		11.1	2.6	8.6	7.9	N/A
<i>Variance Russell 2000 Value Index</i>		1.9	2.7	0.9	0.6	N/A
<i>Variance Morningstar Small Blend</i>		(1.1)	2.0	(0.4)	(0.2)	N/A
<b>Prudential High Yield Fund</b>	<b>\$49,807,920</b>	<b>7.9</b>	<b>1.9</b>	<b>3.8</b>	<b>5.2</b>	<b>4.9</b>
<i>Bloomberg U.S. Corp. HY 1% Issuer Cap Index</i>		8.2	3.0	4.1	5.1	<b>4.6</b>
<i>Morningstar High Yield Bond</i>		7.6	2.8	3.7	4.3	<b>3.6</b>
<i>Variance Bloomberg U.S. Corp. HY 1% Issuer Cap Index</i>		(0.3)	(1.1)	(0.3)	0.1	<b>0.3</b>
<i>Variance Morningstar High Yield Bond</i>		0.3	(0.9)	0.1	0.9	<b>1.3</b>
<b>TIER 3</b>						
<b>Self Directed</b>	<b>\$448,822,215</b>					
<b>TOTAL</b>	<b>\$16,059,803,828</b>					
<b>Loan Fund:</b>	<b>\$193,810,893</b>					

State of Michigan Retirement System

# FIXED INCOME REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



LeAnn L. Auer  
Senior Investment Manager  
Fixed Income Division

## EXECUTIVE SUMMARY

### Performance

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	3.4%	-0.3%	1.3%	2.4%	2.9%
Bloomberg U.S. Agg Index	1.3%	-2.4%	-0.3%	1.0%	1.4%
Peer Median Returns	2.0%	-1.3%	0.7%	1.8%	2.2%

- Across all time periods, the fixed income portfolio outperformed its benchmark and peer group. The portfolio also benefited from an overweight to structured credit and high yield bonds during these periods.
- The fourth quarter delivered weak Fixed Income performance. The U.S. Treasury yield curve rose across most tenors throughout the quarter. Notably, the 10-year Treasury ended the quarter at 4.6%, up 80 bps from September. The yield curve also experienced material steepening as the spread between the 10-year Treasury and the 2-year Treasury increased by 32 bps during the quarter. The Federal Reserve's FOMC committee met twice during the period and decreased their overnight rate by a total of 50 bps. The market also brought down its expectations for the number of rate cuts during 2025 due to 4<sup>th</sup> quarter economic data coming in stronger than expected and inflation exhibiting slower declines. Further, post-election uncertainty regarding fiscal policies under the pending, new administration drove long-term yields higher. Investment Grade and High Yield credit spreads tightened modestly during the quarter, by -8 and -12 bps, respectively, whereas in Securitized assets, ABS and CMBS spreads tightened by -13 and -20 bps, respectively.
- Total Return performance for the 12-month U.S. Aggregate Bond Index was 1.25% and -3.06% for the three months ending December 31, 2024. For both time periods, Securitized ABS and CMBS were the best-performing sectors, while U.S. Treasuries and Agency MBS were the worst performers.
- Securitized Credit, particularly in CLOs and CMBS, were the best performing portfolios for both the past year and the quarter ending December 31, 2024. These portfolios returned 10.4% and 16.1%, respectively, on a 1-year basis, and 2.1% and 1.0%, respectively, for the fourth quarter 2024.



## **Strategy Update**

- The objective of the Fixed Income Division portfolio is to meet or exceed the returns of the Bloomberg U.S. Aggregate Bond Index while satisfying the overall characteristics of a core fixed income portfolio. The portfolio has a higher yield-to-maturity (YTM) than the benchmark, 5.8% versus 4.9%. Further, the portfolio exhibits risk characteristics that are in line with the historical volatility of traditional fixed income benchmarks.
- The portfolio characteristics are:
  - **Income:** The return coupon of the portfolio is 4.1% and is approximately 70 bps higher than the benchmark.
  - **Liquidity:** The portfolio has 35.4% invested in U.S. Treasuries, TIPS, government-related securities, and cash. These investments can typically be liquidated within one trading day.
  - **Principal preservation:** The portfolio has a large allocation to U.S. Treasuries (32.2%). The average credit rating of the portfolio is investment grade.
  - **Diversification from equity market risk:** The estimated equity beta of the portfolio is 0.16 and aligned with the U.S. Aggregate benchmark.
- The Fixed Income portfolio “Core-Plus” strategy relied on out-of-benchmark assets to generate returns given the low yield environment of the prior decade. During the years between 2010 through 2021, the yield to maturity of the benchmark U.S. Aggregate index averaged between 2-3%. Although this strategy is still important to overall performance, higher yields within the core fixed income sectors are compelling.
- The Core-Plus strategy implemented to achieve the goals includes:
  - Core: As of December 31, 2024, the portfolio’s allocation to U.S. Treasuries, Investment Grade Corporate Bonds, government-guaranteed U.S. Agency Debentures, Agency MBS, ABS, and CMBS was 68.7%. This includes a 35.4% allocation to U.S. Treasuries, TIPS, government-related securities, and cash.
  - Plus: The portfolio maintains a strategic out-of-benchmark allocation to High Yield corporate bonds, securitized credit, and global fixed income strategies as market opportunities allow. This allocation increases the portfolio yield and total return potential but results in lower liquidity and higher volatility. As of December 31, 2024, the allocation to the Plus portfolio was 31.3%.

## **Market Environment and Outlook**

- The case for traditional fixed income investing is the strongest it has been in two decades. However, as the changing macro-economic landscape shifts, certain risks are present.
  - The yield to maturity of the U.S. Aggregate Index as of December 31, 2024 was 5.8% which ranks in the second decile for yields over the past twenty years.
  - Fixed Income continues to offer a good risk-adjusted rate of return relative to U.S. equities given higher yields. While U.S. equities are still expected to return a higher rate of return over the long term vs. bonds, the difference in return is at or near the lowest spread in over two decades.
  - Among the core fixed income sectors, Agency MBS continues to offer compelling yields and opportunity for carry. The 30-year Mortgage Basis spread to U.S. Treasuries is historically cheap on 5-year and 10-year basis, and performance should be defensive as the Fed cuts interest rates, volatility declines, and the yield curve steepens.
  - Interest rate volatility has declined, but remains elevated as the market evaluates macro-economic data, particularly inflation and employment, and its potential impact on future FOMC policy actions and the forward path of interest rates. Fiscal policies continue to weigh on volatility and investor's minds as we enter 2025.
  - Investment grade and high yield credit spreads remain at their pre-GFC tight, but continue to offer solid yields for investors. As of December 31, 2024, investment grade credit spreads were 80 bps and offered an index yield of 5.3%, while high yield spreads were 287 bps and offered an index yield of 7.6%. Credit fundamentals remain benign; however, any potential of an economic slowdown presents spread risk across these sectors as there is little cushion to absorb such scenarios.

## **Conclusion**

- The market for traditional fixed income securities is very attractive on a 20-year historical basis. Relative to U.S. equities, fixed income offers opportunity for good risk-adjusted rates of return. Out-of-benchmark securities continue to add to the return potential of the portfolio, however in-benchmark securities now offer better return potential. Overall, the portfolio is defensively positioned for the risks posed by tight credit spreads and shifting market and macro-economic narratives.

# SMRS

## Fixed Income Strategy

### 12/31/24

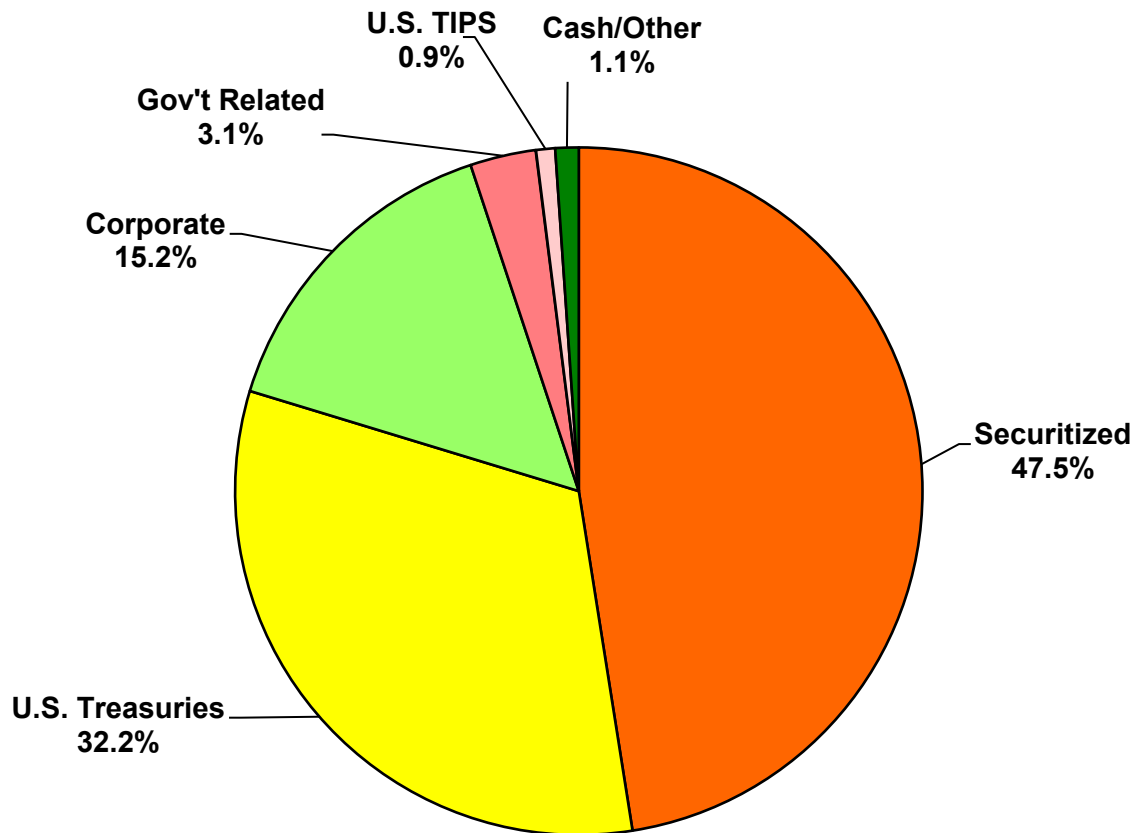
	Amount	Total	% of Total
<b>Core</b> (\$ in Millions)			
FID Internal	\$5,940		
PIMCO Mortgage Fund	2,064		
PGIM Investment Grade Credit	219		
<b>Total Core</b>		<b>\$8,223</b>	<b>68.7%</b>
<b>Tactical</b>			
Fidelity Tactical	\$521		
Guggenheim Core Plus	496		
TCW Core Plus	415		
<b>Total Tactical</b>		<b>\$1,432</b>	<b>12.0%</b>
<b>Securitized Debt</b>			
Met West Securitized Ops	\$673		
Principal CMBS	620		
TICP CLO Debt	328		
Napier Park Strategic Loan	4		
Napier Park ABS Income	3		
<b>Total Securitized Debt</b>		<b>\$1,628</b>	<b>13.6%</b>
<b>High Yield</b>			
PGIM High Yield	\$391		
Crescent Direct Lending	21		
<b>Total High Yield</b>		<b>\$412</b>	<b>3.4%</b>
<b>Global</b>			
T. Rowe Global Multi-Sector	\$276		
<b>Total Global</b>		<b>\$276</b>	<b>2.3%</b>
<b>TOTAL</b>		<b><u>\$11,971</u></b>	<b><u>100.0%</u></b>

NOTE: Totals may not be exact due to rounding.

# SMRS

## Fixed Income By Asset Type

### 12/31/24



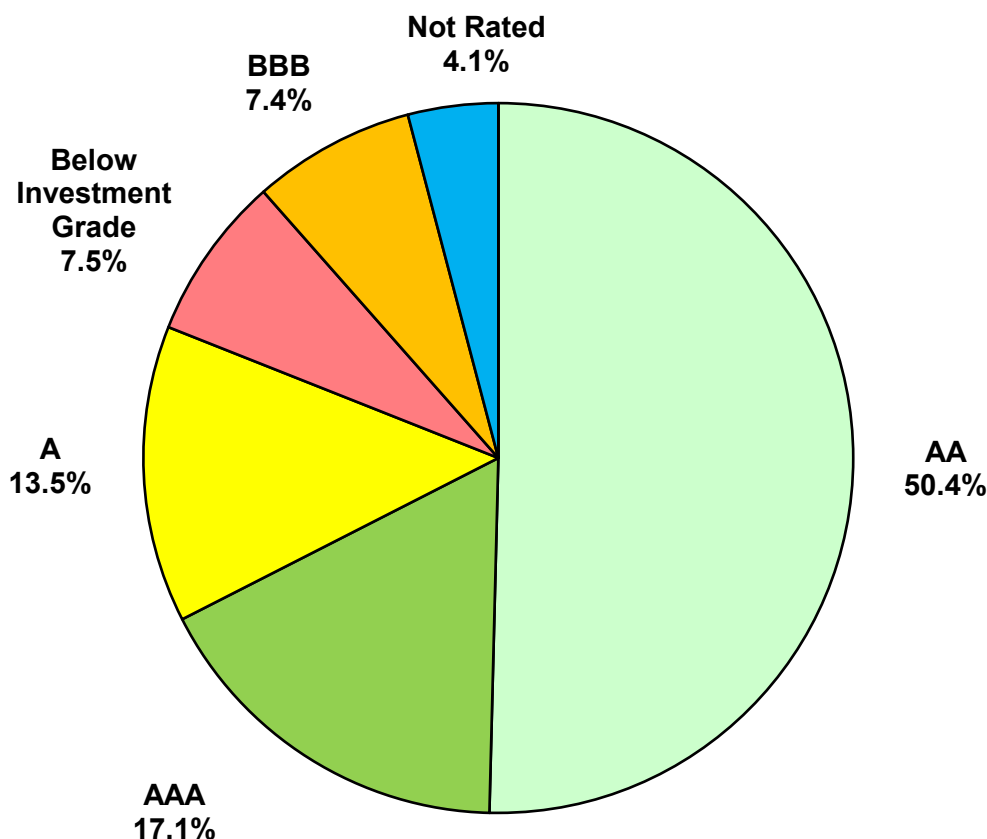
Market Value in Millions				
12/31/24				
	Assets	Percent	Benchmark	Difference
Securitized	\$5,697	47.5%	27.1%	20.4%
U.S. Treasuries	3,853	32.2%	44.2%	-12.0%
Corporate	1,818	15.2%	24.3%	-9.1%
Gov't Related	367	3.1%	4.4%	-1.3%
U.S. TIPS	103	0.9%	0.0%	0.9%
Cash/Other	133	1.1%	0.0%	1.1%
<b>Total Investments</b>	<b>\$11,971</b>	<b>100.0%</b>	<b>100.0%</b>	

Benchmark: Bloomberg U.S. Aggregate Index

# SMRS

## Fixed Income By Rating

### 12/31/24



Market Value in Millions				
12/31/24				
	Assets	Percent	Benchmark	Difference
AAA	\$2,042	17.1%	2.5%	14.6%
AA	6,034	50.4%	72.7%	-22.3%
A	1,619	13.5%	10.3%	3.2%
* Below Investment Grade	901	7.5%	0.2%	7.3%
BBB	884	7.4%	12.9%	-5.5%
Not Rated	491	4.1%	1.4%	2.7%
<b>Total Investments</b>	<b>\$11,971</b>	<b>100.0%</b>	<b>100.0%</b>	

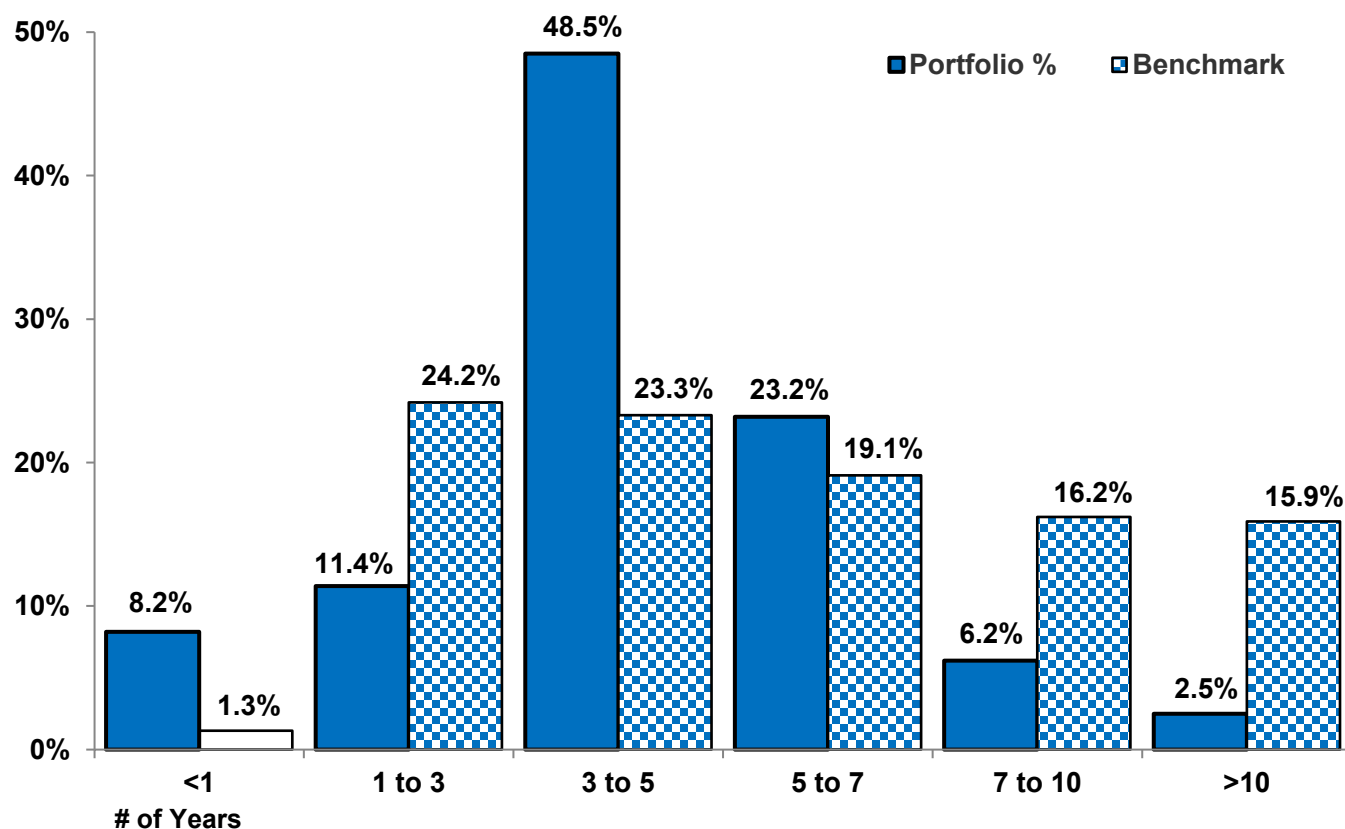
\* Comprised of approximately 3.7% High Yield Credit and 3.8% High Yield RMBS/ABS

Benchmark: Bloomberg U.S. Aggregate Index

# SMRS

## Duration Distribution

### Fixed Income Composite Versus Benchmark 12/31/24



Duration	Assets	Portfolio Weight	Benchmark Weight	Portfolio Duration*	Benchmark Duration*
<1	\$977	8.2%	1.3%	0.0	0.9
1 to 3	1,369	11.4%	24.2%	2.1	1.9
3 to 5	5,810	48.5%	23.3%	3.9	3.9
5 to 7	2,779	23.2%	19.1%	6.1	6.0
7 to 10	737	6.2%	16.2%	7.8	7.7
>10	299	2.5%	15.9%	15.5	14.1
<b>Total</b>	<b>\$11,971</b>	<b>100.0%</b>	<b>100.0%</b>	<b>6.3</b>	<b>6.0</b>

