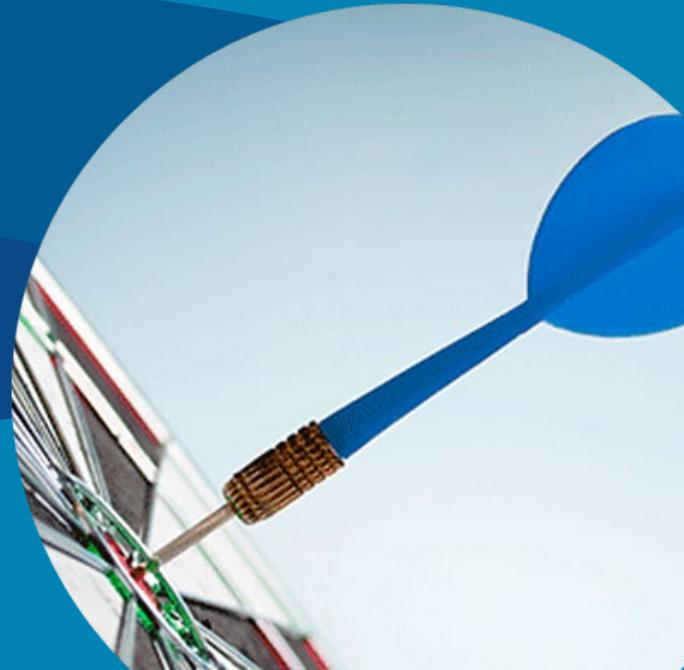




City of Dallas Employees' Retirement Fund

December 31, 2023

Final Valuation Results



Actuarial Valuation

- Prepared as of December 31, 2023, using member data, financial data, benefit and contribution provisions, actuarial assumptions and methods
- Purposes:
 - Measure the actuarial liabilities of the ERF
 - Determine actuarial required contribution rate
 - Current Total Obligation Rate
 - Current Adjusted Total Obligation Rate
 - Provide other information for reporting
 - GASB #67 & #68, Annual Comprehensive Financial Report
 - Explain changes in actuarial condition of the Fund

Key Issues and Changes

- ERF's investment return was above its investment target of 7.25% on a market value basis in 2023
 - Return on market value was 10.05%
 - Dollar-weighted return
 - Versus Wilshire's time-weighted return of 10.21%
 - Investment excess in 2023 of \$95 million
 - \$95 million excess was offset against prior shortfalls, \$64 million of prior year's shortfall was recognized in this valuation, with the remaining \$191 million deferred
- \$70 million liability experience loss in 2023
 - Loss from cost of living adjustment being greater than assumed
 - Loss from salary increases being higher than assumed
 - Smaller retiree mortality gain (more deaths than assumed)

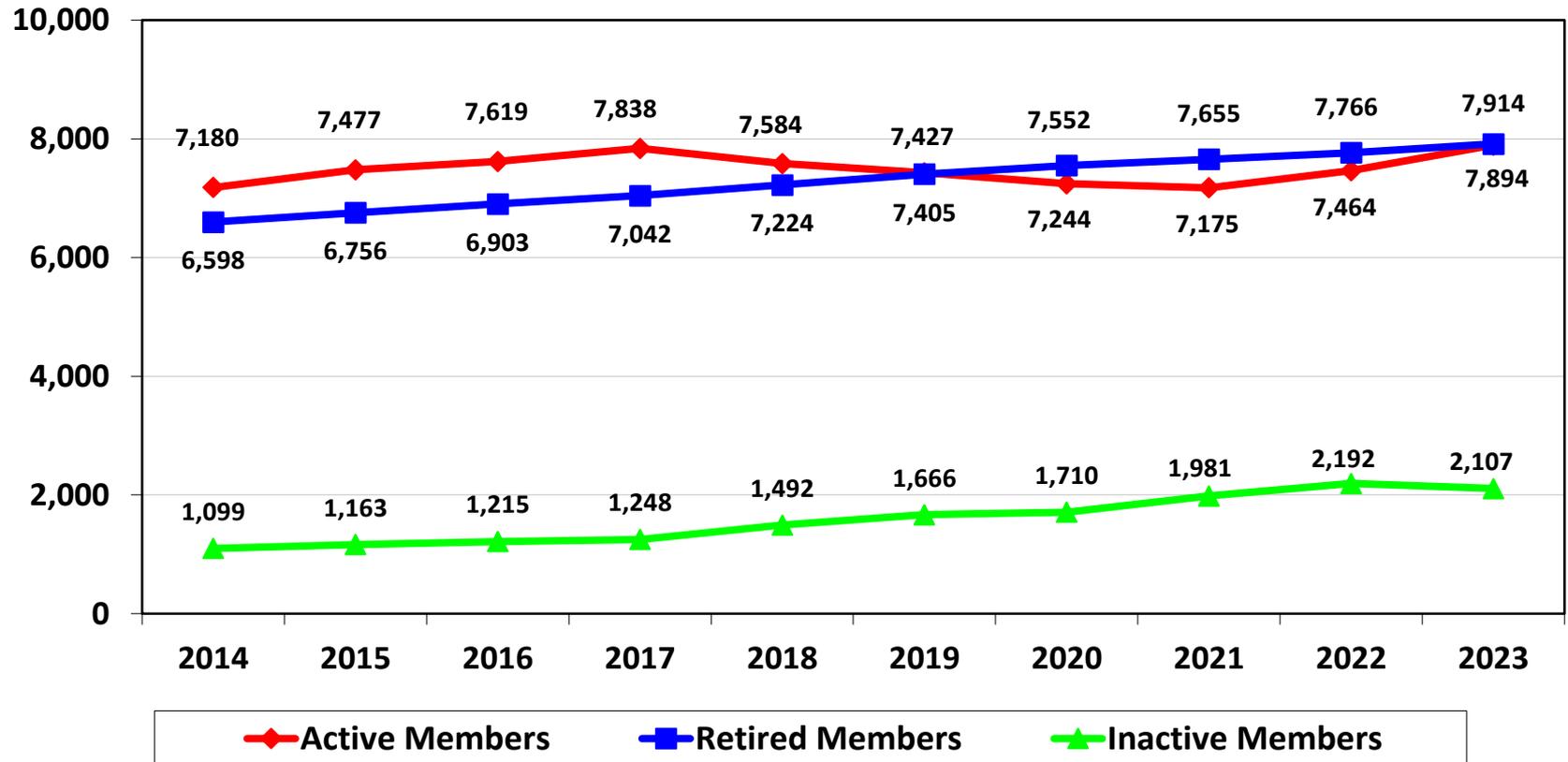
Key Issues and Changes

- Payroll increased more than expected
 - 11.4% increase versus 2.5% increase assumption
 - Driven by 5.8% increase in active employees and larger than expected salary increases
- Current Total Obligation Rate exceeds 36% of pay cap
 - CATOR is 36.00%
 - City contribution rate is 22.68%
 - Member rate is 13.32%
- The new Tier became effective January 1, 2017
 - Over 4,300 employees in new Tier at December 31, 2023
 - New Tier is approximately 55% of the active employees
 - NC% decreased from 19.17% last year to 18.58% this year

Membership

- The number of active members increased from 7,464 to 7,894, a 5.8% increase
- Payroll for active members increased from \$476.6 million to \$530.7 million, an 11.4% increase
- The number of members in payment status increased by a net 148, from 7,766 to 7,914, a 1.9% increase
- There are fewer active members than retired members, but the ratio is close to 1.0

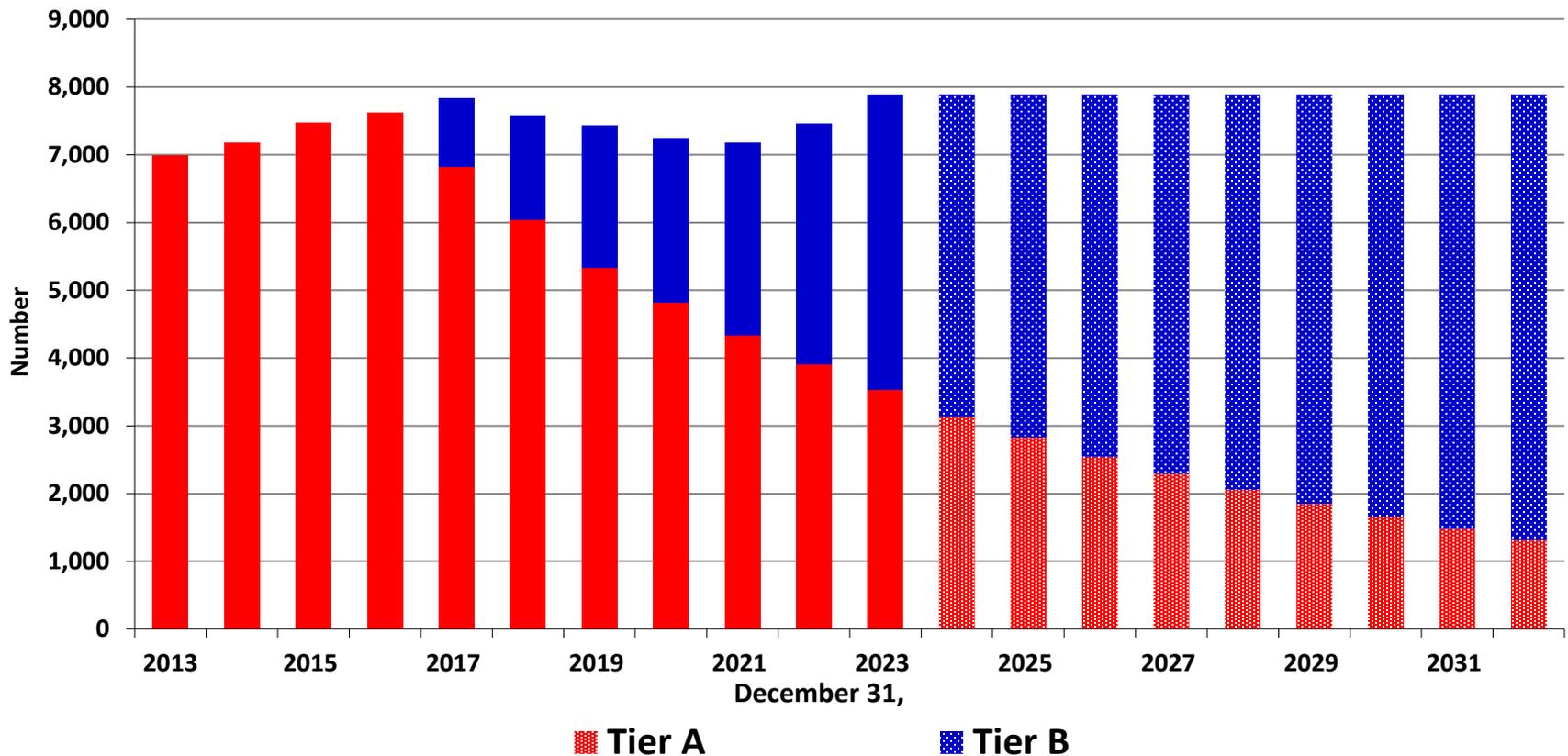
Active Members and Retired Members



Note: active membership increased 5.8% versus last year

Projected Active Membership

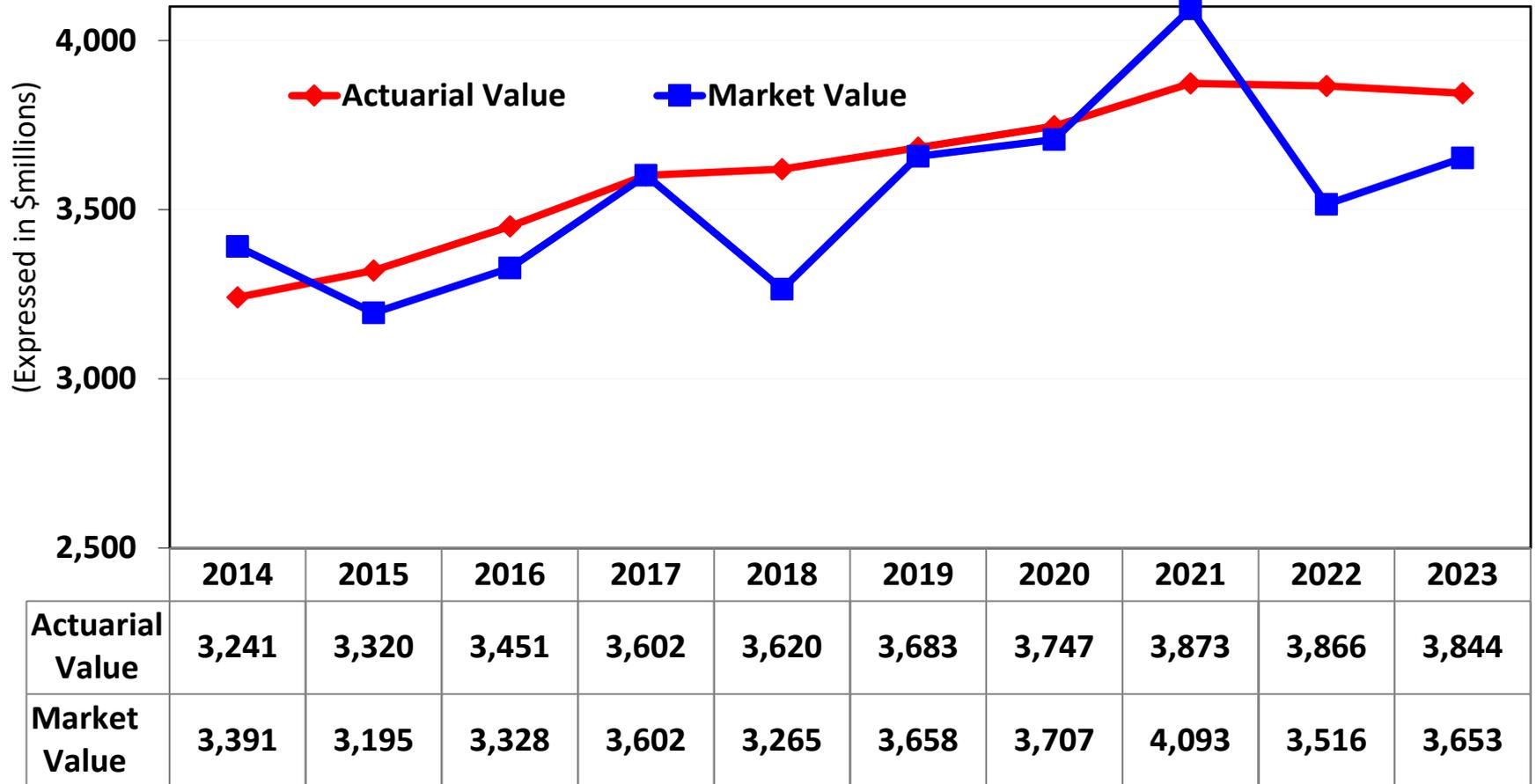
Projected Number of Tier A and Tier B Employees



Assets

- Fair market value (unaudited) increased from \$3.516 billion to \$3.653 billion
- Return on market value of assets was approximately 10.05% in 2023
- Actuarial value is \$3.844 billion, compared to \$3.866 billion last year
- Actuarial rate of return was 4.89% in 2023
 - Less than 7.25% assumed rate
- Actuarial value is 105.2% of fair market value
- Net deferred investment loss of \$191 million still to be recognized in actuarial value of assets

Historical Asset Values



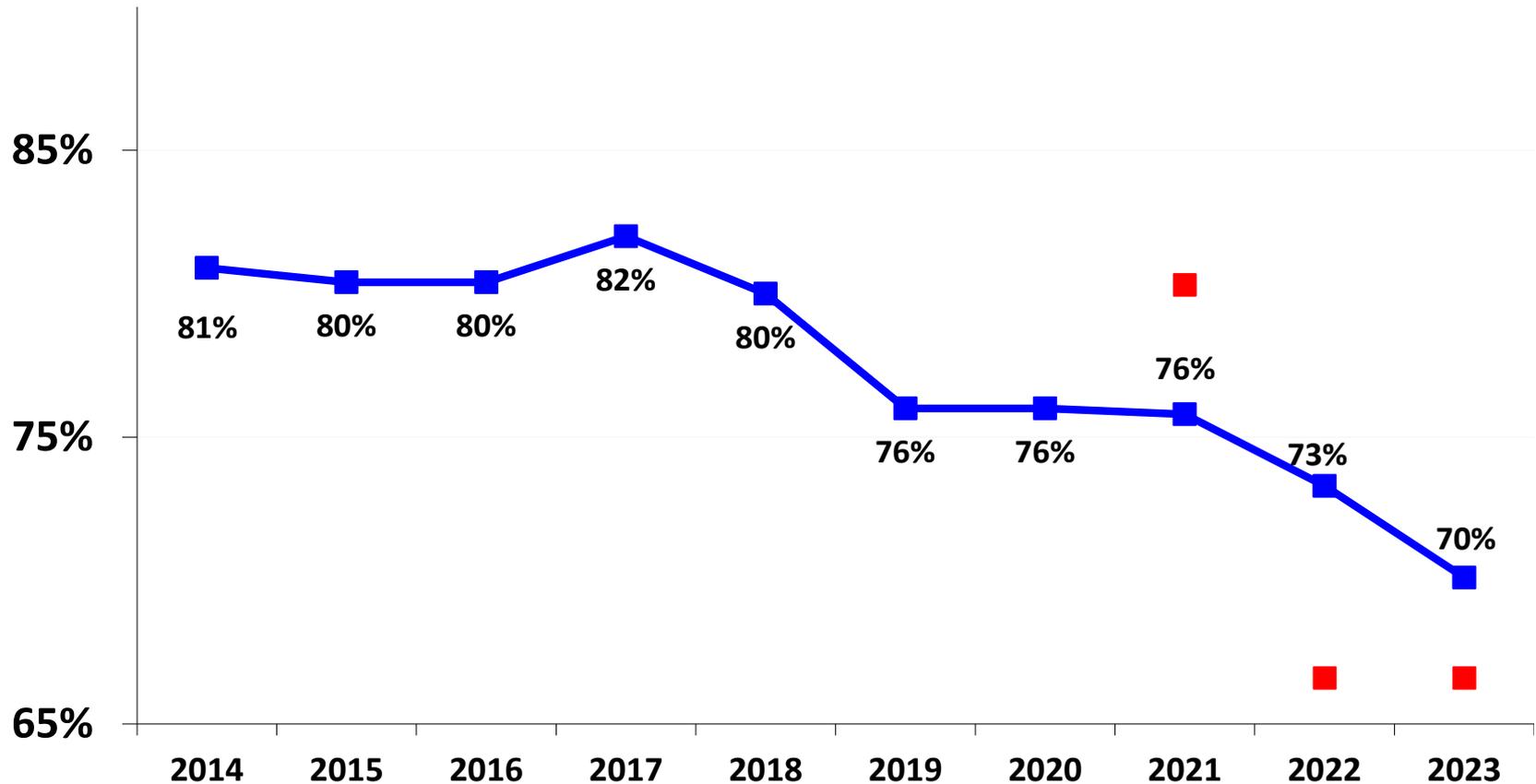
Actuarial Results

- Actuarial Accrued Liability (AAL) of benefits is now \$5.483 billion
- Unfunded Actuarial Accrued Liability (UAAL) increased from \$1,410 million to \$1,639 million
 - Expected to increase to \$1,439 million
 - Reflects \$89 million loss on actuarial value of assets and \$70 million loss on liabilities
 - UAAL increased \$41 million due to difference between calculated contribution rate and actual contribution rate

Actuarial Results

- Funded ratio (actuarial assets divided by actuarial accrued liability) decreased from 73% in 2022 to 70% in 2023
- Funded ratio using market value is 67%
 - Was 67% last year
- Total 30-year contribution rate is 35.96%
 - Does not include POB debt service payments
 - Based on open-group projection
 - 35.40% last year
 - Reflects both City and Member contribution effort

Historical Funded Ratios



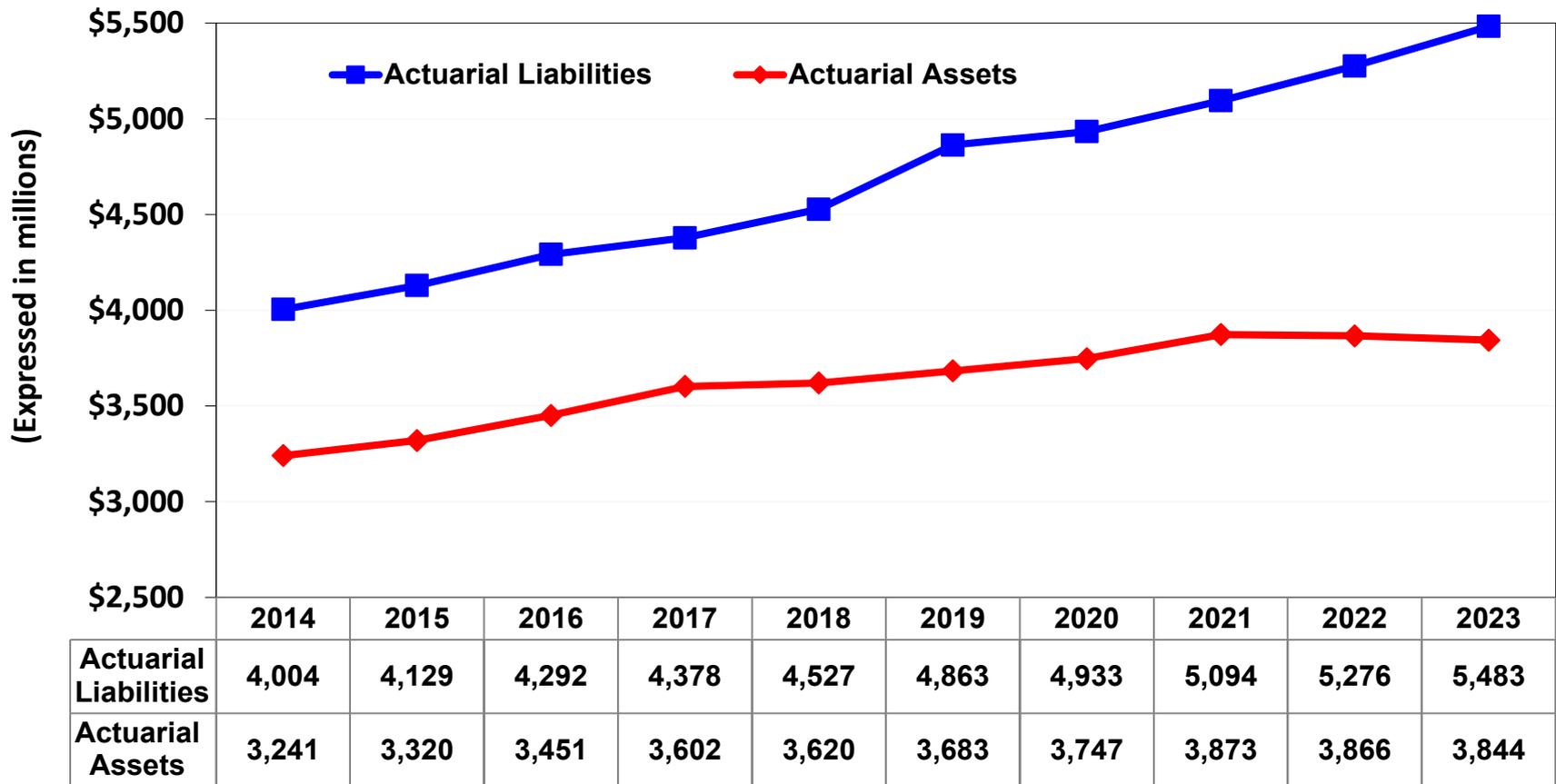
Funded ratio using market value of assets as of December 31, 2021 is 80%.

