INVESTMENT ADVISORY COUNCIL

OF THE
MINNESOTA
STATE BOARD OF INVESTMENT

INVESTMENT ADVISORY COUNCIL
MEETING
May 15, 2024

The Minnesota Legislature has established a seventeen member Investment Advisory Council (IAC) to advise the Board and its staff on investment-related matters. All proposed investment policies are reviewed by the IAC before they are presented to the State Board of Investment (SBI) for action.

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INVESTMENT ADVISORY COUNCIL MEETING

AGENDA

May 15, 2024

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AGENDA
INVESTMENT ADVISORY COUNCIL MEETING

Wednesday, May 15, 2024
12:00 p.m.
Retirement Systems Building
Room 106 – Main Floor
60 Empire Drive, St. Paul, MN

		TAB	
1.	**Call to Order**		
2.	**Approval of Minutes of February 21, 2024**		**Motion Needed**
3.	**Report from the Executive Director (J. Schurtz)**		
	A. Quarterly Performance Summary	**A**	
	B. Administrative Report	**B**	
4.	**Private Markets Investment Program Report (G. Martin/J. Schurtz)**	**C**	**Motion Needed**
5.	**Climate Roadmap Update (J. Schurtz/N. Blumenshine)**	**D**	
6.	**SBI Statement of Investment Beliefs (J. Schurtz)**	**E**	**Motion Needed**
7.	**Other Items**		

REPORTS

- **Public Markets Investment Program Report**
- **Participant Directed Investment Program and Non-Retirement Investment Program Report**
- **Aon Market Environment Report**
- **Meketa Capital Markets Outlook & Risk Metrics Report**
- **SBI Comprehensive Performance Report**

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Approval of
February 21, 2024
IAC Meeting Minutes

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Minnesota
State Board of Investment

Minutes
Investment Advisory Council Meeting
February 21, 2024

The Investment Advisory Council (IAC) met at 12:00 p.m. on Wednesday, February 21, 2024, in Room 106 of the Retirement Systems Building, 60 Empire Drive, St. Paul, MN 55103.

IAC Members Present: Denise Anderson, Doug Anderson, Kim Faust, Jennifer Hassemer (for Erin Campbell), Peggy Ingison, Amy Jensen, Erin Leonard, Gary Martin, Dan McConnell, Ify Onyiah, Carol Peterfeso, Dennis Santos, Jay Stoffel, Sunil Swami, and Shawn Wischmeier.

IAC Members Absent: Nancy Orr and Jen Wilson.

SBI Staff Present: Jill Schurtz, Grace Aas, Hamze Aden, Amanda Allen, PatC Ammann, Nate Blumenshine, Cassie Boll, Sara Bruggeman, Tammy Brusehaver, Andy Christensen, Dan Covich, Aaron Griga, Ben Harris, Andrew Krech, Hannah Lundquist, Melissa Mader, John Mulé, Mercy Ndungu, Charlene Olson, Rachel Pastick-Malm, Emily, Pechacek, Cal Redemske, Erol Sonderegger, Jonathan Stacy, Ryan Tucker, David Velasquez, Jeff Weber, Alex Wolsky, and Samir Zahar.

Others Present: Katie Comstock and Steve Voss, Aon Investments; Sarah Bernstein, Stephanie Sorg and Nahom Kebede, Meketa Investment Group; Dana Mitchell, Attorney General's Office; Mary Fee, Governor's Office; Ramona Advani, State Auditor's Office; Bibi Black and Justin Erickson, Secretary of State's Office; Edgar Hernandez, SEIU; Andrew Higginson, Schroders; and Bonnie Beckel, Minnesota Divestment Coalition.

Call to Order
Gary Martin, Chair of the Investment Advisory Council, called the meeting to order.

Election of Chair and Vice Chair of the Investment Advisory Council
Mr. Martin called for the election of the Investment Advisory Council Chair and Vice Chair with terms to start at the first meeting of the new fiscal year.

A motion was made to nominate and approve Gary Martin as Chair, and Kim Faust as Vice Chair of the Investment Advisory Council. The motion passed.

Approval of IAC Minutes
The minutes of the November 13, 2023, meeting were approved.

Organizational Updates
Executive Director Jill Schurtz expressed a sincere thank you to the Chair and Vice Chair for all the time and energy they contribute to the Investment Advisory Council. Ms. Schurtz announced the appointment of a new member, Jen Wilson of Thrivent Financial, to the Investment Advisory Council with a term expiring January 2028.

Ms. Schurtz and Andy Christensen announced a number of organizational updates which included SBI staff promotions, development opportunities, the addition of new staff members, and the summer internship program. Mr. Christensen gave an update on the office space planning and construction project.

Performance Summary
Ms. Schurtz referred members to the Quarterly Performance Summary in Tab A of the meeting materials and outlined the following items from the report as of December 31, 2023:

> AUM: The SBI was responsible for $138.2 billion in assets. Of the assets under management, the Combined Funds represented $89.3 billion.
>
> Performance: The Combined Funds returned 7.5% for the quarter and 5.4% for the fiscal year to date. The Combined Funds returned 14.6% for the one-year period ending December 31, 2023. The Combined Funds exceeded its long-term objectives by outperforming its Composite Index for the ten-year time-period and provided a real rate of return above inflation over a 20-year time-period.
>
> Asset Allocation and TUCS Ranking: The Combined Funds asset mix was in-line with asset allocation targets. When compared to other public pension plans with assets greater than $20 billion in the Trust Universe Comparison Service (TUCS), the Combined Funds return ranked in the 21st percentile for the quarter and the 5th percentile for the year.

Executive Director's Administrative Report
Ms. Schurtz referred members to Tab B of the meeting materials for the Executive Director's Administrative Report. She reported that the annual audit conducted by the Office of the Legislative Auditor (OLA) has been completed and reflected the highest possible rating with no written findings or recommendations.

Private Markets Investment Program Report
Ms. Schurtz referred members to Tab C of the meeting materials for the Private Markets Investment Program Report. She introduced Cassie Boll, Jon Stacy, and members of the Private Markets team to present four investment recommendations: Blackstone Energy Transition Partners IV; Bridgepoint Development Capital V; Oaktree Real Estate Opportunities Fund IX; and Whitehorse Liquidity Partners VI.

A motion was made that the IAC endorse Staff's recommendation to invest in the four private market investment funds. The motion passed.

Minnesota College Savings Plan (529 Plan)
Ms. Schurtz referred members to Tab D of the meeting materials for the Minnesota College Saving Plan (529 Plan). She stated that the State Board of Investment (SBI) and Office of Higher Education (OHE) recommend that a new five-year contract be entered into with TIAA CREF Tuition Financing Inc. (TFI) as Program Manager for the Minnesota 529 College Savings Plan.

A motion was made that the IAC endorse Staff's recommendation to negotiate and execute a new five-year contract with TIAA CREF Tuition Financing Inc. (TFI) as Plan Manager for the Minnesota College Savings Plan. The motion passed.

Participant-Directed Plans
Ms. Schurtz referred members to Tab E of the meeting materials for the Participant-Directed Plans. She reviewed the proposed transition to a separate account for Dodge & Cox Fixed Income Option and highlighted the significant cost savings that the change would facilitate for particpants.

A motion was made that the IAC endorse Staff's recommendation to transition the current Dodge & Cox Income Fund investment to a dedicated separately managed account managed in the same strategy. The motion passed.

Asset Allocation Study
Ms. Schurtz and Erol Sonderegger gave an update regarding the Combined Funds asset allocation study and climate road map. Additional updates will be provided at each quarterly meeting ahead of the final recommendations.

Informational Reports included in Quarterly Meeting Materials:
Public Markets Investment Report
Participant Directed Investment Program and Non-Retirement Investment Program Report
Aon Market Environmental Report
Meketa Capital Markets Outlook & Risk Metrics Report SBI
Comprehensive Performance Report

Adjournment of Meeting
The motion to adjourn the meeting was approved. The meeting adjourned at 12:55 p.m.

Respectfully submitted,

Jill E. Schurtz
Executive Director and
Chief Investment Officer

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TAB A

Quarterly Performance Summary

March 31, 2024

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Performance Summary

March 31, 2024

Description of SBI Investment Programs

The Minnesota State Board of Investment is responsible for the investment management of various retirement funds, trust funds and cash accounts.

Combined Funds

The Combined Funds represent the assets for both the active and retired public employees in the statewide retirement systems, the biggest of which are the Public Employees Retirement Association (PERA), the Teachers Retirement Association (TRA), and the Minnesota State Retirement System (MSRS). The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

Fire Plans + Other Retirement Plans

Fire Plans and Other Retirement Plans include assets from volunteer fire relief plans and other public retirement plans with authority to invest with the SBI, if they so choose. Fire Plans that are not eligible to be consolidated with Public Employees Retirement Association (PERA) or elect not to be administered by PERA may invest their assets with the SBI using the same asset pools as the Combined Funds. The Statewide Volunteer Firefighter Retirement Plan is administered by PERA and has its own investment vehicle called the Volunteer Firefighter Account.

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. Investment goals among the PDIP's many participants are varied. In order to meet the variety of goals, participants may allocate their investments among one or more accounts that are appropriate for their needs within statutory requirements and rules established by the participating organizations.

Non-Retirement Funds

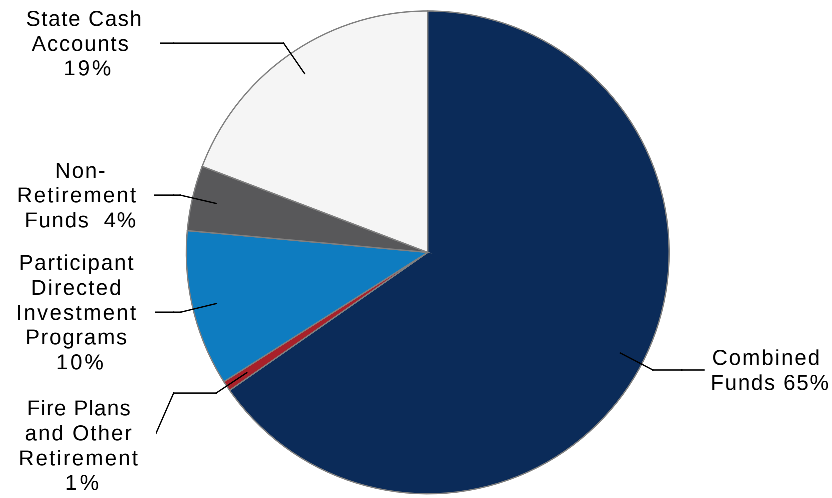
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

State Cash

The State Cash accounts are cash balances of state government funds including the State General Fund. Most accounts are invested by SBI staff through a short-term pooled fund referred to as the Treasurer's Cash Pool. It contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and non-dedicated cash in the State Treasury. Because of special legal restrictions, a small number of cash accounts cannot be commingled.

Funds Under Management

	$ Millions
COMBINED FUNDS	**$92,762**
Fire Plans + Other Retirement Plans	**970**
Participant Directed Investment Program	**14,817**
State Deferred Compensation Plan	10,113
Health Care Savings Plan	2,021
Unclassified Employees Retirement Plan	396
Hennepin County Supplemental Retirement Plan	177
PERA Defined Contribution Plan	100
Minnesota College Savings Plan	1,964
Minnesota Achieving a Better Life Experience Plan	45
Non-Retirement Funds	**6,318**
Assigned Risk Plan	274
Permanent School Fund	2,090
Environmental Trust Fund	1,829
Closed Landfill Investment Fund	146
Miscellaneous Trust Funds	1,015
Other Postemployment Benefits Accounts	964
State Cash	**27,264**
Invested Treasurer's Cash	26,370
Other State Cash Accounts	893
TOTAL SBI AUM	**142,131**



Note: Differentials within column amounts may occur due to rounding

Quarterly Report

Comparison to Objective

Match or Exceed Composite Index (10 yr.)

Outperform a composite market index weighted in a manner that reflects the long-term asset allocation of the Combined Funds over the latest 10 year period.

	10 Year
Combined Funds	8.5%
Combined Funds - Composite Index	8.3
Excess	0.2

Provide Real Return (20 yr.)

Provide returns that are 3-5 percentage points greater than inflation over the latest 20 year period.

	20 Year
Combined Funds	8.3%
CPI-U	2.6
Excess	5.7

Note:

Throughout this report performance is calculated net of investment management fees, differentials within column amounts may occur due to rounding, and returns for all periods greater than one year are annualized.

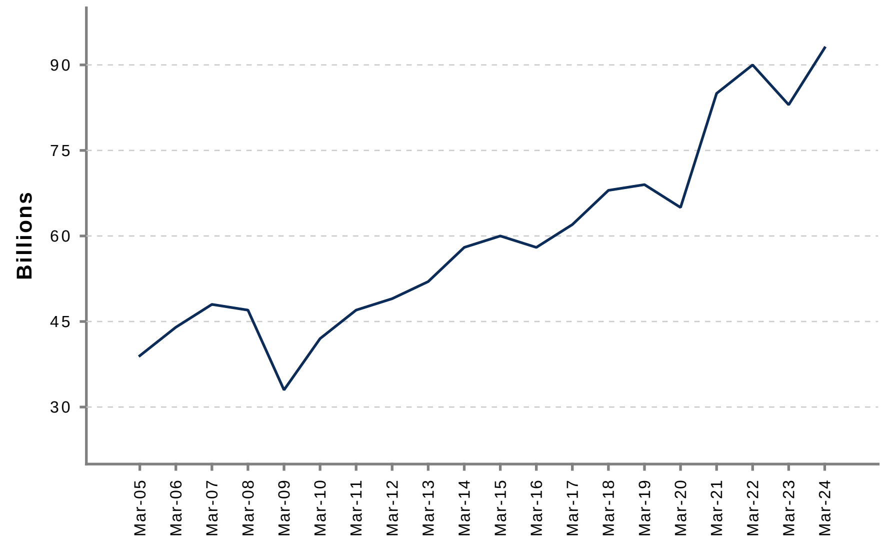
Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$89,307
Net Contributions	-786
Investment Return	4,241
Ending Market Value	92,762

The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

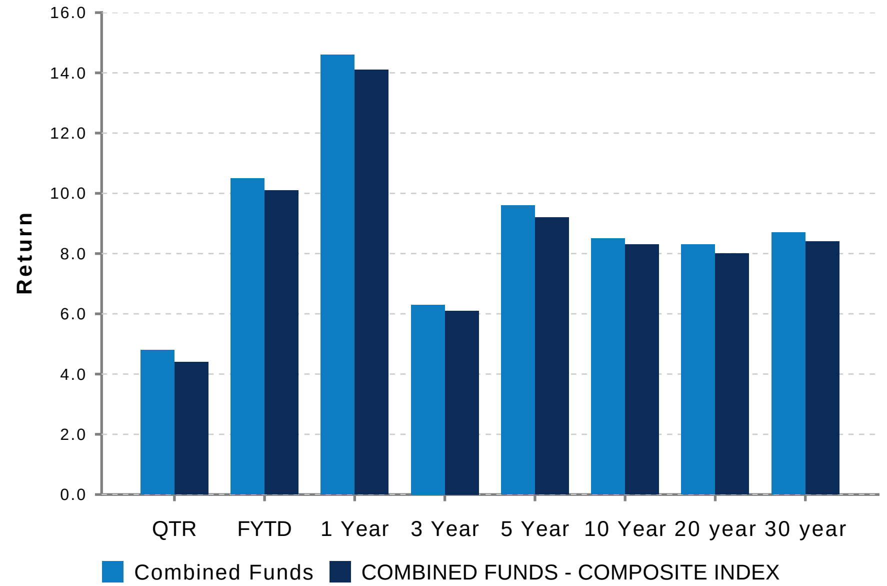
Asset Growth



Performance (Net of Fees)

The Combined Funds' performance is evaluated relative to a composite of public market index and private market investment returns. The Composite performance is calculated by multiplying the beginning of month Composite weights and the monthly returns of the asset class benchmarks.

	QTR	FYTD	1 Yr	3 Yr	5 Yr	10 Yr	20 Yr	30 Yr
Combined Funds	4.8%	10.5%	14.6%	6.3%	9.6%	8.5%	8.3%	8.7%
Combined Funds - Composite Index	4.4%	10.1%	14.1%	6.1%	9.2%	8.3%	8.0%	8.4%
Excess	0.4%	0.4%	0.5%	0.2%	0.4%	0.2%	0.3%	0.2%

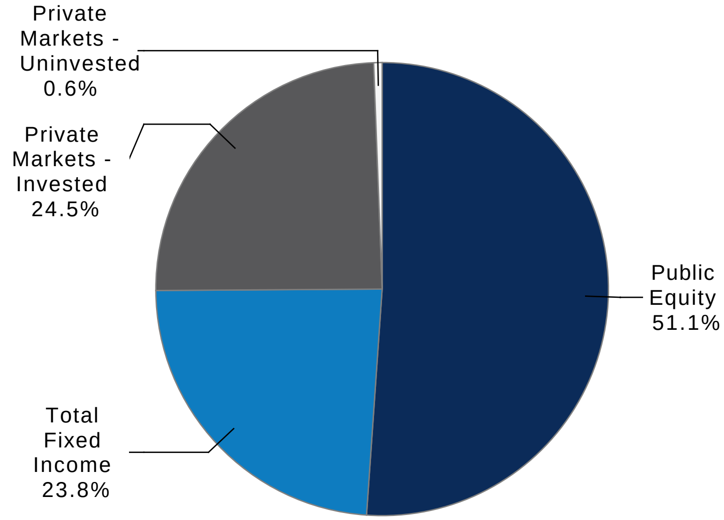


Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in cash.

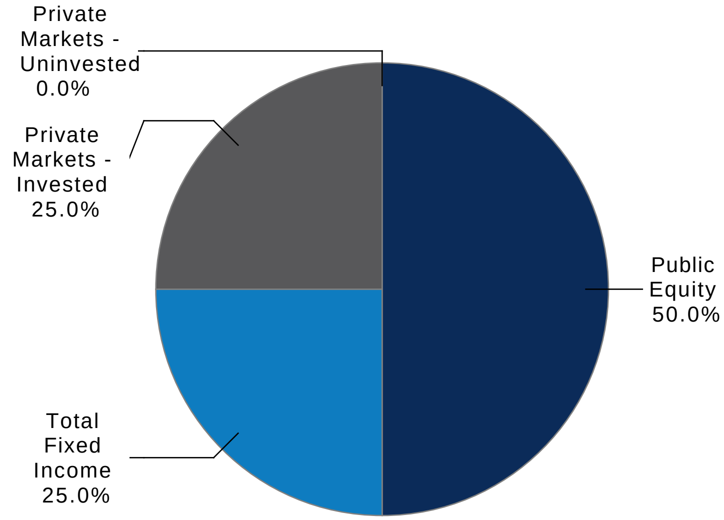
	(Millions)	Actual Mix	Policy Target
Public Equity	$47,424	51.1%	50.0%
Total Fixed Income	22,121	23.8	25.0
Private Markets - Total	23,217	25.0	25.0
Private Markets - Invested	22,685	24.5	
Private Markets - Uninvested	531	0.6	
TOTAL	92,762	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Policy Weight	Market Index
Public Equity	50.0%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	25.0	Private Markets
Private Markets - Uninvested	0.0	



Combined Funds Asset Class Performance Summary

Public Equity

The Combined Funds Public Equity includes Domestic Equity, International Equity and Global Equity.

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex US (net).

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 Year
Public Equity[1]	$47.4	51.1%	50.0%	8.8%	16.8%	24.4%	7.5%	12.0%	10.0%	8.9%	9.3
Public Equity Benchmark				8.2	16.4	23.8	7.2	11.5			
Excess				0.5	0.5	0.6	0.3	0.4			
Domestic Equity	31.5	33.9	33.5	10.3	19.7	29.6	9.8	14.4	12.2	10.0	10.2
Domestic Equity Benchmark				10.0	19.3	29.3	9.8	14.3	12.3	10.1	10.3
Excess				0.2	0.4	0.3	0.0	0.2	-0.1	-0.1	-0.1
International Equity[1]	14.8	16.0	16.5	5.5	11.2	14.5	3.2	7.2	5.0	6.2	6.0
International Equity Benchmark				4.7	10.6	13.3	1.9	5.9	4.2	5.7	5.2
Excess				0.8	0.6	1.2	1.3	1.2	0.8	0.5	0.7
Global Equity[1]	1.1	1.2	0.0	10.2	14.1	19.9	2.2				
MSCI AC World Index (net)				8.2	16.0	23.2	7.0				
Excess				2.0	-2.0	-3.3	-4.8				

Note:

Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a Total Public Equity return. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

(1) The reported performance for all International equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

Combined Funds Asset Class Performance Summary

Total Fixed Income

The Combined Funds Fixed Income program includes Core/Core Plus, Return Seeking Fixed Income, Treasuries and Laddered Bond + Cash.

The Total Fixed Income benchmark is 40% Bloomberg U.S. Aggregate Index/ 40% Bloomberg Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill.

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 Year
Total Fixed Income[1]	$22.1	23.8%	25.0%	-0.6%	2.4%	1.9%	-2.1%	1.2%	2.2%	3.5%	4.9%
Total Fixed Income Benchmark				-0.9%	1.5%	0.6%	-2.5%	0.6%	1.7%	3.1%	4.6%
Excess				0.3%	0.9%	1.3%	0.4%	0.6%	0.5%	0.4%	0.4%
Core/Core Plus	$4.6	5.0%	5.0	-0.5%	3.3%	2.9%	-2.2%	1.0%	2.1%	3.5%	4.9%
Core Bonds Benchmark				-0.8%	2.6%	1.7%	-2.5%	0.4%	1.5%	3.0%	4.5%
Excess				0.2%	0.8%	1.2%	0.2%	0.7%	0.6%	0.5%	0.4%
Return Seeking Fixed Income[1]	$4.4	4.7%	5.0	0.8%	6.4%	7.3%	0.1%				
Bloomberg U.S. Aggregate				-0.8%	2.6%	1.7%	-2.5%				
Excess				1.6%	3.9%	5.6%	2.6%				
Treasury Protection	$8.6	9.2%	10.0	-2.2%	-0.9%	-3.0%	-5.2%	-1.3%			
Bloomberg Treasury 5+ Year				-2.1%	-0.9%	-2.9%	-5.2%	-1.3%			
Excess				-0.0%	0.0%	-0.1%	-0.0%	0.0%			
Laddered Bond + Cash	$4.6	4.9%	5.0	1.3%	4.1%	5.5%	2.5%	2.0%	1.4%	1.7%	3.1%
ICE BofA US 3-Month Treasury Bill				1.3%	4.0%	5.2%	2.6%	2.0%	1.4%	1.5%	2.5%
Excess				0.0%	0.1%	0.2%	-0.0%	-0.0%	0.1%	0.2%	0.7%

Note:

Since 12/1/2020 the Total Fixed Income includes allocations to Core/Core Plus Bonds, Return Seeking Bonds, Treasuries and Laddered Bond + Cash. From 7/1/2020 to 11/30/2020 Total Fixed Income was Core Bonds, Treasuries and Cash. From 2/1/2018-6/30/20 Total Fixed Income was Core Bonds and Treasuries. Prior to 2/1/2018, Total Fixed Income was Core Bonds. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

(1) The reported performance of Return Seeking Fixed Income manager Ashmore Emerging Markets was adversely affected by pricing differences due to the Easter market holiday in the U.S. as well as a delay in processing of a debt exchange. Performance net of these impacts, which will reverse in next quarter's reporting, was in-line with the benchmark for the quarter.

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 Year	30 Year
Private Markets - Invested	2.1%	6.2%	8.9%	14.0%	13.2%	12.0%	13.7%	12.8%	13.4%
Private Markets -Uninvested(1)	1.0%	3.9%	5.5%	2.3%					
Private Equity	2.6%	7.8%	11.7%	14.0%	16.8%	15.5%	15.9%	14.2%	15.3%
Private Credit	4.8%	10.0%	13.6%	16.2%	12.0%	12.7%	12.8%	12.5%	
Resources	-0.5%	2.6%	1.2%	15.5%	3.7%	1.6%	12.7%	13.6%	12.9%
Real Estate	-2.4%	-5.8%	-8.2%	11.0%	9.8%	11.0%	8.9%	9.0%	9.5%

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments - The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments - The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments - The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments - The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

(1) The Uninvested Private Markets is currently cash. Prior to 11/02/2022, the Uninvested portion of the Private Markets allocation was invested in a combination of a passively managed S&P 500 Index strategy and a cash overlay strategy invested in equity derivatives and cash.
Source: State Street Bank

SBI Combined Funds Strategic Allocation Category Framework

	03/31/2024 ($ millions)	03/31/2024 Weights	Category Range	
Growth - Appreciation				
Public Equity	$ 47,457.2	51.2%		
Private Equity	$ 16,509.7	17.8%		
Non-Core Real Assets	$ 3,571.4	3.9%		
	$ 67,538.4	**72.8%**	*50%*	*75%*
Growth - Income-oriented				
Core Fixed Income	$ 4,631.3	5.0%		
Private Credit	$ 2,050.3	2.2%		
Return-Seeking Fixed Income	$ 4,363.4	4.7%		
	$ 11,045.1	**11.9%**	*15%*	*30%*
Real Assets				
Core Real Estate		0.0%		
Real Assets	$ 502.7	0.5%		
	$ 502.7	**0.5%**	*0%*	*10%*
Inflation Protection				
TIPS		0.0%		
Commodities		0.0%		
		0.0%	*0%*	*10%*
Protection				
U.S. Treasuries	$ 8,560.5	9.2%		
	$ 8,560.5	**9.2%**	*5%*	*20%*
Liquidity				
Cash	$ 5,114.7	5.5%		
	$ 5,114.7	**5.5%**	*0%*	*5%*
Opportunity				
Opportunity		**0.0%**		
		0.0%	*0%*	*10%*
Total	**$ 92,761.6**	**100%**		
Illiquid Asset Exposure	**$ 22,634.3**	**24.4%**	*0%*	*30%*

Volatility Equivalent Benchmark Comparison

	As of March 31, 2024							
	1-year	*3-year*	*5-year*	*10-year*	*15-year*	*20-year*	*25-year*	*30-year*
SBI Combined Funds Return	**14.6%**	**6.3%**	**9.6%**	**8.5%**	**11.0%**	**8.3%**	**7.2%**	**8.7%**
Volatility Equivalent Benchmark Return			**6.0%**	**5.6%**	**7.8%**	**6.0%**	**5.5%**	**6.7%**
Value Added			**3.7%**	**2.9%**	**3.1%**	**2.3%**	**1.7%**	**2.0%**

Standard Deviation: Benchmark = Combined Funds			**10.8%**	**9.1%**	**9.1%**	**9.4%**	**9.7%**	**9.6%**
Benchmark Stock Weight			**51%**	**55%**	**56%**	**56%**	**59%**	**60%**
Benchmark Bond Weight			**49%**	**45%**	**44%**	**44%**	**41%**	**40%**

The Volatility Equivalent Benchmark stock and bond weights are adjusted to equal the standard deviation of the SBI Combined Funds portfolio. Then a return is calculated. The bond return used is the Bloomberg U.S. Aggregate. The stock return used is the MSCI AC World Net Return Index. Prior to 12/31/98 it was the MSCI ACWI Total Return Index and pre-11/1/1993 it was the Wilshire 5000 adjusted for various SBI divestment mandates.

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Combined Funds Summary

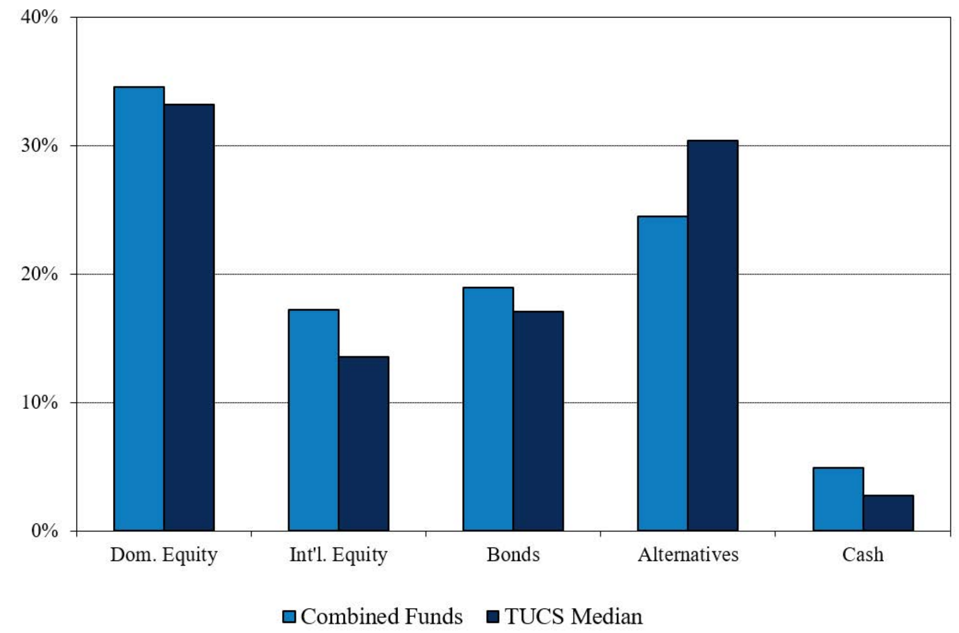
Asset Mix Compared to Other Pension Funds

The comparison universe used by the SBI is the Trust Universe Comparison Service (TUCS). Only funds with assets over $20 billion are included in the comparisons shown in this section.

Comparisons of the Combined Funds' asset mix to the median allocation to stocks, bonds and other assets of the public funds in TUCS over $20 billion are shown below:

Combined Funds Asset Mix

	($Millions)	Actual Mix
Public Equity	47,424	51.1
Total Fixed Income	22,121	23.8
Private Markets - Invested	22,685	24.5
Private Markets - Uninvested	531	0.6
TOTAL	92,762	100.0



	Domestic Equity	International Equity	Bonds	Alternatives	Cash
Combined Funds	34.5%	17.2%	18.9%	24.5%	4.9%
Median in TUCS	33.2%	13.5%	17.1%	30.4%	2.7%

Combined Funds Summary

Performance Compared to Other Pension Funds

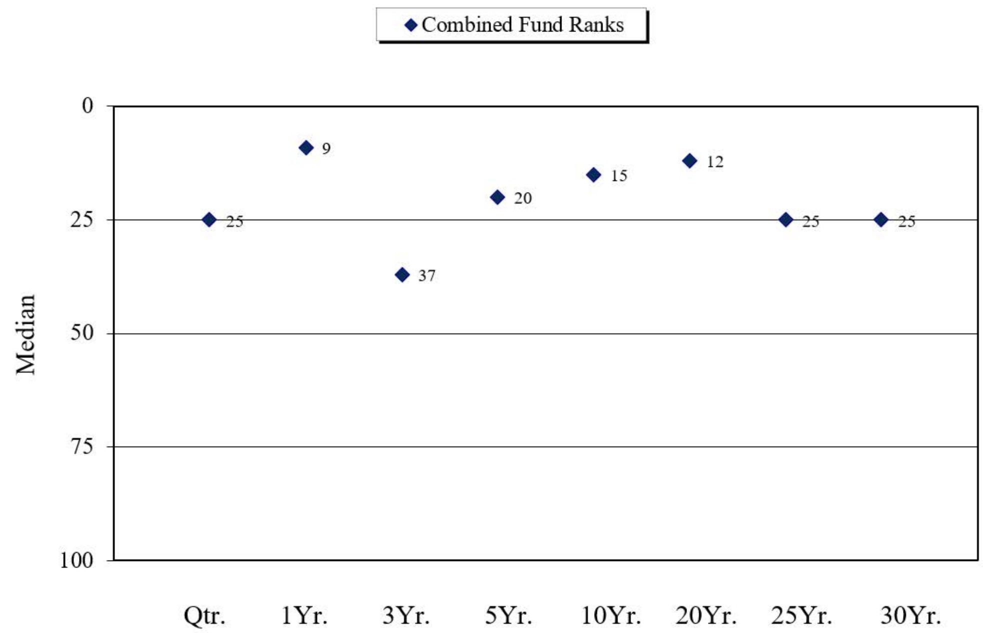
While the SBI is concerned with how its returns compare to other pension investors, universe comparisons should be used with great care. There are several reasons why such comparisons will provide an "apples to oranges" look at performance:

- Differing Allocations. Asset allocation will have a dominant effect on return. The allocation to stocks among the funds in TUCS typically ranges from 20-90%, a very wide range for meaningful comparison. This further distorts comparisons among funds.

- Differing Goals/Liabilities. Each pension fund structures its portfolio to meet its own liabilities and risk tolerance. This will result in different asset mix choices. Since asset mix will largely determine investment results, a universe ranking is not relevant to a discussion of how well a plan sponsor is meeting its long-term liabilities.

With these considerations in mind, the performance of the Combined Funds compared to other public pension funds in Trust Universe Comparison Service (TUCS) are shown below.

The SBI's returns are ranked against public plans with over $20 billion in assets. All funds in TUCS report their returns gross of fees.



Periods Ended 03/31/2024

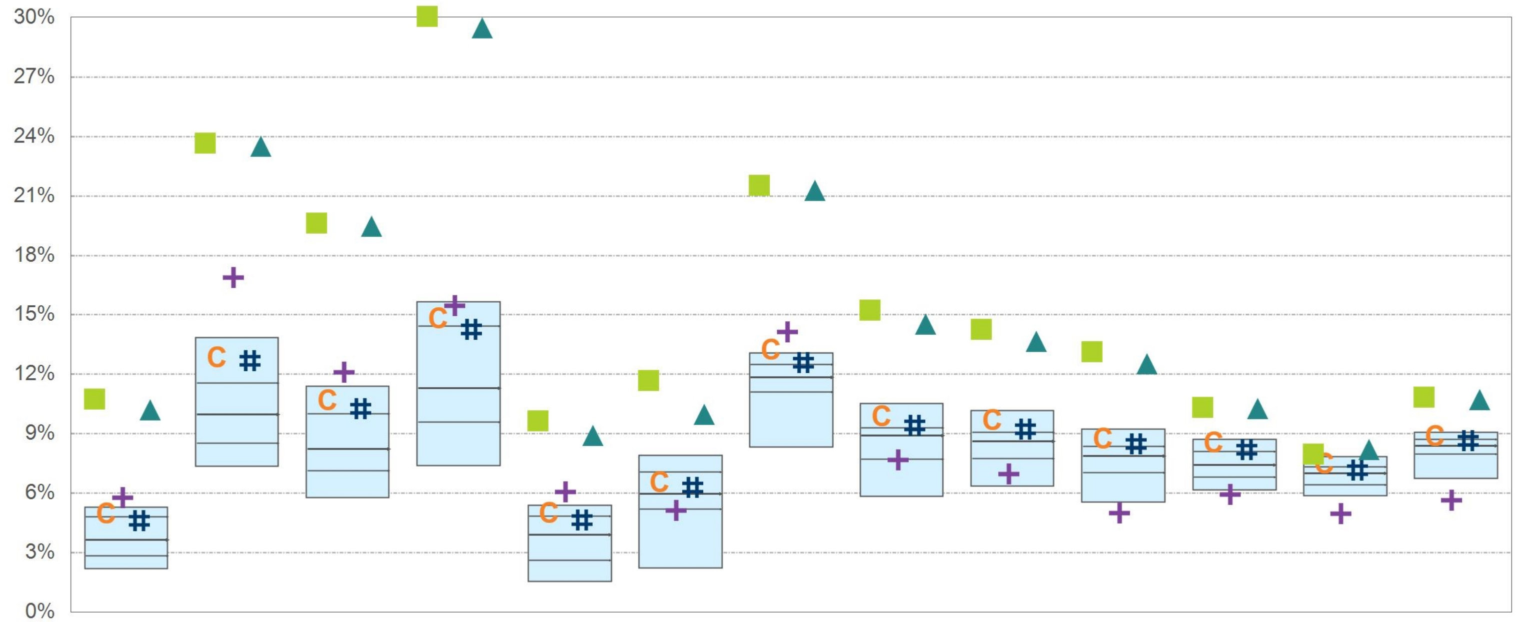
	Qtr	1 Yr	3 Yrs	5 Yrs	10 Yrs	20 Yrs	25 Yrs	30 Yrs
Combined Funds	25th	9th	37th	20th	15th	12th	25th	25th
Percentile Rank in TUCS								

Wilshire

Minnesota State Board of Investments
Performance Comparison

Total Returns of Master Trusts - Public : Plans > $20 Billion

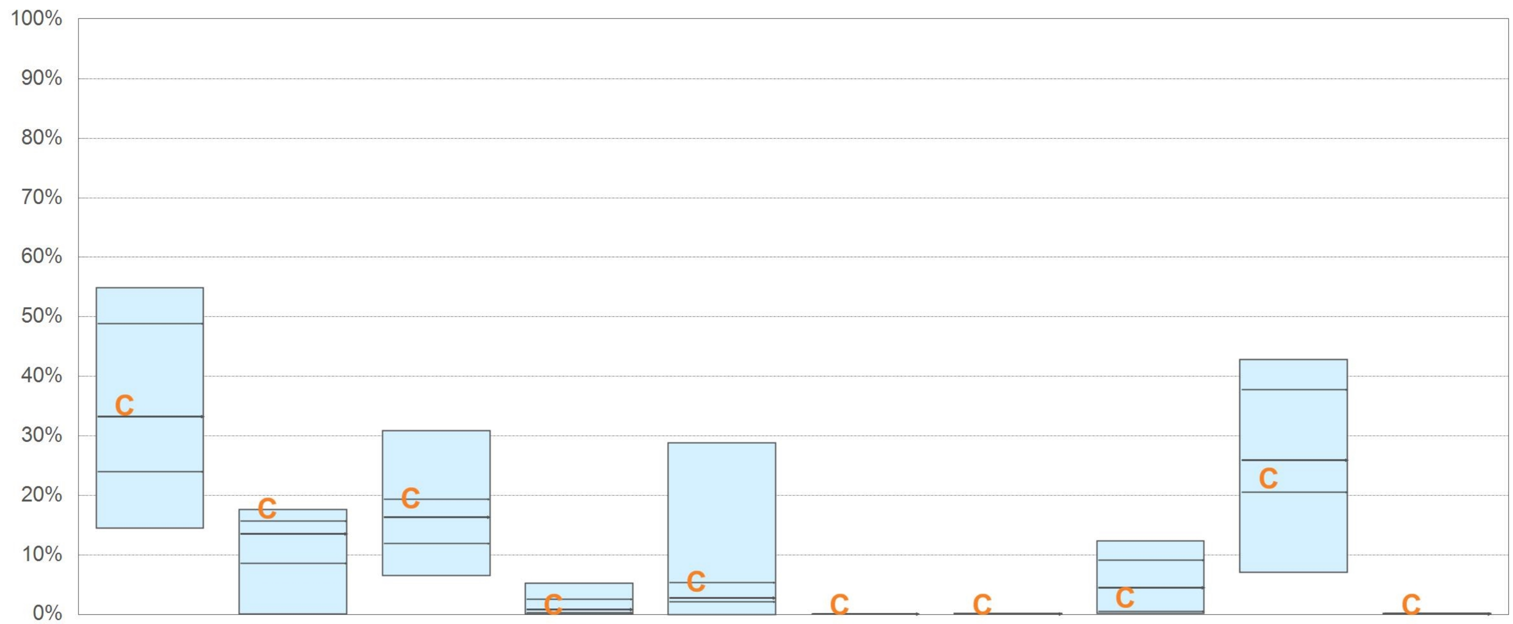
Cumulative Periods Ending : March 31, 2024



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years	20 Years	25 Years	30 Years
5th	5.31	13.84	11.41	15.66	5.38	7.92	13.08	10.54	10.17	9.23	8.71	7.84	9.06
25th	4.80	11.57	10.01	14.45	4.83	7.08	12.51	9.31	9.06	8.35	8.09	7.33	8.71
50th	3.66	9.97	8.24	11.31	3.90	5.97	11.85	8.91	8.62	7.88	7.43	7.00	8.39
75th	2.84	8.52	7.15	9.58	2.62	5.20	11.11	7.72	7.76	7.04	6.82	6.42	7.99
95th	2.21	7.36	5.79	7.40	1.56	2.24	8.33	5.84	6.37	5.57	6.17	5.87	6.74
No. Of Obs	27	27	27	27	24	24	24	23	23	23	20	18	18
C Combined Funds	4.80 (25)	12.68 (17)	10.52 (13)	14.67 (9)	4.83 (25)	6.41 (37)	13.09 (1)	9.73 (20)	9.52 (20)	8.60 (15)	8.38 (12)	7.33 (25)	8.71 (25)
# SBI Combined Funds Ind	4.43 (35)	12.49 (21)	10.09 (21)	14.07 (25)	4.45 (37)	6.11 (45)	12.41 (29)	9.24 (33)	9.04 (25)	8.30 (25)	8.01 (25)	6.98 (50)	8.45 (43)
■ S&P 500	10.56 (1)	23.48 (1)	19.44 (1)	29.88 (1)	9.47 (1)	11.49 (1)	21.33 (1)	15.05 (1)	14.09 (1)	12.96 (1)	10.15 (1)	7.78 (5)	10.66 (1)
▲ Russell 3000	10.02 (1)	23.30 (1)	19.29 (1)	29.29 (1)	8.72 (1)	9.77 (1)	21.09 (1)	14.33 (1)	13.45 (1)	12.33 (1)	10.07 (1)	8.01 (1)	10.53 (1)
+ MSCI Wld Ex US (Net)	5.59 (1)	16.69 (1)	11.90 (1)	15.29 (5)	5.89 (1)	4.93 (75)	13.94 (1)	7.48 (79)	6.78 (89)	4.81 (99)	5.75 (99)	4.78 (100)	5.45 (100)

Wilshire Trust Universe Comparison Service® (TUCS®)

Minnesota State Board of Investments
Asset Allocation of Master Trusts - Public : Plans > $20 Billion
Quarter Ending March 31, 2024



Percentile Rankings	US Equity	Non-US Equity	US Fixed	Non-US Fixed	Cash	Convertible	GIC GAC	Real Estate	Alternative Investments	Other
5th	54.86	17.60	30.87	5.17	28.77	0.08	0.13	12.30	42.79	0.11
25th	48.82	15.64	19.37	2.53	5.31	0.00	0.00	9.12	37.79	0.10
50th	33.18	13.53	16.29	0.76	2.71	0.00	0.00	4.48	25.88	0.00
75th	23.98	8.57	11.85	0.25	2.13	0.00	0.00	0.42	20.51	0.00
95th	14.49	0.00	6.48	0.00	-0.07	0.00	0.00	0.19	7.06	0.00
C Combined Funds	34.52 (45)	17.18 (15)	18.93 (35)	0.00 (100)	4.92 (33)	0.00 (100)	0.00 (100)	2.20 (55)	22.25 (60)	0.00 (99)

TAB B

Executive Director's Administrative Report

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DATE: May 8, 2024

TO: Members, State Board of Investment

FROM: Jill E. Schurtz
Executive Director and Chief Investment Officer

1. Report on SBI's Administrative Budget

A report on the SBI's administrative budget for the fiscal year to date through March 31, 2024, is included as **Attachment A**.

2. Legislative Update

A summary of relevant legislation pending before the MN Legislature is included in **Attachment B**.

3. Russia/Belarus Update

Each quarter, staff provides a report to the Board on steps taken to implement *Minnesota Statutes*, section 11A.245 that requires SBI actions concerning companies with operations in Russia and Belarus.

During the 2022 legislative session, the Minnesota Legislature passed a bill requiring the SBI to liquidate its holdings in companies with their principal place of business in Russia or Belarus. The bill was signed into law and became effective on April 2, 2022. The statute prohibits any new investment in target companies and requires the SBI to identify and liquidate, to the extent practicable, 50% of its direct holdings in target companies within nine months of the effective date; and 100% of its holdings within 15 months of the effective date. SBI utilizes information from data service providers, including MSCI, Factset, Institutional Shareholder Services, Inc. (ISS), and Bloomberg, to develop a list of target companies with their principal place of business in Russia or Belarus. Staff receives monthly reports from the SBI's custodian bank concerning SBI holdings of companies on the restricted list.

In the first quarter, no Russia or Belarus holdings have been sold, due to the reasons outlined below. As of March 31, 2024, fifteen holdings and Russian currency remained on the divestment list.

The liquidation manager indicated that, except for sporadic trading in foreign-listed depository receipts, the market for equity trading remained effectively closed to foreign investors during the quarter due to sanctions imposed by the United States and its allies as well as retaliatory actions taken by the Russian government to restrict foreign capital flows. Due to these sanctions and actions, it was not possible to liquidate 100% of the holdings within 15 months of the effective date. The liquidation manager is selling whenever an opportunity presents itself.

On March 21, 2024, staff sent a letter to each applicable external manager containing the most recent restricted list.

On March 21, 2024, staff sent a letter to each applicable external manager containing the most recent restricted list.

4. Iran Update

Each quarter, staff provides a report to the Board on steps taken to implement *Minnesota Statutes*, section 11A.244, which requires certain SBI actions concerning companies with operations in Iran.

SBI receives information on companies with Iran operations from Institutional Shareholder Services, Inc. (ISS). Staff receives monthly reports from the SBI's custodian bank concerning SBI holdings of companies on the restricted list and undertakes the required communication.

Under the statute, if after 90 days following the SBI's communication, a company continues to have scrutinized business operations, the SBI must divest all publicly traded securities of the company according to the following schedule:

- at least 50% shall be sold within nine months after the company appeared on the scrutinized list; and
- 100% within fifteen months after the company appeared on the scrutinized list.

At the end of the first quarter, there were two companies on the SBI's Iran restricted list held in the Combined Funds portfolio, Gazprom PJSC, and PetroChina Company Limited.

Gazprom PJSC was scheduled for divestment; however, no market currently exists as Russian securities are restricted from trading under sanctions imposed by the United States, Russia, or other governments. Despite continued efforts, the liquidation manager was unable to find a market to sell this security during the quarter. As a result, no shares of Gazprom PJSC held in the portfolio were sold during the first quarter.

As required under the statute, staff notified PetroChina that it would be subject to divestment if it did not cease operations in Iran. As PetroChina failed to respond or cease operations, staff directed liquidation of the company's shares per the statutory requirements.

On March 21, 2024, staff sent a letter to each applicable external manager containing the most recent restricted list.

5. Thermal Coal Update

The Minnesota State Board of Investment approved a resolution at its May 2020 meeting requiring the removal of any publicly traded company deriving more than 25% of its revenue from thermal coal production (exploration/mining). The SBI has contracted with Moody's ESG and Institutional Shareholder Services, Inc. (ISS) to identify companies that meet the criteria set forth in the resolution.

The resolution required removal of companies initially identified in a prudent and expeditious manner by December 31, 2020. Beginning with the Board's regularly scheduled third quarter 2020 meeting and continuing each quarter thereafter, staff reports to the Board on updates and the status of any action authorized by this resolution.

In the first quarter, the MSBI portfolio held no thermal coal connected assets.

On March 21, 2024, staff sent a letter to each applicable external manager containing the most recent restricted list.

6. Litigation Update

SBI legal counsel will give a verbal update on the status of any litigation at the meeting.

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ATTACHMENT A

STATE BOARD OF INVESTMENT
FISCAL YEAR 2024 ADMINISTRATIVE BUDGET REPORT
FISCAL YEAR TO DATE THROUGH MARCH 31, 2024

ITEM	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 3/31/2024
PERSONNEL SERVICES		
FULL TIME EMPLOYEES	$ 11,150,000	$ 5,646,874
PART TIME EMPLOYEES	50,000	19,542
MISCELLANEOUS PAYROLL	200,000	58,455
SUBTOTAL	**$ 11,400,000**	**$ 5,724,871**
STATE OPERATIONS		
RENTS & LEASES	$ 365,000	$ 211,650
REPAIRS/ALTERATIONS/MAINTENANCE	3,595,000	8,115
PRINTING & BINDING	6,000	324
PROFESSIONAL/TECHNICAL SERVICES/IT PROF	555,000	161,999
COMPUTER SYSTEMS SERVICES	357,000	63,342
COMMUNICATIONS	25,000	9,048
TRAVEL, IN-STATE	3,000	543
TRAVEL, OUT-STATE	400,000	105,865
SUPPLIES	75,000	61,550
EQUIPMENT	100,000	50,503
EMPLOYEE DEVELOPMENT	300,000	85,762
OTHER OPERATING COSTS	200,000	136,194
INDIRECT COSTS	300,000	77,292
SUBTOTAL	**$ 6,281,000**	**$ 972,187**
TOTAL ADMINISTRATIVE BUDGET	**$ 17,681,000**	**$ 6,697,059**

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ATTACHMENT B

BILLS OF INTEREST TO THE MINNESOTA STATE BOARD OF INVESTMENT

Bill No.	**Author**	**Name of Bill**	**Current Status**	**Notes**
HF5040 SF4643	Her, et al Frentz, et al	Pensions Supplemental Budget Bill	04/24: HF5040 was referred to The Committee on Ways and Means 04/24: SF4643 was referred to the Finance Committee	The bill provides supplemental funding to various state pension systems. The bill provides benefit modifications within certain pension programs. The bill also allows home and community-based service workers and those who are not employed by a covered employer to open an account with the Secure Choice program. The bill allows the Secure Choice board to appoint an interim executive director and makes technical changes to the Secure Choice program.
HF3996 SF3472 SF5252	Newton Kunesh, et al Kunesh, et al	Distribution of Endowment Fund Earnings Task Force Creation and Appropriation	02/19: HF3996 was referred to the Education Policy Committee 04/02: SF3472 was re-referred to the Environment, Climate, and Legacy Committee 04/25: SF5252 was referred to the Finance Committee	The bill creates a taskforce to make recommendations to the legislature regarding distributions from the Permanent School Fund. The SBI would appoint a member to the taskforce. The taskforce would be required to file a report with the legislature containing recommendations for amendments to Minnesota statutes or the constitution on changes to the distribution formula for the fund. The bill requires that the taskforce file the report by January 15, 2026.
SF3631 HF2310	Hawj, et al Hansen, et al	Omnibus Environment Policy Bill	04/11: SF3631 passed the senate and was transmitted to the house 04/15: SF3631 was received from the Senate and referred to the Environment and Natural Resources Finance and Policy Committee	The bill would create an account with the SBI through which the Commissioner of Natural Resources would be authorized to deposit and invest financial assurance funds received from private entities that lease mineral rights from the state. The account would be a separate account with SBI and the SBI staff would assist in determining an asset allocation for the funds.
HF4790 SF4859	Cha, et al Pappas, et al	Investment Standards Modifications to Require Sustainable Investing	03/11: HF4790 was referred to the State and Local Government Finance and Policy Committee 03/11: SF4859 was referred to the State and Local Government and Veterans Committee	The bill requires the SBI to create policies and incorporate analysis of various sustainability factors with respect to its investment portfolio. Among other things, the bill requires the SBI to create a sustainable investment policy, conduct a climate risk analysis, and incorporate sustainability into its proxy voting practices.
HF 5280 SF5335	Noor, et al Hoffman	Omnibus Human Services Supplemental Appropriations	04/25: HF5280 was referred to the Committee on Ways and Means 04/24: SF5335 was referred to the Finance Committee	The bill creates an account at the SBI for gifts, grants, bequests, etc. directed to the Department of Direct Care and Treatment. The assets of the account must be invested in accordance with Minn Stat. §11A.24.

HF3322	Engen, et al.	State Retirement Plan Protection Act	05/16: HF3322 was referred to the State and Local Government Finance and Policy Committee	The bill requires the SBI to consider only pecuniary factors—those factors prudently expected to impact the risk or return on an investment—when making investment decisions and exercising shareholder rights. A pecuniary factor does not include any social, political, or ideological interest.
SF0940	Lucero, et al	The Stop Environmental Social Governance (ESG) and Social Credit Score Discrimination Act	01/30/2023: SF0940 was referred to the State and Local Government and Veterans Committee	The bill would require the SBI to liquidate direct combined pension fund holdings in any company determined to boycott mining, energy production, production agriculture, or commercial lumber production. The SBI would also be prohibited from purchasing any new investments in such companies and must complete liquidation by July 1, 2028.
HF0707 SF1225	Koznick, et al. Lucero	State Board of Investment Prohibited from Investment in Companies that Exclude Minnesota Based Energy, Natural Resources, Agricultural, or Livestock Companies	01/23/2023: HF0707 was referred to the State and Local Government Finance and Policy Committee 02/06/2023: SF1225 was referred to the State and Local Government and Veterans Committee	The bill would prohibit the SBI from investing in assets which exclude Minnesota based energy, natural resources, and certain agricultural companies based on ESG factors. The SBI would be required to liquidate its existing holdings within 15 months of the effective date of the law. The bill also makes it illegal for financial institutions to discriminate against a person based on that person's political affiliation or upon other ESG criteria.

TAB C

Private Markets Investment Program Report

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DATE: May 8, 2024

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: Private Markets Commitments for Consideration

Staff has reviewed the following action agenda item:

A. Status of SBI Current Private Markets Commitments
B. Consideration of New Investment Commitments

Existing Managers:

Real Estate	Angelo, Gordon and Co.	AG Europe Realty Fund IV	up to $125 million
Private Equity	Blue Owl Capital	Blue Owl GP Stakes VI	up to $175 million
Real Assets	Kohlberg Kravis Roberts & Co.	KKR Global Infrastructure Investors V	up to $200 million
Private Credit	Permira Credit	Permira Strategic Opportunities I	up to $125 million

SBI action is required on item B.

A. Status of SBI Current Private Markets Commitments

Minnesota State Board of Investment

Combined Funds

March 31, 2024

Combined Funds Market Value $92,761,655,502

	% of Combined Funds	Current Level	Target Level[1]	Difference
Market Value (MV)	24.5%	$22,685,343,308	$23,190,413,875	$505,070,567
Policy Target	*25%*			
Statutory Limit	*35%*			
MV +Unfunded	36.7%	$34,052,808,195	$46,380,827,751	$12,328,019,556
Policy Limit	*50.0%*			

Asset Class	% of Combined Funds	Market Value	Unfunded Commitment	Total
Private Equity	17.8%	$16,509,735,630	$7,793,424,535	$24,303,160,165
Private Credit	2.2%	$2,050,394,218	$1,369,755,923	$3,420,150,141
Real Assets	2.2%	$2,029,620,029	$519,713,839	$2,549,333,869
Real Estate	2.2%	$2,044,576,330	$1,684,570,590	$3,729,146,920
Other[2]		$51,017,101		$51,017,101
Total		$22,685,343,308	$11,367,464,887	$34,052,808,195

Cash Flows

March 31, 2024

Calendar Year	Capital Calls	Distributions	Net Invested
2024	$592,602,298	($943,032,772)	($350,430,474)
2023	$2,744,167,005	($2,162,823,326)	$581,343,680
2022	$3,945,092,895	($3,140,446,870)	$804,646,025
2021	$4,556,450,698	($3,672,823,834)	$883,626,864
2020	$2,786,134,001	($2,318,825,278)	$467,308,723
2019	$2,543,614,503	($2,080,037,860)	$463,576,642
2018	$1,992,000,341	($2,049,733,815)	($57,733,474)
2017	$2,021,595,780	($2,383,863,711)	($362,267,931)

[1] There is no target level for MV + Unfunded. This amount represents the maximum allowed by policy

[2] Represents in-kind stock distributions from the liquidating portfolio managed by T.Rowe Price and cash accruals.

B. Consideration of New Investment Commitments

ACTION ITEMS:

1) Investment with an existing Real Estate manager, TPG Angelo, Gordon & Co. ("Angelo Gordon"), in AG Europe Realty Fund IV ("Fund").

AG Europe Realty Fund IV will make investments in commercial and residential real estate in Europe. Assets are expected to fall in the traditional categories of industrial, residential, office, hotels, and retail but may include alternative asset classes such as life science, data centers, self-storage, student housing, senior housing, and land. The firm typically purchases assets from owners who lack the capital, patience, or expertise to improve cash flow and value. Angelo Gordon employs a value-add investment approach, with business plans ranging from modest lease-up and operations improvement to a more significant value-add strategy, which may require complete capital restructuring or repositioning to stabilize the asset. Angelo Gordon believes that the Fund will benefit from a value-added strategy in a region where it expects to see stress arising from rising interest rates, elevated inflation levels, behavioral shifts, and regulatory changes.

In addition to reviewing the attractiveness of the AG Europe Realty Fund IV investment opportunity, staff conducted appropriate due diligence including but not limited to, reference checks, database searches, and, to the extent available, a review of the Fund's potential investor base. Staff's diligence process will continue as additional data and documentation become available.

More information on AG Europe Realty Fund IV is included as **Attachment A beginning on page 7.**

RECOMMENDATION:

Staff is recommending a commitment of <u>up to $125 million</u> to AG Europe Realty Fund IV and requests the IAC's endorsement of this recommendation for the Board's approval. It is understood that 1) such a commitment will not exceed 20% of AG Europe Realty Fund IV and 2) an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing may be required and is approved. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and none of the State of Minnesota, the Investment Advisory Council, the State Board of Investment, or its Executive Director have any liability for reliance by Angelo Gordon upon this approval. Until the Executive Director, on behalf of the SBI, executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Angelo Gordon or a reduction or termination of the commitment.

2) **Investment with an existing Private Equity manager, Blue Owl Capital ("Blue Owl"), in Blue Owl GP Stakes VI ("Fund").**

Blue Owl GP Stakes VI focuses on acquiring minority equity interests in leading institutionalized private equity firms ("PE Firms"). Blue Owl's focus is on PE Firms that are positioned for sustained earnings stability with potential upside growth and that have the resources to retain large, sophisticated investors and build lasting businesses. The Fund is expected to benefit from three return components: (1) a share of the PE Firm's management fees, (2) a share of return of capital and gains on balance sheet investments made alongside the limited partners in the PE Firm's funds (i.e., the GP commitment), and (3) a share of the PE Firm's carried interest The PE Firms Blue Owl invests in will be evaluated both for their investment acumen and their ability to build and manage growth businesses successfully. Blue Owl's underwriting does not ascribe significant terminal value or exit multiple to the PE Firms; rather, Blue Owl expects to generate attractive returns solely from cash flow.

In addition to reviewing the attractiveness of the Blue Owl GP Stakes VI investment opportunity, staff conducted appropriate due diligence including but not limited to, reference checks, database searches, and, to the extent available, a review of the Fund's potential investor base. Staff's diligence process will continue as additional data and documentation become available.

More information on Blue Owl GP Stakes VI is included as **Attachment B beginning on page 11.**

RECOMMENDATION:

Staff is recommending a commitment of <u>up to $175 million</u> to Blue Owl GP Stakes VI and requests the IAC's endorsement of this recommendation for the Board's approval. It is understood that 1) such a commitment will not exceed 20% of Blue Owl GP Stakes VI and 2) an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing may be required and is approved. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and none of the State of Minnesota, the Investment Advisory Council, the State Board of Investment, or its Executive Director have any liability for reliance by Blue Owl Capital upon this approval. Until the Executive Director, on behalf of the SBI, executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Blue Owl Capital or a reduction or termination of the commitment.

3) **Investment with an existing Real Assets manager, Kohlberg Kravis Roberts & Co. ("KKR"), in KKR Global Infrastructure Investors V ("Fund").**

KKR Global Infrastructure Investors V will pursue infrastructure investment opportunities with an emphasis on investments in existing assets and businesses located primarily in OECD (Organization for Economic Co-operation and Development) countries in North America and Western Europe. The Fund will seek to generate attractive risk-adjusted returns by focusing on critical infrastructure investments with low volatility and strong downside protection. KKR utilizes a risk-based, rather than sector-based, approach when defining the universe of potential investments that are suitable for investment, and targets investments where KKR believes it can use its advantages to tackle complexity in sourcing, structuring, operations, and execution and deliver attractive returns with a low risk profile. While complexity often serves as a barrier to entry for other investors, KKR believes its ability to address the challenges of complexity affords it the potential to deliver attractive returns with reasonable risk.

In addition to reviewing the attractiveness of the KKR Global Infrastructure Investors V investment opportunity, staff conducted appropriate due diligence including but not limited to, reference checks, database searches, and, to the extent available, a review of the Fund's potential investor base. Staff's diligence process will continue as additional data and documentation become available.

More information on KKR Global Infrastructure Investors V is included as **Attachment C beginning on page 15.**

RECOMMENDATION:

Staff is recommending a commitment of <u>up to $200 million</u> to KKR Global Infrastructure Investors V and requests the IAC's endorsement of this recommendation for the Board's approval. It is understood that 1) such a commitment will not exceed 20% of KKR Global Infrastructure Investors V and 2) an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing may be required and is approved. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and none of the State of Minnesota, the Investment Advisory Council, the State Board of Investment, or its Executive Director have any liability for reliance by KKR upon this approval. Until the Executive Director, on behalf of the SBI, executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on KKR or a reduction or termination of the commitment.

4) Investment with an existing Private Credit manager, Permira Credit ("Permira"), in Permira Strategic Opportunities I ("Fund").

Permira Strategic Opportunities I will focus on opportunistic and special situations credit investing in Europe, providing complex and bespoke structures for fundamentally strong businesses. These target businesses are expected to have a competitive advantage, demonstrable recurring or predictable revenues, and free cash flow, but may also be experiencing fast and substantial changes, which may include liquidity pressures, financial stress, temporary disruption, raid growth, or industrial change. The Fund is designed to present a favorable alternative where these companies cannot access traditional financing forms. Consistent with Permira's other credit strategies, Permira will place a significant emphasis on capital preservation, achieved through a disciplined approach to underwriting, evaluating potential risks, and modeling appropriate downside scenarios for each investment to ensure sufficient protection. The Fund will seek to be a value-added lender to the businesses it invests in by offering those entities the resources available across the Permira platform, including industry knowledge, operational expertise, and value beyond capital provided by traditional lenders.

In addition to reviewing the attractiveness of the Permira Strategic Opportunities I investment opportunity, staff conducted appropriate due diligence including but not limited to, reference checks, database searches, and, to the extent available, a review of the Fund's potential investor base. Staff's diligence process will continue as additional data and documentation become available.

More information on Permira Strategic Opportunities I is included as **Attachment D beginning on page 19.**

RECOMMENDATION:

Staff is recommending a commitment of <u>up to $125 million</u> to Permira Strategic Opportunities I and requests the IAC's endorsement of this recommendation for the Board's approval. It is understood that 1) such a commitment will not exceed 20% of Permira Strategic Opportunities I and 2) an additional amount not to exceed one percent of the total commitment for the payment of required charges at closing may be required and is approved. Approval of this potential commitment is not intended to be, and does not constitute in any way, a binding or legal agreement or impose any legal obligations on the State Board of Investment and none of the State of Minnesota, the Investment Advisory Council, the State Board of Investment, or its Executive Director have any liability for reliance by Permira upon this approval. Until the Executive Director, on behalf of the SBI, executes a formal agreement, further due diligence and negotiations may result in the imposition of additional terms and conditions on Permira or a reduction or termination of the commitment.

ATTACHMENT A

REAL ESTATE MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	AG Europe Realty Fund IV, L.P.
Type of Fund:	Real Estate – Value Add
Target Fund Size:	$2.5 billion
Fund Manager:	TPG Angelo Gordon
Manager Contact:	Aliana Spungen 245 Park Avenue New York, NY, 10167

II. Organization and Staff

TPG Angelo Gordon ("Angelo Gordon" or the "Firm") is forming AG Europe Realty Fund IV, L.P. ("Fund IV" or the "Fund") to make investments in commercial and residential real estate in Europe. Angelo Gordon has been actively investing in European real estate since 2009 and has offices and staff in London, Amsterdam, Frankfurt, and Milan. Additionally, the Firm has had a significant presence in Europe since 2000 as an active investor in distressed debt.

Angelo Gordon was founded in 1988 by John Angelo and Michael Gordon. Headquartered in New York City, the Firm has over 680 employees working across its four disciplines – corporate credit, real estate, direct lending, and securitized products. There are 20 investment professionals on the Europe Real Estate team led by co-portfolio managers Anuj Mittal and Tom Rowley and overseen by Angelo Gordon's global head of real estate, Adam Schwartz. As of December 2023, Angelo Gordon managed approximately $78 billion in assets.

In November 2023, Angelo Gordon was acquired by TPG Inc. At the time of acquisition, the combined entity's AUM was estimated to be $213 billion. The addition of Angelo Gordon marks an expansion into credit investing for TPG, establishing additional levers to drive growth, diversification, and reach of the TPG platform. TPG and Angelo Gordon real estate funds, including both recently raised and those in the market, will operate as separate businesses, subject to overall control by TPG. Fund strategy, investment process, portfolio management, and investment committees will remain unchanged from their pre-acquisition structure.

Over the past 30 years, Angelo Gordon has acquired over $46 billion of real estate assets in nearly 800 transactions, representing over $22 billion of equity in a series of opportunistic, core plus, and value-added real estate funds. Angelo Gordon began making opportunistic investments in 1993 and has been an active investor in distressed real estate debt since 1990.

Angelo Gordon is committed to fostering, cultivating, and preserving a culture of diversity and inclusion. The Firm has partnered with several organizations that promote the attraction and retention of ethnically diverse and female candidates, including the Robert Toigo Foundation (TOIGO), Sponsors for Educational Opportunity (SEO), and Expanding Equity. Internally, the Firm created the AG Diversity Council and AG Women's Network to drive networking, awareness, and engagement activities.

III. Investment Strategy

The Fund's strategy will emphasize the purchase of sub-performing real estate assets across a range of geographies and product types. Assets are expected to typically fall in the traditional categories of industrial, residential, office, hotels, and retail but may include alternative asset classes such as life science, data centers, self-storage, student housing, senior housing, and land. In addition to making direct property investments, the Fund may also invest in real estate debt and operating businesses. The Fund will focus on the largest, most liquid, and institutional markets in the United Kingdom, Western Europe, and the Nordics. Angelo Gordon believes that the Fund will benefit from a value-added strategy in a region where it expects to see stress arising from rising interest rates, elevated inflation levels, behavioral shifts, and regulatory changes.

Angelo Gordon's approach to value-add real estate investing centers on value creation and capital preservation. The Firm typically purchases assets from owners who lack the capital, patience, or expertise to improve cash flow and value. The assets are often attractively priced due to the inefficiency of the sale process, information gaps due to lender control, specific attributes of the asset, or a unique angle or creative approach Angelo Gordon believes it can take with regard to the acquisition process or the repositioning of the asset. Upon ownership, Angelo Gordon's business plans may range from modest lease-up and operations improvement to a more significant value-add strategy, which may require complete capital restructuring or asset repositioning to stabilize.

The Fund will seek to invest in a portfolio of assets that, after stabilization, will be highly sought after by traditional institutional real estate investors and will continue to appreciate even after underperformance has been corrected. Angelo Gordon will, therefore, seek opportunities to purchase assets with all or some of the following fundamental strengths:

- Identifiable reasons for underperformance and a well-defined and achievable plan for turnaround.
- Purchase price and forecasted stabilized value at discounts to replacement costs.
- Favorable long-term demand growth in the local market.
- Barriers to new supply in the local market due to restrictions on land availability, zoning, or entitlement.