\* Effective Duration

Benchmark: Bloomberg U.S. Aggregate Index

# Fixed Income Performance - Net of Fees

## (MPSERS)

### 12/31/24

	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>10-Years</u>
<b>Total Fixed Income</b>	<b>\$11,970,740,074</b>	<b>3.22%</b>	<b>-0.53%</b>	<b>1.04%</b>	<b>2.18%</b>	<b>2.73%</b>
<i>Bloomberg Aggregate Bond Index</i>	<i>N/A</i>	<i>1.25%</i>	<i>-2.41%</i>	<i>-0.33%</i>	<i>0.97%</i>	<i>1.35%</i>
<b>Internal Core Fixed Income</b>	<b>\$5,940,051,185</b>	<b>0.79%</b>	<b>-2.31%</b>	<b>-0.02%</b>	<b>1.43%</b>	<b>2.08%</b>
<b>Externally Managed Fixed Income</b>	<b>\$6,030,688,888</b>	<b>5.35%</b>	<b>1.20%</b>	<b>2.00%</b>	<b>2.86%</b>	<b>3.37%</b>
<b>External Core Fixed Income</b>	<b>\$2,064,264,280</b>	<b>11.01%</b>	<b>-1.64%</b>	<b>-0.17%</b>	<b>0.89%</b>	<b>1.62%</b>
PIMCO Mortgage Fund	2,064,264,280	0.59%	-2.51%	-0.92%	0.40%	
<i>Bloomberg US MBS Agy Fixed Index</i>	<i>N/A</i>	<i>1.20%</i>	<i>-2.13%</i>	<i>-0.74%</i>	<i>0.49%</i>	
<b>Investment Grade Credit</b>	<b>\$219,093,787</b>	<b>2.91%</b>	<b>-2.05%</b>	<b>0.79%</b>	<b>2.15%</b>	<b>2.79%</b>
PGIM Investment Grade	219,093,787	2.91%	-2.05%	0.79%	2.15%	2.79%
<i>Bloomberg Credit Index</i>	<i>N/A</i>	<i>2.03%</i>	<i>-2.20%</i>	<i>0.23%</i>	<i>1.72%</i>	<i>2.29%</i>
<b>Tactical Fixed Income</b>	<b>\$1,431,799,363</b>	<b>2.27%</b>	<b>-0.99%</b>	<b>1.41%</b>	<b>2.55%</b>	<b>2.97%</b>
Fidelity Tactical Bond Fund	521,420,465	3.41%	-0.74%	1.57%	2.81%	3.41%
Guggenheim Core Plus	495,806,659	3.26%				
TCW Core Plus	414,572,238	1.32%				
<i>Bloomberg Aggregate Bond Index</i>	<i>N/A</i>	<i>1.25%</i>	<i>-2.41%</i>	<i>-0.33%</i>	<i>0.97%</i>	<i>1.35%</i>
<b>High Yield Fixed Income</b>	<b>\$412,151,995</b>	<b>7.84%</b>	<b>2.78%</b>	<b>4.27%</b>	<b>4.92%</b>	<b>5.30%</b>
PGIM High Yield	391,134,830	7.66%	2.27%	4.32%	5.10%	5.45%
Crescent Direct Lending	21,017,165	9.99%	7.31%	7.35%		
<i>Bloomberg US HY BA/B 1% Cap</i>	<i>N/A</i>	<i>6.78%</i>	<i>2.48%</i>	<i>3.79%</i>	<i>4.48%</i>	<i>4.90%</i>
<b>Structured Fixed Income</b>	<b>\$1,627,653,899</b>	<b>10.57%</b>	<b>4.14%</b>	<b>3.45%</b>	<b>3.88%</b>	
TICP CLO Debt	327,781,916	12.81%	7.12%	7.34%	6.07%	
MetWest Securitized Opportunities	672,520,316	8.29%	3.03%	3.17%	3.39%	3.58%
Principal CMBS	619,895,585	16.12%	0.92%	1.85%	3.07%	3.28%
Napier Park ABS Income	3,473,232	-35.81%	-19.20%	-6.96%	-2.72%	
Napier Park Strategic Loan LP	3,982,849	-35.98%	-14.41%	-6.96%	-2.72%	
<i>Bloomberg Aggregate Bond Index</i>	<i>N/A</i>	<i>1.25%</i>	<i>-2.41%</i>	<i>-0.33%</i>	<i>0.97%</i>	<i>1.35%</i>
<i>Blended CMBS Benchmark</i>	<i>N/A</i>	<i>4.96%</i>	<i>-0.53%</i>	<i>0.97%</i>	<i>1.99%</i>	<i>2.34%</i>
<b>Global Fixed Income</b>	<b>\$275,725,565</b>	<b>4.55%</b>	<b>1.12%</b>	<b>1.91%</b>	<b>2.64%</b>	
T. Rowe Global Multi-Sector	275,725,565	4.55%	1.12%	1.91%	2.64%	
<i>Custom GMS Benchmark</i>	<i>N/A</i>	<i>6.66%</i>	<i>1.35%</i>	<i>1.65%</i>		

State of Michigan Retirement System

# INTERNATIONAL EQUITY REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Patrick M. Moraniec, CFA  
Senior Investment Manager  
International Equity Division



## EXECUTIVE SUMMARY

### Performance

MPSERS Plan (12/31/24)	1-Year	3-Years	5-Years	7-Years	10-Years
Annualized Returns	6.7%	0.4%	4.6%	4.1%	5.7%
MSCI ACWI ex USA Returns	5.5%	0.8%	4.1%	3.5%	4.8%
Peer Median Returns	5.6%	1.2%	5.1%	4.4%	5.6%

\*Source: State Street Universe greater than \$1 billion

- The IED's outperformance over the last year was driven by the Stock Plus strategy that outperformed the division's benchmark, MSCI ACWI ex USA index, by 2.1%.
- The Active strategy also outperformed but to a lesser extent over the last year adding nearly 0.7% above the benchmark.
- The IED underperformed the benchmark during the prior three-year measurement period. During this time, the Active strategy was under review and the IED had only implemented about half of the planned changes to the external manager lineup. The strategy underperformed the benchmark by -5.4% during this period with the quality factor and some China exposure explaining most of the underperformance.

### Asset Class Goals

- Construct a non-U.S. equity-focused portfolio to generate, on a consistent basis, ten-year returns that exceed the MSCI ACWI ex USA by 1.0%.
- Perform in the top half of the public plan peer universe percentile rankings.
- Advance people, processes, and systems to continuously improve investment decisions.

### Strategy

- The division allocates capital with the intention of persistent exposure to the quality factor, momentum factor, and value factor.
- Commitments closed during the quarter include:
  - \$25 million in Blackstone Capital Opportunities Co-Investment Fund V, LP, a closed-end co-investment vehicle managed by Blackstone Private Credit Strategies, LLC. The fund will focus on providing private credit solutions on an opportunistic basis across a wide array of investment structures and collateral types.
- Persistent factor exposures create consistent, transparent, low-cost, efficient returns.
  - Current portfolio drivers of risk and return. The tracking error of the portfolio is approximately 1.9%, which is below the division's risk budget of 3.0%.
- Quarterly changes to International Equity Division allocation.
  - Rebalanced \$1.1 billion of equity swaps to match the division's long-term equity factor strategy.

## **Market Environment and Outlook**

### Market Environment

- International stock markets were up 5.5% over the last twelve months. Earnings per share (EPS) over the same period were essentially flat up only 0.1% indicating that multiple most likely expanded approximately 2.9% over the last year.
- Emerging markets outperformed the MSCI ACWI ex USA by 2.0% over the last year. Developed markets underperformed the broader index by -0.8%.
- The U.S. dollar has gained 7.2% over the last year relative to a basket of developed market currencies.
- The Bloomberg Commodity Index was practically unchanged at 0.1% over the last year. Oil, a primary driver, was up only 0.1%, gold increased 27.5%, and copper, a barometer for the economic cycle, gained 3.5% over the last twelve months.
- Global government interest rates (index-weighted) remained low by historical standards at 3.1%.

### Outlook

- Commodities, based on broad indexes such as the Bloomberg Commodity Index, are now trending higher for the first time since 2021.
- Higher commodity prices contradict the general market narrative that inflation will return to 2.0%. Central banks cannot print or control commodity prices or the housing supply, which are key drivers of inflation. Interest rates are indirect mechanisms the central banks utilize to achieve stable prices.
- Major central banks, outside the United States, are cutting monetary policy rates. The Federal Reserve, however, has ceased with any further cuts until there is clarity on the direction of inflation.
- Political movements in Europe are paralleling what took place in the United States during 2024. Major European economies such as Germany, France, and the United Kingdom are all witnessing the rise of political parties focused on a nationalism as a key plank rather than globalism. The IED believes this may potentially contribute to higher prices if tariffs and less global trade ensues.
- Long-term interest rates investments may remain at higher levels due to potentially stubborn inflation. Equity market returns will struggle in such an environment due to high capital formation costs, higher starting valuation multiples, slowing economic growth. These forces will be offset by accommodative central bank policies but may lead to flat equity returns over the next five years.
- Europe's sales per share year-over-year were down -5.3%. The earnings per share decreased -5.3%. Forward-looking sales per share are expected to be up over the next 12 months, 2.6%% and earnings are expected to increase 7.5%.

- Japan's sales per share increase year-over-year by 6.1% while earnings per share increased by 3.0%. Forward-looking sales per share growth is expected to increase by 1.9% and earnings are expected to grow by 8.5% over the next twelve months.
- Analysts' forward-looking one-year estimates for the MSCI ACWI ex USA index sales and earnings per share growth are 4.3% and 9.4% respectively.
- Go-forward returns for the MSCI ACWI ex USA index on an annualized basis are estimated at 8.6%. This rate is based on the current price and actual fundamentals over multiple periods to remove fundamental variability and better estimate the earnings power of the index.
- A ten-year blended international government yield of 3.1% implies an international equity risk premium of 5.5%.

### **Conclusion**

International stocks are expected to grow earnings per share by 9.4% in the next twelve months. The market on a forward basis trades at 13.3x price to earnings, which is above its twenty-one-year average of 13.1x but questions remain if earnings will be impacted by higher interest rates and inflation despite the narratives in financial markets. The annualized go-forward return of 8.6% is still a wide spread relative to global risk-free rates.

# SMRS

## International Equity Strategies

### 12/31/24

Markets	Amount	Total	% of Total
<b>Active</b> (\$ in Millions)			
BlackRock MSCI	\$2,389		
IED Quality Equity	927		
Martin Currie	342		
AQR	263		
Wellington	245		
LSV	202		
WCM	179		
UBS	153		
Brown	137		
Baillie Gifford	124		
Vontobel	117		
Morgan Stanley	107		
Baron	74		
<b>Total Active*</b>		<b>\$5,261</b>	<b>37.0%</b>
<b>Stock Plus</b>			
Internal Swaps	\$3,742		
PIMCO	2,372		
<b>Total Stock Plus</b>		<b>\$6,114</b>	<b>43.0%</b>
<b>Indexed</b>			
SSGA	\$1,574		
BlackRock	1,247		
<b>Total Indexed</b>		<b>\$2,821</b>	<b>20.0%</b>

**TOTAL**

**\$14,196**

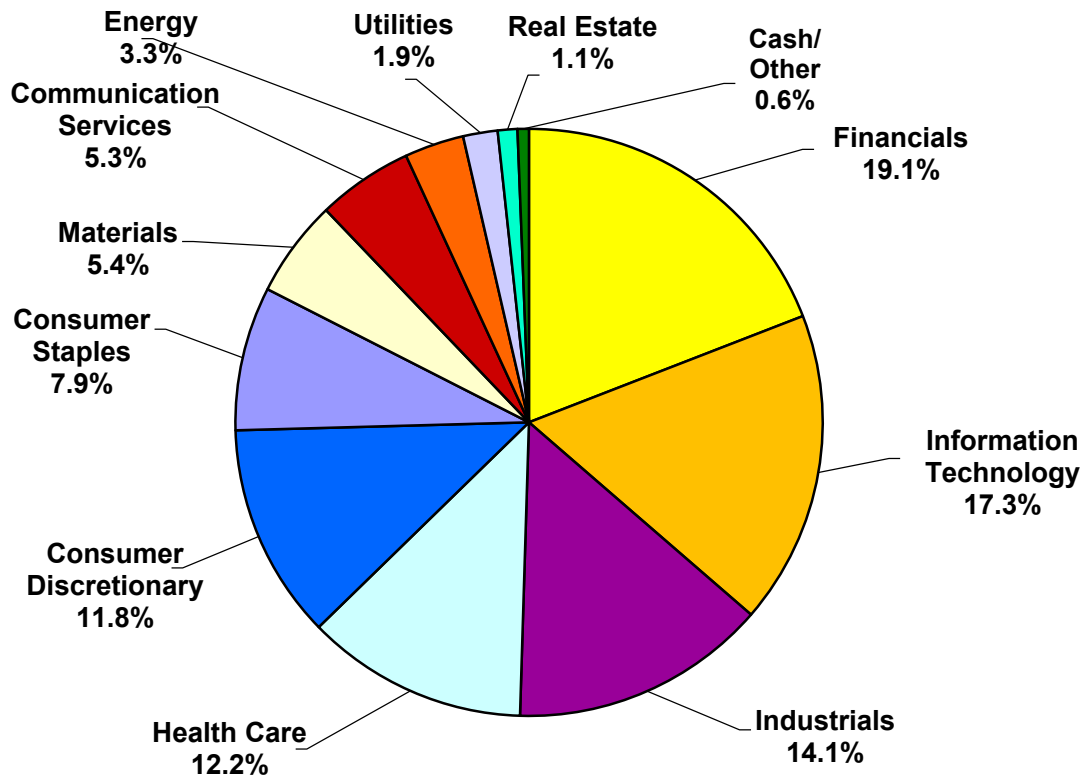
**100.0%**

\*Includes cash balance of \$2.2M

# SMRS

## International Equity By Sector

### 12/31/24



Market Value in Millions				
12/31/24				
	Assets	Percent	Benchmark	Difference
Financials	\$2,713	19.1%	22.4%	-3.3%
Information Technology	2,449	17.3%	12.8%	4.5%
Industrials	2,006	14.1%	9.3%	4.8%
Health Care	1,736	12.2%	13.8%	-1.6%
Consumer Discretionary	1,682	11.8%	11.4%	0.4%
Consumer Staples	1,124	7.9%	7.3%	0.6%
Materials	761	5.4%	7.1%	-1.7%
Communication Services	750	5.3%	5.7%	-0.4%
Energy	464	3.3%	5.1%	-1.8%
Utilities	271	1.9%	3.2%	-1.3%
Real Estate	151	1.1%	1.9%	-0.8%
<b>Total Investments</b>	<b>\$14,105</b>	<b>99.4%</b>	<b>100.0%</b>	
Cash/Other	91	0.6%	0.0%	0.6%
<b>Total</b>	<b>\$14,196</b>	<b>100.0%</b>	<b>100.0%</b>	

Benchmark: MSCI ACWI ex USA

# SMRS

## International Equities

### 12/31/24

<b>Date:</b>	<b><u>12/31/24</u></b>	<b><u>9/30/24</u></b>	<b><u>6/30/24</u></b>	<b><u>3/31/24</u></b>
Assets (\$ in Millions):	\$14,196	\$15,777	\$14,805	\$14,555
Number of Securities:	2,376	2,495	2,567	2,497
Active Share:	34%	36%	35%	36%

Benchmark: MSCI ACWI ex USA

Description: The International Equities Composite represents all International Equity Division investments.

<b>Portfolio Characteristics:</b>	<b>SMRS</b>		<b>MSCI ACWI ex USA</b>	
	<b><u>LTM</u></b>	<b><u>Normalized</u></b>	<b><u>LTM</u></b>	<b><u>Normalized</u></b>
<b>Return:</b>				
Annualized Total Return	9.5%	9.6%	8.8%	8.6%
Sustainable Growth Rate	5.4%	6.3%	5.3%	5.8%
Dividend Yield	2.7%	2.5%	2.6%	2.4%
Buyback Yield	1.1%	0.4%	0.9%	0.4%
Collateral Yield	0.4%	0.4%	--	--
<b>Risk:</b>				
Beta	1.05	--	1.00	--
Volatility	16.6%	--	16.2%	--
Tracking Error	1.9%	--	0.0%	--
Information Ratio	0.4	0.6	--	--
<b>Fundamental:</b>				
Average Capitalization (\$ in Billions)	116.9	--	108.4	--
Price/Earnings	14.4	16.0	15.9	18.1
Price/Book	1.7	1.9	1.9	2.1
ROE	11.9%	11.8%	12.2%	11.6%

### TOP TEN HOLDINGS

(\$ in Billions\* - \$ in Millions\*\*)

	<b><u>Portfolio Weight</u></b>	<b><u>Market Capitalization*</u></b>	<b><u>FY1 P/E</u></b>	<b><u>Market Value**</u></b>
Taiwan Semiconductor Manufacturing Co., Ltd.	2.7%	\$850.3	23.9	\$377.7
ASML Holding NV	2.0%	280.8	35.6	276.9
Roche Holding Ltd. Dividend Right Cert.	1.3%	229.8	13.8	190.4
Novo Nordisk A.S Class B.	1.3%	294.5	27.4	188.0
Samsung Electronics Co., Ltd.	1.1%	240.4	10.6	159.2
Novartis AG	1.1%	214.2	12.9	156.8
AstraZeneca PLC	1.0%	203.3	15.9	141.0
Nestle S.A.	1.0%	216.4	16.2	136.0
Tencent Holdings Ltd.	0.9%	495.2	17.3	127.8
China Construction Bank Corp. Class H	<u>0.8%</u>	<u>212.1</u>	4.6	<u>120.4</u>
<b>TOTAL</b>	<b><u>13.2%</u></b>	<b><u>\$3,237.2</u></b>		<b><u>\$1,874.1</u></b>