Funded ratio using market value of assets as of December 31, 2022 is 67%.

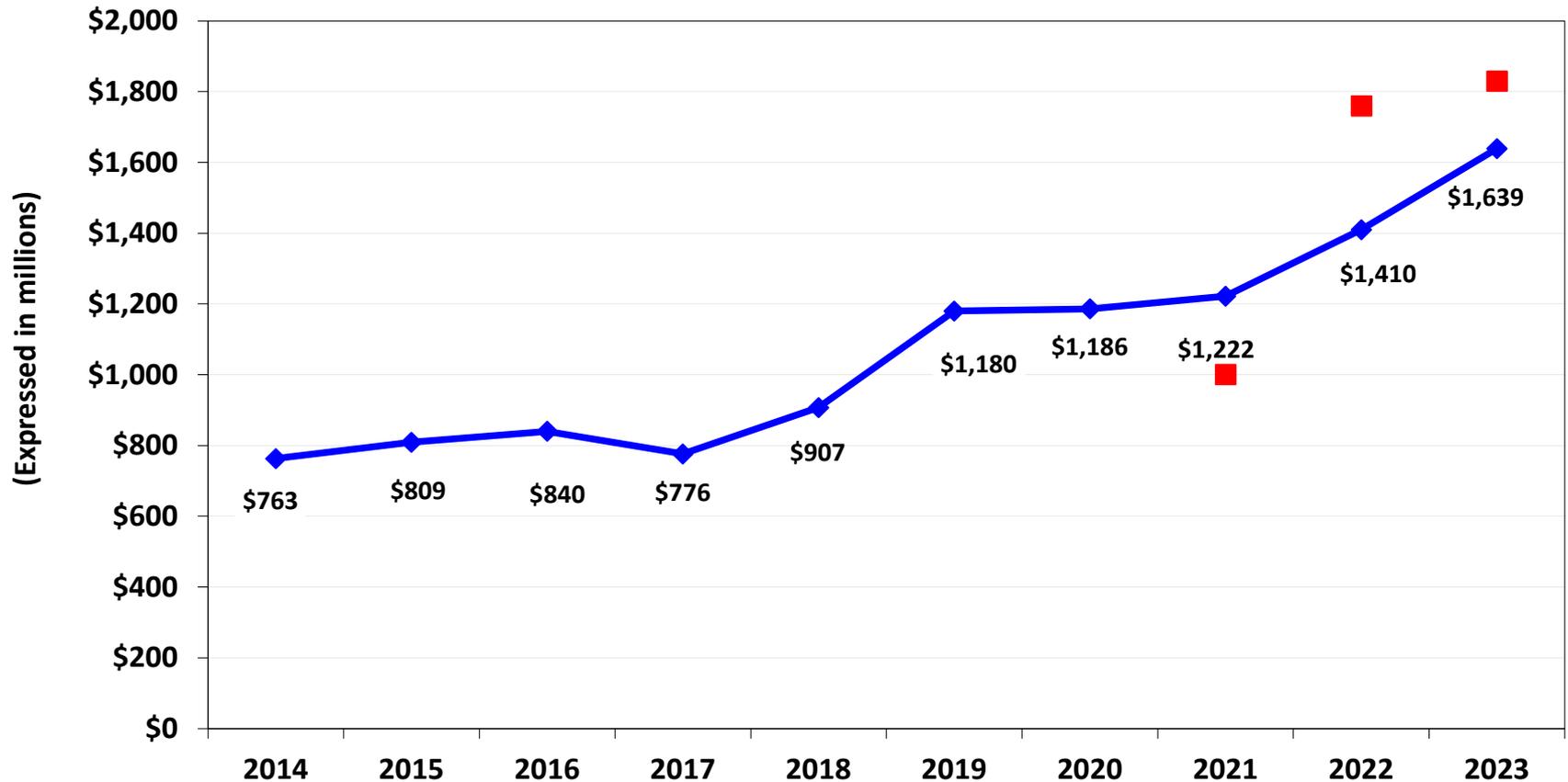
Funded ratio using market value of assets as of December 31, 2023 is 67%.



Liabilities vs. Assets



Unfunded Actuarial Accrued Liability (UAAL)



UAAL based on market value of assets as of December 31, 2021 is \$1,001 million.

■ UAAL based on market value of assets as of December 31, 2022 is \$1,760 million.

UAAL based on market value of assets as of December 31, 2023 is \$1,830 million.



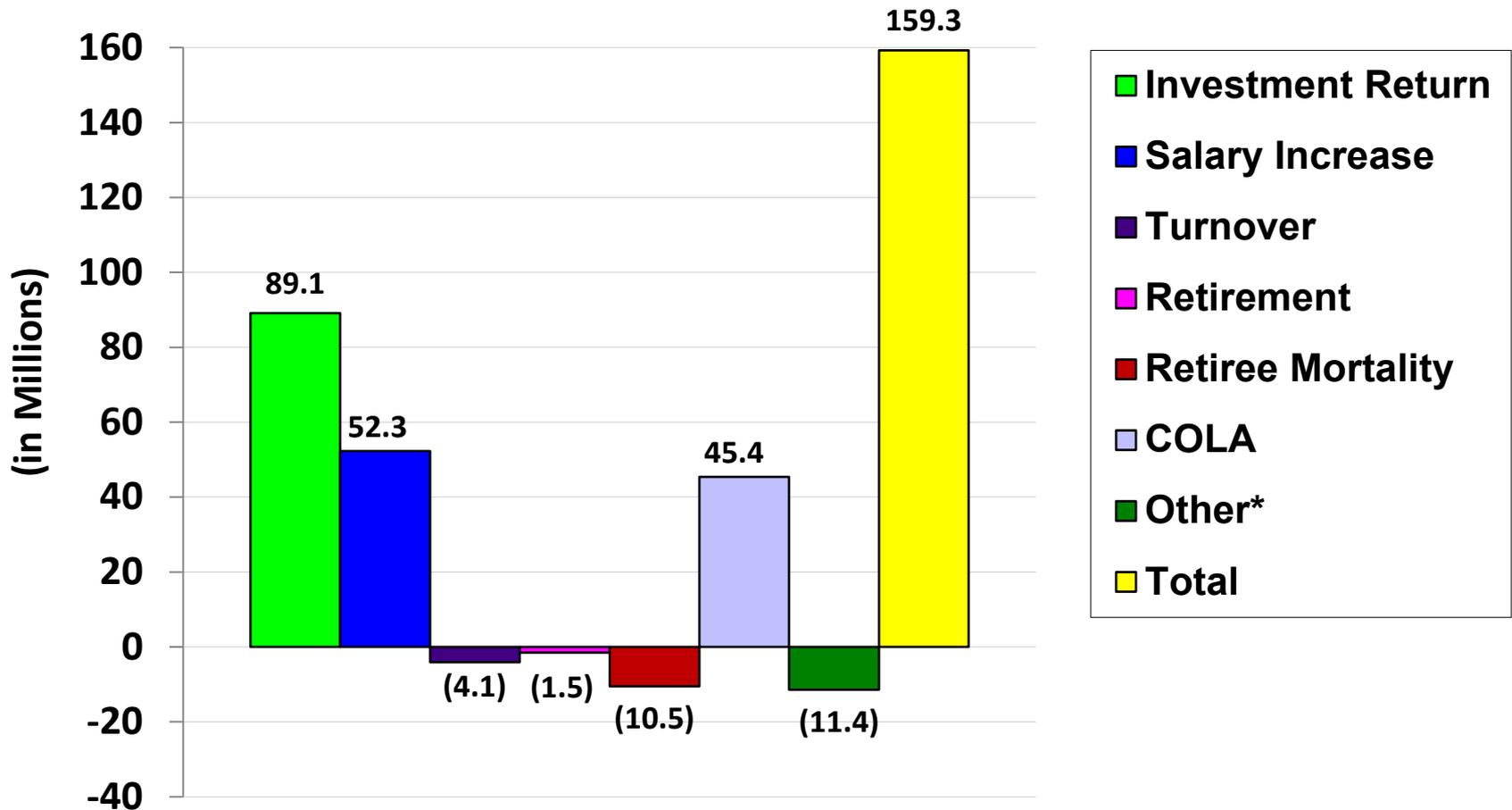
Reconciliation of UAAL

▪ UAAL 12/31/22		\$1,410.1
▪ Expected Changes		
• Amortization Payment for 2023	(70.9)	
• Interest Adjustments	<u>99.7</u>	
		28.8
▪ Difference between expected and actual contributions		41.0
▪ Actuarial Experience Loss		<u>159.3</u>
▪ UAAL 12/31/23		\$1,639.2



\$ in Millions

2023 Actuarial (Gains) and Losses



*Includes disability, active mortality, and data changes

Actuarially Required Contribution Rate

- We use an Open Group projection to determine the Actuarially Required Contribution Rate (ARC)
 - Reflects declining average Normal Cost % over time due to new tier of benefits
 - Rate is determined as level percentage of pay so amortization rate is increasing over time
 - Based on 30-year funding period
 - Debt service is not included

Actuarial Required Contribution Rate

- ARC as of December 31, 2023 is 35.96%
 - Increase from 35.40% in prior year
 - Compares to actual rate expected to be contributed in fiscal year 2024 of 27.76%
 - Total rate of 36.00% of pay less POB Credit of 8.24%
 - Increase due to losses on actuarial assets and liabilities, partially offset by greater than expected payroll growth

Fiscal Year Beginning October 1st

	<u>2023</u>	<u>2024</u>
1. Prior Adjusted Total Obligation Rate	36.00%	36.00%
2. Actuarially Required Contribution Rate	35.40%	35.95%
3. Debt Service		
a) Scheduled Debt Service Payment*	\$ 40,142,080	\$ 44,821,069
b) Projected Payroll	\$488,516,155	\$543,969,644
c) Pension Obligation Bond Credit (a/b)	8.22%	8.24%
4. Current Total Obligation Rate (2+3c)	43.62%	44.20%
5. Current Adjusted Total Obligation Rate	36.00%	36.00%
6. Allocation of Contribution Rates for Fiscal Year Beginning October 1 st		
a) Employee (5 x .37)	13.32%	13.32%
b) City (5 x .63)	22.68%	22.68%
7. City Contribution to Fund (6.b. – 3.c)	14.46%	14.44%

*The debt service payment increased 11.7% between fiscal years 2024 and 2025. If the debt service payment had grown at the same rate as the prior year the POB Credit would have decreased to 7.63% of pay.

The formula for contributions are based on Dallas City Code 40A originally established with City ordinance 25695



Valuation Summary

- The Actuarially Required Contribution to the Fund increased from 35.40% to 35.96%
- The total contribution rate including the debt service increased from 43.62% to 44.20%
- \$191 million in deferred investment loss still to be recognized or offset

Valuation Summary

- Calculated contribution rate is projected to remain relatively level until POBs are paid off
 - Assuming all assumptions are met including 7.25% return on AVA
 - Impact of shortfall in contributions because of 36.00% maximum rate is being somewhat offset by 30-year rolling amortization period
- If no changes are made to the financing of the Fund and the actuarial assumptions are exactly met
 - The total contribution rate will remain at the 36% of pay cap for at least the next 20 years
 - The UAAL is expected to increase and the funded ratio is expected to decline for at least the next 20 years

GASB Preview

- GASB 67/68
 - Fund once again fails the Single Discount Rate (SDR) test
 - Anticipated Single Discount Rate is 5.54%
 - Versus 7.25% last year
- NPL remained relatively unchanged at \$3.0 billion both last year and an estimated \$3.0 billion as of 12-31-2023
 - Volatile number
 - Assets based on the market value of assets
 - Liability can vary due to the capped contribution rate which has resulted in the required use of a lower discount rate for accounting purposes in certain years (2015, 2018, 2019, 2020, 2022 and 2023)

Employees' Retirement Fund of the City of Dallas

Actuarial Valuation Report
as of December 31, 2023

DRAFT





May 7, 2024

Board of Trustees
Employees' Retirement Fund of the City of Dallas
1920 McKinney Avenue
10th Floor
Dallas, Texas 75201

Dear Members of the Board:

We are pleased to present our report of the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2023.

This valuation provides information on the financial health of ERF. It includes a determination of the actuarially calculated contribution rates for the 2024 calendar year. In addition, it also contains the information necessary to determine the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2024 per City Ordinance. The current adjusted total obligation rate is a function of the previous year's adjusted total obligation rate, this year's actuarially calculated contribution rate, and the rate necessary to make the debt service payment on the previously issued pension obligation bonds for fiscal year 2025.

In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of December 31st, the last day of the ERF plan year. This report was prepared at the request of the Board and is intended for use by the ERF staff and those designated or approved by the Board. This report may be provided to parties other than ERF staff only in its entirety and only with the permission of the Board.

As authorized in Chapter 40A-4(a)(16) of the Dallas City Code, the actuarial methods and assumptions are set by the Board of Trustees, based upon recommendations made by the plan's actuary. An experience study was performed for the five-year period ending December 31, 2019. As a result of that study, revised assumptions were adopted by the Board effective with the valuation as of December 31, 2019. There were no changes in the actuarial assumptions or methods since the prior valuation.

We believe the assumptions are internally consistent, reasonable, and, where appropriate, based on the actual experience of the ERF. All of the methods and assumptions used for funding purposes meet the parameters set by the Actuarial Standards of Practice. All actuarial methods and assumptions are described under Section P of this report. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions.

Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. Due to the limited scope of this assignment, GRS did not perform an analysis of the potential range of such possible future differences. The actuarial calculations are intended to provide information for rational decision making. Other than the sensitivity analysis shown in Section L, this report does not include a more robust assessment of the future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

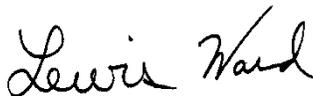
This valuation is based on the provisions of ERF in effect as of the valuation date, data on the ERF membership and information on the asset values of the Fund as of December 31, 2023. The member, annuitant and asset data used in the valuation were all prepared and furnished by ERF staff. While certain checks for reasonableness were performed, the data used was not audited.

To the best of our knowledge, this report is complete and accurate and was conducted in accordance with the Actuarial Standards of Practice as set forth by the Actuarial Standards Board and in compliance with the provisions of the Dallas City Code. The undersigned are independent actuaries and consultants. Mr. White is a Fellow of the Society of Actuaries, an Enrolled Actuary, and a Member of the American Academy of Actuaries and he meets the Qualification Standards of the American Academy of Actuaries. Both Mr. White and Mr. Ward have significant experience in performing valuations for large public retirement systems.

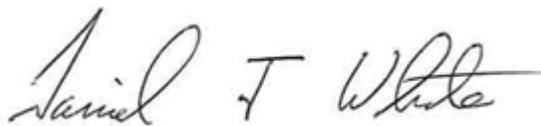
The following schedules in the actuarial section of the ERF Annual Comprehensive Financial Report were prepared by GRS: Executive Summary, Report Highlights, Summary of Actuarial Values, Demonstration of Actuarially Required Contribution Rate, Information for City Ordinance 25695, Net Assets Available for Benefits, Change in Assets Available for Benefits, Development of Actuarial Assets, Historical Investment Performance, Analysis of Change in Unfunded Actuarial Accrued Liability, Investment Experience (Gain) or Loss, Analysis of Actuarial (Gains) or Losses, Schedule of Funding Status, Summary of Data Characteristics, Distribution of Active Members and Payroll by Age and Years of Service, Distribution of Benefit Recipients, Schedule of Active Member Valuation Data, Schedule of Retirees and Beneficiaries Added to and Removed from Rolls, Solvency Test, Analysis of Pay Experience (Valuation Pay), Analysis of Retirement Experience – Each Age, Analysis of Retirement Experience - Age Groups, Analysis of Turnover Experience, Analysis of Active Mortality Experience, Analysis of Disability Experience, Analysis of Retiree Mortality Experience.

We would like to thank the ERF staff for their assistance in providing all necessary information to complete this valuation. Their courteous help is very much appreciated. We look forward to discussing this actuarial valuation report with you at your convenience. Please do not hesitate to let us know if you have any questions or need additional information.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Lewis Ward
Consultant



Daniel J. White, FSA, EA, MAAA
Senior Consultant



Table of Contents

Page

Cover Letter	
Section A	Executive Summary 2
Section B	Purposes of the Actuarial Valuation 3
Section C	Report Highlights 4
Section D	Funding Process 5
Section E	Actuarial Contributions 6
Section F	Actuarial Assumptions..... 7
Section G	ERF Benefits 8
Section H	Experience During Previous Years 9
Section I	Asset Information 10
Section J	Funded Status 11
Section K	GASB Disclosure 12
Section L	Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions 13
Section M	Closing Comments..... 17
Section N	Actuarial Tables..... 18
Section O	Experience Tables..... 39
Section P	Actuarial Methods and Assumptions 47
Section Q	Summary of Benefit Provisions 57



EXECUTIVE SUMMARY

(\$ in 000s)

The key results from the actuarial valuation of the Employees' Retirement Fund of the City of Dallas as of December 31, 2023 may be summarized as follows:

	<u>December 31, 2022</u>	<u>December 31, 2023</u>
Members		
- Actives	7,464	7,894
- Benefit recipients	7,766	7,914
- Deferred vested*	1,042	1,095
- Other terminated*	<u>1,150</u>	<u>1,012</u>
- Total	17,422	17,915
Covered payroll (including overtime)	\$ 476,601	\$ 530,702
Normal cost	\$ 89,856	\$ 96,851
as % of expected payroll	19.17%	18.58%
Actuarial accrued liability	\$ 5,276,469	\$ 5,483,251
Actuarial value of assets	\$ 3,866,412	\$ 3,844,000
Market value of assets	\$ 3,516,280	\$ 3,652,944
Unfunded actuarial accrued liability (UAAL)	\$ 1,410,057	\$ 1,639,251
Estimated yield on assets (market value basis)	(9.25)%	10.05%
Estimated yield on assets (actuarial value basis)	5.36%	4.89%
Contribution Rates		
- Prior Adjusted Total Obligation Rate	36.00%	36.00%
- Current Total Obligation Rate	43.62%	44.20%
- Current Adjusted Total Obligation Rate	36.00%	36.00%
Actuarial gains/(losses)		
- Assets	\$ (71,539)	\$ (89,071)
- Actuarial liability experience	\$ (55,128)	\$ (70,272)
- Assumption and method changes	\$ 0	\$ 0
30-year level % of pay funding cost	\$ 172,945	\$ 195,594
as % of payroll (Employee + City)	35.40%	35.96%
Funded ratio		
- Based on actuarial value of assets	73.3%	70.1%
- Based on market value of assets	66.6%	66.6%

* *Deferred vested are members who have applied for a deferred pension. Other terminations are other members who have terminated and still have contribution balances in the Fund.*



PURPOSES OF THE ACTUARIAL VALUATION

At your request, we have performed the actuarial valuation of the Employees' Retirement Fund of the City of Dallas ("ERF" or the "Fund") as of December 31, 2023.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of ERF as of the valuation date;
- To develop the actuarially determined level of contributions for ERF for the 2024 calendar year; and
- To develop the current total obligation rate and the current adjusted total obligation rate for the fiscal year beginning October 1, 2024.