Over the past 21 years, Angelo Gordon has established an excellent network of both deal sources and operating partner relationships in Europe. Since 2009, Angelo Gordon has purchased approximately \$6.4 billion of real estate assets and over \$14.7 billion of debt securities in Europe. Rather than employing a large internal property management group, Angelo Gordon actively manages a network of third-party operating partners that it believes significantly improves its alignment with other investors. The real estate team will seek to leverage its internal capabilities through the Firm's extensive and well-developed network of external alliances, which has created a broad network of deal sources with local real estate firms, brokers, direct sellers, and distressed debt players. The Firm has approximately 50 real estate operating partners in Europe and is often shown transactions on an exclusive basis.

Angelo Gordon Real Estate is committed to investing responsibly by relying on disciplined portfolio construction with an aim to maximize risk-adjusted returns in accordance with its fiduciary duties. The team incorporates ESG considerations into its investment practices and related processes and procedures. Historically, the Europe real estate fund strategy focused on mitigating downside ESG-related risks; however, as the Firm's responsible investing efforts have increased, the investment professionals aim to identify ESG-related financially valuable opportunities. Importantly, the Fund has made a specific ESG commitment by electing to register as an Article 8 fund pursuant to the Sustainable Finance Disclosure Regulation (SFDR). The Fund's related environmental and social objectives fall into three categories: ESG Enhanced Due Diligence, Decarbonization, and Partner Engagement. Past examples of how the Firm improved the value of a property include achieving LEED Gold Green Building Certification on an office property, installing solar panels and other measures to qualify for "Intelligent Building" and obtaining "Green Building" certifications on a residential property and installing an environmentally friendly generator using geothermal heat as a source of power to utilize renewable energy at an office property.

IV. *Investment Performance*

Previous fund performance as of December 31, 2023 is shown below***:***

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
AG Europe Realty Fund	2014	$570 million	--	17%	1.7	1.7
AG Europe Realty Fund II	2017	$843 million	$75 million	9%	1.4	0.5
AG Europe Realty Fund III	2019	$959 million	$75 million	9%	1.2	0.1
AG Europe Realty Fund III (EU)	2019	€498 million	--	7%	1.2	0.1

* Previous fund investments are not indicative of future results. Net IRR, Net MOIC, and Net DPI were provided by Angelo Gordon & Co.

V. Investment Period and Term

The fund will have a four-year investment period and an eight-year term, with the potential of two one-year extension periods.

This document is a summary of more detailed information provided in the Fund's Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM and the Fund's Agreement of Limited Partnership.

ATTACHMENT B

PRIVATE EQUITY MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Blue Owl GP Stakes VI, L.P.
Type of Fund:	Private Equity
Target Fund Size:	$13 billion
Fund Manager:	Blue Owl Capital Inc.
Manager Contact:	Rich Peperone 399 Park Avenue New York, NY 10022

II. Organization and Staff

Blue Owl Capital Inc. ("Blue Owl" or "Firm") is sponsoring Blue Owl GP Stakes VI ("Fund" or "Fund VI") to make minority equity investments in established investment management companies ("Partner Managers"). Since its inception, the GP Strategic Capital platform has grown to over $51 billion in assets under management, providing innovative long-term minority equity and financing solutions to leading private capital managers.

Blue Owl GP Strategic Capital was founded in 2010 as Dyal Capital, a business unit of Neuberger Berman Group LLC. On May 19, 2021, Dyal Capital combined with Owl Rock Capital Partners and certain of its affiliates and Altimar Acquisition Corporation, a publicly-traded special purpose acquisition company sponsored by an entity affiliated with HPS Investments Partners, LLC, to form Blue Owl.

The Blue Owl GP Strategic Capital team is composed of approximately 35 professionals: approximately 25 investment professionals (the "Investment Team") and approximately 10 professionals providing finance and administrative support. In addition, Blue Owl's Business Services Platform (the "Business Services Platform") is composed of approximately 45 members who provide strategic assistance to Partner Managers. The GP Strategic Capital team is headquartered in New York and has raised over $37 billion in five prior funds. GPS I and GPS II followed a hedge fund-focused investment program, while Funds III, IV, and V followed a private equity manager-focused investment program, which is consistent with the strategy intended for Fund VI.

Blue Owl is committed to fostering, cultivating, and preserving a culture of diversity, equity, and inclusion ("DEI"). The Firm prizes diversity in its team and seeks to create an inclusive, merit-based environment that is supportive of people from all backgrounds. Blue Owl focuses on DEI in our corporate practices and policies, including recruitment and hiring, compensation and benefits, professional development and training, and promotions. In addition, Blue Owl is a sponsor of the following organizations: The Opportunity Network, 100 Women in Finance, Black Women in Asset Management, and the Association of Asian American Investment Managers.

III. *Investment Strategy*

Fund VI will focus on acquiring minority interests in leading institutionalized private equity firms, which should continue to benefit from increased allocations to private equity funds by large institutional investors, such as public and corporate pension plans and sovereign wealth funds. Further, Blue Owl believes that portfolio diversification is critical and will seek to assemble a portfolio of complementary investments diversified by investment strategy, vintage years, and geography.

Blue Owl believes that owners of private equity firms are increasingly attracted to taking on minority equity partners for a number of reasons. First, such a transaction can provide the private equity firm with permanent capital, which can be used to make larger commitments to their own funds or develop new products, as well as engage in acquisitions or geographic expansion. Second, selling a minority stake may allow management to reallocate ownership to the next generation of investment professionals. Third, certain firms may have existing financial shareholders who are seeking liquidity or may be looking to spin a successful franchise out of a bank due to regulatory concerns. Lastly, taking on a minority partner can provide management with access to capital while avoiding an IPO and the costs and responsibilities of running a public company.

The Firm anticipates that each Fund VI investment in a private equity Partner Manager will benefit from three return components:

1. A share of management fees, which is very stable and predictable over the life of the funds,
2. A share of return of capital and gains on balance sheet investments made alongside the limited partners in the funds (i.e., the GP commitment) and
3. A share of carried interest, which is episodic and varies with fund returns.

Although every transaction is unique, Blue Owl generally seeks to acquire the right to these three income streams with respect to a Partner Manager's existing funds, as well as those it will raise in the future. The existing funds may be at different stages of their lives, and the predictability of the performance of balance sheet assets and the likelihood of carried interest payments varies according to the stage of the fund. Regardless of the fund stage, the expected management fee income is much less variable and can be more accurately predicted. Blue Owl uses reasonable and conservative assumptions regarding the size and performance of funds that a Partner Manager may raise in the future and evaluates several different scenarios (both good and bad) to assess the range of possible outcomes. Blue Owl's underwriting does not ascribe significant terminal value or exit multiple to the manager; rather, Blue Owl expects to generate attractive returns solely from cash flow.

Blue Owl's focus is on "institutionalized" firms that are positioned for sustained earnings stability with potential upside growth. These firms have the resources to retain large, sophisticated investors and build lasting businesses. Institutionalized firms dedicate substantial resources to non-investment functions, such as investor relations, legal, compliance, and risk management. They typically have multiple products and are not key-person dependent. Managers will be evaluated both for their investment acumen and their ability to build and manage growth businesses successfully. In addition to business stability and attractiveness to institutional investors and consultants, institutionalized firms are generally large enough to be profitable even in years with little or no carried interest.

Fund VI Partner Managers will be entitled to benefit from the customized suite of services provided by Blue Owl's Business Services Platform. Broadly speaking, the Business Services Platform executes projects in ten key areas: capital strategy, private wealth, human capital advisory, DE&I, artificial intelligence, data science, ops advisory, ESG advisory, corporate strategy & M&A, and procurement.

Blue Owl believes that Environmental, Social and Governance ("ESG") characteristics are an important part of the due diligence of any investment. The Firm considers ESG factors when investing in a private equity fund or firm (through a primary, secondary, or general partner stake) and views the track record and commitment to ESG integration by general partners as an indication of their quality and approach to risk management. Blue Owl believes a culture of accountability, transparency and integrity is fundamental to effectively considering material ESG factors within its corporate and investment activities. Blue Owl's Head of ESG reports to the Chief Operating Officer. This direct line of communication is designed to ensure overall alignment with the strategic direction of the firm.

IV. Investment Performance

Previous fund performance as of December 31, 2023 is shown below:

Fund	Vintage Year	Total Commitment	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
GPS I	2012	$1.3 billion	N/A	-1.1%	0.9x	0.6x
GPS II	2015	$2.2 billion	N/A	8.6%	1.5x	0.5x
GPS III	2016	$5.3 billion	$175 million	20.4%	2.6x	1.0x
GPS IV	2018	$9.0 billion	$250 million	39.8%	1.9x	0.7x
GPS V	2022	$12.9 billion	$200 million	7.5%	1.1x	0.4x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR, Net MOIC, and Net DPI provided by the manager.

V. Investment Period and Term

The investment period will last for five years from the date of the final closing, unless terminated earlier by the General Partner. Fund VI will continue in existence indefinitely. However, the General Partner may pursue either full or partial liquidity opportunities and may cause Fund VI to enter into a transaction or restructuring that affords the Limited Partners with an opportunity to receive cash or marketable securities in exchange for all or substantially all of their interests.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM. This is for informational purposes only and is not an offer or a solicitation to subscribe to any fund or securities issued by Blue Owl Capital Inc. and its affiliates.

ATTACHMENT C

REAL ASSETS MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	KKR Global Infrastructure Investors V
Type of Fund:	Real Assets - Infrastructure
Target Fund Size:	$20 Billion
Fund Manager:	KKR
Manager Contact:	Ari Barkan 30 Hudson Yards Suite 7500 New York, NY, 10001

II. Organization and Staff

Kohlberg Kravis Roberts & Co L.P. ("KKR or the "Firm") is establishing KKR Global Infrastructure Investors V to pursue infrastructure investment opportunities with an emphasis on investments in existing assets and businesses located primarily in OECD (Organization for Economic Co-operation and Development) countries in North America and Western Europe.

KKR is one of the world's oldest and most experienced private equity firms. The Firm is headquartered in New York, NY and has over twenty-five office locations globally. Founded in 1976 by Jerome Kohlberg, Henry R. Kravis, and George R. Roberts, KKR seeks to provide its investors with long-term capital appreciation through multiple business platforms, including private equity, credit, infrastructure and real estate. As of December 31, 2023, KKR had approximately 2,600 employees and was responsible for over $550 billion in client or limited partner assets under management.

Since the establishment of the KKR Infrastructure franchise in 2008, KKR has successfully invested over $76 billion across a variety of infrastructure subsectors, geographies, and asset types. KKR has built an experienced and stable team that has grown from seven investment professionals in 2008 to over 90 investment professionals. Fund V's senior investment team includes Raj Agrawal (Global Head of Infrastructure), Brandon Freiman (Head of North American Infrastructure), Tara Davies (Co-Head of European Infrastructure and Global Head of Core Infrastructure), Vincent Policard (Co-Head of European Infrastructure), James Cunningham (Partner), Alberto Signori (Partner), Waldemar Szlezak (Partner), James Gordon (Partner) and Dash Lane (Partner), and is overseen by Joseph Bae, KKR's Co-President and Co-Chief Operating Officer. Additionally, KKR's Senior Advisors and Industry Advisors have notable infrastructure sub-sector as well as operating, finance, and public affairs expertise.

KKR strives to be a diverse, inclusive organization. KKR is a signatory to ILPA's "Diversity in Action" initiative which aims to advance diversity, equality, and inclusion. KKR formed its Inclusion & Diversity Council in 2014 to help KKR realize its strategic priority of creating a more inclusive workplace. In 2022, KKR implemented Phase 1 of its DEI Accountability Framework, which is designed to drive greater ownership across the firm by linking DEI outcomes across each business with how KKR evaluates, recognizes, and rewards its leaders.

III. Investment Strategy

KKR Global Infrastructure Investors V will seek to generate returns through both long-term capital appreciation and current income generation, targeting an overall gross return in the mid-teens and an overall net return in the low-teens. Fund V will seek to accomplish this by focusing on critical infrastructure investments with low volatility and strong downside protection where KKR believes it can use its advantages to tackle complexity in sourcing, structuring, operations, and execution and deliver attractive returns with a low risk profile.

KKR believes focusing on investments with an appropriate risk profile is critical to delivering attractive risk-adjusted returns. To this end, KKR utilizes a risk-based, rather than sector-based, approach when defining the universe of potential investments that are suitable for investment. KKR leverages the deep investing and analytical expertise of their Global Infrastructure Team, their Global Infrastructure Investment Committee and their network of Senior Advisors and Industry Advisors to critically evaluate investments, assess the risk-return profile of each investment, evaluate key value drivers and develop a disciplined investment plan focused on value creation.

KKR's discipline in selecting investments based on risk profile focuses on investments that fall into one of the following three categories each of which provides long-term visibility of cash flows:

Regulated Investments: These assets and businesses may be subject to regulated tariffs or rate of return regulations. Examples may include water and wastewater or renewable power generation.

Contracted Investments: These investments typically involve contracts of 7-10 years or longer with high quality counterparties. Examples may include midstream energy assets, telecom or power generation and utilities.

Investments with Market/and or Structural Protection: These investments may involve irreplaceable assets, and/or assets and companies with significant structural or market protections that mitigate competitive dynamics and pricing pressure. Examples may include asset leasing or parking.

To achieve its targeted risk/return profile in today's environment, KKR generally migrates towards complexity – in sourcing, structuring, operations, and execution. While complexity often serves as a barrier to entry for other investors, KKR believes its ability to address its challenges affords it the potential to deliver attractive returns with reasonable risk.

Complexity in Sourcing: KKR has been developing relationships with global corporations for over four decades. Across the Global Infrastructure Strategy, KKR has entered a number of corporate partnership or joint ventures that have been furthered by KKR's deep relationships in the infrastructure sectors in which it invests. Even where KKR has invested through an auction process, KKR has been the preferred bidder in many instances. This has enabled KKR to have an edge over its competitors in these transactions and to negotiate customized investment structures tailored to KKR's requirements.

***Complexity in Structuring**:* Overcoming complexity in structuring, and doing so with speed, creativity and flexibility has been a key characteristic of several of KKR's infrastructure investments. KKR migrates towards situations involving complexity in structuring as it finds its capabilities here to be a key differentiator. Structuring complexity that KKR overcomes typically falls into one or more of the following: capital structure, contract structure, or partnership structure.

***Complexity in Operations and Execution**:* KKR's long history of value creation, coupled with its substantial investment in people, processes, and resources for driving operational improvement, positions KKR to excel in this aspect of infrastructure investing. In seeking to create operational improvements, KKR's Global Infrastructure Team frequently works in an integrated manner with KKR Capstone, a team of over 100 operational professionals. KKR Capstone works with KKR's investment professionals and portfolio company management teams to help define strategic priorities for and drive operational improvement in KKR's investments.

KKR integrates material ESG considerations into the investment process to mitigate risk, including through due diligence, decision-making, and management practices, as appropriate. KKR's investment teams are responsible for identifying, assessing, and managing ESG-related risks and opportunities throughout the investment process. Those professionals work closely with dedicated sustainable investing subject-matter experts who are deeply integrated across teams to act as a resource to KKR, its investment professionals, and its portfolio companies. In 2021, KKR established an ESG Committee, which includes senior executives from across the firm, and is tasked with helping to advance a globally coordinated approach to responsible investment.

IV. Investment Performance

Performance of recent prior KKR Global Infrastructure Funds as of December 31, 2023 is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Global Infrastructure Investors	2011	$1.1 Billion	--	15.6%	1.9x	1.9x
Global Infrastructure Investors II	2014	$3.1 Billion	--	17.0%	1.9x	1.5x
Global Infrastructure Investors III	2018	$7.4 Billion	$150 million	12.5%	1.4x	0.3x
Global Infrastructure Investors IV	2021	$17.0 Billion	$100 million	8.4%	1.1x	n/m

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR, Net MOIC, and Net DPI provided by the manager.

V. Investment Period and Term

The investment period for the Fund will be six years from the date of the first investment. The term of the Fund will be 12 years from the initial investment, subject to up to three additional one-year extensions with the consent of a majority-in-interest of the limited partners.

This document is a summary of more detailed information provided in the Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM.

ATTACHMENT D

PRIVATE CREDIT MANAGER SUMMARY PROFILE

I. Background Data

Name of Fund:	Permira Strategic Opportunities I
Type of Fund:	Private Credit
Target Fund Size:	€750 Million
Fund Manager:	Permira Credit
Manager Contact:	Molly Wilson 320 Park Avenue New York, NY 10022

II. Organization and Staff

Permira Credit (the "Firm") is seeking to raise €750 million for Permira Strategic Opportunities ("PSO1" or the "Fund"). Permira Strategic Opportunities will seek to capitalize on opportunities in Europe's credit markets, where Permira Credit believes there is an attractive balance of risk and reward.

The Permira Credit funds have been investing in European private credit for more than 16 years. Established in 2007 as the private credit business of Permira, Permira Credit today focuses on four core strategies: direct lending (PCS funds), strategic opportunities (PSO), structured credit (Sigma funds) and CLO management (Providus funds). Permira Credit has worked with more than 300 companies and 100 private equity sponsors, as well as a significant number of management teams and advisors since its establishment. Permira Partners control Permira itself, and economic interest in Permira is broadly distributed across the Partners. The Permira Credit and Permira private equity funds have in aggregate committed capital of over €77bn, and have invested in more than 300 businesses around the world. Permira was one of the first entrants into the European private equity market in 1985. Today, the organization operates as a matrix of four sectors and 15 offices, including six European investment offices.

In April 2020, Goldman Sachs's Petershill ("GSP") program agreed to acquire a single-digit minority stake in the Permira. GSP has no voting control other than with respect to certain matters relating to its investment and has no legal ownership of Permira. The transaction provides the firm with significant permanent capital, which will enable it to support the continued growth of the business.

The day-to-day management of Permira Credit is the responsibility of the Permira Credit Executive Committee ("Permira Credit ExCo"). The Permira Credit ExCo consists of David Hirschmann (Head of Private Credit, Co-Head of Permira Credit), Ariadna Stefanescu (Head of Liquid Credit, Co-Head of Permira Credit), Ian Jackson (Head of Strategic Opportunities) and Salvatore Ruocco (Chief Operating Officer). The Permira Credit ExCo have an average tenure of nine years.

Permira Credit has a well-established and long-tenured team. The Permira Credit team comprises over 85 professionals, of whom 47 are investment professionals. The team blends a variety of professional and personal backgrounds with strong financing capabilities, and includes individuals of 19 nationalities, fluent in 12 European languages. The PSO team is led by Ian Jackson, who has over 27 years of experience in the credit market, during which time he has predominantly focused on opportunistic European credit investing. In addition, Merrill Goulding joined Permira Credit as a Managing Director in the PSO team in January 2023, bringing 20 years of experience. Ian and Merrill have worked together for seven years in their previous roles.

Permira values Diversity, Equity, and Inclusion (DEI) by actively engaging in various initiatives and measures. They established a Diversity Steering Committee and conducted a global DEI survey to identify areas for improvement and ensure that people from all backgrounds are valued and supported. These results drive initiatives in recruiting practices, internships, mentoring programs, internal seminars, panels, and speakers on diversity, industry forum memberships, and the Permira Women's Network. The Permira Group has participated in the 10,000 Interns program, aiming to provide internship opportunities to underrepresented students in investment management. They are also taking steps to reduce bias in the recruitment process, engaging Professor Mahzarin Banaji from Harvard University for guidance.

III. Investment Strategy

The Permira Strategic Opportunity strategy will focus on opportunistic and special situations investing, providing complex and bespoke structures for fundamentally strong businesses. PSO1 is expected to have the strategic flexibility to access attractive opportunities across the business cycle, regardless of prevailing market conditions. PSO1 is a natural and highly synergistic extension of the range of solutions offered by the Permira platform. The Fund will seek to leverage the Firm’s capabilities and network alongside the experience of the senior team members to generate attractive risk-adjusted returns for investors.

PSO1 focuses on partnering with strong mid-market private companies in stable economies of Northern and Western Europe, primarily in the Consumer, Healthcare, Services, and Technology sectors. It targets companies with a competitive advantage, recurring or predictable revenues, and free cash flow, even if they are undergoing fast and significant changes.

PSO1 will seek to build a well-diversified portfolio targeting investments of c.€30m to c.€100m across approximately 15 to 20 core investments. The Fund will predominantly invest across the capital structure of mid-market companies, typically with an enterprise value up to €500m. Outside of this, the Fund expects to make incremental investments in the secondary market as attractive dislocation opportunities arise. Overall, PSO1 will target a net IRR of c.15%+, which is expected to comprise 70% contractual elements and 30% equity components.

The Fund’s strategy will focus on providing solutions-based capital across two core areas: (i) Strategic Capital, providing bespoke financing solutions across the capital structure; and (ii) Dislocation Opportunities, taking advantage of pricing disruptions in the credit markets.

- *Strategic Capital:* primary investment in companies unable to access traditional forms of capital; providing bespoke solutions across the capital structure, solving liquidity, maturity, or covenant issues in high-quality businesses, or providing strategic capital for growth/and or discrete projects. The capital may take various forms ranging from first lien and secured debt to preferred equity and, in some instances, minority equity positions.

- *Dislocation Opportunities*: unlocking value predominantly in the secondary market, focusing on credits trading at a significant discount to the long-term, fundamental asset value. This may be event-driven special situations or stressed/distressed investments where idiosyncratic events, or overall market conditions have caused pricing dislocation.

As with Permira Credit's other strategies, robust credit underwriting will be core to the PSO1 investment strategy. Permira Credit places a significant focus on capital preservation. This is achieved through a disciplined approach to underwriting, evaluating potential risks, and modeling appropriate downside scenarios for each investment to ensure sufficient protection. Permira Credit has a dedicated Portfolio Monitoring Group created to reinforce the longstanding focus on the performance of underlying businesses. Its primary role is to ensure robust monthly portfolio monitoring, challenge deal teams to engage with sponsors and management teams at the first sign of deviation of the portfolio.

In support of the investment strategy, Permira internal capital vehicles have allocated up to €100 million of capital to warehouse potential investments for the Fund.

The Permira Group believes ESG considerations are an essential part of building lasting value. ESG and sustainability factors are considered part of the investment lifecycle, and the firm is committed to ESG engagement within the PSO1 portfolio, as applicable. Permira Credit’s ESG approach is overseen by Permira’s Head of ESG, Adinah Shackleton, who joined the business in 2015. Isabelle Mitchell is the ESG Lead for Permira Credit and maintains primary oversight of ESG matters within Permira Credit funds’ portfolio. During the pre-investment stage, deal teams may have access to internal and external resources to understand and assess the ESG risks associated with the investment. Deal teams assign ESG risk ratings according to a target’s sector or activity and internal management capability. The Permira Group is also committed to further developing the approach to engagement with investment companies’ post-investment on ESG risks through its annual monitoring and reporting program for its portfolio companies.

The Permira Group is a member of a number of industry associations, through which it engages with the wider industry on responsible investment, including the UN Principles for Responsible Investment, International Climate Initiative and European Data Convergence Initiative. PSO1 is classified as an Article 8 fund under SFDR.

IV. *Investment Performance*

Previous Permira Credit fund performance as of December 31, 2023, is shown below:

Fund	Vintage Year	Total Commitments	SBI Investment	Net IRR*	Net MOIC*	Net DPI*
Permira Credit Direct Lending						
PCS1	2008	€250m	-	7.2%	1.2x	1.2x
PCS2	2014	€1,046m	-	6.5%	1.4x	1.2x
PCS3	2016	€2,471m	-	5.9%	1.3x	1.1x
PCS4	2019	€4,181m	-	7.1%	1.2x	0.3x
PCS5	2022	€4,472m	-	13.5%	1.1x	0.1x
Permira Credit Structured Credit						
Sigma 1	2010	€39m	-	12.9%	1.5x	1.5x
Sigma 2	2012	€30m	-	26.9%	2.4x	2.4x
Sigma 3	2012	€40m	-	19.2%	1.7x	1.7x
Sigma 4	2016	€178m	-	9.8%	1.5x	1.3x
Sigma 5	2018	€122m	-	11.1%	1.4x	0.9x
Sigma 6	2021	€96m	-	14.3%	1.3x	0.0x
Permira Credit CLO						
Providus Risk Retention Fund	2021	€155m	-	22.1%	1.3x	0.3x

* Previous Fund investments may be relatively immature and, therefore, returns may not be indicative of future results. Net IRR, Net MOIC, and Net DPI provided by the manager.

V. *Investment Period and Term*

The fund will have a four-year investment period and an eight-year term, with the potential of three one-year extension periods with the consent of investors representing at least a majority of total commitments.

This document is a summary of more detailed information provided in the Fund's Confidential Private Placement Memorandum (the "PPM"). It is qualified in its entirety by the more detailed information provided in the PPM and the Fund's Agreement of Limited Partnership.

TAB D

Climate Roadmap

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DATE: May 8, 2024

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: Climate Roadmap Update

Staff will present a Climate Roadmap update at the Investment Advisory Council meeting on May 15, 2024.

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TAB E

SBI Statement of Investment Beliefs

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DATE: May 8, 2024

TO: Members, Investment Advisory Council

FROM: Jill Schurtz
Executive Director and CIO

SUBJECT: Recommendation Regarding SBI Statement of Investment Beliefs

The Executive Director is recommending that the Board amend the SBI's Statement of Investment Beliefs (the "Investment Beliefs" or "Beliefs") to include a belief recognizing the fiduciary requirement to consider all material risks and opportunities, as set forth below. The SBI's Investment Beliefs help provide context for SBI's actions, reflect SBI's investment values, and acknowledge SBI's role in supporting the State's retirement systems. When relevant, the SBI also uses these Beliefs as a guide when investing the assets of the other investment programs that it manages, as deemed appropriate.

The SBI's fiduciary duty requires it to prudently invest the Combined Funds assets for the sole benefit of the participants and beneficiaries of the statewide pension plans and to seek appropriate, risk adjusted returns to maintain the health of the plans. For the past several years, the SBI Executive Director, staff, IAC, and Board have discussed the appropriate consideration of risk within the investment portfolio. In light of these discussions, feedback from stakeholders, and general industry norms, the Executive Director requests that the IAC endorse the recommendation to amend the Investment Beliefs to include the follow language:

> **As long-term institutional investors, our fiduciary duty requires us to consider all material risks and opportunities.**

The requirement to consider all material risks and opportunities is supported by the existing investment beliefs and is inherent in the SBI's fiduciary duty. The additional belief will clearly recognize this requirement and provide further clarity regarding the SBI's mission to achieve an appropriate, risk-adjusted return for the Combined Funds investment portfolio.

RECOMMENDATION:

The Executive Director is recommending that the Board amend the SBI's Investment Beliefs to add the foregoing proposed language as a belief and requests the IAC's endorsement of this recommendation for the Board's approval.

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Statement of Investment Beliefs

In September 2017, the Minnesota State Board of Investment (SBI) adopted a set of Investment Beliefs, and updated in May 2022 and in May 2024. The Beliefs help provide context for SBI's actions, reflect SBI's investment values, and acknowledge SBI's role in supporting the State's broader retirement systems. When relevant, the SBI also uses these Beliefs as a guide when investing the assets of the other investment programs that it manages, as deemed appropriate.

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The SBI is a long-term investor whose primary mission is to maintain the viability of the retirement systems it supports.

When determining an appropriate level of risk that the systems' assets should bear the SBI must reflect the nature of those systems' liabilities and funding policy.

As long-term institutional investors, our fiduciary duty requires us to consider all material risks and opportunities.

The SBI's strategic allocation policy is the primary determinant of (i) the asset portfolio's long-term investment return and (ii) asset portfolio's risk.

While the SBI can sacrifice some short-term liquidity to pursue a greater long-term return, the investment portfolio's net cash flows and ability to pay benefits on a year-by-year basis are key risk considerations.

Diversification improves the risk-adjusted return profile of the SBI investment portfolio.

Diversification of the SBI investment portfolio takes place across several critical dimensions, such as allocation across global regions and country markets (e.g., U.S. versus Europe, Asia, emerging markets, etc.), allocation among different types of assets (equities, bonds, real estate, etc.), across various sectors and industries (e.g., technology, financials, consumer-oriented, etc.), and weighting of different risk factor premiums (e.g., value vs. growth, small companies vs. big companies, carry, illiquidity, etc.). If the correlation (i.e., relationship) among the returns generated by these factors is less than perfect (i.e., less than 1.0), then diversification is beneficial.

There are long-term benefits to SBI managing investment costs.

The equity risk premium is significantly positive over a long-term investment horizon although it can vary over time.

The equity risk premium is also pervasive across several asset classes and its overall exposure should be managed accordingly.

Private market investments have an illiquidity premium that the SBI can capture.

This risk premium can increase the portfolio's long-term compound return and help diversify the portfolio's risk.

Statement of Investment Beliefs

It is extremely challenging for a large institutional investor to add significant value over market-representative benchmarks, particularly in the highly-competitive public global equity markets.

Passive management should be utilized when there is low confidence that active management can add value. Active management can have potential to add value where information processing is difficult and challenging, allowing for market inefficiencies that are potentially exploitable.

The SBI benefits significantly when roles and levels of authority are clearly defined and followed.

The role of the members of the State Board of Investment (Board) is to establish investment policies that are in compliance with state statute and guide the ongoing management of the funds. The Board delegates implementation of that policy to the Executive Director/CIO, and exercises oversight with respect to the Executive Director/CIO's implementation activities and the portfolio's active risk level in the context of the portfolio's strategic allocation policy. The Board also ensures adequate resources are available to the SBI staff to perform their work;

The Investment Advisory Council (IAC)'s key role is advising the Board and Executive Director/CIO on general policy matters and methods to enhance the management of the investment portfolio;

The Executive Director's/CIO's key role is implementing SBI investment policies and setting the portfolio's active risk level in a prudent manner to equal or exceed applicable policy benchmarks.

Utilizing engagement initiatives to address environmental, social, and governance-related (ESG) issues can lead to positive portfolio and governance outcomes.

In addition to specific engagement strategies the SBI might apply, proxy rights attached to shareholder interests in public companies are also "plan assets" of the SBI and represent a key mechanism for expressing SBI's positions relating to specific ESG issues. By taking a leadership role in promoting responsible corporate governance through the proxy voting process, SBI can contribute significantly to implementing ESG best practices which should, in turn, add long-term value to SBI's investments.

Best practices are developed by the best teams.

There is no merit-based explanation for the lack of racial and gender diversity in the investment industry. In fact, research indicates that such diversity adds value. The SBI must ensure that non-financial biases do not prevent it from working with the best teams. In this diverse and changing world, organizations that demonstrate a commitment to diversity are more likely to succeed.

REPORTS

- Public Markets Investment Program Report
- Participant Directed Investment Program and Non-Retirement Investment Program Report
- Aon Market Environment Report
- Meketa Capital Markets Outlook & Risk Metrics Report
- SBI Comprehensive Performance Report

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REPORT

Public Markets Investment Program

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DATE: May 8, 2024

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: SBI Public Markets Program Report

This report provides a brief review of financial markets and the performance of the Combined Funds portfolio for the quarter and 12-month periods ended March 31, 2024. Included in this section are a market commentary and performance summary for the overall Combined Funds portfolio, performance summaries for the portfolio's public markets managers, and a report of any organizational updates for the public markets managers in the SBI portfolio.

The report includes the following sections:

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Review of SBI Combined Funds Performance
First Quarter 2024 (CY)

Market Summary

Global equity markets rallied strongly during the first calendar quarter of 2024, with the MSCI All Country World (ACWI) Index of global stocks rising +8.2% in U.S. dollar terms. The U.S. dollar rallied over +3.1% versus a trade-weighted basket of foreign currencies, most notably versus the Japanese yen and Swiss franc. Interest rates rose during the quarter, weighing on returns across most fixed income sectors. The Bloomberg Global Aggregate Bond Index declined -2.1% during the quarter, while the U.S. Aggregate Bond Index fell a more modest -0.8%.

Equity markets posted a second consecutive quarter of strong gains, supported by stronger than expected economic growth data, particularly in the U.S., where consumer spending remained robust despite expectations that higher interest rates and still-elevated inflation would dampen consumer confidence. Corporate earnings beat somewhat lowered expectations during the quarter, led by strength in mega-cap technology, communications services and consumer discretionary names.

In the U.S., economic data surprised to the upside during the quarter. Estimates of gross domestic product (GDP) for the final quarter of 2023 were revised upward (4Q23 growth +3.4% annualized), and measures of personal spending and business activity remained strong carrying into the first quarter of 2024. During the first quarter, employers added an average of 276,000 net new jobs per month, and wage growth, as measured by the Atlanta Federal Reserve's Wage Growth Tracker, rose at a +4.7% annualized rate through March. With growth reaccelerating, progress on inflation returning towards the Fed's 2% target appeared to stall during the quarter. Headline inflation rose to 3.5% year-on-year in March, from 3.4% in December, while measures of core services inflation – a statistic frequently cited by Fed officials as a key barometer of the underlying trend of inflation – rose sharply.

Within fixed income, yields rebounded across the U.S. Treasury yield curve as investors reacted to stronger than expected economic growth and inflation data. Market participants significantly trimmed their expectations for Fed policy rate cuts in 2024, while credit-sensitive sectors rallied along with stocks on the continued strength of the U.S. economy and its unexpected resilience to the Fed's policy tightening actions to date.

Overall Combined Funds Portfolio Performance – Quarter and Last 12 Months

The overall Combined Funds portfolio returned +4.8% during the **calendar first quarter**, outperforming the composite benchmark's return of +4.4%. The Combined Funds portfolio benefitted from active manager outperformance across the domestic equity, international equity, and fixed income portfolios. Within fixed income, the portfolio's allocation to return-seeking strategies benefitted from the strong performance of credit-sensitive sectors over the quarter. Gains from the portfolio's currency hedging program benefitted performance during the quarter, helping to offset the negative impact on the value of the portfolio's international equity investments from the sharp rise in the dollar versus most foreign currencies experienced over the period. The portfolio's slight overweight to equities relative to the policy target, and a corresponding underweight to fixed income, also contributed to portfolio outperformance during the period. Returns on the private markets portfolio were muted. The private markets invested portfolio gained +2.1% during the quarter, led by a +4.8% return within the Private Credit allocation.

For the **one-year period ended March 31, 2024**, the portfolio posted a return of +14.6%, outperforming the composite benchmark return of +14.1% for the same period. The portfolio benefitted from a positive contribution from active management, particularly within domestic and international equities, as well as within core/core plus fixed income. Mark-to-market gains from the portfolio’s currency hedging program also helped results. In terms of asset allocation, the portfolio’s allocation to return-seeking strategies significantly outperformed the portfolio’s fixed income policy benchmark over the period, while a modest underweight to both the Treasury protection portfolio and emerging market stocks helped relative performance over the period as these sectors lagged the broader market. The invested private markets portfolio returned +8.9% for the 12 months ended March 31, 2024, led by a +13.6% return within the Private Credit allocation.

Review of Public Markets Manager Performance
First Quarter 2024 (CY)

Domestic Equity

Domestic equities, as measured by the Russell 3000 Index, gained +10.0% in the first quarter. It was the second consecutive quarter of double-digit gains for domestic equities, with gains fueled in part by continued economic strength and waning concerns over recession. Economic data continued to be stronger than expected, driving optimism for corporate earnings prospects. A re-acceleration in inflation readings, which drove a modest increase in long-term interest rates over the quarter, led equity investors to favor quality growth businesses perceived to have strong pricing power, particularly mega-cap technology and consumer discretionary companies. Demand for generative AI infrastructure was also a key theme of the sentiment-driven rally, and blowout quarterly results from chipmaker NVIDIA helped reinforce investor optimism.

Strong performance during the current quarter was again driven by a handful of large, high-momentum and high-growth stocks. Seven of the largest stocks by market capitalization (Microsoft, Apple, Alphabet, Amazon, NVIDIA, Meta, and Tesla), dubbed the “Magnificent Seven” or “Mag 7”, continued their collective dominance during the quarter, rising +17.1% vs. 10.0% for the broad Russell 3000 Index. Notably, however, participation in the rally was not universal, even among the Mag 7: Apple stumbled (-10.8%) due to weak sales in China, while Tesla shares dropped (-29.3%) as its top-line growth stalled and margins fell.

Technology was the best-performing sector within the Russell 3000 Index during the quarter (+13.3%), followed by energy (+12.5%), financials (+11.7%), and industrials (+10.2%). Real estate was the only sector to post a decline (-1.1%), while other lagging sectors included telecommunications (+2.8%), utilities (+6.1%), and consumer staples (+6.2%).

Large cap stocks experienced a strong rally in the first quarter, outperforming small caps (Russell 1000 Index +10.3% vs. Russell 2000 Index +5.2%). The rally was strongest within large cap growth (Russell 1000 Growth Index +11.4% vs. Russell 1000 Value Index +9.0%), due to the strong performance of higher-growth technology companies. A few mega-cap technology companies such as NVIDIA (+82.5%) and Meta (+37.3%) drove much of the positive performance of the large cap growth index.

Within small cap, growth stocks outperformed value stocks (Russell 2000 Growth Index +7.6% vs. Russell 2000 Value Index +2.9%), due mostly to a strong performance of small cap technology stocks perceived to be AI beneficiaries. One of those stocks, Super Micro Computer, rose +255.3% during the quarter and accounted for over half of the performance differential between the small cap growth and small cap value indices.

The Combined Funds domestic equity portfolio gained +10.3% during the quarter, outperforming the Russell 3000 Index, which returned +10.0%. Portfolio outperformance was due primarily to strong active management during the quarter, which was only partially offset by the portfolio’s slight overweighting to small cap stocks, which underperformed large cap stocks during the period.

The portfolio's large cap and all cap growth managers all outperformed their benchmarks during the quarter. These managers tend to avoid the significant concentration of their market-cap weighted benchmarks, leading to a cumulative underweight in the largest index names. That said, an overweight to Mag 7 outperformers such as NVIDIA (+82.5%), and an underweight to Mag 7 laggards such as Apple (-10.8%) boosted relative performance for the quarter. More broadly, the managers' tendency to favor stocks with higher earnings momentum was also a tailwind to performance during the current quarter. The two large cap growth managers, Sands and Winslow, that experienced the strongest relative performance (+14.3% Managers vs. +11.4% Benchmark), with all cap manager Zevenbergen also showing strong outperformance (+12.2% Manager vs. +11.2% Benchmark).

Active large cap value managers outperformed during the quarter (+10.8% Managers vs. +9.0% Benchmark). Barrow Hanley outperformed the benchmark due to strong stock selection within the industrials, technology, financials, and healthcare sectors. Notably, Barrow generated strong gains from its overweight to a beneficiary of the generative AI theme: an industrials stock that is a provider of infrastructure and services to data centers. LSV's quantitative, deep-value approach generally fared well during the quarter, as stocks that screened cheaper on cash flow and earnings metrics tended to outperform. As a result, LSV benefitted from both sector allocation (underweights to real estate and utilities helped) as well as good stock selection across most sectors.

The portfolio's semi-passive large cap managers both outperformed their benchmark during the quarter (+11.2% Managers vs. +10.3% Benchmark). Both managers maintained an overweight position to the Mag 7 and benefitted from good stock selection within that cohort. Quantitative manager Blackrock outperformed due to security selection driven by sentiment measures, which helped push the portfolio into market-leading companies, as well as macro industry models and fundamental valuation-oriented measures. Fundamental manager J.P. Morgan also outperformed, led by strong stock selection in consumer discretionary, technology, industrials, and healthcare sectors.

Small cap growth managers outperformed their benchmark in aggregate during the quarter (+8.3% Managers vs. +7.6% Benchmark), despite having a collective underweight to Super Micro Computer (+255.3%), a stock that drove a significant portion of the return of the Russell 2000 Growth benchmark. Overall, managers outperformed due to strong security selection. The portfolio's small cap growth managers tend to invest in higher-quality businesses, an attribute which was in-favor during the quarter. Strong issue selection within industrials and consumer staples names drove much of the outperformance versus the benchmark, followed by selection within materials and financials.

Small cap value managers also outperformed their benchmark during the quarter (+4.2% Managers vs. +2.9% Benchmark). As a group, the managers tend to focus on companies that have cheaper valuations than the benchmark, as well as those with higher quality metrics, such as lower leverage. Both factors were in favor during the quarter, with lower-valuation, high quality companies in the financials and industrials sectors driving much of the quarter's gains. In contrast, positioning within the biotechnology sector, both from an under-allocation to the outperforming sector as well as negative stock selection, was a drag on relative performance.

The portfolio's passive portfolios matched their respective benchmarks during the quarter, posting a combined return of +10.3%.

Global Equity and ACWI ex USA Equity

The MSCI All-Country World Index (ACWI) (net) of global equities gained 8.2% in the first quarter, with most markets delivering positive performance. A strong return from the U.S. (+10.3%) was the largest driver of index performance, with Japan (+11.0%) also contributing meaningfully. Only 14 of 47 markets, together making up less than 7% of the index, experienced declines. Of these, China (-2.2%), Hong Kong (-11.7%) and Brazil (-7.4%) detracted the most from index performance. Index gains were also broadly distributed across sectors, with only real estate (-0.8%) experiencing a decline. Technology (+12.1%) and financials (+9.3%), which together make up nearly 40% of the index, were the largest drivers of positive performance in the quarter, followed by industrials (+9.1%) and communications services (+11.4%).

The Combined Funds' global equity managers outperformed the MSCI ACWI Index (net) for the quarter (+10.2% Managers vs. +8.2% Benchmark). The manager's collective overweight to the technology sector, and strong security selection within the sector, drove outperformance for the quarter. Both quality growth manager Martin Currie (+14.0% Manager vs. +8.2% Benchmark) and growth manager Baillie Gifford (+9.9% Manager vs. +8.2% Benchmark) both benefitted from overweight positions in semiconductor names. Value manager Ariel (+6.9% Manager vs. +8.2% Benchmark) underperformed for the quarter, hurt by an overweight to utilities, Chinese communication names, and an underweight to U.S. stocks.

The portfolio's ACWI ex USA manager, Earnest Partners, outperformed the benchmark (+5.3% Manager vs. +4.7% Benchmark), aided by overweights to industrials and technology names and an underweight to the utilities sector. Issue selection was mixed, with gains from issue selection in industrial and healthcare offset by negative selection within communications services, materials and consumer discretionary names.

Developed International Equity and Currency Overlay

International developed markets equities, as measured by the MSCI World ex USA Index (net), rose +5.6% in U.S. dollar terms during the quarter, significantly trailing U.S. markets. The U.S. dollar rallied sharply during the quarter, resulting in a -4% headwind for the index when measured in dollar terms. Measured in local currency, the index returned a more comparable +9.6% versus the U.S. market's 10.3% return. Despite the currency headwind, 16 of 22 developed markets ended the quarter in positive territory. Stocks in Japan and across Europe fared best, particularly within the financial, industrial, consumer discretionary, and technology sectors.

The portfolio's active developed markets managers outperformed the MSCI World ex USA Index (net), returning +6.4% versus the benchmark's +5.6% return. Core quantitative manager Acadian led the portfolio with a +7.8% return. The manager's momentum signals led to strong issue selection in financials and positive sector allocation from an overweight to technology names. Developed markets manager Columbia Threadneedle (+6.9% Manager vs. +5.6% Benchmark) also outperformed, with positive stock selection coming from the healthcare and materials sectors.

Fundamental manager Marathon outperformed (+6.4% Manager vs. +5.6% Benchmark), primarily due to an overweight to industrials and good security selection in healthcare and financials. The passive developed markets portfolio tracked the MSCI World ex USA Index (net) return for the quarter (+5.6% Manager vs. +5.6% Benchmark).

The U.S. dollar rebounded during the first quarter, rallying more than +3% versus a trade-weighted basket of currencies. The dollar benefitted from stronger-than-expected economic growth and a shift in expectations that the Fed would need to keep real interest rates "higher for longer" to bring inflation down to its 2% target. Against a backdrop of weaker growth and inflation around the world, the U.S. dollar gained favor as both a safe and high-yielding currency.

The portfolio's currency overlay program added +0.8% relative to an unhedged portfolio. More than half the gains were accrued in hedges against the Japanese yen, which weakened after markets were surprised by Japanese officials' continued easy monetary policy despite stronger growth and inflation data. Across the entire program, the hedge ratio varied between 6.4% and 43.5% over the quarter.

Emerging Markets Equity

Emerging markets equities, as measured by the MSCI Emerging Markets Index (net), rose +2.4% in U.S. dollar terms during the quarter, lagging developed markets. While emerging market (EM) currencies depreciated less against the U.S. dollar than developed currencies, the dollar's rally still resulted in a -2.1% headwind for EM stocks when measured in dollar terms. In local currency terms, the MSCI EM index rose +4.5%. Performance across the largest countries in the index was mixed. Taiwan, India, Korea all rallied, while China and Brazil lagged. Given its nearly 25% weighing in the EM Index, China's -2.2% return for the quarter was a significant drag on overall index performance. Following a sharp selloff in January which saw the Chinese market fall over -12%, the Chinese government announced new stimulus measures to buoy markets and restore investor confidence. Following this announcement and an uptick in consumer confidence data, Chinese stocks rallied in the second half of the quarter, erasing most of their earlier losses.

The portfolio's active emerging markets managers outperformed the MSCI Emerging Markets Index (net), returning +3.9% versus the benchmark's +2.4% return. Managers' security selection in semiconductor names was the primary driver of outperformance for the quarter. Notably, core manager Macquarie outperformed (+8.2% Manager vs. +2.4% Benchmark) with its significant overweight positioning to semiconductor names, including TSMC and SK Hynix. Quality growth manager Morgan Stanley outperformed (+3.5% Manager vs. +2.4% Benchmark) as the result of an underweight to China and an overweight to India. Quality growth manager Martin Currie underperformed the benchmark for the quarter (+1.1% Manager vs +2.4% Benchmark). Negative issue selection in financials, particularly in India and Hong Kong, detracted from performance for the quarter.

Earnest Partners' China A-share strategy underperformed the MSCI China A Index during the quarter (-5.9% Manager vs. +0.7% Benchmark). Performance for the quarter suffered from negative security selection in healthcare and technology, with an underweight to the energy sector also detracting from performance.

The passive emerging markets portfolio underperformed the MSCI Emerging Markets Index (net) (+1.5% Manager vs. +2.4% Benchmark). However, nearly all of the reported underperformance was due to a timing difference attributable to the Easter holiday in U.S. markets at quarter-end. On Friday, March 29th, U.S. banks and financial markets were closed, while international markets remained open. As a result, the index's official pricing reflects closing prices on March 29th, while the SBI's portfolio was not valued on that day. The performance impact reversed in early April. After accounting for the timing difference, the passive emerging markets portfolio's return relative to the benchmark was within tolerance for the quarter.

Core/Core Plus and Return Seeking Bonds

The U.S. investment grade fixed income market, as measured by the Bloomberg U.S. Aggregate Index, posted a return of -0.8% during the first calendar quarter of 2024. Interest rates rose during the quarter, weighing on returns across the fixed income market. Yields rose as stronger than expected economic growth and higher-than-expected inflation readings during the quarter led investors to dramatically reduce their expectations for Fed rate cuts in 2024. The yield on the benchmark 10-year U.S. Treasury bond rose by +32 basis points to end the quarter at 4.20%.

Despite the headwind from higher interest rates, credit-sensitive sectors of the bond market performed well, buoyed by strong investor inflows into fixed income, continued robust economic activity, and soaring equity markets. Spreads on investment-grade (IG) corporate bonds tightened during the quarter, leading to solid outperformance compared to Treasuries. Commercial mortgage-backed and asset-backed securities benefitted from a strong investor demand amid the resurgence in risk appetite. While securities backed by commercial office properties continued to struggle, spreads on CMBS and ABS securities backed by most other collateral types tightened and the sector posted strong performance overall. Agency mortgage performance was muted during the quarter as continued interest rate volatility and low homeowner refinance activity weighed on valuations. In contrast, performance within non-agency mortgage credit benefitted from the sector's lower duration and extension risk, continued strong borrower credit fundamentals and healthy home equity cushions due to steady home price appreciation.

Performance during the quarter was strongest across the higher risk sectors of the market. High yield corporate bonds returned +1.5% for the quarter. The lowest quality (CCC-rated) high yield corporate issuers outperformed the highest quality (BB-rated) cohort during the quarter. High yield bank loans returned +2.8% for the quarter, supported by strong investor demand for floating rate securities given the prospect of "higher-for-longer" Fed policy. Finally, emerging market debt also rallied during the quarter as inflation across most EM economies remained well-contained, allowing central banks to contemplate policy cuts to support continued economic growth.

The portfolio's core/core plus bond managers outperformed the Bloomberg Aggregate Index during the quarter (-0.5% Managers vs. -0.8% Benchmark). Overall, managers benefitted from an overweight allocation to spread sectors and security selection within corporates. The portfolio's core plus managers' allocations to emerging markets, and an overweight to credit (both high yield and investment grade corporates) also contributed to outperformance for the quarter. Core plus manager Neuberger Berman's overweight allocation to CMBS and strong security selection within investment grade credit was a notable contributor to portfolio outperformance this quarter. On the negative side, core plus manager Western Asset's longer-than-benchmark duration position was a drag on relative performance.

The portfolio's return-seeking bond managers returned +0.8% during the quarter, outperforming the portfolio's policy benchmark (Bloomberg U.S. Aggregate Bond Index), which returned -0.8%. The return-seeking managers matched the performance of a weighted composite of their individual benchmarks, which returned +0.8% for the quarter. The portfolio's dedicated high yield and multi-asset credit managers' allocation to the lower credit quality segments of the high yield bond and bank loan markets contributed to outperformance. Notably, high yield manager KKR's overweight to CCC-quality high yield boosted portfolio relative performance, while both KKR and high yield manager Oaktree benefitted from a healthy allocation to high yield bank loans during the quarter. Several return-seeking managers benefitted from allocations to mortgage credit and CMBS. The reported performance of emerging markets manager Ashmore (-1.4% Manager vs. 0.1% Benchmark) was adversely affected by pricing differences due to the Easter market holiday in the U.S. as well as a delay in processing of a debt exchange. The performance net of these impacts, which will reverse in next quarter's reporting, was in-line with the benchmark for the quarter.

Treasury Protection Portfolio

The Treasury Protection portfolio lost -2.2% during the quarter, slightly underperforming the benchmark of -2.1%. Overall, managers' yield curve positioning was a modest drag for the quarter, although this was partially offset by managers' holdings of U.S. agency securities, which provided a modest yield pickup relative to Treasuries.

Laddered Bonds + Cash Portfolio

The Combined Funds Laddered Bonds +Cash portfolio returned returning +1.3% during the first quarter, matching the benchmark (ICE BofA U.S. 3-Month Treasury Bill) return for the period. The Laddered Bond portfolio's allocation to high-quality corporate bonds and asset-backed securities generated a modest yield advantage over the benchmark, which helped to offset the negative impact of the portfolio's longer-than-benchmark duration position as interest rates rose during the quarter. Both the Laddered Bonds portfolio and the Cash portfolio benefitted from allocations to money market instruments issued by high-quality global banks. During the quarter, SBI Staff increased the allocation to the Laddered Bond portfolio and modestly extended the effective maturity of the Ladder Portfolio's custom cashflow benchmark, allowing managers to invest in higher-yielding assets in the six-month to one-year maturity range.

Public Markets Managers’ Organizational Updates
First Quarter 2024

Acadian (Developed Markets Equity)
Alex Voitenok has been appointed to the role of Deputy Chief Investment Officer, effective March 31, 2024. Mr. Voitenok joined the Executive Management Team and will continue to report to Chief Investment Officer Brendan Bradley.

Ariel (Global Equity)
Frank Jones, Chief Technology Officer, departed the firm in January 2024 to pursue other opportunities. Joseph Wojtena joined Ariel as Chief Technology Officer in February 2024.

ArrowMark (Domestic Equity)
Analyst Josh McAdoo left the firm. Mr. McAdoo’s coverage will be taken over by George Braun. Additionally, during the quarter, Mr. Braun and Jeff Torres were promoted to Assistant Portfolio Managers on the firm's growth strategies. Portfolio decision making will remain with Brian Schaub and Chad Meade.

Baillie Gifford (Global)
Robert Wilson has rotated off the Long-Term Global Growth (LTGG) decision-making group and the LTGG strategy team, effective at the end of January 2024. Kyle McEnery will join the LTGG team to fill Mr. Wilson's role on the strategy team, but he will not immediately have a role within the decision-making group, which will shrink to four members.

Barrow Hanley (Domestic Equity)
During the first quarter of 2024, Equity Analyst and Director Eric Micek left the firm, and Fernando Figueiredo joined as an Equity Trader.

BlackRock (Passive and Semi-Passive)
Senior Managing Director Salim Ramji left the firm in January 2024. Jennifer Hsui took on an expanded role as Global Head of Index Equity Investments.

Columbia Threadneedle (Developed Markets Equity)
Pat Goel joined the firm during Q1 2024 as a Global Industry Investment Analyst.

Fidelity (Developed Markets Equity)
Melissa Reilly was named Global Head of Equity Research.

Goldman Sachs (Domestic Equity, Fixed Income)
After 34 years of service, Sally Pope Davis, co-lead portfolio manager for the Small Cap Value and Small-Mid Cap Value Strategies within the firm’s fundamental equities business, retired from the firm in early 2024. As part of the succession plan, Sean Greely had previously joined Goldman Sachs as co-lead portfolio manager of the Small and Small-Mid Cap Value strategies, alongside Rob Crystal.

Macquarie (Emerging Markets Equity)
Marty Wolin has been appointed to the role of Chief Compliance Officer effective January 22, 2024. Mr. Wolin has previously held CCO roles at MFS, Mercer and Pioneer Investments.

Martin Currie GLTU (Global and Emerging Markets Equity)
Chief Compliance Officer (CCO) Stewart Brown retired at the end of March 2024. Jo Nolan has taken on the CCO role for the firm. Sheena Smith, Chief of Staff and member of the executive team, departed from the firm at the end of March 2024. Ms. Smith's responsibilities will be shared among the executive and the senior leadership team.

Marathon (Developed Markets Equity)
Simon Somerville, Portfolio Manager covering Japan, announced his decision to retire at the end of March 2024. Mr. Somerville's portfolio responsibilities will be transitioned to other team members, including Japan PM Toma Kobayashi. Dianna Gonazales-Burdinn was appointed to Marathon's Board of Directors as an independent non-executive director.

Neuberger Berman (Emerging Markets, Fixed Income)
As of January 1, 2024, Ashok Bhatia, Deputy Chief Investment Officer of Fixed Income, will assume the role of Co-Chief Investment Officer, alongside Brad Tank, Chief Investment Officer and Global Head of Fixed Income. At the end of 2024, Mr. Tank will transition to a Senior Advisor role and Mr. Bhatia will assume the full CIO responsibilities and leadership of Global Fixed Income, while retaining his asset management responsibilities within the Multi-Asset Credit Team.

Pzena (Domestic Equity)
Chris Shin joined the firm in February 2024 as an ESG Research Analyst.

Record Currency (Currency Overlay)
Rebecca Venis, Chief Technology Officer, has departed the firm and stepped down from her role as member of Record Currency's Board of Directors. Paul Sheath, previously Head of Technology at Odey Asset Management, has been appointed as Record's Head of Technology.

Dodge & Cox (Fixed Income)
As of January 1, 2024, Lucy Johns succeeded Tom Dugan as Director of Fixed Income, following Mr. Dugan's long-planned retirement. Ms. Johns will continue to serve as a member of the firm's Board of Directors, Business Strategy and Operations Committees, and will serve on the firm's U.S. Fixed Income, Global Fixed Income, and Balanced Fund investment committees.

PGIM (Fixed Income)
In February 2024, Daleep Singh, Chief Global Economist and Head of Global Macroeconomic Research, departed PGIM Fixed Income to rejoin the United States federal government as U.S. Deputy National Security Advisor for International Economics. The macroeconomic research and strategy teams will continue to report through Gregory Peters.

Oaktree (Fixed Income)

David Rosenberg was appointed Head of Liquid Performing Credit. Mr. Rosenberg will remain co-portfolio manager of Oaktree's U.S. High Yield Bond, Global High Yield Bond, Global Credit and Investment Grade Solutions strategies. Additionally, Wayne Dahl was promoted to co-portfolio manager of the Global Credit strategy, while Jesse Clapham was appointed to assistant portfolio manager of the Investment Grade Solutions strategy. As of March 1, 2024, Bob O'Leary, portfolio manager of the Global Opportunities strategy, and Armen Panossian, Head of Performing Credit, assumed their new leadership roles as Co-CEOs of Oaktree. As part of this change, Jay Wintrob departed the firm.

Q1 2024 Manager Meetings

During the quarter, Staff met onsite with eight existing managers in Edinburgh, London, Los Angeles, and Minneapolis. Staff received eight visits from managers at our office in St. Paul and conducted 32 manager strategy review calls via teleconference or videoconference. Note that while staff met with some managers multiple times during the quarter, each manager/strategy is listed only once below.

Investment Manager	**Asset Class**
Acadian Asset Management LLC	Developed Markets Equity
Ariel Investments, LLC	Global Equity
ArrowMark Colorado Holdings, LLC	Domestic Equity
Ashmore Investment Management Limited	Fixed Income
Baillie Gifford Overseas Limited	Global Equity
BlackRock Financial Management, Inc.	Fixed Income
BlackRock Institutional Trust Company	Passive Equity
Columbia Threadneedle Investments	Fixed Income
Dodge & Cox	Fixed Income
Goldman Sachs Asset Management, L.P.	Domestic Equity
Goldman Sachs Asset Management, LP	Fixed Income
Hotchkis and Wiley Capital Management, LLC	Domestic Equity
J.P. Morgan Investment Management Inc.	Developed Markets Equity
KKR Credit Advisors (US) LLC	Fixed Income
LSV Asset Management	Domestic Equity
Macquarie Investment Management Advisers	Emerging Markets Equity
Marathon Asset Management LLP	Developed Markets Equity
Martin Currie Inc.	Emerging Markets Equity
Martin Currie Inc.	Global Equity
Morgan Stanley Investment Management Inc.	Emerging Markets Equity
NISA Investment Advisors, LLC	Equity Overlay
Payden & Rygel	Fixed Income
Peregrine Capital Management	Domestic Equity
Pzena Investment Management, LLC	Emerging Markets Equity

2024 Manager Meetings (cont.)

Record Currency LLC	Currency Overlay
Rice Hall James & Associates, LLC	Domestic Equity
The Rock Creek Group, LLC	Emerging Markets Equity
Sands Capital Management, LLC	Domestic Equity
State Street Global Advisors	Developed Markets Equity
TCW	Fixed Income
Wellington Management Company, LLP	Domestic Equity
Winslow Capital Management, LLC	Domestic Equity
Zevenbergen Capital Investments LLC	Domestic Equity

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REPORT

Participant Directed Investment Program and Non-Retirement Investment Program

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DATE: May 8, 2024

TO: Members, Investment Advisory Council

FROM: SBI Staff

SUBJECT: Participant Directed Investment Program and Non-Retirement Program

This section of the report provides commentary on the Participant Directed Investment Program (PDIP) investment options and Non-Retirement Program managers along with the list of due diligence meetings staff conducted during the first calendar quarter of 2024.

The report includes the following sections:

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Participant Directed Investment Program Fund Commentaries
First Quarter 2024

Domestic Equities

Vanguard Total Stock Market Index Institutional Plus

The Fund employs an index sampling approach designed to track the performance of the CRSP U.S. Total Market Index, which represents approximately 100% of the investable U.S. stock market and includes large-, mid-, small-, and micro-cap stocks. The Fund matched the benchmark performance for the quarter with a +10.0% return.

Vanguard Institutional Index Plus

The Fund employs a full replication indexing approach designed to track the S&P 500 Index. Performance for the Fund returned +10.5% for the quarter, slightly underperforming the benchmark return of +10.6%. *Note: This option is only available to the Minnesota Deferred Compensation Plan (MNDCP).*

Vanguard Dividend Growth Fund

The Fund is actively managed by Wellington Management in a concentrated Fund of large- and mid-cap stocks, emphasizing high-quality companies with a history of paying stable or increasing dividends. The Fund returned +6.0% for the quarter, underperforming the S&P U.S. Dividend Growers Index return of +7.7%. Stock selection in the industrial sector was the primary detractor from portfolio relative return; security selection in the consumer discretionary sector and an overweight allocation to real estate also detracted from relative performance.

Vanguard Mid-Cap Index

The Fund employs a full replication indexing approach designed to track the performance of a broadly diversified pool of mid-cap U.S. stocks. The Fund matched the benchmark performance for the quarter with a +7.9% return.

T. Rowe Price Institutional Small-Cap Stock Fund

The Fund's investment process emphasizes fundamental research and active, bottom-up stock selection. The Fund seeks to provide long-term capital growth by investing primarily in stocks of small companies in both growth- and value-oriented market segments. The Fund returned +5.6% for the quarter, outperforming the Russell 2000 Index return of +5.2%. The Fund benefited from positive allocation effect and broad stock performance, with eight of the 11 sectors yielding positive stock selection. Stock selection for the quarter was strongest in the consumer discretionary, energy, and industrial sectors.

International Equities

Fidelity Diversified International Equity Fund

The Fund actively selects international companies, primarily in foreign developed markets. The Fund focuses on companies with significant long-term earnings potential, durable business models, and attractive growth prospects. The Fund returned +8.3% for the quarter, outperforming the MSCI EAFE Index return of +5.8%. The strategy's overweight positioning to growth-oriented companies and sectors, such as technology, was additive as growth outperformed value in the quarter. The outperformance was broad, with eight of the 11 sectors yielding positive benchmark-relative returns for the portfolio.

Vanguard Total International Stock Index
The Fund employs a full replication indexing approach designed to track the FTSE Global All Cap ex U.S. Index, a market-cap weighted index designed to measure the performance of developed and emerging market companies. The Fund matched the benchmark performance for the quarter with a +4.3% return.

Fixed Income and Capital Preservation Options

Dodge & Cox Income Fund
The Fund invests in a diversified portfolio that consists primarily of investment-grade debt securities, with a higher allocation to corporate and securitized debt relative to the benchmark. The Fund returned -0.3% for the quarter, outperforming the Bloomberg U.S. Aggregate Index return of -0.8%. Relative outperformance for the quarter was primarily attributable to an underweight position in U.S. Treasuries, an overweight position in the financial sector, and positive issue selection within credit. While remaining overweight in corporate credit, the strategy recently trimmed several credit holdings and invested the proceeds into U.S. Treasuries.

Vanguard Total Bond Market Index
The Fund employs an index sampling approach designed to track the performance of the Bloomberg U.S. Aggregate Index. The Fund matched the benchmark performance for the quarter with a -0.8% return.

Stable Value Fund
Galliard Capital Management manages the Stable Value Fund in a separately managed account. The Fund's assets are invested in short- and intermediate-duration fixed-income securities combined with investment contracts from financial institutions. The contracts have features designed to smooth the impact of changes in interest rates on the value of participant accounts and provide a stable net asset value. The Stable Value Fund returned +0.8% for the quarter compared to a +1.2% return for its benchmark, the 3-Year Constant Maturity Treasury Yield +45 basis points. In periods of rapidly rising interest rates, as experienced over the last 18 months, the crediting rate performance of stable value strategies can be expected to lag the change in prevailing market yields. The Fund's overall quarterly return was within expectations given current market conditions.

Money Market Fund
State Street Global Advisors manages the cash option in a commingled pool called the Short-Term Investment Strategy. The Fund returned +1.4% for the quarter, slightly outperforming the ICE BofA 3 Month U.S. T-Bill Index return of +1.3%.

Balanced Option

Vanguard Balanced Index
The Fund seeks capital appreciation, current income, and long-term income growth by employing an index sampling approach designed to track the investment performance of a composite benchmark of 60% CRSP U.S. Total Stock Market Index and 40% Bloomberg U.S. Aggregate Float Adjusted Index. The Balanced Fund returned +5.7% for the quarter, slightly outperforming the composite benchmark return of +5.6%.

Non-Retirement Fund Commentaries
First Quarter 2024

Assigned Risk Plan Fixed Income Manager

RBC Global Asset Management actively manages the fixed income portfolio for the Assigned Risk Plan relative to the Bloomberg U.S. Government Intermediate Index, focusing on security selection and sector allocation. The portfolio returned -0.4% for the quarter, slightly lagging the benchmark return of -0.3%. For the quarter, positive performance from a modest overweight to spread sectors, such as Agency mortgage-backed securities and municipals, was offset by a slightly longer duration position relative to the benchmark, which hurt performance as rates rose during the period.

Non-Retirement Program Fixed Income Manager

Prudential Global Investment Management (PGIM) actively manages the Non-Retirement Fixed Income Portfolio relative to the Bloomberg U.S. Aggregate Index in a separately managed portfolio. The Portfolio returned -0.5% for the quarter, slightly outperforming the benchmark return of -0.8%. Relative outperformance was primarily attributed to an overweight position and security selection within non-agency commercial mortgage-backed securities (CMBS) along with overweight sector allocations in emerging markets, investment-grade corporates, and asset-backed securities (ABS).

Non-Retirement Program Domestic Equity Manager

Mellon Investments Corporation passively manages the Non-Retirement Domestic Equity Portfolio in a separately managed portfolio. The Portfolio employs a full replication indexing approach designed to track the performance of its benchmark, the S&P 500 Index. The Portfolio performance matched the benchmark for the quarter, returning +10.6%.

Non-Retirement Program Money Market Manager

State Street Global Advisors manages the Non-Retirement Money Market Fund against the iMoneyNet All Taxable Money Fund Average. The Fund returned +1.4% for the quarter, slightly outperforming the benchmark return of +1.3%.

Organizational Updates with
Participant-Directed Investment Program Funds and
Non-Retirement Managers
First Quarter 2024

Vanguard (Participant-Directed Investment Program)
In February 2024, Vanguard announced that CEO and Chairman Tim Buckley will retire from the firm by year-end 2024. Vanguard's Board of Directors is in the process of evaluating both internal and external candidates for the future CEO. In addition, CIO Greg Davis was promoted to President of the firm.

PGIM (Non-Retirement Fixed-Income)
In February 2024, Daleep Singh, Chief Global Economist and Head of Global Macroeconomic Research, departed PGIM Fixed Income to rejoin the United States federal government as U.S. Deputy National Security Advisor for International Economics. The macroeconomic research and strategy teams will continue to report through Gregory Peters.

RBC (Assigned Risk Plan Fixed-Income)
Brandon Swensen, co-head of the Minneapolis fixed income team with Brian Svendahl, left the firm in February 2024. Brandon was primarily responsible for the Investment-Grade Corporate Credit, Short-Duration, and Cash Management strategies. Brandon's departure does not impact the Intermediate Government strategy, and Brian has taken on the team's leadership in Minneapolis.

Manager Meetings
First Quarter 2024

During the quarter, Staff had one on-site due diligence meeting and one in-person portfolio review meeting, and the remaining portfolio reviews were conducted via videoconference.