# International Equity Performance - Net of Fees

12/31/24

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Incept.</u>	<u>Incept. Date</u>
<b>Total International Equity</b>	<b>\$14,195,670,932</b>	<b>6.4%</b>	<b>0.2%</b>	<b>4.4%</b>	<b>3.9%</b>	<b>5.6%</b>	<b>1/1/04</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	5.7%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	5.6%	
Excess Return		0.9%	-0.6%	0.3%	0.4%	-0.1%	
Pct Rank vs. Lipper Int'l Multi-Cap Core		24	75	49	42	37	
<b>Total International Active Strategy*</b>	<b>\$5,261,046,288</b>	<b>6.0%</b>	<b>-1.4%</b>	<b>3.8%</b>	<b>3.1%</b>	<b>4.8%</b>	<b>5/1/05</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	5.2%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	5.2%	
Excess Return		0.5%	-2.2%	-0.3%	-0.5%	-0.4%	
Pct Rank vs Lipper Int'l Multi-Cap Core		32	95	73	80	67	
<b>BlackRock MSCI Systematic Return</b>	<b>\$2,389,091,958</b>	<b>6.3%</b>	<b>1.6%</b>	<b>5.9%</b>	<b>--</b>	<b>7.9%</b>	<b>12/1/18</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	--	5.9%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	--	6.2%	
Excess Return		0.7%	0.8%	1.8%	--	2.0%	
Pct Rank vs Lipper Int'l Multi-Cap Core		30	38	12	--	5	
<b>IED Quality Equity</b>	<b>\$927,250,931</b>	<b>4.3%</b>	<b>-2.7%</b>	<b>--</b>	<b>--</b>	<b>5.9%</b>	<b>2/1/20</b>
MSCI ACWI ex USA		5.5%	0.8%	--	--	4.8%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	--	--	5.1%	
Excess Return		-1.3%	-3.5%	--	--	1.2%	
Pct Rank vs Lipper Int'l Multi-Cap Core		66	99	--	--	25	
<b>Martin Currie International Long-Term</b>	<b>\$342,239,264</b>	<b>-8.0%</b>	<b>-10.0%</b>	<b>1.9%</b>	<b>3.9%</b>	<b>6.0%</b>	<b>2/1/17</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	5.8%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	6.0%	
Excess Return		-13.6%	-10.8%	-2.3%	0.3%	0.1%	
Pct Rank vs Lipper Int'l Multi-Cap Core		100	100	97	42	47	
<b>AQR Enhanced Value</b>	<b>\$262,550,578</b>	<b>7.2%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.0%</b>	<b>N/A</b>
MSCI ACWI ex USA		5.5%	--	--	--	6.5%	
Lipper International Large-Cap Core		5.2%	--	--	--	6.7%	
Excess Return		1.6%	--	--	--	3.4%	
Pct Rank vs Lipper Int'l Large-Cap Core		16	--	--	--	9	
<b>LSV Int'l Concentrated Value Fund</b>	<b>\$201,640,317</b>	<b>9.8%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>12.3%</b>	<b>4/1/23</b>
MSCI ACWI ex USA		5.5%	--	--	--	7.7%	
Lipper Int'l Lg-Cap Core		5.2%	--	--	--	7.9%	
Excess Return		4.2%	--	--	--	4.6%	
Pct Rank vs Lipper Int'l Lg-Cap Core		7	--	--	--	1	
<b>WCM Focused Growth International</b>	<b>\$178,964,832</b>	<b>6.7%</b>	<b>-3.7%</b>	<b>--</b>	<b>--</b>	<b>-1.6%</b>	<b>10/1/21</b>
MSCI ACWI ex USA		5.5%	0.8%	--	--	1.3%	
Lipper Int'l Lg-Cap Core		5.2%	5.2%	--	--	1.9%	
Excess Return		1.1%	-4.5%	--	--	-2.9%	
Pct Rank vs Lipper Int'l Lg-Cap Core		22	99	--	--	98	
<b>UBS China A Opportunity Fund</b>	<b>\$153,394,211</b>	<b>10.9%</b>	<b>-10.0%</b>	<b>--</b>	<b>--</b>	<b>-0.7%</b>	<b>5/1/20</b>
MSCI ChinaOn shore		11.6%	-10.5%	--	--	1.7%	
Lipper Emerging Markets		6.3%	6.3%	--	--	7.1%	
Excess Return		-0.7%	0.5%	--	--	-2.4%	
Pct Rank vs. Lipper Emerging Markets		17	99	--	--	99	
<b>Brown Capital Int'l Small Company Fund</b>	<b>\$136,992,210</b>	<b>9.1%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8%</b>	<b>3/1/22</b>
MSCI ACWI ex USD		5.5%	--	--	--	2.9%	
Lipper Int'l Lg-Cap Core		5.2%	--	--	--	3.7%	
Excess Return		3.6%	--	--	--	0.8%	
Pct Rank vs. Lipper Int'l Lg-Cap Core		8	--	--	--	41	
<b>Wellington Select China Equity</b>	<b>\$130,422,932</b>	<b>10.8%</b>	<b>-13.1%</b>	<b>0.8%</b>	<b>--</b>	<b>1.6%</b>	<b>9/1/19</b>
MSCI ChinaOn shore		11.6%	-10.5%	0.9%	--	2.8%	
Lipper Emerging Markets		6.3%	-1.9%	2.4%	--	4.5%	
Excess Return		-0.8%	-2.6%	-0.1%	--	-1.3%	
Pct Rank vs Lipper Emerging Markets		18	100	73	--	90	

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Incept.</u>	<u>Incept. Date</u>
<b>Baillie Gifford Int'l Concentrated Growth</b>	<b>\$124,205,438</b>	<b>18.2%</b>	<b>-7.0%</b>	--	--	<b>-7.9%</b>	<b>11/1/21</b>
S&P 1500 Value		5.5%	0.8%	--	--	2.1%	
Style & Risk Adj Benchmark		5.2%	1.2%	--	--	2.7%	
Excess Return		12.7%	-7.8%	--	--	-10.0%	
Pct. Rank vs Lipper Multi-Cap Value		1	100	--	--	100	
<b>Vontobel Int'l Quality Growth Fund</b>	<b>\$116,704,787</b>	<b>7.4%</b>	--	--	--	<b>6.8%</b>	<b>5/1/2022</b>
S&P 1500 Growth		5.5%	--	--	--	5.6%	
Style & Risk Adj Benchmark		5.2%	--	--	--	6.5%	
Lipper Multi-Cap Growth		1.8%	--	--	--	1.2%	
Pct. Rank vs Lipper Multi-Cap Growth		15	--	--	--	39	
<b>Wellington Int'l Contrarian Value Fund</b>	<b>\$114,513,184</b>	<b>4.4%</b>	--	--	--	<b>11.8%</b>	<b>5/1/23</b>
MSCI ACWI ex USA		5.5%	--	--	--	10.1%	
Lipper Int'l Lg-Cap Core		5.2%	--	--	--	9.8%	
Excess Return		-1.1%	--	--	--	1.7%	
Pct Rank vs Lipper Int'l Lg-Cap Core		63	--	--	--	14	
<b>Morgan Stanley Int'l Opportunity Fund</b>	<b>\$106,563,575</b>	<b>20.4%</b>	--	--	--	<b>-1.7%</b>	<b>2/1/22</b>
MSCI ACWI ex USA		5.5%	--	--	--	2.2%	
Lipper International Large-Cap Core		5.2%	--	--	--	2.5%	
Excess Return		14.8%	--	--	--	-3.8%	
Pct Rank vs Lipper Int'l Lg-Cap Core		1	--	--	--	98	
<b>Baron Global Advantage</b>	<b>\$74,357,777</b>	<b>22.6%</b>	<b>-5.7%</b>	--	--	<b>-5.5%</b>	<b>1/1/22</b>
MSCI ACWI ex USA		5.5%	0.8%	--	--	0.8%	
Lipper Int'l Lg-Cap Core		5.2%	1.2%	--	--	1.2%	
Excess Return		17.1%	-6.5%	--	--	-6.3%	
Pct Rank vs Lipper Int'l Lg-Cap Core		1	100	--	--	100	
<b>Total Int'l Stock Plus Strategy**</b>	<b>\$6,113,570,171</b>	<b>7.3%</b>	<b>1.3%</b>	<b>4.9%</b>	<b>4.7%</b>	<b>7.0%</b>	<b>1/1/09</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	6.7%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	7.0%	
Excess Return		1.8%	0.4%	0.8%	1.2%	0.3%	
Pct Rank vs Lipper Int'l Multi-Cap Core		15	43	32	13	41	
<b>Internal Stock Plus</b>	<b>\$3,741,750,634</b>	<b>7.6%</b>	<b>1.5%</b>	<b>4.5%</b>	<b>4.8%</b>	<b>5.8%</b>	<b>9/1/11</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	5.0%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	5.8%	
Excess Return		2.0%	0.6%	0.4%	1.3%	0.8%	
Pct Rank vs Lipper Int'l Multi-Cap Core		15	41	43	13	52	
<b>PIMCO StocksPLUS</b>	<b>\$2,371,819,537</b>	<b>6.9%</b>	<b>0.9%</b>	<b>5.5%</b>	--	<b>6.9%</b>	<b>4/1/19</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	--	5.3%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	--	5.7%	
Excess Return		1.3%	0.1%	1.3%	--	1.6%	
Pct Rank vs Lipper Int'l Multi-Cap Core		18	51	21	--	11	
<b>Total Int'l Index Strategy</b>	<b>\$2,821,054,473</b>	<b>5.5%</b>	<b>1.0%</b>	<b>4.3%</b>	<b>4.1%</b>	<b>6.9%</b>	<b>7/1/09</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	6.0%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	6.7%	
Excess Return		0.0%	0.1%	0.2%	0.5%	0.9%	
Pct Rank vs Lipper Int'l Multi-Cap Core		37	50	52	32	32	
<b>SSGA MSCI ACWI ex USA Index</b>	<b>\$1,574,125,380</b>	<b>5.6%</b>	<b>1.0%</b>	<b>4.4%</b>	<b>3.7%</b>	<b>4.1%</b>	<b>11/1/17</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	3.5%	3.9%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	3.8%	4.1%	
Excess Return		0.1%	0.1%	0.3%	0.2%	0.2%	
Pct Rank vs Lipper Int'l Multi-Cap Core		35	50	49	51	41	
<b>Blackrock ACWI ex USA Index</b>	<b>\$1,246,929,093</b>	<b>5.4%</b>	<b>0.9%</b>	<b>4.3%</b>	--	<b>3.7%</b>	<b>3/1/18</b>
MSCI ACWI ex USA		5.5%	0.8%	4.1%	--	3.8%	
Lipper Int'l Multi-Cap Core		5.2%	1.2%	4.5%	--	3.9%	
Excess Return		-0.2%	0.1%	0.2%	--	-0.1%	
Pct Rank vs Lipper Int'l Multi-Cap Core		39	51	55	--	53	

\* The total includes the cash balance of closed funds, a total of \$2.2 million

\*\* Includes \$1,312 Transition account



State of Michigan Retirement System

# DOMESTIC EQUITY REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Jack A. Behar, CFA  
Senior Investment Manager  
Domestic Equity Division

# EXECUTIVE SUMMARY

## Performance

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	29.0%	8.9%	13.6%	13.4%	12.6%
S&P 1500	24.0%	8.5%	14.1%	13.4%	12.8%
Peer Median Return	16.2%	5.5%	10.4%	10.4%	9.8%

\*State Street Universe greater than \$1 billion

- For the year ended December 31, 2024, the Domestic Equity Division (DED) outperformed its peer group over all time periods, including by 1280 bps over the past twelve months. This performance beat the median larger sized pension fund equity portfolio by nearly a cumulative 32%, or 280 bps annualized, over the past decade.
- DED also outperformed the S&P 1500 by 500 bps over the past year and by 40 bps annualized over the past three years, while underperforming the market on a five-and-ten year basis.
- Over the past few years, the division particularly benefitted from investments in the likes of Meta Platforms, Nvidia, American Express, Apollo Global Management, AT&T and Alphabet.
- Results were especially strong across our internal manager lineup, with all of our six portfolio managers outperforming the S&P 1500 by 500 bps or more. As of December 31, 2024, our internal management group is outperforming the S&P 1500 over all time periods and ranks in the top 15% of active managers over the past decade – at less than the cost of an index fund.
- On the external manager side:
  - LA Capital had a good year, beating the S&P 1500 by over 8%. Over the past decade LA Capital has compounded returns at 14.3%, net of fees, with an approach that is both different and diversifying to the division.
  - Patient Capital beat its value benchmark by 15% while also outperforming the S&P 1500 by nearly 300 bps - despite its mid cap value investing style being out of favor. Patient Capital is a young firm that is relatively new to our manager lineup, and we believe it has a bright future going forward.
  - Michigan based Ancora Small Cap beat its benchmark by over 600 bps.
  - Michigan based Seizert Capital has also been a strong, steady performer for SMRS, compounding returns at over 13% since inception of our relationship in 2009, and consistency beating value benchmarks since then – including over the past year.

## **Asset Class Goal**

To provide the SMRS with long-term domestic equity market returns or better, by investing in a diversified and attractively valued portfolio of companies at an index fund-like cost.

## **Strategy Update**

- The Domestic Equity Division's portfolio trades at a slight discount to the S&P 1500 on this year's earnings, while being more profitable and growing faster than the market. This means that it has the capacity to pay more dividends than the market, while also growing those payouts faster.
- While it may well be late in the economic cycle, and it's possible that today's higher level of interest rates coupled with growth in high-cost credit usage on the part of the American consumer could at some point send the economy into recession, we believe the market is nevertheless poised to return roughly 8% over the next decade from current levels.
- DED is overweight technology related communication services companies, healthcare and financials.
- The beta of the division remains roughly 1.1 . This will provide a tailwind to returns in an up market, and a headwind in the event of recession. Over time and most often the market appreciates alongside economic growth.

## **Market Environment and Outlook**

- At ~23x forward earnings, equity markets trade at an earnings yield (earnings/price) of 4.3%, or 30 bps less than 10-year treasury bonds at 4.6%.
- Historically, stocks have traded at earnings yield approximately 125 bps higher than bonds, suggesting that stocks are expensive relative to bonds.
  - One could also argue that the market deserves to trade at a higher multiple than it has historically given the benchmark's larger concentration of dominant and fast-growing technology companies relative to the past.
- Over time we calculate the market's go forward return at roughly 8.0% - below its historical average of 10% - driven by a dividend yield of 1.3% and dividend per share growth of 6.7%.
  - Dividends per share driven by capital reinvestment rate of 4.8% and further 1.9% growth via share buybacks.

# SMRS

## Domestic Equity Strategies

### 12/31/24

Markets	Amount	Total	% of Total
<b>Internal Indexed</b> (\$ in Millions)			
Indexed Portfolios	\$15,101		
<b>Total Indexed</b>		<b>\$15,101</b>	<b>64.7%</b>
<b>Internal Active</b>			
Active Portfolios	\$5,936		
<b>Total Internal Active</b>		<b>\$5,936</b>	<b>25.4%</b>
<b>External Active</b>			
Martin Currie US LT Unconstrained	\$407		
Los Angeles Capital	334		
ARK Investments	310		
Patient Capital	229		
Bivium Capital	220		
Clarkston Capital Partners	198		
Seizert Capital Partners	193		
Attucks Asset Management	161		
Ancora	139		
Managed Asset Portfolios	118		
<b>Total External Active</b>		<b>\$2,309</b>	<b>9.9%</b>

**Total Domestic Equity**

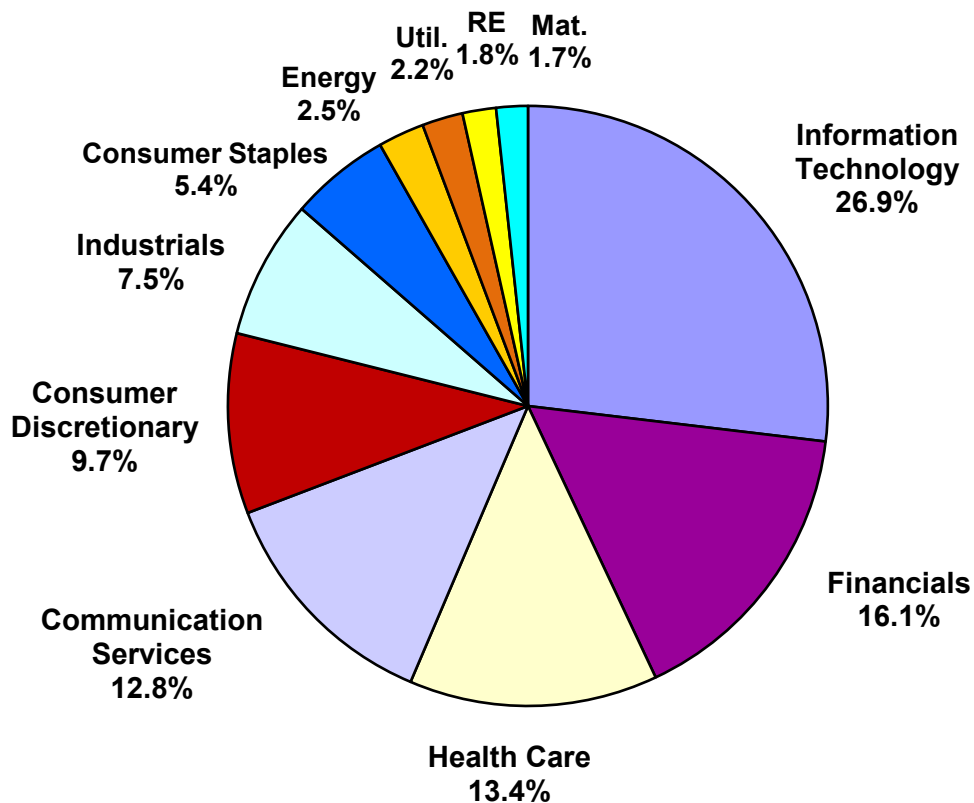
**\$23,346**

**100.0%**

# SMRS

## Domestic Equity By Sector

### 12/31/24



Market Value in Millions				
	12/31/24			
	Assets	Percent	Benchmark	Difference
Information Technology	\$6,285	26.9%	30.8%	-3.9%
Financials	3,760	16.1%	14.0%	2.1%
Health Care	3,122	13.4%	10.1%	3.3%
Communication Services	2,993	12.8%	8.8%	4.0%
Consumer Discretionary	2,270	9.7%	11.5%	-1.8%
Industrials	1,746	7.5%	9.1%	-1.6%
Consumer Staples	1,264	5.4%	5.4%	0.0%
Energy	571	2.5%	3.3%	-0.8%
Utilities	522	2.2%	2.3%	-0.1%
Real Estate	414	1.8%	2.5%	-0.7%
Materials	399	1.7%	2.2%	-0.5%
<b>Total</b>	<b>\$23,346</b>	<b>100.0%</b>	<b>100.0%</b>	

Benchmark: S&P 1500

# SMRS

## Domestic Equities Composite

### 12/31/24

	<u>12/31/24</u>	<u>9/30/24</u>	<u>6/30/24</u>	<u>3/31/24</u>
Assets (\$ in Millions):	\$23,346	\$23,605	\$22,357	\$22,527
Number of Securities:	1,982	1,918	1,959	2,043
Active Share:	30%	30%	31%	35%

Description: The Domestic Equities Composite seeks to deliver excess returns through a blend of index investing and active management with value-added, but diverse strategies. While the goal is for most managers to outperform in the long run, the composite is designed such that they do so during differing parts of the business cycle.