REPORT HIGHLIGHTS

(\$ in 000s)

The following is a set of key actuarial results from the prior year's valuation as compared to the current year:

	Valuation Date	
	December 31, 2022	December 31, 2023
Contribution Rates (% of Payroll)		
Normal Cost (including administrative expense)	20.89%	20.36%
Total Actuarial Contribution Rate	35.40%	35.96%
Total Projected Actuarial Contribution	\$172,945	\$195,594
Funded Status (on AVA basis)		
Actuarial Accrued Liability	\$5,276,469	\$5,483,251
Actuarial Value of Assets	3,866,412	3,844,000
Unfunded Actuarial Accrued Liability	\$1,410,057	\$1,639,251
Funded Ratio	73.28%	70.10%



FUNDING PROCESS

Based on the previous work of the Employees' Retirement Fund Study Committee, which was ratified by the ERF Board, the Dallas City Council and the voters of Dallas, a new funding process commenced October 1, 2005. From this date forward, a new "current adjusted total obligation rate" will be contributed jointly by the City (63%) and the Membership (37%). This current adjusted total obligation rate will cover both the debt service tied to the pension obligation bonds issued in 2005 and the contributions to the ERF. In subsequent years, the contribution rate changes only if the actuarial valuation develops a "current total obligation rate" which differs from the "prior adjusted total obligation rate" by more than 3.00% (plus or minus).

As shown in Section N – Table 3 and discussed later in this report, the "current total obligation rate" (Item 4 in Table 3) exceeds the "prior adjusted total obligation rate" (Item 1 in Table 3) as of December 31, 2023. This means that the "current adjusted total obligation rate" will remain at 36.00% of active member payroll for the fiscal year beginning October 1, 2024. It should be noted that under the contribution corridor methodology, the "current adjusted total obligation rate" would have been higher if not for the maximum rate of 36.00% allowed under Chapter 40A of the Dallas City Code.

ACTUARIAL CONTRIBUTIONS

As shown in Section N – Table 2, the Actuarially Required Contribution Rate developed in this actuarial valuation is 35.96% of active member payroll. This rate excludes the amount needed to make the City's debt service payment on the pension obligation bonds in fiscal year 2025. This rate is the total level rate of pay (member + City) that would need to be contributed each of the next 30 years to pay off the unfunded liability of the Fund over that 30-year period. Note that because the total rate is assumed to remain level and the average normal cost as a percentage of pay is expected to decline over that time period (due to Tier B), the payment towards the unfunded liability as a percentage of pay is expected to increase over the 30-year period. In our opinion, this contribution rate satisfies the reasonable contribution rate requirements of ASOP No. 4.

As shown in Section N – Table 3 of this report, the debt service payment is determined to be 8.24% of projected payroll. The sum of these rates is 44.20% (the Current Total Obligation Rate), which is 8.20% more than the Prior Adjusted Total Obligation Rate of 36.00%. Because the total contribution rate cannot exceed 36.00%, the total contribution rate in fiscal year 2025 (the Current Adjusted Total Obligation Rate) to fund the ERF and make the debt service payment on the pension obligation bonds will be 36.00%, which is the maximum rate allowed under Chapter 40A of the Dallas City Code.

The members contribute 37% of the Current Adjusted Total Obligation Rate and the City contributes 63%. Hence, the members' portion of the 36.00% total contribution rate will be 13.32% and the City portion will be 22.68%. All of the member contribution rate will be contributed to the ERF. As noted above, 8.24% of the City's contribution rate will go towards the debt service on the pension obligation bonds and the remaining 14.44% will be contributed towards the ERF. This means a total contribution rate of 27.76% will be contributed to the ERF for the 2025 fiscal year, which compares to the actuarially calculated rate of 35.96%.



ACTUARIAL ASSUMPTIONS

Section P of this report includes a summary of the actuarial methods and assumptions used in this valuation. In short, costs are determined using the Entry Age Normal actuarial cost method. The assumed annual investment return rate is 7.25% and includes an annual assumed rate of inflation of 2.50%.

There were no changes in the actuarial assumptions since the prior valuation report. Please see Section P of this report for a summary description of these methods and assumptions.

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ERF BENEFITS

There were no changes in the benefit provisions of ERF since the prior valuation. Please see Section Q for a summary description of the ERF benefits.

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EXPERIENCE DURING PREVIOUS YEARS

An Actuarial (Gain)/Loss Analysis [(G)/L] reviews the effects of the actual experience on the expected Unfunded Actuarial Accrued Liability (UAAL). If any unexpected difference increases assets or reduces liabilities (i.e., reductions in the UAAL), we have an actuarial gain. Unexpected increases in the UAAL results in an actuarial loss.

On a market value return basis, the Fund returned approximately 10.05% (calculated on a dollar-weighted basis, net of investment expenses). Given this return, the actual investment income was \$95 million more than the expected investment income on the market value of assets; therefore, an investment gain occurred. Please see Section N – Table 6 for the determination of the actuarial value of assets (AVA) and page 48 for a description of the AVA methodology. As developed on Section N – Table 9a, there was a \$89.1 million loss on the actuarial value of assets as of December 31, 2023 due to deferred investment losses incurred prior to fiscal year 2023. The rate of return on the actuarial value of assets for 2023 was 4.89% (calculated on a dollar-weighted basis, net of investment expenses). Since this result was less than the investment return assumption of 7.25% there is an actuarial loss on the actuarial value of assets in 2023.

As developed on Section N – Table 8, ERF experienced an overall actuarial experience loss in calendar year 2023 in the amount of \$159.3 million. Since there was a \$89.1 million loss on the actuarial value of assets, this implies there was a liability actuarial loss of about \$70.3 million derived from demographic assumptions and non-investment economic assumptions (cost-of-living-adjustment). Please see Section N – Table 9b for an analysis of the experience loss by source.

The total (G)/L for the prior 5 years is broken down as follows (\$ in millions):

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1) Actuarial (Gain)/Loss on Assets	\$35.80	\$16.03	(\$52.23)	\$71.54	\$89.07
2) Actuarial (Gain)/Loss on Liabilities	(6.16)	(69.81)	29.37	55.13	70.27
3) Total Actuarial (Gain) or Loss (1+2)	<u>\$29.64</u>	<u>(\$53.78)</u>	<u>(\$22.86)</u>	<u>\$126.67</u>	<u>\$159.34</u>

The unfunded actuarial accrued liability (UAAL) also increased \$41 million due to the shortfall between the calculated contribution rate and the actual contributions during calendar year 2023.



ASSET INFORMATION

The assets of the Fund (on a market value basis) increased from \$3,516 million as of December 31, 2022 to \$3,653 million as of December 31, 2023.

An asset smoothing method (adopted by the Board) is used to recognize asset gains and losses. The purpose of such a smoothing method is to allow the use of market values, but to dampen the effect of the typical year-to-year market fluctuations. Please see page 48 of this report for a description of the smoothing method (actuarial value of asset method). See Table 6 in Section N of this report for the determination of the actuarial value of assets as of December 31, 2023.

The actuarial value of assets has decreased from \$3,866 million to \$3,844 million during 2023. The actuarial assets are less than the expected actuarial assets, \$3,933 million, due to unfavorable investment experience in calendar year 2022. This resulted in an actuarial loss on the actuarial assets of \$89.1 million.

The rate of return on investments for 2023 on the actuarial value of assets was 4.89%, compared to 5.36% in 2022. The detailed determinations of asset values utilized in this valuation and the change in assets in the last year are exhibited in Tables 4 and 5 of Section N of this report.



FUNDED STATUS

The funded status of ERF is measured by the Funded Ratio and the Unfunded Actuarial Accrued Liability (UAAL). The Funded Ratio is the ratio of the actuarial value of assets available for benefits to the actuarial accrued liability (AAL) of the Fund on the valuation date. Therefore, it reflects the portion of the AAL that is covered by ERF assets. The UAAL is the difference between these two amounts.

A Funded Ratio of 100% means that the funding of ERF is precisely on schedule as of the particular valuation date. In addition, an increasing funded ratio from year-to-year may also mean that the funding of ERF is on schedule. By monitoring changes in the Funded Ratio each year, we can determine whether or not funding progress is being made.

Based on the market value of assets, the Funded Ratio of ERF of 66.6% as of December 31, 2022 and 66.6% as of December 31, 2023. Based on the actuarial value of assets, the Funded Ratio of ERF decreased from 73.3% as of December 31, 2022 and 70.1% as of December 31, 2023.

The UAAL increased from \$1,410.1 million as of December 31, 2022 to \$1,639.3 million as of December 31, 2023. Since the UAAL is positive, this implies the actuarial accrued liabilities exceed the actuarial assets of the Fund as of December 31, 2023.

The actual \$229.2 million increase in the UAAL was more than the expected increase of \$69.8 million (\$28.8 million due to negative amortization and \$41.0 million as a result of the actual contributions being less than the actuarially determined contribution rate), resulting in a net actuarial experience loss in total. The primary reasons the increase in the UAAL was more than expected were continued recognition of the unfavorable investment experience from 2022, the cost of living adjustment being greater than assumed and the larger than expected salary increases for employees.

The funded status is one of many metrics used to show trends and develop future expectations about the health of a retirement system. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.



GASB DISCLOSURE

Governmental Accounting Standards Board (GASB) Statement Numbers 67 and 68 detail the current accounting standards for ERF and the Fund's sponsor, the City of Dallas, Texas. These standards were effective with the plan year ending December 31, 2014 for the Fund and the fiscal year ending September 30, 2015 for the City. The standards created a clear distinction between the funding requirements of a pension plan and the accounting requirements. As a result, the GASB disclosure information is provided in a separate report.

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Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The Current Adjusted Total Obligation Rate shown in the Executive Summary may be considered as a minimum contribution rate that complies with Chapter 40A of the Dallas City Code. However, due to the contribution rate cap, this is less than the actuarially calculated rate. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Several generally accepted plan maturity measures are described below and are followed by a table showing a 10-year history of the measurements for ERF.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.



Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees, resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives, resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF PRESENT VALUE OF BENEFITS

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. While a robust measurement of additional risk assessment is outside the scope of the annual actuarial valuation, we have included a scenario test of a 1% increase or 1% decrease in the investment return assumption. The results of this test are shown at the end of this section.

Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions (Continued)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Ratio of the market value of assets to total payroll	6.88	7.38	9.24	8.64	8.43	7.71	8.55	8.13	8.12	9.34
Ratio of actuarial accrued liability to payroll	10.33	11.07	11.50	11.50	11.21	10.68	10.39	10.48	10.50	11.03
Ratio of actives to retirees and beneficiaries	1.00	0.96	0.94	0.96	1.00	1.05	1.11	1.10	1.11	1.09
Ratio of net cash flow to market value of assets	-5.6%	-5.9%	-4.7%	-4.9%	-4.8%	-5.1%	-4.3%	-4.4%	-4.5%	-4.2%
Duration of the actuarial present value of benefits*	12.52	12.47	12.54	12.69	12.37	NA	NA	NA	NA	NA

*Duration measure not available prior to 2019

Impact on Funding Metrics of Investment Return Assumption +/- 1%

Cost Item	Investment Return Assumption		
	6.25%	7.25%	8.25%
Normal Cost % (excluding admin expenses)	22.94%	18.58%	15.34%
UAAL (\$ in millions)	\$2,273.8	\$1,639.3	\$1,107.0
30-year funding rate (employee + City)	43.91%	35.96%	28.74%
Funded Ratio	62.8%	70.1%	77.6%
Funding Period	Infinite	51 years	34 years

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDRM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:



“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 4.80%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Valuation Accrued Liability	LDROM
\$5,483,251,000	\$7,279,757,000

Again, the difference between the two measures, or \$1,796,506,000, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 4.80% Intermediate FTSE Pension Discount Curve as of December 31, 2023. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

CLOSING COMMENTS

The unfunded actuarial accrued liability of the Fund has increased by more than expected due to unfavorable experience from both the investments and liabilities.

The calculated contribution rate necessary to pay the Fund's normal cost and amortize the UAAL over 30 years is 35.96% of pay. When the debt service payment on the Pension Obligation Bonds is considered, the total contribution rate is 44.20% of payroll. However, Chapter 40A of the Dallas City Code limits the contribution rate to 36.00% of payroll, therefore, the total rate to be contributed by the employees and the City for fiscal year 2025 will be 36.00% of pay.

Based on the current benefit and contribution provisions of the Fund, and assuming the actuarial assumptions are exactly met (including a 7.25% return on the actuarial value of assets), ERF is expected to be fully funded in approximately 51 years.

Given this calculated funding period and the risk the financial condition of ERF will continue to deteriorate, we recommend the ERF continue to have discussions with the City about ways to improve the sustainability of the Fund. Improvements to the Fund's sustainability includes increased contributions as well as a possible review of the benefits provided.

ACTUARIAL TABLES

Table Number	Content of Tables	Page
1	Summary of Actuarial Values	19
2	Demonstration of Actuarially Required Contribution Rate for FY 2025	20
3	Information for City Ordinance 25695	21
4	Net Assets Available for Benefits	25
5	Change in Assets Available for Benefits	26
6	Development of Actuarial Value of Assets	27
7	Historical Investment Performance	28
8	Analysis of Change in Unfunded Actuarial Accrued Liability	29
9a	Investment Experience (Gain) or Loss	30
9b	Analysis of Actuarial (Gains) and/or Losses for 2023	31
10	Schedule of Funding Status	32
11	Summary of Data Characteristics	33
12	Distribution of Active Members and Payroll by Age and Years of Service	34
13	Distribution of Benefit Recipients	35
14a	Schedule of Active Member Valuation Data	36
14b	Schedule of Retirees and Beneficiaries Added to and Removed from Rolls	37
14c	Solvency Test	38



Summary of Actuarial Values As of December 31, 2023

	Entry Age Actuarial Values			
	APV* of Projected Benefits	Actuarial Accrued Liability (AAL)	Normal Cost \$	Normal Cost % of Pay**
1 Active Members				
a. Retirement	\$ 2,037,004	\$ 1,532,641	\$ 69,833	13.40%
b. Death	21,676	12,208	1,250	0.24%
c. Disability	14,270	5,184	1,223	0.23%
d. Termination	167,576	(7,227)	22,902	4.40%
e. Health Subsidy	37,061	28,559	1,643	0.31%
Total	\$ 2,277,587	\$ 1,571,365	\$ 96,851	18.58%
2 Benefit Recipients	3,758,969	3,758,969		
3 Other Inactive	152,917	152,917		
4 Total Actuarial Values of Benefits	\$ 6,189,473	\$ 5,483,251	\$ 96,851	18.58%
5 Actuarial Value of Assets		\$ 3,844,000		
6 Unfunded Actuarial Accrued Liability (4 - 5)		\$ 1,639,251		
7 Funding Ratio		70.10%		
8 Market Value Measurements				
UAAL on market value		\$ 1,830,307		
Funded Ratio on market value		66.62%		

* APV – Actuarial Present Value

** Percentage of expected payroll for continuing active members.



Demonstration of Actuarially Required Contribution Rate for FY 2025

Valuation as of December 31,	Actuarially Determined Total Contribution Rate	Projected Compensation for Plan Year (in \$M)	Total Contributions to Fund for Plan Year (in \$M)	Actuarial Accrued Liability (AAL \$M)	Actuarial Value of Assets (AVA \$M)	Unfunded Actuarial Accrued Liability (UAAL \$M)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2023	35.96%	\$ 530.7	\$ 190.8	\$ 5,483.3	\$ 3,844.0	\$ 1,639.3
2024	35.96%	547.1	196.7	5,603.3	3,929.4	1,673.9
2025	35.96%	565.0	203.1	5,726.1	4,019.4	1,706.8
2026	35.96%	582.8	209.6	5,842.8	4,105.8	1,737.0
2027	35.96%	600.9	216.1	5,953.7	4,189.2	1,764.5
2028	35.96%	619.3	222.7	6,059.0	4,269.9	1,789.1
2029	35.96%	638.6	229.6	6,159.9	4,349.3	1,810.6
2030	35.96%	658.2	236.7	6,256.6	4,427.9	1,828.7
2031	35.96%	678.6	244.0	6,349.8	4,506.7	1,843.1
2032	35.96%	699.5	251.5	6,440.2	4,586.9	1,853.2
2033	35.96%	720.4	259.0	6,527.3	4,668.6	1,858.7
2034	35.96%	741.9	266.8	6,612.2	4,753.0	1,859.2
2035	35.96%	764.1	274.7	6,695.3	4,841.2	1,854.2
2036	35.96%	787.1	283.0	6,776.7	4,933.5	1,843.2
2037	35.96%	810.7	291.5	6,856.9	5,031.2	1,825.7
2038	35.96%	835.1	300.3	6,936.7	5,135.6	1,801.1
2039	35.96%	860.4	309.4	7,017.2	5,248.4	1,768.8
2040	35.96%	886.8	318.9	7,099.4	5,371.3	1,728.1
2041	35.96%	914.1	328.7	7,184.3	5,506.1	1,678.2
2042	35.96%	941.9	338.7	7,272.6	5,654.4	1,618.2
2043	35.96%	970.6	349.0	7,365.3	5,818.0	1,547.3
2044	35.96%	1,000.5	359.8	7,464.0	5,999.3	1,464.7
2045	35.96%	1,031.2	370.8	7,570.5	6,201.2	1,369.3
2046	35.96%	1,062.8	382.1	7,686.1	6,426.0	1,260.1
2047	35.96%	1,095.2	393.8	7,812.2	6,676.4	1,135.8
2048	35.96%	1,128.3	405.7	7,949.8	6,954.4	995.3
2049	35.96%	1,162.2	417.9	8,099.5	7,262.2	837.3
2050	35.96%	1,196.8	430.3	8,261.9	7,601.6	660.3
2051	35.96%	1,232.6	443.2	8,437.7	7,974.8	462.9
2052	35.96%	1,269.1	456.3	8,627.1	8,383.8	243.4
2053	35.96%	1,306.5	469.8	8,830.6	8,830.6	(0.0)



Information for City Ordinance 25695

For the Fiscal Year Commencing October 1, 2024

1 Prior Adjusted Total Obligation Rate	36.00%
2 Actuarially Required Contribution Rate*	35.96%
3 Debt Service	
a Scheduled Debt Service Payment for FY 2025	\$ 44,821,069
b Projected Payroll	\$ 543,969,644
c Pension Obligation Bond Credit Rate (a/b)	8.24%
4 Current Total Obligation Rate (2 + 3c)	44.20%
5 Current Adjusted Total Obligation Rate	36.00%
6 Allocation of Contribution Rates Commencing October 1, 2024	
a Employee (5 x .37)	13.32%
b City (5 x .63)	22.68%

* Actuarially determined level contribution rate as demonstrated on Table 2.

** If the absolute value of the difference between the Prior Adjusted Total Obligation Rate (PATOR) and the Current Total Obligation Rate (CTOR) is less than or equal to 3.0% then:

Current Adjusted Total Obligation Rate (CATOR) = PATOR

otherwise:

1) If $PATOR - CTOR > 3.00\%$ then the CATOR is set equal to the greater of:

- a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
- b) 90% of the Prior Adjusted Total Obligation Rate

or

2) If $PATOR - CTOR < -3.00\%$ then the CATOR is set equal to the lesser of:

- a) the average of the Prior Adjusted Total Obligation Rate and the Current Total Obligation Rate; or
- b) 110% of the Prior Adjusted Total Obligation Rate

Additionally, the CATOR cannot exceed 36.00%.



Excerpts from City Ordinance 25695

ACTUARIALLY REQUIRED CONTRIBUTION RATE – means, for any fiscal year, a rate of contribution to the fund, expressed as a percentage of members’ projected wages for such fiscal year, which is the sum of the following as determined in the actuarial valuation report for the preceding plan year:

- (A) the actuarial present value of the pension plan benefits and expenses that are allocated to a valuation period by the actuarial cost method; and
- (B) the contribution that will amortize the difference between the actuarial accrued liability of the fund and the actuarial value of the assets of the fund over the period of years required by generally accepted accounting principles.

CITY CONTRIBUTIONS – means, for each pay period ending during a transition year, the city shall contribute to the retirement fund an amount equal to:

- (A) 63% times the current total obligation rate for that fiscal year times the members’ wages for the pay period, minus
- (B) The pension obligation bond credit rate for that fiscal year times the members’ wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the city shall contribute to the retirement fund an amount equal to:

- (C) 63% times the current adjusted total obligation rate for that fiscal year times the members’ wages for the pay period, minus
- (D) The pension obligation bond credit rate for that fiscal year times the members’ wages for the pay period.

EMPLOYEE CONTRIBUTIONS – means, for each pay period ending during a transition year, each member shall contribute to the retirement fund an amount equal to:

- (A) 37% times the current total obligation rate for that fiscal year times the member’s wages for the pay period;

and, for each pay period ending during each fiscal year, except for a transition year, the member shall contribute to the retirement fund an amount equal to:

- (B) 37% times the current adjusted total obligation rate for that fiscal year times the member’s wages for the pay period.

CURRENT ADJUSTED TOTAL OBLIGATION RATE – means, for any fiscal year, the rate determined by the board as follows, using whichever formula is applicable:

(A) If the current total obligation rate minus the prior adjusted total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the lesser of:

- (i) the prior adjusted total obligation rate plus one-half times the difference of the current total obligation rate minus the prior adjusted total obligation rate; or
- (ii) 110 percent times the prior adjusted total obligation rate; or
- (iii) 36 percent.