Investment Manager	Management Style/Asset Class	Investment Program
• Ascensus	Multi-Asset Class Platform	PDIP (MN ABLE Plan)
• TIAA-CREF	Multi-Asset Class Platform	PDIP (MN 529 Plan)
• Dodge & Cox	Active, Fixed Income	PDIP
• Dimensional Fund Advisors	Real Estate Investment Trust (REIT)	PDIP (MN 529 Plan)
• Fidelity	Active, International Equity	PDIP
• Galliard	Active, Stable Value Fund	PDIP
• PGIM	Active, Fixed Income	Non-Retirement
• RBC	Active, Fixed Income	Assigned Risk Plan, Non-Retirement
• SSGA	Passive, Target Retirement Fund	PDIP
• T. Rowe Price	Active, Small Cap Equities	PDIP
• Vanguard	Passive, Total Stock Market Fund	PDIP
	Passive, Institutional S&P 500 Index	PDIP
	Passive, Mid Cap Index Fund	PDIP
	Passive, Total International Equity	PDIP
	Passive, Bond Fund	PDIP
	Passive, Balanced Fund	PDIP
	Active, Dividend Growth Fund	PDIP

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REPORT

AON Market Environment Report

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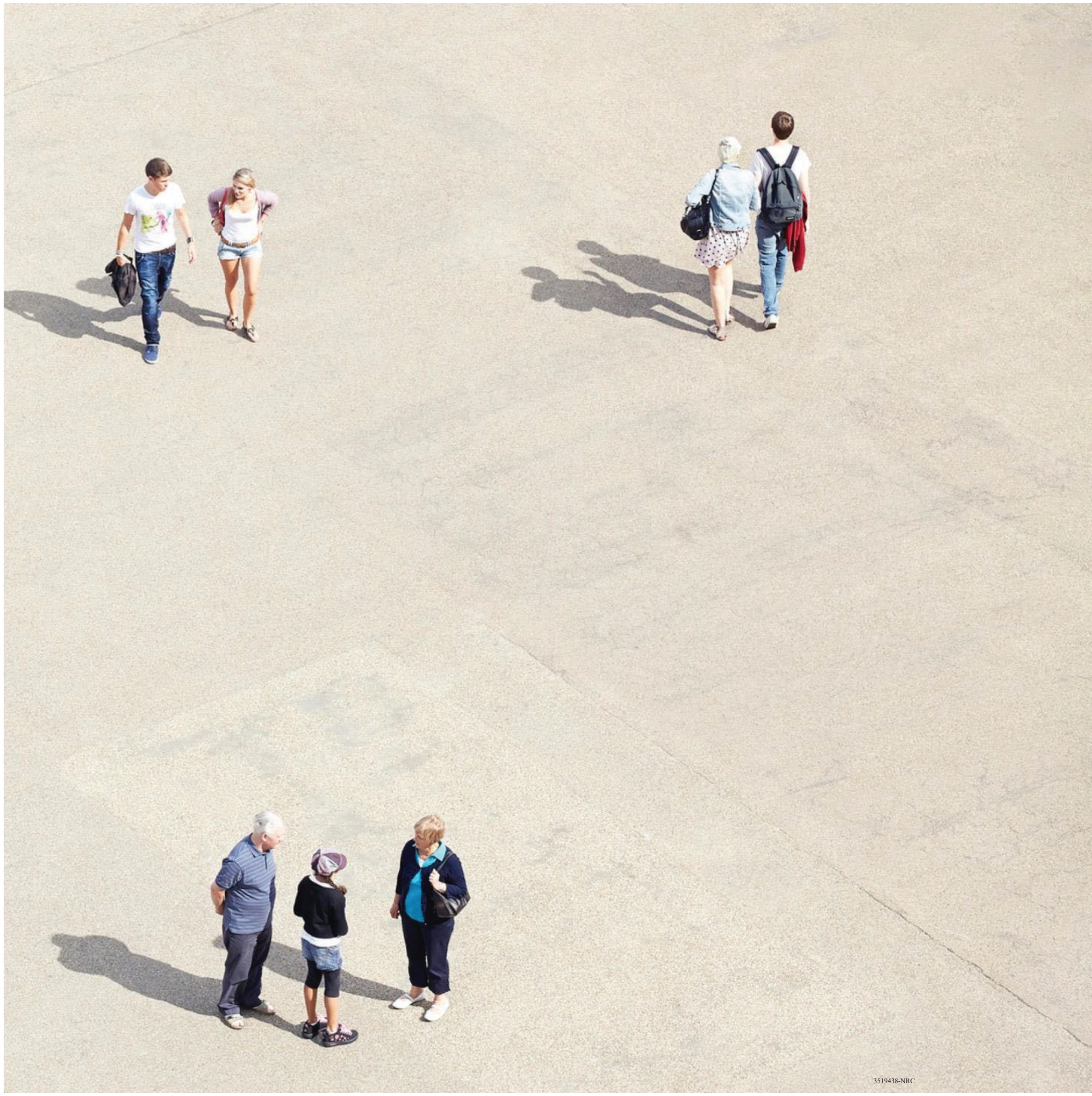
Market Environment

First Quarter 2024



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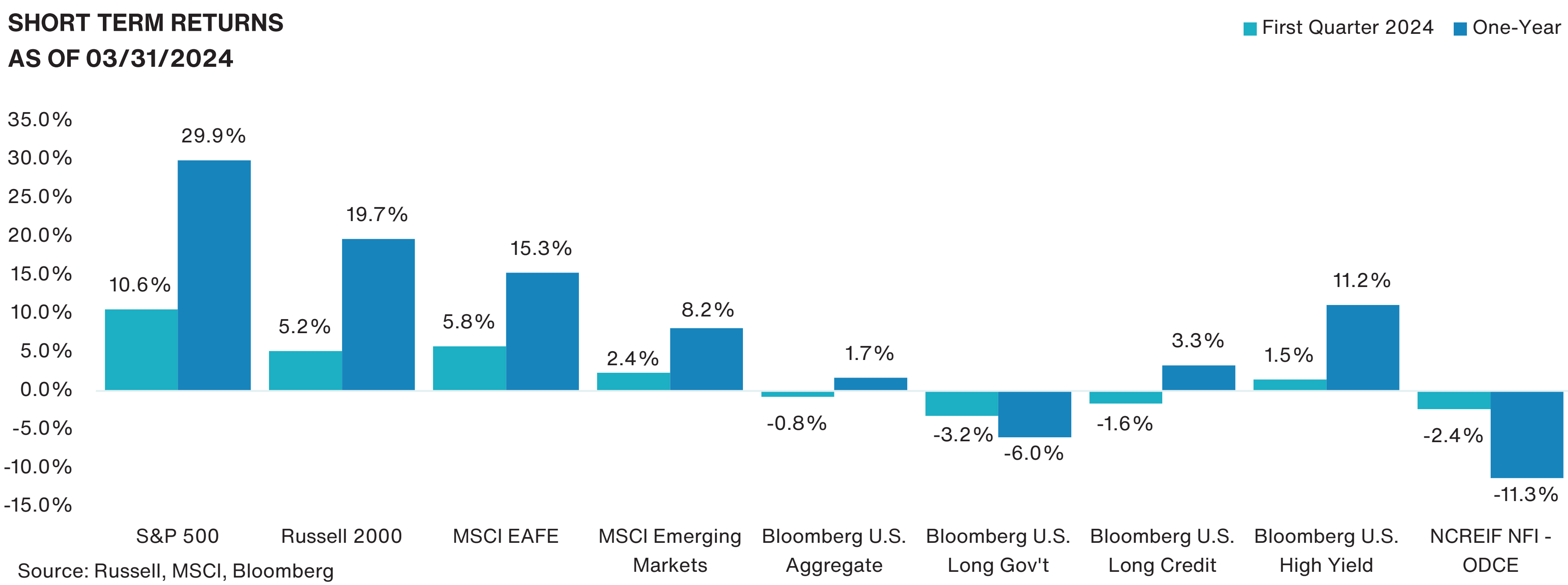
Market Highlights

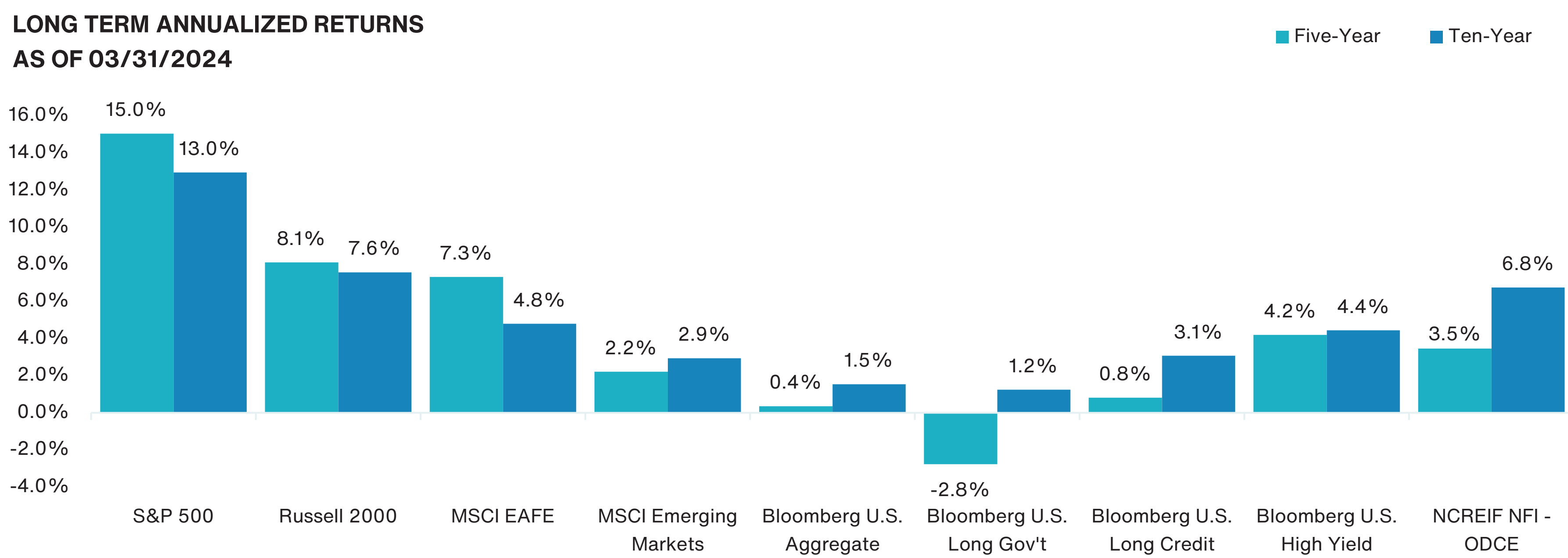


Source: Russell, MSCI, Bloomberg

MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Market Highlights



Source: Russell, MSCI, Bloomberg

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Market Highlights

Returns of the Major Capital Markets

Period Ending 03/31/2024

	First Quarter	YTD	1-Year	3-Year[1]	5-Year[1]	10-Year[1]
Equity						
MSCI All Country World IMI	7.72%	7.72%	22.45%	6.31%	10.57%	8.43%
MSCI All Country World	8.20%	8.20%	23.22%	6.96%	10.92%	8.66%
Dow Jones U.S. Total Stock Market	10.05%	10.05%	29.35%	9.63%	14.23%	12.24%
Russell 3000	10.02%	10.02%	29.29%	9.78%	14.34%	12.33%
S&P 500	10.56%	10.56%	29.88%	11.49%	15.05%	12.96%
Russell 2000	5.18%	5.18%	19.71%	-0.10%	8.10%	7.58%
MSCI All Country World ex-U.S. IMI	4.33%	4.33%	13.20%	1.72%	6.00%	4.32%
MSCI All Country World ex-U.S.	4.69%	4.69%	13.26%	1.94%	5.97%	4.25%
MSCI EAFE	5.78%	5.78%	15.32%	4.78%	7.33%	4.80%
MSCI EAFE (Local Currency)	9.96%	9.96%	18.82%	9.43%	9.36%	7.66%
MSCI Emerging Markets	2.37%	2.37%	8.15%	-5.05%	2.22%	2.95%
Equity Factors						
MSCI World Minimum Volatility (USD)	5.81%	5.81%	11.85%	5.54%	6.61%	8.33%
MSCI World High Dividend Yield	5.79%	5.79%	14.31%	7.11%	8.21%	7.04%
MSCI World Quality	11.70%	11.70%	34.17%	12.41%	16.20%	13.33%
MSCI World Momentum	20.21%	20.21%	36.51%	8.46%	13.31%	12.37%
MSCI World Enhanced Value	7.03%	7.03%	21.67%	7.47%	8.42%	6.48%
MSCI World Index Growth	10.28%	10.28%	31.48%	9.15%	15.36%	12.31%
MSCI USA Minimum Volatility (USD)	7.69%	7.69%	16.72%	8.29%	9.30%	11.00%
MSCI USA High Dividend Yield	8.14%	8.14%	16.36%	7.95%	8.82%	9.99%
MSCI USA Quality	12.92%	12.92%	39.31%	13.51%	17.32%	15.20%
MSCI USA Momentum	20.31%	20.31%	37.54%	7.16%	12.56%	13.72%
MSCI USA Enhanced Value	7.84%	7.84%	20.36%	4.99%	9.48%	8.93%
MSCI USA Equal Weighted	8.23%	8.23%	22.39%	6.90%	11.58%	10.34%
MSCI USA Growth	11.72%	11.72%	39.63%	11.86%	18.96%	16.04%

Returns of the Major Capital Markets

Period Ending 03/31/2024

	First Quarter	YTD	1-Year	3-Year[1]	5-Year[1]	10-Year[1]
Fixed Income						
Bloomberg Global Aggregate	-2.08%	-2.08%	0.49%	-4.73%	-1.17%	-0.07%
Bloomberg U.S. Aggregate	-0.78%	-0.78%	1.70%	-2.46%	0.36%	1.54%
Bloomberg U.S. Long Gov't	-3.24%	-3.24%	-6.03%	-8.01%	-2.77%	1.25%
Bloomberg U.S. Long Credit	-1.65%	-1.65%	3.31%	-4.26%	0.83%	3.08%
Bloomberg U.S. Long Gov't/Credit	-2.41%	-2.41%	-1.15%	-6.04%	-0.62%	2.32%
Bloomberg U.S. TIPS	-0.08%	-0.08%	0.45%	-0.53%	2.49%	2.21%
Bloomberg U.S. High Yield	1.47%	1.47%	11.15%	2.19%	4.21%	4.44%
Bloomberg Global Treasury ex U.S.	-3.81%	-3.81%	-2.75%	-7.65%	-3.41%	-1.68%
JP Morgan EMBI Global (Emerging Market	1.40%	1.40%	9.53%	-1.10%	0.93%	2.85%
Commodities						
Bloomberg Commodity Index	2.19%	2.19%	-0.56%	9.11%	6.38%	-1.56%
Goldman Sachs Commodity Index	10.36%	10.36%	11.14%	18.05%	7.83%	-2.93%
Hedge Funds						
HFRI Fund-Weighted Composite[2]	4.52%	4.52%	11.68%	4.11%	6.92%	4.93%
HFRI Fund of Funds[2]	4.17%	4.17%	9.68%	2.88%	5.00%	3.59%
Real Estate						
NAREIT U.S. Equity REITS	-0.20%	-0.20%	10.54%	4.14%	4.15%	6.61%
NCREIF NFI - ODCE	-2.37%	-2.37%	-11.29%	3.37%	3.46%	6.76%
FTSE Global Core Infrastructure Index	1.80%	1.80%	4.50%	2.88%	4.73%	6.69%
Private Equity						
Burgiss Private iQ Global Private Equity[3]			2.47%	19.41%	15.14%	14.53%

MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

[1] Periods are annualized.

[2] Latest 5 months of HFR data are estimated by HFR and may change in the future.

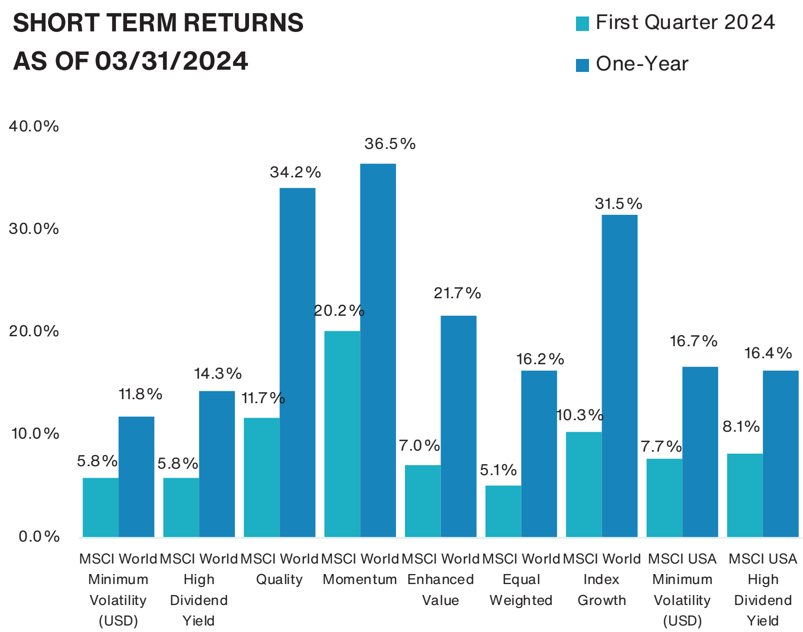
[3] Burgiss Private iQ Global Private Equity data is as at June 30, 2023

Source: Russell, MSCI, Bloomberg

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

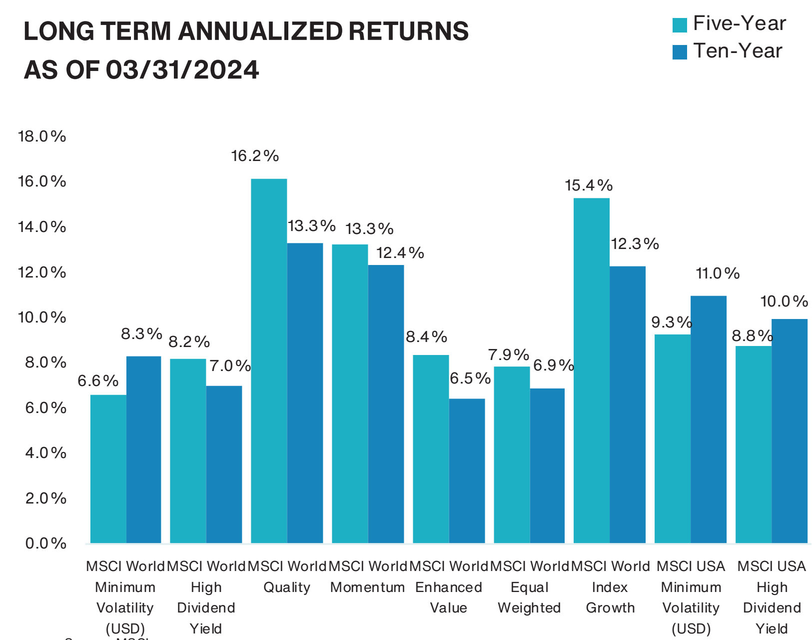
Factor Indices

SHORT TERM RETURNS
AS OF 03/31/2024



Source: MSCI
MSCI Indices show net total returns throughout this report.
All other indices show gross total returns..

LONG TERM ANNUALIZED RETURNS
AS OF 03/31/2024



Source: MSCI
MSCI Indices show net total returns throughout this report. All other indices show gross total returns..

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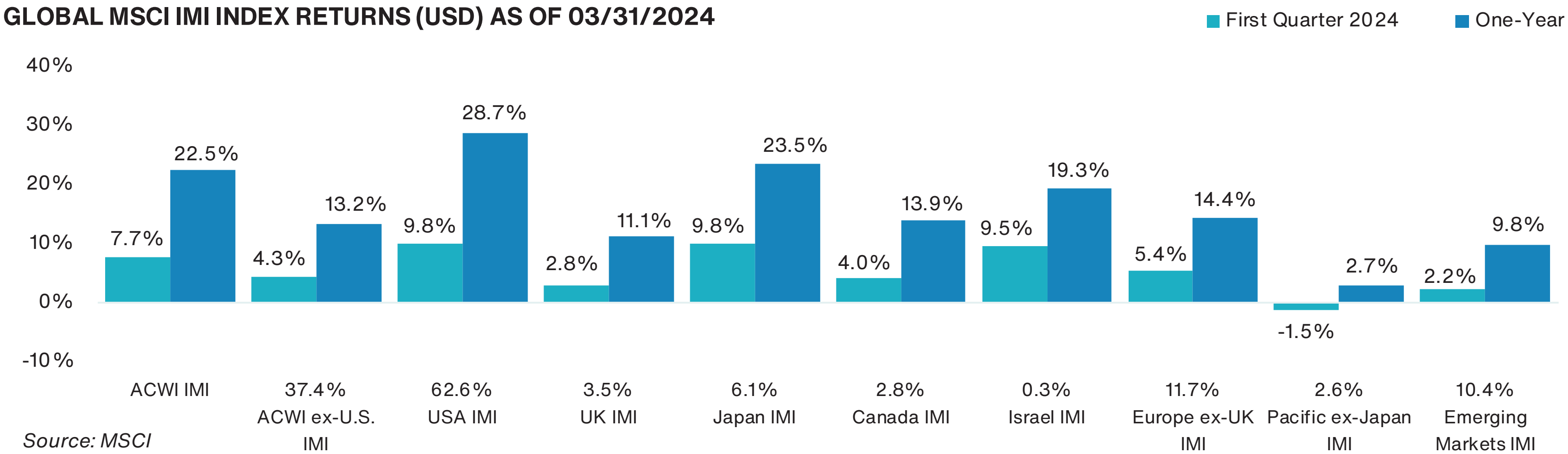
Global Equity Markets

GLOBAL MSCI IMI INDEX RETURNS (USD) AS OF 03/31/2024



Source: MSCI

- In Q1 2024, global equity markets appreciated significantly. The S&P 500 Index surpassed the 5000 level for the first time, driven by a positive earnings season expectations, easing inflation data, signs of economic resilience, and rallies from the tech giants. Volatility rose slightly during the quarter as the CBOE Volatility Index (VIX) rose to 13 in Q1 from 12.5 in the previous quarter, below its 20-year average of 19.1.
- Across international markets, all regions (except for Pacific ex-Japan) posted positive returns. U.S. equities posted strong returns over the quarter with major contributions coming from the Communication Services sector (14.3%).
- Pacific ex-Japan IMI was the worst performer with a return of -1.5% over the quarter. Materials (-9.7%) and Real Estate (-2.8%) weighed over Pacific ex-Japan equities.

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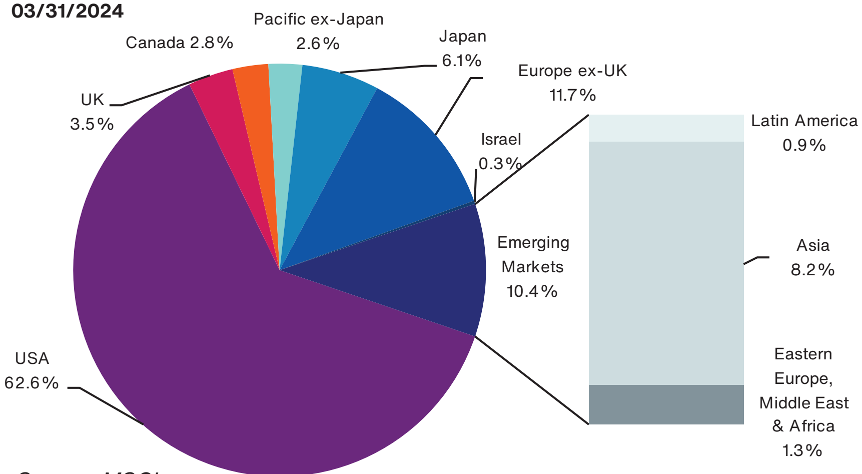
Global Equity Markets

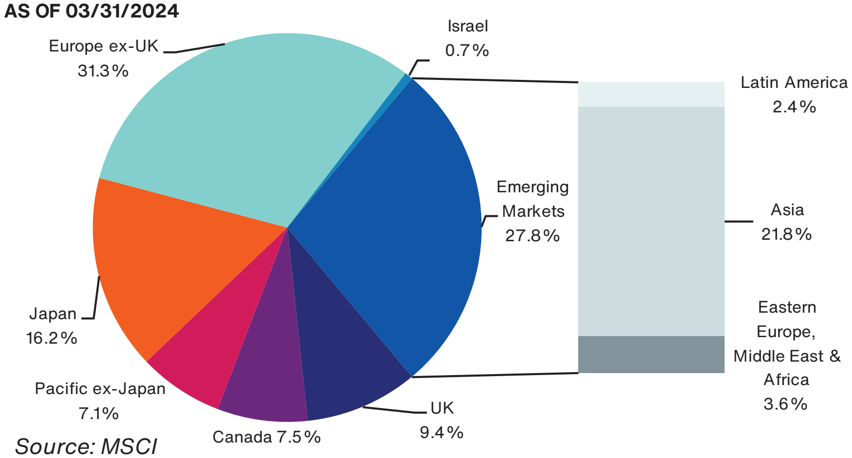
Below is the country/region breakdown of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

MSCI ALL COUNTRY WORLD IMI INDEX GEOGRAPHIC ALLOCATION AS OF 03/31/2024



Source: MSCI

MSCI ALL COUNTRY WORLD EX-U.S. IMI INDEX GEOGRAPHIC ALLOCATION AS OF 03/31/2024

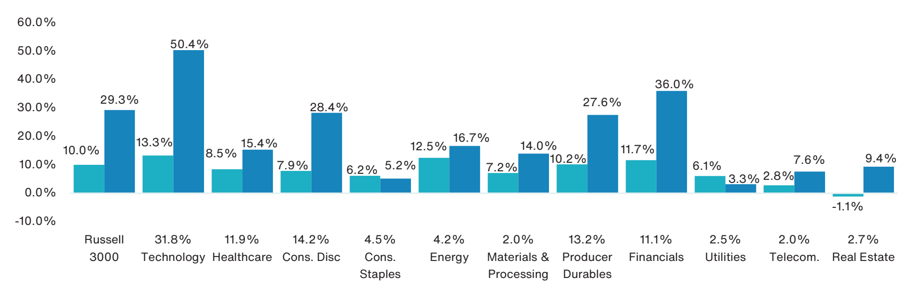


Source: MSCI

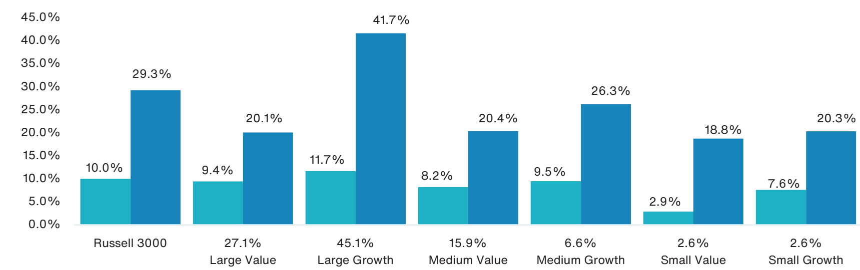
U.S. Equity Markets

- U.S. equities had a positive quarter with the S&P 500 Index rising by 10.6% amidst anticipated interest rate cuts in 2024 and easing inflation.
- U.S. President Joe Biden signed a $1.2 trillion spending bill to avert a partial government shutdown. The bill will keep the U.S. government funded until September 2024. Meanwhile, the U.S. Senate approved a $95 billion national security funding bill, which includes funding for Ukraine, Israel, and Taiwan. The bill's future is uncertain as it needs approval from the Republican-led House of Representatives.
- U.S. economic growth was 3.4% quarter-on-quarter at annualized rates in the fourth quarter, slightly higher than economists' forecasts of 3.3%. Continued growth in consumer spending remains the main driver.
- The Russell 3000 Index rose 10.0% during the first quarter and 29.3% on a one-year basis. Technology (13.3%) and Energy (12.5%) were the best performers while Real Estate (-1.1%) and Telecommunications (2.8%) were the worst performers.
- On a style basis, growth outperformed value across market capitalizations over the quarter. Large-cap stocks outperformed Medium and Small-cap stocks in both growth and value styles over the quarter.

RUSSELL SECTOR RETURNS AS OF 03/31/2024



RUSSELL STYLE RETURNS AS OF 03/31/2024



Source: Russell Indexes

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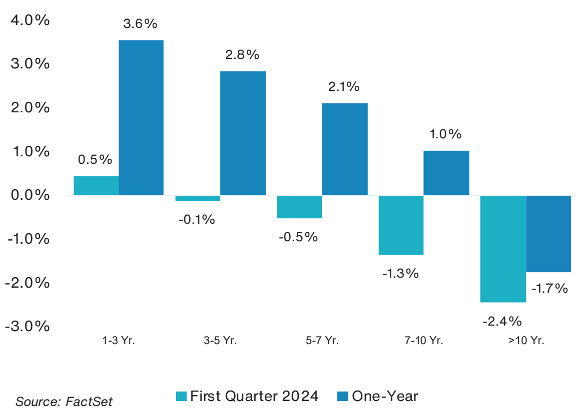
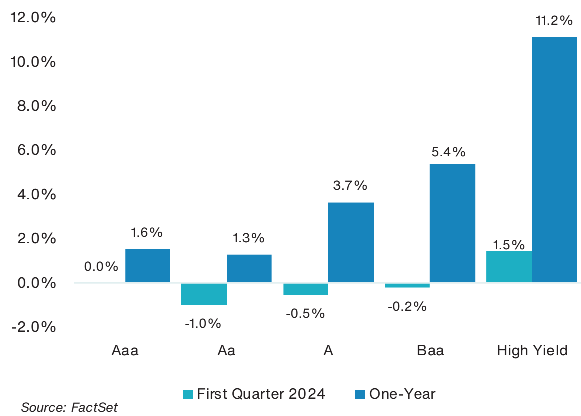
U.S. Fixed Income Markets

BLOOMBERG AGGREGATE RETURNS BY MATURITY AS OF 03/31/2024



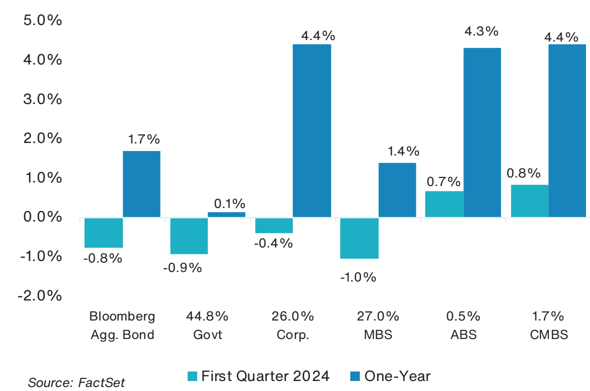
Source: FactSet

BLOOMBERG AGGREGATE RETURNS BY QUALITY AND HIGH YIELD RETURNS AS OF 03/31/2024



Source: FactSet

BLOOMBERG AGGREGATE RETURNS BY SECTOR AS OF 03/31/2024



Source: FactSet

- The U.S. Federal Reserve (Fed) kept its interest rate unchanged at 5.25%-5.5%. The Federal Open Market Committee (FOMC) does not expect it will be appropriate to reduce the target range until it has gained greater confidence that inflation is moving sustainably towards 2%. According to the latest Fed "dot plot", the FOMC members see three, quarter-point cuts this year.
- The Bloomberg U.S. Aggregate Bond Index was down 0.8% over the quarter but was up 1.7% on a one-year basis.
- Across durations, all maturities (except for 1-3 years) finished the quarter in negative territory with longer maturities falling more.
- Within investment-grade bonds, higher-quality issues generally underperformed lower-quality issues, with Aa-rated bonds comparatively falling more. Aaa-rated bonds were flat during the quarter. High yield bonds rose by 1.5%. On a one-year basis, high yield bonds outperformed indicating an increase in risk appetite.

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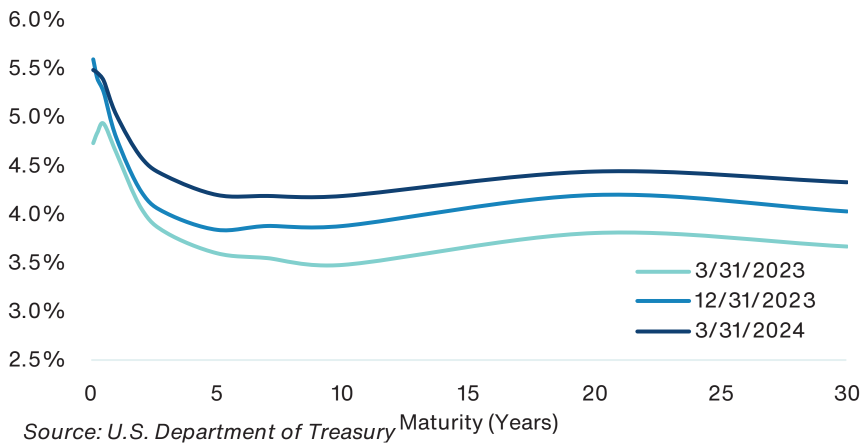
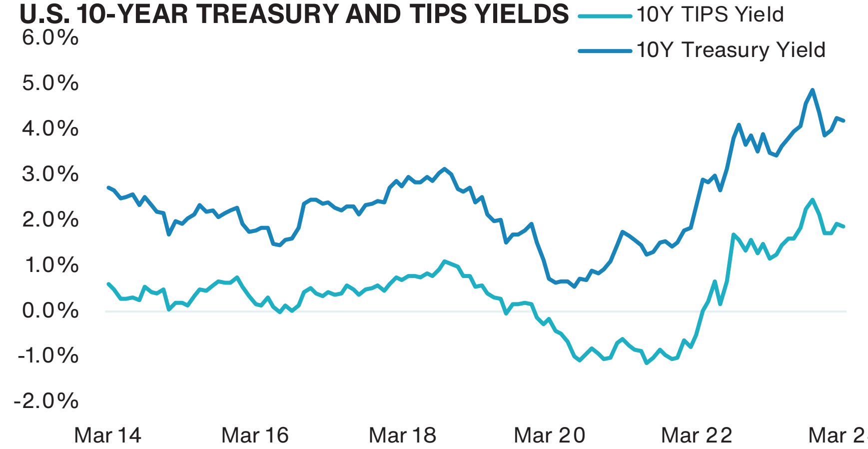
U.S. Fixed Income Markets

U.S. TREASURY YIELD CURVE



Source: U.S. Department of Treasury

U.S. 10-YEAR TREASURY AND TIPS YIELDS

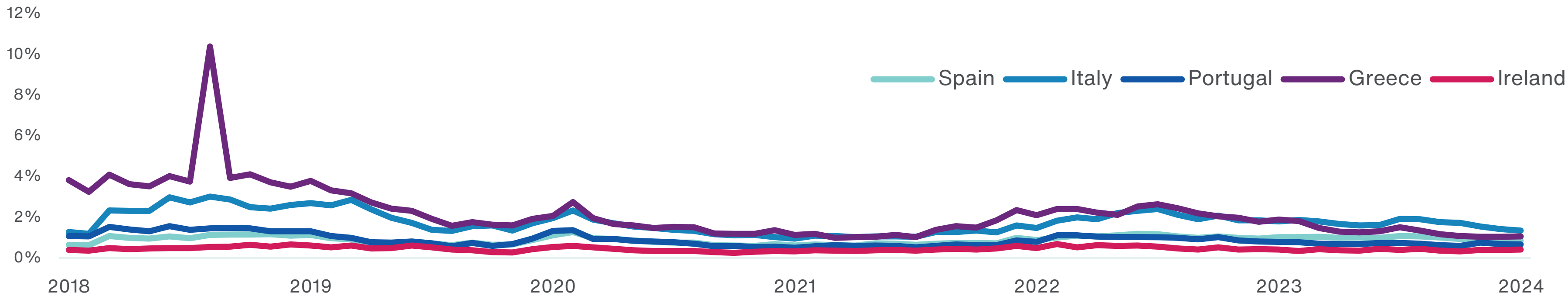


Source: U.S. Department of Treasury

- U.S. Treasury yields generally rose across maturities as the yield curve shifted upwards over the quarter. The 10-year Treasury yield rose by 32bps to 4.2%, and the 30-year Treasury yield rose by 31bps to 4.34% over the quarter.
- U.S. headline consumer price inflation (CPI) increased to 3.2% year-on-year in February. It exceeded economists' expectations and the previous month's reading of 3.1%. Meanwhile, U.S. core inflation, which excludes energy and food prices, reduced to 3.8% year-on-year in February, down from the previous month's 3.9% but higher than economists' expectations of 3.7%.
- The 10-year TIPS yield rose by 16bps over the quarter to 1.88%.

European Fixed Income Markets

EUROZONE PERIPHERAL BOND SPREADS (10-YEAR SPREADS OVER GERMAN BUNDS)



Source: FactSet

- European government bond spreads over 10-year German bunds generally narrowed across the Euro Area (except for Portugal and Ireland). The European Central Bank (ECB) kept its interest rate unchanged at an all-time high of 4.0% as it lowered its annual inflation forecast. The Governing Council (GC) is determined to ensure that inflation returns to its 2% medium-term target in a timely manner. Based on its current assessment, the GC considers restricting key ECB interest rates for a sufficiently long duration, will make a substantial contribution to this goal.
- Irish and Portuguese government bond yields rose by 38bps and 37bps to 2.73% and 2.98%, respectively over the quarter while Italian government bond yields fell by 8bps to 3.66%. Greek and Spanish government bond yields rose by 27bps and 20bps to 3.37% and 3.15%, respectively over the quarter.
- German bund yields rose by 30bps to 2.3% over the quarter.
- Eurozone headline inflation slowed as the CPI rose 2.6% year-on-year in February, down from the previous month's rate of 2.8% but higher than market expectations of 2.5%. Core inflation slowed to 3.1% in the year to February, down from January's 3.3% but higher than economists' forecast of 2.9%.

AON

Credit Spreads

Spread (bps)	3/31/2024	12/31/2023	3/31/2023	Quarterly Change (bps)	One-Year
U.S. Aggregate	39	42	57	-3	-18
Long Gov't	0	2	2	-2	-2
Long Credit	109	117	159	-8	-50
Long Gov't/Credit	57	62	86	-5	-29
MBS	49	47	63	2	-14
CMBS	96	126	142	-30	-46
ABS	55	68	85	-13	-30
Corporate	90	99	138	-9	-48
High Yield	299	323	455	-24	-156
Global Emerging Markets	260	294	352	-34	-92

FactSet, Bloomberg

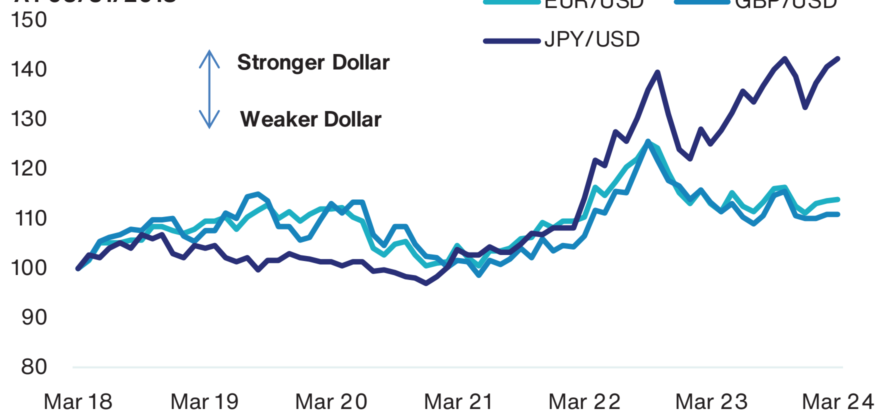
- Credit markets rose amid increasing risk tolerance sentiment, with spreads generally narrowing.
- Global Emerging Markets and CMBS spreads narrowed by 34bps and 30bps, respectively. Meanwhile, MBS spreads widened by 2bps.

Currency

TRADE WEIGHTED U.S. DOLLAR INDEX (2006 = 100)

Source: Federal Reserve

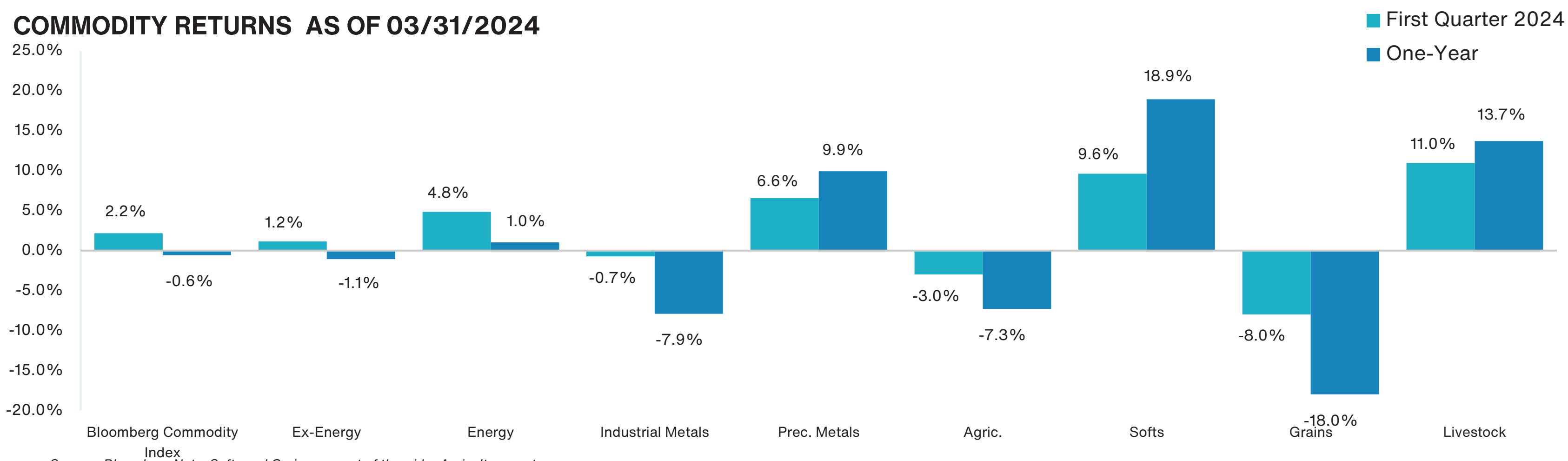
U.S. DOLLAR RELATIVE TO EUR, GBP AND JPY REBASED TO 100 AT 03/31/2018



Source: FactSet

- The U.S. Dollar appreciated against all major currencies over the quarter. On a trade-weighted basis, the U.S. dollar appreciated by 2.4%.
- Sterling depreciated by 0.9% against the U.S. dollar. The Bank of England (BoE) kept its interest rate stable at 5.25% for the fifth consecutive meeting. The Monetary Policy Committee (MPC) voted eight to one to maintain the current interest rate. One member was in favor of a 25bps rate cut. The MPC indicated that monetary policy will need to remain restrictive for sufficiently long to return inflation to the 2% target sustainably in the medium term.
- The U.S. dollar appreciated by 2.3% against the euro and by 7.4% against the yen.

Commodities

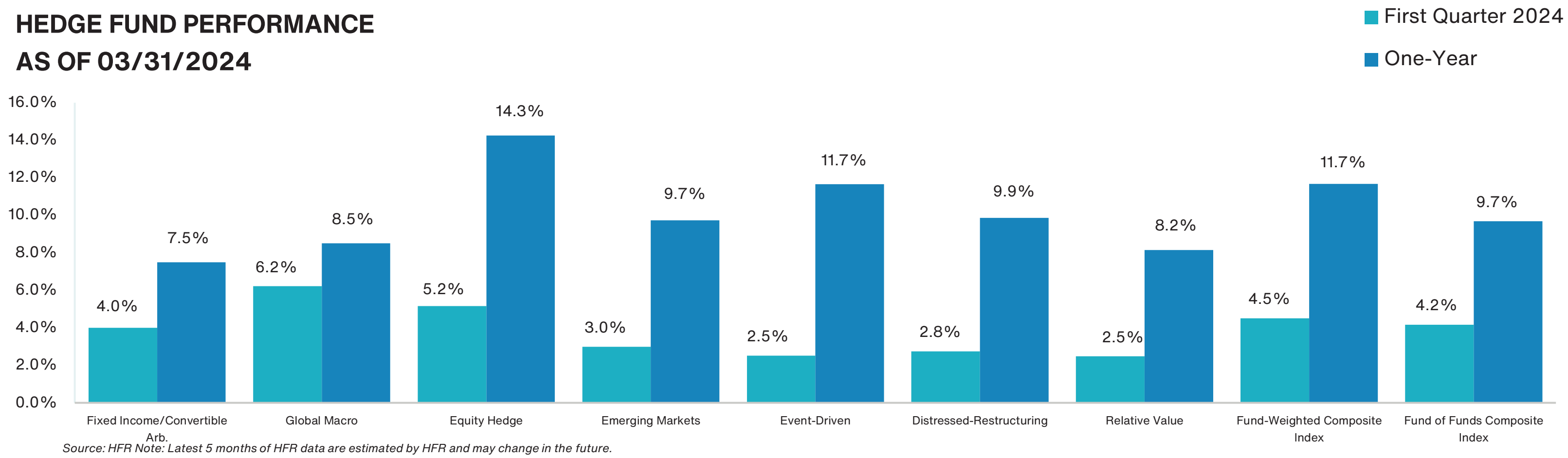


Source: Bloomberg Note: Softs and Grains are part of the wider Agriculture sector

- Commodity prices rose over the quarter with the Bloomberg Commodity Index rising by 2.2% for the quarter.
- The Energy sector was up by 4.8% over the quarter and 1% on a one-year basis. The price of WTI crude oil was significantly up by 16.1% to U.S.$83/BBL.
- Livestock rose the most over the quarter at 11.0%.
- The grain sector was the worst performer with a return of -8.0% over the quarter.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Hedge Funds Market Overview

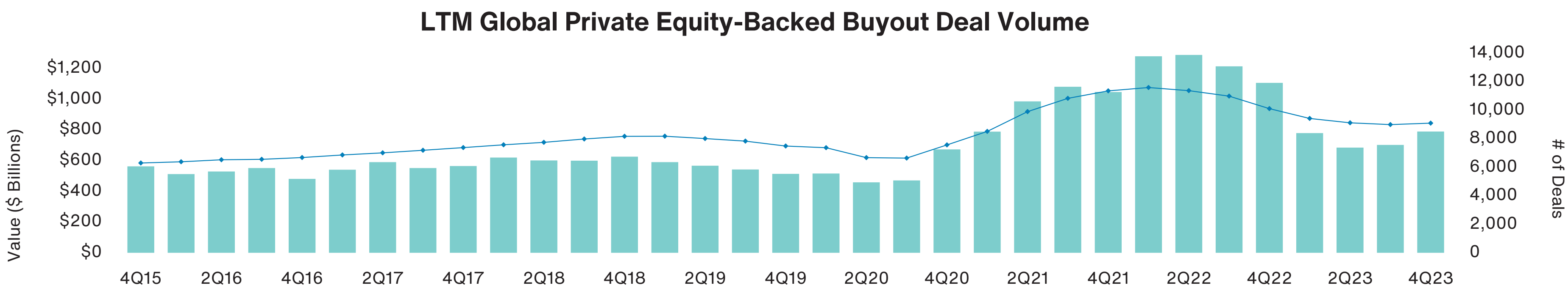


Source: HFR Note: Latest 5 months of HFR data are estimated by HFR and may change in the future.

- Hedge fund performance was positive over the quarter.
- The HFRI Fund-Weighted Composite and HFRI Fund of Funds Composite Index produced returns of 4.5% and 4.2% over the quarter, respectively.
- Over the quarter, Global Macro was the best performer with a return of 6.2%.
- Relative Value was the worst performer with a return of 2.5% over the quarter.
- On a one-year basis, Equity Hedge has outperformed all other strategies whilst Fixed Income/Convertible Arbitrage has performed the worst.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees and expenses. Please see appendix for index definitions and other general disclosures.

Private Equity Overview — Fourth Quarter 2023

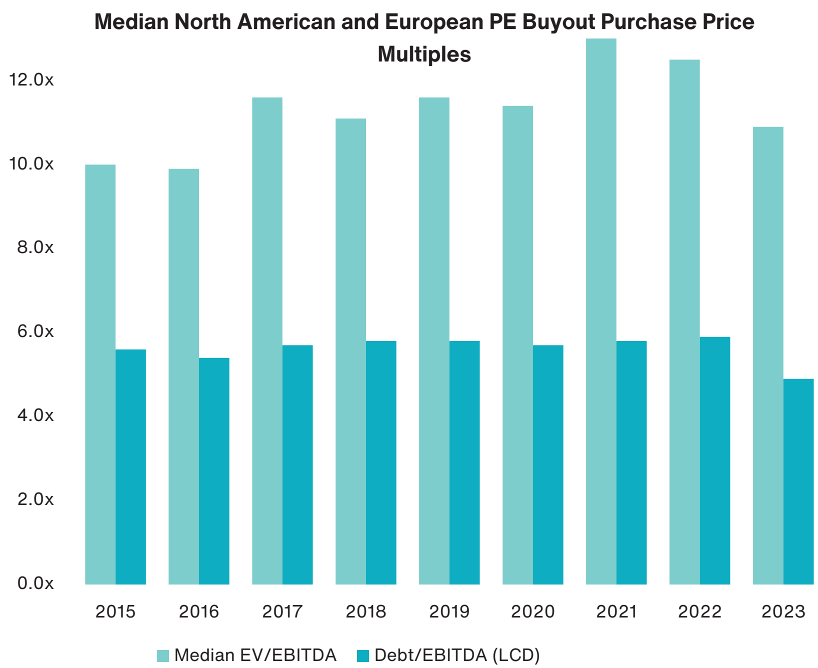


Source: Preqin

- **Fundraising:** In 2023, $1.1 trillion was raised by 2,544 funds, which was a decrease of 14.4% on a capital basis and a decrease of 41.1% by number of funds over the prior year. Dry powder stood at $3.2 trillion at the end of the year, an increase of 15.9% and 39.4% compared to year-end 2022 and the five-year average, respectively.[1]
- **Buyout:** Global private equity-backed buyout deals totaled $788.6 billion in 2023, which was a decrease on a capital basis of 28.6% compared to 2022 but 30.6% higher compared to the five-year average.[1] During the year, the median purchase price multiple for all North American and European private equity buyouts was 10.9x EBITDA, down from 12.5x in 2022 and down from the five-year average (12.0x). The median purchase price multiple for North American PE buyouts ended the year at 11.8x EBITDA, while European LBO transactions ended the year at 10.2x EBITDA.2 Globally, buyout exit value totaled $444.7 billion across 2,077 deals during the year, down from $498.4 billion in value from 2,030 deals during 2022.[1]
- **Venture:** During the year, an estimated 15,766 venture-backed transactions totaling $170.6 billion were completed, which was a decrease on both a capital and deal count basis over the prior year's total of $242.2 billion across 17,592 deals. This was also a decrease of 19.5% compared to the five-year average of $212.0 billion. Total U.S. venture-backed exit value decreased during the year, totaling approximately $61.5 billion across an estimated 1,129 completed transactions, compared to $78.6 billion across 1,401 exits in 2022. This was meaningfully below the $796.8 billion of exit value from 1,990 transactions during 2021.[3]

Sources: 1 Preqin 2 Pitchbook/LCD 3 PitchBook/NVCA Venture Monitor 4 Fitch Ratings 5 Jefferies
Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

Private Equity Overview (cont.)



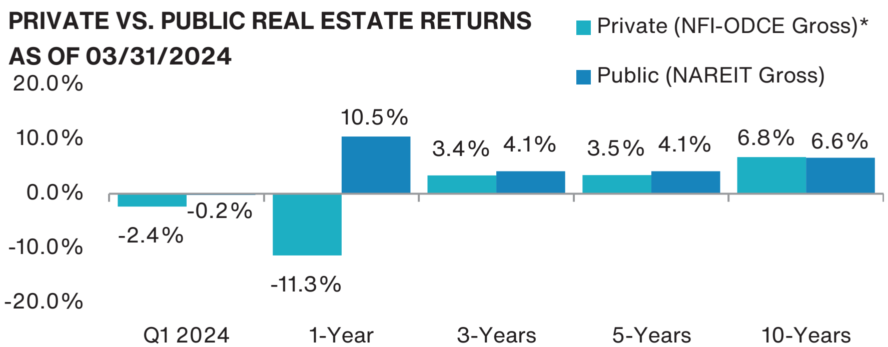
Source: Pitchbook, LCD

- **Mezzanine:** 28 funds closed on $38.6 billion during the year. This was an increase from the prior year's total of $27.1 billion raised by 52 funds and represented an increase of 72.6% from the five-year average of $22.4 billion. Estimated dry powder was $65.5 billion at the end of 2023, up from $57.7 billion at the end of the prior year.[1]
- **Distressed Debt/Special Situations:** The TTM U.S. high-yield default rate was 3.0% as of December 2023, which was up from December 2022's TTM rate of 1.3%. Fitch expects the high-yield default rate to continue trending higher through 2024, with forecasted default rates of 5.0% to 5.5%.[4] During the year, $53.2 billion was raised by 61 funds, down from the $62.8 billion raised by 70 funds during 2022. Dry powder was estimated at $164.0 billion at the end of Q4 2023, which was down 1.4% from Q4 2022. This remained above the five-year average level of $142.1 billion.[1]
- **Secondaries:** 58 funds raised $93.8 billion during 2023, up substantially from the $36.2 billion raised by 70 funds in 2022. This was an increase compared to the five-year average of $42.0 billion.[1] The average discount rate for LP buyout and venture capital portfolios finished the year at 9.0% and 32.0%, respectively.[5]
- **Infrastructure:** $77.6 billion of capital was raised by 84 funds in 2023 compared to $177.0 billion of capital raised by 159 partnerships in 2022. Infrastructure funds are staying in market longer, with 55.2% of closed funds fundraising for two years or more. Infrastructure managers completed 2,067 deals for an aggregate deal value of $308.2 billion in 2023 compared to 2,652 deals totaling $420.4 billion in 2022.[1]
- **Natural Resources:** During 2023, 27 funds closed on $10.5 billion compared to 39 funds totaling $5.7 billion in 2022. 277 energy and utilities deals were completed in 2023 totaling $40.0 billion, an increase compared to 237 completed deals totaling $36.7 billion in 2022.[1]

Sources: 1 Preqin 2 Pitchbook/LCD 3 PitchBook/NVCA Venture Monitor 4 Fitch Ratings 5 Jefferies

U.S. Commercial Real Estate Markets

PRIVATE VS. PUBLIC REAL ESTATE RETURNS AS OF 03/31/2024

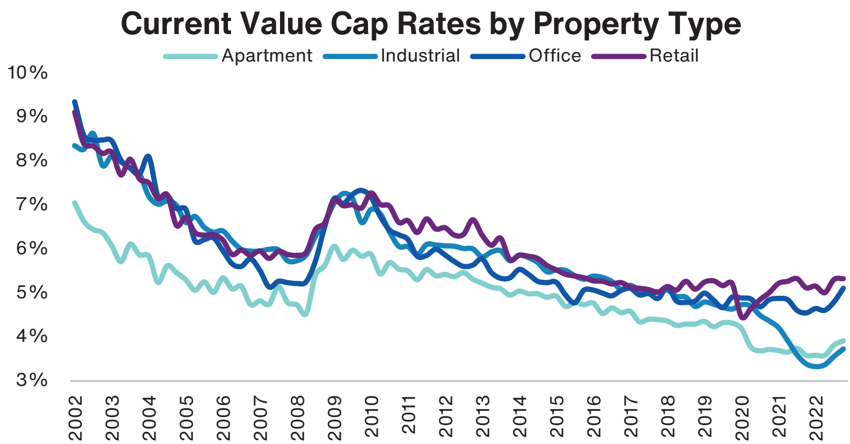


**First quarter returns are preliminary*

Sources: NCREIF, FactSet

- U.S. Core Real Estate returned -3.2%* gross return in the first quarter 2023, resulting in a -3.1% total gross return for the trailing one-year, including a 3.4% income return. Real estate capital markets have been impacted by the higher inflation and interest rate environment and resulting increased cost of capital. During the first quarter of 2023, REITs rebounded as inflationary pressures appeared to settle, and the perceived probability of fed funds rate cuts in 2023 increased.
- Global property markets, as measured by the FTSE EPRA/NAREIT Developed Real Estate Index, returned 1.0% (USD) in aggregate during the first quarter and experienced a cumulative decline of 20.6% over the trailing 1-year period. REIT market performance during the quarter was driven by North America (+2.7% USD), with Europe (-2.8% USD) and Asia Pacific (-2.2% USD) lagging the global Index. The U.S. REIT markets (FTSE NAREIT Equity REITs Index) returned 2.7% in the first quarter.
- In the first quarter of 2023, U.S. private real estate transaction volumes declined 56% from the first quarter of 2022 to $85 billion. This decline is the culmination of rising interest rates, the availability of capital, and a perceived bid-ask spread.

U.S. Commercial Real Estate Markets



Sources: NCREIF, FactSet

- While capital markets have created significant near-term headwinds for nearly every asset class, we believe real estate fundamentals have remained generally promising, but also highly bifurcated. Even in the midst of moderating rent growth, Multifamily properties continue to experience near record-high occupancy and may be a net beneficiary of the eroding affordability of homeownership in this high interest rate environment. Industrial vacancy rates are amongst the lowest which supports continued NOI growth, helping offset pricing pressure as a result of rising cap rates.
- The retail and office sectors are facing significant headwinds over the near term. Retail real estate demand has seen modest recovery from occupiers, but the sector faces declining consumer confidence and purchasing power. Additionally, work-from-home trends and a cooling labor market are impacting office space needs. Weakening demand and increasing sublease inventory have pushed occupancy rates down across the sector—although demand for high-quality assets in well-located markets has been more resilient than commodity product.
- Townsend has identified high conviction investment themes that are predicated on secular growth trends and strong underlying real estate market fundamentals. These investment themes have commonalities such as anticipated tenant demand growth, natural barriers to supply, and operating complexity that are anticipated to persist medium to long-term.

Appendix
Index Definitions

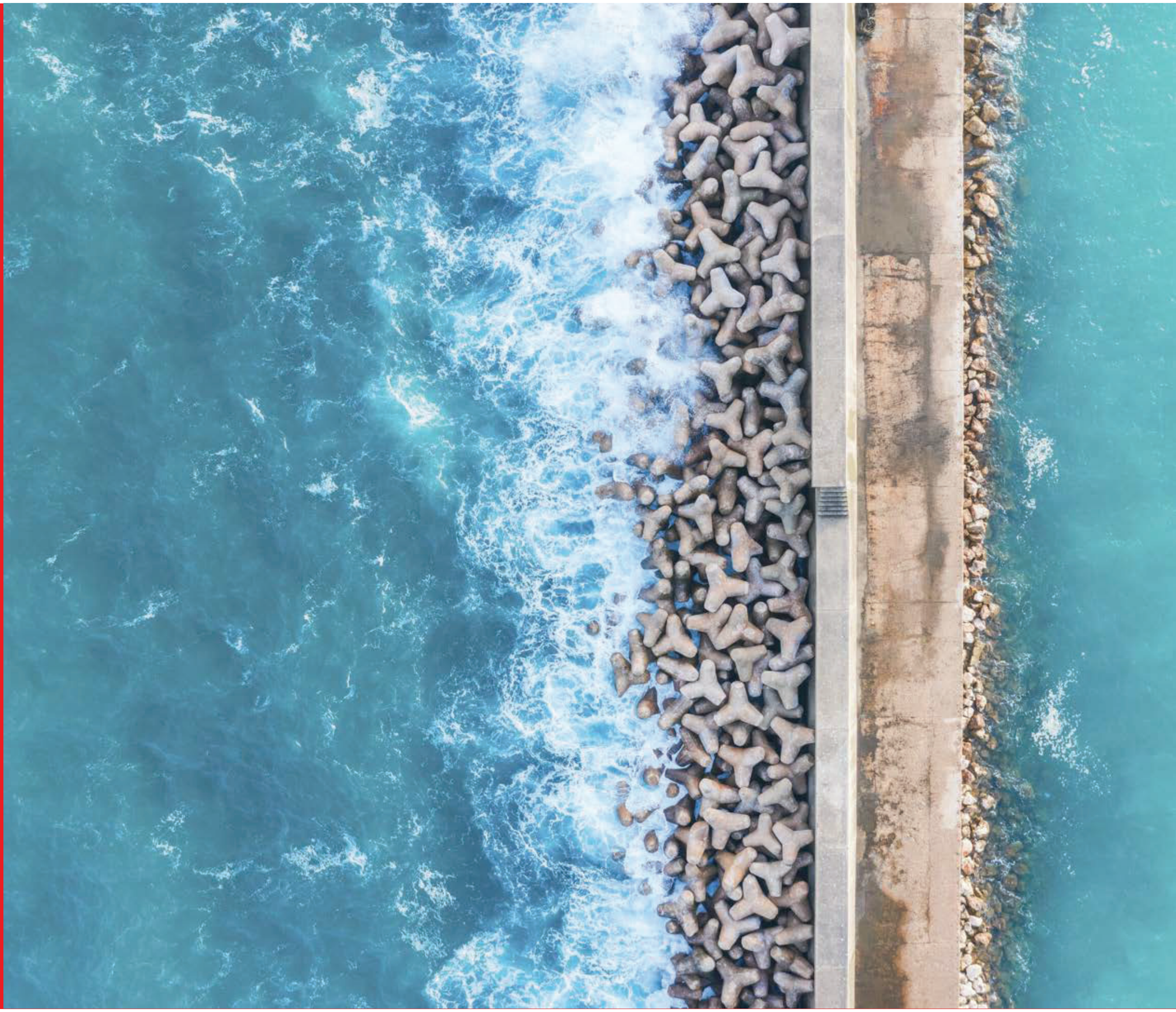
Index	Definition
MSCI AC World Index	The MSCI ACWI Index, MSCI's flagship global equity index, is designed to represent performance of the full opportunity set of large- and mid-cap stocks across 23 developed and 24 emerging markets. As of May 2022, it covers more than 2,933 constituents across 11 sectors and approximately 85% of the free float-adjusted market capitalization in each market.
MSCI All Country World Investable Market Index	A capitalization-weighted index of stocks representing approximately 49 developed and emerging countries, including the U.S. and Canadian markets and covering all investable large-, mid- and small-cap securities.
MSCI World Index	A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, representing 24 developed market country indices.
MSCI EAFE	The MSCI EAFE Index is an equity index which captures large and mid-cap representation across 21 Developed Markets countries* around the world, excluding the US and Canada. With 783 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
MSCI Emerging Markets	The MSCI Emerging Markets Index captures large and mid-cap representation across 24 Emerging Markets (EM) countries. With 1,441 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
MSCI Emerging Markets Investable Market Index	A capitalization-weighted index of stocks representing approximately 26 emerging countries, and covering all investable large-, mid- and small-cap securities.
MSCI Factor indexes	These are rules-based indexes that capture the returns of systematic factors that have historically earned a persistent premium over long periods of time—such as Value, Low Size, Low Volatility, High Yield, Quality and Momentum and Growth.
MSCI USA Value/Growth	The MSCI USA Value/Growth Index captures U.S. large and mid cap securities exhibiting overall value/growth style characteristics. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend.
Dow Jones U.S. Total Stock Market Index	A capitalization-weighted index of stocks representing all U.S. equity eligible securities.
S&P 500	The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities and serves as the foundation for a wide range of investment products. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.
S&P GSCI	A world-production weighted index that is based on the average quantity of production of each commodity in the index.
Russell 3000 Index	The Russell 3000 Index is a market-capitalization-weighted equity index that seeks to track 3000 of the largest U.S.-traded stocks.
Russell 2000 Index	The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 Index is a subset of the Russell 3000® Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership.
Bank of America Merrill Lynch U.S. Corporate Index	An unmanaged index considered representative of fixed-income obligations issued by U.S. corporates.
Bank of America Merrill Lynch U.S. High Yield Index	An unmanaged index considered representative of sub-investment grade fixed-income obligations issued by U.S. corporates.

Appendix
Index Definitions

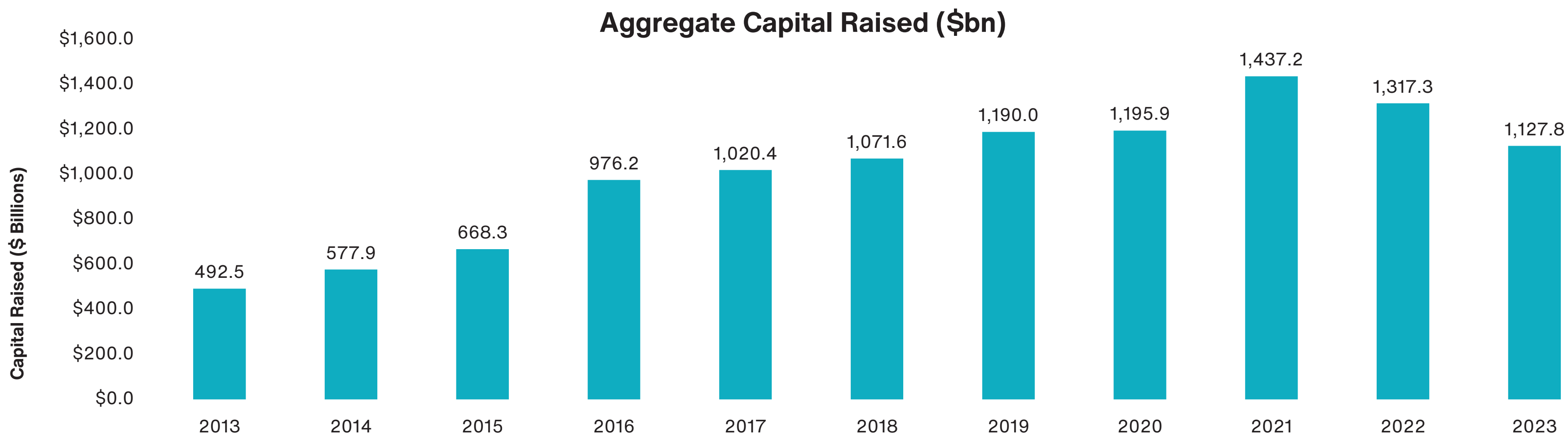
Index	Definition
Bloomberg U.S. Government Index	An unmanaged index considered representative of fixed-income obligations issued by the U.S. government.
Bloomberg Long Credit Index	An unmanaged index considered representative of long duration fixed-income obligations issued by U.S. corporates.
Bloomberg Global Aggregate Index	The Bloomberg Global Aggregate Index is a flagship measure of global investment grade debt from twenty-eight local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.
Bloomberg U.S. Aggregate Index	The Bloomberg US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, fixed rate agency MBS, ABS and CMBS (agency and non-agency).
Bloomberg U.S. TIPS Index	The Index measures the performance of the U.S. treasury inflation linked bond market.
JP Morgan EMBI Global	The J.P.Morgan Emerging Markets Bond Index Global ("EMBI Global") tracks total returns for traded external debt instruments in the emerging markets and is an expanded version of the JPMorgan EMBI+.
Bloomberg Commodity Index	The Bloomberg Commodity Index is a broadly diversified commodity price index distributed by Bloomberg Index Services Limited.
HFRI Fund Weighted Composite	The HFRI Fund Weighted Composite Index is a global, equal-weighted index of single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of $50 Million under management or $10 Million under management and a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.
HFRI Fund of Funds	HFR FOF Indices are comprised of funds that are constituents of the HFRI 500 Index and are designed to synthetically (S) represent the performance of Low, Mid or High volatility fund of funds.
FTSE NARIET	The FTSE Nareit U.S. Real Estate Index Series tracks the performance of the U.S. REIT industry at both an industry-wide level and on a sector-by-sector basis.
NCREIF NFI-ODCE	The NFI-ODCE, like the NCREIF Property Index (NPI) and other stock and bond indices, is a capitalization-weighted index based on each fund's net invested capital, which is defined as beginning market value net assets (BMV), adjusted for weighted cash flows (WCF) during the period.
FTSE Global Core Infrastructure	The FTSE Infrastructure Index Series is a comprehensive set of nine cap-weighted indices, diversified across six FTSE-defined infrastructure sub-sectors, to reflect the performance of infrastructure and infrastructure-related listed securities worldwide.