	<u>SMRS</u>	<u>S&amp;P 1500</u>
<b>Characteristics:</b>		
Market Cap. (\$ in Billions)	\$1,078.1	\$1,029.6
FY1 P/E	22.2	23.3
P/E upside to S&P 1500	5.0%	0.0
Return on Equity	25.6%	19.1%
<b>Risk Metrics</b>		
Beta	1.10	1.00
Tracking Error	2.7%	0.0%
<b>Projected Returns</b>		
Dividend Yield	1.4%	1.3%
Buyback Yield	2.0%	1.9%
Reinvestment Rate	<u>6.4%</u>	<u>4.8%</u>
<b>Projected Investment Return</b>	9.8%	8.0%

#### TOP TEN EXPOSURES - Domestic Equities vs S&P 1500

<u>Domestic Equity Portfolio</u>		<u>S&amp;P 1500</u>	
<u>Company Name</u>	<u>Portfolio Weight</u>	<u>Company Name</u>	<u>Market Weight</u>
NVIDIA Corporation	6.5%	Apple Inc.	7.0%
Apple Inc.	5.6%	NVIDIA Corporation	6.1%
Meta Platforms Inc Class A	5.4%	Microsoft Corporation	5.8%
Microsoft Corporation	4.9%	Amazon.com, Inc.	3.8%
Cash and Equivalents	4.8%	Meta Platforms Inc Class A	2.4%
Amazon.com, Inc.	3.4%	Tesla, Inc.	2.1%
Alphabet Inc. Class A	3.3%	Alphabet Inc. Class A	2.1%
UnitedHealth Group Incorporated	3.0%	Broadcom Inc.	2.0%
American Express Company	2.3%	Alphabet Inc. Class C	1.7%
Apollo Global Management Inc	<u>2.1%</u>	Berkshire Hathaway Inc. Class B	<u>1.5%</u>
<b>TOTAL</b>	<b><u>41.3%</u></b>	<b>TOTAL</b>	<b><u>34.4%</u></b>

# Domestic Equity Performance - Net of Fees

12/31/24

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Incept.</u>	<u>Incept. Date</u>
<b>SMRS S&amp;P 500 Index</b>	<b>\$14,283,272,854</b>	<b>24.9%</b>	<b>8.9%</b>	<b>14.5%</b>	<b>13.8%</b>	<b>--</b>	<b>N/A</b>
S&P 500		25.0%	8.9%	14.5%	13.8%	--	
Style & Risk Adj Benchmark		25.0%	8.9%	14.5%	13.8%	--	
Lipper Lg-Cap Core		22.3%	7.6%	13.4%	12.8%	--	
Excess Return		-0.1%	0.0%	0.0%	0.0%	--	
Alpha		0.0%	0.0%	0.0%	0.0%	--	
Pct. Rank vs Lipper Lg-Cap Core		30	28	32	26	--	
<b>SMRS Large-Cap Core</b>	<b>\$2,191,269,475</b>	<b>82.0%</b>	<b>34.1%</b>	<b>29.1%</b>	<b>24.8%</b>	<b>14.6%</b>	<b>8/31/07</b>
S&P 500		25.0%	8.9%	14.5%	13.8%	10.5%	
Style & Risk Adj Benchmark		17.9%	10.0%	19.1%	18.1%	12.4%	
Lipper Large-Cap Core		22.3%	7.6%	13.4%	12.8%	9.8%	
Excess Return		57.0%	25.1%	14.6%	11.0%	4.1%	
Alpha		64.1%	24.1%	10.0%	6.7%	2.2%	
Pct Rank vs Lipper Lg-Cap Core		1	1	1	1	1	
<b>SMRS All-Cap Garp</b>	<b>\$1,037,140,864</b>	<b>30.4%</b>	<b>2.9%</b>	<b>8.0%</b>	<b>8.0%</b>	<b>11.2%</b>	<b>4/30/11</b>
S&P 1500 Super Composite		24.0%	8.5%	14.1%	13.4%	13.3%	
Style & Risk Adj Benchmark		29.6%	9.8%	15.3%	14.5%	14.0%	
Lipper Multi-Cap Core		18.4%	5.5%	11.5%	10.8%	11.2%	
Excess Return		6.4%	-5.6%	-6.1%	-5.3%	-2.1%	
Alpha		0.8%	-6.9%	-7.3%	-6.5%	-2.8%	
Pct. Rank vs Lipper Multi-Cap Core		2	81	89	88	55	
<b>SMRS Mid-Cap Index</b>	<b>\$817,410,939</b>	<b>14.1%</b>	<b>5.0%</b>	<b>10.4%</b>	<b>9.2%</b>	<b>0.0%</b>	<b>N/A</b>
S&P 400		13.9%	4.9%	10.3%	9.1%	0.0%	
Style & Risk Adj Benchmark		13.9%	4.9%	10.3%	9.0%	0.0%	
Lipper Mid-Cap Core		13.1%	4.2%	9.4%	8.5%	0.0%	
Excess Return		0.2%	0.2%	0.1%	0.1%	0.0%	
Alpha		0.2%	0.2%	0.1%	0.1%	0.0%	
Pct. Rank vs Lipper Mid-Cap Core		43	40	30	35	0	
<b>SMRS Large-Cap Growth</b>	<b>\$802,236,408</b>	<b>29.2%</b>	<b>6.4%</b>	<b>16.0%</b>	<b>16.3%</b>	<b>11.9%</b>	<b>5/31/05</b>
S&P 500 Growth		36.1%	7.7%	17.1%	16.3%	12.3%	
Style & Risk Adj Benchmark		38.5%	7.5%	16.1%	15.8%	12.1%	
Lipper Large-Cap Growth		29.9%	7.9%	16.3%	15.8%	11.8%	
Excess Return		-6.8%	-1.3%	-1.1%	-0.1%	-0.4%	
Alpha		-9.2%	-1.1%	0.0%	0.5%	-0.2%	
Pct Rank vs Lipper Lg-Cap Growth		60	80	56	40	43	
<b>Value, Quality, Momentum Composite</b>	<b>\$794,385,109</b>	<b>20.7%</b>	<b>5.5%</b>	<b>--</b>	<b>--</b>	<b>12.5%</b>	<b>10/1/20</b>
S&P 1500		35.5%	11.5%	--	--	15.7%	
Style & Risk Adj Benchmark		27.4%	8.5%	--	--	15.8%	
Lipper Multi-Cap Core		18.4%	5.5%	--	--	13.0%	
Excess Return		-3.3%	-3.0%	--	--	-3.3%	
Alpha		-6.7%	-3.0%	--	--	-3.3%	
Pct. Rank vs Lipper Multi-Cap Core		42	56	--	--	64	
<b>Large-Cap Consistent Growth</b>	<b>\$754,162,850</b>	<b>34.0%</b>	<b>4.5%</b>	<b>12.7%</b>	<b>14.4%</b>	<b>13.6%</b>	<b>3/1/15</b>
S&P 500		25.0%	8.9%	14.5%	13.8%	13.0%	
Style & Risk Adj Benchmark		52.5%	8.4%	18.6%	17.1%	15.7%	
Lipper Large-Cap Core		22.3%	7.6%	13.4%	12.8%	11.9%	
Excess Return		9.0%	-4.4%	-1.8%	0.5%	0.5%	
Alpha		-18.5%	-3.8%	-5.8%	-2.8%	-2.2%	
Pct. Rank vs Lipper Lg-Cap Core		3	90	68	17	9	
<b>Martin Currie</b>	<b>\$407,356,189</b>	<b>12.4%</b>	<b>-3.0%</b>	<b>--</b>	<b>--</b>	<b>6.2%</b>	<b>11/1/20</b>
S&P 1500 Growth		34.1%	7.3%	--	--	16.0%	
Style & Risk Adj Benchmark		27.4%	7.8%	--	--	18.2%	
Lipper Multi-Cap Growth		27.4%	3.5%	--	--	10.0%	
Excess Return		-21.8%	-10.3%	--	--	-9.8%	
Alpha		-15.0%	-10.8%	--	--	-11.9%	
Pct. Rank vs Lipper Multi-Cap Growth		96	90	--	--	81	

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Incept.</u>	<u>Incept.</u> <u>Date</u>
<b>LA Capital All-Cap Growth</b>	<b>\$333,768,040</b>	<b>32.7%</b>	<b>9.1%</b>	<b>15.3%</b>	<b>14.7%</b>	<b>13.0%</b>	<b>5/31/05</b>
S&P 1500 Growth		34.1%	7.3%	16.5%	15.7%	12.1%	
Style & Risk Adj Benchmark		33.1%	7.1%	15.7%	14.8%	12.3%	
Lipper Multi-Cap Growth		27.4%	3.5%	13.3%	13.5%	10.9%	
Excess Return		-1.5%	1.8%	-1.1%	-1.0%	0.9%	
Alpha		-0.4%	2.0%	-0.4%	-0.1%	0.7%	
Pct. Rank vs Lipper Multi-Cap Growth		32	8	29	37	14	
<b>Ark Investments</b>	<b>\$310,260,585</b>	<b>5.6%</b>	<b>-17.5%</b>	<b>-1.5%</b>	<b>2.3%</b>	<b>10.4%</b>	<b>3/1/16</b>
S&P 1500 Growth		34.1%	7.3%	16.5%	15.7%	17.1%	
Style & Risk Adj Benchmark		22.9%	-1.6%	10.6%	10.5%	26.8%	
Lipper Multi-Cap Growth		27.4%	3.5%	13.3%	13.5%	15.2%	
Excess Return		-28.5%	-24.8%	-18.0%	-13.5%	-6.7%	
Alpha		-17.3%	-15.9%	-12.2%	-8.3%	-16.5%	
Pct. Rank vs Lipper Multi-Cap Growth		99	100	100	100	95	
<b>Disruptive Innovation Momentum</b>	<b>\$229,433,314</b>	<b>59.7%</b>	<b>-2.4%</b>	<b>--</b>	<b>--</b>	<b>3.2%</b>	<b>9/1/20</b>
MSCI Momentum Index		32.9%	5.8%	--	--	8.4%	
Style & Risk Adj Benchmark		22.0%	9.3%	--	--	13.6%	
Lipper Multi-Cap Growth		27.4%	3.5%	--	--	8.5%	
Excess Return		26.8%	-8.2%	--	--	-5.2%	
Alpha		37.7%	-11.7%	--	--	-10.4%	
Pct. Rank vs Lipper Multi-Cap Growth		1	90	--	--	85	
<b>Patient Capital</b>	<b>\$228,625,091</b>	<b>27.3%</b>	<b>4.6%</b>	<b>--</b>	<b>--</b>	<b>1.9%</b>	<b>10/1/21</b>
S&P 1500 Value		12.1%	8.8%	--	--	10.8%	
Style & Risk Adjusted Benchmark		12.6%	5.0%	--	--	7.5%	
Lipper Multi-Cap Value		13.7%	6.1%	--	--	8.1%	
Excess Return		15.2%	-4.3%	--	--	-8.9%	
Alpha		14.7%	-0.5%	--	--	-5.6%	
Pct. Rank vs Lipper Multi-Cap Value		1	77	--	--	98	
<b>Bivium Capital Partners</b>	<b>\$220,013,129</b>	<b>22.9%</b>	<b>7.1%</b>	<b>9.0%</b>	<b>8.4%</b>	<b>7.5%</b>	<b>11/30/07</b>
S&P 1500 Value		12.1%	8.8%	10.4%	10.1%	7.8%	
Style & Risk Adj Benchmark		24.2%	8.4%	13.8%	13.3%	10.3%	
Lipper Multi-Cap Value		13.7%	6.1%	9.4%	8.4%	7.0%	
Excess Return		10.7%	-1.7%	-1.5%	-1.7%	-0.4%	
Alpha		-1.3%	-1.2%	-4.8%	-4.9%	-2.8%	
Pct. Rank vs Lipper Multi-Cap Value		1	39	58	53	35	
<b>Clarkston Capital Small/Mid-Cap</b>	<b>\$197,415,051</b>	<b>8.1%</b>	<b>5.5%</b>	<b>9.0%</b>	<b>8.8%</b>	<b>10.3%</b>	<b>1/1/14</b>
S&P 400		12.3%	4.0%	9.7%	8.6%	9.4%	
Style & Risk Adj Benchmark		10.8%	5.7%	8.2%	6.9%	7.1%	
Lipper Mid-Cap Core		13.1%	4.2%	9.4%	8.5%	8.4%	
Excess Return		-4.3%	1.5%	-0.8%	0.1%	1.0%	
Alpha		-2.7%	-0.2%	0.8%	1.9%	3.2%	
Pct. Rank vs Lipper Mid-Cap Core		90	31	69	46	5	
<b>Seizert Capital Partners</b>	<b>\$192,505,602</b>	<b>17.5%</b>	<b>7.3%</b>	<b>12.5%</b>	<b>11.4%</b>	<b>13.2%</b>	<b>11/30/09</b>
S&P 1500 Value		12.1%	8.8%	10.4%	10.1%	12.1%	
Style & Risk Adj Benchmark		12.2%	5.8%	8.4%	10.0%	12.1%	
Lipper Multi-Cap Value		13.7%	6.1%	9.4%	8.4%	10.6%	
Excess Return		5.3%	-1.5%	2.1%	1.3%	1.1%	
Alpha		5.3%	1.5%	4.1%	1.4%	1.1%	
Pct. Rank vs Lipper Multi-Cap Value		17	36	8	5	3	
<b>Attucks Asset Management</b>	<b>\$161,255,572</b>	<b>15.1%</b>	<b>7.4%</b>	<b>9.0%</b>	<b>9.1%</b>	<b>7.8%</b>	<b>11/30/07</b>
S&P 1500		24.0%	8.5%	14.1%	13.4%	10.2%	
Style & Risk Adj Benchmark		11.4%	8.7%	10.1%	9.7%	7.4%	
Lipper Multi-Cap Core		18.4%	5.5%	11.5%	10.8%	8.5%	
Excess Return		-8.9%	-1.2%	-5.1%	-4.3%	-2.4%	
Alpha		3.6%	-1.3%	-1.1%	-0.6%	0.4%	
Pct. Rank vs Lipper Multi-Cap Core		66	35	82	79	74	



<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Incept.</u>	<u>Incept. Date</u>
<b>Ancora</b>	<b>\$139,142,025</b>	<b>18.5%</b>	<b>7.2%</b>	<b>11.1%</b>	<b>9.5%</b>	<b>9.7%</b>	<b>10/1/17</b>
S&P 1000		12.3%	4.0%	9.7%	8.6%	9.1%	
Style & Risk Adj. Benchmark		12.9%	4.0%	9.7%	8.6%	9.1%	
Lipper Mid-Cap Core		13.1%	4.2%	9.4%	8.5%	9.0%	
<i>Excess Return</i>		6.2%	3.2%	1.4%	0.8%	0.5%	
<i>Alpha</i>		5.6%	3.2%	1.4%	0.9%	0.6%	
<i>Pct. Rank vs Lipper Mid-Cap Core</i>		6	9	16	27	33	
<b>Managed Asset Portfolios</b>	<b>\$118,440,000</b>	<b>10.4%</b>	<b>3.8%</b>	<b>7.9%</b>	<b>8.5%</b>	<b>10.7%</b>	<b>2/29/16</b>
S&P 1500 Value		12.1%	8.8%	10.4%	10.1%	12.3%	
Style & Risk Adj. Benchmark		9.9%	8.1%	9.0%	8.2%	9.8%	
Lipper Multi-Cap Value		13.7%	6.1%	9.4%	8.4%	10.7%	
<i>Excess Return</i>		-1.7%	-5.1%	-2.5%	-1.6%	-1.6%	
<i>Alpha</i>		0.5%	-4.3%	-1.0%	0.3%	0.8%	
<i>Pct. Rank vs Lipper Multi-Cap Value</i>		81	82	77	51	54	
<b>All-Cap Core</b>	<b>\$75,311,914</b>	<b>29.9%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>21.8%</b>	<b>5/1/22</b>
S&P 1500		24.0%	--	--	--	15.5%	
Style & Risk Adj. Benchmark		26.9%	--	--	--	18.6%	
Lipper Multi-Cap Core		18.4%	--	--	--	12.0%	
<i>Excess Return</i>		6.0%	--	--	--	6.4%	
<i>Alpha</i>		3.1%	--	--	--	3.3%	
<i>Pct. Rank vs Lipper Multi-Cap Core</i>		2	--	--	--	1	

State of Michigan Retirement System

# **ABSOLUTE RETURN REVIEW**

State of Michigan Investment Board Meeting  
April 2, 2025



Daniel J. Quigley  
Senior Investment Manager  
Real, Opportunistic, and Absolute Return Division

## EXECUTIVE SUMMARY

### Performance

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Absolute Return	13.1%	8.5%	9.0%	7.7%	6.4%
HFRI FOF Conservative	7.4%	4.0%	5.3%	4.5%	3.7%

- The value of the Absolute Return portfolio is \$11.1 billion with a one-year return of 13.1%. The portfolio's performance was positive for both Private Credit and Hedge Funds.
- A contributor to Private Credit's positive performance this year has been higher interest rates on an absolute basis when compared to recent historical averages. In addition to this yield, credit instruments have experienced price appreciation as credit spreads have tightened. Senior corporate credit, mortgage credit, and housing-related exposures were all positive drivers of performance.
- In the Hedge Fund portfolio, core managers in the Credit and Multi-Strategy sleeves of the portfolio were the primary drivers of positive returns. Macro and Quant strategies exhibited significant outperformance versus the benchmark. Equity strategies were positive but underperformed.
- Hedge Fund Credit strategies focused on Special Situations and Mortgage Credit investments outperformed as managers were able to take advantage of market dislocations. This credit outperformance was primarily driven by mortgage servicing and specialty finance strategies.
- In total, Hedge Fund and Private Credit strategies have taken advantage of higher market volatility and higher interest rates to generate strong risk-adjusted returns.

### Strategy Update

- The objective of the Absolute Return portfolio is to diversify the total plans' holdings, targeting returns above investment-grade fixed income with lower volatility than the equity portfolio. The portfolio utilizes a diverse mix of managers that invest both long and short to target specific exposures and seek to hedge out unwanted risk.
- Commitments closed during the quarter include:
  - \$100.5 million in Nuveen SMRS, LLC, a fund of one investment vehicle managed by Nuveen Asset Management, LLC. The fund will invest in collateralized loan obligation ("CLO") liability and equity securities.
  - \$50 million in Blackstone Capital Opportunities Co-Investment Fund V, LP, a closed-end co-investment vehicle managed by Blackstone Private Credit Strategies, LLC. The fund will focus on providing private credit solutions on an opportunistic basis across a wide array of investment structures and collateral types.

- In terms of allocation priorities, the division expects to maintain the current allocation to hedge funds and private credit and will review investments on a relative value basis. Staff will also review credit strategies on an opportunistic basis.

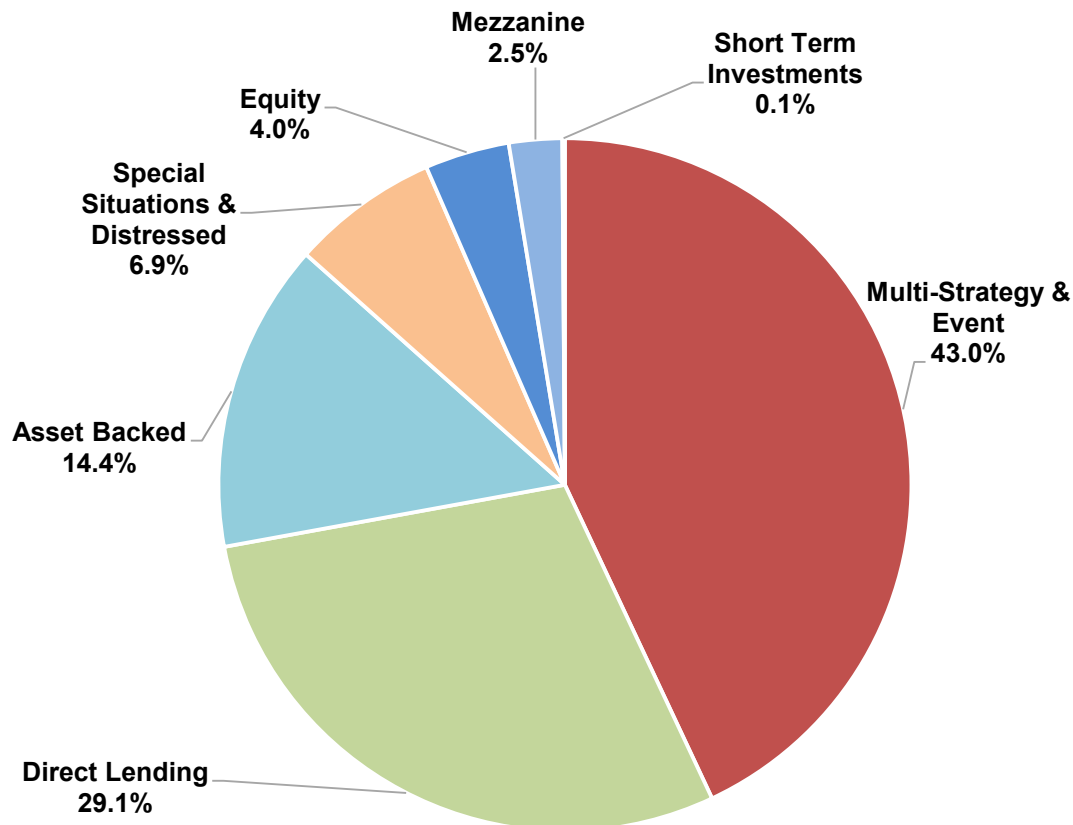
Overall, staff will continue to focus on opportunities that seek to provide diversification, protect the downside, and deliver absolute return.