(B) If the difference between the current total obligation rate and the prior adjusted total obligation rate is less than three, then the current adjusted total obligation rate for such fiscal year is equal to the prior adjusted total obligation rate.

(C) If the prior adjusted total obligation rate minus the current total obligation rate is greater than three, then the current adjusted total obligation rate for such fiscal year is equal to the greater of:

- (i) the prior adjusted total obligation rate minus one-half times the difference of the prior adjusted total obligation rate minus the current total obligation rate; or
- (ii) 90 percent times the prior adjusted total obligation rate.

CURRENT TOTAL OBLIGATION RATE – means, for any fiscal year, the rate adopted by the board that is equal to the sum of the pension obligation bond credit rate for such fiscal year plus the actuarially required contribution rate for such fiscal year.

PENSION OBLIGATION BOND CREDIT RATE – means, for any fiscal year, the rate adopted by the board that is a percentage calculated by dividing:

- (A) the debt service due during such fiscal year on any pension obligation bonds, the proceeds of which have been deposited in the fund, by:
- (B) the total members' projected wages for such fiscal year, as reported in the relevant actuarial valuation report.

PRIOR ADJUSTED TOTAL OBLIGATION RATE – means:

- (A) for the fiscal year commencing October 1, 2006, the current total obligation rate that was effective for the prior fiscal year; and
- (B) for each fiscal year commencing on or after October 1, 2007, the current adjusted total obligation rate that was effective for the prior fiscal year.



PROJECTED PAYROLL – means the covered payroll for the valuation proceeding the fiscal year multiplied by the payroll growth assumption.

TRANSITION YEAR – means each of the following:

- (A) the first fiscal year in which debt service payments related to pension obligation bonds are due from the city;
- (B) the first fiscal year in which no debt service payments related to pension obligation bonds are due from the city; and
- (C) the fiscal year beginning October 1, 2005.

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Net Assets Available for Benefits

	December 31, 2022	December 31, 2023
1 Assets		
a. Cash & Short-Term	\$ 458,347	\$ 339,075
2 Receivables		
a. Accrued Investment Income	\$ 16,036	\$ 18,942
b. Securities Sold	18,065	14,218
c. Employer Contribution	785	926
d. Employee Contribution	740	808
e. Pending Contracts	278,970	585,984
	\$ 314,596	\$ 620,878
3 Investments		
a. Index Funds	\$ 93,082	\$ 116,640
b. Fixed Income	894,597	1,048,551
c. Equities	1,710,927	1,684,944
d. Real Estate	346,345	340,635
e. Private Equity	381,814	374,443
	\$ 3,426,765	\$ 3,565,213
4 Total Assets	\$ 4,199,708	\$ 4,525,166
5 Liabilities		
a. Accounts Payable	\$ 10,872	\$ 7,273
b. Investment Transactions	672,556	864,949
	\$ 683,428	\$ 872,222
6 Net Assets Available For Benefits	\$ 3,516,280	\$ 3,652,944



Change in Assets Available for Benefits Fiscal Year Ending December 31, 2023

(\$ in 000s)

	2022	2023
1 Assets Available at Beginning of Year	\$ 4,093,215	\$ 3,516,280
Adjustment *	0	0
	<u>\$ 4,093,215</u>	<u>\$ 3,516,280</u>
2 Revenues		
a. Employer Contributions	\$ 67,288	\$ 73,987
b. Employee Contributions	63,427	70,025
c. Investment Income	114,233	131,660
d. Investment Expense	(19,621)	(17,324)
e. Realized and Unrealized Gains (Losses)	(464,890)	227,047
f. Other (Security Lending)	1,349	1,589
Total Revenues	<u>\$ (238,214)</u>	<u>\$ 486,984</u>
3 Expenses		
a. Benefits	\$ 317,528	\$ 328,296
b. Refunds	12,158	12,601
c. Administrative Expenses	8,209	9,423
d. Depreciation Expense	826	-
Total Expense	<u>\$ 338,721</u>	<u>\$ 350,320</u>
4 Assets Available at End of Year (1 + 2 - 3)	<u><u>\$ 3,516,280</u></u>	<u><u>\$ 3,652,944</u></u>

* Change due to difference between unaudited asset value used for prior valuation and audited asset value reported the following year.



Development of Actuarial Value of Assets

Development of Actuarial Value of Assets (\$ in 000s)

		December 31, 2023				
1.	Market value of assets at beginning of year	\$ 3,516,280				
2.	External cashflow					
	a. Contributions	\$ 144,012				
	b. Benefits and refunds paid	(340,897)				
	c. Administrative and miscellaneous expenses	(9,423)				
	d. Subtotal	(206,308)				
3.	Assumed investment return rate for fiscal year	7.25%				
4.	Assumed investment income for fiscal year	\$ 247,582				
5.	Expected Market Value at end of year (1+ 2 + 4)	\$ 3,557,554				
6.	Market value of assets at end of year	\$ 3,652,944				
7.	Difference (6 - 5)	\$ 95,390				
8.	Development of amounts to be recognized as of December 31, 2023:					
	Remaining					
Fiscal	Deferrals of Excess					
Year	(Shortfall) of	Offsetting of				
End	Investment Income	Gains/(Losses)				
	(1)	(2)				
		Net Deferrals				
		Remaining				
		(3) = (1) + (2)				
		Years				
		Remaining				
		(4)				
		Recognized for				
		this valuation				
		(5) = (3) / (4)				
		Remaining after				
		this valuation				
		(6) = (3) - (5)				
2019	\$ 0	\$ 0	\$ 0	1	\$ 0	\$ 0
2020	0	0	0	2	0	0
2021	0	0	0	3	0	0
2022	(350,132)	95,390	(254,742)	4	(63,686)	(191,056)
2023	95,390	(95,390)	0	5	0	0
Total	\$ (254,742)	\$ 0	\$ (254,742)		\$ (63,686)	\$ (191,056)
9.	Final actuarial value of plan net assets, end of year (Item 6 - Item 8, Column 6)	\$ 3,844,000				
10.	Ratio of actuarial value to market value	105.2%				

Notes: Remaining deferrals in Column (1) for prior years are from last year's report Table 6, column 6. The number in the current year is Item 7, above. Column 2 is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type.



Historical Investment Performance

Dollar Weighted Basis Net of Investment Expenses

<u>Calendar Year</u>	<u>On Market Value</u>	<u>On Actuarial Value</u>
2004	15.22%	9.38%
2005	7.93%	13.71%
2006	16.90%	13.03%
2007	3.56%	9.58%
2008	-31.31%	-3.76%
2009	30.35%	6.79%
2010	15.77%	4.30%
2011	0.86%	1.15%
2012	14.29%	2.82%
2013	16.75%	10.65%
2014	6.14%	10.29%
2015	-1.83%	7.02%
2016	8.65%	8.51%
2017*	12.34%	8.99%
2018	-5.15%	5.23%
2019	17.30%	6.74%
2020	6.42%	6.81%
2021	16.01%	8.68%
2022	-9.25%	5.36%
2023	10.05%	4.89%
5-year average ending in 2023	7.66%	6.49%
10-year average ending in 2023	5.72%	7.24%
20-year average ending in 2023	7.60%	6.70%

*The yield on the actuarial value of assets for 2017 includes the impact of the method change for the Actuarial Value of Assets.



Analysis of Change in Unfunded Actuarial Accrued Liability For the Year Ending December 31, 2023

(\$ in 000s)

1. UAAL as of December 31, 2022	\$ 1,410,057
2. Expected Change in UAAL during 2023	
a. Expected Amortization Payment for CY 2023 based on the Actuarially Determined Contribution Rate	(70,882)
b. Interest adjustments on 1 & 2a to Year End @ 7.25%	99,705
c. Expected change in UAAL	28,823
3. Increase/(Decrease) in UAAL Due to Difference Between the Actuarially Determined Contribution Rate and Actual Contribution Rate	41,028
4. Net Actuarial Experience (Gains) & Losses	159,343
5. Assumption and Method Changes	0
6. UAAL as of December 31, 2023	\$ 1,639,251

Investment Experience (Gain) or Loss

(\$ in 000s)

Item	Valuation as of December 31, 2023
1. Actuarial assets, beginning of year	\$ 3,866,412
2. Contributions	144,012
3. Benefits and refunds paid with administrative expenses	(350,320)
4. Assumed net investment income at 7.25% on	
a. Beginning of year assets	280,315
b. Contributions	5,129
c. Benefits and refunds paid with administrative expenses	(12,477)
d. Total	\$ 272,967
5. Expected actuarial assets, end of year (Sum of Items 1 through 4)	3,933,071
6. Actual actuarial assets, end of year	3,844,000
7. Asset experience (gain)/loss for year	89,071

Analysis of Actuarial (Gains) and/or Losses for 2023

(\$ in 000s)

	2023
Investment Return	\$ 89,071
Salary Increase	52,299
Age and Service Retirement	(1,511)
General Employment Termination	(4,055)
Disability Incidence	(236)
Active Mortality	(93)
Benefit Recipient Mortality	(10,464)
Actual vs. Expected Cost of Living Adjustment (COLA)*	45,368
Other	(11,036)
Total Actuarial (Gain)/ Loss	\$ 159,343

* Actual COLA of 4.43% for Tier A and 3.00% for Tier B versus expected COLAs of 2.50% for Tier A and 2.20% for Tier B.

Schedule of Funding Status

(\$ in 000s)

End of Year	Actuarial Value of Assets (a)	AAL (b)	UAAL (b-a)	Funding Ratio (a/b)	Payroll* (c)	UAAL as % of Payroll ((b-a)/c)
2004	2,482,082	2,488,270	6,188	99.75%	331,201	1.87%
2005	2,739,269	2,606,173	(133,096)	105.11%	332,446	-40.04%
2006	2,998,099	2,761,404	(236,695)	108.57%	344,997	-68.61%
2007	3,183,260	2,915,164	(268,096)	109.20%	370,150	-72.43%
2008	2,957,506	3,075,385	117,879	96.17%	389,362	30.27%
2009	3,031,652	3,192,120	160,468	94.97%	375,164	42.77%
2010	3,027,439	3,282,126	254,687	92.24%	332,045	76.70%
2011	2,916,746	3,391,652	474,906	86.00%	318,972	148.89%
2012	2,846,124	3,518,356	672,232	80.89%	340,452	197.45%
2013	3,074,284	3,610,845	362,477	85.14%	352,486	102.83%
2014	3,241,053	4,004,055	763,002	80.94%	374,002	204.01%
2015	3,320,387	4,129,133	808,746	80.41%	404,981	199.70%
2016	3,451,463	4,291,802	840,339	80.42%	420,693	199.75%
2017	3,601,612	4,377,844	776,232	82.27%	432,854	179.33%
2018	3,620,319	4,526,996	906,677	79.97%	435,375	208.25%
2019	3,682,959	4,863,325	1,180,366	75.73%	444,737	265.41%
2020	3,747,078	4,932,886	1,185,808	75.96%	439,544	269.78%
2021	3,872,601	5,094,362	1,221,761	76.02%	453,934	269.15%
2022	3,866,412	5,276,469	1,410,057	73.28%	488,516	288.64%
2023	3,844,000	5,483,251	1,639,251	70.10%	543,970	301.35%

* Projected to following year.



Summary of Data Characteristics

As of December 31,	2021	2022	2023
Active Members			
Number	7,175	7,464	7,894
Total Annualized Earnings of Members as of 12/31 (000s)	\$ 442,863	\$ 476,601	\$ 530,702
Average Earnings	61,723	63,853	67,229
Benefit Recipients			
Number	7,655	7,766	7,914
Total Annual Retirement Income (000s)	\$ 294,130	\$ 309,799	\$ 327,190
Total Annual Health Supplement (000s)	11,077	11,234	11,440
Average Total Annual Benefit	39,870	41,338	42,789
Inactive Members*			
Deferred Vested	974	1,042	1,095
Deferred Nonvested	1,007	1,150	1,012
Total	1,981	2,192	2,107

* The number of inactives on 12/31/2023 includes 1,095 members who have applied for a deferred pension and 1,012 other members who have terminated and still have contribution balances in the Fund.

Distribution of Active Members and Payroll by Age and Years of Service

Age	Years of Service								Totals
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30 & Over	
Under 20	13								13
	\$531,002								\$531,002
20-24	181	121							302
	\$8,122,438	\$6,339,316							\$14,461,754
25-29	270	369	75						714
	\$13,185,283	\$20,051,313	\$4,547,084						\$37,783,680
30-34	229	377	223	38					867
	\$12,231,255	\$22,277,962	\$14,258,962	\$2,742,994					\$51,511,173
35-39	162	335	225	110	58				890
	\$9,064,054	\$21,398,127	\$15,408,573	\$8,269,330	\$4,483,010				\$58,623,094
40-44	161	271	203	127	134	26	3		925
	\$9,009,653	\$17,933,198	\$14,886,100	\$9,809,239	\$10,820,165	\$2,237,859	222,851		\$64,919,065
45-49	124	247	219	126	163	106	50	1	1,036
	\$6,647,336	\$16,000,945	\$15,815,463	\$10,343,277	\$12,527,696	\$9,003,262	\$3,878,477	\$109,632	\$74,326,088
50-54	113	242	189	106	159	125	95	19	1,048
	\$6,047,377	\$15,972,010	\$14,368,091	\$8,151,533	\$12,688,896	\$9,234,718	\$7,300,009	\$1,526,505	\$75,289,139
55-59	78	199	198	110	193	106	65	27	976
	\$4,275,784	\$13,557,054	\$13,559,331	\$8,125,906	\$15,568,673	\$8,855,191	\$5,509,334	\$2,244,123	\$71,695,396
60-64	56	139	165	86	154	56	48	24	728
	\$3,211,508	\$9,696,280	\$11,648,108	\$5,766,389	\$11,320,272	\$4,440,812	\$3,931,896	\$2,212,373	\$52,227,638
65&Over	17	52	75	58	74	50	32	37	395
	\$952,177	\$3,376,875	\$5,161,338	\$4,685,520	\$5,627,032	\$3,989,947	\$2,458,299	\$3,082,875	\$29,334,063
Totals	1,404	2,352	1,572	761	935	469	293	108	7,894
	\$73,277,867	\$146,603,080	\$109,653,050	\$57,894,188	\$73,035,744	\$37,761,789	\$23,300,866	\$9,175,508	\$530,702,092



Distribution of Benefit Recipients as of December 31, 2023

Age	Number	Annual Benefit*	Annual Average Benefit*
Under 50	31	\$ 613,682	\$ 19,796
50-54	131	6,186,722	47,227
55-59	528	27,447,996	51,985
60-64	1,296	56,144,796	43,322
65-69	1,657	70,298,468	42,425
70-74	1,719	72,644,100	42,260
75-79	1,293	53,942,932	41,719
80-84	706	23,552,340	33,360
85-89	344	10,779,264	31,335
90 & Over	209	5,579,510	26,696
Total	7,914	\$ 327,189,809	\$ 41,343

* Does not include Health Benefit Supplement.

Schedule of Active Member Valuation Data

Year Ending December 31,	Active Participants	Percent Change	Covered Payroll	Percent Change	Average Salary	Percent Change
2007	8,117	-	\$ 359,369,000	-	\$ 44,274	-
2008	8,371	3.1%	378,021,000	5.2%	45,158	2.0%
2009	7,654	-8.6%	364,237,000	-3.6%	47,588	5.4%
2010	7,034	-8.1%	322,374,000	-11.5%	45,831	-3.7%
2011	6,745	-4.1%	309,682,000	-3.9%	45,913	0.2%
2012	6,864	1.8%	330,536,000	6.7%	48,155	4.9%
2013	6,993	1.9%	342,219,000	3.5%	48,937	1.6%
2014	7,180	2.7%	363,109,000	6.1%	50,572	3.3%
2015	7,477	4.1%	393,186,000	8.3%	52,586	4.0%
2016	7,619	1.9%	409,433,000	4.1%	53,738	2.2%
2017	7,838	2.9%	421,269,000	2.9%	53,747	0.0%
2018	7,584	-3.2%	423,723,000	0.6%	55,871	4.0%
2019	7,427	-2.1%	433,890,000	2.4%	58,421	4.6%
2020	7,244	-2.5%	428,824,000	-1.2%	59,197	1.3%
2021	7,175	-1.0%	442,863,000	3.3%	61,723	4.3%
2022	7,464	4.0%	476,601,000	7.6%	63,853	3.5%
2023	7,894	5.8%	530,702,000	11.4%	67,229	5.3%



Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Year Ending December 31,	Added to Rolls		Removed from Rolls		Rolls-End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances		
2007	239	\$ 7,250,468	205	\$ 4,551,742	5,304	\$ 142,267,609	-	\$ 26,823
2008	383	8,905,680	211	4,684,964	5,476	154,692,846	8.7%	28,249
2009	446	9,268,740	216	4,795,982	5,706	165,826,328	7.2%	29,062
2010	508	12,798,268	221	4,907,000	5,993	179,730,384	8.4%	29,990
2011	404	10,012,165	198	4,396,317	6,199	193,851,170	7.9%	31,271
2012	325	9,795,464	204	4,529,539	6,320	202,120,582	4.3%	31,981
2013	324	11,246,955	197	4,327,990	6,447	210,027,512	3.9%	32,578
2014	370	12,415,771	219	4,821,713	6,598	219,150,070	4.3%	33,215
2015	476	13,777,204	318	6,847,464	6,756	226,019,290	3.1%	33,455
2016	384	12,746,549	237	5,562,549	6,903	237,992,528	5.3%	34,477
2017	383	9,893,931	244	6,375,641	7,042	244,768,143	2.8%	34,758
2018	402	14,905,595	220	5,976,286	7,224	258,085,328	5.4%	35,726
2019	478	17,715,050	297	8,368,302	7,405	269,263,106	4.3%	36,362
2020	455	28,634,730	308	11,614,128	7,552	277,428,698	3.0%	36,736
2021	424	16,109,924	321	8,655,976	7,655	294,130,270	6.0%	38,423
2022	384	14,364,767	273	8,500,245	7,766	309,799,134	5.3%	39,892
2023	404	15,039,143	256	8,098,656	7,914	327,189,809	5.6%	41,343



Solvency Test

Valuation Date	Aggregated Accrued Liabilities for			Reported Assets	Portions of Accrued Liabilities Covered by Reported Assets		
	Active and Inactive Members Contributions	Retirees and Beneficiaries	Active and Inactive Members (Employer Financed Portion)		(5)/(2)	[(5)-(2)]/3	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
December 31, 2007	\$ 206,090	\$ 1,591,731	\$ 1,117,343	\$ 3,183,260	100.0%	100.0%	100.0%
December 31, 2008	221,667	1,707,599	1,146,119	2,957,506	100.0%	100.0%	89.7%
December 31, 2009	228,666	1,834,491	1,128,963	3,031,652	100.0%	100.0%	85.8%
December 31, 2010	232,727	2,041,322	1,008,077	3,027,439	100.0%	100.0%	74.7%
December 31, 2011	240,821	2,181,731	969,100	2,916,746	100.0%	100.0%	51.0%
December 31, 2012	257,716	2,250,533	1,010,107	2,846,124	100.0%	100.0%	33.4%
December 31, 2013	278,892	2,319,424	1,012,529	3,074,284	100.0%	100.0%	47.0%
December 31, 2014	301,567	2,578,071	1,124,417	3,241,053	100.0%	100.0%	32.1%
December 31, 2015	325,607	2,650,638	1,152,888	3,320,387	100.0%	100.0%	29.9%
December 31, 2016	350,646	2,770,533	1,170,623	3,451,463	100.0%	100.0%	28.2%
December 31, 2017	373,193	2,854,818	1,149,833	3,601,612	100.0%	100.0%	32.5%
December 31, 2018	392,004	2,989,597	1,145,395	3,620,319	100.0%	100.0%	20.8%
December 31, 2019	408,984	3,228,576	1,225,766	3,682,959	100.0%	100.0%	3.7%
December 31, 2020	430,411	3,312,228	1,190,247	3,747,078	100.0%	100.0%	0.4%
December 31, 2021	448,149	3,456,659	1,189,554	3,872,601	100.0%	99.1%	0.0%
December 31, 2022	467,549	3,603,830	1,205,090	3,866,412	100.0%	94.3%	0.0%
December 31, 2023	490,401	3,758,969	1,233,881	3,844,000	100.0%	89.2%	0.0%



EXPERIENCE TABLES

Table Number	Content of Tables	Page
15	Analysis of Pay Experience (Valuation Pay)	40
16a	Analysis of Retirement Experience – Each Age	41
16b	Analysis of Retirement Experience – Age Groups	42
17	Analysis of Turnover Experience	43
18	Analysis of Active Mortality Experience	44
19	Analysis of Disability Experience	45
20	Analysis of Retiree Mortality Experience	46

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**Pay Experience for Employees who are Active at
Beginning and End of Year
Valuation Pay Analysis
Analyzed by Years of Service**

Service Beginning of Year	Experience for 2023			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	2,167	\$ 125,952,594	\$ 133,911,334	106%
5-9	1,632	107,232,638	112,642,488	105%
10-14	832	60,485,012	63,092,682	104%
15-19	912	67,846,736	70,752,867	104%
20-24	477	36,969,925	38,189,786	103%
25-29	346	27,386,177	28,079,642	103%
30 & Over	121	9,936,744	10,138,345	102%
Total	6,487	\$ 435,809,826	\$ 456,807,144	105%
Over 10 Years	2,688	\$ 202,624,594	\$ 210,253,322	104%