Q4 2023 Global Private Equity Market Overview

April 2024



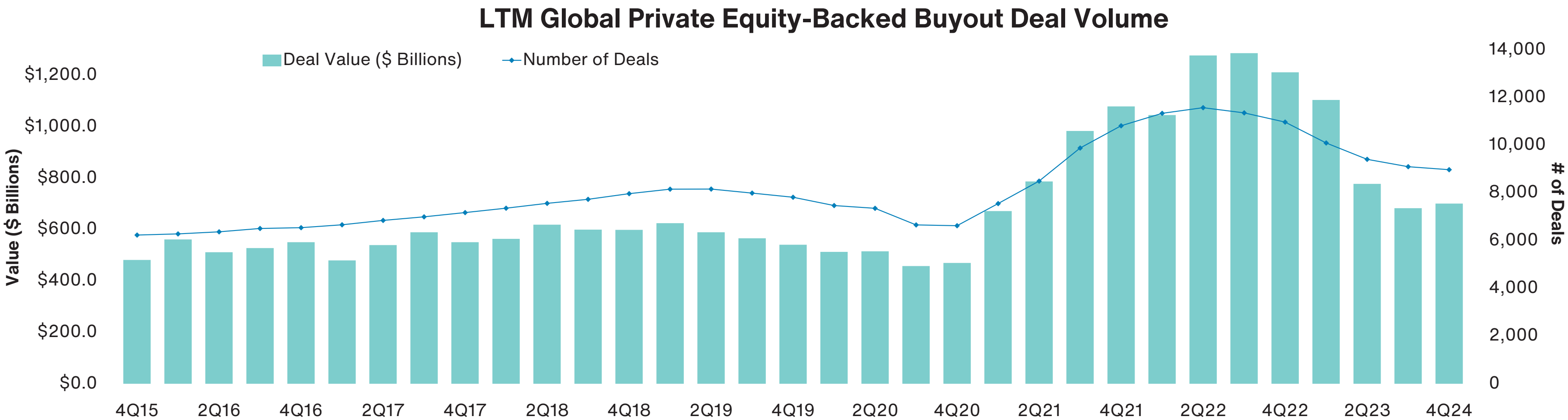
Private Equity Overview



Fundraising

- In 2023, $1.1 trillion was raised by 2,544 funds, which was a decrease of 14.4% on a capital basis and a decrease of 41.1% by number of funds over the prior year. Capital raised in Q4 2023 represented an increase of 30.1% compared to the prior quarter.[1]
  - 2023 fundraising was 9.2% lower, on a capital basis, and 80.2% lower, by number of funds, compared to the five-year average.
  - The majority of capital was raised by funds located in North America, comprising 63.1% of the year's total. This was up from 58.8% in 2022. Capital raised by European managers accounted for 20.4% of the total capital raised during the year, an increase from 17.2% in 2022. The remainder was attributable to managers located in Asia and other parts of the world.
- Dry powder stood at $3.2 trillion at the end of the year, an increase of 15.9% and 39.4% compared to year-end 2022 and the five-year average, respectively.[1]

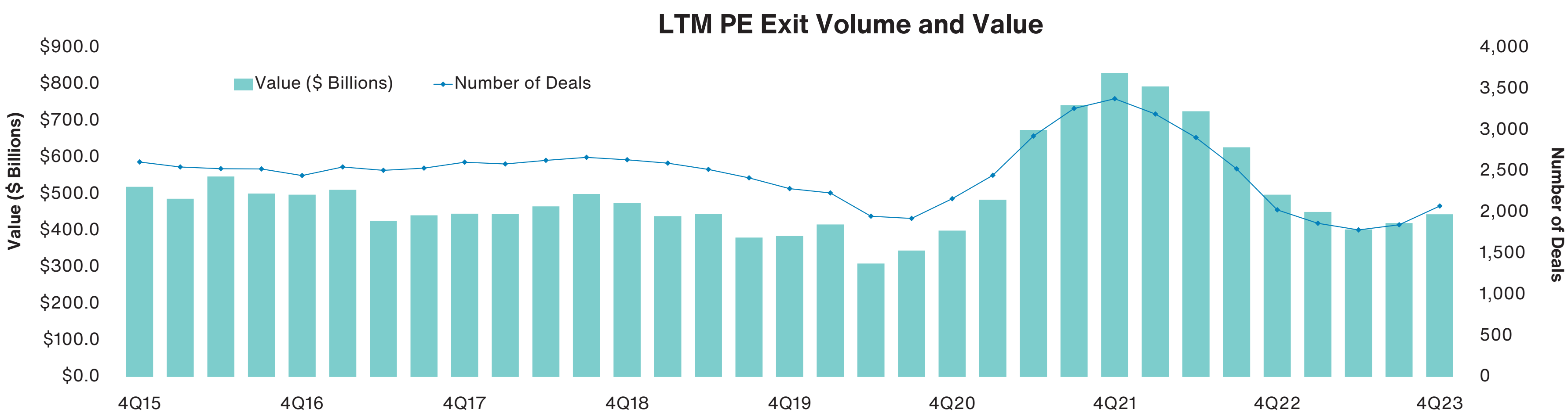
Private Equity Overview (cont.)



Activity

- Global private equity-backed buyout deals totaled $788.6 billion in 2023, which was a decrease on a capital basis of 28.6% compared to 2022.[1]
  - However, this was an increase of 30.6% compared to the five-year average.
  - Average deal size was $504.9 million in 2023. This was down 26.6% compared to 2022 and down 2.3% relative to the five-year average.
- On an LTM basis, the median purchase price multiple for North American PE buyout transactions was 11.8x EBITDA at the end of Q4 2023, down from 2022's median level of 13.3x and down from the peak level seen in 2021 of 13.5x EBITDA.[3]
  - Median purchase price multiples for all North American PE buyout transactions were 0.3x (multiple of EBITDA) below the five-year average, but 0.9x higher than the ten-year average.
- In Europe, the median purchase price multiple ended 2023 at 10.2x EBITDA on an LTM basis, down from 12.3x in 2022 and down from 13.1x in 2021. This was also below the five-year and ten-year averages of 12.0x EBITDA and 11.3x EBITDA, respectively.[3]
- GPs were able to obtain debt financing for completed deals but utilized more equity to consummate transactions.
  - The median debt/EBITDA multiple through 2023 across North American and European PE buyout transactions was 4.9x compared to the five-year and ten-year averages of 5.8x and 5.7x, respectively.[3]

Buyouts / Corporate Finance



Sources: Preqin

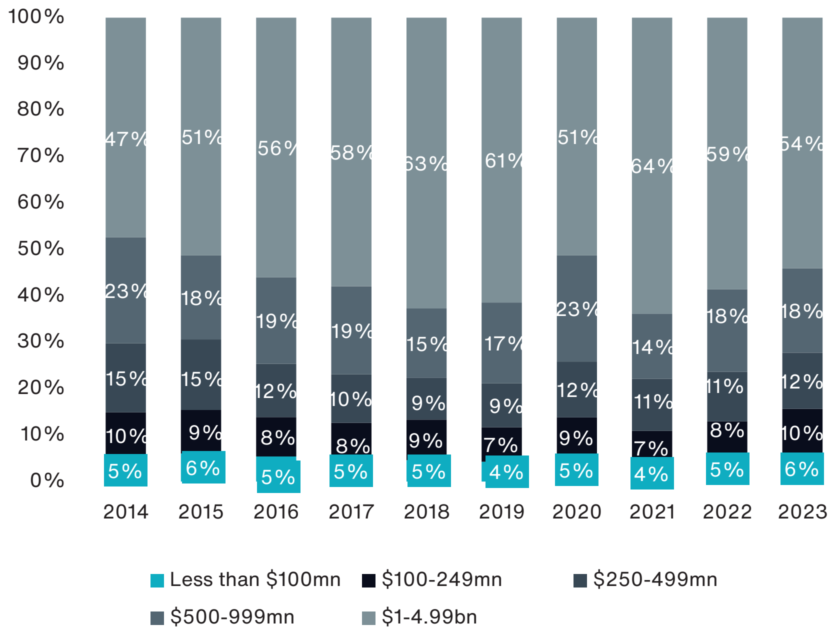
Fundraising

- $567.5 billion was closed on by 623 buyout and growth funds in 2023, compared to $517.3 billion raised by 913 funds in 2022. This represented the highest fundraising period since 2019, which saw 901 funds raise $565.8 billion.[1]
  - This was higher, on a capital basis, than the five-year average of $485.2 billon raised, but meaningfully lower by average number of funds raised (972).
  - In Q4 2023, 160 funds closed on $155.3 billion of capital, a decrease compared to the prior quarter's $167.6 billion raised by 145 funds.
  - CVC Capital Partners Fund IX was the largest fund raised during the year, closing on $28.9 billion of commitments.
- Buyout and growth equity dry powder was estimated at $1.4 trillion at the end of Q4 2023, up from $1.3 trillion in Q4 2022.[1]
  - An estimated 60.3% of buyout dry powder was targeted for North America, while European dry powder comprised 23.5% and Asia/Rest of World accounted for the remainder.

Activity

- Globally, buyout exit value totaled $444.7 billion across 2,077 deals during the year, down from $498.4 billion in value from 2,030 deals during 2022.[1]

Buyouts / Corporate Finance



Sources: Preqin

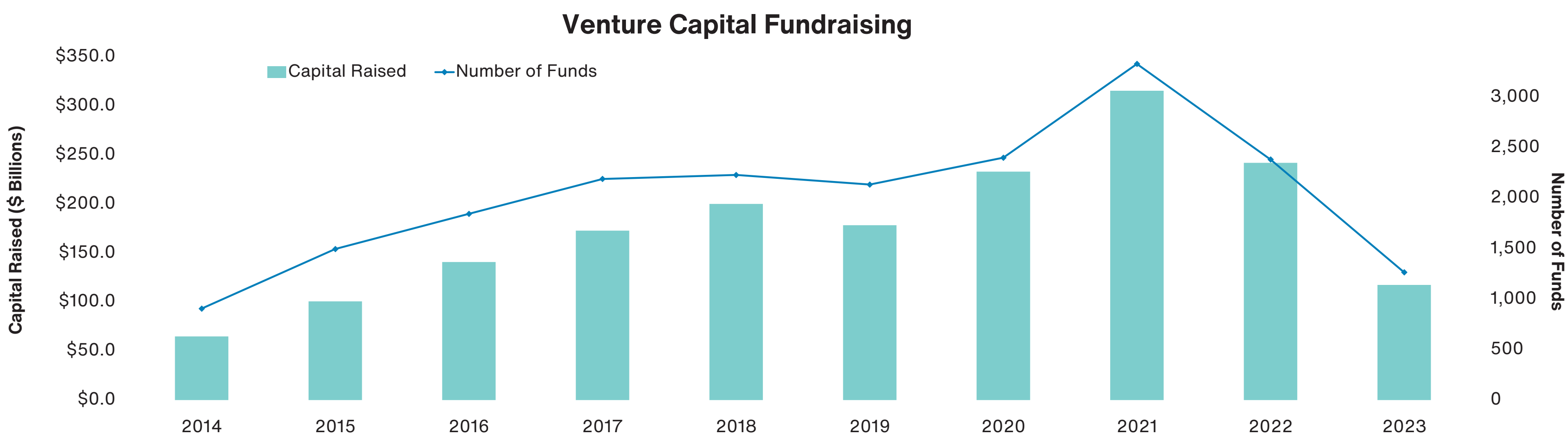
Activity

- Global private equity-backed buyout deals totaled $788.6 billion in 2023, which was a decrease, on a capital basis, of 28.6% compared to 2022 but 30.6% higher compared to the five-year average.[1]
  - By geography, North American deals accounted for the largest percentage of total deal value at an estimated 47.0% in 2023, while information technology deals accounted for the largest percentage by industry at 16.3% of total deal value.
  - Of deals less than $5.0 billion in size, deals valued between $1.0 billion - $4.9 billion accounted for an estimated 54.1% of total deal value compared to 58.5% in 2022. Deals valued between $500.0 million to $999.9 million represented 18.2% of total deal value through 2023.
- The median North American PE buyout purchase price multiple ended 2023 at 11.8x EBITDA, compared to 13.3x EBITDA in 2022.[3]
  - This was below the five-year average of 12.1x EBITDA and remained well below the peak multiple seen in 2021 (13.5x).
- The median Europe PE buyout purchase price multiple ended the year at 10.2x EBITDA compared to 12.3x EBITDA in 2022. This was also below the five-year average of 12.0x EBITDA.[3]
- The equity contribution for North American and European PE buyout transactions stood at 54.3% through the end of the year as transactions were less reliant on debt financing to complete the deals. This was above the five- and ten-year median levels of 47.8% and 45.0%, respectively.[3]

Opportunity [4]

- Mid-market managers targeting growing companies operating within fragmented markets with value-creation expertise across business cycles.
- Managers focused on value-oriented strategies and/or corporate carve-outs.

Venture Capital

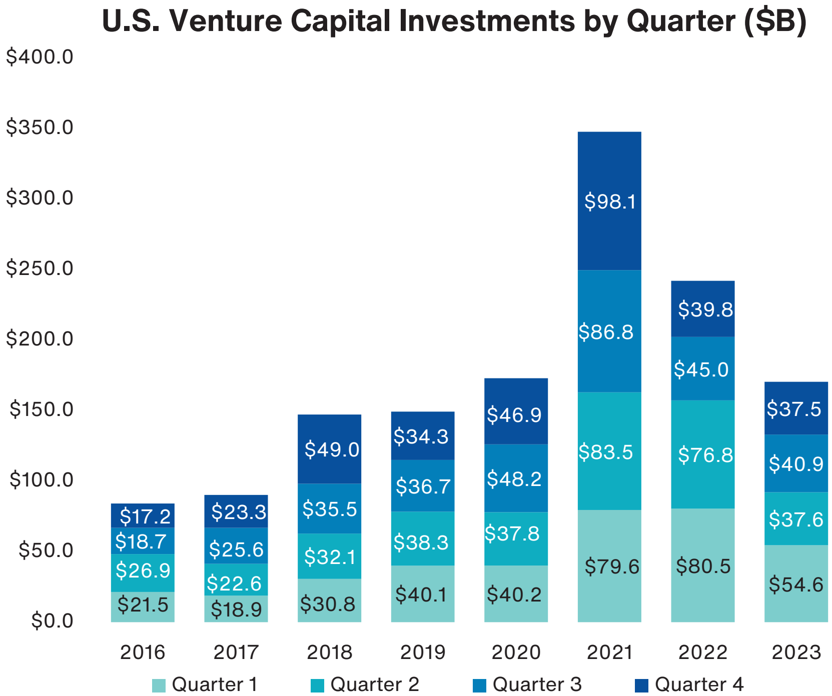


Sources: Preqin

Fundraising

- $117.4 billion of capital was raised by 1,265 funds in 2023, lower, on both a capital raised and number of funds basis, from the prior year's total of $241.9 billion raised by 2,382 managers. This was materially lower than the peak fundraising amounts raised during 2021, which saw 3,329 funds close on $315.3 billion.[1]
  - 2023 fundraising was 49.8% lower, on a capital basis, compared to the five-year average of $233.6 billion.
  - True Light Fund I was the largest fund raised during the year, closing on $3.3 billion.
- At the end of Q4 2023, there were an estimated 6,487 funds in market targeting $437.0 billion.[1]
  - A fund being raised by Zhongwan Capital was the largest fund in market, targeting an estimated $14.9 billion.
  - The majority of funds in market are seeking commitments of $200.0 million or less.
- Dry powder was estimated at $571.7 billion at the end of 2023, up from year-end 2022's total of $526.6 billion.[1]

Venture Capital



Source: Pitchbook / NVCA

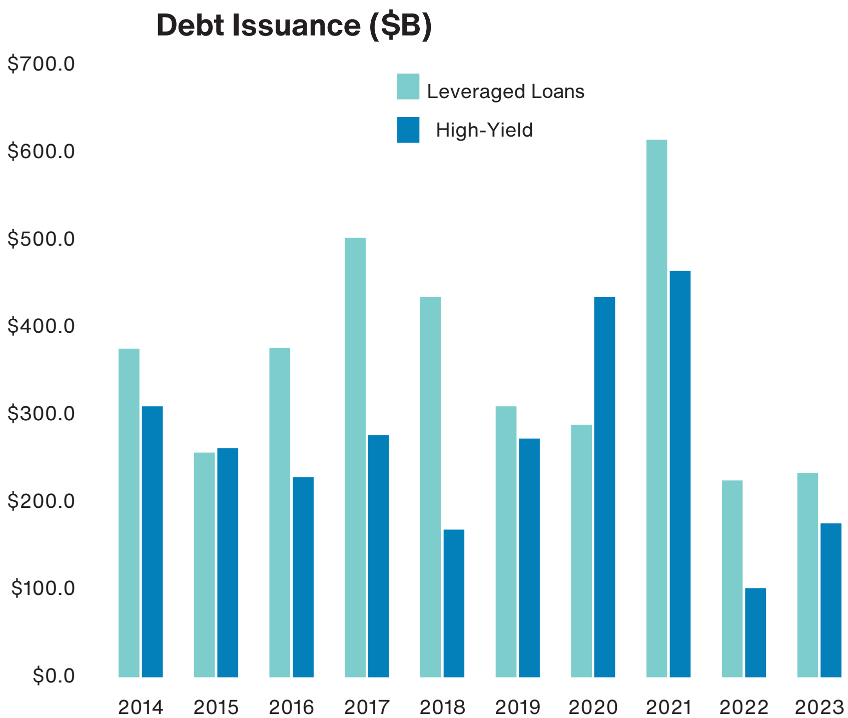
Activity

- During the year, an estimated 15,766 venture-backed transactions totaling $170.6 billion were completed, which was a decrease on both a capital and deal count basis over the prior year's total of $242.2 billion across 17,592 deals. This was also a decrease of 19.5% compared to the five-year average of $212.0 billion.[7]
  - In 2023, there were 225 U.S.-based deals involving unicorn companies, representing roughly $56.5 billion in deal value. This was down by both value and number of deals compared to 2022, which saw 380 unicorn-related deals close at a deal value of $74.7 billion. This was also below the five-year average of $71.3 billion.[7]
- Most median pre-money valuations increased relative to valuations seen at year-end 2022, with the exception of Series A and seed-stage valuations. Compared to 2022, seed valuations decreased from a median pre-money valuation of $13.6 million to $12.5 million, while Series A valuations decreased from $40.0 million to $34.0 million. Series B, Series C, and Series D or later experienced valuation uplift. Series B increased from $90.0 million to $105.0 million, Series C increased from $228.0 million to $320.0 million, and Series D and later increased from $426.6 million to $585.0 million. [8]
- Total U.S. venture-backed exit value decreased during the year, totaling approximately $61.5 billion across an estimated 1,129 completed transactions, compared to $78.6 billion across 1,401 exits in 2022. This was meaningfully below the $796.8 billion of exit value from 1,990 transactions during 2021.[7]
  - The number of U.S. venture-backed initial public offerings increased slightly over 2022, with 83 IPOs completed in 2023 at a value of $28.2 billion. 698 exits occurred by acquisition, marking a decrease over the prior year's 1,018 acquisitions, and accounted for $26.7 billion in exit value.[7]

Opportunity [4]

- Early stage continues to be attractive, although we continue to monitor valuations
- Smaller end of growth equity
- Technology sector, with emerging AI, digital health, and potential for new energy & climate-related innovation

Leveraged Loans & Mezzanine



Sources: UBS

Leveraged Loans
Fundraising

- New CLO issuance totaled $120.7 billion in 2023, compared to $129.3 billion in 2022 (-6.7%).[2]
- High-yield debt issuance totaled $176.0 billion in 2023, compared to $102.0 billion in 2022 (+72.0%). However, this remained well below the ten-year average of $270.0 billion.[2]
- In 2023, leveraged loan mutual fund net flows ended at a net outflow of $14.0 billion, a decrease of 65.0% compared to the prior year.[2]

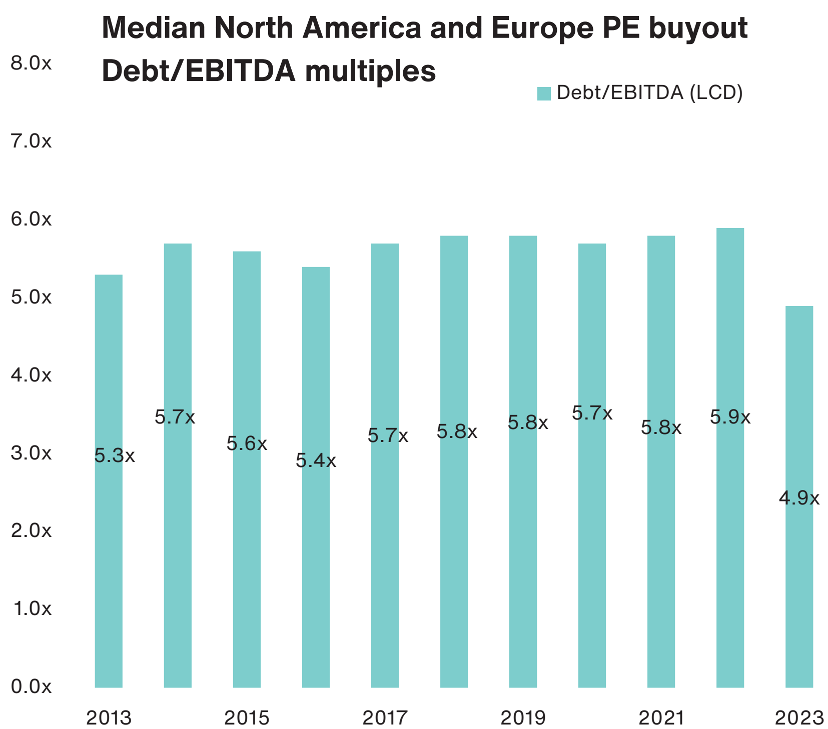
Activity

- U.S. institutional leveraged loan issuances totaled $234.0 billion in 2023, compared to $225.0 billion in 2022. However, 2023's total was well below the ten-year average issuance of $385.0 billion.[2]
  - UBS predicts institutional term loan issuance of approximately $300.0 billion in 2024, an increase of 28.0% over 2023. Loan issuance for M&A activity is expected to pickup throughout 2024 in addition to continued activity related to repricing and managing loan maturities.
- European institutional leveraged loan issuance totaled €32.5 billion during 2023 compared to €34.9 billion during 2022.[3]

Opportunity [4]

- Funds with the ability to source deals directly and the capacity to scale for large transactions (both sponsored and non-sponsored)
- Funds with an extensive track record, experience through prior credit cycles, and staff with workout experience

Leveraged Loans & Mezzanine



Sources: S&P

Activity

- Median leverage for North American and European PE buyout transactions through Q4 2023 was 4.9x, down from 2022's leverage level of 5.9x. Leverage continues to be comprised almost entirely of senior debt. This was lower than the five-year average of 5.8x.[3]
- UBS predicts junior capital to re-emerge as part of financing packages for M&A/LBO transactions, particularly if interest rates begin to compress as anticipated in the second half of 2024.[2]

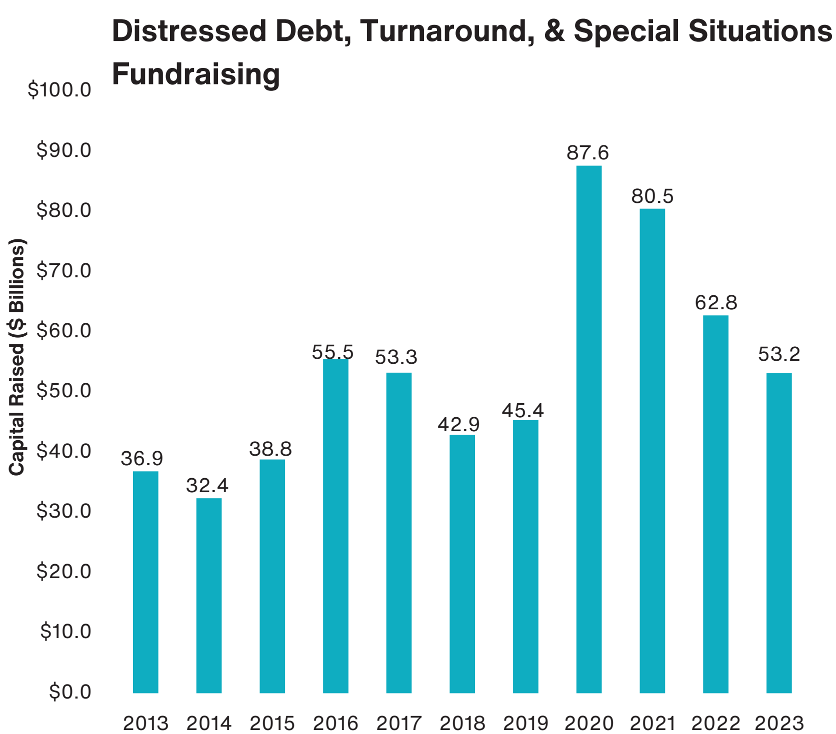
Mezzanine
Fundraising

- 28 funds closed on $38.6 billion during the year. This was an increase from the prior year's total of $27.1 billion raised by 52 funds and represented an increase of 72.6% from the five-year average of $22.4 billion.[1]
- Estimated dry powder was $65.5 billion at the end of 2023, up from $57.7 billion at the end of the prior year.[1]
- An estimated 109 funds were in market targeting $27.5 billion of commitments. ICG North American Credit Partners Fund III and North Haven Credit Partners IV were the largest funds in market targeting commitments of $2.0 billion each.[1]

Opportunity [4]

- Funds with the capacity to scale for large sponsored deals

Distressed Private Markets

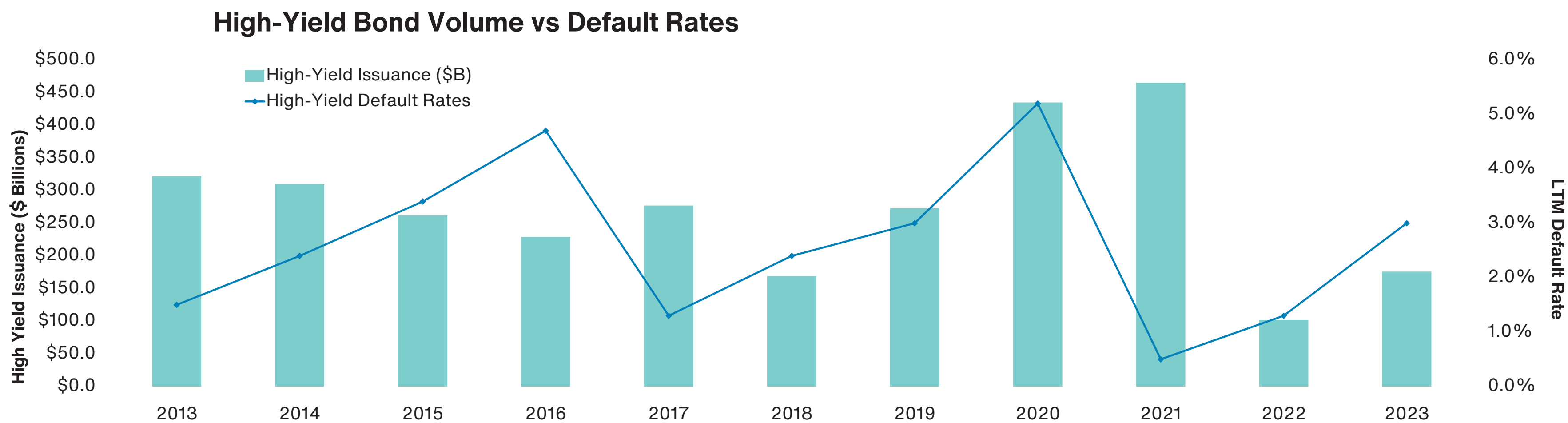


Source: Preqin

Fundraising

- During the year, $53.2 billion was raised by 61 funds, down from the $62.8 billion raised by 70 funds during 2022.[1]
  - Capital raised in Q4 2023 increased materially to $25.5 billion compared to the prior quarter's total of $8.6 billion. Capital raised in the final quarter of the year significantly bolstered 2023's totals.
  - 2023's fundraising was 16.6% lower than the five-year average.
  - The average closed fund size grew to $1.0 billion in 2023, an increase of 34.4% compared to the five-year average.
  - Ares Pathfinder Fund II was the largest fund closed during the year with $6.6 billion in commitments.
- Dry powder was estimated at $164.0 billion at the end of Q4 2023, which was down 1.4% from Q4 2022. This remained above the five-year annual average level of $142.1 billion.[1]
- Roughly 255 funds were in the market at the end of Q4 2023 seeking $134.0 billion in capital commitments.[1]
  - Special situations managers were targeting the most capital, seeking $74.9 billion in commitments, followed by distressed debt managers seeking $57.3 billion.
  - Oaktree Opportunities Fund XII was the largest fund in market with a target fund size of $18.0 billion.

Distressed Private Markets



Sources: UBS / Fitch Ratings

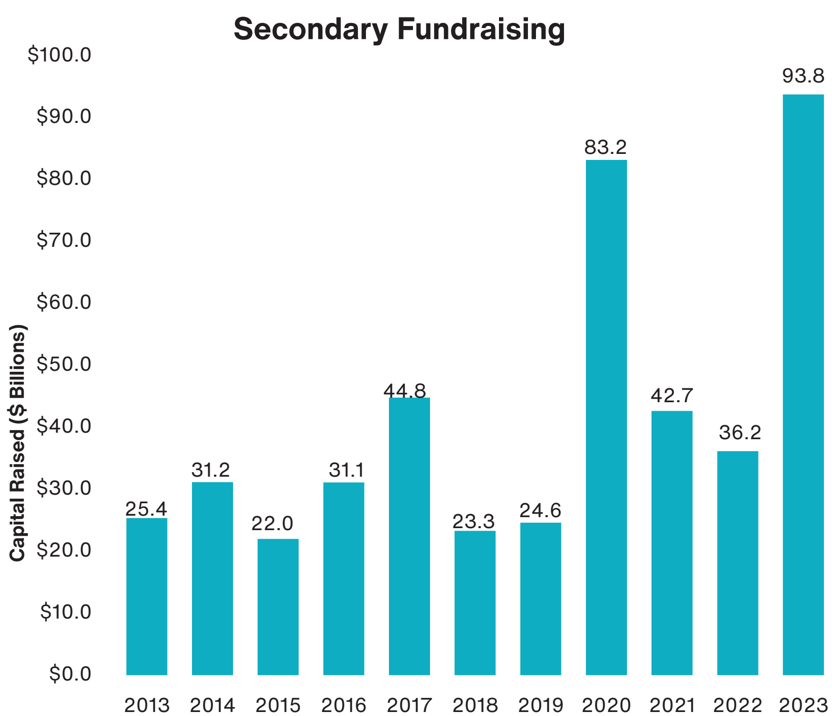
Activity

- The TTM U.S. high-yield default rate was 3.0% as of December 2023, which was up from December 2022's TTM rate of 1.3%. Fitch expects the high-yield default rate to continue trending higher through 2024, with forecasted default rates of 5.0% to 5.5%.[6]
- Continued market dislocations caused by macroeconomic factors may supply additional distressed opportunities in the next several months, notably if the default rate continues to move higher.

Opportunity [4]

- Funds capable of performing operational turnarounds
- Funds with the flexibility to invest globally

Secondaries



Source: Preqin

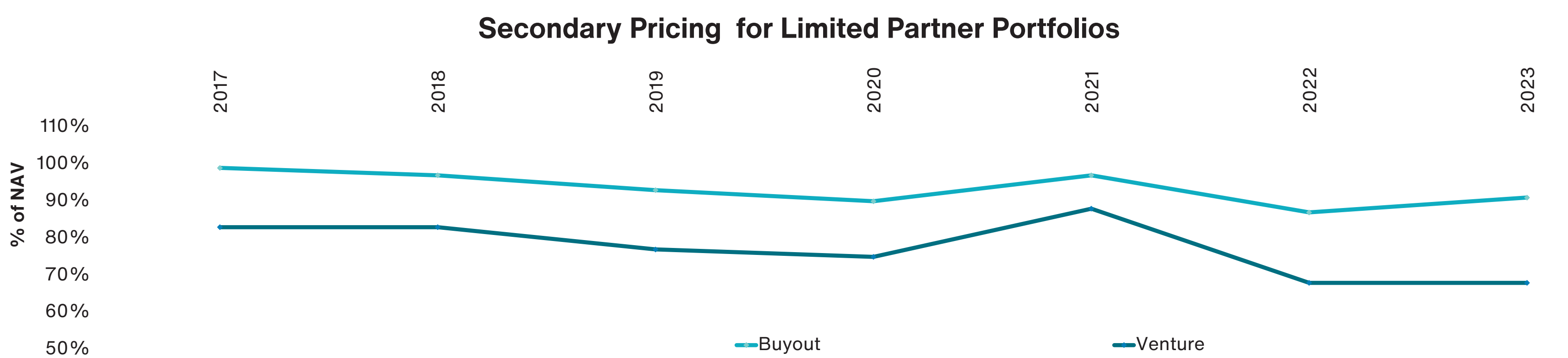
Fundraising

- 58 funds raised $93.8 billion during 2023, up substantially from the $36.2 billion raised by 70 funds in 2022. This was an increase compared to the five-year average of $42.0 billion.[1]
  - Lexington Capital Partners X was the largest fund closed during the year, closing on $22.7 billion.
- At the end of Q4 2023, there were an estimated 139 secondary and direct secondary funds in market targeting roughly $137.0 billion. The majority of secondary funds are targeting North American investments.[1]
  - ASF IX is the largest fund being raised, seeking $25.0 billion in commitments. There are currently five funds in market seeking $10.0 billion or more in capital commitments.

Activity

- Limited Partner transactions continue to have participation from a broad base of buyers and sellers with selling activity spread across LP seller types. Jefferies' data showcases strong selling activity from pensions and sovereign wealth funds (62% of 2023 activity), followed by fund of funds (16%) and financial institutions (11%).
- Evercore noted limited partner selling volume increased in 2023 compared to 2022, with more LPs coming to market to take advantage of supportive market conditions with larger portfolios up for sale. Given the substantial amount of dry powder raised by the largest secondary buyers, these firms are writing larger checks to purchase sizable, diversified LP portfolios.[14]
- Jefferies identified several trends in 2023 including increased demand and activity related to secondary transactions, notably within the buyout segment, and peak capital availability given the fundraising environment over the last several quarters. Compared to the prior year, LP-led activity increased in total deal volume while GP-led activity remained stable.[16]
- Investors have continued to focus on well-known assets, with demand increasing for a select group of managers.

Secondaries



Source: Jefferies

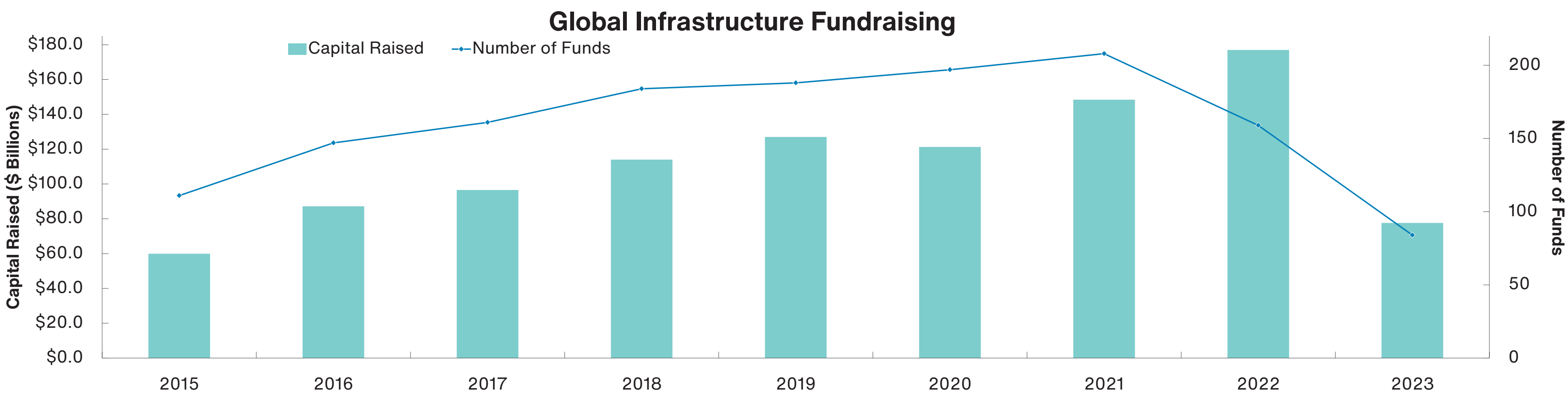
Activity

- Limited partner portfolio pricing has improved relative to the lows seen in H2 2022 given public market price momentum and more aggressive buyer activity. The average discount rate for LP buyout and venture capital portfolios finished the year at 9.0% and 32.0%, respectively.[17]
  - Jefferies expects pricing to improve as demand increases and markets stabilize. This, coupled with secondary dry powder available to invest, is expected to drive strong transaction volume in 2024.[17] Similarly, Evercore highlights the narrowing public-private valuation gap is expected to produce stronger pricing for most strategies.[16]
- Payment deferrals and structured equity solutions, notably mosaic structures, continue to be prevalent in the LP portfolio market and are used as a means to improve pricing and deal returns in an increasingly competitive environment. [16]
- GP-led volume is expected to increase meaningfully in 2024, according to Jefferies, and may reach north of $65.0 billion in transaction volume. Numerous factors support a healthy GP-led market including Limited Partner's desire for increased liquidity, an increase in investment strategies and capital targeting GP-led transactions, and a growing universe of potential syndicate investors.
- Campbell Lutyens noted a decrease in GP-led secondary pricing, with 68% of GP-led transactions priced at a 10% discount or better to NAV compared to 79% in the prior year. However, expectations for 2024 suggest that pricing may improve given the robust fundraising environment, causing increased competition in 2024 transactions.[14]

Opportunity [4]

- Funds that are able to execute complex and structured transactions
- Niche strategies

Infrastructure

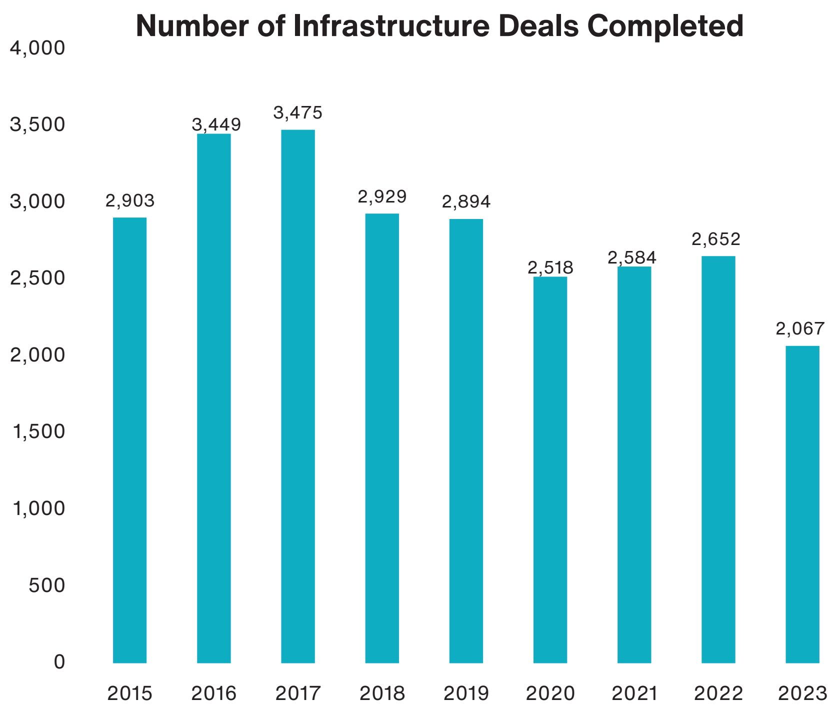


Source: Preqin

Fundraising

- $77.6 billion of capital was raised by 84 funds in 2023 compared to $177.0 billion of capital raised by 159 partnerships in 2022. This was a decline of 43.6% compared to the five-year average of $137.6 billion. Infrastructure funds are staying in market longer, with 55.2% of closed funds fundraising for two years or more.[1]
  - Brookfield Infrastructure Fund V was the largest fund closed at $28.0 billion of commitments.
- As of the end of Q4 2023, there were an estimated 413 funds in the market seeking roughly $545.2 billion.[1]
  - The largest funds in market each had target fund sizes of $25.0 billion, including Global Infrastructure Partners V and ALTÉRRA Acceleration.
  - The ten largest funds are each seeking $10.0 billion or more of LP commitments.
- Concerns surrounding the relative availability and pricing of assets remain. Although fundraising has slowed it remains competitive given the number of funds and aggregate target level of funds in market. Investor appetite for the asset class persists despite the strong levels of dry powder and increased investment activity from strategic and corporate buyers as well as institutional investors.

Infrastructure



Source: Preqin

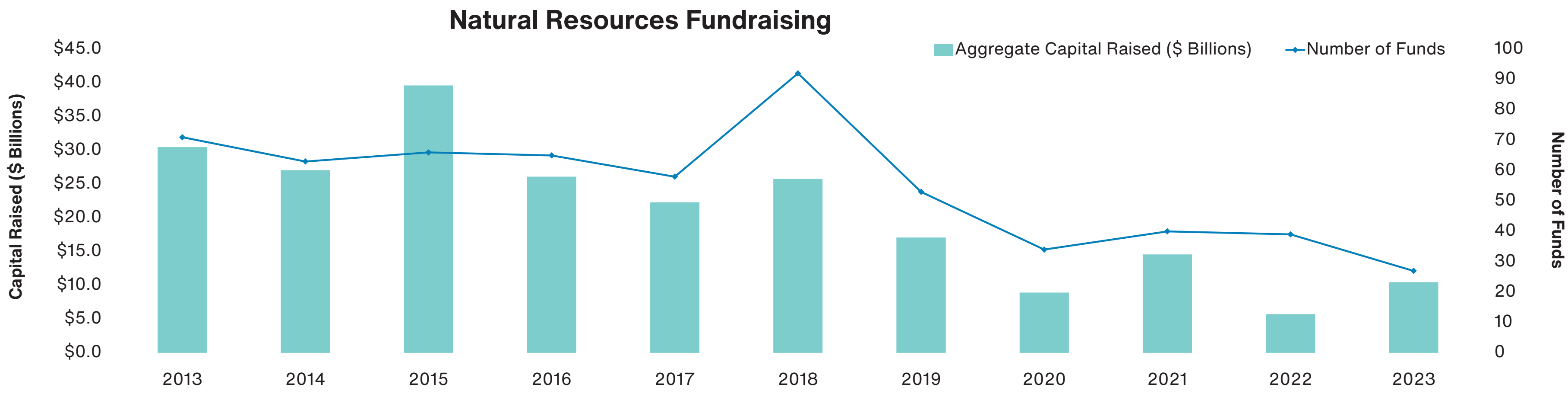
Activity

- Infrastructure managers completed 2,067 deals for an aggregate deal value of $308.2 billion in 2023 compared to 2,652 deals totaling $420.4 billion in 2022.[1]
  - By region, Europe saw the largest number of deals, with 43.8% of deals being completed in the region, followed by North America at 28.1%. APAC amassed 11.4% of activity through the end of 2023.

Opportunity [4]

- Mid-market core+ and value-add infrastructure as well as a platform investing approach continue to offer the best relative value.
- Assess funds with pre-specified assets with caution due to possible lag in and uncertainty around valuation impact.
- Blind-pool funds may be better positioned to take advantage of the market dislocation in certain sub-sectors, however careful review of such strategies is required.
- Build-to-core greenfield strategies particularly in the social / PPP infrastructure space offer a premium for investors willing to take on construction / development risk.

Natural Resources



Source: Preqin

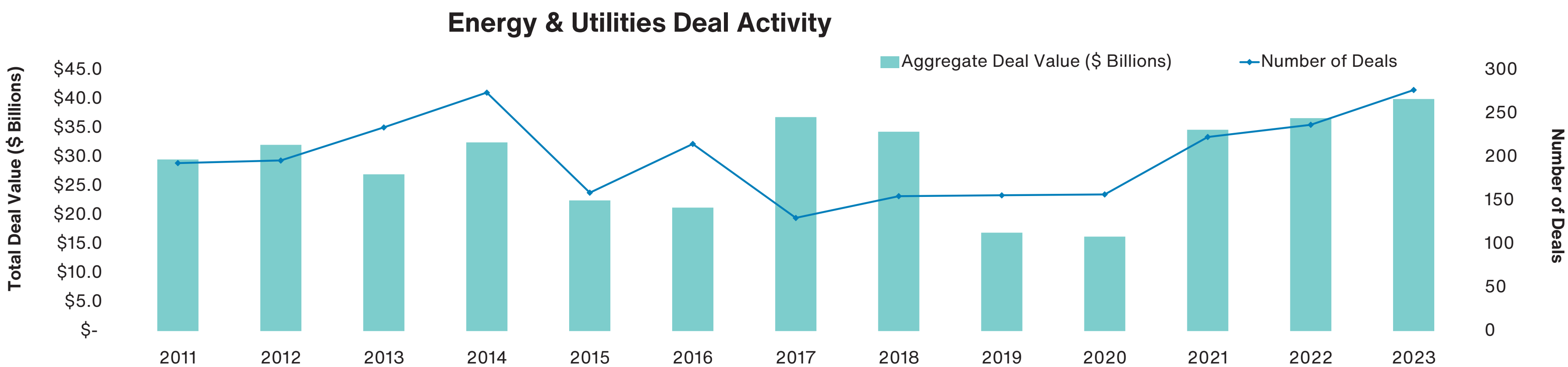
Fundraising

- During 2023, 27 funds closed on $10.5 billion compared to 39 funds totaling $5.7 billion in 2022. However, this was below the five-year average of $14.4 billion.[1]
- Dry powder stood at roughly $35.9 billion at the end of 2023, which was higher than Q4 2022's level of $30.8 billion, but down from the five-year average level by 14.6%.[1]

Activity

- Crude oil and natural gas prices decreased during the quarter.
  - WTI crude oil prices decreased 5.9% during the year to $71.90 per bbl. This was also a decrease of 19.6% compared to Q3 2023.[10]
  - Brent crude oil prices ended the quarter at $77.63/bbl, down 4.1% compared to the prior year. This was a decrease of 17.2% from Q3 2023.[10]
  - Natural gas prices (Henry Hub) finished Q4 2023 at $2.52 per MMBtu, which was down 54.4% compared to the prior year and 4.5% from the prior quarter.[10]

Natural Resources



Source: Preqin

Activity

- 277 energy and utilities deals were completed in 2023 totaling $40.0 billion, an increase compared to 237 completed deals totaling $36.7 billion in 2022.[1]
- A total of 622 crude oil and natural gas rotary rigs were in operation in the U.S. at the end of the year. This was down by 0.2% from the prior quarter and down 20.2% over Q4 2022.[13]
  - Crude oil rigs represented 80.4% of the total rigs in operation. 61.0% of the 500 active oil rigs were in the Permian basin.
  - At the end of Q4 2023, 36.7% and 22.5% of natural gas rigs were operating in the Haynesville and Marcellus basins, respectively.
- The price of iron ore (Tianjin Port) ended the year at $137.05 per dry metric ton, up from $111.84 at the end of Q4 2022.[10]

Opportunity[4]

- Acquire and exploit existing oil and gas strategies over early-stage exploration in core U.S. and Canadian basins
- Select midstream opportunities

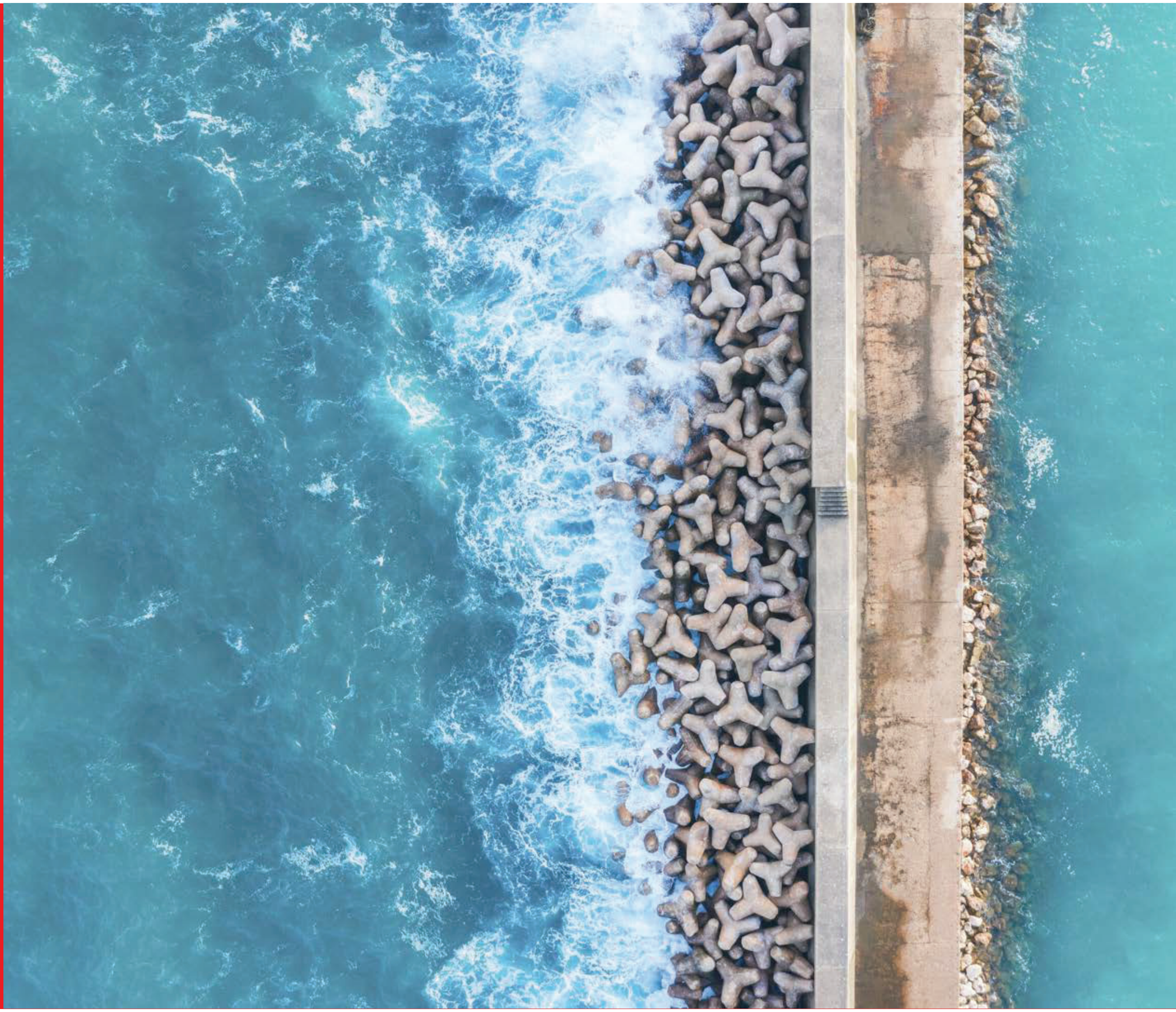
Notes

1. Preqin
2. UBS
3. Pitchbook / LCD
4. Aon Investments USA Inc.
5. Moody's
6. Fitch Ratings
7. PitchBook/National Venture Capital Association Venture Monitor
8. Cooley Venture Financing Report
9. U.S. Energy Information Administration
10. Bloomberg
11. Setter Capital Volume Report: Secondary Market
12. KPMG and CB Insights
13. Baker Hughes
14. Evercore
15. Campbell Lutyens
16. PJT Partners
17. Jefferies

Notes:
FY: Fiscal year ended 12/31
YTD: Year to date
YE: Year end
LTM: Last twelve months (aka trailing twelve months or TTM)
PPM: Purchase Price Multiples: Total Purchase Price / EBITDA
/bbl: Price per barrel
MMBtu: Price per million British thermal units

Q4 2023 Real Estate Market Overview

April 2024



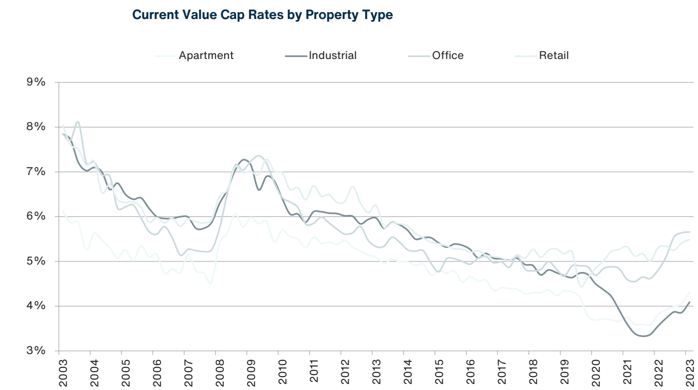
United States Real Estate Market Update (4Q23)

General

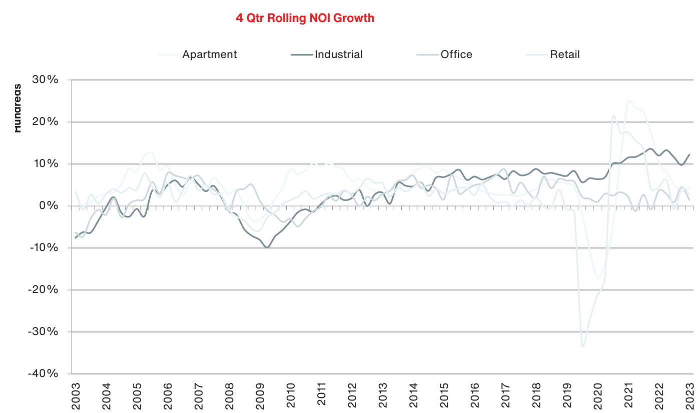
- The economy continues to face headwinds stemming from an increasingly aggressive federal funds rate, continuous inflation, and geopolitical events. The S&P 500 rebounded after a difficult third quarter, returning 11.7% to close out 2023. The MSCI US REIT index also rebounded from its challenging year coming in at 16% for the fourth quarter.
- During the fourth quarter, GDP increased at an annualized rate of 3.3%. This positive growth was primarily due to government spending, consumer spending, and strong job market growth. Inflation has tamed over previous quarters due to the Fed reducing the central bank's balance sheet and the Federal Open Market Committee's dramatic rate hikes spanning from March 2022 until mid-2023.
- 10-year treasury bond yields increased, ending the quarter at 3.9%. As economists expected, rates moved significantly higher throughout 2023, but have since plateaued after the Fed paused its dramatic rate increases spanning from early 2022 until mid 2023.

Commercial Real Estate

- The fourth quarter of 2023 saw total CRE transaction activity decrease by 51% YOY. The apartment sector transaction volumes in the U.S. have dropped dramatically due to a large amount of transaction volume during and post-pandemic. Although apartment fundamentals remain intact, the increase in cost of debt has contributed to a YoY decrease in transaction volume of 61%.
- Transaction cap rates (5.7%) expanded, moving out 53 bps during the quarter. This increase continues the upward trend on cap rates beginning in 4Q21. Current valuation cap rates expanded for all major property sectors, led by apartment (+23 bps), and followed by industrial (+23 bps), retail (+7 bps), and office (+2 bps).
- NOI growth has continued to diverge between property sectors. Apartment sector struggles due to near-term supply of new deliveries; however, fundamentals over the longer-term continue to show strength. With the cost of debt for homes continuing to become more expensive, Apartment NOI expanded (4%) YoY. Industrial NOI continued to expand (12%) YoY with the continued investments into direct-to-customer distribution by companies.
- Commercial Real Estate fundraising activity rebounded after seeing a slow year. In the fourth quarter, the number of funds in the market increased (22%) as well as a (5%) increase in aggregate capital raised over the previous quarter, albeit aggregate capital raised has declined by 53% YoY.



Source: NCREIF



Source: NCREIF

United States Property Matrix (4Q23)

TOWNSEND® GROUP
an Aon company

INDUSTRIAL

- In 4Q23, industrial properties returned -2.29% and outperformed the NPI by 73 bps.
- Transaction volumes decreased to $21 billion in the fourth quarter of the year, resulting in an 43% decrease year-over-year. Individual asset sales decreased 70% year-over-year, while portfolio purchases turned in a year-over-year volume increase of 20%. At $21 billion, the industrial sector slightly decreased by $2 billion quarter-over-quarter.
- The industrial sector turned in NOI growth of 12.25% over the past year. NOI continues to reach all time highs for the sector.
- Vacancy increased by 81 bps year-over-year to 2.3%. Vacancy in the sector increased 24 bps from the prior quarter. E-commerce continues to drive demand across the sector.
- Industrial cap rates expanded approximately 53 bps from a year ago, to 4.09%. Industrial overall fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a -2.98% return during the quarter, outperforming the NPI by 4 bps.
- Transaction volume in the fourth quarter of 2023 slightly decreased to $27 billion, resulting in a decrease of 50% year-over-year. Transaction volume for the sector slightly decreased from the third quarter by nearly 20%. This volume continues to make multifamily the most actively traded sector for the twenty third straight quarter.
- Cap rates increased to 4.31% quarter-over-quarter, increasing 49 bps year-over-year. Multifamily cap rates remain at low levels relative to prior years, driven by continued increases in valuation.
- The multifamily sector saw increasing vacancy rates throughout the entirety of 2020 due to the global pandemic. Throughout 2021 and 2022, the sector appeared to have shaken that trend although vacancy rates remained steady. Vacancy rates increased during fourth quarter of 2022 and have increased to 6.73% as of the fourth quarter of 2023. The aging millennials have begun shifting their desires to suburban living, but continued home price appreciation has deterred the full effect of this migratory trend.

OFFICE

- The office sector returned -5.40% in 4Q23, 238 bps below the NPI return over the period.
- Transaction volumes decreased by 32% year-over-year in the fourth quarter. Transaction volume equated to $14 billion for the quarter, slightly increasing quarter-over-quarter. Office transaction levels have regressed since 4Q21 and are at levels seen during the COVID-19 pandemic.
- Office sector vacancy rates have expanded since the beginning of the pandemic due to work from home orders and uncertainty revolving around the future of office space. Office continues to be the highest vacancy property type at 14.13%, increasing by 54 bps from last quarter.
- NOI growth in the office sector decreased quarter-over-quarter by 200 bps to -2.00% and is still experiencing volatility given the current market environment.
- Office cap rates expanded from a year ago, sitting at approximately 5.7%. Office-using job growth was stunted significantly through out 2020 due to work from home orders. Though we are observing a slow but steady flow back to in-office work, there is still uncertainty in the sector.

RETAIL

- As of 4Q23, the retail sector delivered a quarterly return of -1.12%, outperforming 190 bps compared to the NPI.
- Transaction volumes totaled $12 billion in the fourth quarter, decreasing 31% year-over-year. Single asset transactions accounted for just over 91% of all sales volume for the quarter.
- Cap rates have remained fairly steady within the sector over the last year at 5.5%. Current valuation cap rates expanded quarter-over-quarter by 7 bps due to valuation adjustments made across the sector in general.
- NOI growth increased from the prior quarter to 3.50% as of the fourth quarter. Retail has begun its slow recovery but has continued to experience volatility due to the current market environment.
- Retail vacancy rates remained steady over the quarter at 7.0%, down 14 bps over the past year. Many big box stores have closed as the need for retail space shrinks, translating to a negative outlook for rent growth. Paired with the global economic crisis, which has had a significant negative impact on this sector.

AON

Sources: Real Capital Analytics, Green Street, NCREIF

Global Real Estate Market Update (4Q23)

TOWNSEND® GROUP an Aon company

- This past year in the global real estate market proved to be an uphill battle for buyers and sellers alike as high volatility , low inventory, and elevated interest rates were persistent throughout. While commercial interest rates quelled transaction activity in the fourth quarter, they have begun to stabilize and cuts by the Federal Reserve expected in the second half of 2024 . Year over year, deal volumes have contracted by 37% YOY with buyers and sellers far apart on pricing .
- US markets have exhibited pronounced deterioration with transaction volumes decreasing 53% since the third quarter of last year. This drawback in activity has outgrown the period in decline at the onset of the pandemic. Significant distress, up to $42 billion in office alone, is expected to materialize in the coming months. The refinancing and discounted sales to offset these losses should compound as the year progresses.

Global Total Commercial Real Estate Volume - 2022 - 2023

$ US Billions	Q4 2023	Q4 2022	% Change Q4 23 - Q4 22	2023	2022	% Change Full Year
Americas	79	131	-40%	329	701	-53%
EMEA	44	68	-35%	173	339	-49%
Asia Pacific	268	266	1%	688	860	-20%
Total	391	465	-16%	1191	1900	-37%

Source: Real Capital Analytics, Inc., Q4' 23

- China emerged as the top performing market in the Asia Pacific this year, seeing distressed office and retail properties begin to trade following a stagnant period midyear. Singapore doubled its activity in the quarter, leaning into cross border investment in value-added hotel and logistics prospects. Japan deal making waned in the quarter, as concerns over the Bank of Japan's (BOJ) cessation of its negative interest rate policy impacted investor interest in office assets.
- The fourth quarter confirmed a decade low in real estate transaction volumes across major European markets. Despite these themes, there is increased optimism that favorable funding conditions are on the horizon as interest rates are expected to decline in the second half of 2024. Investors in Italy and the UK have gravitated to alterative property types, namely student housing, for their counter cyclical components and a shortage of supply in the region. Overall, there is belief of a gradual recovery over the coming quarters in markets with stable economic conditions, inflation has subdued, and repricing has taken shape (ie. The UK, Netherlands, Spain).
- US logistics and industrial markets saw supply nearly triple net absorption for the year as developers completed 607 million square feet of new product . This was reflected in the average vacancy rate reaching 5.5%, the highest since 2016. These elevated level of vacancies, along with the rising cost of debt have led to concessions in construction starts. As construction starts remain limited, new supply will fall off during each quarter of 2024, positioning supply and demand to reach equilibrium by the end of the year.
- US housing construction was robust over the year, particularly for single-family housing. Forecasts point towards US home starts tracking below the rate of household formations, forming a gap in supply . Europe’s largest economies (Germany, France, & the UK) have been hamstrung by a steep decline in housebuilding due to rising build and debt costs and developer insolvencies. These hurdles are consistent across the Asia Pacific among chronic undersupply, rapid urban population growth, and the least affordable ownership rates. This has resulted in the surge of interest in institutional multifamily in the region, while boosting demand for nice sectors in senior and student housing.

Global Outlook - GDP (Real) Growth % pa, 2023-2025

	2023	2024	2025
Global	**3.1**	**3.1**	**3.2**
Asia Pacific	**4.0**	**4.1**	**4.0**
Australia	1.9	1.4	2.2
China	5.2	4.6	4.4
India	7.2	6.8	6.3
Japan	2.0	0.8	1
North America	**2.5**	**1.6**	**1.7**
US	2.5	1.6	1.7
Middle East	**1.0**	**2.0**	**4.0**
European Union	**0.5**	**0.9**	**1.7**
France	0.8	0.7	1.3
Germany	-0.3	0.2	1.2
UK	0.3	0.4	1.2

Source: Bloomberg

AON

Sources: Jones Lang LaSalle Research, Cushman & Wakefield, Real Capital Analytics, Inc., CBRE, Avision Young

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REPORT

Meketa Capital Markets Outlook & Risk Metrics

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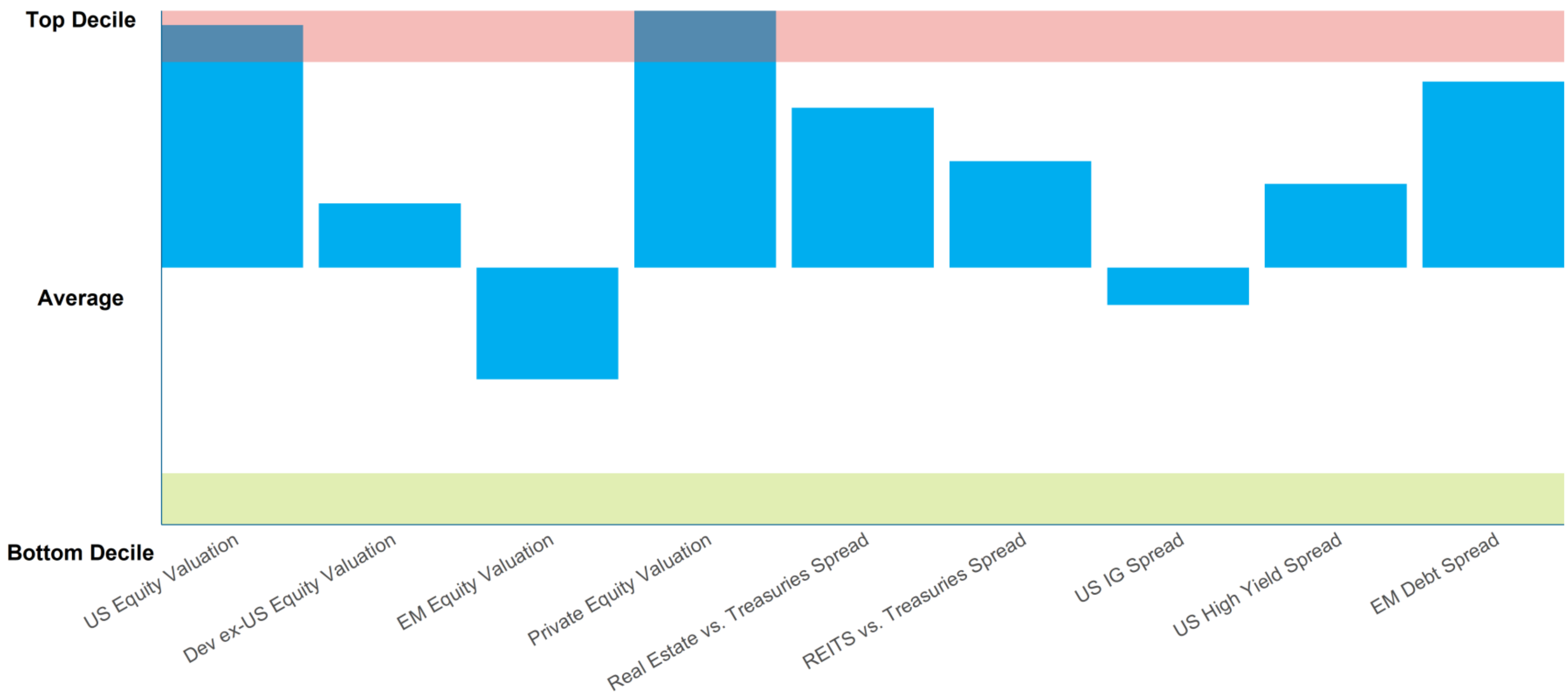
Capital Markets Outlook & Risk Metrics

As of March 31, 2024

Capital Markets Outlook

- → In March, the Fed kept interest rate guidance steady as stronger than expected economic data and elevated core inflation justified a delay on interest rate cuts until later in the year.
- → With the notable exception of China, global equity markets finished the first quarter of 2024 in positive territory, continuing to build on their strong performance in 2023.
- → US large cap growth stocks outperformed the S&P 500 index, with the Magnificent Seven leading the way. In particular, advanced chip maker Nvidia continued to benefit from the AI boom.
- → US stocks outperformed non-US stocks, and non-US developed market equities outperformed emerging market equities. A strong US dollar contributed to the weaker performance of non-US equities.
- → Chinese equities stood out with negative returns for the first quarter of 2024 and on a one-year basis. A slowing economy, troubled real estate sector, and geopolitical tensions weigh on listed stocks in spite of a series of formal and informal interventions in Chinese financial markets.
- → In spite of the negative performance of Chinese stocks, emerging market equities delivered positive returns for the quarter, helped by strong performance in India.
- → Bond returns were mixed in the first quarter, with longer duration bonds generally experiencing losses. Meanwhile, economic growth helped lift high yield bonds and bank loans.
- → At the end of the first quarter, energy prices were higher than a year ago, and natural resource stocks posted positive returns.
- → While infrastructure stocks rallied in March, they remained in negative territory for the quarter.
- → Public real estate stocks (REITs) fell on the expectation of policy rates not declining as quickly as previously anticipated.