# SMRS

## Absolute Return

### 12/31/24

## Investments By Strategy



### Market Value in Millions

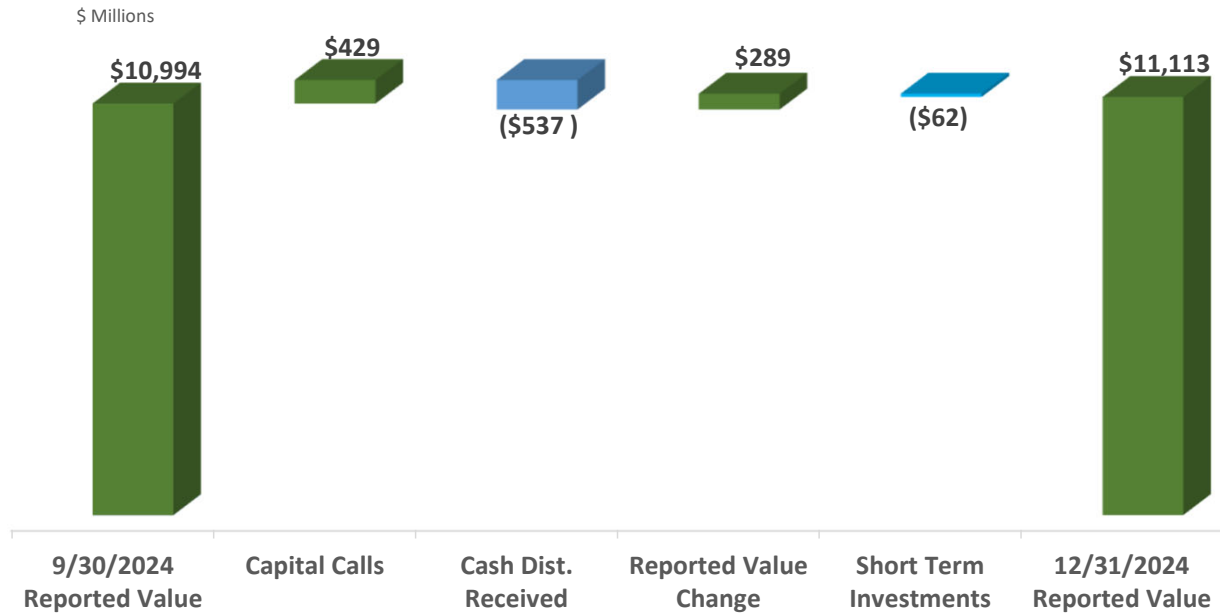
	12/31/24
Multi-Strategy & Event	\$ 4,781
Direct Lending	3,235
Asset Backed	1,604
Special Situations & Distressed	765
Equity	439
Mezzanine	275
Short Term Investments	14
<b>Total Investments</b>	<b>\$ 11,113</b>

# SMRS

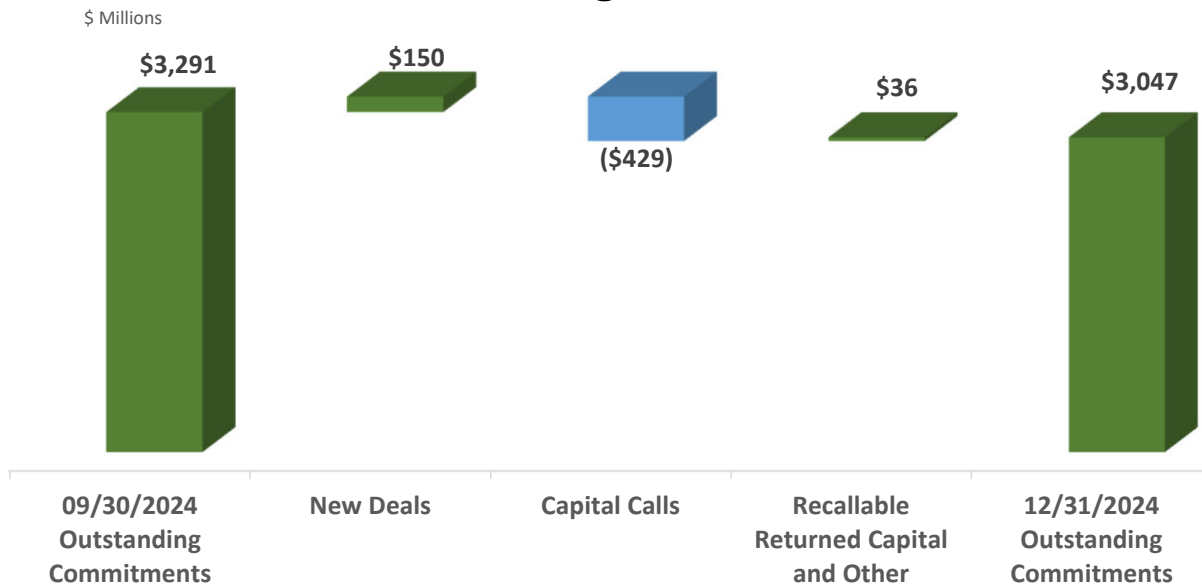
## Absolute Return

### 12/31/24

## Invested Commitments



## Outstanding Commitments



# SMRS

## Absolute Return

### 12/31/24

### Net Market Value by Entity

	Net Market Value	Unfunded Commitment
Acacia Co-Invest, LP	\$ 333,601,265	\$ 0
AG Essential Housing, LP	4,095,428	58,000,000
AMG Comvest Senior Lending Feeder Fund II, LP	79,359,498	71,189,024
Angelo Gordon Credit Solutions Fund II, LP	81,386,956	18,958,905
Angelo Gordon Credit Solutions Fund, LP	40,589,419	4,325,340
Apollo Accord+ II Fund, LP	75,082,904	224,917,096
Apollo Accord+, LP	325,146,147	37,564,136
Apollo MidCap FinCo Holdings, LTD	330,784,421	0
<b>** Blackstone Capital Opportunities Co-Investment Fund V, LP</b>	<b>0</b>	<b>50,000,000</b>
Blackstone Capital Opportunities Fund IV Co-Invest, LP	27,980,325	2,991,865
Blackstone Capital Opportunities Fund IV, LP	90,863,924	69,894,487
Blackstone Capital Opportunities Fund V, LP	0	100,000,000
Blue Range Holdings, LLC	658,281,136	210,175,447
Castle Credit SMRS Holdings, LLC Series A	150,737,879	71,382,271
Castle Credit SMRS Holdings, LLC Series C	104,502,527	10,424,795
Cerberus Manitou Residential Loan Fund, LP	342,459,948	73,000,000
Cerberus SMRS Partners, LP	7,172,023	23,304,657
EnTrust White Pine Partners, LP	1,145,659	0
Farallon Special Situations Fund II, LP	80,829,315	22,889,836
Fortress FCO MA MI, LP	102,497,460	23,523,189
Fortress MSR Opportunities Fund I A, LP	0	15,662,214
GSO Capital Opportunities Fund III, LP	22,571,858	26,504,941
GSO COF III Co-Investment Fund, LP	2,572,602	13,463,876
HarbourVest Credit Opportunities Fund II, LP	65,752,834	2,250,000
HarbourVest Credit Opportunities Fund III, LP	1,012,895	75,000,000
Harbourvest Direct Lending Fund, LP	89,674,708	12,500,000
HarbourVest Direct Lending II, LP	12,000,000	48,000,000
HarbourVest Partners Mezzanine Income Fund, LP	22,530,585	16,310,000
HPS Mezzanine Partners 2019, LP	41,743,377	9,084,002
HPS Red Cedar Fund, LP	341,509,756	94,872,700
Irradiant CLO Partners Fund II, LP (fka Kayne CLO Partners FD II)	44,213,344	28,171,442
Irradiant CLO Partners III, LP	78,575,647	27,990,171
Irradiant Solutions Fund II, LP	166,004,330	195,672,196
Irradiant Solutions Fund, LP (fka Kayne)	86,817,167	143,230,444
Jana Strategic Investment Fund IV, LP	105,437,970	381,103
Kayne Anderson BDC, LLC (KABDC)	110,690,089	0
Lone Star Residential Mortgage Fund III, LP	47,456,173	50,617,917
Marathon CLO Equity Fund, LP	6,457,419	0
Monument Park, LLC	82,554,454	0
MP Securitized Credit Fund, LP	466,767	0
<b>** Nuveen SMRS, LLC</b>	<b>9,452,736</b>	<b>90,547,264</b>

	<b>Net Market Value</b>	<b>Unfunded Commitment</b>
Oaktree Opportunities Fund VIII, LP	100,971	0
Owl Rock Technology Finance Corp II (ORTF II), LLC	119,436,156	82,684,408
Owl Rock Technology Holdings II (ORTH II), LLC	1,264,173	22,727,169
PIMCO Aviation Co-Invest Vehicle Onshore Feeder, LP	18,896,892	34,647,702
PIMCO Private Income Fund Onshore Feeder, LLC	95,022,608	0
Redding Ridge Holdings, LP	142,236,088	17,163,814
Sixth Street CLO Equity Fund IV, LP	31,617,980	70,132,257
Sixth Street Lending Partners, LP	306,459,685	250,177,883
Sixth Street Opportunities Partners IV (A), LP	66,760,505	12,668,929
Sixth Street Opportunities Partners V (A), LP	104,559,246	29,336,712
Sixth Street Specialty Lending Europe II (USD Feeder), LP	85,781,433	62,870,797
Sixth Street Specialty Lending Europe III (USD Feeder), LP	0	125,000,000
SJC DLF IV 10 YEAR-J, LLC	11,667,510	5,000,000
SJC Onshore Direct Lending Fund IV-SMRS, LP	327,699,511	122,989,896
SMRS-HVDL, LLC	107,598,818	15,000,000
Suttons Bay Fund, LP	513,712,192	188,623,146
* Tahquamenon Fund, LP	4,780,048,239	0
TCW/Crescent Mezzanine Partners V, LP	27,891	12,395,466
TICP CLO Partners II, LP	21,934,318	0
TICP CLO Partners III, LP	52,465,922	4,411,277
Turning Rock Fund I, LP	31,557,097	16,319,293
Turning Rock Fund II, LP	59,647,947	6,932,538
Turning Rock Fund III, LP	46,446,146	45,194,865
* Visium Balanced Fund, LP	2	0
<b>Total Absolute Return Strategies</b>	<b>\$ 11,098,952,276</b>	<b>\$ 3,047,075,471</b>
Short-Term Investments & Other	14,299,204	0
<b>Grand Total</b>	<b>\$ 11,113,251,479</b>	<b>\$ 3,047,075,471</b>

\* Fund of Funds

\*\* New Commitments made during quarter reported



State of Michigan Retirement System

# PRIVATE EQUITY REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Peter A. Woodford  
Senior Investment Manager  
Private Equity Division

## EXECUTIVE SUMMARY

### **Performance**

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	8.0%	2.5%	13.9%	13.7%	13.3%
PE Benchmark Returns	40.3%	15.2%	19.4%	17.9%	16.8%
Peer Median Returns	6.9%	5.3%	10.0%	9.3%	8.9%

- It is not unusual for private equity returns to lag the public benchmark returns during periods of expansion and lead the public benchmark during periods of contraction. Over the last 10 years, the Private Equity Division outperformed the S&P by 0.2% (ten-year S&P 500 return 13.1%) and underperformed the benchmark by 3.5%.
- Private equity returns have been strong relative to peer median returns, ranking in the top 8.0% of peers over the past ten years. Outperformance to peers is attributable to strategy as well as fund and co-investment selectivity.
- Commitments closed during the quarter:
  - \$100 million to Summit Partners Growth Equity Fund XII-A, LP, managed by Summit Partners LP, focused on growth equity investments.
  - \$20 million to Accel Growth Fund VII, LP, managed by Accel Growth Fund VII Associates LP, focused on later-stage/technology investments.
  - \$10 million to Accel India VIII, LP, managed by Accel India VIII Associates LP, focused on early-stage/technology investments.

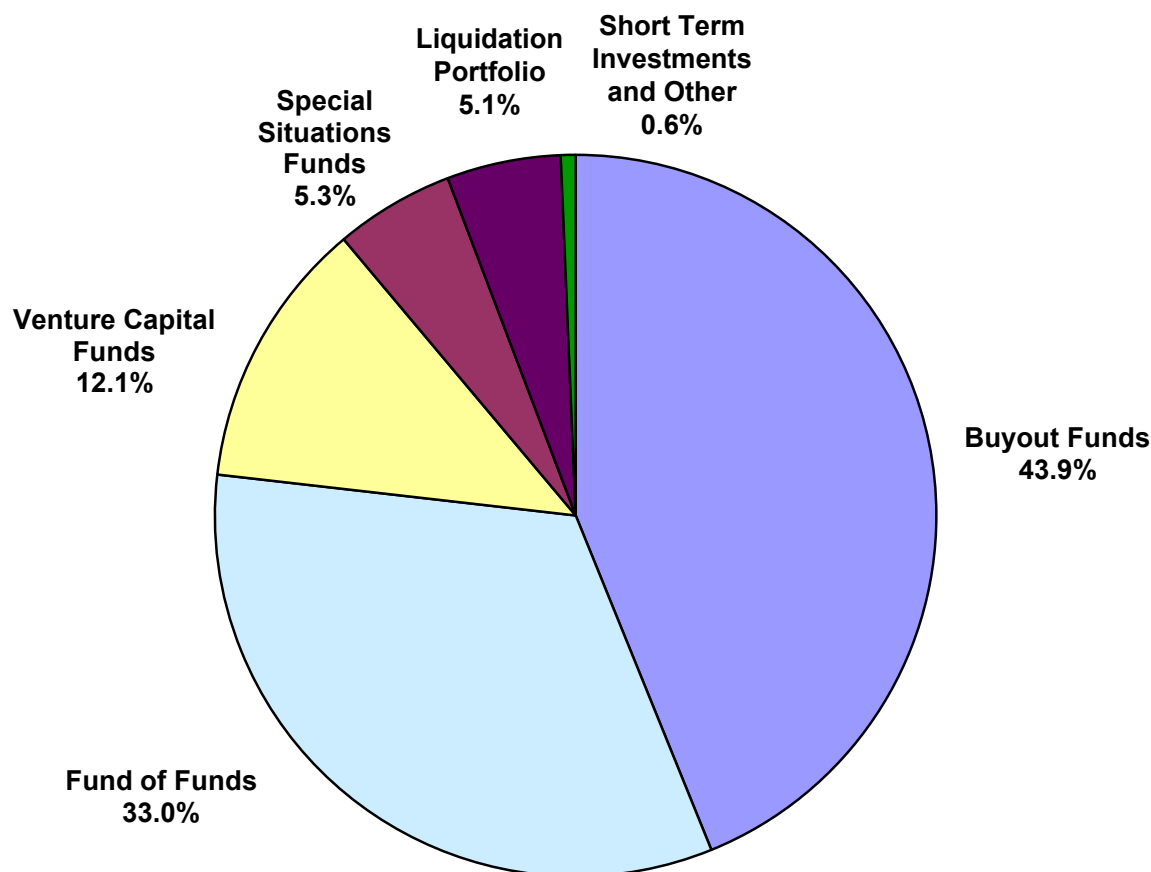
### **Strategy Update**

The strategy for the next twelve months will focus on existing sponsors raising successor funds. This may be a combination of buyout, venture capital, secondary, and growth equity funds seeking new commitments. Co-investments continue to play an important role in both averaging down costs and targeting specific investments with attractive risk/return characteristics.

# SMRS

## Private Equity

### 12/31/24



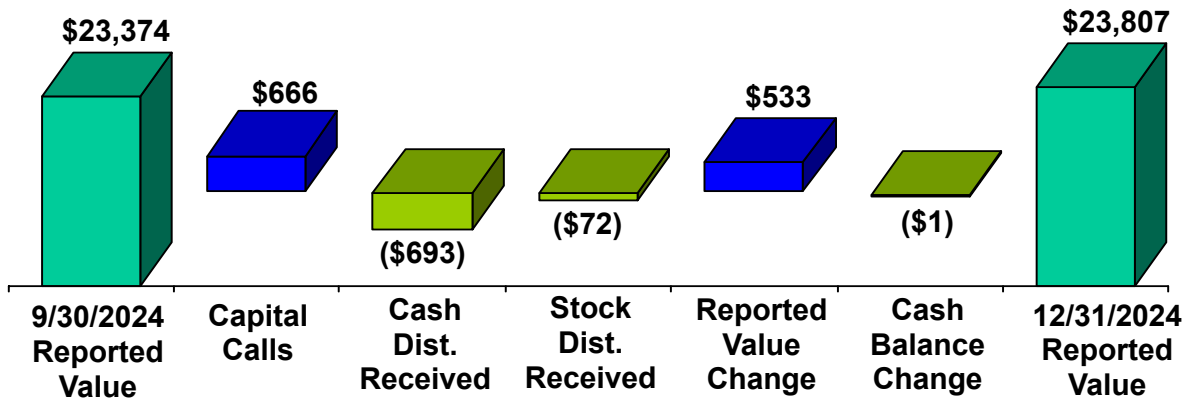
Market Value in Millions				
	12/31/2024		12/31/2023	
Buyout Funds	\$10,444	43.9%	\$10,131	44.8%
Fund of Funds	\$7,844	32.9%	\$6,938	30.7%
Venture Capital Funds	\$2,876	12.1%	\$2,633	11.6%
Special Situations Funds	\$1,274	5.3%	\$1,473	6.5%
Liquidation Portfolio	\$1,217	5.1%	\$1,295	5.7%
Short Term Investments and Other	\$152	0.6%	\$152	0.7%
<b>Total</b>	<b>\$23,807</b>	<b>100.0%</b>	<b>\$22,622</b>	<b>100.0%</b>