Service Beginning of Year	Experience for 2020-2023			
	Number	Expected Pay	Actual Pay	Ratio A/E
Under 5	7,594	\$ 424,110,637	\$ 438,604,014	103%
5-9	6,720	413,282,858	421,643,673	102%
10-14	3,514	239,619,785	242,640,709	101%
15-19	3,438	243,996,803	247,686,994	102%
20-24	2,326	165,625,696	166,742,830	101%
25-29	1,291	98,826,398	99,238,392	100%
30 & Over	517	43,231,924	42,994,523	99%
Total	25,400	\$ 1,628,694,101	\$ 1,659,551,135	102%
Over 10 Years	11,086	\$ 791,300,606	\$ 799,303,448	101%



Analysis of Retirement Experience

Each Age

Age	2023 Retirement			2020-2023 Retirement		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
46	-	-	N/A	-	-	N/A
47	-	-	N/A	-	-	N/A
48	-	-	N/A	-	-	N/A
49	-	0.10	0%	1	0.80	125%
50	2	2.45	82%	15	19.10	79%
51	3	8.35	36%	17	33.15	51%
52	13	12.10	107%	36	37.90	95%
53	6	8.00	75%	35	43.40	81%
54	4	8.85	45%	32	39.65	81%
55	10	11.20	89%	49	44.95	109%
56	14	13.25	106%	47	49.50	95%
57	11	10.60	104%	60	52.95	113%
58	12	10.45	115%	45	45.05	100%
59	7	10.45	67%	42	50.20	84%
60	30	19.59	153%	109	79.14	138%
61	15	16.03	94%	62	66.78	93%
62	13	16.18	80%	62	65.21	95%
63	16	12.69	126%	53	56.93	93%
64	13	13.10	99%	39	59.11	66%
65	21	16.02	131%	69	67.11	103%
66	17	14.64	116%	59	60.64	97%
67	17	15.56	109%	49	50.22	98%
68	8	10.76	74%	33	33.80	98%
69	6	5.70	105%	21	22.36	94%
70 & Over	22	94.00	23%	80	355.00	23%
Total	260	330.07	79%	1,015	1,332.95	76%
Total Under 70	238	236.07	101%	935	977.95	96%



Analysis of Retirement Experience

Age Groups

Age Group	2023 Retirements			2020-2023 Retirements		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
Under 55	28	39.85	70%	136	174.00	78%
55-59	54	55.95	97%	243	242.65	100%
60-64	87	77.59	112%	325	327.17	99%
65-69	69	62.68	110%	231	234.13	99%
70 & Over	22	94.00	23%	80	355.00	23%
Total	260	330.07	79%	1,015	1,332.95	76%
Total Under 70	238	236.07	101%	935	977.95	96%

Analysis of Turnover Experience

Years of Service	2023 Quits			2020-2023 Quits		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
0-4	463	444.67	104%	1,857	1,545.34	120%
5-9	167	121.13	138%	683	502.64	136%
10-14	38	27.23	140%	164	109.08	150%
15-19	24	13.21	182%	81	52.06	156%
20-24	5	4.01	125%	26	19.22	135%
25-29	1	0.53	187%	4	1.97	203%
Total	698	610.79	114%	2,815	2,230.30	126%

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Analysis of Active Mortality Experience

Age	2023 Deaths			2020-2023 Deaths		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	1	0.04	2752%	2	0.11	1749%
25-29	0	0.10	0%	2	0.41	485%
30-34	0	0.21	0%	2	0.83	242%
35-39	1	0.31	320%	6	1.22	494%
40-44	0	0.48	0%	2	1.97	102%
45-49	2	0.84	239%	7	3.40	206%
50-54	3	1.34	224%	13	5.63	231%
55-59	3	1.87	160%	11	7.94	139%
60 and Over	6	3.60	167%	27	13.52	200%
Total	16	8.79	182%	72	35.02	206%

Analysis of Disability Experience

Age	2023 Disabilities			2020-2023 Disabilities		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
20-24	0	0.00	0%	0	0.01	0%
25-29	0	0.03	0%	0	0.10	0%
30-34	0	0.13	0%	0	0.49	0%
35-39	0	0.29	0%	0	1.12	0%
40-44	0	0.53	0%	0	2.15	0%
45-49	0	0.93	0%	0	3.75	0%
50-54	0	1.29	0%	0	5.23	0%
55-59	1	1.43	70%	1	5.82	17%
60 and Over	1	1.14	88%	1	3.84	26%
Total	2	5.77	35%	2	22.52	9%

Analysis of Retiree Mortality Experience*

Age	2023 Experience			2020-2023 Experience		
	Actual	Expected	Ratio A/E	Actual	Expected	Ratio A/E
Under 60	5	2.38	210%	17	9.55	178%
60-64	18	8.56	210%	52	32.82	158%
65-69	22	18.15	121%	98	70.78	138%
70-74	31	33.18	93%	155	120.28	129%
75-79	48	37.76	127%	146	119.30	122%
80-84	36	36.18	100%	121	113.76	106%
85-89	39	30.94	126%	120	93.17	129%
90 & over	43	44.26	97%	117	117.04	100%
Total	242	211.39	114%	826	676.70	122%

**This analysis does not include beneficiary, QDRO, or disabled deaths.*

ACTUARIAL METHODS AND ASSUMPTIONS

The most recent experience study was completed in conjunction with the December 31, 2019 actuarial valuation. Please see our experience study, dated June 2020, to see more detail of the rationale for the current assumptions. As authorized under Sec. 40A-9 of Chapter 40A, the actuarial methods and assumptions are established set by the Board of Trustees based upon recommendations from the Fund's actuary.

Entry Age Normal Method

The Entry Age Normal actuarial cost method is the actuarial valuation method used for all purposes under ERF. The concept of this method is that funding of benefits for each member should be affected as a, theoretically, level contribution (as a level percentage of pay) from entry into ERF to termination of active status.

The Normal Cost (NC) for a fiscal year under this method is determined as described in the prior paragraph for each individual member. The ERF NC for the year is the total of individual normal costs determined for each active member. The Actuarial Accrued Liability (AAL) under this method is the theoretical asset balance of the normal costs that would have accumulated to date based upon current actuarial assumptions. To the extent that the current assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability (UAAL) develops.

Actuarially Determined Contribution

The actuarially determined contribution rate is developed using an open group projection. The total contribution rate (member plus City) is the level percentage of pay needed to fund the Normal Cost for each year and pay off the UAAL over 30 years.

In the open group projection, the demographic assumptions are applied to the current active employees and any employees that are assumed to leave employment are replaced one for one with a new employee. Over time this results in the change of the employee group from mostly Tier A members to Tier B members. The projection is built to assume no gains or losses on the actuarial accrued liability or the actuarial value of assets.

In the projection, new members' pay is assumed to increase at 3.00% year over year (i.e. a new employee in 2024 is assumed to be hired at a salary that is 3.00% greater than a new employee hired in 2023). The 3.00% growth rate is equal to our wage inflation assumption of 3.00% (ultimate salary increase



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

assumption). Note that this is not an assumption that payroll will grow at 3.00% per year. Payroll could grow more slowly in the near-term due to membership demographics.

New Entrant Profile

For the purposes of determining the funding period, an open group projection is used which replaces on a one-to-one basis each active member who leaves employment with an average new hire. The average new hire is determined based on a new entrant profile, which is created from the valuation data by determining the entry age and entry pay for anyone with between one and six years of service as of the valuation date, with salaries normalized to the valuation date. A summary of the new entrant profile is shown in the table below, with 60% of the population being male. The salaries below would be applicable for the year preceding the valuation date. Future cohorts of new hires have starting salaries that are assumed to grow at the General Wage Inflation of 3.00% over the salaries of the previous year.

New Entrant Profile		
Entry Age	# of Employees	Average Salary
15-19	7	\$51,244
20-24	278	49,616
25-29	440	52,096
30-34	409	55,477
35-39	334	60,163
40-44	313	61,928
45-49	282	61,221
50-54	274	61,956
55-59	195	61,816
60-64	109	64,260
65-69	10	50,491
Total	2,651	\$57,731

Actuarial Value of Asset Method

The method for determining the actuarial value of assets in future years is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual market value and the expected market value of assets each year, and recognizes the cumulative excess return (or shortfall) at a minimum rate of 20% per year. Each year, a base is set up to reflect this difference. If the current year's base is of opposite sign to the deferred bases, then it is offset dollar for dollar against the deferred bases. Any remaining bases are then recognized over the remaining period for the base.



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Annual Rate of Investment Return: For all purposes under the Fund, the rate of investment return is assumed to be 7.25% per annum, net of investment expenses. This rate includes an annual assumed rate of inflation of 2.50%. In addition, annual cost-of-living adjustments are assumed to occur on average at the rate of 2.50% per annum for Tier A members and 2.20% for Tier B members (due to the lower maximum on cost-of-living-adjustments).

Annual Compensation Increases: Each member's compensation is assumed to increase in accordance with a table based on actual ERF experience. Sample rates follow:

<u>Years of Service</u>	<u>Merit, Promotion, Longevity</u>	<u>General</u>	<u>Total</u>
0	5.25 %	3.00 %	8.25 %
1	4.25	3.00	7.25
2	3.25	3.00	6.25
3	2.50	3.00	5.50
4	2.00	3.00	5.00
5	1.75	3.00	4.75
6	1.75	3.00	4.75
7	1.25	3.00	4.25
8	1.25	3.00	4.25
9	1.00	3.00	4.00
10	1.00	3.00	4.00
11	1.00	3.00	4.00
12	0.75	3.00	3.75
13	0.75	3.00	3.75
14	0.75	3.00	3.75
15	0.75	3.00	3.75
16	0.75	3.00	3.75
17	0.75	3.00	3.75
18	0.50	3.00	3.50
19 & Over	0.00	3.00	3.00



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality:

Disabled Lives: The gender-distinct 2019 Texas Municipal Retirees Mortality Table for males and females respectively, set forward 4 years for males and 3 years for females. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries (“Ultimate MP”) and projected from the year 2019.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

<u>Age</u>	<u>Disability Mortality Rate</u>	
	<u>Male</u>	<u>Female</u>
20	35	30
30	35	30
40	35	30
50	35	30
60	35	30
70	35	30
80	81	49
90	232	158

Other Benefit Recipients: The gender-distinct 2019 Texas Municipal Retirees Mortality Tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries (“Ultimate MP”) and projected from the year 2019.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

<u>Age</u>	<u>Mortality Rate</u>	
	<u>Male</u>	<u>Female</u>
30	0.4	0.1
40	0.8	0.3
50	2.7	1.1
60	7.2	3.4
70	19.4	10.8
80	53.7	34.4
90	151.4	110.0

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Mortality, Continued:

Active Members: The PubG-2010 Employee Mortality Table for General Employees tables are used for males and females respectively. Generational mortality improvements in accordance with the ultimate rates from the scales published through 2019 by Retirement Plans Experience Committee of the Society of Actuaries (“Ultimate MP”) and projected from the year 2010.

Sample rates as of 2023 follow (rate per 1,000), with projected mortality applied:

Age	Mortality Rate	
	Male	Female
30	0.3	0.1
40	0.6	0.3
50	1.3	0.7
60	2.8	1.6
70	6.2	4.3
80	15.2	11.7
90	129.9	101.7

10% of active deaths are assumed to be service related.

Disability: A client-specific table of disability incidence with sample rates follows (rate per 1,000):

Age	Disability Rate
30	0.1
40	0.5
50	1.2
60	2.2

20% of disabilities are assumed to be service related. There is a 0% assumption of disability for members who have over 10 years of service and are eligible for retirement.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Retirement: Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier A:

Age	Male		Female	
	First Year Eligible	Thereafter	First Year Eligible	Thereafter
48-49	100	100	100	100
50	550	550	450	350
51	500	450	400	350
52	500	300	400	300
53	400	300	350	300
54	350	250	350	200
55	300	250	350	250
56	300	250	350	250
57	300	250	350	250
58-59	300	250	250	200
	Service < 18 yrs.	Service 18 yrs.+	Service < 18 yrs.	Service 18 yrs. +
60	80	230	90	200
61	90	230	90	180
62	100	230	90	200
63	100	230	150	150
64	150	230	120	130
65	150	230	120	300
66	200	230	150	300
67	200	230	250	300
68	200	230	150	300
69	200	230	150	300
70	1,000	1,000	1,000	1,000



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Retirement, Continued:

Upon eligibility, active members are assumed to retire as follows (rate per 1,000):

Tier B:

Age	Male		Female	
	Service < 40 yrs.	Service 40 yrs. +	Service < 40 yrs.	Service 40 yrs. +
<55	10	350	10	350
55-56	20	350	20	350
57-58	30	350	30	350
59-60	40	350	40	350
61-62	50	350	50	350
63-64	60	350	60	350
65	180	600	200	450
66	200	250	250	250
67	200	250	250	250
68	200	250	150	250
69	200	250	150	250
70	1,000	1,000	1,000	1,000

*For service < 40 yrs, rates shown are for those who met the rule of 80.

Retirement of Deferred Vested Members:

All deferred vested members are assumed to commence payment at their normal retirement age, which is age 60 for Tier A members and age 65 for Tier B members.

ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

General Turnover: A table of termination rates based on ERF experience as shown below.

Years of Service	Terminations (per 1,000)	
	Male	Female
0	228	200
1	180	165
2	144	150
3	110	120
4	90	95
5	75	90
6	67	80
7	60	65
8	51	48
9	43	48
10	33	45
11	33	32
12	30	30
13	30	30
14	22	20
15	22	14
16	19	14
17	19	14
18	19	14
19	19	14
20	12	14
21	12	14
22	12	6
23	12	6
24	12	6
25	12	6
26 & Over	5	6

There is 0% assumption of termination for members eligible for retirement.

Refunds of Contributions: Members are assumed to choose the most valuable termination benefit.



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Operational Expenses: The amount of estimated administrative expenses expected in the next year is assumed to be equal to the prior year's expenses and is incorporated in the Normal Cost.

Marital Status: 75% of active male members and 50% of active female employees are assumed to be married.

Vacation Leave Conversions: Members with 20 or more years of service are assumed to convert unused vacation leave to 1.5 months of service. Other members are assumed to convert unused vacation leave to 1 month of service. No vacation leave conversion is assumed for disability retirement.

Spouse Age: The female spouse is assumed to be 3 years younger than the male spouse.

Payroll Growth Rate: Used to estimate projected payroll for the following fiscal year only. Assumed to be equal to the inflation rate of 2.50%. This assumption is not used as part of the open group projection used to calculate the Actuarially Determined Contribution Rate.

Member's Pay: In determining the member's valuation salary, the greater of the prior calendar year's gross pay and the member's rate of compensation is used.

Form of Payment: For Tier A it is assumed that 60% of married active male members and 84% of married active female employees will elect a Joint & 50% Survivor form of payment. Taking into consideration the marriage assumption and the inherent subsidy in the ERF's Joint & 100% Survivor factors, the male employees are valued with Joint and 28.0% Survivor annuities and the female employees are valued with Joint and 19.5% Survivor annuities. It is also assumed that 100% of Tier B employees will elect the normal form of payment under Tier B.

Data Adjustments: Certain records are missing spousal information. For these records we use the marital status assumption and spousal age difference assumption to value these records. No other adjustments are made to the data.

Actuarial Equivalence Assumptions: for form of payment conversion and Tier B early retirement factors are based on the following assumptions:

- a. Interest Rate of 8.00%.
- b. Mortality: Unisex blend (60% male and 40% female) of the following assumptions for males and females. 109% of the RP-2000 Combined Healthy Table for males with Blue Collar adjustment projected to 2026 using improvement scale BB for males. 103% of the RP-2000 Combined Healthy Table for females with Blue Collar adjustment projected to 2026 using improvement scale BB for females.
- c. Cost-of-living-adjustments (COLA): a 3.00% COLA assumption for Tier A members and a 2.50% COLA assumption for Tier B members.



ACTUARIAL METHODS AND ASSUMPTIONS (cont.)

Actuarial Model: This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Changes in Methods and Assumptions Since Prior Valuation: None.

DRAFT

SUMMARY OF BENEFIT PROVISIONS

Employees' Retirement Fund of the City of Dallas As of December 31, 2023

Membership

An employee becomes a member upon permanent employment and contributes to the Fund.

Tier A

A person who was employed by the City prior to January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service was not cancelled by withdrawal or forfeiture or was reinstated.

Tier B

A person who was employed by the City on or after January 1, 2017, or who was re-employed by the City on or after January 1, 2017 and whose pre January 1, 2017 credited service has been cancelled by withdrawal or forfeiture.

Contributions

Member: 37% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

City: 63% of the current adjusted total obligation rate. New rates effective October 1 after the valuation date.

Definitions

Final Average Salary:

Tier A

Average monthly salary over the member's highest three years (or 36 months) of service.

Tier B

Average monthly salary over the member's highest five years (or 60 months) of service.

Credited Service: Length of time as an employee of the City of Dallas and while making contributions to the Fund.



SUMMARY OF BENEFIT PROVISIONS (cont.)

Retirement Pension

Eligibility:

Tier A

- a. Attainment of age 60; or
- b. Attainment of age 55 (if credited service began before May 9, 1972); or
- c. At any age after completion of 30 years of credited service with a reduced benefit before age 50; or
- d. Attainment of age 50, if the sum of an active member's age and credited service is at least equal to 78.

Tier B

- a. Attainment of age 65 and 5 years of service; or
- b. At any age after completion of 40 years of credited service; or
- c. At any age if the sum of an active member's age and credited service is at least equal to 80 (under this eligibility the member's pension will be actuarially reduced for each year prior to the age of 65 that the member retires).
- d. Restricted Prior Service Credit included for eligibility (if approved).

Retirement Benefits:

Tier A

The retirement benefit equals 2-3/4% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 36.3636 years plus a monthly \$125 health supplement (prorated for service less than 5 years).

Tier B

The retirement benefit equals 2-1/2% multiplied by average monthly earnings multiplied by credited service limited to a maximum of 40 years (no monthly health supplement).

Form of Payment:

Tier A

An unreduced pension benefit under a joint and one-half survivor option with 10 years guaranteed or a ten-year certain and life option. An actuarially equivalent joint and full survivor option is also available.

Tier B

An unreduced pension payable for life with 10 years guaranteed. Actuarially equivalent joint and survivor options (50% and 100%) are also available.



SUMMARY OF BENEFIT PROVISIONS (cont.)

Early Retirement Factors:

Tier A

For members retiring prior to age 50 with 30 or more years of service the pension shall be multiplied by the following percentage:

Age	Percentage
49	93.3
48	87.2
47	81.5
46	76.3
45	71.5
44	67.0

Tier B

For members retiring prior to age 65 with less than 40 years of service, the pension shall be multiplied by the following percentage:

Age	Percentage	Age	Percentage
64	89.72	56	40.03
63	80.66	55	36.41
62	72.64	54	33.15
61	65.53	53	30.22
60	59.21	52	27.57
59	53.58	51	25.18
58	48.56	50	23.01
57	44.06	49	21.05

Deferred Retirement

Eligibility: Deferred retirement pension benefit commencing at age 60 for Tier A members or at age 65 for Tier B members, with at least five (5) years of credited service, and accumulated contributions are left on deposit with the Fund.

Monthly Benefit: The deferred retirement benefit is equal to the retirement pension based on earnings and credited service at the time of termination.



SUMMARY OF BENEFIT PROVISIONS (cont.)

Disability Retirement Pension

Non-Service Disability:

1. Eligibility: Five (5) years of service and totally and permanently incapacitated for duty.
2. Monthly Benefit: Computed based on average monthly earnings and credited service at time of disability but not less than 10 times the percentage multiplier multiplied by the average monthly earnings.

Service Disability:

1. Eligibility: Totally and permanently incapacitated from the further performance of duty as a result of injury while in the course of employment for the City.
2. Monthly Benefit: Calculated as a non-service disability pension but not less than \$1,000 per month.

Death Benefits

Eligibility: active or inactive members who die prior to retirement

Benefit: For members with less than 2 years of service or inactive member with less than 5 years of service: refund of the members contributions.

Benefit: For members with more than 2 years of service but less than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a one-half survivor option for life with 120 payments guaranteed.

Benefit: For members eligible for retirement or members and inactive members with more than 15 years of service: an unreduced pension to designated beneficiary for 120 months or a Full Survivor option for life with 120 payments guaranteed.

Form: Benefit paid in accordance with the option on file, or the eligible option, or if no eligible beneficiary, a lump sum equivalent of 10 years of benefit payments to the member's estate.

Minimum Benefit for Service Death: For job-related death a minimum of 10 years of service used in calculation of benefit. Benefit will not be less than \$1,000 per month.



SUMMARY OF BENEFIT PROVISIONS (cont.)

Return of Accumulated Contributions

A member at the time of termination is entitled to be paid accumulated contributions without interest.

Cost-of-Living Adjustments

An annual cost-of-living adjustment to the base pension benefit shall be made based on the greater of:

Tier A

- a. The percentage of change in the price index for October of the current year over October of the previous year, up to 5%, or
- b. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 5%.