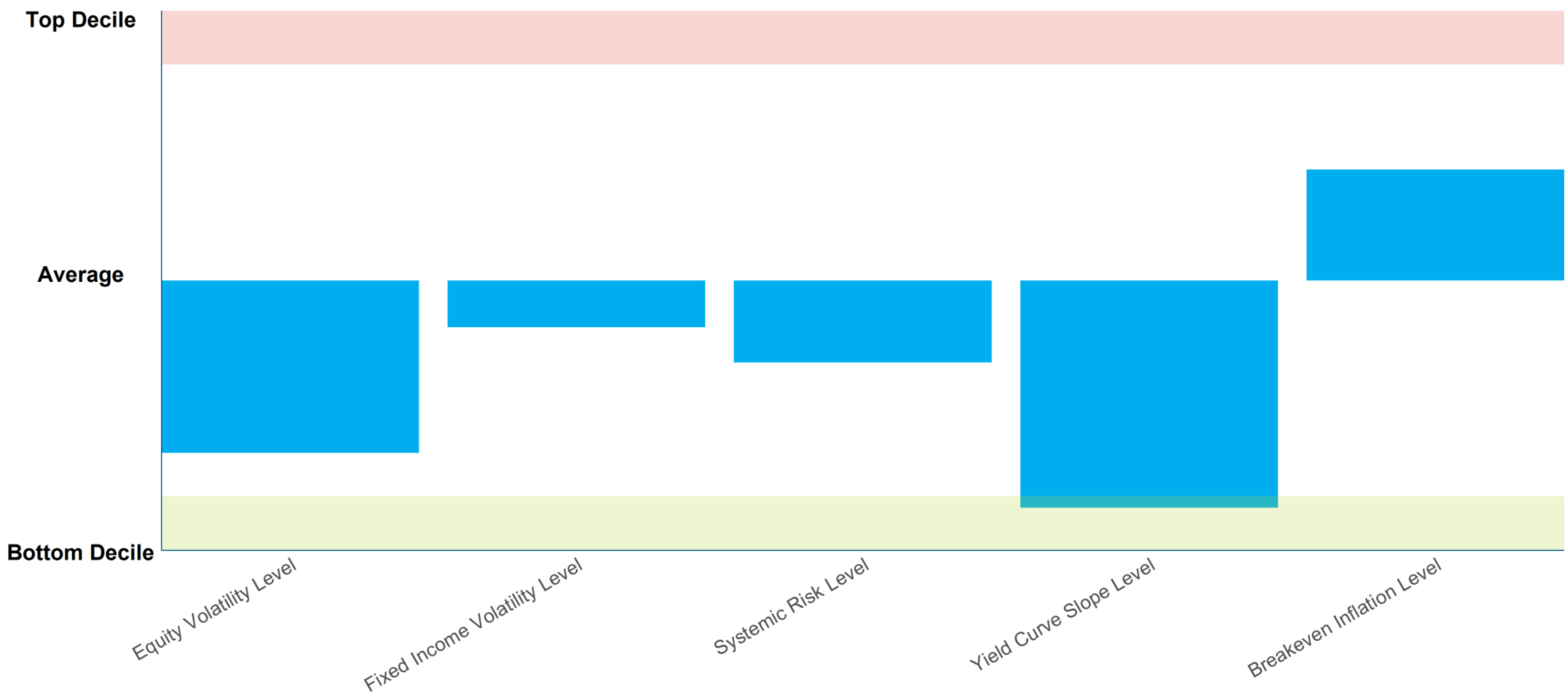
Risk Overview/Dashboard (1)
(As of March 31, 2024)[1]



→ Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

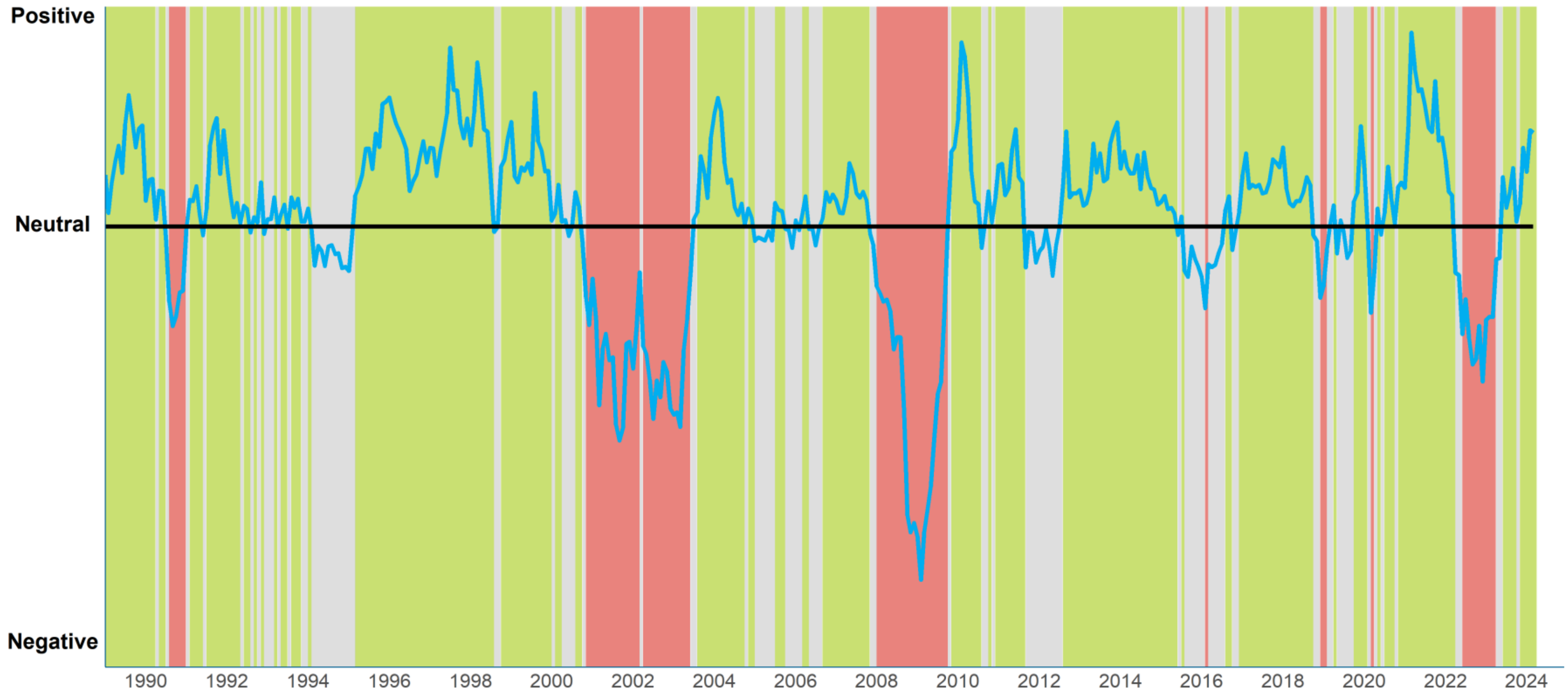
[1] With the exception of Private Equity Valuation, that is YTD as of December 30, 2023.

Risk Overview/Dashboard (2)
(As of March 31, 2024)

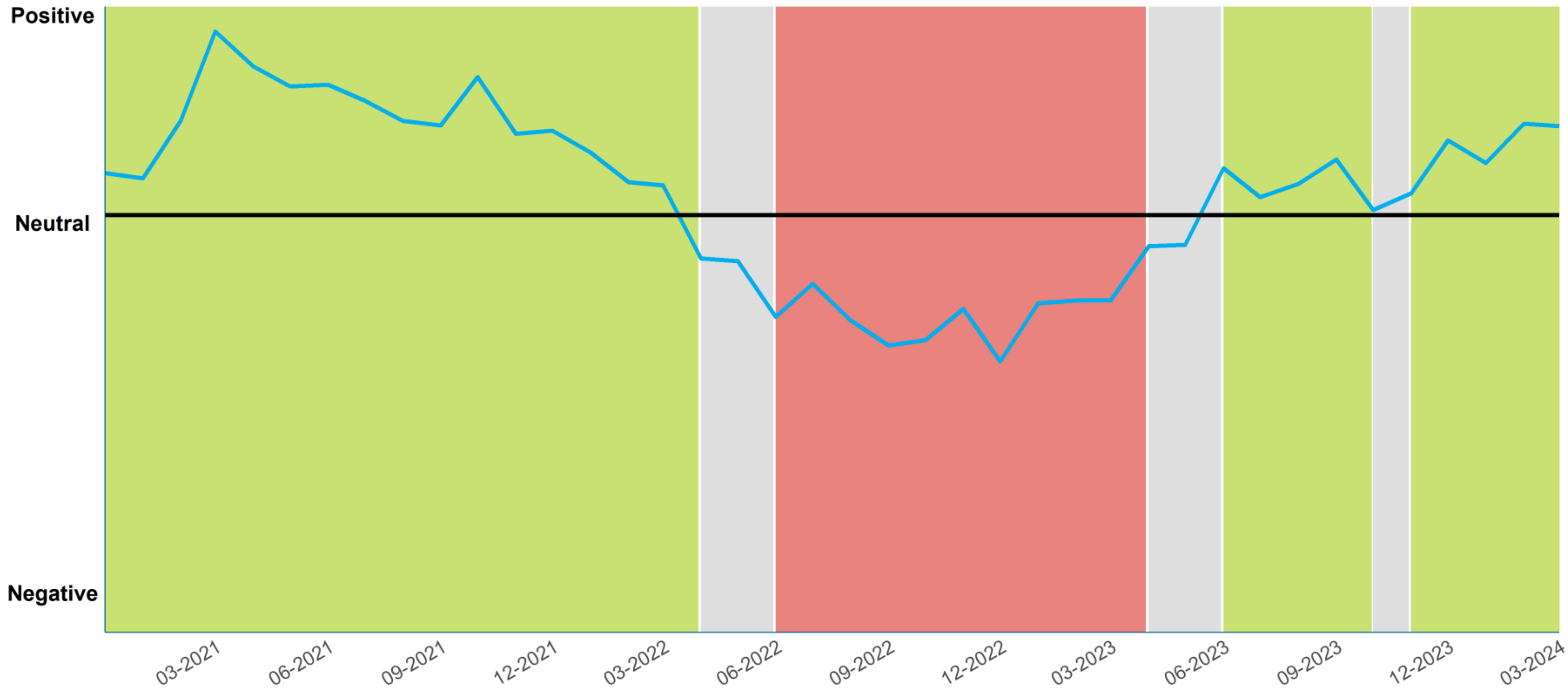


→ Dashboard (2) shows how the current level of each indicator compares to its respective history.

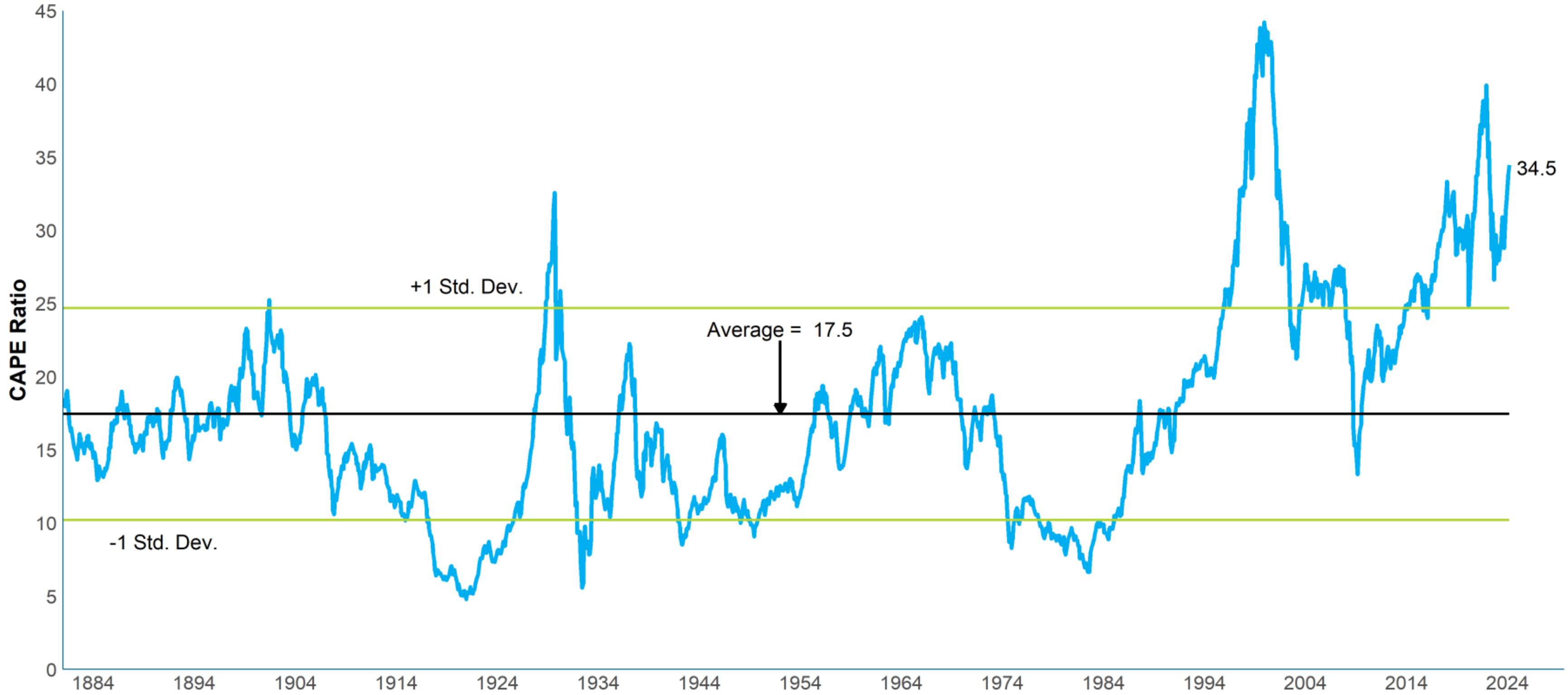
Market Sentiment Indicator (All History)
(As of March 31, 2024)



Market Sentiment Indicator (Last Three Years)
(As of March 31, 2024)



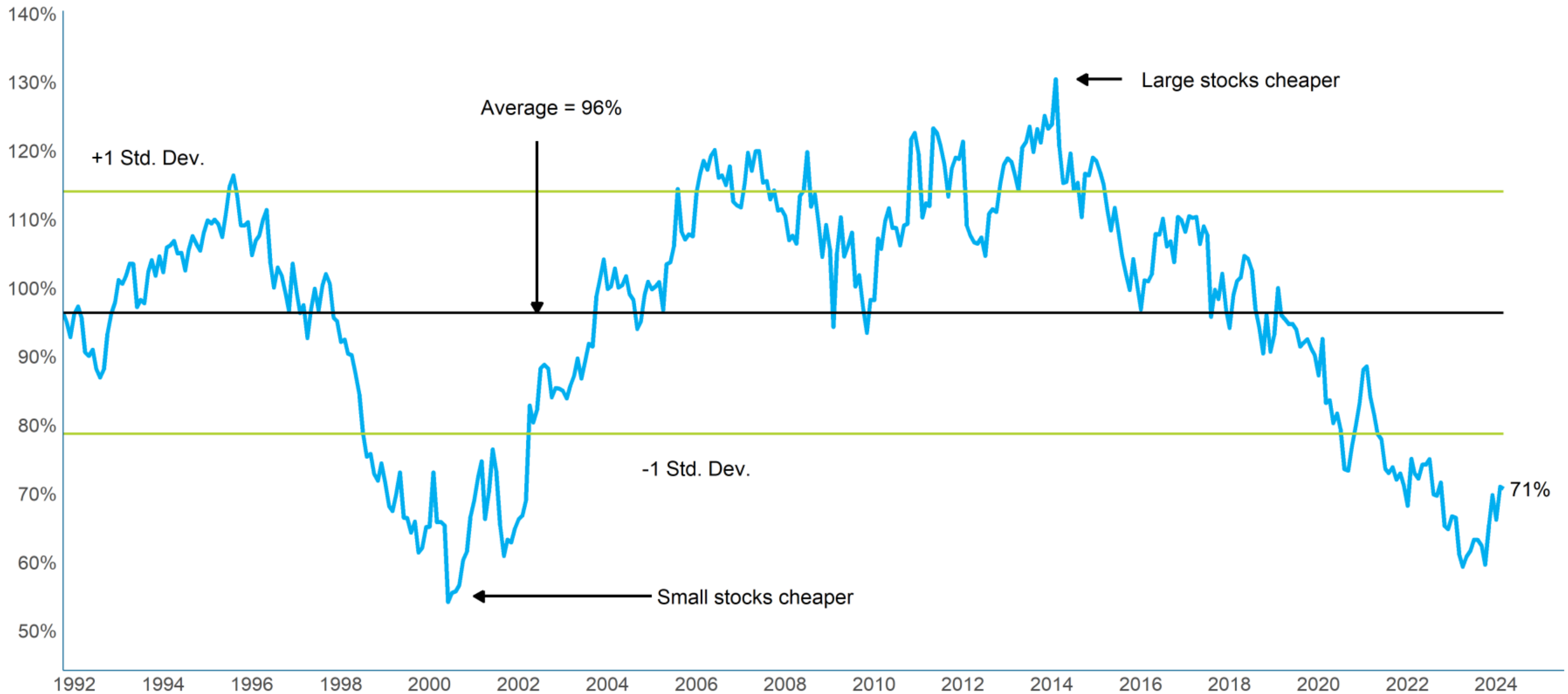
US Equity Cyclically Adjusted P/E[1]
(As of March 31, 2024)



→ This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

Small Cap P/E vs. Large Cap P/E[1]
(As of March 31, 2024)



→ This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments and Bloomberg. Prior months unavailable on Bloomberg are backfilled with last reported earnings. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of March 31, 2024)

→ This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

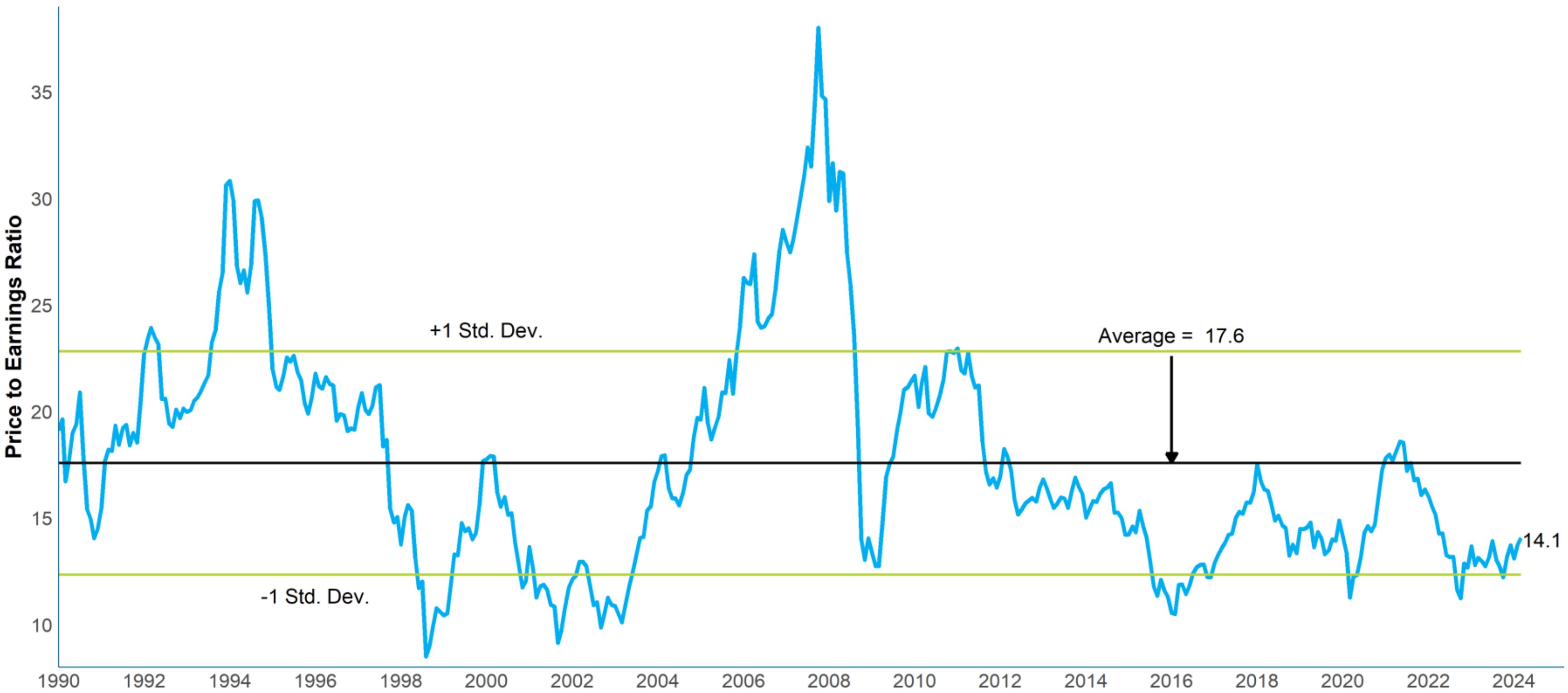
[1] Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

Developed International Equity Cyclically Adjusted P/E[1]
(As of March 31, 2024)

→ This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

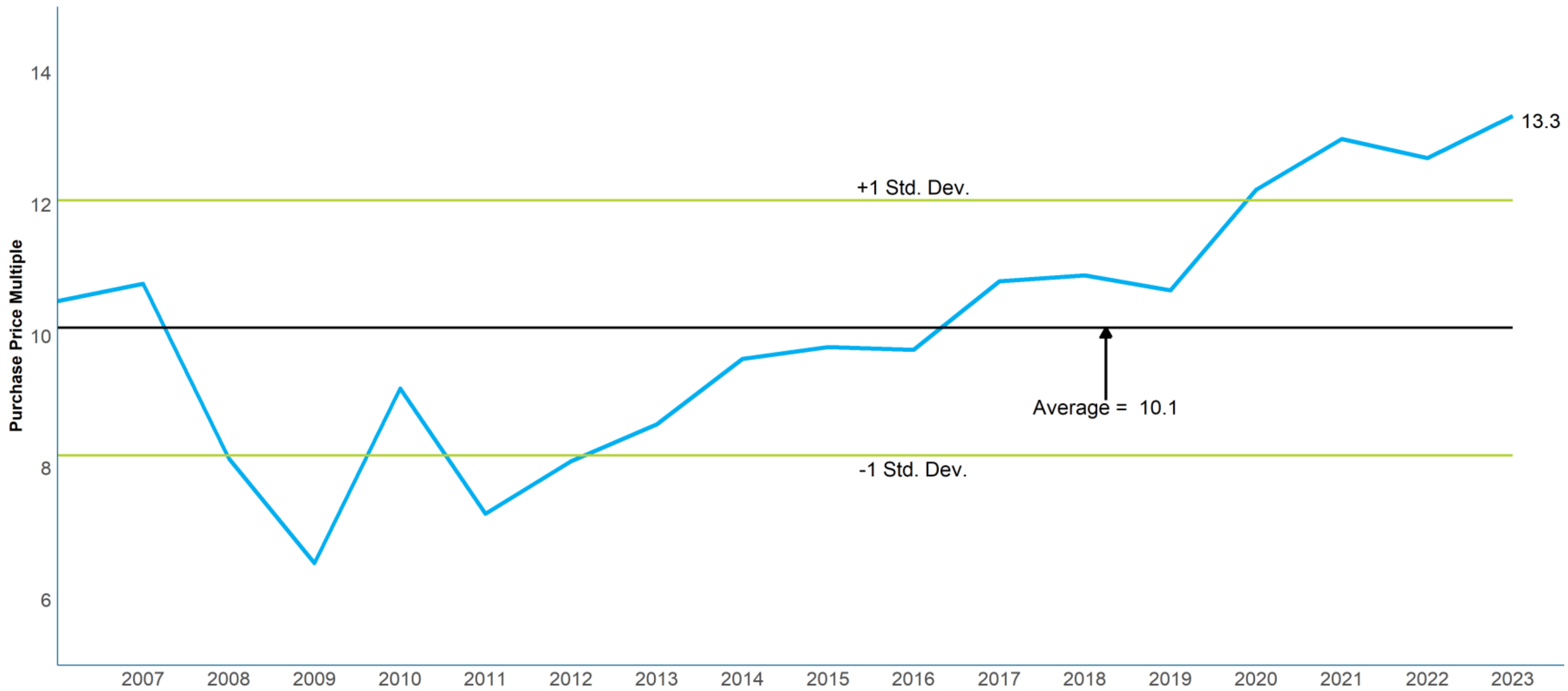
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of March 31, 2024)



→ This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

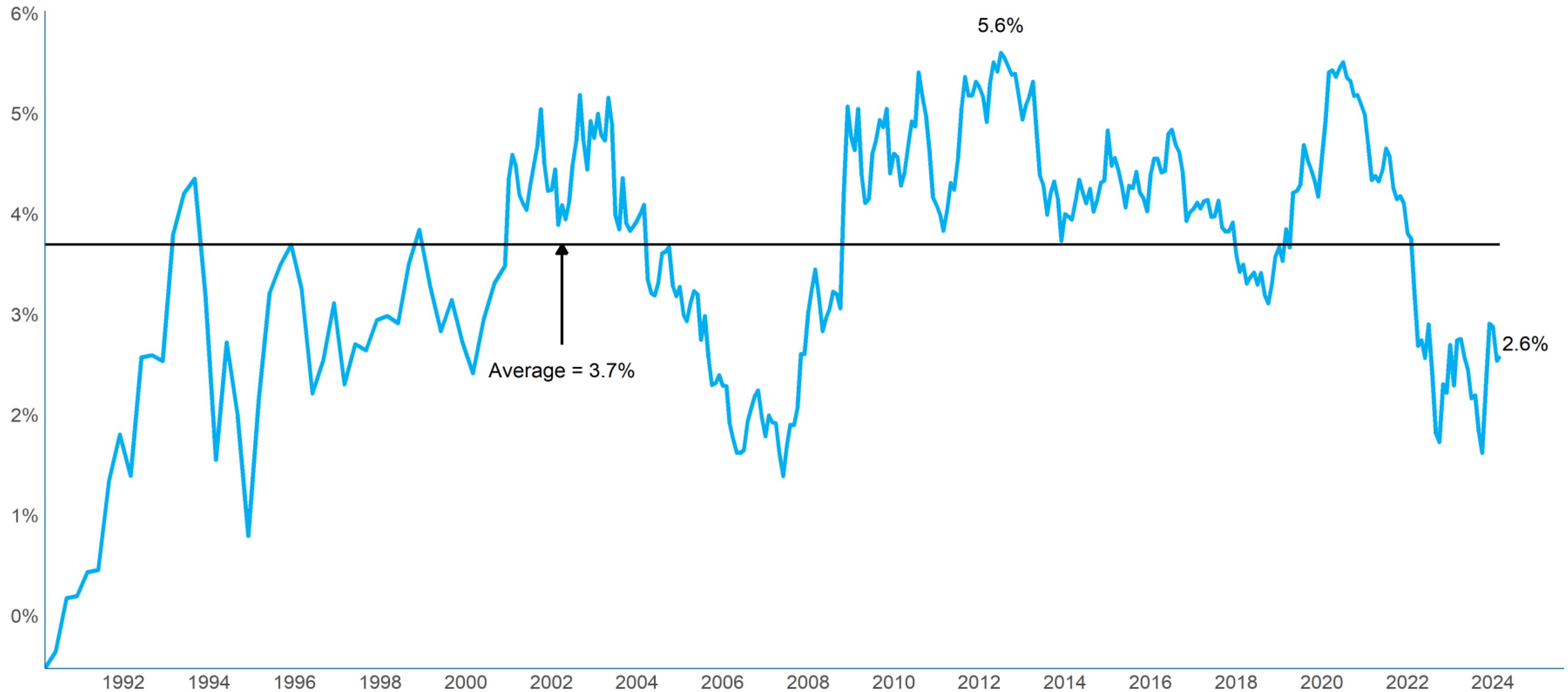
Private Equity Multiples[1]
(As of December 31, 2023)



→ This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Private Equity Multiples – Source: Preqin Median EBITDA Multiples Paid in All LBOs. Accessed April 1, 2023.

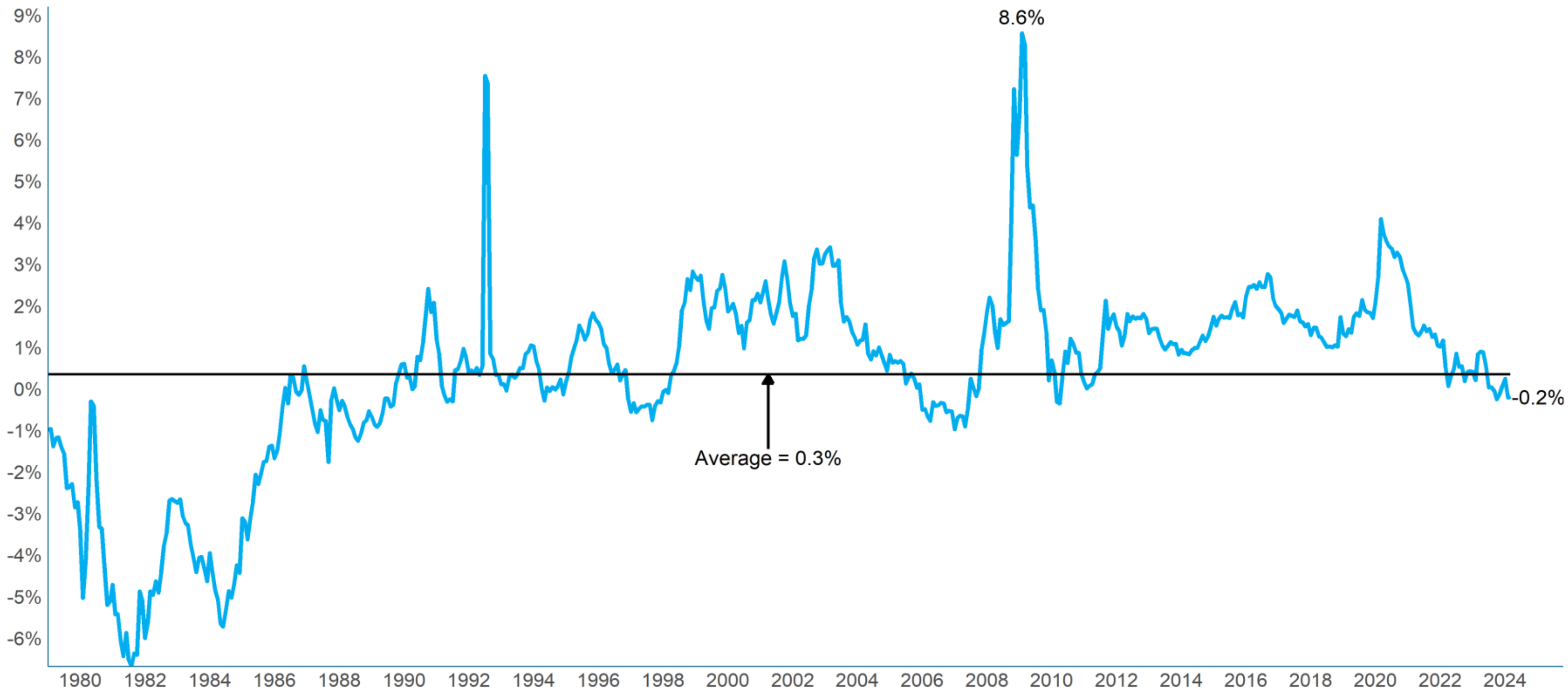
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of March 31, 2024)



→ This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, FRED, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

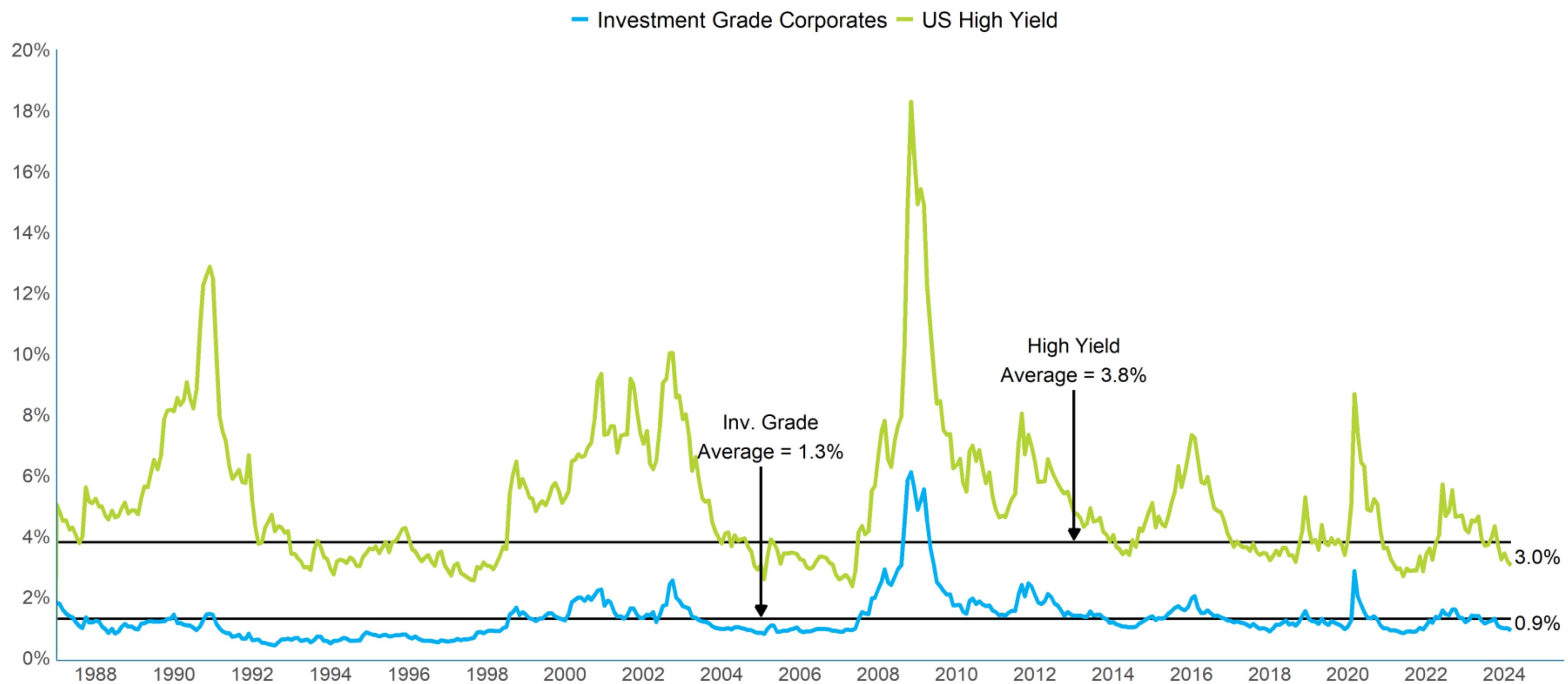
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of March 31, 2024)



→ This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, Bloomberg, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

Credit Spreads[1]
(As of March 31, 2024)



→ This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

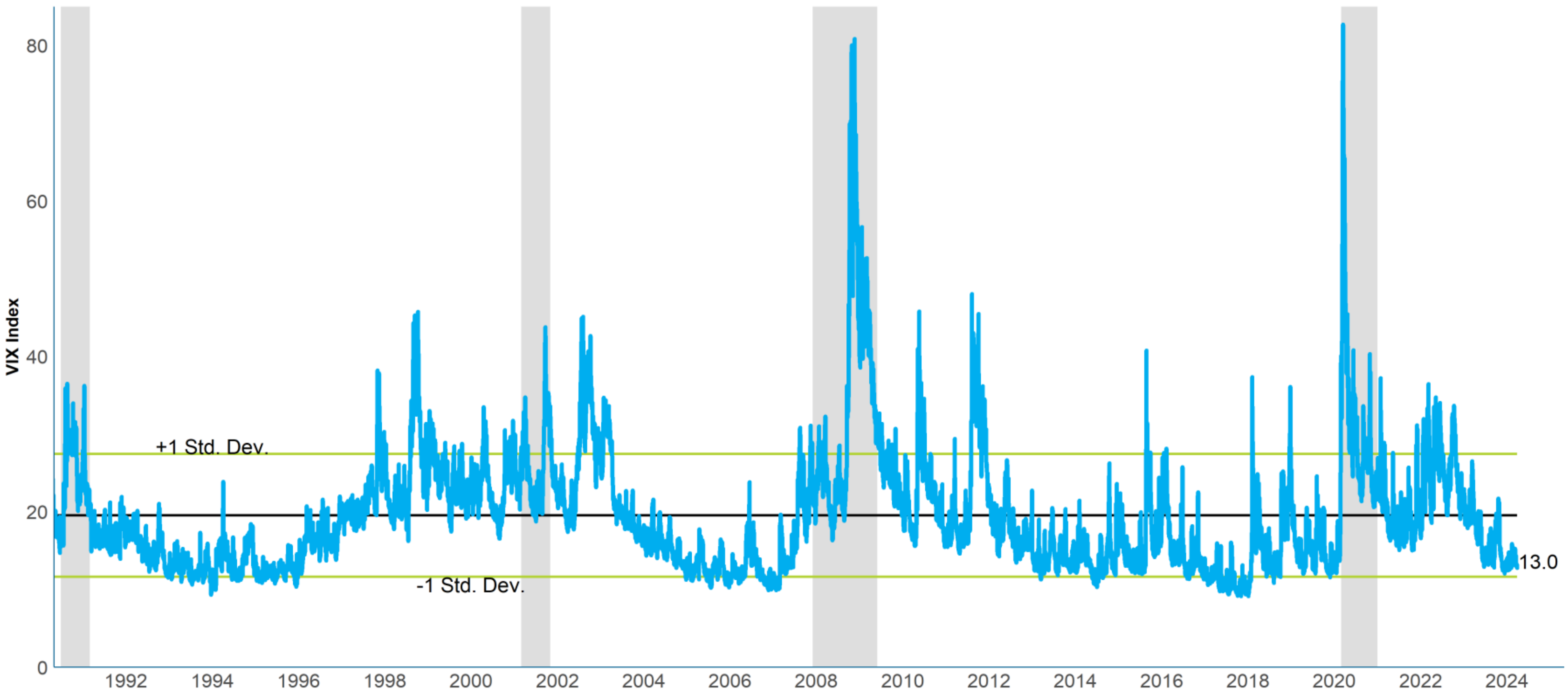
[1] Credit Spreads – Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

Emerging Market Debt Spreads[1]
(As of March 31, 2024)

→ This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

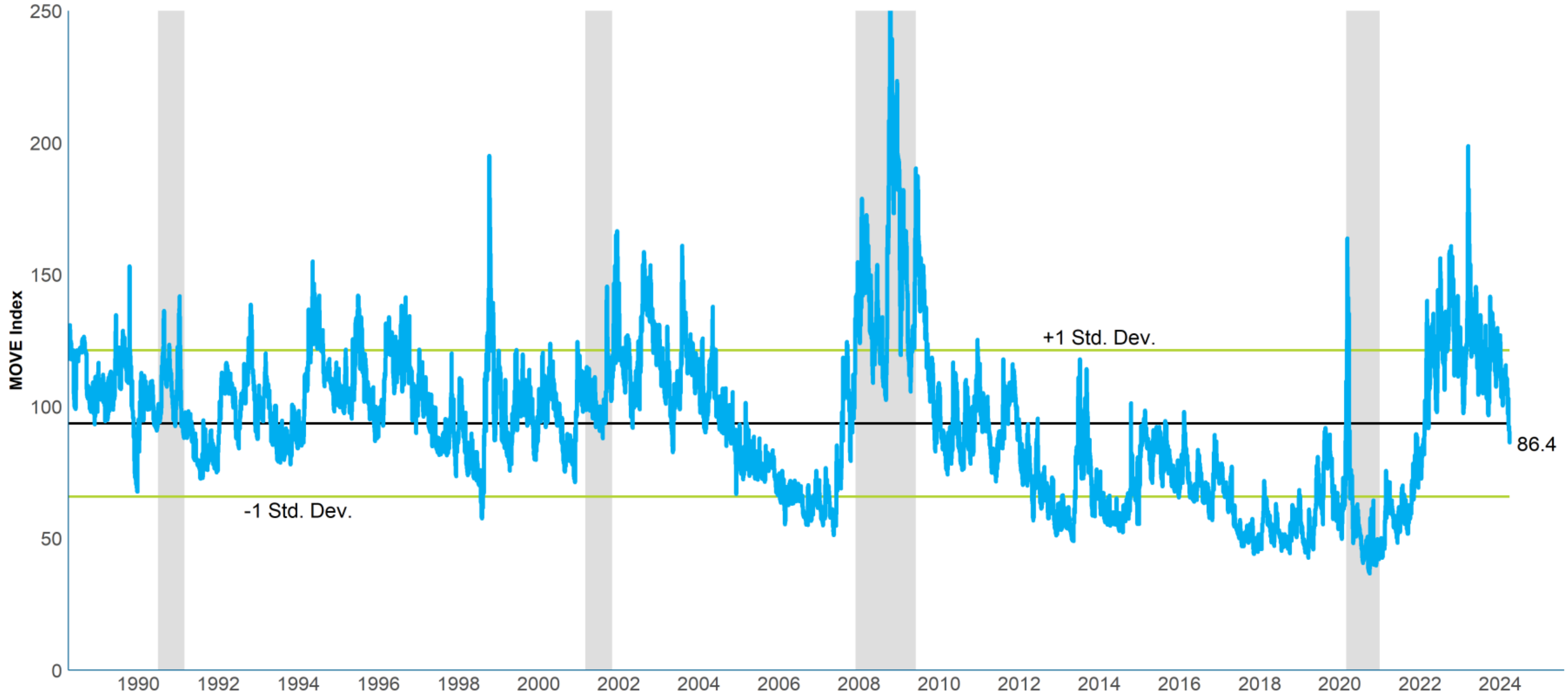
Equity Volatility[1]
(As of March 31, 2024)



→ This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Equity Volatility – Source: FRED, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
[2] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

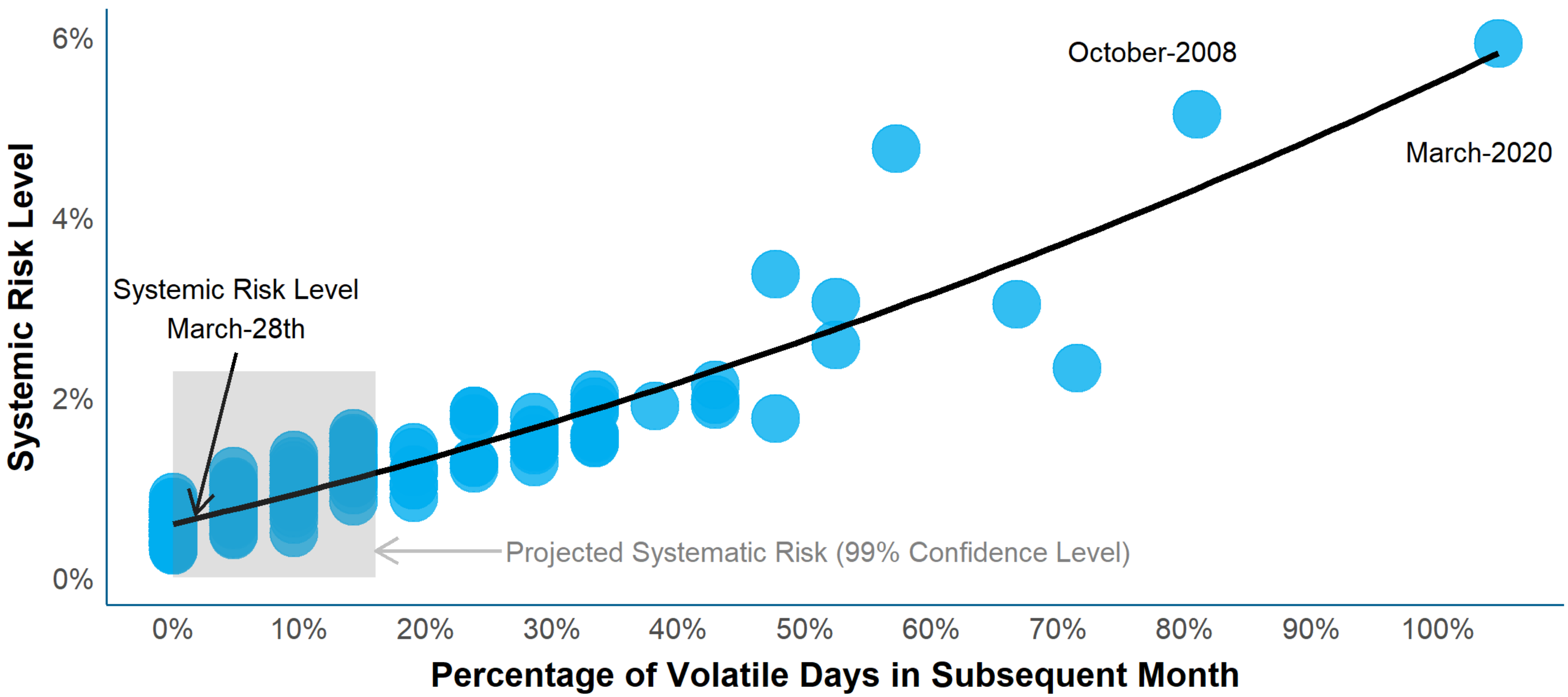
Fixed Income Volatility[1]
(As of March 31, 2024)



→ This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

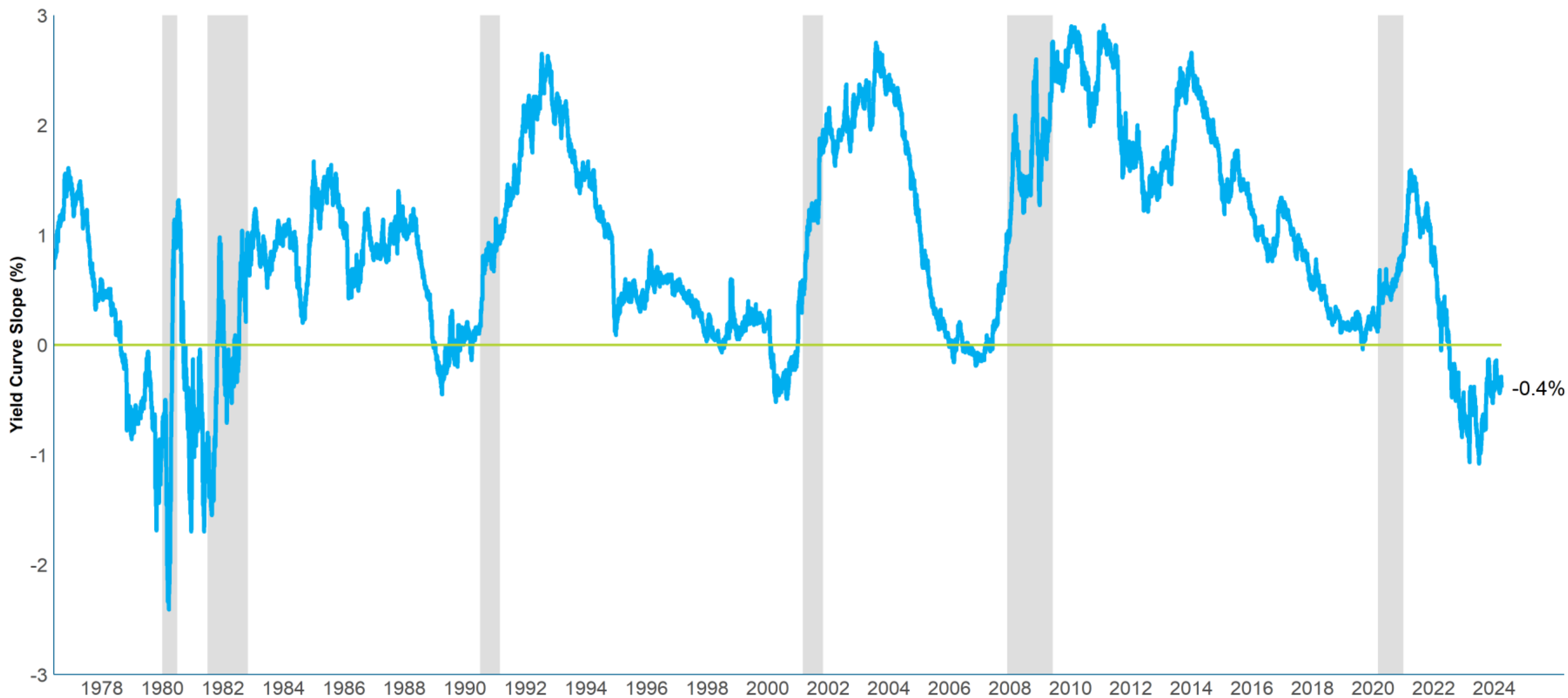
Systemic Risk and Volatile Market Days[1]
(As of March 31, 2024)



→ Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

[1] Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

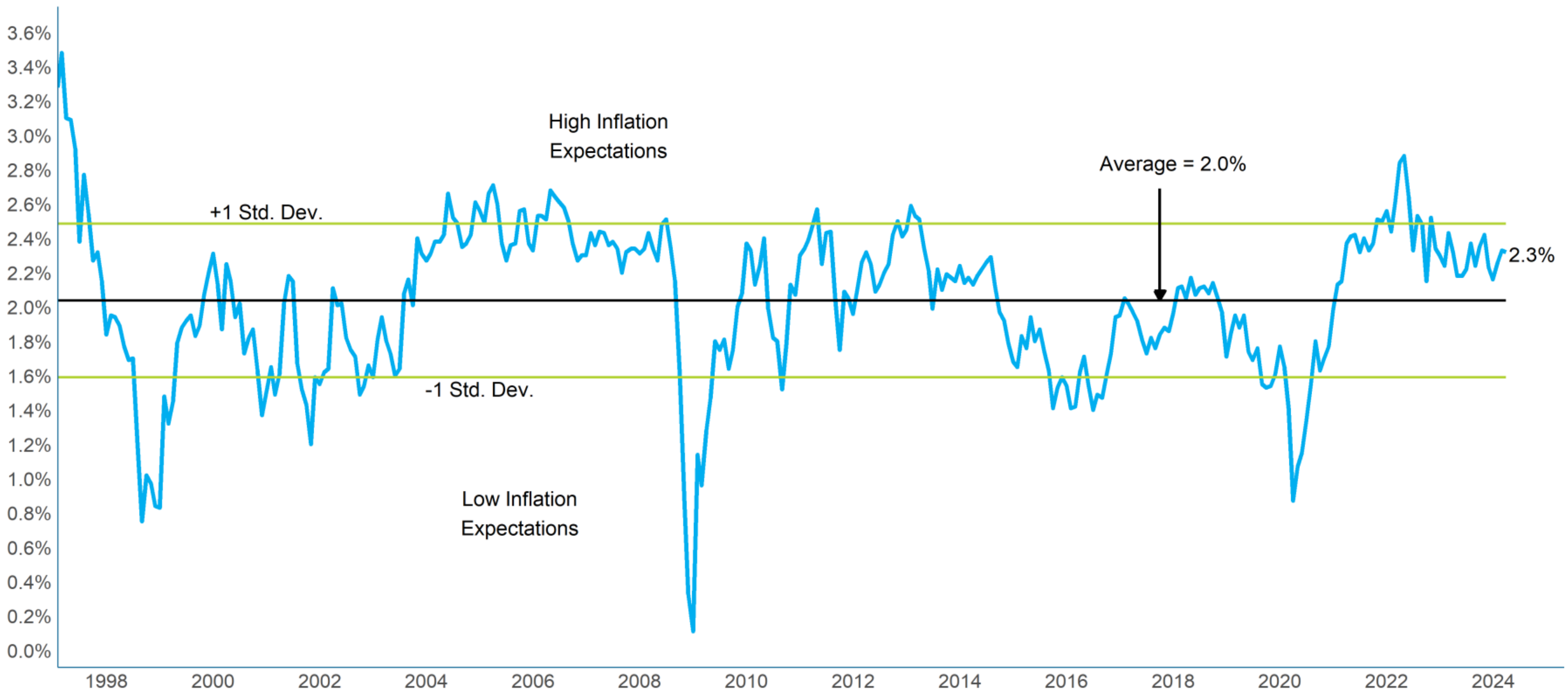
Yield Curve Slope (Ten Minus Two)[1]
(As of March 31, 2024)



→ This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

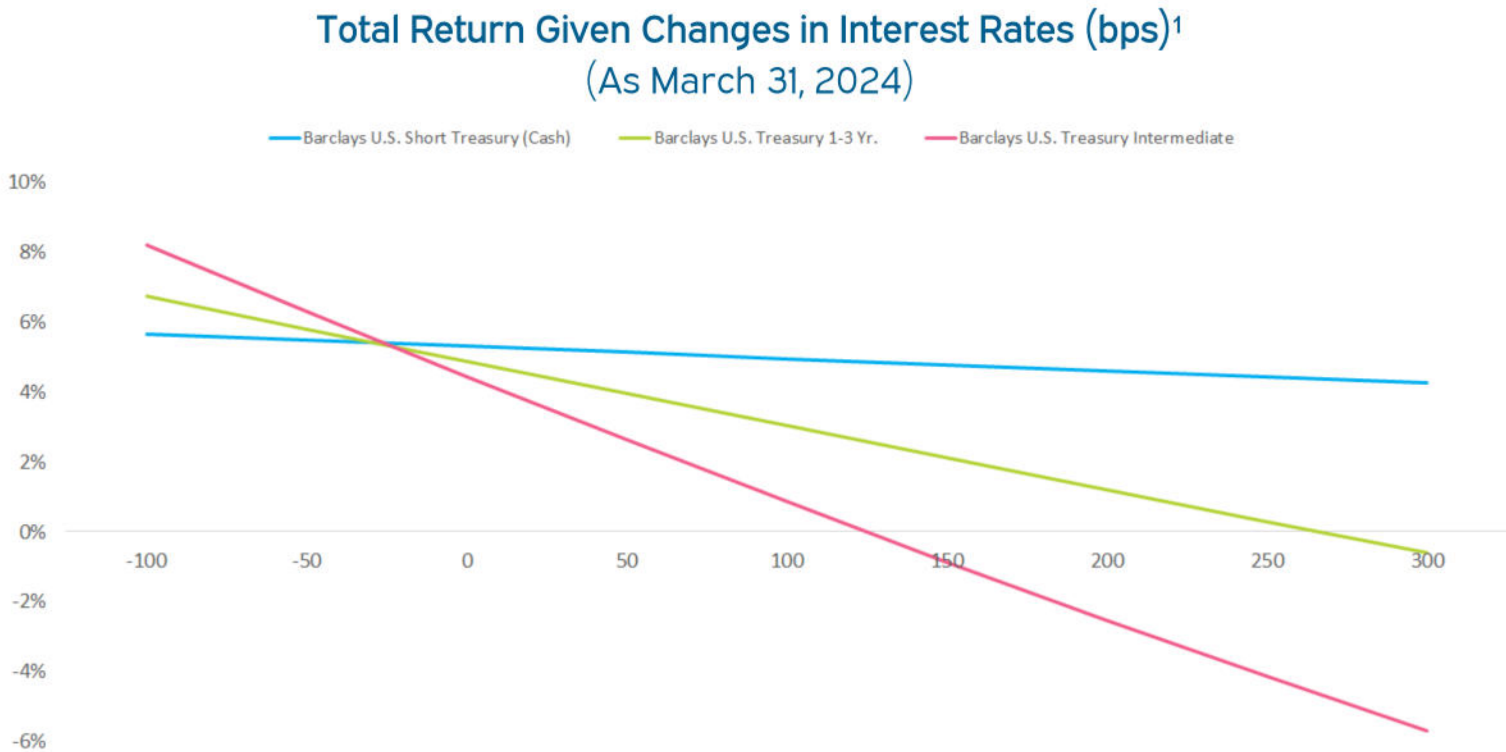
[1] Yield Curve Slope (Ten Minus Two) – Source: FRED. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

Ten-Year Breakeven Inflation[1]
(As of March 31, 2024)



→ This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

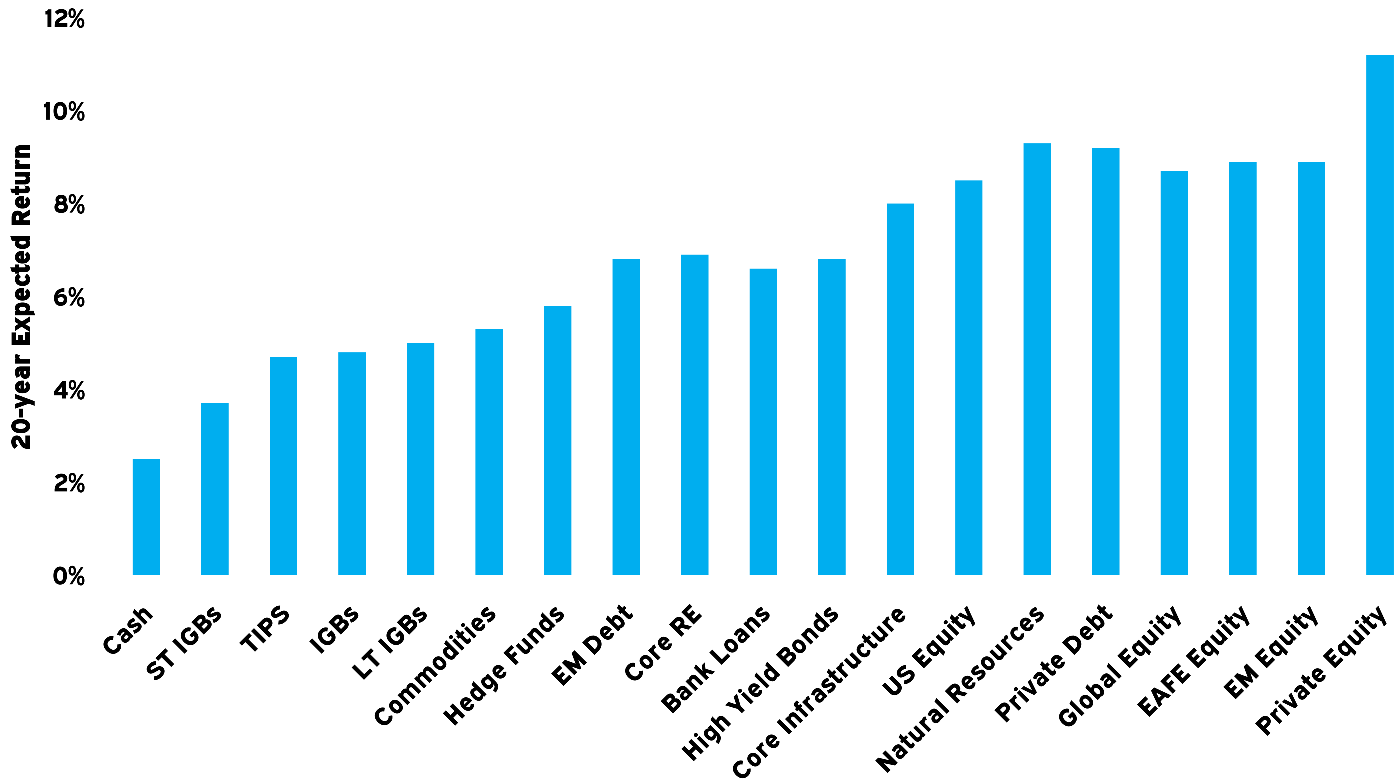
[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	5.7%	5.5%	5.3%	5.1%	5.0%	4.8%	4.6%	4.4%	4.3%	0.35	5.31%
Barclays US Treasury 1-3 Yr.	6.7%	5.8%	4.9%	4.0%	3.0%	2.1%	1.2%	0.3%	-0.6%	1.85	4.88%
Barclays US Treasury Intermediate	8.2%	6.3%	4.4%	2.6%	0.9%	-0.9%	-2.5%	-4.1%	-5.7%	3.68	4.43%
Barclays US Treasury Long	21.3%	12.5%	4.4%	-2.9%	-9.4%	-15.1%	-20.0%	-24.2%	-27.6%	15.34	4.42%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns[1]



→ This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

[1] Source: Meketa Investment Group's 2024 Asset Study.

Appendix

Data Sources and Explanations[1]

→ US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.

→ Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

→ Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

→ Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

→ Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

→ Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

→ Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

[1] All Data as of March 31, 2024, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

→ REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

→ Credit Spreads – Source: Bloomberg High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index.

- Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.

→ EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

→ Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

→ Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

→ Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

→ Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

[1] All Data as of March 31, 2024, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

→ Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

→ Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

[1] All Data as of March 31, 2024, unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

→ What is the Meketa Market Sentiment Indicator?

→ How do I read the indicator graph?

→ How is the Meketa Market Sentiment Indicator constructed?

→ What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

→ Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market correction take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation-based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

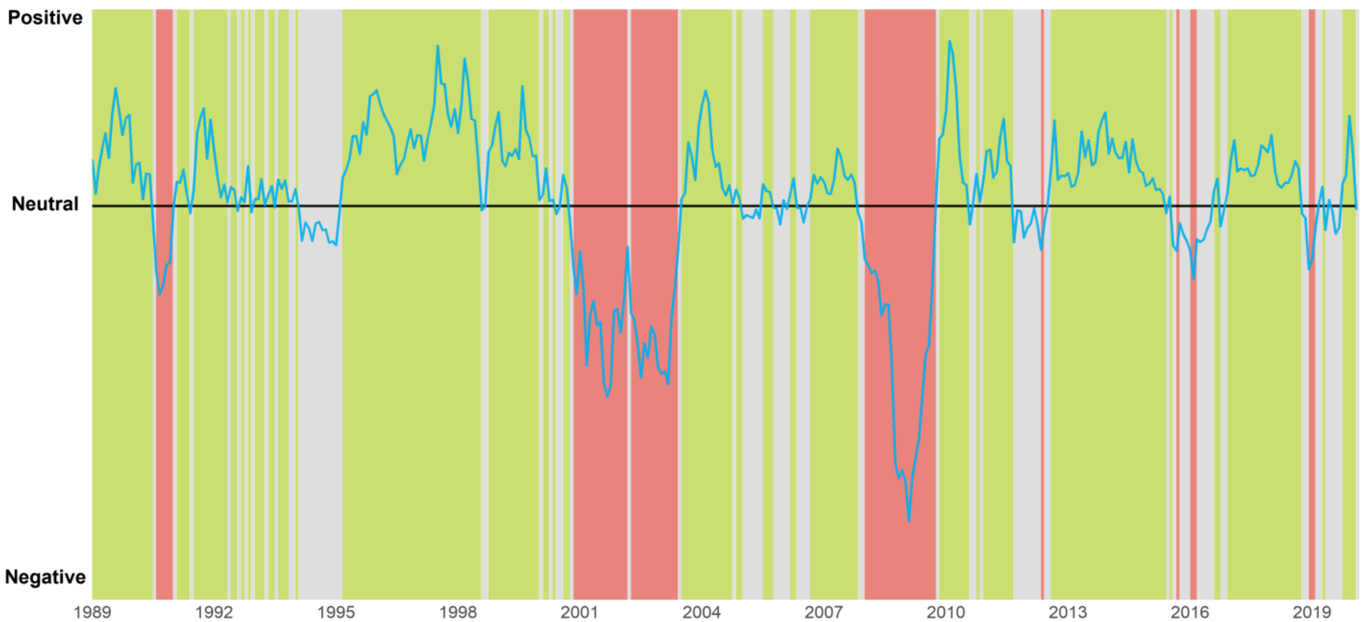
What is the Meketa Market Sentiment Indicator (MIG-MSI)?

→ The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

→ Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication of the signal's current strength.

→ Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

→ The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

- Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
- Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
- Both measures are converted to Z-scores and then combined to get an "apples to apples" comparison without the need of re-scaling.

→ The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure[1]. The color reading on the graph is determined as follows:

- If both stock return momentum and bond spread momentum are positive = GREEN (positive).
- If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
- If both stock return momentum and bond spread momentum are negative = RED (negative).

---

[1] Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
"Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010. *http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf*

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

→ There is strong evidence that time series momentum is significant and persistent. Across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

Disclaimer Information

This material is provided by Meketa Investment Group, Inc. ("Meketa") for informational purposes only and may contain information that is not suitable for all clients. No portion of this commentary is to be construed as a solicitation or recommendations to buy or sell a security, or the provision of personalized investment advice, tax, or legal advice. Past performance may not be indicative of future results and may have been impacted by market events and economic conditions that will not prevail in the future. There can be no assurance that any particular investment or strategy will prove profitable, and the views, opinions, and projects expressed herein may not come to pass. Any direct or indirect reference to a market index is included for illustrative purposes only, as an index is not a security in which an investment can be made. Indices are benchmarks that serve as market or sector indicators and do not account for the deduction of management fees, transaction costs and other expenses associated with investable products. Meketa does not make any representation as to the accuracy, timeliness, suitability, completeness, or relevance of any information prepared by any unaffiliated third party and takes no responsibility, therefore. Any data provided regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of futures results. Investing involves risk, including the potential loss of principal and clients should be guided accordingly.