# SMRS

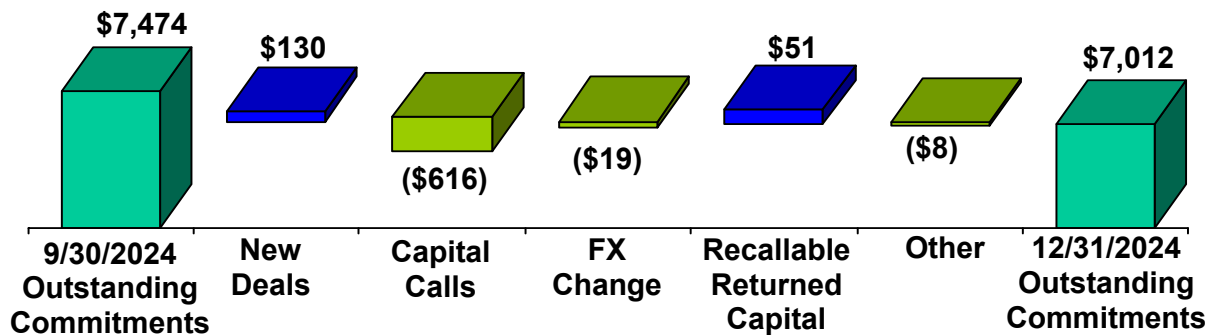
## Private Equity

### 12/31/2024

#### Invested Commitments



#### Outstanding Commitments

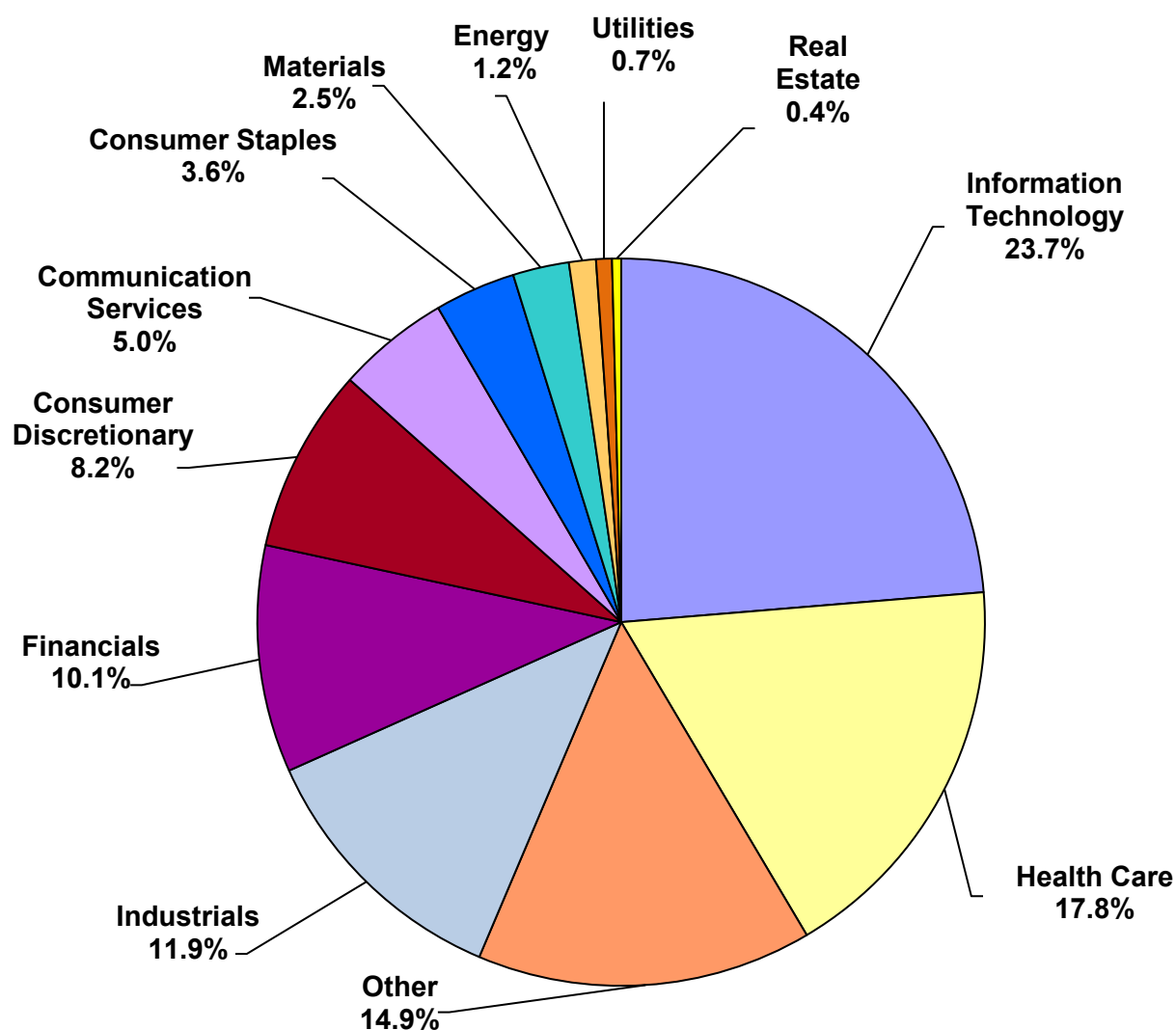


# SMRS

## Private Equity

12/31/24

### Investments by Industry



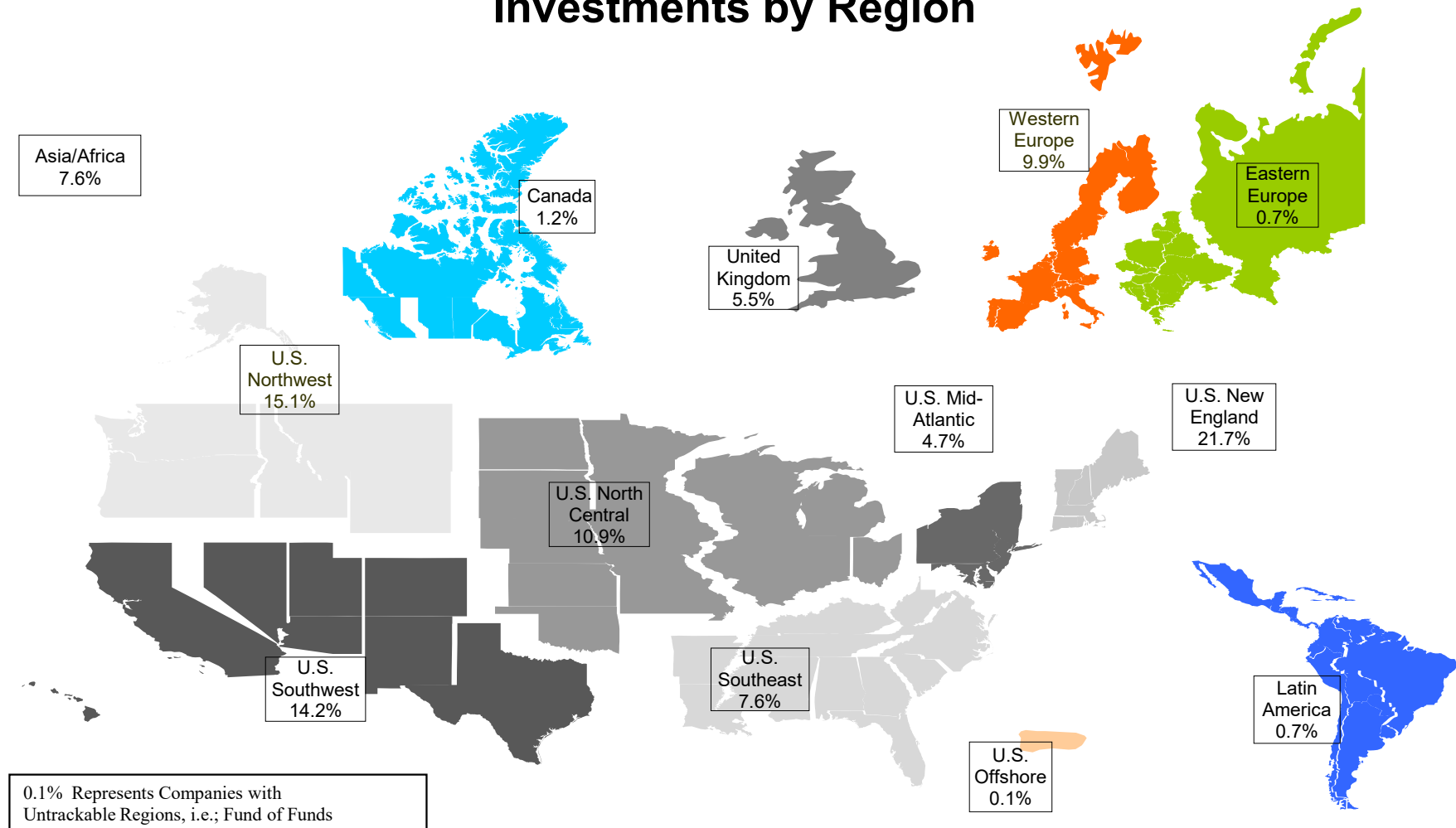
These numbers are based on the most recent available General Partner Data; primarily 9/30/2024 and are subject to change.

# SMRS

## Private Equity

12/31/24

### Investments by Region



# SMRS

## Private Equity

### 12/31/24

## Portfolio by Vintage Year

(\$ in Millions)

<b>Asset Vintage</b>	<b>Reported Value</b>	<b>Outstanding Commitment</b>	<b>Total Exposure</b>
1986-2005	\$ 123	\$ 57	\$ 180
2006*	58	68	126
2007	44	40	84
2008	125	57	182
2009	3	0	3
2010	31	3	34
2011	246	33	279
2012	397	27	424
2013	130	32	162
2014	614	52	666
2015	7,881	905	8,786
2016	1,620	170	1,790
2017	1,836	190	2,026
2018	3,830	892	4,722
2019	2,242	293	2,535
2020	1,082	244	1,326
2021	2,073	1,034	3,107
2022	1,177	1,535	2,712
2023	104	672	776
2024	39	708	747
Income Accruals	0	0	0
Short Term Investments and Other	152	0	152
<b>Total</b>	<b>\$ 23,807</b>	<b>\$ 7,012</b>	<b>\$ 30,819</b>

\*Liquidation portfolio is 2006 vintage

## FX Exposure

(\$ in Millions)

	<b>Reported Value</b>	<b>Outstanding Commitment</b>	<b>Total Exposure</b>	<b>Total (USD)</b>
Euro (\$1.036/ €)	€ 548	€ 202	€ 750	\$776

# SMRS

## Private Equity

### 12/31/24

## Net Market Value by Entity

	Adjusted Reported Value	Unfunded Commitment
5AM Opportunities I, LP	\$ 11,976,348	\$ 0
5AM Opportunities II, LP	21,811,056	0
5AM Ventures VI, LP	18,724,171	0
5AM Ventures VII, LP	12,105,068	12,500,000
Accel Europe I, LP	1,112,916	1
Accel Europe II, LP	29,826,903	3,300,000
Accel Growth Fund II, LP	7,752,498	0
Accel Growth Fund III, LP	10,451,063	280,000
Accel Growth Fund IV, LP	22,259,765	0
Accel Growth Fund V, LP	36,395,970	0
Accel Growth Fund VI, LP	18,753,089	4,562,500
<b>** Accel Growth Fund VII, LP</b>	<b>0</b>	<b>20,000,000</b>
Accel India VII, LP	5,328,268	4,075,000
<b>** Accel India VIII, LP</b>	<b>0</b>	<b>10,000,000</b>
Accel IX, LP	611,244	3,000,000
Accel Leaders 4, LP	27,631,495	22,750,000
Accel Leaders Fund 3, LP	35,188,705	800,000
Accel Leaders Fund II, LP	10,022,291	0
Accel Leaders Fund, LP	14,891,632	0
Accel London V, LP	29,259,522	600,000
Accel London VI, LP	14,989,074	1,625,000
Accel London VII, LP	7,530,979	4,000,000
Accel London VIII, LP	1,200,000	8,800,000
Accel VI-S	317,522	652,611
Accel VI, LP	475,099	0
Accel X, LP	2,687,622	0
Accel XI, LP	6,265,395	1,440,000
Accel XII, LP	25,103,743	980,000
Accel XIII, LP	17,189,595	1,000,000
Accel XIV, LP	11,337,638	1,150,000
Accel XV, LP	6,005,726	3,100,000
Accel XVI, LP	350,000	9,650,000
Accel-KKR Growth Capital Fund IV, LP	20,139,995	19,860,005
Acorn Bioventures 2, LP	46,699,013	50,000,000
Acorn Bioventures, LP	92,732,311	0
Advent Global Private Equity V, LP	3,488,545	8,700,000
Advent International GPE IX, LP	318,410,829	11,250,261
Advent International GPE VI-A, LP	16,069,982	0
Advent International GPE VII-B, LP	22,147,975	8,000,000
Advent International GPE VIII-B, LP	196,102,807	0
Advent International GPE X, LP	220,295,452	168,837,964
Advent International LAPEF VII, LP	39,512,222	19,650,000
Advent Latin American Private Equity Fund VI, LP	27,770,442	2,450,000
Affinity Asia Pacific Fund III, LP	10,893,997	8,520,204
Affinity Asia Pacific Fund IV, LP	77,261,275	10,143,475
Affinity Asia Pacific Fund V, LP	122,009,056	60,307,258



	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
Apax Digital II, LP	32,797,023	68,278,083
Apax Digital, LP	69,136,675	4,546,237
Apax Europe Fund VI, LP	4,648,136	2,189,873
Apax Europe VII, LP	1,893,178	1,542,254
Apax IX, LP	107,295,260	16,039,252
Apax US VII, LP	2,895,724	417,509
Apax VIII - B, LP	9,089,603	3,983,093
Apax X USD, LP	165,565,217	28,483,288
Apax XI USD, LP	27,974,028	123,240,017
Apollo Investment Fund IX, LP	95,107,461	24,641,923
Apollo Investment Fund VIII, LP	25,622,555	10,027,504
Arboretum Ventures II, LP	0	0
Arboretum Ventures III, LP	2,505,177	0
Arboretum Ventures IV, LP	9,212,888	3,300,001
Arboretum Ventures V, LP	25,021,344	6,125,000
Arboretum Ventures VI, LP	8,810,570	24,604,993
Ares Corporate Opportunities Fund III, LP	0	1,424,582
Ares Corporate Opportunities Fund IV, LP	15,146,836	1,624,990
ASF VIII B	128,709,994	31,768,400
AXA ASF Miller Co-Investment	122,863	0
Axiom Asia 6, LP	31,415,675	19,500,000
Axiom Asia Co-Investment Fund I, LP	50,171,397	4,831,107
Axiom Asia Co-Investment Fund II, LP	29,461,255	24,891,037
Axiom Asia IV, LP	50,953,482	5,747,811
Axiom Asia Private Capital Fund III, LP	30,897,898	5,250,002
Axiom Asia V, LP	50,609,422	9,500,000
BC European Capital VII, LP	571,213	0
Berkshire Fund IX Coinvestment Fund, LP	60,603,211	3,415,332
Berkshire Fund IX, LP	202,191,625	16,732,056
Berkshire Fund VI, LP	7,699,308	6,902,061
Berkshire Fund VII, LP	6,661,973	2,441,522
Berkshire Fund VIII, LP	34,091,803	4,465,738
Berkshire Fund X, LP	123,728,106	35,400,966
Blackstone Capital Partners IV, LP	144,747	4,413,477
Blackstone Capital Partners V, LP	1,093,068	13,069,138
Blackstone Capital Partners V-S	0	712,476
Blackstone Capital Partners VI, LP	70,438,428	32,926,549
Blackstone Capital Partners VII, LP	225,403,333	15,783,358
Blackstone Capital Partners VIII, LP	183,235,505	60,940,739
Blackstone Growth II, LP	0	100,000,000
Carlyle Europe Partners V, SCSp	108,924,665	24,036,514
Carlyle Partners Growth, LP	16,216,437	32,555,436
Carlyle Partners V, LP	14,009,730	10,645,569
Carlyle Partners VI, LP	37,571,986	9,288,430
Carlyle Partners VII, LP	276,843,903	10,438,900
Carlyle Partners VIII, LP	120,638,338	91,636,415
Charlesbank Equity Fund IX, LP	103,322,819	24,071,664
Charlesbank Equity Fund X, LP	94,829,639	20,995,501
Charlesbank Equity Overage Fund X, LP	60,002,577	13,979,551
Charlesbank Fund IX Overage Allocation Program	32,653,336	17,826,614
Clearlake Capital Partners VII, LP	149,568,105	67,076,107
Clearlake Capital Partners VIII, LP	4,959,743	95,040,257
Coller International Partners VI, LP	6,559,581	5,000,000
Coller International Partners VII, LP	51,439,983	45,871,272
CVC Capital Partners Fund IX (A), LP	24,634,573	129,287,450
CVC Capital Partners VII, LP	188,248,407	351,794

	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
CVC Capital Partners VIII, LP	107,704,153	4,215,867
Dover Street IX, LP	46,289,480	9,000,000
Dover Street X, LP	134,907,694	30,000,000
Dover Street XI, LP	31,132,582	75,000,000
FirstMark Capital I, LP	34,765,993	196,596
FirstMark Capital IV, LP	68,860,697	0
FirstMark Capital OF I, LP	8,029,948	0
FirstMark Capital OF II, LP	54,217,238	0
FirstMark Capital OF III, LP	28,312,760	0
FirstMark Capital OF IV, LP	4,142,759	29,925,000
FirstMark Capital V, LP	39,177,614	2,100,000
FirstMark Capital VI, LP	8,263,058	26,075,000
Flagship Pioneering Fund VII, LP	115,449,354	109,000,000
Flagship Pioneering Fund VIII, LP	14,856,680	183,000,000
Flagship Pioneering Special Opportunities Fund II, LP	92,719,201	1,500,000
Flagship Pioneering VI, LP	303,104,670	0
Flagship Ventures Fund 2004, LP	23,022	0
Flagship Ventures Fund 2007, LP	1,437,024	0
Flagship Ventures Fund IV, LP	16,896,990	0
Flagship Ventures Fund V, LP	48,743,871	0
Flagship Ventures Opportunities Fund I, LP	30,189,283	0
GCM Grosvenor Fund Investment Program I, LP	2,357,721	1,023,516
GCM Grosvenor Fund Investment Program II, LP	13,908,213	12,840,574
GCM Grosvenor Fund Investment Program III - 2004	17,944,972	3,996,786
GCM Grosvenor Fund Investment Program III - 2006	25,908,580	6,467,901
GCM Grosvenor Fund Investment Program V, LP	22,804,986	8,960,898
GCM Grosvenor Fund Investment Program VI, LP	15,732,312	885,851
GCM Grosvenor Fund Investment Program VIII, LP	93,461,014	8,503,438
GCM Grosvenor SeasPriFIP, LP (PIS06-10)	16,155,995	9,194,401
GCM Grosvenor SeasPriFIP, LP (PIS14)	173,514,351	20,159,013
GCM Grosvenor SeasPriFIP, LP (Seed)	4,615,713	16,979,668
Genstar Capital Partners IX, LP	104,067,049	9,363,294
Genstar Capital Partners VIII, LP	84,631,649	4,144,830
Genstar Capital Partners X, LP	103,876,996	1,975,734
Genstar Capital Partners XI, LP	11,297,602	115,114,691
Genstar IX Opportunities Fund I, LP	66,756,478	5,860,823
Genstar VIII Opportunities Fund I, LP	63,972,386	3,310,751
Genstar X Opportunities Fund I, LP	25,037,421	2,793,621
Genstar XI Opportunities Fund I, LP (Priority Co-Investment Vehicle)	8,572,961	17,326,551
Golden Bell Azalea, LLC	121,159	0
Green Equity Investors IX, LP	113,450,532	173,671,069
Green Equity Investors V, LP	1,115,728	14,745,120
Green Equity Investors VI, LP	119,417,543	2,578,335
Green Equity Investors VII, LP	135,141,017	28,729,242
Green Equity Investors VIII, LP	303,437,435	32,846,847
Greenspring Master G, LP	719,354,720	371,562,500
Greenspring Micro II, LP	38,404,055	1,000,000
GTCR Fund XIII, LP	46,261,152	9,642,247
GTCR Fund XIV, LP	17,301,828	134,280,000
GTCR Strategic Growth Fund, LP	20,782,259	22,605,750
HarbourVest Co-Investment Fund VII Combined, LP	1,260,590	100,000,000
HarbourVest Dover Street VIII, LP	3,266,800	5,400,000
HarbourVest Int'l III Partnership, LP	0	1,200,000
Harbourvest Partners Co-Investment Fund IV, LP	77,880,032	19,107,835
HarbourVest Partners Co-Investment Fund V, LP	228,947,820	45,000,000
Harbourvest Partners Co-Investment Fund VI, LP	199,100,820	30,000,000