Tier B

- c. The percentage of change in the price index for October of the current year over October of the previous year, up to 3%, or
- d. The percentage of annual average change in the price index for the 12-month period ending with the effective date of the adjustment, up to 3%.

Wilshire

ERF of the City of Dallas

Executive Summary - 1Q 2024

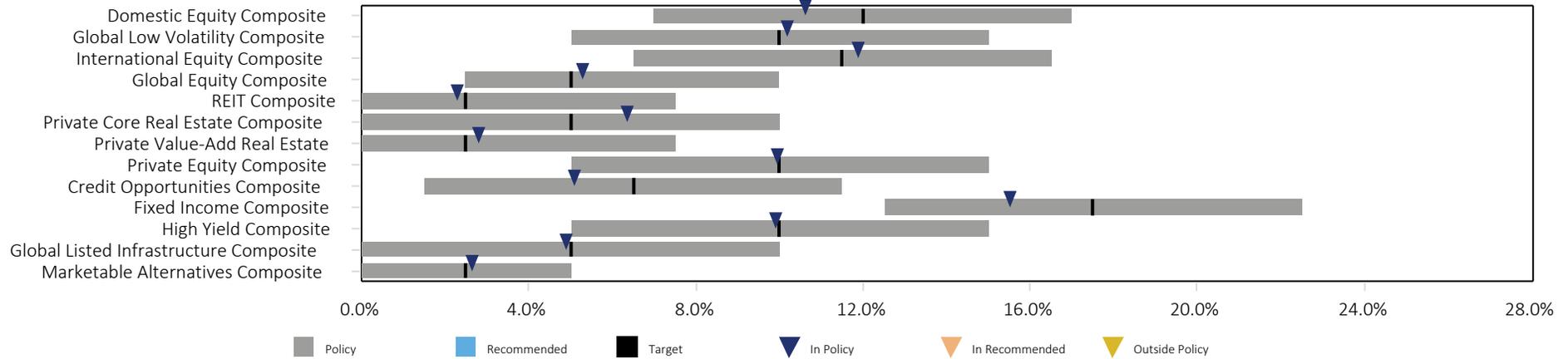
March 31, 2024

Asset Allocation Compliance

Dallas Total Fund

Periods Ended As of March 31, 2024

Executive Summary



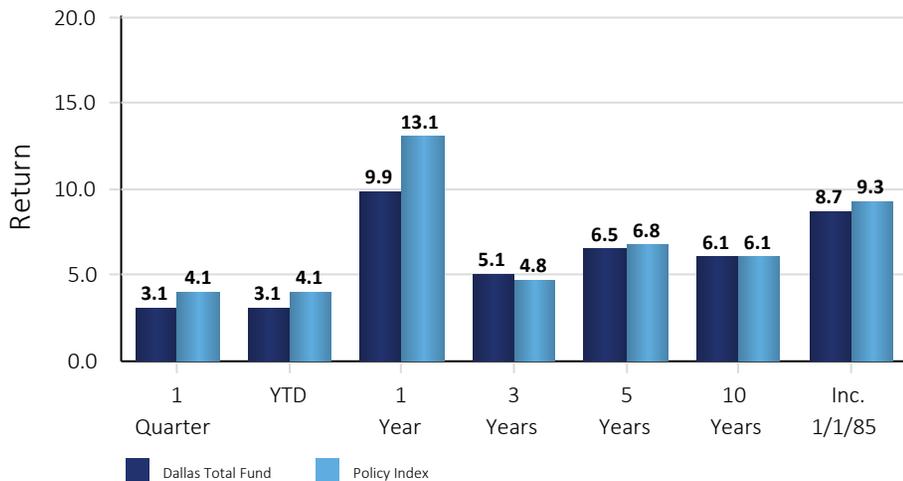
	Asset Allocation \$	Asset Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Rebalance \$
Dallas Total Fund	3,714,720,756	100.0	100.0			
Domestic Equity Composite	395,183,088	10.6	12.0	7.0	17.0	50,583,403
Global Low Volatility Composite	378,447,133	10.2	10.0	5.0	15.0	-6,975,057
International Equity Composite	441,230,641	11.9	11.5	6.5	16.5	-14,037,754
Global Equity Composite	196,634,884	5.3	5.0	2.5	10.0	-10,898,847
REIT Composite	85,757,310	2.3	2.5	0.0	7.5	7,110,709
Private Core Real Estate Composite	236,450,774	6.4	5.0	0.0	10.0	-50,714,736
Private Value-Add Real Estate	103,984,181	2.8	2.5	0.0	7.5	-11,116,162
Private Equity Composite	369,033,607	9.9	10.0	5.0	15.0	2,438,469
Credit Opportunities Composite	189,851,080	5.1	6.5	1.5	11.5	51,605,769
Fixed Income Composite	576,263,095	15.5	17.5	12.5	22.5	73,813,037
High Yield Composite	368,264,077	9.9	10.0	5.0	15.0	3,207,999
Global Listed Infrastructure Composite	182,272,631	4.9	5.0	0.0	10.0	3,463,407
Marketable Alternatives Composite	97,912,252	2.6	2.5	0.0	5.0	-5,044,233

Composite Performance Summary

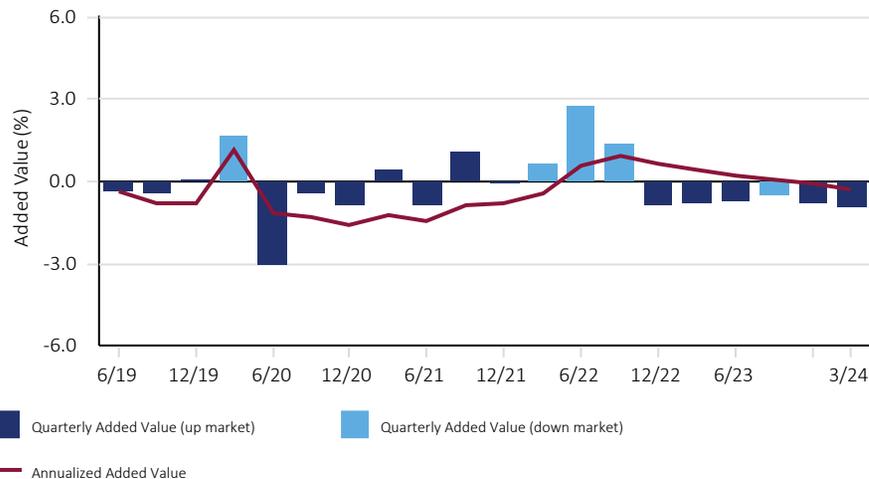
Dallas Total Fund

Periods Ended March 31, 2024

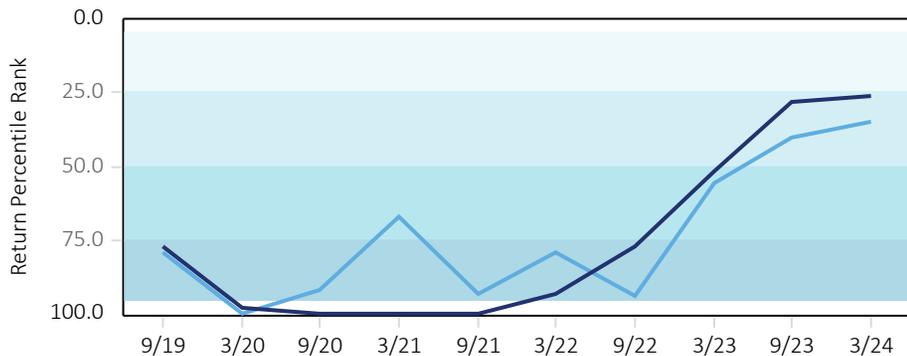
Comparative Performance



Added Value History

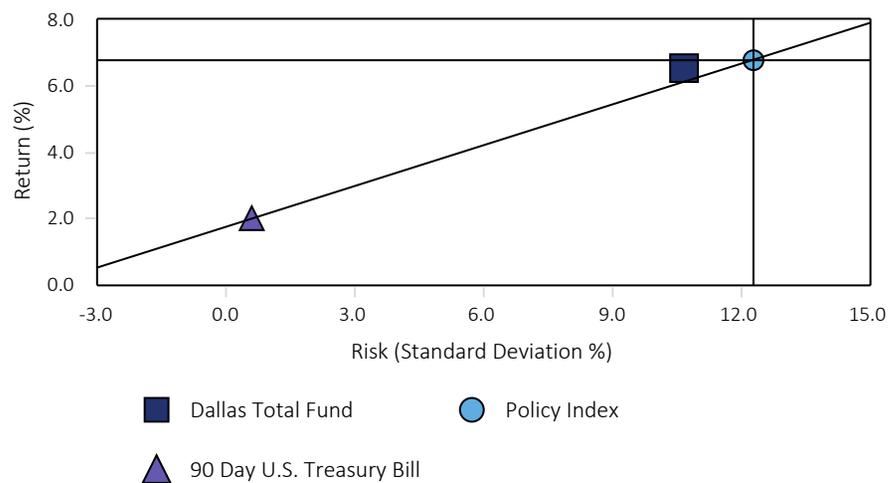


Rolling Percentile Rank: All Public Plans > \$1B-Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— Dallas Total Fund	10	0 (0%)	2 (20%)	1 (10%)	7 (70%)
— Benchmark	10	0 (0%)	2 (20%)	2 (20%)	6 (60%)