REPORT

SBI Comprehensive Performance Report

March 31, 2024

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Comprehensive Performance Report

March 31, 2024

Description of SBI Investment Programs

The Minnesota State Board of Investment is responsible for the investment management of various retirement funds, trust funds and cash accounts.

Combined Funds

The Combined Funds represent the assets for both the active and retired public employees in the statewide retirement systems, the biggest of which are the Public Employees Retirement Association (PERA), the Teachers Retirement Association (TRA), and the Minnesota State Retirement System (MSRS). The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

Fire Plans + Other Retirement Plans

Fire Plans and Other Retirement Plans include assets from volunteer fire relief plans and other public retirement plans with authority to invest with the SBI, if they so choose. Fire Plans that are not eligible to be consolidated with Public Employees Retirement Association (PERA) or elect not to be administered by PERA may invest their assets with the SBI using the same asset pools as the Combined Funds. The Statewide Volunteer Firefighter Retirement Plan is administered by PERA and has its own investment vehicle called the Volunteer Firefighter Account.

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. Investment goals among the PDIP's many participants are varied. In order to meet the variety of goals, participants may allocate their investments among one or more accounts that are appropriate for their needs within statutory requirements and rules established by the participating organizations.

Non-Retirement Funds

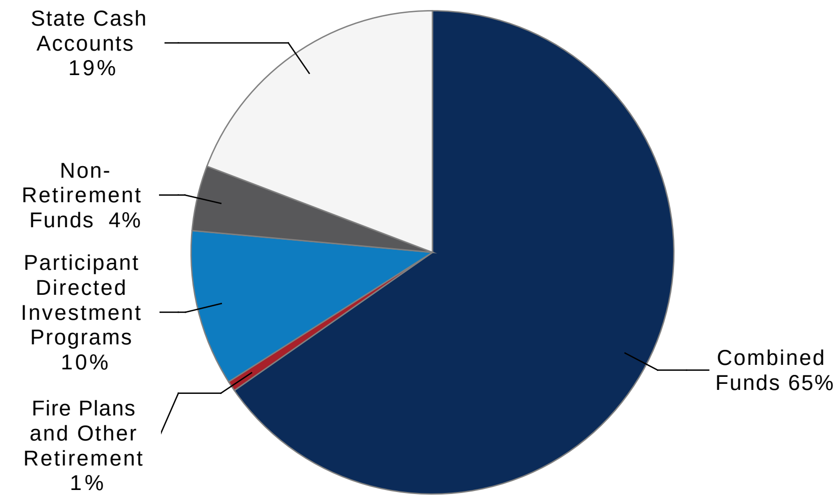
The Non-Retirement Funds are funds established by the State of Minnesota and other government entities for various purposes which include the benefit of public schools, the environment, other post-employment benefits, workers compensation insurance, and other purposes.

State Cash

The State Cash accounts are cash balances of state government funds including the State General Fund. Most accounts are invested by SBI staff through a short-term pooled fund referred to as the Treasurer's Cash Pool. It contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and non-dedicated cash in the State Treasury. Because of special legal restrictions, a small number of cash accounts cannot be commingled.

Funds Under Management

	$ Millions
COMBINED FUNDS	**$92,762**
Fire Plans + Other Retirement Plans	**970**
Participant Directed Investment Program	**14,817**
State Deferred Compensation Plan	10,113
Health Care Savings Plan	2,021
Unclassified Employees Retirement Plan	396
Hennepin County Supplemental Retirement Plan	177
PERA Defined Contribution Plan	100
Minnesota College Savings Plan	1,964
Minnesota Achieving a Better Life Experience Plan	45
Non-Retirement Funds	**6,318**
Assigned Risk Plan	274
Permanent School Fund	2,090
Environmental Trust Fund	1,829
Closed Landfill Investment Fund	146
Miscellaneous Trust Funds	1,015
Other Postemployment Benefits Accounts	964
State Cash	**27,264**
Invested Treasurer's Cash	26,370
Other State Cash Accounts	893
TOTAL SBI AUM	**142,131**



Note: Differentials within column amounts may occur due to rounding

Quarterly Report

Table of Contents

Performance Reporting Legend

Manager Level Data
Aggregate Level Data
Sub-Asset Class Level Data
Asset Class Level Data

Note:
Throughout this report performance is calculated net of investment management fees, gross of administrative fees. Aggregates include terminated managers, and returns for all periods greater than one year are annualized. Inception Date and Since Inception Returns refer to the date of retention by the SBI. FYTD refers to the return generated by an account since July 1 of the most recent year. For historical benchmark details, please refer to the addendum of this report. Some aggregate inception to date return are based portfolio management decisions to re-group manager accounts in different or newly created aggregates.

Combined Funds

March 31, 2024

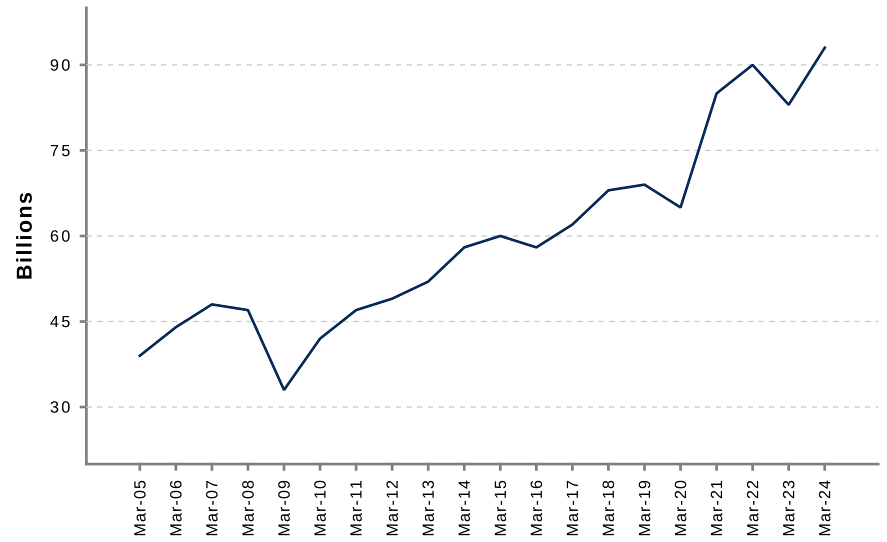
Combined Funds Summary

Combined Funds Change in Market Value ($Millions)

	One Quarter
COMBINED FUNDS	
Beginning Market Value	$89,307
Net Contributions	-786
Investment Return	4,241
Ending Market Value	92,762

The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

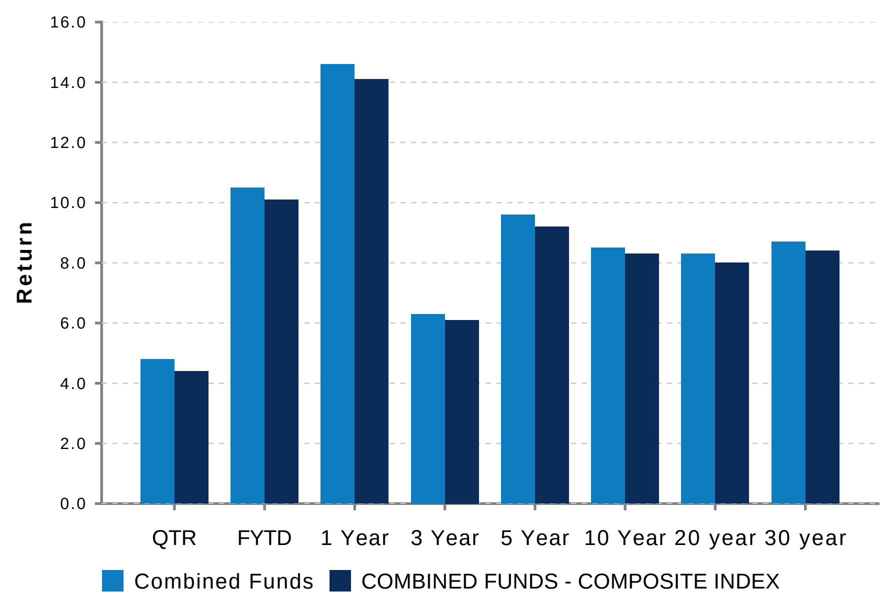
Asset Growth



Performance (Net of Fees)

The Combined Funds' performance is evaluated relative to a composite of public market index and private market investment returns. The Composite performance is calculated by multiplying the beginning of month Composite weights and the monthly returns of the asset class benchmarks.

	QTR	FYTD	1 Yr	3 Yr	5 Yr	10 Yr	20 Yr	30 Yr
Combined Funds	4.8%	10.5%	14.6%	6.3%	9.6%	8.5%	8.3%	8.7%
Combined Funds - Composite Index	4.4%	10.1%	14.1%	6.1%	9.2%	8.3%	8.0%	8.4%
Excess	0.4%	0.4%	0.5%	0.2%	0.4%	0.2%	0.3%	0.2%

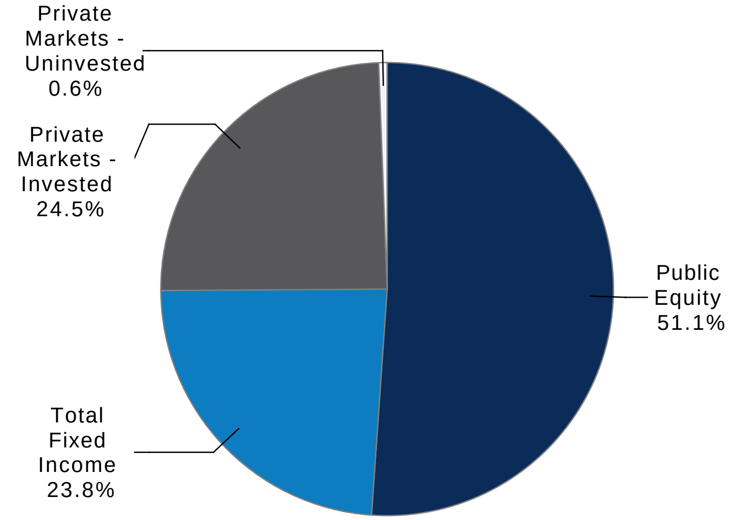


Combined Funds Summary

Asset Mix

The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in cash.

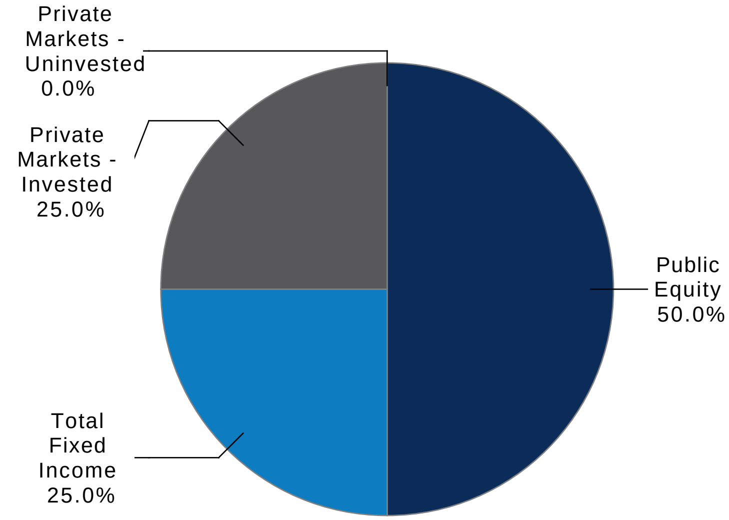
	(Millions)	Actual Mix	Policy Target
Public Equity	$47,424	51.1%	50.0%
Total Fixed Income	22,121	23.8	25.0
Private Markets - Total	23,217	25.0	25.0
Private Markets - Invested	22,685	24.5	
Private Markets - Uninvested	531	0.6	
TOTAL	92,762	100.0	



Composite Index Comparison

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

	Policy Weight	Market Index
Public Equity	50.0%	Public Equity Benchmark
Total Fixed Income	25.0	Total Fixed Income Benchmark
Private Markets - Invested	25.0	Private Markets
Private Markets - Uninvested	0.0	



Combined Funds Asset Class Performance Summary

Public Equity

The Combined Funds Public Equity includes Domestic Equity, International Equity and Global Equity.

The Public Equity benchmark is 67% Russell 3000 and 33% MSCI ACWI ex US (net).

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 Year
Public Equity[1]	$47.4	51.1%	50.0%	8.8%	16.8%	24.4%	7.5%	12.0%	10.0%	8.9%	9.3
Public Equity Benchmark				8.2	16.4	23.8	7.2	11.5			
Excess				0.5	0.5	0.6	0.3	0.4			
Domestic Equity	31.5	33.9	33.5	10.3	19.7	29.6	9.8	14.4	12.2	10.0	10.2
Domestic Equity Benchmark				10.0	19.3	29.3	9.8	14.3	12.3	10.1	10.3
Excess				0.2	0.4	0.3	0.0	0.2	-0.1	-0.1	-0.1
International Equity[1]	14.8	16.0	16.5	5.5	11.2	14.5	3.2	7.2	5.0	6.2	6.0
International Equity Benchmark				4.7	10.6	13.3	1.9	5.9	4.2	5.7	5.2
Excess				0.8	0.6	1.2	1.3	1.2	0.8	0.5	0.7
Global Equity[1]	1.1	1.2	0.0	10.2	14.1	19.9	2.2				
MSCI AC World Index (net)				8.2	16.0	23.2	7.0				
Excess				2.0	-2.0	-3.3	-4.8				

Note:

Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a Total Public Equity return. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

(1) The reported performance for all International equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

Combined Funds Asset Class Performance Summary

Total Fixed Income

The Combined Funds Fixed Income program includes Core/Core Plus, Return Seeking Fixed Income, Treasuries and Laddered Bond + Cash.

The Total Fixed Income benchmark is 40% Bloomberg U.S. Aggregate Index/ 40% Bloomberg Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill.

	Market Value	Actual Weight	Policy Weight	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	30 Year
Total Fixed Income[1]	$22.1	23.8%	25.0%	-0.6%	2.4%	1.9%	-2.1%	1.2%	2.2%	3.5%	4.9%
Total Fixed Income Benchmark				-0.9%	1.5%	0.6%	-2.5%	0.6%	1.7%	3.1%	4.6%
Excess				0.3%	0.9%	1.3%	0.4%	0.6%	0.5%	0.4%	0.4%
Core/Core Plus	$4.6	5.0%	5.0	-0.5%	3.3%	2.9%	-2.2%	1.0%	2.1%	3.5%	4.9%
Core Bonds Benchmark				-0.8%	2.6%	1.7%	-2.5%	0.4%	1.5%	3.0%	4.5%
Excess				0.2%	0.8%	1.2%	0.2%	0.7%	0.6%	0.5%	0.4%
Return Seeking Fixed Income[1]	$4.4	4.7%	5.0	0.8%	6.4%	7.3%	0.1%				
Bloomberg U.S. Aggregate				-0.8%	2.6%	1.7%	-2.5%				
Excess				1.6%	3.9%	5.6%	2.6%				
Treasury Protection	$8.6	9.2%	10.0	-2.2%	-0.9%	-3.0%	-5.2%	-1.3%			
Bloomberg Treasury 5+ Year				-2.1%	-0.9%	-2.9%	-5.2%	-1.3%			
Excess				-0.0%	0.0%	-0.1%	-0.0%	0.0%			
Laddered Bond + Cash	$4.6	4.9%	5.0	1.3%	4.1%	5.5%	2.5%	2.0%	1.4%	1.7%	3.1%
ICE BofA US 3-Month Treasury Bill				1.3%	4.0%	5.2%	2.6%	2.0%	1.4%	1.5%	2.5%
Excess				0.0%	0.1%	0.2%	-0.0%	-0.0%	0.1%	0.2%	0.7%

Note:

Since 12/1/2020 the Total Fixed Income includes allocations to Core/Core Plus Bonds, Return Seeking Bonds, Treasuries and Laddered Bond + Cash. From 7/1/2020 to 11/30/2020 Total Fixed Income was Core Bonds, Treasuries and Cash. From 2/1/2018-6/30/20 Total Fixed Income was Core Bonds and Treasuries. Prior to 2/1/2018, Total Fixed Income was Core Bonds. For additional information regarding historical asset class performance and benchmarks, please refer to the Combined Funds Performance Report.

(1) The reported performance of Return Seeking Fixed Income manager Ashmore Emerging Markets was adversely affected by pricing differences due to the Easter market holiday in the U.S. as well as a delay in processing of a debt exchange. Ashmore's performance net of these impacts, which will reverse in next quarter’s reporting, was in-line with the benchmark for the quarter.

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 Year	30 Year
Private Markets - Invested	2.1%	6.2%	8.9%	14.0%	13.2%	12.0%	13.7%	12.8%	13.4%
Private Markets -Uninvested(1)	1.0%	3.9%	5.5%	2.3%					
Private Equity	2.6%	7.8%	11.7%	14.0%	16.8%	15.5%	15.9%	14.2%	15.3%
Private Credit	4.8%	10.0%	13.6%	16.2%	12.0%	12.7%	12.8%	12.5%	
Resources	-0.5%	2.6%	1.2%	15.5%	3.7%	1.6%	12.7%	13.6%	12.9%
Real Estate	-2.4%	-5.8%	-8.2%	11.0%	9.8%	11.0%	8.9%	9.0%	9.5%

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments - The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments - The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments - The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments - The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

(1) The Uninvested Private Markets is currently cash. Prior to 11/02/2022, the Uninvested portion of the Private Markets allocation was invested in a combination of a passively managed S&P 500 Index strategy and a cash overlay strategy invested in equity derivatives and cash.
Source: State Street Bank

Asset Class & Manager Performance
March 31, 2024

The assets of the Combined Funds are allocated to public equity, fixed income, private markets, and cash. Each asset class may be further differentiated by geography, management style, and/or strategy. Managers are hired to manage the assets accordingly. This diversification is intended to reduce wide fluctuations in investment returns on a year-to-year basis and enhances the Funds' ability to meet or exceed the actuarial return target over the long-term.

The Combined Funds consist of the assets of active employees and retired members of the statewide retirement plans. The SBI commingles the assets of these plans into the Combined Funds to capture investment efficiencies. This sharing is accomplished by grouping managers by asset class, geography, and management style, into several Investment Pools. The individual funds participate in the Investment Pools by purchasing units which function much like the shares of a mutual fund.

While the vast majority of the units of these pools are owned by the Combined Funds, the Supplemental Investment Fund also owns units of these pools. The Supplemental Investment Funds are mutual fund-like investment vehicles which are used by investors in the Participant Directed Investment Program. Please refer to the Participant Directed Investment Program report for more information.

The performance information presented on the following pages for Public Equity and Fixed Income includes both the Combined Funds and Supplemental Investment Fund. The Private Markets is Combined Funds only. All assets in the Combined Funds are managed externally by investment management firms retained by contract.

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Domestic Equity

March 31, 2024

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Domestic Equity										
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**$3,179,835,655**	**9.9%**	**8.9%**	**18.3%**	**25.6%**	**4.1%**	**11.5%**	**10.3%**	**8.6%**	**06/1996**
Active Domestic Equity Benchmark			7.5	16.2	23.4	4.4	10.9	10.1	9.0	06/1996
Excess			1.4	2.0	2.2	-0.3	0.6	0.3	-0.5	
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**3,893,380,182**	**12.1**	**11.2**	**21.4**	**31.8**	**11.7**	**15.7**	**13.1**	**9.5**	**06/1996**
Semi Passive Domestic Equity Benchmark			10.3	19.6	29.9	10.5	14.8	12.7	9.4	06/1996
Excess			0.9	1.8	2.0	1.3	0.9	0.4	0.2	
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**25,048,789,423**	**78.0**	**10.3**	**19.6**	**29.8**	**10.4**	**14.7**	**12.5**	**9.6**	**06/1996**
Passive Domestic Equity Benchmark			10.3	19.6	29.8	10.4	14.7	12.5	9.7	06/1996
Excess			-0.0	0.0	0.0	0.0	0.0	0.0	-0.1	
TRANSITION AGGREGATE DOMESTIC EQUITY (4)	16,874	0.0								
TOTAL DOMESTIC EQUITY (5)	**32,122,022,133**	**100.0**	**10.3**	**19.7**	**29.6**	**9.8**	**14.4**	**12.2**	**10.9**	**01/1984**
Domestic Equity Benchmark			10.0	19.3	29.3	9.8	14.3	12.3	11.0	01/1984
Excess			0.2	0.4	0.3	0.0	0.2	-0.1	-0.2	

(1) The Active Domestic Equity Benchmark is a weighted composite each of the individual active domestic equity manager's benchmarks.
(2) The current Semi-Passive Domestic Equity Benchmark is the Russell 1000 index.
(3) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.
(4) The Transition Domestic Equity Aggregate will periodically contain residual Domestic Equity securities from transitions.
(5) The current Domestic Equity Benchmark is the Russell 3000.
Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Total Domestic Equity					
ACTIVE DOMESTIC EQUITY AGGREGATE (1)	**20.9%**	**-21.3%**	**18.5%**	**27.3%**	**27.6%**
Active Domestic Equity Benchmark	19.4	-19.4	20.3	19.8	28.2
Excess	1.5	-1.9	-1.7	7.5	-0.6
SEMI PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**27.5**	**-18.7**	**28.8**	**21.0**	**30.9**
Semi Passive Domestic Equity Benchmark	26.5	-19.1	26.5	21.0	31.4
Excess	1.0	0.4	2.3	0.0	-0.5
PASSIVE DOMESTIC EQUITY AGGREGATE (3)	**26.5**	**-19.2**	**26.5**	**20.8**	**31.3**
Passive Domestic Equity Benchmark	26.5	-19.1	26.4	20.8	31.3
Excess	0.0	-0.0	0.1	0.0	0.0
TRANSITION AGGREGATE DOMESTIC EQUITY (4)					
TOTAL DOMESTIC EQUITY (5)	**26.0**	**-19.4**	**25.8**	**21.7**	**30.7**
Domestic Equity Benchmark	26.0	-19.2	25.7	20.8	30.8
Excess	0.1	-0.2	0.1	0.9	-0.1

(1) The Active Domestic Equity Benchmark is a weighted composite each of the individual active domestic equity manager's benchmarks.
(2) The current Semi-Passive Domestic Equity Benchmark is the Russell 1000 index.
(3) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.
(4) The Transition Domestic Equity Aggregate will periodically contain residual Domestic Equity securities from transitions.
(5) The current Domestic Equity Benchmark is the Russell 3000.
Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Growth										
SANDS	**$244,305,324**	**0.8%**	**15.0%**	**30.2%**	**48.4%**	**-1.5%**	**11.7%**	**12.3%**	**11.5%**	**01/2005**
Russell 1000 Growth			11.4	23.2	39.0	12.5	18.5	16.0	12.0	01/2005
Excess			3.6	7.0	9.4	-14.0	-6.8	-3.6	-0.5	
WINSLOW	**242,282,660**	**0.8**	**13.5**	**29.5**	**46.6**	**11.7**	**17.1**	**15.5**	**12.4**	**01/2005**
Russell 1000 Growth			11.4	23.2	39.0	12.5	18.5	16.0	12.0	01/2005
Excess			2.1	6.3	7.6	-0.8	-1.4	-0.4	0.4	
RUSSELL 1000 GROWTH AGGREGATE (1)	**486,587,984**	**1.5**	**14.3**	**29.9**	**47.5**	**4.2**	**17.7**	**16.2**	**12.0**	**11/2003**
Russell 1000 Growth			11.4	23.2	39.0	12.5	18.5	16.0	11.9	11/2003
Excess			2.8	6.7	8.5	-8.3	-0.8	0.2	0.1	

(1) Prior to 1/1/2021 the Russell 1000 Growth Aggregate included returns from Zevenbergen, which moved to the Russell 3000 Growth benchmark and is now reported separately.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Large Cap Growth					
SANDS	**52.0%**	**-49.3%**	**5.2%**	**71.0%**	**33.5%**
Russell 1000 Growth	42.7	-29.1	27.6	38.5	36.4
Excess	9.3	-20.2	-22.4	32.5	-2.8
WINSLOW	**43.7**	**-31.0**	**24.8**	**37.6**	**34.2**
Russell 1000 Growth	42.7	-29.1	27.6	38.5	36.4
Excess	1.0	-1.8	-2.8	-0.9	-2.2
RUSSELL 1000 GROWTH AGGREGATE (1)	**47.7**	**-41.3**	**12.8**	**81.3**	**37.3**
Russell 1000 Growth	42.7	-29.1	27.6	38.5	36.4
Excess	5.1	-12.1	-14.8	42.8	0.9

(1) Prior to 1/1/2021 the Russell 1000 Growth Aggregate included returns from Zevenbergen, which moved to the Russell 3000 Growth benchmark and is now reported separately.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Semi-Passive Large Cap										
BLACKROCK	**$1,937,270,001**	**6.0%**	**11.3%**	**21.5%**	**31.3%**	**11.2%**	**15.1%**	**13.3%**	**10.8%**	**01/1995**
Semi Passive Domestic Equity Benchmark			10.3	19.6	29.9	10.5	14.8	12.7	10.4	01/1995
Excess			1.0	1.8	1.4	0.8	0.4	0.7	0.4	
J.P. MORGAN	**1,956,110,181**	**6.1**	**11.1**	**21.4**	**32.4**	**12.2**	**16.2**	**13.4**	**10.8**	**01/1995**
Semi Passive Domestic Equity Benchmark			10.3	19.6	29.9	10.5	14.8	12.7	10.4	01/1995
Excess			0.9	1.8	2.5	1.7	1.4	0.7	0.4	
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**3,893,380,182**	**12.1**	**11.2**	**21.4**	**31.8**	**11.7**	**15.7**	**13.1**	**9.5**	**06/1996**
Semi Passive Domestic Equity Benchmark			10.3	19.6	29.9	10.5	14.8	12.7	9.4	06/1996
Excess			0.9	1.8	2.0	1.3	0.9	0.4	0.2	

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Semi-Passive Large Cap					
BLACKROCK	**26.9%**	**-19.2%**	**28.3%**	**20.7%**	**30.4%**
Semi Passive Domestic Equity Benchmark	26.5	-19.1	26.5	21.0	31.4
Excess	0.4	-0.1	1.8	-0.3	-1.0
J.P. MORGAN	**28.1**	**-18.1**	**29.3**	**21.2**	**31.3**
Semi Passive Domestic Equity Benchmark	26.5	-19.1	26.5	21.0	31.4
Excess	1.6	1.0	2.8	0.3	-0.1
SEMI-PASSIVE DOMESTIC EQUITY AGGREGATE	**27.5**	**-18.7**	**28.8**	**21.0**	**30.9**
Semi Passive Domestic Equity Benchmark	26.5	-19.1	26.5	21.0	31.4
Excess	1.0	0.4	2.3	0.0	-0.5

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Large Cap Value										
BARROW HANLEY	**$412,692,759**	**1.3%**	**10.2%**	**19.5%**	**26.2%**	**12.1%**	**13.5%**	**10.4%**	**9.2%**	**04/2004**
Russell 1000 Value			9.0	15.6	20.3	8.1	10.3	9.0	8.3	04/2004
Excess			1.2	3.9	6.0	4.0	3.2	1.4	0.9	
LSV	**366,277,297**	**1.1**	**11.4**	**18.8**	**22.5**	**8.3**	**10.9**	**9.4**	**9.3**	**04/2004**
Russell 1000 Value			9.0	15.6	20.3	8.1	10.3	9.0	8.3	04/2004
Excess			2.4	3.3	2.3	0.2	0.6	0.4	1.0	
RUSSELL 1000 VALUE AGGREGATE	**778,970,055**	**2.4**	**10.8**	**19.1**	**24.4**	**10.2**	**12.4**	**10.1**	**9.3**	**10/2003**
Russell 1000 Value			9.0	15.6	20.3	8.1	10.3	9.0	8.9	10/2003
Excess			1.8	3.6	4.1	2.1	2.1	1.1	0.4	

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Large Cap Value					
BARROW HANLEY	**12.0%**	**1.1%**	**27.7%**	**2.4%**	**26.9%**
Russell 1000 Value	11.5	-7.5	25.2	2.8	26.5
Excess	0.5	8.6	2.5	-0.4	0.4
LSV	**10.5**	**-6.3**	**29.7**	**-1.3**	**26.9**
Russell 1000 Value	11.5	-7.5	25.2	2.8	26.5
Excess	-0.9	1.3	4.5	-4.1	0.4
RUSSELL 1000 VALUE AGGREGATE	**11.3**	**-2.6**	**28.8**	**1.6**	**27.4**
Russell 1000 Value	11.5	-7.5	25.2	2.8	26.5
Excess	-0.2	4.9	3.7	-1.2	0.9

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Growth										
ARROWMARK	**$202,480,578**	**0.6%**	**5.3%**	**10.3%**	**16.9%**	**-1.0%**	**5.8%**		**10.4%**	**11/2016**
Russell 2000 Growth			7.6	12.4	20.3	-2.7	7.4		10.1	11/2016
Excess			-2.3	-2.2	-3.5	1.7	-1.6		0.3	
HOOD RIVER	**228,288,096**	**0.7**	**14.5**	**21.2**	**31.2**	**4.0**	**16.2**		**16.4**	**11/2016**
Russell 2000 Growth			7.6	12.4	20.3	-2.7	7.4		10.1	11/2016
Excess			6.9	8.8	10.9	6.7	8.8		6.3	
RICE HALL JAMES	**189,063,769**	**0.6**	**5.5**	**9.8**	**12.9**	**-0.8**	**7.0**		**10.2**	**11/2016**
Russell 2000 Growth			7.6	12.4	20.3	-2.7	7.4		10.1	11/2016
Excess			-2.0	-2.6	-7.5	1.8	-0.4		0.1	
WELLINGTON	**241,854,101**	**0.8**	**7.6**	**12.8**	**22.0**	**-2.3**	**7.3**		**10.2**	**11/2016**
Russell 2000 Growth			7.6	12.4	20.3	-2.7	7.4		10.1	11/2016
Excess			0.1	0.3	1.6	0.4	-0.1		0.1	
RUSSELL 2000 GROWTH AGGREGATE	**861,686,544**	**2.7**	**8.3**	**13.6**	**20.9**	**-0.1**	**9.2**	**7.8%**	**8.0**	**11/2003**
Russell 2000 Growth			7.6	12.4	20.3	-2.7	7.4	7.9	8.7	11/2003
Excess			0.7	1.1	0.6	2.6	1.8	-0.1	-0.7	

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Small Cap Growth					
ARROWMARK	**19.9%**	**-23.3%**	**6.1%**	**21.9%**	**20.1%**
Russell 2000 Growth	18.7	-26.4	2.8	34.6	28.5
Excess	1.3	3.1	3.2	-12.8	-8.4
HOOD RIVER	**21.9**	**-27.7**	**24.2**	**61.7**	**24.3**
Russell 2000 Growth	18.7	-26.4	2.8	34.6	28.5
Excess	3.3	-1.4	21.4	27.0	-4.2
RICE HALL JAMES	**14.3**	**-24.4**	**15.6**	**23.8**	**18.0**
Russell 2000 Growth	18.7	-26.4	2.8	34.6	28.5
Excess	-4.3	2.0	12.8	-10.8	-10.5
WELLINGTON	**18.5**	**-28.5**	**4.3**	**33.1**	**35.6**
Russell 2000 Growth	18.7	-26.4	2.8	34.6	28.5
Excess	-0.1	-2.1	1.4	-1.5	7.1
RUSSELL 2000 GROWTH AGGREGATE	**18.7**	**-26.3**	**12.4**	**35.4**	**24.6**
Russell 2000 Growth	18.7	-26.4	2.8	34.6	28.5
Excess	0.1	0.0	9.5	0.8	-3.9

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Small Cap Value										
GOLDMAN SACHS	**$211,863,389**	**0.7%**	**3.4%**	**13.9%**	**15.4%**	**2.5%**	**7.1%**	**6.8%**	**8.6%**	**01/2004**
Russell 2000 Value			2.9	15.1	18.8	2.2	8.2	6.9	7.7	01/2004
Excess			0.5	-1.2	-3.3	0.3	-1.1	-0.1	0.9	
HOTCHKIS AND WILEY	**216,430,374**	**0.7**	**5.8**	**17.9**	**22.1**	**13.0**	**13.6**	**9.0**	**9.2**	**01/2004**
Russell 2000 Value			2.9	15.1	18.8	2.2	8.2	6.9	7.7	01/2004
Excess			2.9	2.8	3.3	10.8	5.5	2.1	1.5	
MARTINGALE	**180,429,716**	**0.6**	**3.8**	**18.1**	**23.7**	**9.5**	**11.1**	**8.6**	**8.4**	**01/2004**
Russell 2000 Value			2.9	15.1	18.8	2.2	8.2	6.9	7.7	01/2004
Excess			0.9	3.0	4.9	7.3	2.9	1.7	0.6	
PEREGRINE	**214,046,912**	**0.7**	**3.5**	**11.7**	**13.3**	**2.2**	**8.0**	**6.7**	**9.4**	**07/2000**
Russell 2000 Value			2.9	15.1	18.8	2.2	8.2	6.9	9.0	07/2000
Excess			0.6	-3.4	-5.4	-0.0	-0.1	-0.2	0.4	
RUSSELL 2000 VALUE AGGREGATE	**822,770,390**	**2.6**	**4.2**	**15.1**	**17.9**	**5.8**	**9.3**	**7.5**	**9.0**	**10/2003**
Russell 2000 Value			2.9	15.1	18.8	2.2	8.2	6.9	8.4	10/2003
Excess			1.3	-0.0	-0.9	3.6	1.2	0.6	0.5	

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Small Cap Value					
GOLDMAN SACHS	**11.9%**	**-14.4%**	**27.0%**	**2.4%**	**23.2%**
Russell 2000 Value	14.6	-14.5	28.3	4.6	22.4
Excess	-2.8	0.1	-1.3	-2.3	0.8
HOTCHKIS AND WILEY	**18.8**	**3.1**	**36.5**	**-0.2**	**19.7**
Russell 2000 Value	14.6	-14.5	28.3	4.6	22.4
Excess	4.2	17.6	8.2	-4.8	-2.7
MARTINGALE	**20.7**	**-8.0**	**41.3**	**-4.6**	**21.1**
Russell 2000 Value	14.6	-14.5	28.3	4.6	22.4
Excess	6.1	6.4	13.0	-9.2	-1.3
PEREGRINE	**9.2**	**-12.5**	**28.6**	**7.3**	**21.1**
Russell 2000 Value	14.6	-14.5	28.3	4.6	22.4
Excess	-5.4	2.0	0.3	2.7	-1.3
RUSSELL 2000 VALUE AGGREGATE	**14.2**	**-9.4**	**31.8**	**1.5**	**21.3**
Russell 2000 Value	14.6	-14.5	28.3	4.6	22.4
Excess	-0.5	5.1	3.5	-3.1	-1.1

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active All Cap										
ZEVENBERGEN (1)	**$229,820,681**	**0.7%**	**12.2%**	**22.5%**	**41.2%**	**-6.6%**	**13.6%**	**13.6%**	**11.5%**	**04/1994**
Zevenbergen Custom Benchmark			11.2	22.7	38.0	11.5	19.1	16.3		04/1994
Excess			1.0	-0.1	3.3	-18.2	-5.5	-2.7		
ACTIVE RUSSELL 3000 GROWTH (2)	**229,820,681**	**0.7**	**12.2**	**22.5**	**41.2**	**-6.6**			**-8.6**	**01/2021**
Russell 3000 Growth TR			11.2	22.7	38.0	11.5			11.0	01/2021
Excess			1.0	-0.1	3.3	-18.2			-19.6	

(1) Effective 1/1/2021, the SBI changed the Zevenbergen Benchmark to the Russell 3000 Growth. Prior to this date it was the Russell 1000 Growth.

(2) Prior to 1/1/2021, Zevenbergen returns were reported as part of the Russell 1000 Growth Aggregate.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active All Cap					
ZEVENBERGEN (1)	**66.6%**	**-55.7%**	**-9.7%**	**126.2%**	**43.0%**
Zevenbergen Custom Benchmark	41.2	-29.0	32.3	38.5	36.4
Excess	25.4	-26.8	-42.0	87.7	6.7
ACTIVE RUSSELL 3000 GROWTH (2)	**66.6**	**-55.7**	**-9.7**		
Russell 3000 Growth TR	41.2	-29.0	25.8		
Excess	25.4	-26.8	-35.6		

(1) Effective 1/1/2021, the SBI changed the Zevenbergen Benchmark to the Russell 3000 Growth. Prior to this date it was the Russell 1000 Growth.

(2) Prior to 1/1/2021, Zevenbergen returns were reported as part of the Russell 1000 Growth Aggregate.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Passive Domestic Equity										
BLACKROCK RUSSELL 1000	**$24,058,459,178**	**74.9%**	**10.3%**	**19.6%**	**29.9%**	**10.4%**	**14.8%**		**14.8%**	**11/2016**
RUSSELL 1000 (DAILY)			10.3	19.6	29.9	10.5	14.8		14.8	11/2016
Excess			-0.0	0.0	0.0	-0.0	-0.0		-0.0	
BLACKROCK RUSSELL 2000	**80,817,923**	**0.3**	**5.2**	**13.7**	**19.6**	**0.3**	**8.6**		**8.4**	**11/2018**
RUSSELL 2000 (DAILY)			5.2	13.8	19.7	-0.1	8.1		8.0	11/2018
Excess			0.1	-0.1	-0.1	0.4	0.5		0.4	
BLACKROCK RUSSELL 3000 (1)	**909,512,322**	**2.8**	**10.0**	**19.4**	**29.4**	**10.0**	**14.5**	**12.4%**	**10.1**	**07/1995**
Passive Manager Benchmark			10.0	19.3	29.3	9.8	14.3	12.3	10.0	07/1995
Excess			0.0	0.1	0.1	0.2	0.2	0.1	0.1	
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**25,048,789,423**	**78.0**	**10.3**	**19.6**	**29.8**	**10.4**	**14.7**	**12.5**	**9.6**	**06/1996**
Passive Domestic Equity Benchmark			10.3	19.6	29.8	10.4	14.7	12.5	9.7	06/1996
Excess			-0.0	0.0	0.0	0.0	0.0	0.0	-0.1	

(1) The current Passive Manager Benchmark is the Russell 3000. For historical benchmark details please refer to the addendum of this report.

(2) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Total Passive Domestic Equity					
BLACKROCK RUSSELL 1000	**26.6%**	**-19.2%**	**26.5%**	**20.9%**	**31.4%**
RUSSELL 1000 (DAILY)	26.5	-19.1	26.5	21.0	31.4
Excess	0.0	-0.0	0.1	-0.0	0.0
BLACKROCK RUSSELL 2000	**16.7**	**-19.9**	**16.0**	**20.8**	**25.2**
RUSSELL 2000 (DAILY)	16.9	-20.4	14.8	20.0	25.5
Excess	-0.3	0.6	1.2	0.8	-0.3
BLACKROCK RUSSELL 3000 (1)	**26.0**	**-19.2**	**26.2**	**21.2**	**31.1**
Passive Manager Benchmark	26.0	-19.2	25.7	20.9	31.0
Excess	0.1	0.0	0.5	0.3	0.0
PASSIVE DOMESTIC EQUITY AGGREGATE (2)	**26.5**	**-19.2**	**26.5**	**20.8**	**31.3**
Passive Domestic Equity Benchmark	26.5	-19.1	26.4	20.8	31.3
Excess	0.0	-0.0	0.1	0.0	0.0

(1) The current Passive Manager Benchmark is the Russell 3000. For historical benchmark details please refer to the addendum of this report.

(2) The current Passive Domestic Equity Benchmark is a weighted average of the Russell 1000, Russell 2000 and Russell 3000.

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International Equity

March 31, 2024

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total International Equity										
DEVELOPED MARKETS (1)	**$10,838,350,520**		**6.5%**	**12.8%**	**17.0%**	**6.7%**	**9.0%**	**5.8%**	**5.8%**	**01/1997**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	2.8	01/1997
Excess			0.9	0.9	1.8	1.7	1.5	1.0	3.0	
EMERGING MARKETS (2)	**3,610,220,851**	**24.0%**	**3.2**	**7.4**	**8.9**	**-5.1**	**2.7**	**2.9**	**5.2**	**11/1996**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2	2.9	5.4	11/1996
Excess			0.8	0.2	0.8	-0.0	0.5	-0.0	-0.2	
ACWI EX-US AGGREGATE	**435,902,660**	**2.9**	**5.3**	**11.1**	**15.6**	**5.6**			**6.4**	**01/2021**
MSCI AC WORLD ex US (NET) - DAILY			4.7	10.6	13.3	1.9			2.9	01/2021
Excess			0.6	0.5	2.4	3.7			3.5	
CHINA ONLY AGGREGATE	**130,604,436**	**0.9**	**-5.9**	**-8.8**	**-20.4**	**-12.7**			**-13.6**	**01/2021**
MSCI China A			0.7	-6.8	-16.7	-11.4			-11.8	01/2021
Excess			-6.6	-2.0	-3.6	-1.3			-1.8	
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)	799,719	0.0								
TOTAL INTERNATIONAL EQUITY (4)	**15,015,878,185**	**100.0**	**5.5**	**11.2**	**14.5**	**3.2**	**7.2**	**5.0**	**6.5**	**10/1992**
International Equity Benchmark			4.7	10.6	13.3	1.9	5.9	4.2	5.9	10/1992
Excess			0.8	0.6	1.2	1.3	1.2	0.7	0.6	

(1) The current benchmark for Developed Markets, Benchmark DM, is the Standard (large + mid) MSCI World ex USA (net).

(2) The current benchmark for Emerging Markets, Benchmark EM, is the Standard (large + mid) MSCI Emerging Markets Free (net).

(3) The Transition Aggregate International Equity contains International Equity securities that are being transitioned to a different manager.

(4) The current International Equity Benchmark is the MSCI ACWI ex USA (net). Does not includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00. This impact is included in the return for the Combined Funds portion of the International Equity portfolio.TThe reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Total International Equity					
DEVELOPED MARKETS (1)	**17.8%**	**-10.7%**	**13.5%**	**8.9%**	**23.3%**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	-0.1	3.6	0.9	1.3	0.8
EMERGING MARKETS (2)	**10.2**	**-21.1**	**-1.5**	**17.9**	**20.3**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	0.4	-1.0	1.1	-0.4	1.9
ACWI EX-US AGGREGATE	**17.9**	**-12.6**	**12.8**		
MSCI AC WORLD ex US (NET) - DAILY	15.6	-16.0	7.8		
Excess	2.3	3.4	4.9		
CHINA ONLY AGGREGATE	**-10.0**	**-24.5**	**-2.9**		
MSCI China A	-13.5	-25.9	3.2		
Excess	3.5	1.4	-6.1		
TRANSITION AGGREGATE INTERNATIONAL EQUITY (3)					
TOTAL INTERNATIONAL EQUITY (4)	**15.6**	**-13.7**	**8.9**	**11.4**	**22.4**
International Equity Benchmark	15.6	-16.0	7.8	10.5	21.5
Excess	-0.1	2.3	1.1	0.8	0.9

(1) The current benchmark for Developed Markets, Benchmark DM, is the Standard (large + mid) MSCI World ex USA (net).

(2) The current benchmark for Emerging Markets, Benchmark EM, is the Standard (large + mid) MSCI Emerging Markets Free (net).

(3) The Transition Aggregate International Equity contains International Equity securities that are being transitioned to a different manager.

(4) The current International Equity Benchmark is the MSCI ACWI ex USA (net). Does not includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00. This impact is included in the return for the Combined Funds portion of the International Equity portfolio.

Note: All aggregates include the performance of terminated managers. For historical benchmark details please refer to the addendum of this report.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Developed Markets										
ACADIAN	**$599,067,027**	**4.0%**	**7.8%**	**14.8%**	**16.6%**	**4.4%**	**7.8%**	**7.2%**	**6.7%**	**07/2005**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	5.4	07/2005
Excess			2.2	2.9	1.3	-0.5	0.4	2.4	1.4	
COLUMBIA	**521,223,130**	**3.5**	**6.9**	**13.4**	**18.8**	**6.6**	**10.6**	**7.5**	**4.4**	**03/2000**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	4.1	03/2000
Excess			1.3	1.5	3.5	1.7	3.1	2.7	0.3	
FIDELITY	**502,932,107**	**3.3**	**5.0**	**10.4**	**14.1**	**3.7**	**8.7**	**5.9**	**6.8**	**07/2005**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	5.4	07/2005
Excess			-0.6	-1.5	-1.1	-1.3	1.2	1.1	1.4	
JP MORGAN	**377,736,787**	**2.5**	**5.3**	**10.4**	**13.9**	**3.7**	**8.0**	**5.3**	**5.6**	**07/2005**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	5.4	07/2005
Excess			-0.2	-1.5	-1.4	-1.2	0.5	0.5	0.2	
MARATHON	**434,615,619**	**2.9**	**6.4**	**13.0**	**16.9**	**5.6**	**8.6**	**5.9**	**8.0**	**11/1993**
BENCHMARK DM			5.6	11.9	15.3	4.9	7.5	4.8	5.3	11/1993
Excess			0.8	1.1	1.6	0.6	1.1	1.1	2.7	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Developed Markets					
ACADIAN	**12.4%**	**-12.5%**	**13.6%**	**11.7%**	**19.1%**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	-5.5	1.8	0.9	4.2	-3.4
COLUMBIA	**21.1**	**-15.0**	**14.2**	**15.0**	**28.9**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	3.2	-0.7	1.6	7.4	6.4
FIDELITY	**18.0**	**-17.4**	**13.0**	**15.4**	**27.1**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	0.1	-3.2	0.4	7.8	4.6
JP MORGAN	**17.1**	**-19.0**	**13.3**	**14.2**	**28.5**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	-0.9	-4.7	0.7	6.6	6.0
MARATHON	**18.2**	**-12.1**	**12.8**	**7.6**	**23.5**
BENCHMARK DM	17.9	-14.3	12.6	7.6	22.5
Excess	0.3	2.2	0.2	0.1	1.0

	Ending Market Value	Portfolio Weight	1 Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Developed Markets										
Active Developed Markets Aggregate (1)	**$2,439,350,786**	**16.2%**	**6.4%**	**12.7%**	**16.6%**	**4.6%**	**8.4%**	**5.7%**	**5.8%**	**06/1996**
BENCHMARK DM			5.6%	11.9%	15.3%	4.9%	7.5%	4.8%	2.8%	06/1996
Excess			0.8%	0.8%	1.3%	-0.3%	0.9%	0.9%	3.1%	
SSgA DEVELOPED MARKETS PASSIVE	**$8,311,499,207**	**55.4%**	**5.6%**	**12.0%**	**15.6%**	**5.4%**	**7.9%**	**5.2%**		
BENCHMARK DM			5.6%	11.9%	15.3%	4.9%	7.5%	4.8%		
Excess			-0.0%	0.1%	0.4%	0.5%	0.5%	0.4%		
RECORD CURRENCY (2)	**$87,500,527**	**0.6%**	**0.8%**	**0.6%**	**1.2%**	**1.6%**				**10/2020**
DEVELOPED MARKETS TOTAL (3)	**$10,838,350,520**		**6.5%**	**12.8%**	**17.0%**	**6.7%**	**9.0%**	**5.8%**	**5.8%**	**01/1997**
BENCHMARK DM			5.6%	11.9%	15.3%	4.9%	7.5%	4.8%	2.8%	01/1997
Excess			0.9%	0.9%	1.8%	1.7%	1.5%	1.0%	3.0%	

(1) Includes the historical returns of AQR and terminated managers previously classified as "Semi-Passive Developed Markets."

(2) Return for Record Currency is the difference between the DM Equity with Currency Management and without.

(3) The current International Equity Benchmark is the MSCI ACWI ex USA (net). Does not includes impact of currency overlay on the passive EAFE portfolio from 12/1/95-10/31/00. This impact is included in the return for the Combined Funds portion of the International Equity portfolio.

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Total Developed Markets					
Active Developed Markets Aggregate	**17.6%**	**-15.2%**	**12.5%**	**12.2%**	**24.4%**
BENCHMARK DM	17.9%	-14.3%	12.6%	7.6%	22.5%
Excess	-0.4%	-0.9%	-0.1%	4.6%	1.9%
SSgA DEVELOPED MARKETS PASSIVE	**18.5%**	**-13.8%**	**13.0%**	**8.2%**	**23.0%**
BENCHMARK DM	17.9%	-14.3%	12.6%	7.6%	22.5%
Excess	0.5%	0.5%	0.4%	0.6%	0.5%
DEVELOPED MARKETS TOTAL	**17.8%**	**-10.7%**	**13.5%**	**8.9%**	**23.3%**
BENCHMARK DM	17.9%	-14.3%	12.6%	7.6%	22.5%
Excess	-0.1%	3.6%	0.9%	1.3%	0.8%

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Emerging Markets										
MARTIN CURRIE	**$380,974,487**	**2.5%**	**1.1%**	**0.8%**	**2.3%**	**-9.1%**	**1.9%**		**4.4%**	**04/2017**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2		3.7	04/2017
Excess			-1.2	-6.4	-5.9	-4.1	-0.4		0.7	
MACQUARIE	**410,813,084**	**2.7**	**8.2**	**15.6**	**16.4**	**-4.4**	**4.6**		**5.7**	**04/2017**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2		3.7	04/2017
Excess			5.9	8.4	8.2	0.7	2.4		2.0	
MORGAN STANLEY	**492,759,142**	**3.3**	**3.5**	**8.5**	**11.9**	**-3.8**	**3.2**	**3.2%**	**7.9**	**01/2001**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2	2.9	7.6	01/2001
Excess			1.2	1.3	3.7	1.2	1.0	0.2	0.3	
NEUBERGER BERMAN	**348,836,919**	**2.3**	**4.9**	**7.0**	**7.2**	**-7.4**	**0.1**		**2.3**	**04/2017**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2		3.7	04/2017
Excess			2.5	-0.1	-1.0	-2.3	-2.1		-1.5	
PZENA	**582,999,679**	**3.9**	**3.1**	**10.8**	**15.7**	**3.7**	**7.3**		**6.7**	**04/2017**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2		3.7	04/2017
Excess			0.8	3.6	7.6	8.7	5.1		3.0	
ROCK CREEK	**320,063,928**	**2.1**	**2.6**	**5.1**	**5.1**	**-7.2**	**2.3**		**2.7**	**04/2017**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2		3.7	04/2017
Excess			0.2	-2.1	-3.1	-2.1	0.0		-1.0	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

Active Emerging Markets

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
MARTIN CURRIE	**5.8%**	**-25.7%**	**-3.5%**	**26.5%**	**27.3%**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	-4.1	-5.6	-1.0	8.2	8.8
MACQUARIE	**16.0**	**-26.5**	**-2.2**	**24.2**	**23.2**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	6.1	-6.4	0.3	5.9	4.7
MORGAN STANLEY	**10.8**	**-23.8**	**3.5**	**15.7**	**20.4**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	1.0	-3.7	6.0	-2.6	1.9
NEUBERGER BERMAN	**5.9**	**-22.1**	**-5.6**	**14.2**	**19.7**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	-3.9	-2.0	-3.1	-4.1	1.3
PZENA	**19.7**	**-7.4**	**9.3**	**7.7**	**13.4**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	9.9	12.7	11.8	-10.6	-5.1
ROCK CREEK	**5.0**	**-19.4**	**-5.2**	**22.0**	**22.3**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	-4.9	0.7	-2.7	3.7	3.9

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Total Emerging Markets										
ACTIVE EMERGING MARKETS AGGREGATE	**$2,536,447,238**	**16.9%**	**3.9%**	**8.0%**	**9.9%**	**-4.8%**	**3.1%**	**2.8%**	**3.6%**	**01/2012**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2	2.9	3.5	01/2012
Excess			1.5	0.8	1.7	0.3	0.8	-0.1	0.0	
SSGA EMERGING MARKETS PASSIVE	**1,073,773,613**	**7.2**	**1.5**	**5.9**	**6.7**	**-5.7**	**1.7**	**2.8**	**3.4**	**01/2012**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2	2.9	3.5	01/2012
Excess			-0.9	-1.3	-1.4	-0.6	-0.5	-0.1	-0.1	
EMERGING MARKETS TOTAL	**3,610,220,851**	**24.0**	**3.2**	**7.4**	**8.9**	**-5.1**	**2.7**	**2.9**	**5.2**	**11/1996**
BENCHMARK EM			2.4	7.2	8.2	-5.1	2.2	2.9	5.4	11/1996
Excess			0.8	0.2	0.8	-0.0	0.5	-0.0	-0.2	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Total Emerging Markets					
ACTIVE EMERGING MARKETS AGGREGATE	**10.6%**	**-21.4%**	**-0.9%**	**17.6%**	**21.4%**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	0.8	-1.3	1.6	-0.7	3.0
SSGA EMERGING MARKETS PASSIVE	**9.4**	**-20.4**	**-2.9**	**18.3**	**18.1**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	-0.4	-0.3	-0.3	0.0	-0.3
EMERGING MARKETS TOTAL	**10.2**	**-21.1**	**-1.5**	**17.9**	**20.3**
BENCHMARK EM	9.8	-20.1	-2.5	18.3	18.4
Excess	0.4	-1.0	1.1	-0.4	1.9

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active ACWI ex-US										
EARNEST PARTNERS ACWI EX US	**$435,902,660**	**2.9%**	**5.3%**	**11.1%**	**15.6%**	**5.6%**			**6.4%**	**01/2021**
MSCI AC WORLD ex US (NET) - DAILY			4.7%	10.6%	13.3%	1.9%			2.9%	01/2021
Excess			0.6%	0.5%	2.4%	3.7%			3.5%	
TOTAL ACWI EX-US AGGREGATE	**$435,902,660**	**2.9%**	**5.3%**	**11.1%**	**15.6%**	**5.6%**			**6.4%**	**01/2021**
MSCI AC WORLD ex US (NET) - DAILY			4.7%	10.6%	13.3%	1.9%			2.9%	01/2021
Excess			0.6%	0.5%	2.4%	3.7%			3.5%	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active ACWI ex-US					
EARNEST PARTNERS ACWI EX US	**17.9%**	**-12.6%**	**12.8%**		
MSCI AC WORLD ex US (NET) - DAILY	15.6	-16.0	7.8		
Excess	2.3	3.4	4.9		
TOTAL ACWI EX-US AGGREGATE	**17.9**	**-12.6**	**12.8**		
MSCI AC WORLD ex US (NET) - DAILY	15.6	-16.0	7.8		
Excess	2.3	3.4	4.9		

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
China Only Managers										
EARNEST PARTNERS CHINA	**$130,604,436**	**0.9%**	**-5.9%**	**-8.8%**	**-20.4%**	**-12.7%**			**-13.6%**	**01/2021**
MSCI China A			0.7	-6.8	-16.7	-11.4			-11.8	01/2021
Excess			-6.6	-2.0	-3.6	-1.3			-1.8	
CHINA ONLY AGGREGATE	**130,604,436**	**0.9**	**-5.9**	**-8.8**	**-20.4**	**-12.7**			**-13.6**	**01/2021**
MSCI China A			0.7	-6.8	-16.7	-11.4			-11.8	01/2021
Excess			-6.6	-2.0	-3.6	-1.3			-1.8	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

China Only Managers

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
EARNEST PARTNERS CHINA	**-10.0%**	**-24.5%**	**-2.9%**		
MSCI China A	-13.5	-25.9	3.2		
Excess	3.5	1.4	-6.1		
CHINA ONLY AGGREGATE	**-10.0**	**-24.5**	**-2.9**		
MSCI China A	-13.5	-25.9	3.2		
Excess	3.5	1.4	-6.1		

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Global Equity

March 31, 2024

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Global Equity Managers										
ARIEL INVESTMENTS	**$416,589,241**	**37.9%**	**6.9%**	**11.5%**	**15.7%**	**7.5%**			**8.2%**	**01/2021**
MSCI AC WORLD NET USD DAILY			8.2	16.0	23.2	7.0			7.9	01/2021
Excess			-1.3	-4.5	-7.5	0.5			0.3	
BAILLIE GIFFORD	**262,289,235**	**23.9**	**9.9**	**17.5**	**26.5**	**-5.3**			**-5.6**	**01/2021**
MSCI AC WORLD NET USD DAILY			8.2	16.0	23.2	7.0			7.9	01/2021
Excess			1.7	1.4	3.3	-12.3			-13.5	
MARTIN CURRIE INVESTMENTS - GLOBAL EQ	**420,004,404**	**38.2**	**14.0**	**14.5**	**20.4**	**2.5**			**2.0**	**01/2021**
MSCI AC WORLD NET USD DAILY			8.2	16.0	23.2	7.0			7.9	01/2021
Excess			5.8	-1.6	-2.8	-4.4			-5.8	
GLOBAL EQUITY	**1,098,882,880**	**100.0**	**10.2**	**14.1**	**19.9**	**2.2**			**2.1**	**01/2021**
MSCI AC WORLD NET USD DAILY			8.2	16.0	23.2	7.0			7.9	01/2021
Excess			2.0	-2.0	-3.3	-4.8			-5.8	

Note: The reported performance for all Non-US Equity portfolios was negatively impacted by pricing differences due to the Easter market holiday in the U.S. The performance impact reversed in early April.

Global Equity Managers

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
ARIEL INVESTMENTS	**14.1%**	**-5.6%**	**12.1%**		
MSCI AC WORLD NET USD DAILY	22.2	-18.4	18.5		
Excess	-8.1	12.8	-6.5		
BAILLIE GIFFORD	**38.0**	**-46.9**	**3.1**		
MSCI AC WORLD NET USD DAILY	22.2	-18.4	18.5		
Excess	15.8	-28.5	-15.5		
MARTIN CURRIE INVESTMENTS - GLOBAL EQ	**23.8**	**-32.9**	**12.8**		
MSCI AC WORLD NET USD DAILY	22.2	-18.4	18.5		
Excess	1.6	-14.5	-5.8		
GLOBAL EQUITY	**22.6**	**-27.7**	**9.6**		
MSCI AC WORLD NET USD DAILY	22.2	-18.4	18.5		
Excess	0.4	-9.4	-8.9		

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Core/Core Plus Bonds

March 31, 2024

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Bonds										
CORE (1)	**$2,052,428,255**	**42.2%**	**-0.5%**	**3.6%**	**3.3%**	**-1.5%**			**-1.7%**	**11/2020**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5			-2.8	11/2020
Excess			0.3	1.1	1.6	0.9			1.2	
CORE PLUS (1)	**2,806,213,883**	**57.8**	**-0.6**	**3.1**	**2.6**	**-2.7**			**-2.7**	**11/2020**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5			-2.8	11/2020
Excess			0.2	0.6	0.9	-0.3			0.1	
TRANSITION AGGREGATE CORE BONDS (2)	20,430	0.0								
TOTAL CORE/CORE PLUS BONDS (3)	**4,858,662,568**	**100.0**	**-0.5**	**3.3**	**2.9**	**-2.2**	**1.0%**	**2.1%**	**6.7**	**07/1984**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	6.3	07/1984
Excess			0.2	0.8	1.2	0.2	0.7	0.6	0.4	

(1) Prior to 12/1/2020 the Core and Core Plus managers were categorized as Active or Semi-Passive. For historical performance of each manager, see the following pages in this report. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

(2) The Transition Aggregate Core Bonds includes core bonds securities that are being transition to a different manager.

(3) The current Core Bonds Benchmark is the Bloomberg U.S. Aggregate calculated daily. For historical benchmark details please refer to the addendum of this report.

Note: All aggregates include the performance of terminated managers. Inception refers to the date of retention by the SBI.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Bonds					
CORE (1)	**7.3%**	**-12.3%**	**-1.0%**		
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5		
Excess	1.7	0.7	0.5		
CORE PLUS (1)	**6.8**	**-15.2**	**-1.1**		
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5		
Excess	1.3	-2.2	0.4		
TRANSITION AGGREGATE CORE BONDS (2)					
TOTAL CORE/CORE PLUS BONDS (3)	**7.0**	**-14.1**	**-1.1**	**9.7%**	**9.7%**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	1.5	-1.1	0.5	2.2	1.0

(1) Prior to 12/1/2020 the Core and Core Plus managers were categorized as Active or Semi-Passive. For historical performance of each manager, see the following pages in this report. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

(2) The Transition Aggregate Core Bonds includes core bonds securities that are being transition to a different manager.

(3) The current Core Bonds Benchmark is the Bloomberg U.S. Aggregate calculated daily. For historical benchmark details please refer to the addendum of this report.

Note: All aggregates include the performance of terminated managers. Inception refers to the date of retention by the SBI.

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Active Core										
DODGE & COX	**$1,032,700,525**	**21.3%**	**-0.4%**	**4.2%**	**4.3%**	**-0.9%**	**1.9%**	**2.6%**	**5.1%**	**02/2000**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	4.0	02/2000
Excess			0.4	1.7	2.6	1.5	1.5	1.0	1.1	
BLACKROCK	**1,019,727,729**	**21.0**	**-0.6**	**3.0**	**2.3**	**-2.2**	**0.7**	**1.8**	**4.4**	**04/1996**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	4.3	04/1996
Excess			0.2	0.4	0.6	0.2	0.3	0.2	0.1	
CORE	**2,052,428,255**	**42.2**	**-0.5**	**3.6**	**3.3**	**-1.5**			**-1.7**	**11/2020**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5			-2.8	11/2020
Excess			0.3	1.1	1.6	0.9			1.2	

(1) Prior to 12/1/2020 the Core managers were categorized as Active or Semi-Passive. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Active Core					
DODGE & COX	**8.0%**	**-11.3%**	**-0.7%**	**9.4%**	**9.6%**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	2.5	1.7	0.8	1.8	0.9
BLACKROCK	**6.4**	**-13.4**	**-1.3**	**8.3**	**9.3**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	0.9	-0.4	0.2	0.8	0.6
CORE	**7.3**	**-12.3**	**-1.0**		
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5		
Excess	1.7	0.7	0.5		

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Core Plus Bonds										
GOLDMAN SACHS	**$921,638,351**	**19.0%**	**-0.5%**	**2.8%**	**2.3%**	**-2.2%**	**0.8%**	**1.9%**	**4.7%**	**07/1993**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	4.4	07/1993
Excess			0.3	0.3	0.6	0.2	0.4	0.3	0.3	
NEUBERGER	**911,312,231**	**18.8**	**-0.1**	**3.9**	**3.4**	**-2.1**	**1.2**	**2.0**	**5.6**	**07/1988**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	5.3	07/1988
Excess			0.7	1.4	1.7	0.4	0.9	0.5	0.3	
WESTERN	**973,263,302**	**20.0**	**-1.1**	**2.7**	**2.1**	**-3.7**	**0.5**	**2.2**	**7.3**	**07/1984**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5	0.4	1.5	6.3	07/1984
Excess			-0.3	0.2	0.4	-1.3	0.1	0.6	1.0	
CORE PLUS	**2,806,213,883**	**57.8**	**-0.6**	**3.1**	**2.6**	**-2.7**			**-2.7**	**11/2020**
Bloomberg U.S. Aggregate			-0.8	2.6	1.7	-2.5			-2.8	11/2020
Excess			0.2	0.6	0.9	-0.3			0.1	

(1) Prior to 12/1/2020 the Core managers were categorized as Active or Semi-Passive. For information on the historical performance of the previous groupings refer to the 9/30/2020 Comprehensive Performance Report.

Core Plus Bonds

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
GOLDMAN SACHS	**6.3%**	**-13.9%**	**-1.5%**	**9.0%**	**9.6%**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	0.8	-0.9	0.0	1.5	0.9
NEUBERGER	**6.7**	**-13.8**	**-0.6**	**9.9**	**9.0**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	1.2	-0.8	1.0	2.4	0.3
WESTERN	**7.4**	**-17.6**	**-1.3**	**10.9**	**11.1**
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5	7.5	8.7
Excess	1.8	-4.6	0.3	3.4	2.4
CORE PLUS	**6.8**	**-15.2**	**-1.1**		
Bloomberg U.S. Aggregate	5.5	-13.0	-1.5		
Excess	1.3	-2.2	0.4		

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Return Seeking Bonds

March 31, 2024

Return Seeking Bonds Managers	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
COLUMBIA CREDIT PLUS	**$890,942,003**	**20.4%**	**-0.2%**	**4.7%**	**4.5%**	**-1.9%**			**-1.8%**	**12/2020**
Credit Plus Benchmark			-0.0	5.1	5.3	-1.3			-1.9	12/2020
Excess			-0.2	-0.4	-0.8	-0.6			0.1	
PIMCO CREDIT PLUS	**867,672,985**	**19.9**	**0.3**	**5.2**	**5.4**	**-1.1**			**-1.4**	**12/2020**
Credit Plus Benchmark			-0.0	5.1	5.3	-1.3			-1.9	12/2020
Excess			0.3	0.1	0.1	0.2			0.5	
CREDIT PLUS	**1,758,614,988**	**40.3**	**0.0**	**5.0**	**4.9**	**-1.5**			**-1.6**	**12/2020**
Credit Plus Benchmark			-0.0	5.1	5.3	-1.3			-1.9	12/2020
Excess			0.0	-0.2	-0.4	-0.2			0.3	
BLACKROCK OPPORTUNISTIC	**519,159,073**	**11.9**	**0.7**	**5.9**	**6.7**	**1.2**			**1.1**	**12/2020**
ICE BofA US 3-Month Treasury Bill			1.3	4.0	5.2	2.6			2.3	12/2020
Excess			-0.6	1.9	1.5	-1.4			-1.3	
ASHMORE EMERGING MARKETS[1]	**304,502,665**	**7.0**	**-1.4**	**4.5**	**5.8**	**-4.7**			**-6.1**	**01/2021**
JPM JEMB Sovereign-only 50-50			-0.1	5.6	8.1	-1.5			-3.1	01/2021
Excess			-1.3	-1.1	-2.3	-3.2			-3.0	
TCW SECURITIZED CREDIT	**423,643,104**	**9.7**	**2.4**	**6.2**	**7.6**				**2.0**	**07/2021**
ICE BofA US 3-Month Treasury Bill			1.3	4.0	5.2				2.8	07/2021
Excess			1.2	2.1	2.4				-0.8	

(1) The reported performance of Return Seeking Fixed Income manager Ashmore Emerging Markets was adversely affected by pricing differences due to the Easter market holiday in the U.S. as well as a delay in processing of a debt exchange. Performance net of these impacts, which will reverse in next quarter's reporting, was in-line with the benchmark for the quarter.