	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
HarbourVest V Partnership, LP	0	300,000
HarbourVest VI - Direct Fund, LP	1,123,766	750,000
HarbourVest VI Partnership, LP	0	2,000,000
Harvest Partners IX, LP	39,608,457	59,677,486
Harvest Partners VII, LP	92,935,135	7,734,486
Harvest Partners VIII, LP	96,324,867	9,281,268
Hellman & Friedman Capital Partners X, LP	92,241,247	20,247,187
Hg Saturn 3 A, LP	61,935,574	45,615,299
Insight Partners Fund X Follow-On Fund, LP	39,542,443	5,850,000
Insight Partners XI, LP	144,096,008	2,992,458
Insight Partners XII, LP	127,986,087	19,650,000
Insight Partners XIII, LP	4,138,388	146,250,000
Insight Venture Partners Growth-Buyout Coinvestment Fund, LP	81,875,931	4,856,050
Insight Venture Partners IX, LP	179,935,612	830,984
Insight Venture Partners X, LP	187,154,429	13,723,989
Jade Equity Investors II, LP	37,310,279	112,452,746
Jade Equity Investors, LP	131,176,429	14,399,012
Kelso Investment Associates IX, LP	55,910,274	10,233,695
Kelso Investment Associates VII, LP	137,781	0
Kelso Investment Associates VIII, LP	526,082	7,693,622
Kelso Investment Associates X, LP	145,035,953	12,568,457
Khosla Ventures III, LP	2,555,981	0
Khosla Ventures IV, LP	59,720,498	950,000
Khosla Ventures Opportunity I, LP	31,145,477	1,375,000
Khosla Ventures Opportunity II, LP	4,949,373	7,512,500
Khosla Ventures Seed D, LP	21,155,693	940,000
Khosla Ventures Seed E, LP	5,851,918	500,000
Khosla Ventures Seed F, LP	7,542,587	6,000,000
Khosla Ventures V, LP	61,116,355	1,750,000
Khosla Ventures VI, LP	179,096,816	3,750,000
Khosla Ventures VII, LP	45,224,417	10,600,000
Khosla Ventures VIII, LP	20,118,328	30,750,000
KKR 2006 Fund, LP	0	4,951,985
KKR Americas Fund XII, LP	228,730,160	21,526,645
KKR Asian Fund, LP	22,514	0
KKR Asian Fund II, LP	21,141,324	0
KKR Asian Fund III, LP	116,565,801	14,041,003
KKR China Growth Fund, LP	0	3,306,040
KKR European Fund III, LP	1,489,092	4,394,157
KKR European Fund IV, LP	80,838,223	357,456
KKR European Fund V (USD) SCSp	116,110,174	13,777,816
KKR Millennium Fund, LP	0	0
KKR North America Fund XI, LP	46,855,297	225,237
KKR North America Fund XIII SCSp	99,490,021	42,211,094
Lead Edge Capital IV, LP	30,665,600	9,521,879
Lead Edge Capital V, LP	36,219,704	4,180,330
Lead Edge Capital VI, LP	21,796,323	23,750,774
Lightspeed India Fund IV, LLC	3,251,160	3,945,000
Lightspeed Opportunity Fund II, LP	25,851,757	1,500,000
Lightspeed Opportunity Fund, LP	23,551,677	250,000
Lightspeed Venture Partners Select IV, LP	27,705,777	1,250,000
Lightspeed Venture Partners Select V, LP	20,546,046	4,000,000
Lightspeed Venture Partners VII, LP	2,117,106	0
Lightspeed Venture Partners XIII, LP	12,225,223	800,000
Lightspeed Venture Partners XIV-A, LP	9,905,540	2,587,500
Lightspeed Venture Partners XIV-B, LP	14,209,165	3,712,500

	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
Menlo Special Opportunities Fund II, LP	42,424,161	900,000
Menlo Special Opportunities Fund III, LP	12,346,996	12,250,000
Menlo Ventures IX, LP	0	0
Menlo Ventures X, LP	1,171,965	0
Menlo Ventures XI, LP	12,307,255	0
Menlo Ventures XIV, LP	14,695,309	0
Menlo Ventures XV, LP	26,061,326	750,000
Menlo Ventures XVI, LP	6,521,797	8,100,000
Meritech Capital Partners Franchise Fund, LP	9,748,862	5,700,000
Meritech Capital Partners IV, LP	1,746,095	0
Meritech Capital Partners V, LP	10,910,116	400,000
Meritech Capital Partners VI, LP	43,430,053	1,275,000
Meritech Capital Partners VII, LP	42,472,593	3,718,750
Meritech Capital Partners VIII, LP	0	48,000,000
Meritech Capital Sidecar III, LP	0	12,000,000
Michigan Growth Capital Partners II, LP	86,330,433	0
Michigan Growth Capital Partners III, LP	82,503,136	7,992,812
Michigan Growth Capital Partners IV, LP	46,808,993	47,058,233
Michigan Growth Capital Partners, LP	11,131,965	4,731,989
Michigan SEMF Barings	110,558,033	91,642,661
Michigan SEMF Grosvenor	113,165,112	87,146,138
New Leaf Biopharma Opportunities II, LP	114,799,954	0
New Leaf Growth Fund I, LP	0	0
New Leaf Ventures II, LP	0	0
New Leaf Ventures III, LP	22,418,672	0
New Leaf Ventures IV, LP	58,376,585	2,250,000
Oak Investments Partners IX, LP	6,574	246,728
Ocqueoc Holdings, LLC	1,658,759	12,473
Odyssey Investment Partners Fund VI, LP	101,038,653	23,446,338
Permira Growth Opportunities I, LP1	49,171,665	5,619,666
Permira Growth Opportunities II SCSp	14,492,449	32,856,595
Permira VII, LP 1	88,012,393	9,970,357
Permira VIII, LP 2	42,667,643	37,224,635
Public Pension Capital, LLC	86,949,903	9,209,469
Renaissance Venture Capital Fund IV, LP	13,059,448	11,250,000
Renaissance Venture Capital Fund V, LP	670,770	19,000,000
Riverside Capital Appreciation Fund VI, LP	24,146,771	6,262,007
Riverside Capital Appreciation Fund VII, LP	60,352,112	20,531,974
Riverside Micro Cap Fund I, LP	87,303	4,096,758
Riverside Micro-Cap Fund II, LP	0	2,735,834
Riverside Micro-Cap Fund III, LP	35,391,284	4,823,424
Riverside Micro-Cap Fund IV, LP	73,240,126	6,709,650
Riverside Micro-Cap Fund IV B, LP	25,637,145	576,806
Riverside Micro-Cap Fund V, LP	125,127,713	1,517,048
Riverside Micro-Cap Fund VI, LP	67,798,186	57,382,384
Science Ventures Fund II, LP	47,185,477	500,000
Science Ventures Fund III, LP	19,297,692	6,250,000
Silver Lake Partners III, LP	6,512,193	11,910,583
Silver Lake Partners IV, LP	70,953,676	1,440,657
Silver Lake Partners V, LP	70,531,703	8,778,952
Silver Lake Partners VI, LP	84,587,729	7,729,129
Silver Lake SL SPV-2	47,327,101	0
SK Capital Partners V, LP	52,520,685	8,779,662
SKCP Catalyst Fund I-A, LP	39,585,182	6,792,369
SMRS - TOPE, LLC	5,522,404,554	411,551,571
SMRS-CAPP, LLC	516,866,244	193,831,651

	Adjusted Reported Value	Unfunded Commitment
SMRS-NCRP, LLC	1,216,982,482	361,158,994
Summit Partners Growth Equity Fund X, LP	112,081,990	31,076,979
Summit Partners Growth Equity Fund XI-A, LP	39,128,034	64,470,854
<b>** Summit Partners Growth Equity Fund XII-A, LP</b>	<b>0</b>	<b>100,000,000</b>
The Veritas Capital Fund VIII, LP	234,262,548	42,386,073
The Veritas Capital Vantage Fund, LP	34,040,211	33,144,006
Thoma Bravo Discover Fund II, LP	84,197,526	21,468,815
Thoma Bravo Discover Fund IV, LP	87,554,498	27,734,766
Thoma Bravo Discover Fund V, LP	0	100,000,000
Thoma Bravo Explore II, LP	0	100,000,000
Thoma Bravo Fund XII, LP	173,747,942	36,904,285
Thoma Bravo Fund XIII, LP	155,606,523	9,263,445
Thoma Bravo Fund XV, LP	101,305,175	20,049,735
Thoma Bravo Fund XVI, LP	0	50,000,000
Thoma Bravo XIV, LP	136,078,270	19,517,081
TI Platform BOV, LP	16,048,425	2,751,206
TI Platform Fund II, LP	16,290,107	991,928
TI Platform Fund III, LP	14,628,883	12,890,498
TI Platform SMRS SMA, LP	132,147,234	56,004,340
TPG Healthcare Partners II, L.P.	14,515,748	24,575,267
TPG Healthcare Partners, LP	26,576,053	3,313,976
TPG IV (Texas Pacific Group IV), LP	54,324	211,725
TPG Partners IX, LP	62,951,470	54,384,452
TPG Partners VI, LP	2,758,077	4,219,844
TPG Partners VIII, LP	142,108,124	15,790,364
TPG Partners, VII, LP	48,275,649	15,206,610
TSG6, LP	458,670	11,725,177
TSG7 A, LP	73,691,972	17,459,542
TSG8, LP	120,620,187	9,878,559
TSG9, LP	55,089,530	112,280,253
Veritas Capital Fund IX, LP	969,288	149,030,712
Veritas Capital Fund V, LP	46,067,741	1,508,273
Veritas Capital Fund VI, LP	67,906,219	12,911,500
Veritas Capital Fund VII, LP	135,743,667	4,427,813
Veritas V Co-Investors, LP	356,676	0
Warburg Pincus Global Growth, LP	175,031,591	8,700,000
Warburg Pincus Private Equity IX, LP	223,680	0
Warburg Pincus Private Equity X, LP	5,804,241	0
Warburg Pincus Private Equity XI, LP	50,577,932	0
Warburg Pincus Private Equity XII Secondary, LP	18,193,718	0
Warburg Pincus Private Equity XII, LP	127,374,407	0
<b>Total</b>	<b>\$ 23,654,941,286</b>	<b>\$ 7,012,442,900</b>
Short Term Investments and Other	151,669,745	0
Income Accruals	(4)	0
<b>Grand Total</b>	<b>\$ 23,806,611,027</b>	<b>\$ 7,012,442,900</b>

\* Total Private Equity amounts do not include Cash and Active Small Cap

\*\* New Commitments made during quarter reported

State of Michigan Retirement System

# REAL ESTATE AND INFRASTRUCTURE REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Todd A. Warstler  
Senior Investment Manager  
Real Estate and Infrastructure Division

# EXECUTIVE SUMMARY

## Performance

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	1.8%	7.2%	6.8%	7.6%	8.2%
NCREIF NPI	-0.9%	-2.1%	1.8%	2.8%	4.3%
Peer Median Returns	-0.5%	1.4%	3.8%	4.9%	7.0%

\*State Street Universe greater than \$1 billion

- Outperformance relative to the one-year benchmark resulted primarily from the Real Estate and Infrastructure Division's (REID) strategy of being overweight in hospitality, underweight to office, and exposure to infrastructure and REIT sectors. Over the ten-year timeframe the REID is outperforming the benchmark by 390 basis points.

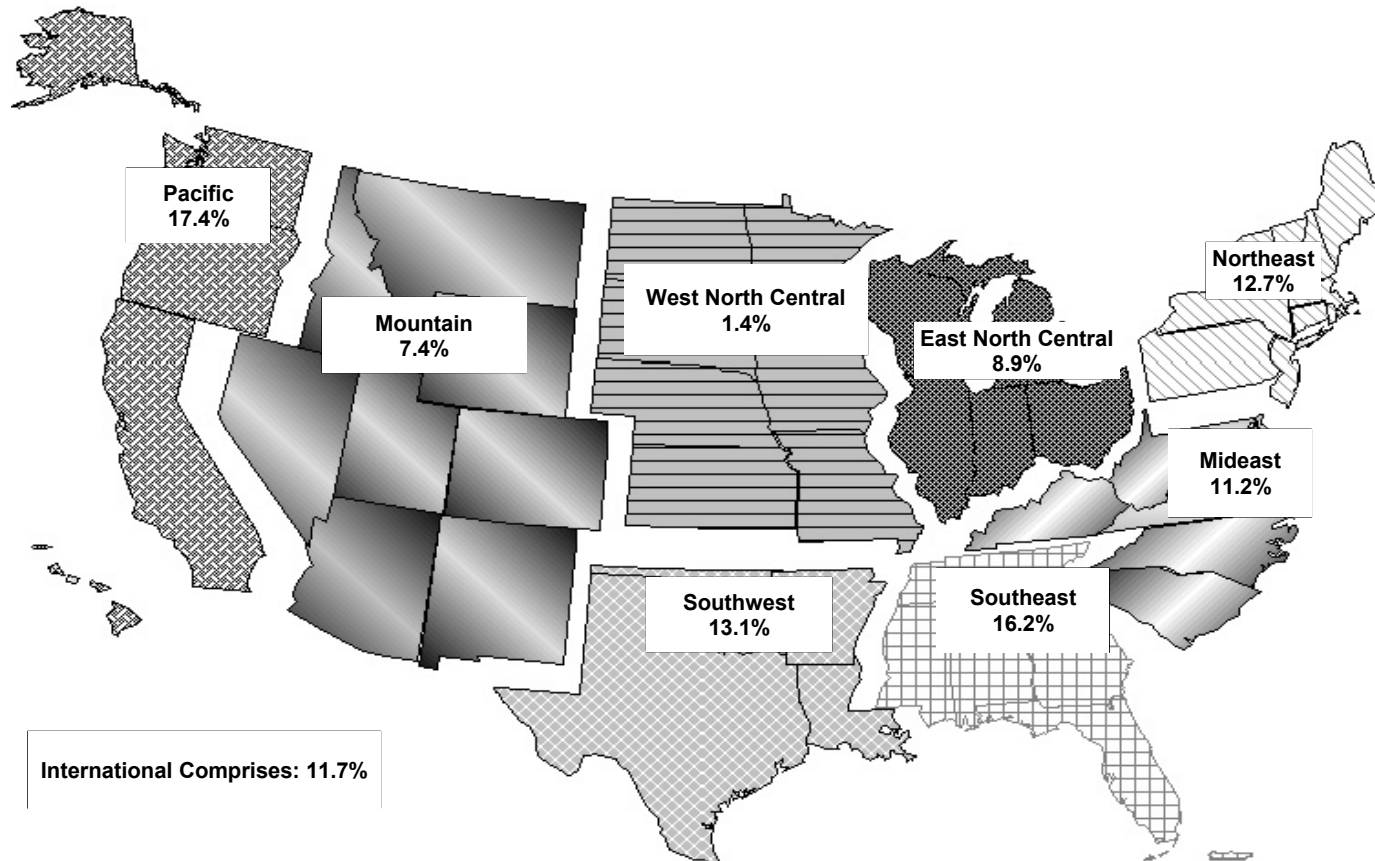
## Strategy Update

- Impacts to commercial markets from the global pandemic were uneven across the real estate and infrastructure sectors. There was a mix of negative and positive impacts with some transitory and others that continue to shape the market and will for years to come. New threats to markets have emerged and continued through the fourth quarter of 2024 including escalating geopolitical tensions, elevated levels of inflation and higher interest rates. We continue to monitor, assess, and shift strategies, as necessary.
- In the real estate space, we are focused on sourcing off-market opportunities through our extensive network and where available reducing risk in the portfolio through early income-generating investments. We have selectively acquired properties where we can add value through management and leasing and have continued to develop properties at attractive risk-adjusted returns. The team continues to assemble portfolios in both traditional and non-traditional real estate sectors that we believe will become institutional property types, providing the potential for above market appreciation and total returns. In the infrastructure space, we continue to focus on diversified strategies and select sector strategies and to identify those managers with top performing track records and best in class investment teams, who are pursuing opportunities in those sectors we have identified for allocation.
- We have been actively managing the portfolio with capital returned of approximately \$1.1 billion, and funding for new or existing investments of approximately \$1.2 billion over the past 12 months.
- The REID has approximately \$2.8 billion in unfunded commitments. One new commitment was made during the quarter.
  - \$100 million in Duration Transportation Infrastructure Capital Partners, LP, an open-end US fund investing in diverse segments of the US transportation infrastructure market, managed by Duration Capital Partners LLC.

# SMRS Real Estate 12/31/24

## Investments by Region

(excludes public REITS & cash equivalents)



Geographic regions defined by NCREIF, whose property index composition is:

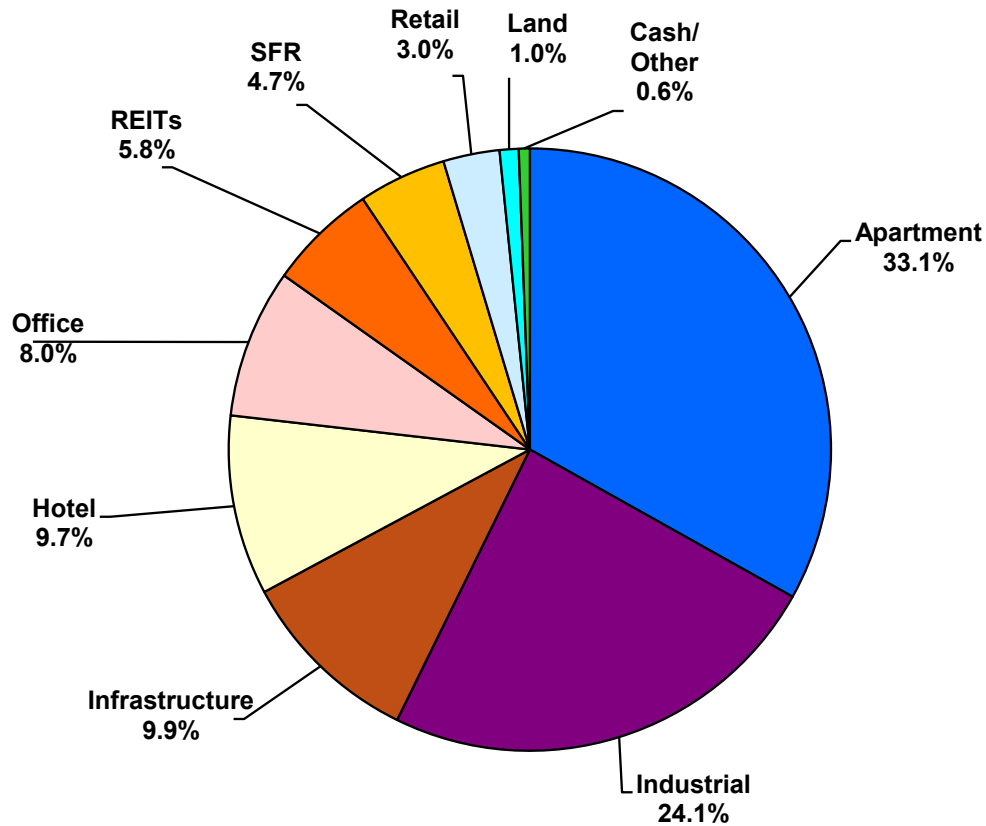
Pacific	Southeast	Southwest	Northeast	Midwest	East North Central	Mountain	West North Central
26.2%	17.3%	13.8%	13.0%	9.8%	8.9%	8.6%	2.3%



# SMRS

## Real Estate and Infrastructure

### 12/31/24



Market Value in Millions					
	12/31/24		12/31/23		
Apartment	\$3,190	33.1%	\$3,380	34.2%	
Industrial	2,325	24.1%	2,909	29.4%	
Infrastructure	954	9.9%	892	9.0%	
Hotel	930	9.7%	839	8.5%	
Office	769	8.0%	725	7.3%	
REITs	562	5.8%	331	3.3%	
SFR	455	4.7%	350	3.5%	
Retail	292	3.0%	309	3.1%	
Land	97	1.0%	105	1.1%	
	\$9,574	99.4%	\$9,840	99.5%	
Cash/Other	57	0.6%	50	0.5%	
<b>Total Investments</b>	<b>\$9,631</b>	<b>100.0%</b>	<b>\$9,890</b>	<b>100.0%</b>	