Risk and Return 04/1/19 - 03/31/24

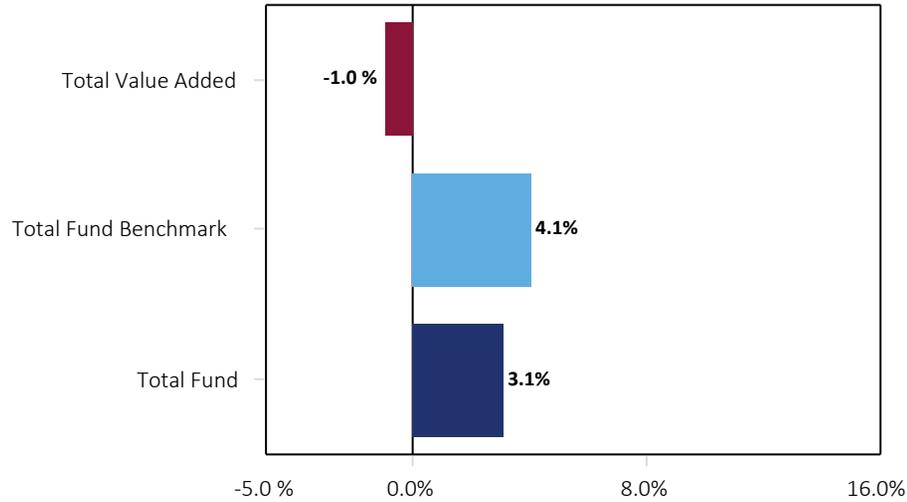


Total Fund Attribution

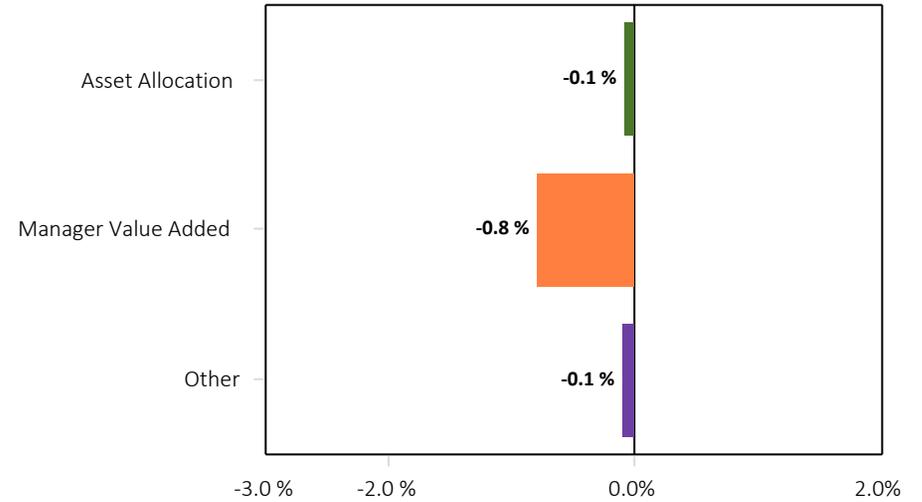
Dallas Total Fund

Periods Ended 1 Quarter Ending March 31, 2024

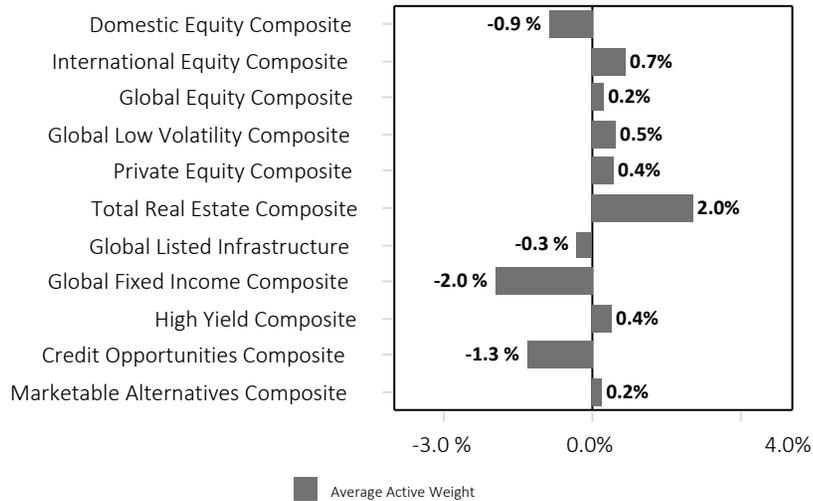
Total Fund Performance



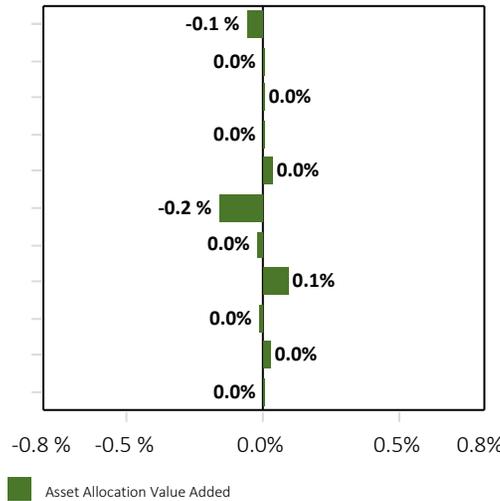
Total Value Added:-1.0 %



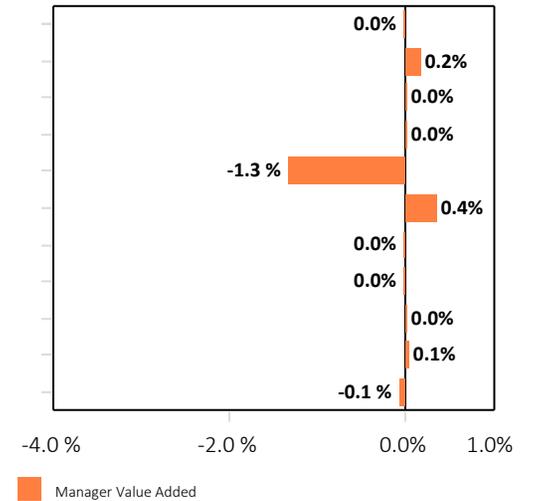
Total Asset Allocation:-0.1 %



Asset Allocation Value Added:-0.1 %



Total Manager Value Added:-0.8 %

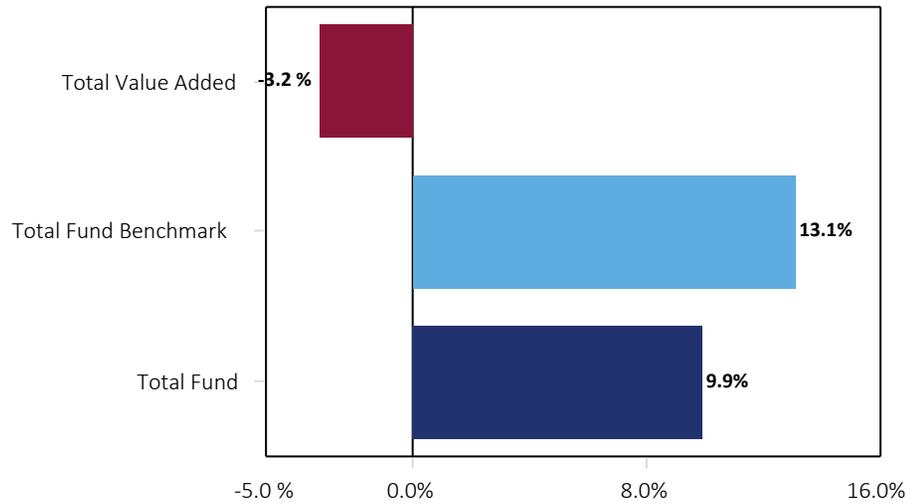


Total Fund Attribution

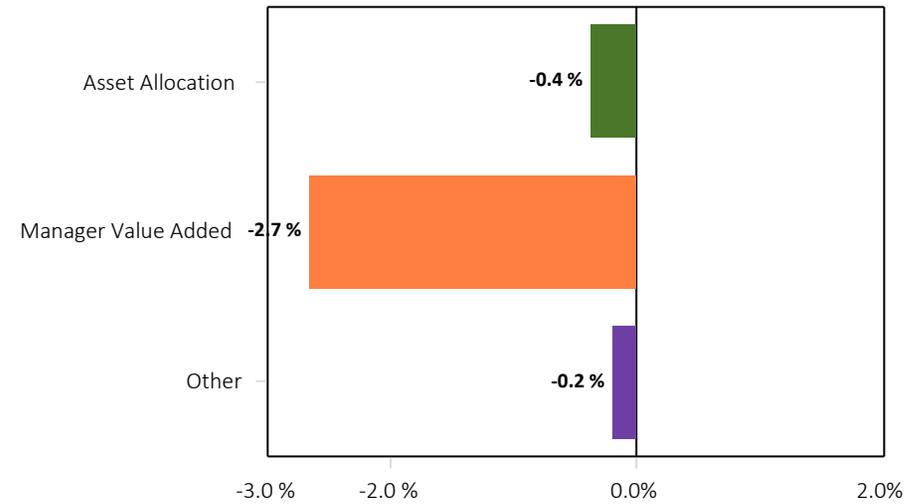
Dallas Total Fund

Periods Ended 1 Year Ending March 31, 2024

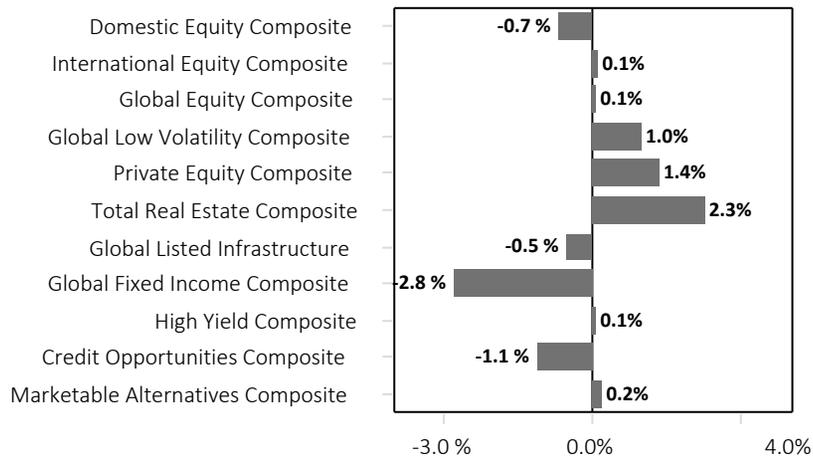
Total Fund Performance



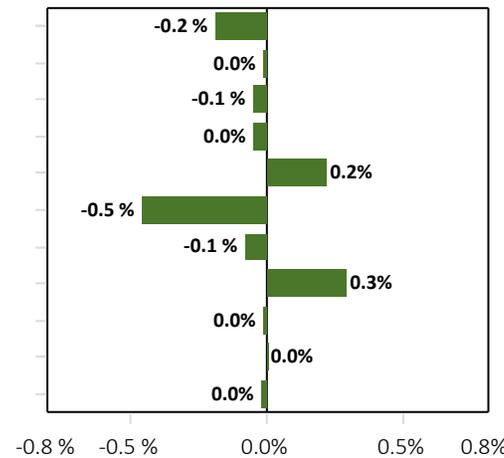
Total Value Added:-3.2 %



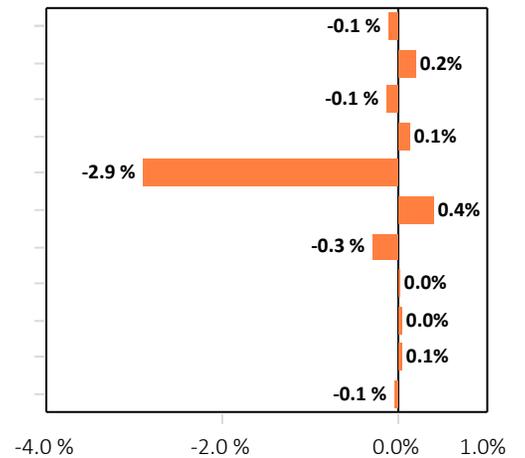
Total Asset Allocation:-0.4 %



Asset Allocation Value Added:-0.4 %



Total Manager Value Added:-2.7 %



Average Active Weight

Asset Allocation Value Added

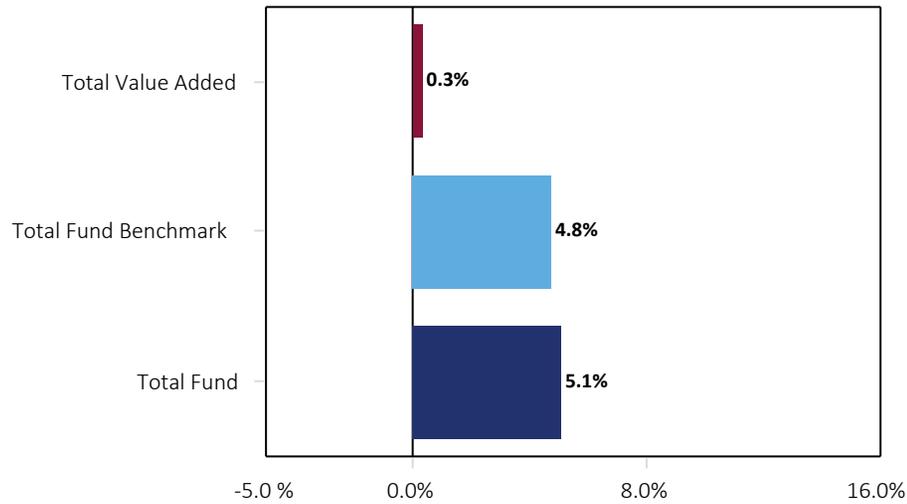
Manager Value Added

Total Fund Attribution

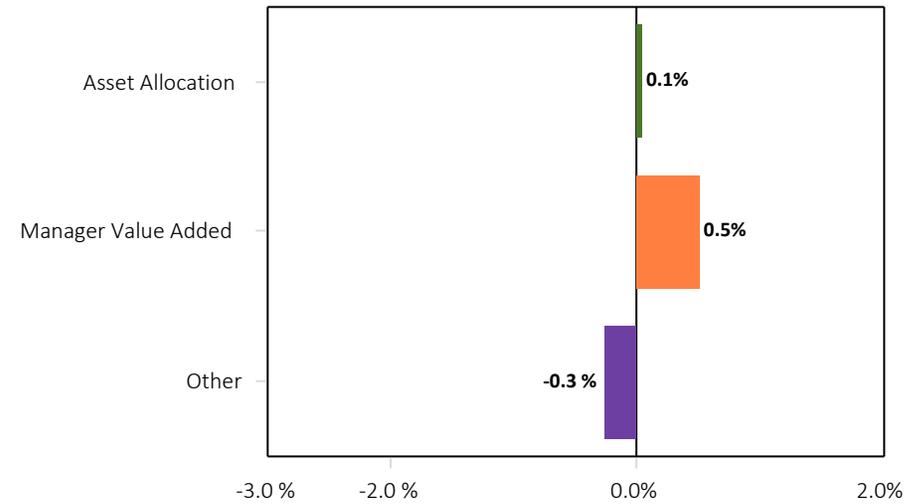
Dallas Total Fund

Periods Ended 3 Years Ending March 31, 2024

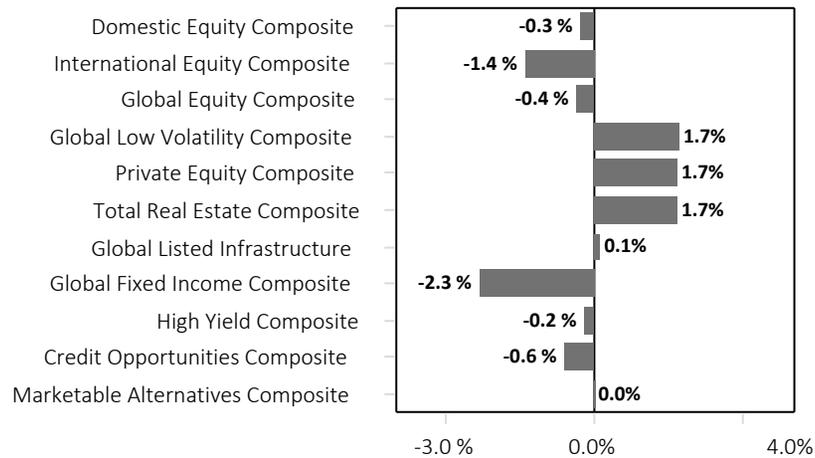
Total Fund Performance



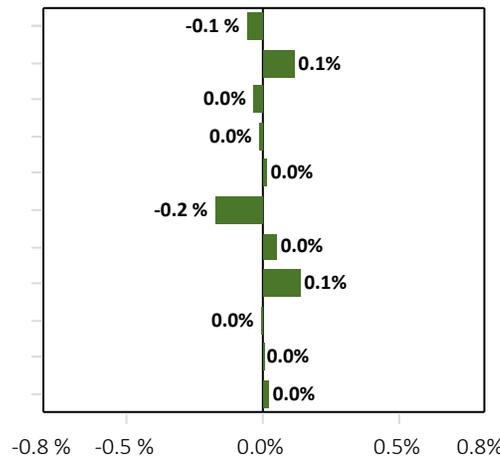
Total Value Added:0.3%



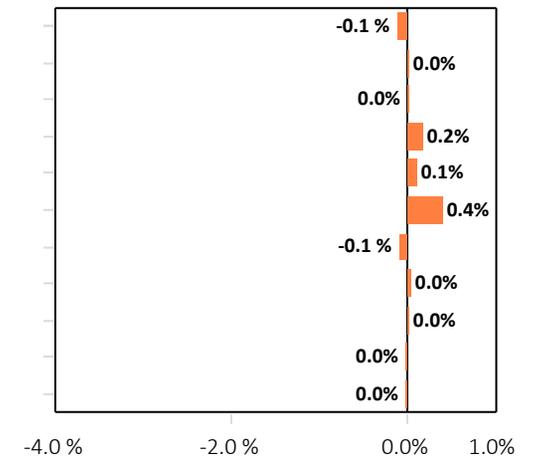
Total Asset Allocation:0.1%



Asset Allocation Value Added:0.1%



Total Manager Value Added:0.5%



Average Active Weight

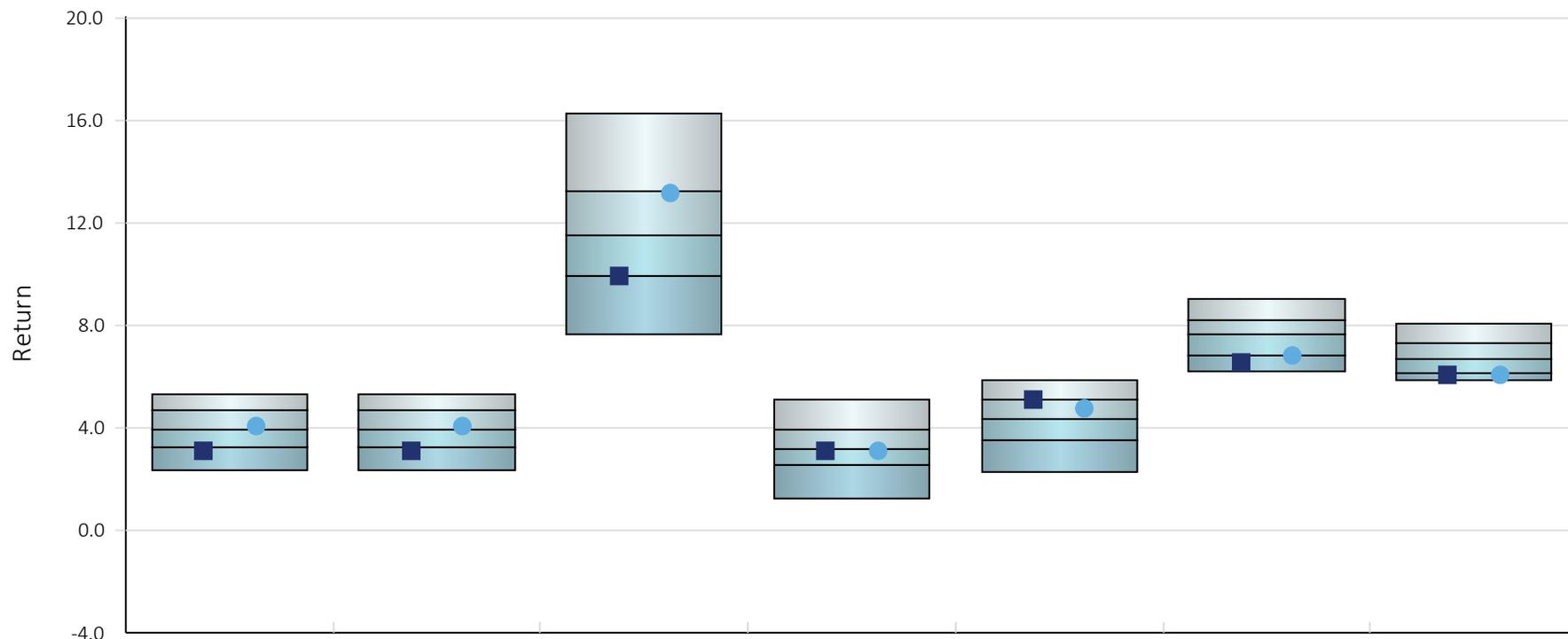
Asset Allocation Value Added

Manager Value Added

Plan Sponsor Peer Group Analysis

Dallas Total Fund vs All Public Plans > \$1B-Total Fund

Periods Ended March 31, 2024



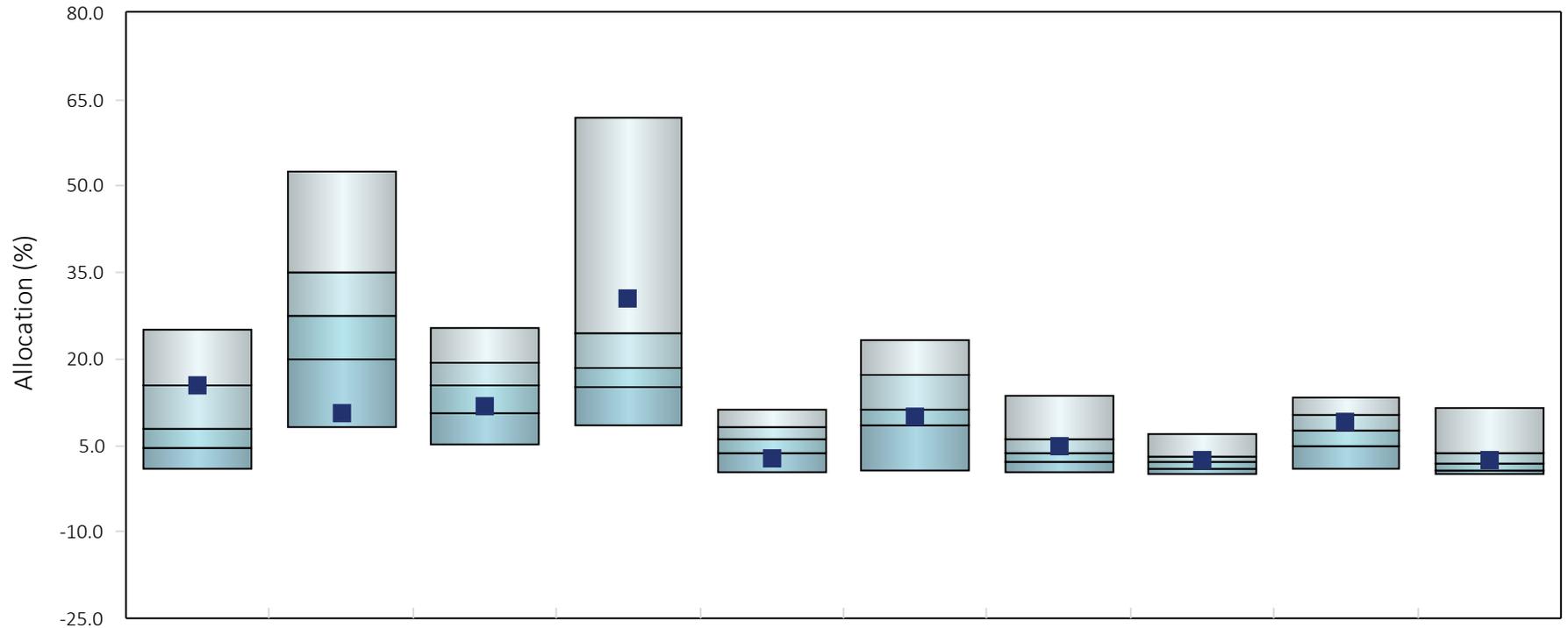
	QTD	YTD	1 Year	2 Years	3 Years	5 Years	10 Years
■ Dallas Total Fund	3.11 (81)	3.11 (81)	9.93 (75)	3.11 (55)	5.07 (26)	6.55 (85)	6.10 (76)
● Policy Index	4.07 (45)	4.07 (45)	13.15 (26)	3.13 (54)	4.76 (35)	6.82 (76)	6.07 (77)
5th Percentile	5.32	5.32	16.24	5.07	5.87	9.00	8.04
1st Quartile	4.68	4.68	13.27	3.91	5.07	8.17	7.29
Median	3.94	3.94	11.54	3.18	4.36	7.65	6.69
3rd Quartile	3.27	3.27	9.93	2.54	3.49	6.84	6.11
95th Percentile	2.33	2.33	7.66	1.28	2.25	6.22	5.84
Population	68	68	45	43	41	40	34

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor TF Asset Allocation

Dallas Total Fund vs All Public Plans > \$1B-Total Fund

Periods Ended March 31, 2024



	Global Equity	US Equity	Global ex-US Equity	US Fixed	Hedge Funds	Private Equity	Real Assets/Com mod	Real Estate - Public	Real Estate - Private	Cash & Equivalents
■ Dallas Total Fund	15.48	10.64	11.88	30.54	2.64	9.93	4.91	2.31	9.16	2.52
5th Percentile	25.13	52.50	25.53	61.92	11.32	23.18	13.63	7.05	13.30	11.44
1st Quartile	15.48	35.09	19.48	24.60	8.08	17.32	5.99	3.08	10.26	3.53
Median	7.78	27.63	15.40	18.59	6.14	11.24	3.72	2.27	7.69	1.90
3rd Quartile	4.50	20.05	10.49	15.24	3.52	8.51	2.29	0.95	4.97	0.77
95th Percentile	0.89	8.11	5.05	8.62	0.41	0.74	0.48	0.04	0.86	0.13
Population	29	113	111	115	32	55	39	23	50	99

Asset Allocation & Performance

Dallas Total Fund

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Domestic Equity Composite	9.72	9.72	28.09	9.10	13.92	11.68	10.55	1/1/1990	395,183,088	10.64
International Equity Composite	5.91	5.91	14.93	1.88	7.24	5.20	5.67	1/1/1990	441,230,641	11.88
Global Equity Composite	8.76	8.76	20.82	6.82	9.90	7.97	9.33	9/1/2012	196,634,884	5.29
Global Low Volatility Composite	4.86	4.86	12.28	5.75	6.25		7.29	7/1/2015	378,447,133	10.19
Private Equity Composite	-1.36	-1.36	0.83	14.33	12.85	12.54	13.16	6/1/2009	369,033,607	9.93
Total Real Estate Composite	-0.59	-0.59	-2.50	6.44	5.68	7.12	6.50	1/1/1990	426,192,265	11.47
Global Listed Infrastructure Composite	10.00	10.00	21.21	20.01	6.17	2.43	6.15	1/1/2012	182,272,631	4.91
Fixed Income Composite	-0.88	-0.88	1.64	-2.18	0.83	1.98	4.25	10/1/1995	576,263,095	15.51
High Yield Composite	1.66	1.66	11.57	2.66	4.37	4.16	6.08	1/1/1997	368,264,077	9.91
Credit Opportunities Composite	3.07	3.07	12.69	1.96	3.28		4.89	2/1/2016	189,851,080	5.11
Marketable Alternatives Composite	1.48	1.48	5.38				5.78	10/1/2022	97,912,252	2.64
Managed Short Term Composite	1.35	1.35	5.30	2.60	2.03	1.38	2.82	1/1/1990	93,436,003	2.52
Dallas Total Fund	3.11	3.11	9.93	5.07	6.55	6.10	8.73	1/1/1985	3,714,720,756	100.00
Policy Index	4.07	4.07	13.15	4.76	6.82	6.07	9.28			

Asset Allocation & Performance

Domestic Equity

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Systematic Financial Russell 2000 Index	7.52 5.18	7.52 5.18	22.05 19.71	6.48 -0.10	11.21 8.10	9.86 7.58	10.80 8.95	8/1/2003	55,593,297	14.07
Channing Capital Russell 2000 Value Index	9.26 2.90	9.26 2.90	26.21 18.75	3.81 2.22	10.15 8.17	7.33 6.87	7.59 7.02	12/1/2013	32,755,166	8.29
Domestic Equity Small Cap Composite	8.01	8.01	21.83	3.14	9.99	8.50	9.50	6/1/2003	88,348,463	22.36
T. Rowe Price S&P 500 Index	11.56 10.56	11.56 10.56	33.97 29.88	12.79 11.49	16.07 15.05	13.78 12.96	10.96 10.26	4/1/2006	159,962,864	40.48
Northern Trust S&P 500 (Lending) S&P 500 Index	10.51 10.56	10.51 10.56	29.85 29.88	11.51 11.49	15.03 15.05	12.97 12.96	10.79 10.75	1/1/1995	146,871,760	37.17
Domestic Equity Composite	9.72	9.72	28.09	9.10	13.92	11.68	10.55	1/1/1990	395,183,088	100.00
Custom Benchmark ¹	9.95	9.95	29.26	10.13	14.56	12.52	10.69			

¹ Domestic Equity Composite Custom Benchmark: FT Wilshire 5000 (2Q99-Present); S&P 500 (1Q90-1Q99)

Asset Allocation & Performance

International Equity

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Acadian International	4.88	4.88	11.46	2.28	7.60	6.12	8.20	4/1/1989	108,481,537	24.59
Custom Benchmark ¹	2.11	2.11	12.80	0.38	6.24	4.74	5.85			
Ativo International	3.82	3.82	15.32	3.36	5.60		3.79	1/1/2018	27,129,696	6.15
MSCI EAFE (Net)	5.78	5.78	15.32	4.78	7.33		4.92			
AQR Capital Management	8.88	8.88	20.37	2.50	6.04	4.48	3.92	4/1/2006	132,876,356	30.11
Custom Benchmark ²	4.69	4.69	13.26	1.94	5.97	4.25	3.55			
Baillie Gifford	4.20	4.20	9.64	-4.70	5.51		5.51	4/1/2019	77,948,575	17.67
MSCI AC World ex USA (Net)	4.69	4.69	13.26	1.94	5.97		5.97			
Earnest Partners	5.01	5.01	15.84	5.37	8.66		8.66	4/1/2019	94,794,478	21.48
MSCI AC World ex USA (Net)	4.69	4.69	13.26	1.94	5.97		5.97			
International Equity Composite	5.91	5.91	14.93	1.88	7.24	5.20	5.67	1/1/1990	441,230,641	100.00
Custom Benchmark ³	4.33	4.33	13.20	1.72	6.00	4.32	4.68			

¹ Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3Q09-Present); MSCI EAFE Small Cap (4Q99-2Q09); S&P/Citigroup Eur/Pac EMI Index (2Q96-3Q99); MSCI EAFE (2Q89-1Q96)

² AQR Custom Benchmark: MSCI ACWI x-US (2Q10-Present); MSCI EAFE (1Q06-1Q10)

³ International Equity Composite Custom Benchmark: MSCI ACWI x-US IMI (2Q10-Present); MSCI ACWI x-US (1Q99-1Q10); Wilshire Non-US/Non-SA (2Q96-4Q98); MSCI EAFE (4Q89-1Q96)

Asset Allocation & Performance

Global Equity

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Ariel Global	6.93	6.93	15.41	7.52	8.49		7.31	1/1/2018	93,027,379	47.31
MSCI AC World Index (Net)	8.20	8.20	23.22	6.96	10.92		8.92			
Wellington	10.36	10.36	25.63	6.18	10.80	9.13	11.20	9/1/2012	103,607,505	52.69
MSCI AC World Index (Net)	8.20	8.20	23.22	6.96	10.92	8.66	10.02			
Global Equity Composite	8.76	8.76	20.82	6.82	9.90	7.97	9.33	9/1/2012	196,634,884	100.00
MSCI AC World Index (Net)	8.20	8.20	23.22	6.96	10.92	8.66	10.02			

Asset Allocation & Performance

Low Volatility

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Acadian Global Low Vol.	4.99	4.99	12.90	6.84	6.90		7.32	7/1/2015	189,061,482	49.96
MSCI AC World Index (Net)	8.20	8.20	23.22	6.96	10.92		9.25			
MSCI AC World Minimum Volatility Index (Net)	4.71	4.71	11.12	4.26	5.44		6.93			
BlackRock Global Low Vol.	4.73	4.73	11.66	4.65	5.60		7.24	7/1/2015	189,385,651	50.04
MSCI AC World Minimum Volatility Index (Net)	4.71	4.71	11.12	4.26	5.44		6.93			
Global Low Volatility Composite	4.86	4.86	12.28	5.75	6.25		7.29	7/1/2015	378,447,133	100.00
MSCI AC World Minimum Volatility Index (Net)	4.71	4.71	11.12	4.26	5.44		6.93			