Return Seeking Bonds Managers	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
COLUMBIA CREDIT PLUS	**9.0%**	**-15.3%**	**1.1%**		
Credit Plus Benchmark	8.6	-13.7	0.0		
Excess	0.5	-1.6	1.1		
PIMCO CREDIT PLUS	**8.4**	**-13.6**	**0.8**		
Credit Plus Benchmark	8.6	-13.7	0.0		
Excess	-0.1	0.1	0.7		
CREDIT PLUS	**8.7**	**-14.5**	**0.9**		
Credit Plus Benchmark	8.6	-13.7	0.0		
Excess	0.2	-0.7	0.9		
BLACKROCK OPPORTUNISTIC	**7.7**	**-5.4**	**0.3**		
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0		
Excess	2.7	-6.8	0.2		
ASHMORE EMERGING MARKETS	**10.9**	**-17.2**	**-10.1**		
JPM JEMB Sovereign-only 50-50	11.9	-14.8	-5.3		
Excess	-1.0	-2.4	-4.8		
TCW SECURITIZED CREDIT	**7.1**	**-4.6**			
ICE BofA US 3-Month Treasury Bill	5.0	1.5			
Excess	2.1	-6.1			

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Return Seeking Bonds Managers										
PAYDEN RYGEL	**$316,828,811**	**7.3%**	**1.8%**	**8.6%**	**11.0%**	**2.0%**			**1.6%**	**01/2021**
Multi-Asset Credit Benchmark			2.0	8.9	11.3	2.2			1.8	01/2021
Excess			-0.1	-0.3	-0.3	-0.1			-0.1	
PGIM	**369,148,759**	**8.5**	**2.2**	**9.5**	**11.7**	**2.2**			**1.4**	**01/2021**
Multi-Asset Credit Benchmark			2.0	8.9	11.3	2.2			1.8	01/2021
Excess			0.2	0.6	0.4	-0.0			-0.3	
MULTI-ASSET CREDIT	**685,977,570**	**15.7**	**2.0**	**9.1**	**11.4**	**2.1**			**1.5**	**01/2021**
Multi-Asset Credit Benchmark			2.0	8.9	11.3	2.2			1.8	01/2021
Excess			0.1	0.1	0.1	-0.1			-0.2	
KKR	**338,454,657**	**7.8**	**2.2**	**9.6**	**11.8**	**2.7**			**2.5**	**01/2021**
ICE BofA US Cash Pay HY Constrained			1.5	9.2	11.0	2.2			2.3	01/2021
Excess			0.7	0.3	0.8	0.4			0.2	
OAKTREE	**333,098,462**	**7.6**	**1.5**	**9.1**	**10.8**	**2.5**			**2.4**	**01/2021**
ICE BofA US Cash Pay HY Constrained			1.5	9.2	11.0	2.2			2.3	01/2021
Excess			0.0	-0.1	-0.2	0.3			0.1	
HIGH YIELD	**671,553,119**	**15.4**	**1.9**	**9.4**	**11.3**	**2.6**			**2.4**	**01/2021**
ICE BofA US Cash Pay HY Constrained			1.5	9.2	11.0	2.2			2.3	01/2021
Excess			0.4	0.1	0.3	0.4			0.1	

Return Seeking Bonds Managers	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
PAYDEN RYGEL	**11.7%**	**-9.6%**	**2.6%**		
Multi-Asset Credit Benchmark	12.3	-10.0	2.7		
Excess	-0.6	0.4	-0.1		
PGIM	**12.3**	**-11.5**	**3.2**		
Multi-Asset Credit Benchmark	12.3	-10.0	2.7		
Excess	-0.0	-1.5	0.5		
MULTI-ASSET CREDIT	**12.0**	**-10.6**	**2.9**		
Multi-Asset Credit Benchmark	12.3	-10.0	2.7		
Excess	-0.3	-0.6	0.2		
KKR	**13.9**	**-11.0**	**4.7**		
ICE BofA US Cash Pay HY Constrained	13.4	-11.1	5.3		
Excess	0.5	0.1	-0.6		
OAKTREE	**12.4**	**-9.5**	**4.5**		
ICE BofA US Cash Pay HY Constrained	13.4	-11.1	5.3		
Excess	-1.0	1.6	-0.8		
HIGH YIELD	**13.2**	**-10.3**	**4.6**		
ICE BofA US Cash Pay HY Constrained	13.4	-11.1	5.3		
Excess	-0.2	0.8	-0.7		

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Return Seeking Bonds										
CREDIT PLUS	**$1,758,614,988**	**40.3%**	**0.0%**	**5.0%**	**4.9%**	**-1.5%**			**-1.6%**	**12/2020**
Credit Plus Benchmark			-0.0	5.1	5.3	-1.3			-1.9	12/2020
Excess			0.0	-0.2	-0.4	-0.2			0.3	
OPPORTUNISTIC FI	**519,159,073**	**11.9**	**0.7**	**5.9**	**6.7**	**1.2**			**1.1**	**12/2020**
ICE BofA US 3-Month Treasury Bill			1.3	4.0	5.2	2.6			2.3	12/2020
Excess			-0.6	1.9	1.5	-1.4			-1.3	
EMERGING MARKET DEBT	**304,502,665**	**7.0**	**-1.4**	**4.5**	**5.8**	**-4.7**			**-6.1**	**01/2021**
JPM JEMB Sovereign-only 50-50			-0.1	5.6	8.1	-1.5			-3.1	01/2021
Excess			-1.3	-1.1	-2.3	-3.2			-3.0	
SECURITIZED CREDIT	**423,643,104**	**9.7**	**2.4**	**6.2**	**7.6**				**1.9**	**06/2021**
ICE BofA US 3-Month Treasury Bill			1.3	4.0	5.2				2.7	06/2021
Excess			1.2	2.1	2.4				-0.8	
MULTI-ASSET CREDIT	**685,977,570**	**15.7**	**2.0**	**9.1**	**11.4**	**2.1**			**1.5**	**01/2021**
Multi-Asset Credit Benchmark			2.0	8.9	11.3	2.2			1.8	01/2021
Excess			0.1	0.1	0.1	-0.1			-0.2	
HIGH YIELD	**671,553,119**	**15.4**	**1.9**	**9.4**	**11.3**	**2.6**			**2.4**	**01/2021**
ICE BofA US Cash Pay HY Constrained			1.5	9.2	11.0	2.2			2.3	01/2021
Excess			0.4	0.1	0.3	0.4			0.1	
RETURN SEEKING BONDS (1)	**4,363,450,519**	**100.0**	**0.8**	**6.4**	**7.4**	**0.2**			**-0.0**	**12/2020**
Return Seeking Fixed Income Benchmark			0.8	6.1	7.3	0.6			0.2	12/2020
Excess			0.0	0.3	0.2	-0.5			-0.3	

(1) The reported performance of Return Seeking Fixed Income manager Ashmore Emerging Markets was adversely affected by pricing differences due to the Easter market holiday in the U.S. as well as a delay in processing of a debt exchange. Performance net of these impacts, which will reverse in next quarter's reporting, was in-line with the benchmark for the quarter.

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Return Seeking Bonds					
CREDIT PLUS	**8.7%**	**-14.5%**	**0.9%**		
Credit Plus Benchmark	8.6	-13.7	0.0		
Excess	0.2	-0.7	0.9		
OPPORTUNISTIC FI	**7.7**	**-5.4**	**0.3**		
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0		
Excess	2.7	-6.8	0.2		
EMERGING MARKET DEBT	**10.9**	**-17.2**	**-10.1**		
JPM JEMB Sovereign-only 50-50	11.9	-14.8	-5.3		
Excess	-1.0	-2.4	-4.8		
SECURITIZED CREDIT	**7.1**	**-4.6**			
ICE BofA US 3-Month Treasury Bill	5.0	1.5			
Excess	2.1	-6.1			
MULTI-ASSET CREDIT	**12.0**	**-10.6**	**2.9**		
Multi-Asset Credit Benchmark	12.3	-10.0	2.7		
Excess	-0.3	-0.6	0.2		
HIGH YIELD	**13.2**	**-10.3**	**4.6**		
ICE BofA US Cash Pay HY Constrained	13.4	-11.1	5.3		
Excess	-0.2	0.8	-0.7		
RETURN SEEKING BONDS (1)	**9.8**	**-11.3**	**0.9**		
Return Seeking Fixed Income Benchmark	9.3	-9.8	0.8		
Excess	0.5	-1.6	0.1		

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Treasuries

March 31, 2024

	Ending Market Value	Portfolio Weight	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Treasuries Managers										
BLACKROCK	**$2,860,917,409**	**33.4%**	**-2.2%**	**-1.0%**	**-3.0%**	**-5.3%**	**-1.4%**		**-0.2%**	**02/2018**
Bloomberg Treasury 5+ Year			-2.1	-0.9	-2.9	-5.2	-1.3		-0.1	02/2018
Excess			-0.1	-0.1	-0.1	-0.1	-0.1		-0.1	
GOLDMAN SACHS	**2,530,196,457**	**29.6**	**-2.1**	**-0.8**	**-2.8**	**-5.2**	**-1.2**		**-0.1**	**02/2018**
Bloomberg Treasury 5+ Year			-2.1	-0.9	-2.9	-5.2	-1.3		-0.1	02/2018
Excess			-0.0	0.1	0.1	0.0	0.1		0.0	
NEUBERGER	**3,169,434,496**	**37.0**	**-2.2**	**-0.9**	**-3.1**	**-5.2**	**-1.2**		**-0.1**	**02/2018**
Bloomberg Treasury 5+ Year			-2.1	-0.9	-2.9	-5.2	-1.3		-0.1	02/2018
Excess			-0.0	0.0	-0.2	-0.1	0.1		0.0	
TOTAL TREASURIES	**8,560,548,363**	**100.0**	**-2.2**	**-0.9**	**-3.0**	**-5.2**	**-1.3**		**-0.1**	**02/2018**
Bloomberg Treasury 5+ Year			-2.1	-0.9	-2.9	-5.2	-1.3		-0.1	02/2018
Excess			-0.0	0.0	-0.1	-0.0	0.0		-0.0	

Treasuries Managers

	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
BLACKROCK	**4.1%**	**-20.6%**	**-4.0%**	**12.5%**	**10.4%**
Bloomberg Treasury 5+ Year	3.7	-20.3	-3.8	12.8	10.4
Excess	0.5	-0.3	-0.2	-0.3	-0.1
GOLDMAN SACHS	**4.4**	**-20.6**	**-3.9**	**12.7**	**10.6**
Bloomberg Treasury 5+ Year	3.7	-20.3	-3.8	12.8	10.4
Excess	0.7	-0.3	-0.1	-0.1	0.1
NEUBERGER	**4.1**	**-20.5**	**-3.4**	**12.8**	**10.4**
Bloomberg Treasury 5+ Year	3.7	-20.3	-3.8	12.8	10.4
Excess	0.4	-0.2	0.4	-0.1	-0.0
TOTAL TREASURIES	**4.2**	**-20.6**	**-3.7**	**12.7**	**10.4**
Bloomberg Treasury 5+ Year	3.7	-20.3	-3.8	12.8	10.4
Excess	0.5	-0.3	0.0	-0.2	0.0

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Laddered Bonds + Cash

March 31, 2024

Laddered Bond and Cash Managers	Ending Market Value	Portfolio Weight	Last Qtr	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
Neuberger Berman Ladder Bond	**$1,391,997,828**	**30.5%**	**1.3%**	**5.3%**	**2.4%**			**2.1%**	**11/2020**
ICE BofA US 3-Month Treasury Bill			1.3	5.2	2.6			2.3	11/2020
Excess			-0.0	0.1	-0.2			-0.1	
Goldman Sachs Ladder Bond	**1,394,086,272**	**30.5**	**1.4**	**5.4**	**2.5**			**2.2**	**11/2020**
ICE BofA US 3-Month Treasury Bill			1.3	5.2	2.6			2.3	11/2020
Excess			0.1	0.2	-0.1			-0.1	
Treasury Ladder Aggregate	**2,786,084,100**	**61.0**	**1.3**	**5.4**	**2.4**			**2.2**	**11/2020**
ICE BofA US 3-Month Treasury Bill			1.3	5.2	2.6			2.3	11/2020
Excess			0.0	0.2	-0.1			-0.1	
Combined Funds STIF	**1,710,413,273**	**37.5**	**1.4**	**5.6**	**2.8**	**2.1%**	**1.5%**	**1.7**	**01/2004**
iMoneyNet Money Fund Average-All Taxable			1.3	5.0	2.5	1.8	1.2	1.3	01/2004
Excess			0.1	0.5	0.3	0.3	0.3	0.4	
TEACHERS RETIREMENT CD REPO	**68,361,811**	**1.5**	**1.4**	**5.5**	**2.7**	**2.2**	**1.6**	**1.4**	**02/2012**
ICE BofA US 3-Month Treasury Bill			1.3	5.2	2.6	2.0	1.4	1.1	02/2012
Excess			0.1	0.2	0.1	0.2	0.2	0.2	
Laddered Bond + Cash	**4,565,176,791**	**100.0**	**1.3**	**5.5**	**2.5**	**2.0**	**1.4**	**4.2**	**12/1977**
ICE BofA US 3-Month Treasury Bill			1.3	5.2	2.6	2.0	1.4	4.4	12/1977
Excess			0.0	0.2	-0.0	-0.0	0.1	-0.2	

Laddered Bond and Cash Managers	2023 Calendar Return	2022 Calendar Return	2021 Calendar Return	2020 Calendar Return	2019 Calendar Return
Neuberger Berman Ladder Bond	**5.2%**	**0.8%**	**0.0%**		
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0		
Excess	0.2	-0.6	-0.0		
Goldman Sachs Ladder Bond	**5.2**	**0.9**	**0.1**		
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0		
Excess	0.2	-0.5	0.0		
Treasury Ladder Aggregate	**5.2**	**0.9**	**0.0**		
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0		
Excess	0.2	-0.6	-0.0		
Combined Funds STIF	**5.3**	**1.7**	**0.1**	**0.5%**	**2.3%**
iMoneyNet Money Fund Average-All Taxable	4.8	1.4	0.0	0.3	1.9
Excess	0.5	0.4	0.1	0.2	0.5
TEACHERS RETIREMENT CD REPO	**5.2**	**1.5**	**0.1**	**1.0**	**2.5**
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0	0.7	2.3
Excess	0.2	0.1	0.0	0.4	0.2
Laddered Bond + Cash	**5.2**	**1.1**	**0.0**	**0.6**	**2.3**
ICE BofA US 3-Month Treasury Bill	5.0	1.5	0.0	0.7	2.3
Excess	0.2	-0.4	-0.0	-0.1	0.1

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Private Markets

March 31, 2024

Combined Funds Asset Class Performance Summary

Private Markets

	Last Qtr	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	25 Year	30 Year
Private Markets - Invested	2.1%	6.2%	8.9%	14.0%	13.2%	12.0%	13.7%	12.8%	13.4%
Private Markets -Uninvested(1)	1.0%	3.9%	5.5%	2.3%					
Private Equity	2.6%	7.8%	11.7%	14.0%	16.8%	15.5%	15.9%	14.2%	15.3%
Private Credit	4.8%	10.0%	13.6%	16.2%	12.0%	12.7%	12.8%	12.5%	
Resources	-0.5%	2.6%	1.2%	15.5%	3.7%	1.6%	12.7%	13.6%	12.9%
Real Estate	-2.4%	-5.8%	-8.2%	11.0%	9.8%	11.0%	8.9%	9.0%	9.5%

Private Markets

The time-weighted rates of return for the Private Markets portfolio are shown here. Private Markets included Private Equity, Private Credit, Resources, and Real Estate. Some of the existing investments are relatively immature and returns may not be indicative of future results.

Private Equity Investments - The objectives of the Private Equity portfolio, which may include leveraged buyouts, growth equity, venture capital and special situations, are to achieve attractive returns and to provide overall portfolio diversification to the total plan.

Private Credit Investments - The objectives of the Private Credit portfolio, which may include mezzanine debt, direct lending, and other forms of non-investment grade fixed income instruments, are to achieve a high total return over a full market cycle and to provide some degree of downside protection and typically provide current income in the form of a coupon. In certain situations, investments in the Private Credit portfolio also provide an equity component of return in the form of warrants or re-organized equity.

Resource Investments - The objectives of the Resources portfolio, which may include energy, infrastructure, and other hard assets, are to provide protection against the risks associated with inflation and to provide overall portfolio diversification to the total plan.

Real Estate Investments - The objectives of the Real Estate portfolio, which may include core and non-core real estate investments, are to achieve attractive returns, preserve capital, provide protection against risks associated with inflation, and provide overall portfolio diversification to the total plan.

The SBI also monitors Private Markets performance using money-weighted return metrics such as Internal Rate of Return and Multiple of Invested Capital. For money-weighted return metrics please refer to the Combined Funds Performance Report.

(1) The Uninvested Private Markets is currently cash. Prior to 11/02/2022, the Uninvested portion of the Private Markets allocation was invested in a combination of a passively managed S&P 500 Index strategy and a cash overlay strategy invested in equity derivatives and cash.
Source: State Street Bank

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Private Equity	**25,858,070,326**	**20,226,449,449**	**15,814,105,676**	**7,793,424,535**	**16,509,735,630**	**1.60**	**13.6**	
Adams Street Partners, LLC	465,355,000	257,832,184	150,345,682	208,332,175	222,578,279	1.45	12.3	
Adams Street Global Secondary Fund 5 LP	100,000,000	77,114,692	80,333,805	22,885,308	25,373,497	1.37	6.4	2012
Adams Street Global Secondary Fund 6	100,000,000	80,400,008	70,011,877	19,599,992	58,909,583	1.60	19.7	2017
Adams Street Global Secondary Fund 7	265,355,000	100,317,484	0	165,846,875	138,295,199	1.38	41.5	2021
Advent International Group	505,000,000	409,284,452	372,905,652	98,799,502	323,860,668	1.70	15.4	
Advent International GPE VI-A, L.P.	50,000,000	52,993,313	103,400,194	0	4,011,518	2.03	16.4	2008
Advent International GPE VII, L.P.	90,000,000	86,490,641	146,622,935	3,600,000	10,537,885	1.82	13.4	2012
Advent International GPE VIII-B	100,000,000	100,000,000	111,387,115	0	96,751,544	2.08	17.2	2016
Advent International GPE IX	115,000,000	107,532,348	11,495,408	7,467,652	150,203,337	1.50	16.6	2019
Advent International GPE X	150,000,000	62,268,150	0	87,731,850	62,356,384	1.00	0.2	2022
Affinity Ventures	9,000,000	9,000,000	3,590,011	0	788,645	0.49	-11.0	
Affinity Ventures IV, L.P.	4,000,000	4,000,000	1,541,970	0	3,279	0.39	-34.0	2004
Affinity Ventures V, L.P.	5,000,000	5,000,000	2,048,042	0	785,366	0.57	-8.0	2008
Apax Partners	600,000,000	547,623,093	571,884,780	144,283,344	326,426,511	1.64	15.4	
APAX VIII - USD	200,000,000	240,451,261	364,650,169	7,966,190	32,498,857	1.65	13.6	2013
Apax IX USD L.P.	150,000,000	162,660,807	190,842,594	14,436,164	127,137,238	1.95	20.1	2016
Apax X USD L.P.	150,000,000	142,888,355	16,392,016	23,503,662	165,167,745	1.27	13.8	2019
Apax XI	100,000,000	1,622,671	0	98,377,329	1,622,671	1.00	0.0	2022
Arsenal Capital Partners	175,000,000	102,510,142	13,903,312	81,210,301	95,913,346	1.07	2.5	
Arsenal Capital Partners V, L.P.	75,000,000	72,853,782	13,616,281	10,598,693	74,085,081	1.20	5.8	2019
Arsenal Capital Partners VI LP	100,000,000	29,656,360	287,031	70,611,608	21,828,265	0.75	-18.0	2021
Asia Alternatives	649,000,000	219,625,757	24,378,280	447,390,839	212,746,563	1.08	3.8	
Asia Alternatives Capital Partners V	99,000,000	107,888,911	23,182,276	9,121,646	112,444,263	1.26	8.0	2017
MN Asia Investors	550,000,000	111,736,846	1,196,004	438,269,193	100,302,300	0.91	-8.0	2020
Banc Fund	178,551,387	187,460,477	63,057,136	0	188,231,352	1.34	5.5	
Banc Fund IX, L.P.	107,205,932	107,205,932	55,731,739	0	100,607,193	1.46	5.9	2014
Banc Fund X, L.P.	71,345,455	80,254,545	7,325,397	0	87,624,160	1.18	4.3	2018
BlackRock	950,000,000	954,617,522	294,789,955	0	1,724,888,400	2.12	32.1	
BlackRock Long Term Capital, SCSP	950,000,000	954,617,522	294,789,955	0	1,724,888,400	2.12	32.1	2019
Blackstone Group L.P.	1,535,000,000	934,645,736	751,970,900	713,025,702	579,861,391	1.42	14.1	
Blackstone Capital Partners IV, L.P.	70,000,000	84,481,419	201,562,974	1,765,384	37,222	2.39	37.0	2002
Blackstone Capital Partners V L.P.	140,000,000	152,431,082	246,495,819	7,026,873	522,227	1.62	8.0	2006
Blackstone Capital Partners VI, L.P.	100,000,000	106,951,296	167,432,431	10,975,597	26,499,190	1.81	12.3	2008
Blackstone Capital Partners VII	130,000,000	140,131,503	101,719,954	9,306,402	115,984,603	1.55	12.0	2015
Blackstone Capital Partners VIII LP	150,000,000	106,791,207	7,889,893	57,901,977	118,288,502	1.18	9.3	2019
Blackstone Capital Partners Asia II	270,000,000	67,509,678	997	202,490,322	77,795,317	1.15	15.7	2021
Blackstone Capital Partners IX	150,000,000	0	0	150,000,000	0			2022
Blackstone Growth	250,000,000	210,796,638	26,034,561	63,036,047	177,389,797	0.97	-1.6	2020
Blackstone Growth Equity II	150,000,000	0	0	150,000,000	0			2022
Blackstone Supplemental Account - M	125,000,000	65,552,913	834,272	60,523,099	63,344,533	0.98	-1.0	2021

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Blackstone Strategic Partners	915,500,000	722,777,043	882,436,049	234,268,659	230,124,705	1.53	11.3	
Strategic Partners III VC, L.P.	25,000,000	25,088,565	34,142,783	86,254	0	1.36	6.0	2004
Strategic Partners III-B, L.P.	100,000,000	79,714,850	118,768,862	12,219,010	0	1.49	6.3	2004
Strategic Partners IV VC, L.P.	40,500,000	42,325,414	63,954,747	1,084,828	93,033	1.51	9.0	2008
Strategic Partners IV-B	100,000,000	99,541,961	155,239,588	3,156,298	116,714	1.56	12.1	2008
Strategic Partners V, LP	100,000,000	87,497,031	141,091,599	1,706,005	200,543	1.61	18.2	2011
Strategic Partners VI, L.P.	150,000,000	104,564,078	137,376,880	22,349,653	20,629,737	1.51	13.8	2014
Strategic Partners VII, L.P.	150,000,000	124,810,944	135,394,014	43,100,796	71,601,926	1.66	17.0	2016
Strategic Partners VIII	150,000,000	123,485,508	92,151,365	82,121,490	101,311,693	1.57	26.7	2018
Strategic Partners IX	100,000,000	35,748,692	4,316,209	68,444,325	36,171,059	1.13	12.6	2022
Blue Owl	625,000,000	491,468,073	399,313,276	440,995,750	460,371,832	1.75	28.4	
Dyal Capital Partners III	175,000,000	215,743,153	219,434,359	108,261,804	177,614,077	1.84	25.4	2015
Dyal Capital Partners IV	250,000,000	202,631,390	143,712,786	171,627,902	230,512,212	1.85	39.2	2018
Dyal Capital Partners V	200,000,000	73,093,530	36,166,131	161,106,044	52,245,543	1.21	13.8	2020
Bridgepoint	267,564,030	178,478,771	17,636,286	95,561,274	253,289,540	1.52	17.7	
Bridgepoint Europe VI L.P.	161,999,987	161,699,396	17,634,108	6,700,008	236,586,763	1.57	17.8	2018
Bridgepoint Europe VII	105,564,043	16,779,375	2,178	88,861,266	16,702,776	1.00	-0.7	2022
Brookfield Asset Management Inc.	500,000,000	436,446,497	262,830,891	121,408,406	462,677,220	1.66	28.3	
Brookfield Capital Partners Fund IV	100,000,000	115,475,156	221,010,118	6,367,629	56,812,460	2.41	42.5	2015
Brookfield Capital Partners V L.P.	250,000,000	261,958,058	41,545,372	24,054,060	330,938,191	1.42	14.3	2018
Brookfield Capital Partners Fund VI	150,000,000	59,013,283	275,401	90,986,717	74,926,569	1.27	31.9	2022
Canyon Partners	125,000,000	146,475,843	27,948,519	0	158,449,315	1.27	11.9	
Canyon Distressed Opportunity Fund III	125,000,000	146,475,843	27,948,519	0	158,449,315	1.27	11.9	2020
Cardinal Partners	10,000,000	10,000,000	39,196,082	0	30,059	3.92	10.6	
DSV Partners IV	10,000,000	10,000,000	39,196,082	0	30,059	3.92	10.6	1985
Carlyle Group	400,000,000	356,059,110	77,853,313	117,297,132	335,951,898	1.16	6.4	
Carlyle Strategic Partners IV, L.P.	100,000,000	119,848,374	53,429,269	32,306,465	82,082,308	1.13	5.4	2016
Carlyle Partners VII, L.P.	150,000,000	156,227,244	17,422,357	8,061,427	178,032,575	1.25	7.3	2017
Carlyle Partners VIII	150,000,000	79,983,492	7,001,687	76,929,240	75,837,015	1.04	4.3	2021
CarVal Investors	600,000,000	503,024,588	425,684,544	75,000,000	258,707,074	1.36	8.0	
CVI Credit Value Fund A II	150,000,000	142,500,000	199,735,718	7,500,000	3,631,772	1.43	8.3	2012
CVI Credit Value Fund A III	150,000,000	142,500,000	168,545,561	7,500,000	26,690,846	1.37	8.3	2015
CVI Credit Value Fund IV	150,000,000	113,024,588	57,248,698	15,000,000	107,956,177	1.46	7.6	2017
CVI Credit Value Fund V	150,000,000	105,000,000	154,566	45,000,000	120,428,280	1.15	6.8	2020
Clearlake Capital	100,000,000	57,849,852	268,947	42,308,461	60,303,697	1.05	3.1	
Clearlake Capital Partners VII	100,000,000	57,849,852	268,947	42,308,461	60,303,697	1.05	3.1	2022
Court Square	589,419,132	499,615,126	667,313,420	148,602,249	286,114,468	1.91	15.1	
Court Square Capital Partners II, L.P.	164,419,132	170,245,229	295,744,454	5,681,078	3,130,843	1.76	12.3	2006
Court Square Capital Partners III, L.P.	175,000,000	190,475,727	325,596,774	5,769,184	142,886,932	2.46	21.3	2012
Court Square Capital Partners IV, L.P.	150,000,000	138,894,170	45,972,192	37,151,987	140,096,693	1.34	14.5	2018
Court Square Capital Partners V, L.P.	100,000,000	0	0	100,000,000	0			2024

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
CVC Capital Partners	458,999,963	445,190,280	671,906,910	123,967,774	212,165,581	1.99	16.5	
CVC Capital Partners VI	242,999,981	291,306,182	376,348,683	14,425,285	209,089,813	2.01	16.2	2013
CVC Capital Partners IX	107,999,991	0	0	107,999,991	0			2023
CVC European Equity Partners V, L.P.	107,999,991	153,884,098	295,558,227	1,542,498	3,075,768	1.94	16.7	2008
Goldman, Sachs & Co.	449,800,000	384,850,749	356,302,251	163,045,250	230,189,642	1.52	11.1	
GS Capital Partners VI, L.P.	100,000,000	110,285,035	143,299,966	2,551,356	1,668,813	1.31	7.1	2007
GS China-US Cooperation Fund	99,800,000	40,727,812	523,330	59,480,800	51,317,650	1.27	8.2	2018
GS Vintage VII	100,000,000	89,690,317	84,040,359	61,120,372	62,184,033	1.63	14.7	2016
West Street Capital Partners VII, L.P.	150,000,000	144,147,585	128,438,596	39,892,722	115,019,146	1.69	17.7	2016
Goldner Hawn Johnson & Morrison	150,510,266	78,695,721	77,216,563	72,446,511	75,656,512	1.94	21.2	
GHJM TrailHead Fund	20,000,000	17,572,130	55,500,283	2,894,486	1,002,043	3.22	19.6	2012
Goldner Hawn Fund VII, L.P.	57,755,138	48,781,366	21,716,280	9,139,123	62,198,992	1.72	27.7	2018
Goldner Hawn VIII	72,755,128	12,342,225	0	60,412,903	12,455,477	1.01	1.4	2023
Green Equity Investors	325,000,000	353,078,961	258,128,326	13,312,200	373,345,830	1.79	13.5	
Green Equity Investors VI, L.P.	200,000,000	235,160,724	256,023,237	4,125,348	228,071,328	2.06	13.9	2012
Green Equity Investors VIII	125,000,000	117,918,237	2,105,089	9,186,852	145,274,503	1.25	9.6	2020
GTCR	110,000,000	108,828,273	261,469,386	10,416,556	93,184,019	3.26	32.2	
GTCR XI	110,000,000	108,828,273	261,469,386	10,416,556	93,184,019	3.26	32.2	2013
HarbourVest	21,297,417	20,948,171	27,736,166	790,216	3,584,546	1.50	11.4	
Dover Street VII Cayman Fund L.P.	2,198,112	2,074,270	1,856,658	132,416	3,796	0.90	-4.5	2014
HarbourVest Intl PE Partners V-Cayman US	3,352,610	3,346,199	4,530,727	172,800	5,486	1.36	13.5	2014
Harbourvest Intl PE Partners VI-Cayman	4,049,086	4,040,737	6,026,903	189,000	1,818,865	1.94	14.6	2014
HarbourVest Partners VIII Cayman Buyout	4,506,711	4,395,883	6,132,214	156,000	53,856	1.41	12.9	2014
HarbourVest Partners VIII-Cayman Venture	7,190,898	7,091,082	9,189,664	140,000	1,702,544	1.54	10.6	2014
Hellman & Friedman	575,000,000	414,759,813	203,244,035	197,284,616	439,303,514	1.55	18.7	
Hellman & Friedman Capital Partners VII, L.P.	50,000,000	49,914,704	161,459,211	2,183,886	4,451,256	3.32	24.9	2009
Hellman & Friedman Investors IX, L.P.	175,000,000	178,070,867	17,266,326	12,324,342	242,974,220	1.46	13.0	2018
Hellman & Friedman Capital Partners X	250,000,000	186,774,242	24,518,498	82,776,388	191,878,039	1.16	8.1	2021
Hellman & Friedman Capital Partners XI	100,000,000	0	0	100,000,000	0			2023
IK Limited	575,364,005	505,149,589	560,239,017	128,033,172	260,778,980	1.63	14.4	
IK Fund VII	161,999,987	179,393,652	322,286,061	8,191,013	12,582,452	1.87	14.1	2013
IK Fund VIII	161,999,987	179,209,717	237,952,956	8,291,136	90,532,754	1.83	17.8	2016
IK Fund IX	145,799,988	146,546,221	0	5,986,980	157,663,774	1.08	3.8	2019
IK Fund X	105,564,043	0	0	105,564,043	0			2022

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Kohlberg, Kravis, Roberts & Co.	1,797,000,000	1,268,388,061	1,008,240,919	618,200,348	943,698,660	1.54	13.0	
KKR 2006 Fund L.P.	200,000,000	218,137,965	392,571,781	3,300,979	25,337	1.80	9.1	2006
KKR Americas Fund XII L.P.	150,000,000	148,237,434	97,200,987	17,333,680	178,224,047	1.86	18.7	2016
KKR Ascendant Strategy	150,000,000	0	0	150,000,000	0			2023
KKR Asian Fund III	100,000,000	97,147,977	64,343,355	14,730,983	117,781,769	1.87	21.2	2017
KKR Asian Fund IV	150,000,000	77,864,675	5,621,720	84,002,345	85,995,461	1.18	9.9	2020
KKR Core Investments Partnership	97,000,000	103,902,528	5,817,967	24,319	124,683,383	1.26	11.2	2021
KKR Core Investments Fund II	100,000,000	25,158,045	0	74,841,955	25,175,027	1.00	0.1	2022
KKR Europe V	100,000,000	94,916,908	16,973,058	10,650,220	102,954,701	1.26	9.6	2018
KKR European Fund VI (USD) SCSp	100,000,000	23,795,784	0	78,471,765	16,858,675	0.71	-34.9	2022
KKR Millennium Fund	200,000,000	205,167,570	424,946,028	0	119,445	2.07	16.4	2002
KKR MN Partnership L.P.	150,000,000	98,899,850	766,023	52,512,105	107,944,154	1.10	6.0	2021
KKR North America Fund XIII	300,000,000	175,159,325	0	132,331,997	183,936,662	1.05	4.5	2021
Lexington Partners	1,645,000,000	1,187,041,619	819,596,862	537,822,361	938,196,974	1.48	12.7	
Lexington Capital Partners VI-B, L.P.	100,000,000	98,374,022	145,958,371	1,634,703	531,991	1.49	7.9	2005
Lexington Capital Partners VII, L.P.	200,000,000	173,297,773	270,920,764	30,670,593	18,817,870	1.67	14.3	2009
Lexington Capital Partners VIII, L.P.	150,000,000	139,025,292	146,776,947	30,024,932	84,453,106	1.66	15.4	2014
Lexington Capital Partners IX, L.P.	150,000,000	129,405,518	40,446,827	34,017,534	149,529,438	1.47	20.3	2018
Lexington Capital Partners X	100,000,000	30,000,000	688,222	70,000,000	35,983,266	1.22	40.8	2021
Lexington Co-Investment Partners IV	200,000,000	219,344,601	157,895,609	3,604,175	214,818,819	1.70	15.2	2017
Lexington Co-Investment Partners V	300,000,000	278,046,618	21,194,948	41,113,613	303,828,348	1.17	10.8	2020
Lexington Co-Investment Partners V Overage	45,000,000	35,649,900	1,805,011	10,654,706	39,664,705	1.16	8.8	2021
Lexington Co-Investment Partners VI	300,000,000	0	0	300,000,000	0			2023
Lexington Middle Market Investors IV	100,000,000	83,897,895	33,910,163	16,102,105	90,569,431	1.48	17.2	2016
Madison Dearborn Capital Partners LLC	200,000,000	197,576,778	83,301,631	35,227,667	176,941,712	1.32	9.4	
Madison Dearborn Capital Partners VII, L.P.	100,000,000	100,683,058	66,192,167	16,504,931	84,222,641	1.49	9.6	2015
Madison Dearborn Capital Partners VIII-A, L.P	100,000,000	96,893,720	17,109,464	18,722,736	92,719,071	1.13	8.6	2019
Marathon	400,000,000	187,906,171	28,744,793	218,000,000	197,628,650	1.20	9.5	
Marathon Distressed Credit Fund	200,000,000	161,906,171	28,744,793	44,000,000	171,628,650	1.24	9.5	2020
Marathon Distressed Credit Fund II	200,000,000	26,000,000	0	174,000,000	26,000,000	1.00	0.0	2023
Merced Capital	178,737,500	184,266,287	170,420,389	0	49,860,974	1.20	3.5	
Merced Partners IV	125,000,000	124,968,390	126,847,539	0	12,420,716	1.11	2.2	2013
Merced Partners V	53,737,500	59,297,897	43,572,850	0	37,440,258	1.37	5.9	2017
MHR Institutional Partners	75,000,000	83,360,009	26,370,916	11,398,019	95,131,205	1.46	9.2	
MHR Institutional Partners IV LP	75,000,000	83,360,009	26,370,916	11,398,019	95,131,205	1.46	9.2	2014
Nordic Capital	575,364,005	547,502,633	357,872,104	174,853,834	469,968,985	1.51	14.0	
Nordic Capital Fund VIII	161,999,987	228,229,426	296,912,142	12,535,831	52,544,831	1.53	12.1	2013
Nordic Capital IX Beta, L.P.	161,999,987	180,204,637	60,907,110	49,558,740	243,531,211	1.69	17.9	2017
Nordic Capital Fund X	145,799,988	120,307,140	0	25,993,184	157,512,641	1.31	17.6	2020
Nordic Capital Fund XI	105,564,043	18,761,429	52,852	86,766,078	16,380,302	0.88	-23.5	2022

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Oak Hill Capital Management, Inc.	250,000,000	248,354,824	273,661,397	10,015,542	162,078,574	1.75	28.4	
Oak Hill Capital Partners IV Onshore LP	150,000,000	154,205,648	254,552,290	3,539,128	50,926,798	1.98	32.8	2016
Oak Hill Capital Partners V	100,000,000	94,149,176	19,109,107	6,476,414	111,151,776	1.38	14.5	2018
Oaktree Capital Management, LLC	400,000,000	266,822,618	68,970,664	186,555,047	253,527,799	1.21	7.2	
Oaktree Special Situations Fund, L.P.	100,000,000	103,690,420	22,391,423	7,741,294	72,180,616	0.91	-1.9	2014
Oaktree Special Situations Fund II, L.P.	100,000,000	99,366,710	46,579,241	42,579,241	116,419,059	1.64	35.3	2018
Oaktree Special Situations Fund III	200,000,000	63,765,488	0	136,234,512	64,928,124	1.02	1.6	2022
Paine & Partners, LLC	325,000,000	239,658,844	88,839,960	108,951,935	232,261,674	1.34	10.8	
Paine Schwartz Food Chain Fund IV	75,000,000	70,242,247	35,397,971	13,616,374	61,703,784	1.38	7.0	2014
Paine Schwartz Food Chain Fund V, L.P.	150,000,000	129,710,805	53,257,921	34,716,092	132,321,637	1.43	17.9	2018
Paine Schwartz Food Chain VI	100,000,000	39,705,792	184,068	60,619,469	38,236,253	0.97	-4.8	2023
Permal PE	5,337,098	4,406,696	4,794,251	1,090,000	258,246	1.15	4.5	
Glouston Private Equity Opportunities IV	5,337,098	4,406,696	4,794,251	1,090,000	258,246	1.15	4.5	2014
Permira	599,399,952	505,701,762	488,265,163	166,469,627	479,749,844	1.91	18.2	
Permira V, L.P.	161,999,987	185,583,230	395,454,233	4,546,567	115,799,302	2.75	21.0	2013
Permira VI, L.P.	129,599,990	129,712,367	81,585,258	26,747,264	169,636,640	1.94	16.2	2016
Permira VII L.P.1	145,799,988	147,198,277	11,225,671	16,659,680	150,628,223	1.10	3.6	2019
Permira VIII	161,999,987	43,207,888	0	118,516,117	43,685,679	1.01	1.4	2022
Public Pension Capital Management	285,000,000	185,147,296	105,333,579	121,878,682	233,699,690	1.83	21.4	
Public Pension Capital, LLC	285,000,000	185,147,296	105,333,579	121,878,682	233,699,690	1.83	21.4	2014
Silver Lake Partners	335,000,000	347,450,958	451,184,532	29,821,004	303,564,985	2.17	18.8	
Silver Lake Partners III, L.P.	100,000,000	93,900,858	212,089,820	9,528,468	16,874,484	2.44	18.6	2007
Silver Lake Partners IV	100,000,000	116,267,955	162,157,815	2,881,307	148,651,549	2.67	21.9	2012
Silver Lake Partners V, L.P.	135,000,000	137,282,145	76,936,897	17,411,229	138,038,952	1.57	13.1	2017
Siris Capital Group	67,875,000	0	0	67,875,000	0			
Siris V	67,875,000	0	0	67,875,000	0			2022
Split Rock	110,000,000	107,055,906	125,392,564	2,944,094	26,848,062	1.42	4.8	
Split Rock Partners II, LP	60,000,000	59,165,000	66,598,372	835,000	24,448,940	1.54	7.1	2008
Split Rock Partners LP	50,000,000	47,890,906	58,794,192	2,109,094	2,399,122	1.28	3.0	2005
Summit Partners	600,000,000	457,961,306	434,542,318	282,106,193	402,038,641	1.83	24.7	
Summit Partners Growth Equity Fund VIII	100,000,000	116,727,192	254,546,673	23,129,320	29,488,548	2.43	25.9	2011
Summit Partners Growth Equity Fund IX	100,000,000	134,554,799	146,949,457	32,610,000	129,741,493	2.06	26.8	2015
Summit Partners Growth Equity Fund X-A	150,000,000	142,186,520	33,046,188	40,859,668	170,253,432	1.43	16.4	2019
Summit Partners Growth Equity Fund XI	250,000,000	64,492,795	0	185,507,205	72,555,168	1.13	10.8	2021
TA Associates	80,000,000	0	0	80,000,000	0			
TA XV	80,000,000	0	0	80,000,000	0			2023
Thoma Bravo LLC	525,000,000	539,981,928	339,723,510	77,278,115	547,081,333	1.64	21.8	
Thoma Cressey Fund VII, L.P.	50,000,000	50,000,000	107,057,940	0	392,098	2.15	23.6	2000
Thoma Bravo Fund XII, L.P.	75,000,000	81,949,004	84,992,456	18,452,144	91,621,539	2.16	16.5	2016
Thoma Bravo Fund XIII, L.P.	150,000,000	184,783,234	128,118,668	12,475,387	221,564,683	1.89	26.4	2018
Thoma Bravo Fund XIV	150,000,000	151,866,214	19,534,890	17,668,639	154,036,442	1.14	5.6	2020
Thoma Bravo Fund XV LP	100,000,000	71,383,476	19,556	28,681,945	79,466,571	1.11	8.4	2021

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Thomas H. Lee Partners	400,000,000	336,785,055	301,774,973	93,370,784	218,718,877	1.55	21.6	
Thomas H. Lee Equity Fund VII, LP.	100,000,000	99,998,423	137,891,993	10,163,734	38,485,271	1.76	19.4	2015
Thomas H. Lee Equity Fund IX	150,000,000	85,661,483	0	64,338,517	79,193,527	0.92	-7.0	2021
Thomas H. Lee Equity Fund VIII, L.P.	150,000,000	151,125,149	163,882,980	18,868,533	101,040,079	1.75	31.1	2018
TPG Capital	800,000,000	488,888,344	206,706,491	358,015,454	491,567,134	1.43	18.0	
TPG Growth V	150,000,000	139,821,283	13,525,748	20,827,206	166,070,735	1.28	15.8	2021
TPG Growth VI, L.P.	150,000,000	0	0	150,000,000	0			2023
TPG Partners VII, L.P.	100,000,000	102,070,843	157,320,926	15,818,010	40,126,412	1.93	19.0	2015
TPG Partners VIII	150,000,000	149,026,326	34,475,140	19,340,130	184,476,723	1.47	21.3	2018
TPG Partners IX, L.P.	100,000,000	26,509,750	7,014	73,490,250	27,030,060	1.02	2.5	2022
TPG Tech Adjacencies II, L.P.	150,000,000	71,460,142	1,377,663	78,539,858	73,863,204	1.05	3.9	2021
Varde Fund	531,286,710	526,571,585	524,660,014	6,000,000	212,020,408	1.40	7.2	
Varde Fund X, LP	150,000,000	150,000,000	253,807,303	0	5,077,042	1.73	9.9	2010
Varde Fund XI, LP	200,000,000	200,000,000	229,469,710	0	30,900,016	1.30	4.3	2013
Varde Fund XIII, L.P.	150,000,000	144,000,000	41,383,001	6,000,000	141,135,471	1.27	8.3	2018
Varde Fund XIV	31,286,710	32,571,585	0	0	34,907,880	1.07	9.0	2022
Vestar Capital Partners	325,000,000	327,307,904	318,520,482	22,089,738	190,534,255	1.56	9.9	
Vestar Capital Partners V, L.P.	75,000,000	76,797,458	101,218,231	0	99	1.32	3.9	2005
Vestar Capital Partners VI, LP	100,000,000	109,624,110	184,058,508	0	51,625,475	2.15	23.9	2011
Vestar Capital Partners VII, L.P.	150,000,000	140,886,336	33,243,742	22,089,738	138,908,681	1.22	8.4	2017
Vista Equity Partners	200,000,000	160,333,183	77,223	40,879,720	195,678,483	1.22	6.7	
Vista Equity Partners Perennial	200,000,000	160,333,183	77,223	40,879,720	195,678,483	1.22	6.7	2020
Warburg Pincus	1,316,000,000	1,086,513,882	1,010,958,429	234,805,000	748,917,767	1.62	11.0	
Warburg Pincus China, L.P.	45,000,000	46,935,000	19,177,200	0	41,494,289	1.29	5.9	2016
Warburg Pincus China-Southeast Asia II	50,000,000	29,000,000	4,097,500	21,000,000	27,654,434	1.09	4.6	2019
Warburg Pincus Financial Sector	90,000,000	90,512,016	57,946,320	3,555,000	105,690,847	1.81	17.2	2017
Warburg Pincus Global Growth, L.P.	250,000,000	235,121,050	39,277,289	14,500,000	299,338,944	1.44	12.5	2018
Warburg Pincus Global Growth 14, L.P.	300,000,000	103,603,363	2,313,000	195,750,000	107,121,602	1.06	5.2	2022
Warburg Pincus Private Equity IX, L.P.	100,000,000	100,000,000	172,072,950	0	118,310	1.72	9.6	2005
Warburg Pincus Private Equity X, LP	150,000,000	150,000,000	266,806,541	0	2,752,892	1.80	9.5	2007
Warburg Pincus Private Equity XI, LP	200,000,000	200,342,452	290,499,821	0	64,006,128	1.77	12.0	2012
Warburg Pincus Private Equity XII, LP	131,000,000	131,000,000	158,767,808	0	100,740,323	1.98	16.0	2015
Wayzata Investment Partners	150,000,000	68,415,000	54,124,640	0	18,399,481	1.06	1.2	
Wayzata Opportunities Fund III	150,000,000	68,415,000	54,124,640	0	18,399,481	1.06	1.2	2012
Wellspring Capital Partners	125,000,000	153,950,798	60,233,023	11,130,966	167,690,333	1.48	15.5	
Wellspring Capital Partners VI, L.P.	125,000,000	153,950,798	60,233,023	11,130,966	167,690,333	1.48	15.5	2016
Welsh, Carson, Anderson & Stowe	650,000,000	532,239,135	501,621,083	117,760,865	412,100,822	1.72	17.1	
Welsh, Carson, Anderson & Stowe XI, L.P.	100,000,000	100,000,000	161,464,441	0	6,723,979	1.68	11.6	2008
Welsh, Carson, Anderson & Stowe XII, L.P.	150,000,000	150,000,000	250,367,938	0	112,068,023	2.42	24.8	2014
Welsh, Carson, Anderson & Stowe XIII, L.P.	250,000,000	229,328,036	89,788,704	20,671,964	247,927,659	1.47	20.7	2018
Welsh, Carson, Anderson & Stowe XIV	150,000,000	52,911,099	0	97,088,901	45,381,162	0.86	-23.3	2022

Minnesota State Board of Investment
Quarter Ending March 31, 2024
Private Markets Investments

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Whitehorse Capital	400,000,000	268,855,447	177,909,589	196,046,414	148,720,540	1.21	13.5	
Whitehorse Liquidity Partners III	100,000,000	105,085,291	90,757,598	12,608,997	44,868,291	1.29	14.0	2019
Whitehorse Liquidity Partners IV	100,000,000	100,970,188	59,922,806	23,476,242	60,704,183	1.19	12.9	2020
Whitehorse Liquidity Partners V	100,000,000	62,799,969	27,229,186	59,961,175	43,148,066	1.12	12.8	2021
Whitehorse Liquidity Partners VI, LP	100,000,000	0	0	100,000,000	0			2024
Wind Point Partners	200,000,000	146,250,206	25,350,842	73,753,956	174,282,394	1.37	17.0	
Wind Point Partners IX	100,000,000	97,306,904	25,350,842	22,697,258	122,003,900	1.51	18.6	2019
Wind Point Partners X	100,000,000	48,943,302	0	51,056,698	52,278,494	1.07	6.7	2022
Windjammer Capital Investors	441,708,861	235,459,388	293,363,646	231,304,081	149,045,537	1.88	12.2	
Windjammer Mezzanine & Equity Fund II	66,708,861	55,215,684	85,678,634	10,139,363	297,022	1.56	9.0	2000
Windjammer Senior Equity Fund IV, L.P.	100,000,000	94,783,390	166,983,745	21,125,252	69,842,428	2.50	17.2	2012
Windjammer Senior Equity Fund V, L.P.	100,000,000	84,094,418	40,701,267	26,405,362	77,540,191	1.41	14.9	2017
Windjammer Capital Fund VI	175,000,000	1,365,896	0	173,634,104	1,365,896	1.00	0.0	2023

Minnesota State Board of Investment
Quarter Ending March 31, 2024
Private Markets Investments

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Private Credit	**4,304,157,500**	**3,470,172,113**	**2,633,767,506**	**1,369,755,923**	**2,050,394,218**	**1.35**	**10.6**	
Audax Group	350,000,000	244,859,267	222,963,821	128,910,348	86,384,920	1.26	10.3	
Audax Mezzanine Fund III, L.P.	100,000,000	105,485,676	133,977,984	0	5,488,109	1.32	9.7	2010
Audax Mezzanine Fund IV-A, L.P.	100,000,000	90,323,717	82,209,261	26,154,078	31,469,664	1.26	11.1	2015
Audax Mezzanine Fund V	150,000,000	49,049,875	6,776,577	102,756,270	49,427,147	1.15	16.1	2020
Avenue Capital Partners	200,000,000	200,977,328	256,792,503	0	142,275,229	1.99	12.1	
Avenue Energy Opportunities Fund, L.P.	100,000,000	100,977,328	114,341,600	0	54,930,985	1.68	7.9	2014
Avenue Energy Opportunities Fund II	100,000,000	100,000,000	142,450,903	0	87,344,244	2.30	18.1	2017
BlackRock	97,500,000	94,161,958	36,820,068	3,338,042	94,478,342	1.39	9.5	
BlackRock Middle Market Senior Fund	97,500,000	94,161,958	36,820,068	3,338,042	94,478,342	1.39	9.5	2018
Brookfield Asset Management Inc.	200,000,000	100,830,631	33,990,602	126,018,394	76,796,626	1.10	10.7	
Brookfield Real Estate Finance Fund VI	200,000,000	100,830,631	33,990,602	126,018,394	76,796,626	1.10	10.7	2021
Castlelake L.P.	100,000,000	0	0	100,000,000	0			
Castlelake Aviation V Stable Yield	100,000,000	0	0	100,000,000	0			2023
Energy Capital Partners	28,087,500	38,526,304	18,996,994	8,558,190	23,214,223	1.10	5.9	
Energy Capital Credit Solutions II-A	28,087,500	38,526,304	18,996,994	8,558,190	23,214,223	1.10	5.9	2018
Gold Hill	40,000,000	40,000,000	65,449,702	0	12,090	1.64	10.7	
Gold Hill Venture Lending	40,000,000	40,000,000	65,449,702	0	12,090	1.64	10.7	2004
HPS Investment Partners	200,000,000	143,433,990	42,393,338	83,711,823	138,136,575	1.26	11.7	
HPS Mezzanine Partners 2019, L.P.	100,000,000	100,782,995	38,002,210	21,971,690	94,101,764	1.31	11.4	2019
HPS Strategic Investment Partners V	100,000,000	42,650,995	4,391,128	61,740,133	44,034,811	1.14	14.5	2022
Kohlberg, Kravis, Roberts & Co.	274,000,000	382,292,128	356,986,433	80,601,499	97,624,185	1.19	9.5	
KKR Lending Partner II L.P.	75,000,000	87,059,946	85,209,374	8,802,924	4,779,344	1.03	1.6	2015
KKR Lending Partners III L.P.	199,000,000	295,232,182	271,777,059	71,798,575	92,844,841	1.24	13.3	2017
LBC Credit Partners	200,000,000	208,902,679	179,539,337	62,241,479	78,113,979	1.23	10.9	
LBC Credit Partners IV, L.P.	100,000,000	120,048,550	124,627,302	24,251,243	19,630,214	1.20	8.8	2016
LBC Credit Partners V, L.P.	100,000,000	88,854,129	54,912,035	37,990,236	58,483,765	1.28	15.6	2019
Marathon	200,000,000	133,522,008	15,935,562	72,500,000	157,160,618	1.30	10.0	
Marathon Secured Private Strategies Fund II	100,000,000	96,022,008	15,752,864	10,000,000	118,182,330	1.39	10.4	2019
Marathon Secured Private Strategies Fund III	100,000,000	37,500,000	182,698	62,500,000	38,978,288	1.04	5.0	2022
Merit Capital Partners	350,000,000	280,145,608	357,775,102	69,787,592	105,571,286	1.65	11.7	
Merit Mezzanine Fund IV, L.P.	75,000,000	70,178,571	139,120,463	4,821,429	0	1.98	11.5	2004
Merit Mezzanine Fund V, LP	75,000,000	72,306,122	114,022,067	2,693,878	9,248,422	1.70	10.2	2009
Merit Mezzanine Fund VI	100,000,000	92,629,096	104,178,026	7,304,104	52,349,114	1.69	16.6	2016
Merit Mezzanine Fund VII	100,000,000	45,031,818	454,546	54,968,182	43,973,751	0.99	-1.6	2020
Oaktree Capital Management, LLC	650,000,000	528,444,365	85,797,572	135,100,000	572,927,871	1.25	10.0	
Oaktree Opportunities Fund X, L.P.	50,000,000	46,500,021	44,944,660	8,500,000	24,704,687	1.50	9.0	2015
Oaktree Opportunities Fund Xb, L.P.	100,000,000	75,003,445	6,350,000	25,000,000	108,935,674	1.54	12.2	2015
Oaktree Real Estate Debt III	200,000,000	151,940,899	31,426,776	56,600,000	137,747,241	1.11	8.3	2020
Oaktree Opportunities Fund XI	300,000,000	255,000,000	3,076,136	45,000,000	301,540,269	1.19	9.9	2020
PIMCO BRAVO	5,000,000	4,501,479	5,714,432	0	273,206	1.33	6.0	
PIMCO Bravo Fund OnShore Feeder II	5,000,000	4,501,479	5,714,432	0	273,206	1.33	6.0	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Prudential Global Investment Mgmt	600,000,000	549,155,906	593,768,489	110,983,184	178,820,172	1.41	10.4	
Prudential Capital Partners II, L.P.	100,000,000	97,930,132	145,671,152	11,049,052	488,725	1.49	9.0	2005
Prudential Capital Partners III, L.P.	100,000,000	102,894,352	174,862,733	13,563,659	2,382,207	1.72	14.1	2009
Prudential Capital Partners IV	100,000,000	114,810,063	142,986,419	1,846,576	18,151,210	1.40	9.3	2012
Prudential Capital Partners V, L.P.	150,000,000	159,827,164	117,943,020	5,728,990	80,505,614	1.24	7.2	2016
PGIM Capital Partners VI, L.P.	150,000,000	73,694,196	12,305,164	78,794,907	77,292,417	1.22	17.1	2020
Summit Partners	95,000,000	100,002,497	137,062,090	11,539,099	2,216,421	1.39	9.1	
Summit Subordinated Debt Fund III, L.P.	45,000,000	44,088,494	62,804,226	2,250,000	550,584	1.44	8.6	2004
Summit Subordinated Debt Fund IV, L.P.	50,000,000	55,914,003	74,257,864	9,289,099	1,665,837	1.36	9.8	2008
TCW	189,570,000	174,519,135	163,137,171	62,018,565	62,058,608	1.29	8.7	
TCW Direct Lending LLC	89,570,000	83,599,652	90,722,447	14,899,409	19,819,049	1.32	8.6	2014
TCW Direct Lending VII	100,000,000	90,919,484	72,414,724	47,119,156	42,239,559	1.26	8.8	2018
Torchlight Investors	150,000,000	30,000,000	0	120,000,000	28,928,400	0.96	-3.8	
Torchlight Debt Fund VIII	150,000,000	30,000,000	0	120,000,000	28,928,400	0.96	-3.8	2023
TSSP	375,000,000	215,896,830	60,644,291	194,447,707	205,401,467	1.23	9.9	
Sixth Street Opportunities Partners V	75,000,000	43,564,799	712,372	32,138,374	42,986,102	1.00	0.3	2021
Sixth Street TAO Partners (B), L.P.	50,000,000	52,779,340	24,582,130	25,209,197	42,652,782	1.27	8.6	2018
Sixth Street TAO Partners (D), L.P.	100,000,000	64,783,255	17,824,346	44,818,795	67,927,336	1.32	13.0	2018
Sixth Street TAO Partners (B) Vintage 2023	100,000,000	14,383,125	0	85,616,875	14,264,004	0.99	-4.9	2023
TSSP Opportunities Partners IV (A), L.P.	50,000,000	40,386,311	17,525,443	6,664,466	37,571,243	1.36	10.7	2018

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Real Assets	**4,197,571,518**	**4,023,265,728**	**3,036,130,397**	**519,713,839**	**2,029,620,029**	**1.26**	**5.0**	
BlackRock	198,500,000	179,390,563	81,887,133	36,272,158	131,787,280	1.19	6.5	
BlackRock Global Renewable Power Fund II	98,500,000	108,982,081	79,021,873	4,886,616	55,359,901	1.23	6.2	2017
BlackRock Global Renewable Power Infrastructure III	100,000,000	70,408,481	2,865,259	31,385,542	76,427,379	1.13	7.7	2019
EIG Global Energy Partners	450,000,000	473,254,572	397,775,990	75,356,663	115,054,576	1.08	1.8	
EIG Energy Fund XIV	100,000,000	113,459,470	95,309,310	2,761,129	3,501,881	0.87	-5.0	2007
EIG Energy Fund XV	150,000,000	161,570,371	159,449,534	22,871,323	11,117,058	1.06	1.3	2010
EIG Energy Fund XVI	200,000,000	198,224,731	143,017,146	49,724,211	100,435,637	1.23	4.6	2013
Encap Energy	300,000,000	322,809,150	362,504,343	7,836,632	114,609,675	1.48	8.3	
EnCap Energy Capital Fund VIII, L.P.	100,000,000	103,367,281	68,667,631	0	36,855,564	1.02	0.4	2010
Encap Energy Fund IX	100,000,000	113,725,245	149,930,524	3,890,055	19,140,721	1.49	10.5	2012
EnCap Energy Capital Fund X, L.P.	100,000,000	105,716,624	143,906,189	3,946,576	58,613,389	1.92	15.5	2015
Energy & Minerals Group	680,000,000	696,099,762	429,769,848	43,953,880	534,473,059	1.39	6.4	
NGP Midstream & Resources, L.P.	100,000,000	103,565,615	179,560,149	17,857	4,535,966	1.78	13.2	2007
The Energy & Minerals Group Fund II, L.P.	100,000,000	109,697,789	110,462,562	170,365	107,089,865	1.98	11.6	2011
The Energy & Minerals Group Fund III, L.P.	200,000,000	208,719,926	39,535,987	952,518	107,781,410	0.71	-4.6	2014
The Energy & Minerals Group Fund IV, LP	150,000,000	164,550,231	95,001,375	14,023,899	147,504,748	1.47	8.1	2015
The Energy & Minerals Group Fund V	112,500,000	92,332,817	3,658,916	23,199,538	141,617,669	1.57	11.8	2019
The Energy & Minerals Group Fund V Accordion, LP	17,500,000	17,233,384	1,550,859	5,589,703	25,943,401	1.60	12.5	2019
Energy Capital Partners	500,000,000	451,219,578	370,921,488	150,718,449	283,852,172	1.45	12.4	
Energy Capital Partners III, L.P.	200,000,000	239,038,835	314,765,322	30,959,867	54,488,099	1.54	11.6	2013
Energy Capital Partners IV-A, LP	150,000,000	158,945,486	55,739,958	22,081,623	166,388,793	1.40	14.4	2017
Energy Capital Partners V	150,000,000	53,235,257	416,208	97,676,959	62,975,280	1.19	18.2	2023
Enervest Management Partners	100,000,000	99,836,121	101,510,847	8,257,577	56,548,653	1.58	9.7	
EnerVest Energy Institutional Fund XIV-A, L.P.	100,000,000	99,836,121	101,510,847	8,257,577	56,548,653	1.58	9.7	2015
First Reserve	500,000,000	554,637,226	313,100,156	11,058,656	87,775,709	0.72	-7.0	
First Reserve Fund XI, L.P.	150,000,000	150,292,121	100,059,903	0	45,042	0.67	-8.8	2006
First Reserve Fund XII, L.P.	150,000,000	165,617,044	85,669,271	0	144,665	0.52	-17.9	2008
First Reserve Fund XIII, L.P.	200,000,000	238,728,061	127,370,982	11,058,656	87,586,001	0.90	-2.9	2013
Kohlberg, Kravis, Roberts & Co.	249,850,000	202,123,351	44,664,365	64,363,672	215,068,844	1.29	11.0	
KKR Global Infrastructure Investors III	149,850,000	138,503,964	42,686,783	23,442,771	148,817,888	1.38	12.0	2018
KKR Global Infrastructure Investors IV	100,000,000	63,619,387	1,977,582	40,920,901	66,250,956	1.07	5.5	2021
Merit Energy Partners	519,721,518	407,944,488	228,969,551	71,299,891	292,150,474	1.28	3.8	
Merit Energy Partners F-II, L.P.	100,000,000	59,522,861	36,375,957	0	1,426,279	0.64	-6.6	2006
Merit Energy Partners H	100,000,000	100,000,000	30,216,512	0	36,034,989	0.66	-5.5	2011
Merit Energy Partners I, L.P.	169,721,518	169,721,518	124,639,060	0	145,479,858	1.59	8.3	2014
Merit Energy Partners K, L.P.	150,000,000	78,700,109	37,738,022	71,299,891	109,209,348	1.87	26.6	2019
NGP	599,500,000	601,597,913	669,901,677	37,076,261	176,044,589	1.41	9.1	
Natural Gas Partners IX, LP	150,000,000	174,005,353	249,411,654	605,481	105,751	1.43	12.0	2007
NGP Natural Resources X, L.P.	150,000,000	149,697,949	135,379,508	302,051	12,539,397	0.99	-0.3	2011
NGP Natural Resources XI, L.P.	150,000,000	157,024,056	169,369,921	4,736,941	81,311,869	1.60	10.3	2014
NGP Natural Resources XII, L.P.	149,500,000	120,870,555	115,740,594	31,431,788	82,087,572	1.64	14.9	2017
Sheridan	100,000,000	34,353,005	35,125,000	13,520,000	22,255,000	1.67	11.5	
Sheridan Production Partners III-B, L.P.	100,000,000	34,353,005	35,125,000	13,520,000	22,255,000	1.67	11.5	2014

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Real Estate	**4,523,147,868**	**3,185,191,710**	**2,045,902,560**	**1,684,570,590**	**2,044,576,330**	**1.28**	**7.9**	
Angelo, Gordon & Co.	650,000,000	491,442,916	305,532,407	210,905,000	340,247,521	1.31	9.1	
AG Asia Realty Fund III, L.P.	50,000,000	47,587,261	47,125,000	6,196,250	14,140,834	1.29	8.7	2016
AG Asia Realty Fund IV, L.P.	100,000,000	85,851,377	54,000,000	30,047,500	64,479,607	1.38	13.6	2018
AG Asia Realty Fund V	100,000,000	12,000,000	0	88,000,000	11,064,300	0.92	-9.4	2023
AG Europe Realty Fund II, L.P.	75,000,000	68,635,121	33,769,976	12,768,750	62,730,845	1.41	8.4	2018
AG Europe Realty Fund III	75,000,000	50,003,777	3,750,000	24,937,500	55,931,322	1.19	8.3	2020
AG Realty Fund IX	100,000,000	92,141,126	89,250,000	11,650,000	28,799,448	1.28	5.7	2014
AG Realty Fund X, L.P.	150,000,000	135,224,254	77,637,431	37,305,000	103,101,165	1.34	13.3	2018
Blackstone	1,224,500,000	934,409,652	918,626,397	471,240,887	548,889,076	1.57	12.4	
Blackstone Real Estate Partners Asia II	74,500,000	72,334,552	16,556,389	12,885,561	68,609,866	1.18	5.4	2017
Blackstone Real Estate Partners Asia III	100,000,000	19,950,284	2,368	82,371,606	15,815,789	0.79	-18.1	2021
Blackstone Real Estate Partners Europe Fund VII	100,000,000	0	0	100,000,000	0			2023
Blackstone Real Estate Partners V	100,000,000	104,217,981	209,143,624	4,174,052	122,761	2.01	10.8	2006
Blackstone Real Estate Partners VI, L.P.	100,000,000	109,582,860	220,260,491	4,907,906	11,094	2.01	13.1	2007
Blackstone Real Estate Partners VII, LP	100,000,000	114,146,871	183,004,502	9,101,973	14,736,011	1.73	14.5	2011
Blackstone Real Estate VIII.TE.1 L.P.	150,000,000	176,677,885	180,455,860	19,729,846	104,983,316	1.62	14.0	2015
Blackstone Real Estate Partners IX, L.P.	300,000,000	324,551,961	109,203,163	47,616,957	334,290,164	1.37	15.4	2018
Blackstone Real Estate Partners X	200,000,000	12,947,258	0	190,452,985	10,320,074	0.80	-29.3	2022
Blackstone Strategic Partners	75,000,000	77,489,832	66,308,764	907,704	73,697	0.86	-2.3	
Strategic Partners III RE, L.P.	25,000,000	25,981,841	15,327,012	0	0	0.59	-6.5	2005
Strategic Partners IV RE, L.P.	50,000,000	51,507,991	50,981,752	907,704	73,697	0.99	-0.1	2008
Brookfield Asset Management Inc.	400,000,000	197,689,009	14,236,421	216,480,605	197,665,161	1.07	7.1	
Brookfield Strategic Real Estate Partners IV	300,000,000	197,689,009	14,236,421	116,480,605	197,665,161	1.07	7.1	2021
Brookfield Strategic Real Estate Partners V	100,000,000	0	0	100,000,000	0			2023
Carlyle Group	450,000,000	202,975,789	118,104,179	321,406,617	136,109,969	1.25	17.6	
Carlyle Realty Partners VIII, L.P.	150,000,000	128,182,470	118,104,179	96,199,936	71,081,292	1.48	23.0	2017
Carlyle Realty Partners IX	300,000,000	74,793,319	0	225,206,681	65,028,677	0.87	-17.5	2021
Kohlberg, Kravis, Roberts & Co.	125,000,000	87,683,641	6,724,260	45,391,941	77,320,203	0.96	-2.5	
KKR Real Estate Partners Americas III	125,000,000	87,683,641	6,724,260	45,391,941	77,320,203	0.96	-2.5	2021
Landmark Partners	249,500,000	118,668,102	69,637,848	153,372,819	82,818,699	1.28	12.4	
Landmark Real Estate Partners VIII, L.P.	149,500,000	115,762,784	69,637,848	56,278,137	81,555,214	1.31	12.8	2016
Landmark Real Estate Partners IX	100,000,000	2,905,317	0	97,094,683	1,263,485	0.43	-56.5	2021
Lubert Adler	174,147,868	154,982,744	92,039,144	21,986,552	106,183,897	1.28	12.6	
Lubert-Adler Real Estate Fund VII-B, L.P.	74,147,868	67,585,213	85,481,136	7,414,787	18,597,293	1.54	15.1	2017
Lubert-Adler Recovery and Enhancement Capital Fund	100,000,000	87,397,530	6,558,008	14,571,765	87,586,604	1.08	5.6	2021
Oaktree Capital Management, LLC	200,000,000	160,475,519	37,457,552	74,000,000	137,889,053	1.09	8.9	
Oaktree Real Estate Opportunities Fund VIII	200,000,000	160,475,519	37,457,552	74,000,000	137,889,053	1.09	8.9	2020
Rockpoint	200,000,000	195,212,260	69,882,159	27,354,575	137,799,773	1.06	2.1	
Rockpoint Real Estate Fund V, L.P.	100,000,000	103,619,500	58,755,434	14,217,829	42,404,752	0.98	-0.6	2014
Rockpoint Real Estate Fund VI, L.P.	100,000,000	91,592,760	11,126,725	13,136,746	95,395,022	1.16	7.4	2019

Minnesota State Board of Investment
Quarter Ending March 31, 2024
Private Markets Investments

Investments	Commitments	Contributions	Distributions	Remaining Commitment	Market Value	Investment Multiple	IRR	Vintage Year
Rockwood	200,000,000	182,652,872	61,784,022	21,527,831	119,256,021	0.99	-0.3	
Rockwood Capital RE Partners X, L.P.	100,000,000	99,845,593	57,507,174	1,838,936	43,538,222	1.01	0.3	2015
Rockwood Capital RE Partners XI	100,000,000	82,807,279	4,276,848	19,688,895	75,717,800	0.97	-1.6	2019
Silverpeak Real Estate Partners	225,000,000	144,009,375	109,295,624	7,496,058	3,389,232	0.78	-3.9	
Silverpeak Legacy Pension Partners III, L.P.	150,000,000	70,940,363	17,261,685	0	2,977,599	0.29	-11.9	2008
Silverpeak Legacy Pension Partners II, L.P.	75,000,000	73,069,012	92,033,940	7,496,058	411,633	1.27	4.2	2005
TA Associates Realty	350,000,000	237,500,000	176,273,782	112,500,000	156,934,028	1.40	10.7	
Realty Associates Fund XI	100,000,000	100,000,000	157,150,272	0	2,802,709	1.60	10.7	2015
Realty Associates Fund XII	100,000,000	100,000,000	19,123,510	0	125,132,269	1.44	13.3	2018
Realty Associates Fund XII	150,000,000	37,500,000	0	112,500,000	28,999,050	0.77	-22.7	2023
Fund Total	**38,882,947,212**	**30,905,079,000**	**23,529,906,140**	**11,367,737,851**	**22,634,326,207**	**1.49**	**11.5**	
Difference**					*51,017,101*			
Private Markets Total with Difference					**22,685,343,308**			

Private Markets Portfolio Status	Managers	Funds
Private Equity	58	193
Private Credit	19	42
Real Assets	11	32
Real Estate	13	37
Total	**101**	**304**

Notes

None of the data presented herein has been reviewed or approved by either the general partner or investment manager. The performance and valuation data presented herein is not a guarantee or prediction of future results and may slightly differ from final fiscal year-end report. Ultimately, the actual performance and value of any investment is not known until final liquidation. Because there is no industry-standardized method for valuation or reporting comparisons of performance and valuation data among different investments is difficult.