# SMRS

## Real Estate

### 12/31/24

### Market Values by Entity

	Market Value	Unfunded Commitment
801 Grand Avenue Capital, LLC	\$ 20,361,769	\$ 0
AEW Senior Housing Investors III, LP	3,338,819	258,896
AEW Senior Housing Investors IV, LP	35,500,636	6,089,469
Albertsons Companies, Inc.	46,357,451	0
Apollo Asia Real Estate Fund, LP	33,895,401	10,367,391
Asana Partners Fund I, LP	32,262,267	2,449,559
Asana Partners Fund II, LP	47,696,792	5,592,905
Asana Partners Fund III, LP	50,361,976	45,666,667
Avanath Affordable Housing III, LLC	58,360,069	709,078
Avanath Affordable Housing IV, LLC	28,986,292	52,292
Avanath Affordable Housing Renaissance Fund, LP	43,558,698	0
BentallGreenOak Asia (USD) IV, LP	0	100,000,000
BentallGreenOak Europe IV, LP	44,391,431	59,135,997
BentallGreenOak US Cold Storage, LP	31,061,452	42,798,740
BGO Europe III Co-Investment, LP	18,644,653	8,320,134
BGO Europe IV King II/ King III Co-Investment, LP	25,654,636	1,383,860
BlackRock MiREIT Fund	222,194,897	0
Blackstone Real Estate Partners IX, LP	219,416,826	30,997,583
Blackstone Real Estate Partners V.TE.2, LP	58,963	208,703
Blackstone Real Estate Partners VI, LP	38,379	552,139
Blackstone Real Estate Partners VIII, LP	50,242,088	8,686,449
Blackstone Real Estate Partners X, LP	59,191,526	148,577,711
Carlyle Realty Partners IX, LP	44,057,074	55,832,480
CIM Fund III, LP	15,420,773	0
CIM Fund VIII, LP	30,290,062	0
CIM VI (Urban REIT), LLC	9,000,305	0
Clarion Gables Multifamily Trust, LP	35,143,079	0
Columbus Circle Holdings, LLC	289,564,927	160,527,982
Crown Small Cap Real Estate Fund II-T, LP	6,823,911	3,280,000
DM2501, LLC	15,195,447	16,105,096
Domain GVA-1, LLC	7,390,053	0
Domain Hotel Properties, LLC	446,759,732	4,938,106
Eastport Properties, LLC	88,808,322	273,619
GreenOak Europe III, LP	49,791,556	18,964,958
Heitman Core Real Estate Debt Income Trust, LP	39,511,543	0
Heitman Global Real Estate Fund II, LP	76,494,574	22,308,683
Heitman MiREIT Fund	225,932,495	0
IDR Core Property Index Fund, LLC	103,790,423	0
India Property Fund II, LLC	2,339,116	5,897,418
Invesco Mortgage Recovery Fund II, LP	4,485,741	18,116,596
Invesco Strategic Opportunities III, LP	17,890,972	82,461,385
IPF II Co-Invest, LP	1,856,038	2,168,655
ISO III SMRS Sidecar, LP	9,592,880	51,086,951
KBS/SM Fund IV, LP	89,567,078	0
L&B Spartan Holdings, LP	181,917,380	81,425,398
Landmark Real Estate Partners V, LP	82,394	0
LaSalle Asia Opportunity Fund III, LP	386,267	1,732,325
Lion Industrial Trust	394,660,846	0
Lion Mexico Fund, LP	2,311,431	0

	<b>Market Value</b>	<b>Unfunded Commitment</b>
Lombard International Life Assurance Company GVA0016	351,577,050	1,907,506
Lone Star Fund X (U.S), LP	110,049,977	21,734,113
Lone Star Fund XI, LP	176,642,715	14,259,006
Lone Star Fund XII, LP	54,799,432	232,675,463
Lubert-Adler Real Estate Fund VII, LP	24,319,782	1,875,000
M1-Westgate Co-Investor, LLC	32,768	0
M-301W Co-Investor, LLC	347,280	0
MERS Acquisitions, Ltd	968,006	0
MIP Holdco, LLC	232,032,739	10,148,751
Morgan Stanley Real Estate Special Situations Fund III Institutional, LP	853,201	0
MWT Holdings, LLC	2,295,811,783	0
Northpark Land Associates, LLLP	36,881,956	4,599,833
Paladin Realty Brazil Investors III (US-A), LP	612,598	0
Paladin Realty Latin America Investors IV-CI, LP	25,832,129	0
Paladin Realty TB Co-Investment, LP	11,720,473	0
Penmain Office, LLC	703	0
Principal Data Center Growth & Income Fund, LP	693,335,040	350,000,000
Principal Life Insurance Company GA4-43579	226,836,148	38,100,357
Principal MiREIT	114,131,953	0
Proprium Real Estate Special Situations Fund Institutional, LP	128,231,256	0
Rialto Credit Partnership, LP	2,248,926	0
Rialto Real Estate Fund III-Debt, LP	38,078,094	0
Rialto Real Estate Fund III-Property, LP	16,438,353	0
Rialto Real Estate Fund IV - Debt, LP	74,941,010	9,531,172
Rialto Real Estate Fund V-Debt, LP	22,937,480	77,500,000
SFR CM, LP	100,469,655	4,950,495
SM Brell II, LP	110,324	0
Stockbridge Real Estate Fund II-C, LP	915,677	0
Strategic II, LLC	403,157,301	38,767,818
TPG Real Estate Partners III, LP	28,292,085	14,407,357
TPG Real Estate Partners IV, LP	39,653,212	104,484,105
Transwestern Strategic Partners Fund III, LP	71,453,611	7,677,926
Transwestern Strategic Partners Fund IV, LP	0	75,000,000
True North Real Estate Fund III, LLC	13,798,435	5,000,000
TSP Value and Income Fund II, LP	225,653	6,790,952
Warwick UK Real Estate Fund I	61,890,847	0
	<b>\$ 8,620,267,088</b>	<b>\$ 2,021,558,204</b>
Short-Term Investments & Other	22,146,731	0
<b>Total Real Estate Investments</b>	<b>\$ 8,642,413,819</b>	<b>\$ 2,021,558,204</b>

# SMRS

## Infrastructure

### 12/31/24

### Market Values by Entity

	Market Value	Unfunded Commitment
ArcLight Energy Partners Fund VI, LP	\$ 17,032,266	\$ 7,004,763
ArcLight Energy Partners VII, LP	43,429,745	14,691,794
ASF Como Co-Investment, LP	844,104	1,441,464
ASF VI Infrastructure B, LP	9,491,120	4,919,972
ASF VII Infrastructure Fund B, LP	25,311,322	6,271,268
ASF VIII Infrastructure B, LP	36,829,305	65,700,863
Basalt Infrastructure Partners, LP	5,049,642	2,219,045
Blackstone Energy Partners II, LP	59,329,086	12,752,989
Blackstone Energy Partners, LP	9,163,300	4,728,291
Blackstone Energy Transition Partners IV, LP	0	100,000,000
Blackstone Green Private Credit Fund III, LP	23,107,302	77,544,146
Brookfield Infrastructure Fund II-B, LP	42,340,572	2,825,603
Customized Infrastructure Strategies, LP	2,748,933	4,364,067
Dalmore Capital Fund, LP	53,813,873	0
<b>* Duration Transportation Infrastructure Capital Partners, LP</b>	<b>0</b>	<b>100,000,000</b>
GCM Grosvenor Customized Infrastructure Strategies II, LP	16,575,453	6,002,006
GCM Grosvenor Customized Infrastructure Strategies III, LP	63,546,646	43,173,559
GCM Grosvenor Infrastructure Investment Program, LP Global	126,777,184	18,339,396
Energy & Power Infrastructure Fund II, LP	21,125,441	2,237,661
GSO Energy Select Opportunities Fund II, LP	5,109,102	34,486,225
GSO Energy Select Opportunities Fund, LP	2,629,926	22,445,028
Irradiant Renewable Opportunities Partners (TE), LP	74,338,993	26,777,648
KKR Eagle Co-Invest, LP	45,665,908	1,917,282
KKR Global Infrastructure Investors IV (USD) SCSp	93,915,977	20,636,759
KKR Global Infrastructure Investors V, LP	0	100,000,000
KKR Global Infrastructure Investors, LP	18,514	2,943,773
Ridgewood Water & Infrastructure Fund, LP	48,108,640	5,191,321
Ridgewood Water & Strategic Infrastructure Fund II, LP RPEP	29,711,776	45,050,611
SMRS Holdings, LLC	67,910	0
StonePeak Infrastructure Fund, LP	15,284,749	7,349,329
TRG AIRRO Fund II, LLC	2,521,279	6,480,150
TRG AIRRO India SideCar Fund US, LLC	79,855,097	0
Short-Term Investments & Other	\$ 953,743,166	\$ 747,495,013
<b>Total Infrastructure Investments</b>	<b>\$ 988,352,720</b>	<b>\$ 747,495,013</b>
<b>Total Real Estate &amp; Infrastructure Investments</b>	<b>\$ 9,630,766,539</b>	<b>\$ 2,769,053,217</b>

\* New or additional commitment made during the quarter reported

State of Michigan Retirement System

# REAL RETURN & OPPORTUNISTIC REVIEW

State of Michigan Investment Board Meeting  
April 2, 2025



Daniel J. Quigley  
Senior Investment Manager  
Real, Opportunistic, and Absolute Return Division

## EXECUTIVE SUMMARY

### **Performance**

<b>MPSERS Plan (12/31/24)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Real & Opportunistic	5.6%	6.4%	10.1%	11.1%	10.2%
Custom Benchmark	6.5%	7.2%	7.4%	7.3%	7.3%

- The portfolio value is \$10.1 billion with a return of 5.6% for the past twelve-month period.
- Performance for the year has been positive for both the Real Asset and Opportunistic strategies. The portfolio underperformed the benchmark on a one-year and three-year basis but outperformed on a five-, seven-, and ten-year basis. Positive performance was primarily driven by income distributions and asset appreciation within the entertainment royalties and real assets strategies along with gains in the Opportunistic Equity portfolio.

### **Strategy Update**

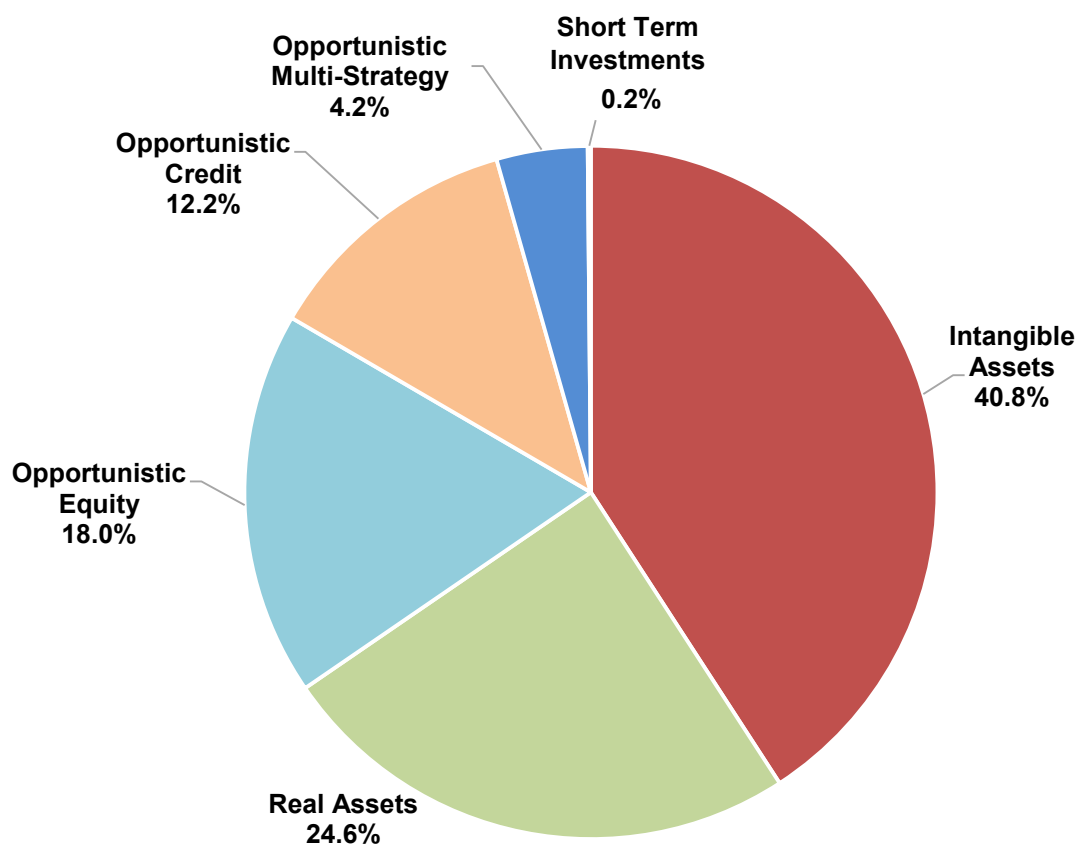
- The objective of the Real Return & Opportunistic portfolio is to provide an inflation hedge and to gain exposure to attractive opportunities that may not fit in any other plan portfolio.
- During the quarter, the Real Return & Opportunistic portfolio continued to benefit from exposure to assets with low equity beta and diversity of strategy, industry, and geography.
- The Real Return & Opportunistic portfolio has approximately \$3.1 billion of unfunded commitments. There were no new commitments closed during the quarter.
- In addition to monitoring opportunities in the private capital markets along with macroeconomic developments, staff remains focused on finding differentiated strategies that are additive to the current portfolio mix and continues to favor niche private markets strategies with some scalability. Staff prefers opportunities that have defensible, contractual cash flows and offer structural downside protection and has a preference for opportunities with experienced investment teams and proven track records.

# SMRS

## Real Return and Opportunistic

### 12/31/24

### Investments By Strategy



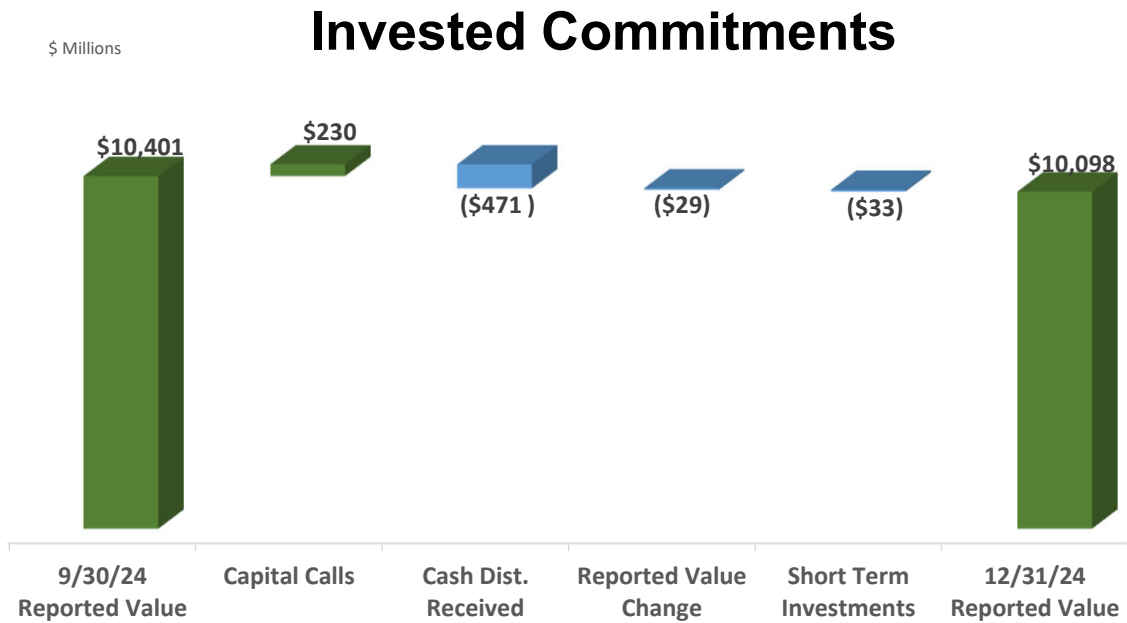
### Market Value in Millions

	<u>12/31/24</u>
Intangible Assets	\$4,124
Real Assets	\$2,484
Opportunistic Equity	\$1,813
Opportunistic Credit	\$1,233
Opportunistic Multi-Strategy	\$428
Short Term Investments	<u>\$16</u>
<b>Total Investments</b>	<b><u><u>\$10,098</u></u></b>

# SMRS

## Real Return and Opportunistic

### 12/31/24





# SMRS

## Real Return and Opportunistic

### 12/31/24

### Net Market Value by Entity

	Net Market Value	Unfunded Commitment
* Abernathy Fund I, LLC	\$ 215,307,382	\$ 4,948,241
* Abernathy Fund II, LLC	30,714,235	36,931,418
American Industrial Partners Capital Fund VIII, LP	46,925,995	51,676,364
American Industrial Partners VII, LP	118,423,452	10,808,745
Apollo Financial Credit Investments Fund II, LP	213,513,738	301,950,061
Apollo Financial Credit Investments Fund III, LP	148,556,876	282,605,871
Axton Holdings, LLC	3,847,335,690	0
Blackstone Strategic Capital Holdings (Side Car), LP	126,113,928	0
Blackstone Strategic Capital Holdings II, LP	169,027,478	94,764,155
Blackstone Strategic Capital Holdings, LP	139,285,139	16,164,930
Blue Peninsula Fund, LP	110,851,983	9,988,856
BroadRiver III, LP	143,736,677	59,487,103
BSCH Parallel (MLG) I, LP	402,570,055	0
Castle Credit SMRS Holdings, LLC Series D	23,302,196	442,443
Castle Credit SMRS Holdings, LLC Series E	83,815,088	123,000,000
Centerbridge Capital Partners III, LP	58,786,611	5,306,590
CircleUp Credit Fund I, LP	569,461	900,364
Clearlake Capital Partners VI, LP	113,918,895	3,718,307
Clearlake Opportunities Partners II, LP	46,546,357	25,044,407
Clearlake Opportunities Partners III, LP	24,774,331	77,006,311
Content Holdings, LLC	11,268,293	0
Dawson (Co-Invest) GP Finance 2, LP	4,036,010	46,576,054
Dawson Partners GP Finance 2, LP	5,956,328	146,256,552
Energy Transition Holdings, LLC	232,359,638	0
Green Range , LLC	2,157,999,330	982,260,122
Hopen Life Sciences Fund II, LP	1,114,366	97,500
Nyanza I, LLC	0	2,222
Nyanza II, LLC	232,522,594	66,061,723
Origami Opportunities Fund V, LP	39,305,591	65,835,064
Origami Opportunities Overflow Fund V, LP	32,210,692	75,678,316
* Renaissance Venture Cap Fund II, LP	19,353,164	0
* Renaissance Venture Cap Fund III, LP	29,393,210	1,500,000
Shamrock Capital Content Fund I, LP	33,300,587	34,763,337
Sixth Street Agriculture Partners I, LP	92,930,584	15,604,122
Sixth Street Growth Partners (A), LP	154,172,268	61,073,186
Sixth Street Growth Partners II (A), LP	93,674,070	113,748,954
Sixth Street TAO Partners (B), LP	278,469,951	85,895,203
* Social Network Holdings, LLC	236,761,164	0
Sycamore Partners III, LP	107,451,234	45,544,155
TPG Rise Climate II, LP	0	150,000,000
TPG Rise Climate, LP	172,468,007	100,202,807
Vida Insurance Credit Opportunity Fund II, LP	82,882,385	37,944,695
<b>Total Real Return and Opportunistic Strategies</b>	<b>\$ 10,081,705,033</b>	<b>\$ 3,133,788,176</b>
Short-Term Investments & Other	15,907,501	0
<b>Grand Total</b>	<b>\$ 10,097,612,534</b>	<b>\$ 3,133,788,176</b>

\* Fund of Funds

\*\* New Commitments made during quarter reported

# **Disclaimer**



**This presentation was given solely for the purpose of explaining the structure, investment process, and returns for the State of Michigan Retirement System. It should not be interpreted in any way as financial advice.**