Data presented in this report is made public pursuant to Minn. Stat. Chs. 13 and 13D, and Minn. Stat. § 11A.24, subd. 6(c). Additional information on private markets investments may be classified as non-public and not subject to disclosure.

Arsenal Capital Partners V, L.Pp erformance and valuation data may differ from final year-end reporting.

*Partnership interests transferred to the MSBI during 1Q2015. All data presented as of the transfer date.

** Difference is from an in-kind stock distribution liquidating account, cash transactions posted to next day and distributions received in foreign currency during the month.

Quarterly Report

Participant Directed Investment Program

March 31, 2024

Quarterly Report

Participant Directed Investment Program

The Participant Directed Investment Program (PDIP) provides investment vehicles for a variety of retirement or other tax-advantaged savings plans. The objective of the Plan is to be competitive in the marketplace by providing quality investment options with low fees to its participants. Investment goals among the PDIP's many participants are varied.

- The Supplemental Investment Fund (SIF) is an investment platform that provides participants with the option to invest in many of the same pools as the Combined Funds in addition to a Stable Value Fund and a Money Market Fund. The Volunteer Firefighter Account is an option in the SIF for local firefighter entities that join the Statewide Voluntary Firefighter Plan administered by PERA. The investment vehicles are structured much like a family of mutual funds where participating entities buy or sell units in each fund. Participants may allocate their investments among one or more funds that are appropriate for their needs and are within statutory requirements and rules established by the participating organizations.
- The Mutual Fund Line-up is an investment platform that offers participants three sets of investment options. The first is a set of actively and passively managed mutual funds, a Stable Value Fund and a Money Market Fund. The second is a set of target date funds called Minnesota Target Retirement Funds. The third is a self-directed brokerage account window which offers thousands of mutual funds. The SBI has no direct management responsibilities for funds within the self-directed brokerage account window. Participants may allocate their investments among one or more accounts that are appropriate for their needs within the statutory requirements and rules established by the participating organizations.
- The SBI is responsible for the investment options provided in the two State Sponsored Savings Plans established under provisions of the Internal Revenue Code 529, the Minnesota College Savings Plan and Minnesota Achieving a Better Life Experience Plan (ABLE). The Minnesota College Savings Plan is an educational savings plan designed to help families save for qualified nationwide college costs. The SBI is responsible for the investments and the Minnesota Office of Higher Education (OHE) is responsible for the overall administration of the Plan. The SBI and OHE have contracted jointly with TIAA-CREF Tuition Financing, Inc. to provide administrative, marketing, communication, recordkeeping and investment management services. The ABLE Plan is a savings plan designed to help individuals save for qualified disability expenses without losing eligibility for certain assistance programs. The plan is administered by the Department of Human Services (DHS). The SBI and DHS have jointly contracted with Ascensus to provide recordkeeping, administrative, and investment management services for the plan.

The investment returns shown in this report are calculated using a time-weighted rate of return formula. These returns are net of investment management fees and transaction costs. They do not, however, reflect administrative expenses that may be deducted by the retirement systems or other agencies to defray administrative costs.

Supplemental Investment Fund Summary

The Minnesota Supplemental Investment Fund (SIF) is a multi-purpose investment platform that offers a range of investment options to state and local public employees. This investment platform provides some or all of the investment options to the Public Employees Retirement Association (PERA) Defined Contribution Plan, local pension plans and the Statewide Volunteer Firefighter plan.

A wide diversity of investment goals exists among the Fund's participants. In order to meet those needs, the Fund has been structured much like a "family of mutual funds." Participants may allocate their investments among one or more accounts that are appropriate for their needs, within the statutory requirements and rules established by the participating organizations. Participation in the Fund is accomplished through the purchase or sale of shares in each account. All returns are net of investment management fees.

Investment Option Descriptions

- Balanced Fund - a balanced portfolio utilizing both common stocks and bonds
- U.S. Equity Actively Managed Fund - an actively managed, U.S. common stock portfolio.
- U.S. Equity Index Fund - a passively managed, common stock portfolio designed to broadly track the performance of the U.S. stock market.
- Broad International Equity Fund - a portfolio of non-U.S. stocks that incorporates both active and passive management.
- Bond Fund - an actively managed, bond portfolio.
- Money Market Fund - a portfolio utilizing short-term, liquid debt securities.
- Stable Value Fund - a portfolio of stable value instruments, including security backed contracts and insurance company and bank investment contracts.
- Volunteer Firefighter Account - a balanced portfolio only used by the Statewide Volunteer Firefighter Plan.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
BALANCED FUND	$123,219,583	5.9%	18.5%	5.4%	9.4%	8.4%	01/1980
U.S. EQUITY ACTIVELY MANAGED FUND	99,126,024	11.2	31.6	9.2	14.9	12.7	07/1986
U.S. EQUITY INDEX FUND	394,180,977	10.0	29.4	10.0	14.5	12.4	07/1986
BROAD INTERNATIONAL EQUITY FUND	150,035,362	5.5	14.5	3.2	7.2	5.0	09/1994
BOND FUND	104,994,961	-0.5	2.9	-2.2	1.0	2.1	07/1986
MONEY MARKET FUND	792,460,175	1.4	5.7	2.9	2.2	1.6	07/1986
STABLE VALUE FUND	1,575,358,914	0.8	3.0	2.4	2.4	2.3	11/1994
VOLUNTEER FIREFIGHTER ACCOUNT	184,151,039	4.2	13.6	3.0	6.9	6.3	01/2010

Note:

The Market Values for the Money Market Fund, the Stable Value Fund, and the Total Supplemental Investment Fund also include assets held through other plans.

Supplemental Investment Fund Performance

Balanced Fund

The primary investment objective of the Balanced Fund is to gain exposure to publicly traded U.S. equities, bond and cash in a diversified investment portfolio. The Fund seeks to maximize long-term real rates of return, while limiting short-run portfolio return volatility. The Balanced Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification. The benchmark is a blend of 60% Russell 3000/35% Bloomberg U.S. Aggregate/5% 3 Month T-Bills.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BALANCED FUND	**$123,219,583**	**5.9%**	**18.5%**	**5.4%**	**9.4%**	**8.4%**
SIF BALANCED FUND BENCHMARK		5.7%	17.9%	5.2%	9.0%	8.2%
Excess		0.2%	0.6%	0.1%	0.4%	0.3%

U.S. Equity Actively Managed Fund

The U.S. Equity Actively Managed Fund's investment objective is to generate above-average returns from capital appreciation on common stocks. The U.S. Stock Actively Managed Fund is invested primarily in the common stocks of U.S. companies. The managers in the account also hold varying levels of cash.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
U.S. EQUITY ACTIVELY MANAGED FUND	**99,126,024**	**11.2**	**31.6**	**9.2**	**14.9**	**12.7**
Russell 3000		10.0	29.3	9.8	14.3	12.3
Excess		1.2	2.3	-0.6	0.5	0.3

Supplemental Investment Fund Performance

U.S. Equity Index Fund

The investment objective of the U.S. Equity Index Fund is to generate returns that track those of the U.S. stock market as a whole. The Fund is designed to track the performance of the Russell 3000 Index, a broad-based equity market indicator. The Fund is invested 100% in common stock.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
U.S. EQUITY INDEX FUND	**$394,180,977**	**10.0%**	**29.4%**	**10.0%**	**14.5%**	**12.4%**
Russell 3000		10.0%	29.3%	9.8%	14.3%	12.3%
Excess		0.0%	0.1%	0.2%	0.2%	0.1%

Broad International Equity Fund

The investment objective of the Broad International Equity Fund is to earn a high rate of return by investing in the stock of companies outside the U.S. Portions of the Fund are passively managed and semi-passively managed. These portions of the Fund are designed to track and modestly outperform, respectively, the return of developed markets included in the MSCI World ex USA Index. A portion of the Fund is "actively managed" by several international managers and emerging markets specialists who buy and sell stocks in an attempt to maximize market value. The International Equity Benchmark is currently the MSCI ACWI ex USA (net).

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BROAD INTERNATIONAL EQUITY FUND	**150,035,362**	**5.5**	**14.5**	**3.2**	**7.2**	**5.0**
International Equity Benchmark		4.7	13.3	1.9	5.9	4.2
Excess		0.8	1.2	1.3	1.2	0.8

Supplemental Investment Fund Performance

Bond Fund

The investment objective of the Bond Fund is to exceed the return of the broad domestic bond market by investing in fixed income securities. The Bond Fund invests primarily in high-quality, government and corporate bonds that have intermediate to long-term maturities, usually 3 to 20 years. The Bond Fund benchmark is the Bloomberg U.S. Aggregate.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
BOND FUND	**$104,994,961**	**-0.5%**	**2.9%**	**-2.2%**	**1.0%**	**2.1%**
Bloomberg U.S. Aggregate		-0.8%	1.7%	-2.5%	0.4%	1.5%
Excess		0.2%	1.2%	0.2%	0.7%	0.6%

Money Market Fund

The investment objective of the Money Market Fund is to protect principal by investing in short-term, liquid U.S. Government securities. The Fund is invested entirely in high-quality, short-term U.S. Treasury and Agency securities. The average maturity of the portfolios is less than 90 days. Please note that the Market Value for the Money Market Fund reflects assets held through the Deferred Compensation Plan as well.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
MONEY MARKET FUND	**792,460,175**	**1.4**	**5.7**	**2.9**	**2.2**	**1.6**
ICE BofA US 3-Month Treasury Bill		1.3	5.2	2.6	2.0	1.4
Excess		0.1	0.4	0.3	0.2	0.2

Supplemental Investment Fund Performance

Stable Value Fund

The investment objectives of the Stable Value Fund are to protect investors from loss of their original investment and to provide competitive interest rates using somewhat longer-term investments than typically found in a money market fund. The Fund is invested in a well-diversified portfolio of high-quality fixed income securities with strong credit ratings. The Fund also invests in contracts issued by highly rated insurance companies and banks which are structured to provide principal protection for the Fund's diversified bond portfolios, regardless of daily market changes. The Stable Value Fund Benchmark is the 3-year Constant Maturity Treasury Bill +45 basis points. Please note that the Market Value for the Stable Value Fund reflects assets held through the Deferred Compensation Plan as well.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
STABLE VALUE FUND	**$1,575,358,914**	**0.8%**	**3.0%**	**2.4%**	**2.4%**	**2.3%**
Fixed Interest Blended Benchmark		1.2%	4.8%	3.4%	2.6%	2.2%
Excess		-0.4%	-1.8%	-1.0%	-0.1%	0.0%

Volunteer Firefighter Account

The Volunteer Firefighter Account is different than other SIF program options. It is available only to the local entities that participate in the Statewide Volunteer Firefighter Plan (administered by PERA) and have all of their assets invested in the Volunteer Firefighter Account. There are other volunteer firefighter plans that are not eligible to be consolidated that may invest their assets through other SIF program options. The investment objective of the Volunteer Firefighter Account is to maximize long-term returns while limiting short-term portfolio return volatility. The account is invested in a balanced portfolio of domestic equity, international equity, fixed income and cash. The benchmark for this account is 35% Russell 3000, 15% MSCI ACWI ex USA (net), 45% Bloomberg U.S. Aggregate, 5% 3 Month T-Bills.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
VOLUNTEER FIREFIGHTER ACCOUNT	**184,151,039**	**4.2**	**13.6**	**3.0**	**6.9**	**6.3**
SIF Volunteer Firefighter Account		3.9	12.8	2.9	6.4	5.9
Excess		0.3	0.8	0.2	0.5	0.4

Mutual Funds

The mutual fund investment line-up provides investment options to the Minnesota Deferred Compensation Plan (MNDCP), Unclassified Retirement Plan, Health Care Savings Plan, and the Hennepin County Retirement Plan. The MNDCP is a tax-sheltered retirement savings plan that is supplemental to public employees primary retirement plan. (In most cases, the primary plan is a defined benefit plan administered by TRA, PERA, or MSRS.) Participants can choose from active and passively managed stock and bond funds, a Stable Value Fund, a Money Market Fund, a set of 10 target date retirement fund options, and a brokerage window where participants can choose from hundreds of mutual funds.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year	Option Since
VANGUARD TOTAL STOCK MARKET INSTITUTIONAL INDEX PLUS	$933,475,531	10.0%	29.4%	9.7%			07/2019
VANGUARD INSTITUTIONAL INDEX PLUS	2,109,236,847	10.5	29.9	11.5	15.0%	12.9%	07/1999
VANGUARD DIVIDEND GROWTH	1,034,159,874	6.0	14.5	9.3	11.9		10/2016
VANGUARD MID CAP INDEX	812,812,425	7.9	20.5	5.7	11.0	9.9	01/2004
T. ROWE PRICE SMALL-CAP STOCK	930,541,860	5.6	20.0	0.8	9.6	9.7	04/2000
FIDELITY DIVERSIFIED INTERNATIONAL	368,554,257	8.3	17.2	3.4	9.1	6.1	07/1999
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	395,665,588	4.3	13.0	1.9	6.2	4.5	07/2011
VANGUARD BALANCED INDEX	1,481,190,639	5.7	17.7	4.9	8.8	8.1	12/2003
DODGE & COX INCOME	305,178,544	-0.3	4.1	-0.9	1.9	2.5	07/1999
VANGUARD TOTAL BOND MARKET INDEX	328,449,887	-0.8	1.7	-2.4	0.4	1.5	12/2003
2025 FUND	211,372,285	2.3	8.9	2.3	5.5	5.2	07/2011
2030 FUND	243,446,720	3.3	11.4	2.6	6.8	6.2	07/2011
2035 FUND	208,780,938	4.4	14.2	3.1	7.8	6.9	07/2011
2040 FUND	173,674,570	4.9	15.5	3.4	8.3	7.3	07/2011
2045 FUND	170,590,616	5.5	16.7	3.8	8.8	7.6	07/2011
2050 FUND	151,957,596	5.8	17.8	4.1	9.2	7.9	07/2011
2055 FUND	104,235,891	6.2	18.8	4.3	9.5	8.0	07/2011
2060 FUND	78,877,823	6.3	18.9	4.4	9.6	8.0	07/2011
2065 FUND	17,849,631	6.3	18.9	4.4			04/2020
INCOME FUND	209,894,329	2.2	8.3	2.1	4.8	4.1	07/2011
Charles Schwab SDB	91,933,887						
Charles Schwab SDB Roth	4,378,285						

Mutual Funds

LARGE CAP EQUITY

Vanguard Total Stock Market Institutional Index Plus (passive)

A passive domestic stock portfolio of large and small companies that tracks the CRSP US Total Market Index.

Vanguard Index Institutional Plus (passive)

A passive domestic stock portfolio that tracks the S&P 500.

Vanguard Dividend Growth (active) (1)

A fund of large cap stocks which is expected to outperform the S&P U.S. Dividend Growers Index, over time.

MID CAP EQUITY

Vanguard Mid Cap Index (passive) (2)

A fund that passively invests in companies with medium market capitalizations that tracks the CRSP US Mid-Cap Index.

SMALL CAP EQUITY

T Rowe Price Small Cap (active)

A fund that invests primarily in companies with small market capitalizations and is expected to outperform the Russell 2000 Index.

INTERNATIONAL EQUITY

Fidelity Diversified International (active)

A fund that invests primarily in stocks of companies located outside of the United States and is expected to outperform the MSCI index of Europe, Australasia and the Far East (EAFE), over time.

Vanguard Total International Stock Index (passive) (3)

A fund that seeks to track the investment performance of the FTSE Global All Cap ex US Index, an index designed to measure equity market performance in developed and emerging markets, excluding the United States.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Large Cap US Equity						
VANGUARD TOTAL STOCK MARKET INSTITUTIONAL INDEX PLUS	**$933,475,531**	**10.0%**	**29.4%**	**9.7%**		**07/2019**
CRSP US Total Market Index		10.0	29.3	9.6		07/2019
Excess		0.0	0.1	0.0		
VANGUARD INSTITUTIONAL INDEX PLUS	**2,109,236,847**	**10.5**	**29.9**	**11.5**	**15.0%**	**07/1999**
S&P 500		10.6	29.9	11.5	15.0	07/1999
Excess		-0.0	-0.0	-0.0	-0.0	
VANGUARD DIVIDEND GROWTH	**1,034,159,874**	**6.0**	**14.5**	**9.3**	**11.9**	**10/2016**
VANGUARD DIVIDEND GROWTH INDEX		7.7	21.0	9.7	12.9	10/2016
Excess		-1.7	-6.6	-0.4	-1.0	
Mid Cap US Equity						
VANGUARD MID CAP INDEX	**812,812,425**	**7.9**	**20.5**	**5.7**	**11.0**	**01/2004**
CRSP US Mid Cap Index		7.9	20.4	5.7	10.9	01/2004
Excess		0.0	0.0	0.0	0.0	
Small Cap US Equity						
T. ROWE PRICE SMALL-CAP STOCK	**930,541,860**	**5.6**	**20.0**	**0.8**	**9.6**	**04/2000**
Russell 2000		5.2	19.7	-0.1	8.1	04/2000
Excess		0.4	0.3	0.9	1.5	
International Equity						
FIDELITY DIVERSIFIED INTERNATIONAL	**368,554,257**	**8.3**	**17.2**	**3.4**	**9.1**	**07/1999**
MSCI EAFE FREE (NET)		5.8	15.3	4.8	7.3	07/1999
Excess		2.5	1.9	-1.4	1.8	
VANGUARD TOTAL INTERNATIONAL STOCK INDEX	**395,665,588**	**4.3**	**13.0**	**1.9**	**6.2**	**07/2011**
FTSE Global All Cap ex US Index Net		4.3	13.3	1.9	6.1	07/2011
Excess		0.0	-0.3	0.0	0.1	

Mutual Funds

BALANCED

Vanguard Balanced Index (passive) (4)

A fund that passively invests in a mix of domestic stocks and bonds. The fund is expected to track a weighted benchmark of 60% CRSP US Total Market Index/40% Bloomberg U.S. Aggregate.

FIXED INCOME

Dodge & Cox Income Fund (active)

A fund that invests primarily in investment grade securities in the U.S. bond market which is expected to outperform the Bloomberg U.S. Aggregate, over time.

Vanguard Total Bond Market Index (passive)

A fund that passively invests in a broad, market weighted bond index that is expected to track the Bloomberg U.S. Aggregate.

Money Market Fund (5)

A fund that invests in short-term debt instruments which is expected to outperform the return on 3 Month T-Bills.

STABLE VALUE

Stable Value Fund (5)

A portfolio composed of stable value instruments which are primarily investment contracts and security backed contracts. The fund is expected to outperform the return of the 3 year Constant Maturity Treasury +45 basis points, over time.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
Balanced Funds						
VANGUARD BALANCED INDEX	**$1,481,190,639**	**5.7%**	**17.7%**	**4.9%**	**8.8%**	**12/2003**
Vanguard Balanced Fund Benchmark		5.6	17.7	4.9	8.9	12/2003
Excess		0.1	0.0	-0.1	-0.1	
Fixed Income						
DODGE & COX INCOME	**305,178,544**	**-0.3**	**4.1**	**-0.9**	**1.9**	**07/1999**
Bloomberg U.S. Aggregate		-0.8	1.7	-2.5	0.4	07/1999
Excess		0.5	2.4	1.5	1.5	
VANGUARD TOTAL BOND MARKET INDEX	**328,449,887**	**-0.8**	**1.7**	**-2.4**	**0.4**	**12/2003**
Bloomberg U.S. Aggregate		-0.8	1.7	-2.5	0.4	12/2003
Excess		-0.0	-0.0	0.0	0.0	
MONEY MARKET FUND	**792,460,175**	**1.4**	**5.7**	**2.9**	**2.2**	**07/1986**
ICE BofA US 3-Month Treasury Bill		1.3	5.2	2.6	2.0	07/1986
Excess		0.1	0.4	0.3	0.2	
Stable Value						
STABLE VALUE FUND	**1,575,358,914**	**0.8**	**3.0**	**2.4**	**2.4**	**11/1994**
Fixed Interest Blended Benchmark		1.2	4.8	3.4	2.6	11/1994
Excess		-0.4	-1.8	-1.0	-0.1	

(1) Prior to 09/20/2021 the benchmark was the NASDAQ US Dividend Achievers Select Index.

(2) Prior to 02/01/2013 the benchmark was the MSCI US Mid-Cap 450 Index.

(3) Prior to 06/01/2013 the benchmark was MSCI ACWI ex USA IMI.

(4) Prior to 01/01/2013 the benchmark was 60% MSCI US Broad Market Index and 40% Bloomberg U.S. Aggregate.

(5) Money Market and Stable Value are Supplemental Investment Fund options which are also offered to eligible plans that invest through other plans.

Mutual Funds

MN TARGET RETIREMENT ACCOUNTS

Target retirement funds offer a mix of investments that are adjusted over time to reduce risk and become more conservative as the target retirement date approaches. A participant only needs to make one investment decison by investing their assets in the fund that is closest to their anticipated retirement date.

Target Date Retirement Funds

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
SSgA						
2025 FUND	**$211,372,285**	**2.3%**	**8.9%**	**2.3%**	**5.5%**	**07/2011**
2025 FUND BENCHMARK		2.4%	9.0%	2.3%	5.5%	07/2011
Excess		-0.0%	-0.1%	-0.0%	-0.0%	
2030 FUND	**$243,446,720**	**3.3%**	**11.4%**	**2.6%**	**6.8%**	**07/2011**
2030 FUND BENCHMARK		3.3%	11.5%	2.6%	6.8%	07/2011
Excess		-0.0%	-0.1%	-0.0%	0.0%	
2035 FUND	**$208,780,938**	**4.4%**	**14.2%**	**3.1%**	**7.8%**	**07/2011**
2035 FUND BENCHMARK		4.4%	14.3%	3.1%	7.8%	07/2011
Excess		0.0%	-0.1%	-0.0%	0.0%	
2040 FUND	**$173,674,570**	**4.9%**	**15.5%**	**3.4%**	**8.3%**	**07/2011**
2040 FUND BENCHMARK		4.9%	15.7%	3.4%	8.3%	07/2011
Excess		-0.0%	-0.1%	-0.0%	0.0%	
2045 FUND	**$170,590,616**	**5.5%**	**16.7%**	**3.8%**	**8.8%**	**07/2011**
2045 FUND BENCHMARK		5.4%	16.8%	3.8%	8.8%	07/2011
Excess		0.0%	-0.1%	-0.0%	0.0%	

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	Option Since
2050 FUND	**$151,957,596**	**5.8%**	**17.8%**	**4.1%**	**9.2%**	**07/2011**
2050 FUND BENCHMARK		5.8%	17.9%	4.1%	9.2%	07/2011
Excess		0.0%	-0.1%	0.0%	0.0%	
2055 FUND	**$104,235,891**	**6.2%**	**18.8%**	**4.3%**	**9.5%**	**07/2011**
2055 FUND BENCHMARK		6.2%	18.9%	4.3%	9.5%	07/2011
Excess		0.0%	-0.1%	0.0%	0.0%	
2060 FUND	**$78,877,823**	**6.3%**	**18.9%**	**4.4%**	**9.6%**	**07/2011**
2060 FUND BENCHMARK		6.3%	19.0%	4.4%	9.6%	07/2011
Excess		0.0%	-0.1%	0.0%	-0.0%	
2065 FUND	**$17,849,631**	**6.3%**	**18.9%**	**4.4%**		**04/2020**
2065 FUND BENCHMARK		6.3%	19.0%	4.4%		04/2020
Excess		0.0%	-0.1%	0.0%		
INCOME FUND	**$209,894,329**	**2.2%**	**8.3%**	**2.1%**	**4.8%**	**07/2011**
INCOME FUND BENCHMARK		2.2%	8.4%	2.1%	4.8%	07/2011
Excess		0.0%	-0.1%	-0.0%	0.0%	

Note: Each SSgA Fund benchmark is the aggregate of the returns of the Fund's underlying index funds weighted by the Fund's asset allocation

MN College Savings Plan Options

The Minnesota College Savings Plan is an education savings plan designed to help families set aside funds for future college costs. The SBI is responsible for the investments and the Minnesota Office of Higher Education (OHE) is responsible for the overall administration of the Plan.

The SBI and OHE contract jointly with TIAA to provide administrative, marketing, communication, recordkeeping and investment management services. Please see the next page for the performance as reported by TIAA.

ENROLLMENT-BASED MANAGED ALLOCATIONS - The Enrollment Year Investment Option is a set of single fund options representing the date your future student needs their college savings. The asset allocation adjusts automatically to a more conservative investment objective and level of risk as the enrollment year approaches. The managed allocation changed from Age-Based to Enrollment-Based on October 28, 2019.

RISK BASED ALLOCATIONS - The Risk Based Allocation Option offers three separate allocation investment options - Aggressive, Moderate and Conservative, each of which has a fixed risk level that does not change as the Beneficiary ages.

ASSET CLASS BASED ALLOCATIONS

U.S. LARGE CAP EQUITY INDEX - A passive domestic stock portfolio that tracks the S&P 500.

INTERNATIONAL EQUITY INDEX - A fund that passively invests in a mix of developed and emerging market equities. The fund is expected to track a weighted benchmark of 80% MSCI ACWI World ex USA and 20% MSCI Emerging Markets Free Index.

U.S. AND INTERNATIONAL EQUITY INDEX - A fund that invests in a mix of equities, both U.S. and international, across all capitalization ranges and real estate-related securities. The fund is expected to track a weighted benchmark of 60% Russell 3000, 24% International, 6% Emerging Markets, and 10% Real Estate Securities Fund.

PRINCIPAL PLUS INTEREST OPTION - A passive fund where contributions are invested in a Funding Agreement issued by TIAA-CREF Life. The funding agreement provides for a return of principal plus a guaranteed rate of interest which is made by the insurance company to the policyholder, not the account owners. The account is expected to outperform the return of the 3-month T-Bill.

EQUITY AND INTEREST ACCUMULATION - A fund that passively invests half of the portfolio in U.S. equities across all capitalization ranges and the other half in the same Funding Agreement issued by TIAA-CREF Life as described above. The fund is expected to track a weighted benchmark of 50% Russell 3000 and 50% 3-month T-Bill.

100% FIXED INCOME - A fund that passively invests in fixed income holdings that tracks the Bloomberg U.S. Aggregate and two active funds that invest in inflation-linked bonds and high yield securities. The fund is expected to track a weighted benchmark of 70% Bloomberg U.S. Aggregate, 20% inflation-linked bond, and 10% high yield.

MONEY MARKET - An active fund that invests in high-quality, short-term money market instruments of both domestic and foreign issuers that tracks the iMoneyNet Average All Taxable benchmark.

SOCIAL CHOICE EQUITY ALLOCATION – An actively managed fund that seeks to provide a favorable long-term total return that reflects the investment performance of the overall U.S. equity market while giving special consideration to companies whose activities are consistent with certain environmental, social and governance criteria.

MINNESOTA COLLEGE SAVINGS PLAN
Performance Statistics for the Period Ending: March 28, 2024

Total = $1,964 Million

Fund Name	Ending Market	3 Months	1 Year	Annualized 3 Years	5 Years	10 Years	Since Inception	Inception Date
2040/2041 Enrollment Option	**$11,635,225**	**5.76%**					**17.60%**	**5/12/2023**
2040-2041 Custom Benchmark		5.86%					18.42%	
2038/2039 Enrollment Option	**$41,079,144**	**5.58%**	**17.56%**				**3.39%**	**6/11/2021**
2038-2039 Custom Benchmark		5.67%	18.02%				3.51%	
2036/2037 Enrollment Option	**$95,673,070**	**5.26%**	**16.77%**	**5.08%**			**8.59%**	**10/28/2019**
2036-2037 Custom Benchmark		5.36%	17.21%	5.26%			8.56%	
2034/2035 Enrollment Option	**$76,253,891**	**4.82%**	**15.81%**	**4.73%**			**8.13%**	**10/28/2019**
2034-2035 Custom Benchmark		4.99%	16.32%	4.91%			8.12%	
2032/2033 Enrollment Option	**$81,003,932**	**4.22%**	**14.31%**	**4.16%**			**7.57%**	**10/28/2019**
2032-2033 Custom Benchmark		4.39%	14.81%	4.35%			7.57%	
2030/2031 Enrollment Option	**$90,804,550**	**3.49%**	**12.21%**	**3.39%**			**6.70%**	**10/28/2019**
2030-2031 Custom Benchmark		3.64%	12.80%	3.64%			6.72%	
2028/2029 Enrollment Option	**$110,508,274**	**2.82%**	**10.17%**	**2.70%**			**5.69%**	**10/28/2019**
2028-2029 Custom Benchmark		2.98%	10.98%	3.01%			5.73%	
2026/2027 Enrollment Option	**$141,286,782**	**2.08%**	**8.10%**	**2.01%**			**4.74%**	**10/28/2019**
2026-2027 Custom Benchmark		2.40%	9.26%	2.45%			4.88%	
2024/2025 Enrollment Option	**$179,493,517**	**1.63%**	**6.08%**	**1.56%**			**3.94%**	**10/28/2019**
2024-2025 Custom Benchmark		1.96%	7.80%	2.23%			4.19%	
In School Option	**$285,234,285**	**1.33%**	**5.27%**	**1.73%**			**2.98%**	**10/28/2019**
In School Custom Benchmark		1.79%	7.26%	2.25%			2.98%	

MINNESOTA COLLEGE SAVINGS PLAN
Performance Statistics for the Period Ending: March 28, 2024

				Annualized				
Fund Name	**Ending Market**	**3 Months**	**1 Year**	**3 Years**	**5 Years**	**10 Years**	**Since Inception**	**Inception Date**
U.S. and International Equity Option	**$304,068,925**	**7.37%**	**22.23%**	**7.06%**	**10.94%**	**9.44%**	**7.81%**	**10/1/2001**
BB: U.S. and International Equity Option		7.46%	22.64%	7.29%	10.95%	9.46%	8.48%	
Moderate Allocation Option	**$106,407,551**	**4.23%**	**14.06%**	**3.85%**	**7.30%**	**6.57%**	**5.81%**	**8/2/2007**
BB: Moderate Allocation Option		4.37%	14.54%	4.10%	7.35%	6.68%	6.30%	
100% Fixed-Income Option	**$17,610,762**	**-0.32%**	**2.60%**	**-1.11%**	**1.18%**	**1.82%**	**2.79%**	**8/16/2007**
BB: 100% Fixed-Income Option		-0.19%	2.99%	-0.99%	1.44%	2.10%	3.32%	
International Equity Index Option	**$11,263,322**	**4.98%**	**13.53%**	**3.07%**	**6.42%**	**4.47%**	**5.20%**	**6/18/2013**
BB: International Equity Index Option		5.12%	13.92%	2.83%	6.39%	4.51%	5.29%	
Money Market Option	**$25,261,418**	**1.31%**	**5.17%**	**2.54%**	**1.90%**	**1.23%**	**0.90%**	**11/1/2007**
BB: Money Market Option		1.25%	5.00%	2.44%	1.77%	1.13%	0.83%	
Principal Plus Interest Option	**$96,155,282**	**0.72%**	**2.37%**	**1.70%**	**1.77%**	**1.62%**	**2.34%**	**10/10/2001**
Citigroup 3-Month U.S. Treasury Bill		1.37%	5.52%	2.70%	2.07%	1.39%	1.48%	
Aggressive Allocation Option	**$106,450,631**	**5.78%**	**18.08%**	**5.48%**	**9.11%**		**8.02%**	**8/12/2014**
BB: Aggressive Allocation Option		5.91%	18.55%	5.72%	9.19%		8.02%	
Conservative Allocation Option	**$17,774,269**	**2.17%**	**8.14%**	**2.17%**	**4.41%**		**4.03%**	**8/18/2014**
BB: Conservative Allocation Option		2.47%	9.39%	2.60%	4.68%		4.20%	
Equity and Interest Accumulation Option	**$10,287,572**	**5.25%**	**15.11%**	**5.84%**	**8.11%**		**6.92%**	**8/18/2014**
BB: Equity and Interest Accumulation Option		5.65%	17.12%	6.59%	8.52%		7.12%	
U.S. Large Cap Equity Option	**$151,937,366**	**10.48%**	**29.67%**	**11.32%**	**14.88%**		**12.81%**	**8/12/2014**
BB: U.S. Large Cap Equity Option		10.56%	29.88%	11.49%	15.05%		12.94%	
Social Choice Equity Option	**$2,673,717**	**10.01%**	**27.35%**				**7.35%**	**6/11/2021**
BB: Social Choice Equity Option		9.98%	29.25%				7.84%	
Matching Grant	**$1,076,715**	**0.72%**	**2.37%**	**1.70%**	**1.77%**	**1.62%**	**2.34%**	**3/22/2002**
Citigroup 3-Month U.S. Treasury Bill		1.37%	5.52%	2.70%	2.07%	1.39%	1.48%	

MINNESOTA ABLE plan
A member of The National ABLE Alliance

Performance as of
03/31/24

Total Market Value: **$45,443,544**

Fund Name	Market Value	% of Plan	1 Month	3 Months	YTD	1 Year	3 Year	5 Year	10 Year	Inception	Inception Date
Aggressive Option	$3,609,016	7.94%	2.81	5.73	5.73	18.88	4.09	8.79		8.91	12/15/16
ABLE Aggressive Custom Benchmark			2.86	5.78	5.78	19.34	4.35	9.10		9.31	
Variance			**(0.05)**	**(0.05)**	**(0.05)**	**(0.46)**	**(0.26)**	**(0.31)**		**(0.40)**	
Moderately Aggressive Option	$4,018,034	8.84%	2.43	4.66	4.66	16.03	3.40	7.70		7.81	12/15/16
ABLE Moderately Aggressive Custom Benchmark			2.50	4.73	4.73	16.49	3.67	7.99		8.18	
Variance			**(0.07)**	**(0.07)**	**(0.07)**	**(0.46)**	**(0.27)**	**(0.29)**		**(0.37)**	
Growth Option	$5,803,749	12.77%	2.11	3.76	3.76	13.24	2.70	6.54		6.65	12/15/16
ABLE Growth Custom Benchmark			2.14	3.89	3.89	13.73	2.97	6.83		7.02	
Variance			**(0.03)**	**(0.13)**	**(0.13)**	**(0.49)**	**(0.27)**	**(0.29)**		**(0.37)**	
Moderate Option	$5,230,848	11.51%	1.73	2.79	2.79	10.41	1.95	5.33		5.46	12/15/16
ABLE Moderate Custom Benchmark			1.77	2.90	2.90	10.94	2.21	5.60		5.80	
Variance			**(0.04)**	**(0.11)**	**(0.11)**	**(0.53)**	**(0.26)**	**(0.27)**		**(0.34)**	
Moderately Conservative Option	$4,835,768	10.64%	1.27	2.19	2.19	8.40	1.94	4.22		4.25	12/15/16
ABLE Moderately Conservative Custom Benchmark			1.35	2.29	2.29	8.98	2.22	4.48		4.56	
Variance			**(0.08)**	**(0.10)**	**(0.10)**	**(0.58)**	**(0.28)**	**(0.26)**		**(0.31)**	
Conservative Option	$8,101,221	17.83%	0.67	1.27	1.27	5.46	1.73	2.56		2.51	12/15/16
ABLE Conservative Custom Benchmark			0.79	1.48	1.48	6.31	2.15	2.84		2.80	
Variance			**(0.12)**	**(0.21)**	**(0.21)**	**(0.85)**	**(0.42)**	**(0.28)**		**(0.29)**	
Checking Account Option	$13,844,908	30.47%									03/30/17

ascensus™ | college savings

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Non-Retirement

March 31, 2024

Non-Retirement Funds

The SBI manages funds for trusts and programs created by the Minnesota State Constitution and Legislature.

- The Minnesota Workers Compensation Assigned Risk Plan provides worker compensation insurance for companies unable to obtain coverage through private carriers.
- The Permanent School Fund is a trust established for the benefit of Minnesota public schools.
- The Environmental Trust Fund is a trust established for the protection and enhancement of Minnesota's environment. It is funded with a portion of the proceeds from the state's lottery.
- The Closed Landfill Investment Fund is a trust created by the Legislature to invest money to pay for the long-term costs of maintaining the integrity of landfills in Minnesota once they are closed.
- Other Post-Employment Benefits Accounts (OPEB) are the assets set aside by local units of government for the payment of retiree benefits trusteed by the Public Employees Retirement Association.
- Miscellaneous Trust Accounts are other small funds managed by the SBI for a variety of purposes.

All equity, fixed income, and cash assets for these accounts are managed externally by investment management firms retained by the SBI.

Non-Retirement

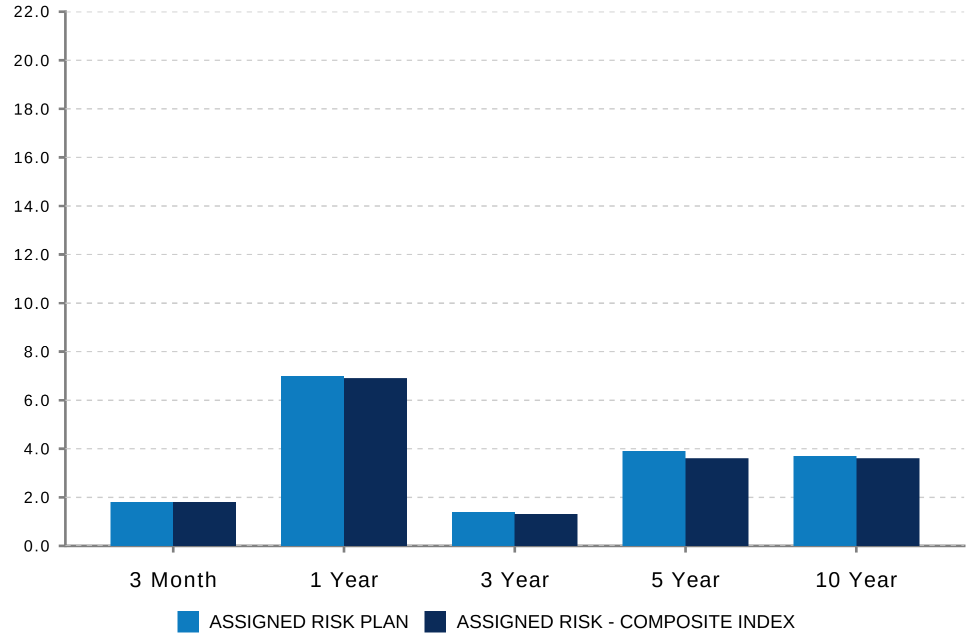
Assigned Risk Plan

The Assigned Risk plan has two investment objectives: to minimize the mismatch between assets and liabilities and to provide sufficient liquidity for the payment of ongoing claims and operating expenses.

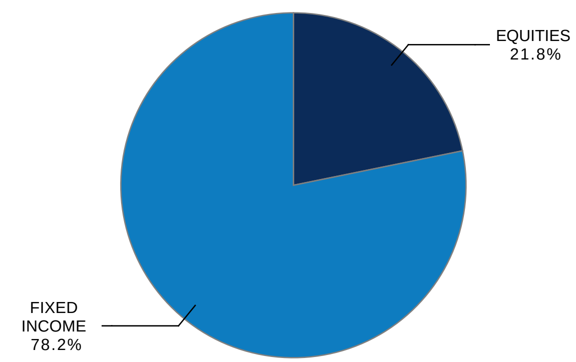
The Assigned Risk Plan is invested in a portfolio of common stocks and bonds

The equity segment is passively managed to track the performance of the S&P 500.

The fixed income benchmark is the Bloomberg U.S. Government Intermediate Index. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 80% fixed income and 20% equities. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
ASSIGNED RISK PLAN	$273,606,113	1.8%	7.0%	1.4%	3.9%	3.7%
EQUITIES	$59,516,056	10.6%	29.8%	11.5%	15.0%	12.5%
FIXED INCOME	$214,090,057	-0.4%	1.7%	-1.3%	0.8%	1.2%
ASSIGNED RISK - COMPOSITE INDEX		1.8%	6.9%	1.3%	3.6%	3.6%
Excess		0.0%	0.1%	0.1%	0.2%	0.1%
S&P 500		10.6%	29.9%	11.5%	15.0%	13.0%
Bloomberg U.S. Government: Intermediate		-0.3%	1.6%	-1.4%	0.6%	1.1%



Note: Since 12/1/2017 the Assigned Risk equity segment has been managed by Mellon. From 1/17/2017-11/30/2017 it was managed internally by SBI staff. Prior to 1/17/2017 the equity segment was managed by SSgA (formerly GE Investment Mgmt.). RBC manages the fixed income segment of the Fund.

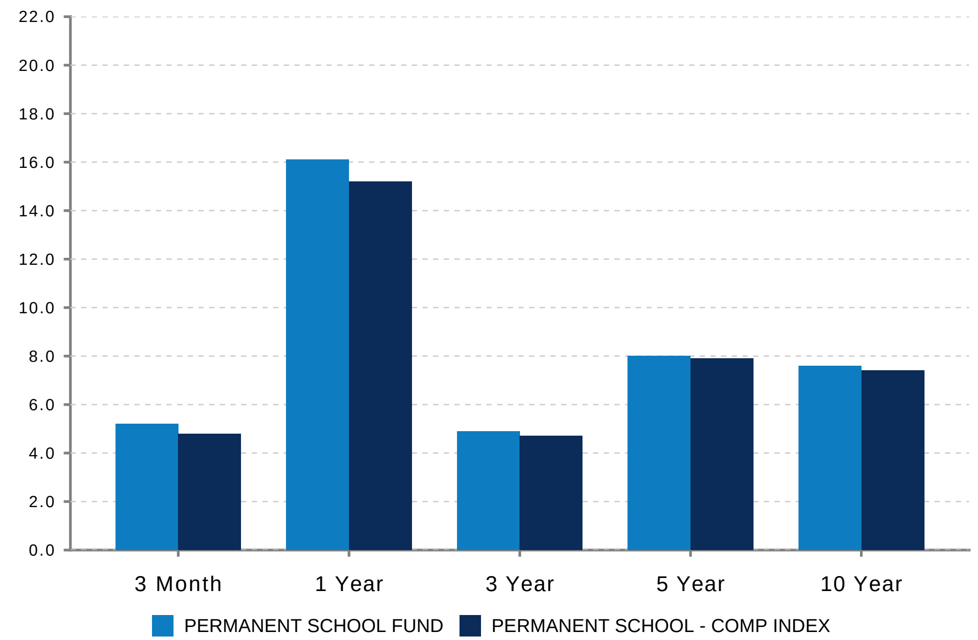
Non-Retirement

Permanent School Fund

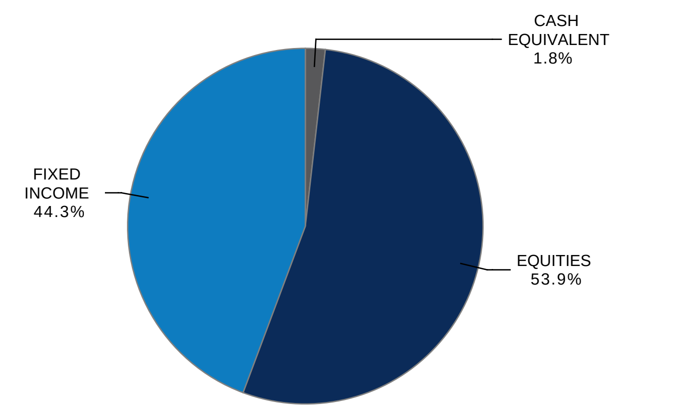
The investment objective of the Permanent School Fund is to produce a growing level of spendable income, within the constraints of maintaining adequate portfolio quality and liquidity. The income from the portfolio is transferred to the school endowment fund and distributed to Minnesota's public schools.

The Permanent School Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds provide portfolio diversification and a more stable stream of current income.

The stock segment is passively managed to track the performance of the S&P 500. The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The fixed income benchmark is the Bloomberg U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 2% cash, 50% equity, and 48% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
PERMANENT SCHOOL FUND	$2,090,104,566	5.2%	16.1%	4.9%	8.0%	7.6%
CASH EQUIVALENTS	38,116,288	1.4	5.6	2.8	2.1	1.5
EQUITIES	1,126,206,408	10.6	29.8	11.5	15.0	13.0
FIXED INCOME	925,781,870	-0.5	2.6	-2.3	0.6	1.9
PERMANENT SCHOOL - COMP INDEX		4.8	15.2	4.7	7.9	7.4
Excess		0.4	0.8	0.2	0.1	0.2
S&P 500		10.6	29.9	11.5	15.0	13.0
Bloomberg U.S. Aggregate		-0.8	1.7	-2.5	0.4	1.5



Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. Prior to 7/1/97 the Fund allocation was 100% fixed income.

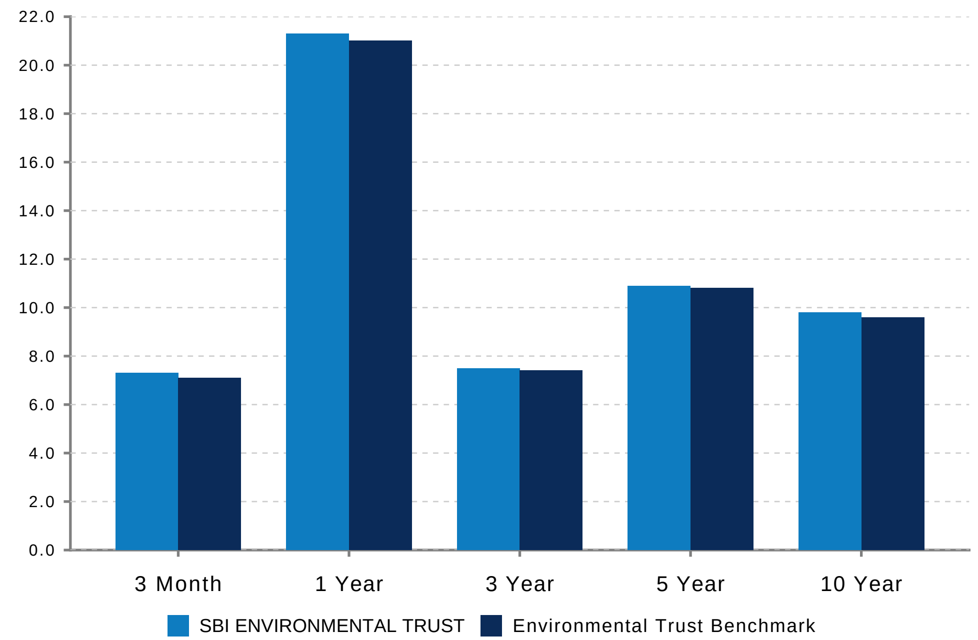
Non-Retirement

Environmental Trust Fund

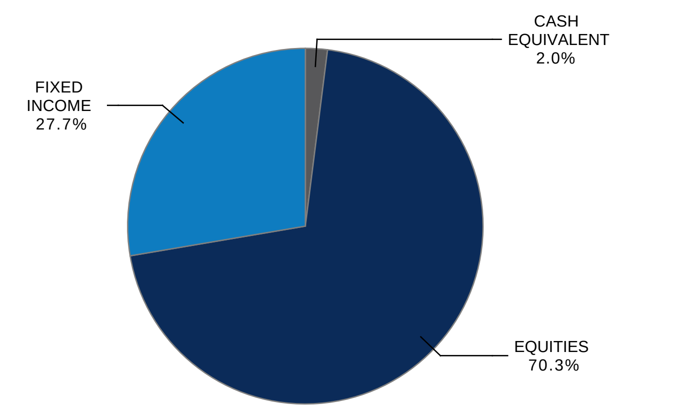
The objective of the Environmental Trust Fund is to increase the market value of the Fund over time in order to increase the annual amount made available for spending within the constraints of maintaining adequate portfolio quality and liquidity.

The Environmental Trust Fund is invested in a balanced portfolio of common stocks and bonds. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification.

The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The stock segment is passively managed to track the performance of the S&P 500. The fixed income benchmark is the Bloomberg U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 2% cash, 70% equities, and 28% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
SBI ENVIRONMENTAL TRUST	$1,829,186,031	7.3%	21.3%	7.5%	10.9%	9.8%
CASH EQUIVALENTS	35,827,294	1.4	5.6	2.8	2.1	1.5
EQUITIES	1,287,276,461	10.6	29.8	11.5	15.0	13.0
FIXED INCOME	506,082,276	-0.5	2.6	-2.3	0.6	1.9
Environmental Trust Benchmark		7.1	21.0	7.4	10.8	9.6
Excess		0.1	0.4	0.0	0.1	0.1
S&P 500		10.6	29.9	11.5	15.0	13.0
Bloomberg U.S. Aggregate		-0.8	1.7	-2.5	0.4	1.5



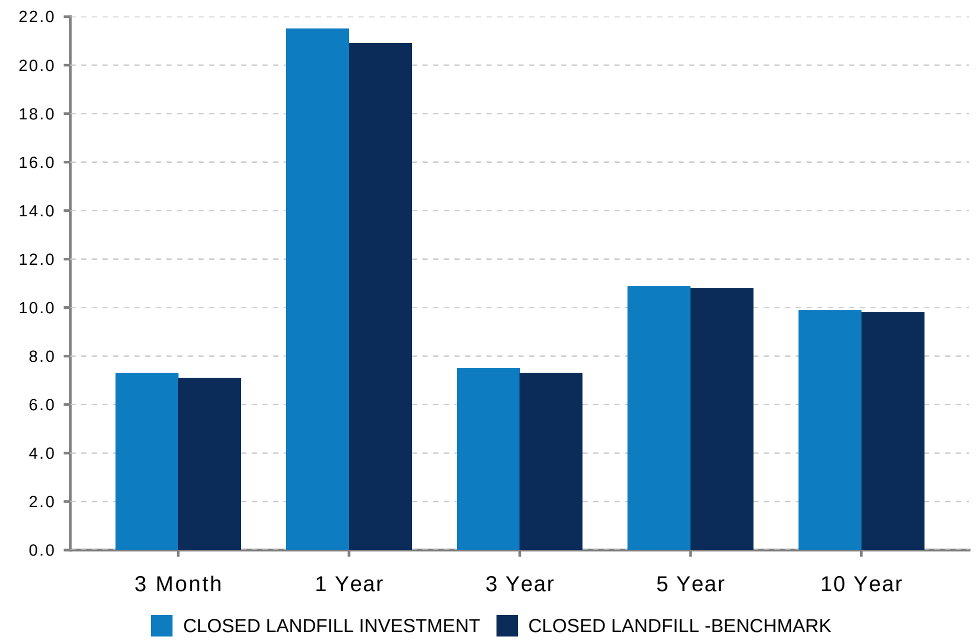
Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. From 7/1/94 to 7/1/99, the Fund's target allocation and benchmark was 50% fixed income and 50% stock. Prior to 7/1/94 the Fund was invested entirely in short-term instruments as part of the Invested Treasurer's Cash pool.

Non-Retirement

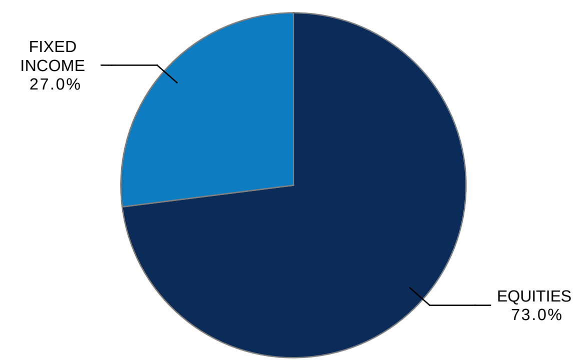
Closed Landfill Investment Fund

The investment objective of the Closed Landfill Investment Fund is to increase the market value of the Fund and to reduce volatility to meet future expenditures. By statute, the assets of the Fund were unavailable for expenditure until after the fiscal year 2020 to pay for long-term costs of maintaining the integrity of landfills in Minnesota once they are closed. In FY 2011, $48 million was transferred out of the general fund leaving a balance of $1 million in the account. Legislation was enacted in 2013 to replenish the principal and earnings back into the fund and in FY 2014 a repayment was made in the amount of $64.2 million. In 2015, legislation was passed which repealed any further repayments.

The bond segment is actively managed to add incremental value through sector, security and yield curve decisions. The stock segment is managed to passively track the performance of the S&P 500. The fixed income benchmark is the Bloomberg U.S. Aggregate. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the total fund asset allocation targets of 70% equities and 30% fixed income. The actual asset mix will fluctuate and is shown in the graph below.



	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
CLOSED LANDFILL INVESTMENT	$146,371,916	7.3%	21.5%	7.5%	10.9%	9.9%
EQUITIES	106,859,810	10.6	29.8	11.5	15.0	13.0
FIXED INCOME	39,512,106	-0.5	2.6	-2.3	0.6	
CLOSED LANDFILL -BENCHMARK		7.1	20.9	7.3	10.8	9.8
Excess		0.3	0.6	0.2	0.1	0.1
S&P 500		10.6	29.9	11.5	15.0	13.0
Bloomberg U.S. Aggregate		-0.8	1.7	-2.5	0.4	1.5



Note: Since 12/1/2017 the equity segment has been managed by Mellon and the fixed income segment by Prudential. Prior to 12/1/2017 both segments were managed internally by SBI staff. Prior to 9/10/14 the Fund's target allocation and benchmark was 100% domestic equity.

	Ending Market Value	Last Qtr	Fiscal YTD	1 Year	3 Year	5 Year	10 Year	Since Inception	Inception Date
NON RETIREMENT EQUITY INDEX - MELLON	**3,471,394,826**	**10.6**	**19.4**	**29.9**	**11.5**	**15.0**	**13.0**	**10.5**	**07/1993**
S&P 500 INDEX (DAILY)		10.6	19.4	29.9	11.5	15.0	13.0	10.4	07/1993
Excess		-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.1	
NON RETIREMENT FIXED INCOME - PRUDENTIAL	**1,762,675,277**	**-0.5**	**3.4**	**2.6**	**-2.3**	**0.6**	**1.9**	**5.0**	**07/1994**
Bloomberg U.S. Aggregate		-0.8	2.6	1.7	-2.5	0.4	1.5	4.6	07/1994
Excess		0.3	0.8	0.9	0.2	0.3	0.3	0.5	
RBC	**214,090,008**	**-0.4**	**2.7**	**1.7**	**-1.3**	**0.8**	**1.2**	**4.2**	**07/1991**
RBC Custom Benchmark		-0.3	2.8	1.6	-1.4	0.6	1.1	4.3	07/1991
Excess		-0.0	-0.1	0.0	0.0	0.1	0.1	-0.1	
MET COUNCIL OPEB BOND POOL	119,881,601	0.2	3.3	2.5	-0.5	0.8			02/2009
NON RETIREMENT CASH ACCOUNT	**740,647,984**	**1.4**	**4.2**	**5.6**	**2.8**	**2.1**		**2.1**	**12/2017**
ICE BofA US 3-Month Treasury Bill		1.3	4.0	5.2	2.6	2.0		2.0	12/2017
Excess		0.1	0.2	0.3	0.2	0.1		0.1	

Note:

RBC is the manager for the fixed income portion of the Assigned Risk Account. RBC changed its name from Voyageur Asset Management on 1/1/2010. The current benchmark is the Bloomberg U.S. Government Intermediate Index. Prior to 7/1/11 the Voyageur Custom Index was 10% 90 day T-Bill, 25% Merrill 1-3 Government, 15% Merrill 3-5 Government, 25% Merrill 5-10 Government, 25% Merrill Mortgage Master.

Prior to 12/1/17 the Non Retirement Equity Index and Non Retirement Fixed Income accounts were managed internally by SBI staff.

In addition to the Non-Retirement Funds listed on the previous pages, the Non Retirement Equity Index and the Non Retirement Fixed Income accounts also include the assets of various smaller Miscellaneous Trust Accounts and Other Post Employment Benefits.

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State Cash

March 31, 2024

State Cash Accounts

Invested Treasurer's Cash

The Invested Treasurer's Cash Pool (ITC) represents the balances in more than 400 separate accounts that flow through the Minnesota State Treasury. These accounts vary greatly in size. The ITC contains the cash balances of certain State agencies and non-dedicated cash in the State Treasury.

The investment objectives of the ITC, in order of priority, are as follows:

- Safety of Principal. To preserve capital.
- Liquidity. To meet cash needs without the forced sale of securities at a loss.
- Competitive Rate of Return. To provide a level of current income consistent with the goal of preserving capital.

The SBI seeks to provide safety of principal by investing all cash accounts in high quality, liquid, short term investments. These include U.S. Treasury and Agency issues, repurchase agreements, bankers acceptances, commercial paper, and certificates of deposit.

Beginning in January 2003, the Treasurer's Cash Pool is measured against the iMoneyNet, All Taxable Money Fund Report Average.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Treasurer's Cash	26,370,412,106	1.3	5.5	2.3	1.9	1.3
iMoneyNet Money Fund Average-All Taxable		1.3	5.0	2.5	1.8	1.2

Other State Cash Accounts

Due to differing investment objectives, strategies, and time horizons, some State agencies' accounts are invested seperately. These agencies direct the investments or provide the SBI with investment guidelines and the SBI executes on their behalf. Consequently, returns are shown for informational purposes only and there are no benchmarks for these accounts.

	Ending Market Value	Last Qtr	1 Year	3 Year	5 Year	10 Year
Debt Service	93,130,216	-0.5	4.7	1.4	2.3	1.7
Housing Finance (1)	800,233,519	0.9	9.7			

1. Housing Finance performance will be shown with first full quarter of performance.

Addendum

Benchmark Definitions

Active Domestic Equity Benchmark:

A weighted composite each of the individual active domestic equity managers' benchmarks. Effective 3/1/2017 the calculation uses the average weight of the manager relative to the total group of active managers during the month. Prior to 3/1/2017 the beginning of the month weight relative to the total group was used.

Benchmark DM:

Since 6/1/08 the developed markets managers' benchmark, "Benchmark DM," is the Standard (large + mid) MSCI World ex USA (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI World ex USA (net). From 10/1/03 to 9/30/07 the benchmark was the MSCI World ex USA (net). Prior to that date, it was the MSCI EAFE Free (net), including from 10/1/01 to 5/31/02 when it was the Provisional MSCI EAFE Free (net).

Benchmark EM:

Since 6/1/08 the emerging markets managers' benchmark, "Benchmark EM,"is the Standard (large + mid) MSCI Emerging Markets Free (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI Emerging Markets Free (net). From 1/1/01 to 9/30/07 the benchmark was the MSCI Emerging Markets Free (net), including from 10/1/01 to 5/31/02 when it was the Provisional MSCI Emerging Markets Free (net). Prior to 1/1/01, it was the MSCI Emerging Markets Free (gross).

Combined Funds Composite Index:

The Composite Index performance is calculated by multiplying the beginning of month Composite weights by the monthly returns of the asset class benchmarks. Asset class weights for Private Markets - Invested and Private Markets - Uninvested are reset at the start of each month. From 1/1/2018-2/28/2019 the Transitional Policy Target was used to reflect the addition of Treasuries to the Fixed Income portfolio. From 7/1/2016-12/31/2016 the composite weights were set to match actual allocation as the portfolio was brought into line with the new Strategic Asset Allocation Policy Target. 7/1/2016 to 12/1/2020 the uninvested portion of Private Markets allocated to Public Equity. Prior to 7/1/2016 the uninvested portion of the Private Markets was invested in Fixed Income and the Composite Index was adjusted accordingly. When the Strategic Asset Allocation Policy Target changes, so does the Composite Index.

Core Bonds Benchmark:

The Core Bonds Benchmark is the Bloomberg U.S. Aggregate. Prior to 2016 this index was called the Barclays Agg. Prior to 9/18/2008 this index was called the Lehman Brothers Aggregate Bond Index. From 7/1/84-6/30/94 the asset class benchmark was the Salomon Brothers Broad Investment Grade Index. The SBI name for this benchmark changed from Fixed Income to Core Bonds on March 31, 2020.

Credit Plus Benchmark:

40% Bloomberg US Corporate Bond Index, 30% Bloomberg US Mortgage Backed Index, 20% BofA ML US High Yield BB-B Cash Pay Constrained Index, and 10% JPM EMBI Global Diversified Index.

Addendum

Domestic Equity Benchmark:

Since 12/1/2020 the benchmark is the Russell 3000. From 1/1/2019-11/30/2020 the benchmark was 90% Russell 1000 and 10% Russell 2000. From 10/1/2003 to 12/31/2018 it was the Russell 3000. From 7/1/1999 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/1999, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Fixed Interest Blended Benchmark: Since 6/1/2002, equals 3 Year Constant Maturity Treasury Yield + 45 bps. Prior to this change it was the 3 Year Constant Maturity Treasury Yield + 30 bps.

International Equity Benchmark:

Since 12/1/2020 equals the MSCI ACWI ex-US(Net). From 1/1/2018 to 1/1/2019 it was 75% MSCI World ex USA Index (net) and 25% MSCI Emerging Markets Index (net). From 6/1/08 to 12/31/2018 the International Equity asset class target was the Standard (large + mid) MSCI ACWI ex U.S. (net). From 10/1/07 through 5/31/08 the benchmark was the Provisional Standard MSCI ACWI ex U.S. (net). From 10/1/03 to 9/30/07 the target was MSCI ACWI ex U.S. (net). From 1/1/01 to 9/30/03, the target was MSCI EAFE Free (net) plus Emerging Markets Free (net), and from 7/1/99 to 12/31/00 the target was MSCI EAFE Free (net) plus Emerging Markets Free (gross). From 7/1/99 to 9/30/03, the weighting of each index fluctuated with market capitalization. From 10/1/01 to 5/31/02 all international benchmarks being reported were the MSCI Provisional indices. From 12/31/96 to 6/30/99 the benchmark was fixed at 87% EAFE Free (net)/13% Emerging Markets Free (gross). On 5/1/96, the portfolio began transitioning from 100% EAFE Free (net) to the 12/31/96 fixed weights. Prior to 5/1/96 it was 100% the EAFE Free (net).

Multi-Asset Credit Benchmark:

33.33% ICE BofA High Yield, 33.33% S&P LSTA Leveraged Loan, and 33.33% JPM EMBI Global Diversified Index.

Passive Domestic Equity Benchmark:

A weighted average of the Russell 1000, Russell 2000 and Russell 3000 effective 11/1/2018. From 10/1/2016 to 11/1/2018 it was a weighted average of the Russell 1000 and Russell 3000. From 10/1/2003 to 10/1/2016 it was equal to the Russell 3000. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Passive Manager Benchmark:

Russell 3000 effective 10/1/2003. From 7/1/2000 to 9/30/2003, it was the Wilshire 5000 Investable Index. From 11/1/1993 to 6/30/2000, the target was the Wilshire 5000 as reported with no adjustments. Prior to 11/1/1993, the Wilshire 5000 was adjusted to reflect SBI mandated restrictions, which included liquor and tobacco, American Home Products and South Africa.

Addendum

Public Equity Benchmark:

Since 12/1/2020 it is 67% Russell 3000 and 33% MSCI ACWI ex-US(net). From 1/1/2019 to 12/1/2020 it was 60.3% Russell 1000, 6.7% Russell 2000, 24.75% MSCI World Ex US (net), and 8.25% MSCI EM (net). From 7/1/2017 thru 12/31/2018 it was 67% Russell 3000 and 33% MSCI ACWI ex USA. Prior to 6/30/16 the returns of Domestic and International Equity were not reported as a total Public Equity return. From 6/30/16-6/30/17 the Public Equity benchmark adjusted by 2% each quarter from 75% Russell 3000 and 25% MSCI ACWI ex USA until it reached 67% and 33%.

Return Seeking BM:

A weighted composite of each individual return seeking fixed income managers' benchmarks. The calculation uses the average weight of the manager relative to the total group of active managers during the month.

Semi-Passive Domestic Equity Benchmark: Russell 1000 index effective 1/1/2004. Prior to 1/1/2004 it was the Completeness Fund benchmark.

Total Fixed Income Benchmark:

Since 7/1/2020 the Total Fixed Income benchmark is 40% Bloomberg U.S. Aggregate Index/ 40% Bloomberg Treasury 5+ Years Index/ 20% ICE BofA US 3-Month Treasury Bill. From 4/1/2019-6/30/2020 it was 50% Bloomberg Aggregate and 50% Bloomberg Treasury 5+ Years Index. From 2/1/2018-3/31/19 the weighting of this benchmark reflected the relative weights of the Core Bonds and Treasuries allocations in the Combined Funds Composite.

Zevenbergen Benchmark: Russell 3000 Growth index effective 1/1/2021. Prior to 1/1/2021 it was the Russell 1000 Growth Index.