Private Equity Summary

Periods Ended as of March 31, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple ¹
Hamilton Lane Secondary Fund II	106,651	25,000,000	22,058,532	31,222,789	Jul-09	13.4%	1.4
Hamilton Lane Secondary Fund III	2,313,112	30,000,000	23,372,292	28,674,658	Nov-12	9.5%	1.3
Hamilton Lane Secondary Fund IV	13,460,845	30,000,000	25,907,343	28,531,630	Mar-17	16.8%	1.6
Hamilton Lane Secondary Fund V	49,453,822	65,000,000	43,128,993	15,614,650	Mar-20	17.7%	1.5
Hamilton Lane Secondary Fund VI-A	6,130,610	30,000,000	4,471,334	36,435	Feb-23	68.4%	1.4
Hamilton Lane Fund VII Composite	12,968,634	50,000,000	45,600,834	56,618,108	Jan-10	5.9%	1.5
Hamilton Lane Fund VIII (Global)	14,864,093	30,000,000	22,270,594	19,031,416	Nov-12	6.9%	1.5
GCM Grosvenor - Partnership, L.P.	22,263,613	75,000,000	94,485,722	138,802,151	Jun-11	14.1%	1.7
GCM Grosvenor - Partnership II, L.P. (2014)	43,000,591	60,000,000	72,758,185	72,443,967	Jul-14	14.7%	1.6
GCM Grosvenor - Partnership II, L.P. (2015)	55,643,258	30,000,000	43,878,226	11,913,802	Dec-15	13.3%	1.5
GCM Grosvenor - Partnership II, L.P. (2017)	33,226,633	30,000,000	30,891,286	10,457,194	Jan-18	13.7%	1.4
GCM Grosvenor - Advance Fund, L.P.	7,009,519	10,000,000	6,323,513	345,493	Jun-21	11.8%	1.2
GCM Grosvenor - Partnership II, L.P. (2022)	3,996,934	20,000,000	4,054,719	5,461	May-22	-6.3%	1.0
Fairview Capital - Lone Star Fund I	51,564,024	40,000,000	33,903,847	16,021,490	Aug-15	13.5%	2.0
Fairview Capital - Lone Star Fund II	35,253,716	30,000,000	23,306,717	509,173	Dec-18	12.6%	1.5
Fairview Capital - Lone Star Fund III - A	14,999,477	25,000,000	14,953,620	-	Apr-21	-1.7%	1.0
Fairview Capital - Lone Star Fund III - B	680,050	20,000,000	689,462	-	Dec-22	-45.0%	1.0
Fairview Capital - Private Markets Fund VI	2,098,025	10,000,000	2,604,127	210,556	Apr-22	-10.0%	0.9
Total Private Equity Composite	369,033,607	610,000,000	514,659,347	430,438,972	Jul-09	12.9%	1.6

Public Market Equivalent (PME) ²

591,903,308

17.2%

¹ Total Value to Paid-in Capital ("TVPI") multiple calculation = $(market\ value + distributions) / capital\ called$

² The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

Private Real Estate Summary

Periods Ended as of March 31, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple ¹
Invesco II	77,173,756	65,188,333	65,188,333	16,664,334	Jan-14	5.2%	1.4
Total Direct Private Real Estate	77,173,756	65,188,333	65,188,333	16,664,334	Jan-14	5.2%	1.4

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Heitman America Real Estate Trust	90,044,709	75,000,000	88,210,161	95,834,138	Dec-10	6.7%	2.1
Invesco Core Real Estate USA	69,232,309	75,000,000	75,000,000	97,697,523	Oct-10	10.3%	2.2
Total Core Private Real Estate	159,277,018	150,000,000	163,210,161	193,531,661	Oct-10	8.9%	2.2

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
AEW Partners Real Estate Fund IX	36,167,711	45,000,000	34,074,074	1,507,895	Mar-21	5.5%	1.1
AEW PIX MM Co-Invest	4,091,447	10,000,000	4,773,585	654,987	Nov-21	-0.3%	1.0
AEW PIX Oakland Park Co-Invest	5,254,439	5,000,000	5,000,000	542,858	Feb-22	7.7%	1.2
Virtus Real Estate Capital III	43,555,109	43,281,585	40,344,080	3,714,853	Jan-21	7.8%	1.2
Brasa Real Estate Fund II	11,525,410	20,000,000	12,509,199	889,136	Jul-22	-0.6%	1.0
Long Wharf Real Estate Partners VII	3,390,065	20,000,000	3,701,305	-	Mar-23	-20.0%	0.9
Total Value-Add Private Real Estate	103,984,181	143,281,585	100,402,242	7,309,729	Jan-21	5.5%	1.1

¹ Total Value to Paid-in Capital ("TVPI") multiple calculation = (market value + distributions) / capital called

Asset Allocation & Performance

Real Estate

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Adelante Capital Management	0.47	0.47	12.73	4.80	5.29	7.22	9.02	10/1/2001	43,034,741	50.18
Wilshire U.S. Real Estate Securities Index	0.09	0.09	12.49	4.60	4.45	6.86	9.11			
CenterSquare	-0.47	-0.47	10.62	4.44	5.22		6.90	6/1/2018	42,722,569	49.82
Wilshire U.S. Real Estate Securities Index	0.09	0.09	12.49	4.60	4.45		6.08			
REIT Composite	0.00	0.00	11.67	4.62	5.25	7.09	9.10	10/1/2001	85,757,310	100.00
Wilshire U.S. Real Estate Securities Index	0.09	0.09	12.49	4.60	4.45	6.86	9.11			

Asset Allocation & Performance

Global Listed Infrastructure

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
CIBC	13.33	13.33	30.96	27.89	11.89	5.04	8.63	1/1/2012	57,870,690	31.75
Alerian MLP Index	13.89	13.89	38.46	29.44	11.46	3.05	5.10			
Harvest Fund Advisors MLP	14.43	14.43	31.50	28.92	13.61	5.69	8.70	1/1/2012	63,311,195	34.73
Alerian MLP Index	13.89	13.89	38.46	29.44	11.46	3.05	5.10			
C&S Global Listed Infrastructure	3.01	3.01	5.24	4.60			7.47	11/1/2020	61,090,746	33.52
FTSE Global Core Infrastructure 50/50 (Net)	1.55	1.55	3.22	2.91			6.47			
Global Listed Infrastructure Composite	10.00	10.00	21.21	20.01	6.17	2.43	6.15	1/1/2012	182,272,631	100.00
Global Listed Infrastructure Benchmark ¹	10.73	10.73	28.96	22.66	6.33	0.65	3.10			

¹ Global Listed Infrastructure Benchmark: 75% Alerian MLP / 25% FTSE Global Core Infrastructure 50/50 (4Q20-Present); Alerian MLP (1Q12-3Q20)

Asset Allocation & Performance

Fixed Income

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Garcia Hamilton	-1.42	-1.42	-0.20	-2.41	0.25	1.64	1.79	11/1/2013	186,584,496	32.38
Blmbg. U.S. Aggregate Index	-0.78	-0.78	1.70	-2.46	0.36	1.54	1.57			
Western Asset Management	-1.06	-1.06	1.97				1.31	7/1/2022	194,556,998	33.76
Blmbg. U.S. Aggregate Index	-0.78	-0.78	1.70				0.91			
Wellington Core Bond	-0.17	-0.17	3.13				1.76	7/1/2022	195,121,601	33.86
Blmbg. U.S. Aggregate Index	-0.78	-0.78	1.70				0.91			
Fixed Income Composite	-0.88	-0.88	1.64	-2.18	0.83	1.98	4.25	10/1/1995	576,263,095	100.00
Blmbg. U.S. Aggregate Index	-0.78	-0.78	1.70	-2.46	0.36	1.54	4.26			

Asset Allocation & Performance

Opportunistic Credit

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$
Neuberger Berman	3.07	3.07	12.69	1.96	3.28		4.89	2/1/2016	189,851,080
Custom Benchmark ¹	2.00	2.00	11.66	2.32	3.45		5.09		

¹ Custom Benchmark: 33% Morningstar LSTA U.S. Leveraged Loan Index / 33% ICE BofA U.S. High Yield Constrained Index / 33% JPM EMBI Global Diversified

Asset Allocation & Performance

High Yield

Periods Ended March 31, 2024

	Performance (%) net of fees								Allocation	
	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value \$	%
Oaktree Capital Management	1.44	1.44	12.05	2.55	4.18	3.78	6.22	2/1/1997	181,619,565	49.32
FTSE High Yield Market Capped Index	1.61	1.61	11.40	2.37	3.96	4.13				
FTSE High Yield Cash Pay	1.51	1.51	11.21	2.36	4.08	4.20	6.34			
BlackRock	1.88	1.88	11.11	2.78	4.56	4.31	5.83	10/1/2006	186,644,512	50.68
FTSE High Yield Market Capped Index	1.61	1.61	11.40	2.37	3.96	4.13	6.05			
FTSE High Yield Cash Pay	1.51	1.51	11.21	2.36	4.08	4.20	6.13			
High Yield Composite	1.66	1.66	11.57	2.66	4.37	4.16	6.08	1/1/1997	368,264,077	100.00
FTSE High Yield Cash Pay	1.51	1.51	11.21	2.36	4.08	4.20	6.35			

Asset Allocation & Performance

Marketable Alternatives

Periods Ended March 31, 2024

	Performance (%) net of fees					Allocation	
	QTD	YTD	1 Year	Since Inception	Inception Date	Market Value \$	%
Davidson Kempner	2.01	2.01	6.19	6.33	10/1/2022	49,340,098	50.39
HFRI Event-Driven Total Index	4.88	4.88	7.82	9.55			
Value Added	-2.87	-2.87	-1.63	-3.22			
Hudson Bay Capital	0.95	0.95	4.56	5.22	10/1/2022	48,572,154	49.61
HFRI Relative Value Total Index	2.78	2.78	6.53	6.64			
Value Added	-1.83	-1.83	-1.97	-1.42			
Marketable Alternatives Composite	1.48	1.48	5.38	5.78	10/1/2022	97,912,252	100.00
Marketable Alternatives Policy ¹	3.84	3.84	7.20	8.11			
Value Added	-2.36	-2.36	-1.82	-2.33			

¹ Marketable Alternatives Policy: 50% HFRI Event-Driven Total Index / 50% HFRI Relative Value Total Index

Cash Flow Summary

Dallas Total Fund

1 Quarter Ending March 31, 2024

	Begin Value	Net Cash Flow	Fees	Expenses	Capital Apprec./ Deprec.	End Value
Dallas Total Fund	3,655,166,196	-53,795,355	-3,125,828	-1,288,987	117,764,731	3,714,720,756
Domestic Equity Composite	430,688,168	-72,113,078	-525,176	-2,692	37,135,866	395,183,088
Northern Trust S&P 500 (Lending)	73,250,645	62,301,373		-1,373	11,321,116	146,871,760
Smith Graham	81,851,188	-82,414,451	-198,572	-219	762,054	
T. Rowe Price	174,166,926	-32,000,000	-120,089	-239	17,916,266	159,962,864
Domestic Equity Small Cap Composite	101,419,409	-20,000,000	-206,515	-861	7,136,429	88,348,463
Systematic Financial	71,439,505	-20,000,000	-139,840	-678	4,294,309	55,593,297
Channing Capital	29,979,904		-66,675	-183	2,842,120	32,755,166
Total Real Estate Composite	437,656,578	-8,849,098	-120,444	-278	-2,494,493	426,192,265
REIT Composite	95,938,517	-10,000,000	-120,444	-278	-60,486	85,757,310
Adelante Capital Management	47,890,566	-5,000,000	-65,752	-216	210,143	43,034,741
CenterSquare	48,047,952	-5,000,000	-54,692	-62	-270,629	42,722,569
Private Core Real Estate Composite	242,324,498	-3,309,325			-2,564,398	236,450,774
Heitman America Real Estate Trust, LP	91,669,570	-1,624,856			-5	90,044,709
Invesco Core Real Estate USA, LLC	70,261,390	-1,029,577			497	69,232,309
Invesco II	80,393,538	-654,892			-2,564,890	77,173,756
Private Value-Add Real Estate	99,393,563	4,460,227			130,391	103,984,181
Virtus Real Estate Capital III	41,157,968	2,397,141				43,555,109
AEW PARTNERS REAL ESTATE FUND IX	34,697,133	632,884			837,694	36,167,711
AEW PIX MM CO-INVEST	4,560,683	-94,681			-374,555	4,091,447
AEW PIX OAKLAND PARK CO-INVEST	5,288,760	-85,395			51,074	5,254,439
Brasa Real Estate Fund II	11,028,587	854,056			-357,233	11,525,410
Private Equity Composite	374,443,153	-340,863	-333,141	-52	-4,735,490	369,033,607
Fairview Capital - Lone Star Fund I	51,679,549	-34,808	-80,000		-717	51,564,024
Fairview Capital - Lone Star Fund II	35,253,716	75,000	-75,000			35,253,716

Cash Flow Summary

Dallas Total Fund

1 Quarter Ending March 31, 2024

	Begin Value	Net Cash Flow	Fees	Expenses	Capital Apprec./ Deprec.	End Value
Fairview Capital - Lone Star Fund III - A	13,514,328	1,560,149	-75,000			14,999,477
Fairview Capital - Lone Star Fund III - B	680,050	60,000	-60,000			680,050
Fairview Private Makets Fund VI	1,798,025	300,000				2,098,025
Grosvenor Composite	172,854,738	-2,950,812		-52	-4,763,326	165,140,548
Hamilton Lane Test	98,662,747	649,608	-43,141		28,553	99,297,767
Hamilton Lane Secondary Fund II	106,651					106,651
Hamilton Lane Secondary Fund III	2,727,215	-414,103				2,313,112
Hamilton Lane Secondary Fund IV	13,460,845					13,460,845
Hamilton Lane Secondary Fund V	49,453,822					49,453,822
Hamilton Lane Fund VIII (Global)	15,314,970	-407,736	-43,141			14,864,093
Hamilton Lane Fund VII Composite	12,968,634					12,968,634
Hamilton Lane Fund VII (Series B)	3,645,401					3,645,401
Hamilton Lane Fund VII (Series A)	9,323,233					9,323,233
International Equity Composite	444,112,779	-27,834,721	-586,079	-2,872	25,541,533	441,230,641
Acadian International	113,128,420	-9,846,872	-153,128	-150	5,353,266	108,481,537
Ativo International	34,167,482	-8,000,000	-47,982	-219	1,010,415	27,129,696
AQR Capital Management	131,736,542	-9,987,849	-166,500	-1,791	11,295,953	132,876,356
Earnest Partners	90,271,036		-125,761	-343	4,649,546	94,794,478
Baillie Gifford	74,809,299		-92,708	-369	3,232,352	77,948,575
Global Equity Composite	185,595,372	-5,000,000	-273,684	-971	16,314,167	196,634,884
Ariel Global	86,997,089		-132,565	-190	6,163,045	93,027,379
Wellington	98,598,283	-5,000,000	-141,119	-782	10,151,123	103,607,505
Global Low Volatility Composite	372,571,285	-11,982,063	-172,176	-445	18,030,533	378,447,133
Acadian Global Low Vol.	187,863,469	-8,000,000	-154,239	-445	9,352,697	189,061,482
BlackRock Global Low Vol.	184,707,816	-3,982,063	-17,937		8,677,835	189,385,651

Cash Flow Summary

Dallas Total Fund

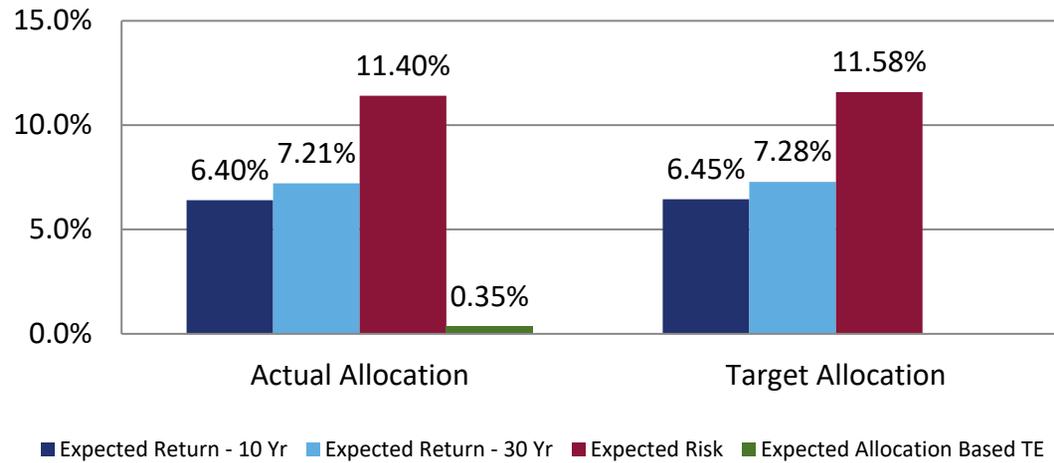
1 Quarter Ending March 31, 2024

	Begin Value	Net Cash Flow	Fees	Expenses	Capital Apprec./ Deprec.	End Value
Global Listed Infrastructure Composite	165,697,469		-268,371	-1,058	16,844,589	182,272,631
CIBC	51,064,270		-81,146	-473	6,888,038	57,870,690
Harvest Fund Advisors MLP	55,330,221		-103,632	-456	8,085,061	63,311,195
C&S Global Listed Infrastructure	59,302,978		-83,593	-128	1,871,490	61,090,746
Fixed Income Composite	547,541,792	33,186,623	-299,917	-3,045	-4,162,357	576,263,095
Garcia Hamilton	177,900,212	11,107,146	-107,146	-169	-2,315,546	186,584,496
Western Asset Management	185,408,542	11,000,000	-113,294	-788	-1,737,462	194,556,998
Wellington Core Bond	184,233,038	11,079,477	-79,477	-2,088	-109,349	195,121,601
Credit Opportunities Composite	184,200,966		-119,507	-369	5,769,990	189,851,080
Neuberger Berman	184,200,966		-119,507	-369	5,769,990	189,851,080
High Yield Composite	375,158,161	-12,956,939	-427,334	-2,547	6,492,735	368,264,077
Oaktree Capital Management	183,018,305	-3,980,467	-215,310	-994	2,798,031	181,619,565
BlackRock	192,139,856	-8,976,472	-212,024	-1,553	3,694,704	186,644,512
Marketable Alternatives Composite	96,480,767				1,431,485	97,912,252
Davidson Kempner	48,366,570				973,528	49,340,098
Hudson Bay Capital	48,114,197				457,957	48,572,154
Managed Short Term Composite	41,019,705	52,094,783		-1,274,659	1,596,174	93,436,003
Cash Account	41,019,705	52,094,783		-1,274,659	1,596,174	93,436,003

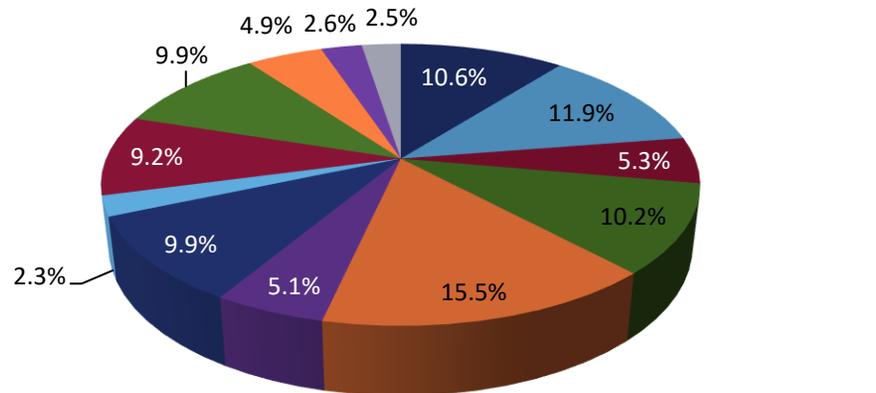
Risk Analysis & Performance Objectives

Expected Return and Risk

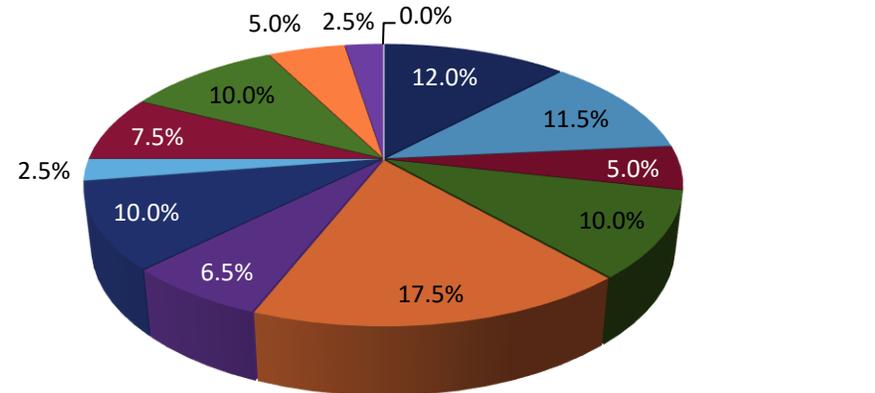
Periods Ended as of March 31, 2024



Actual Asset Allocation



Target Asset Allocation



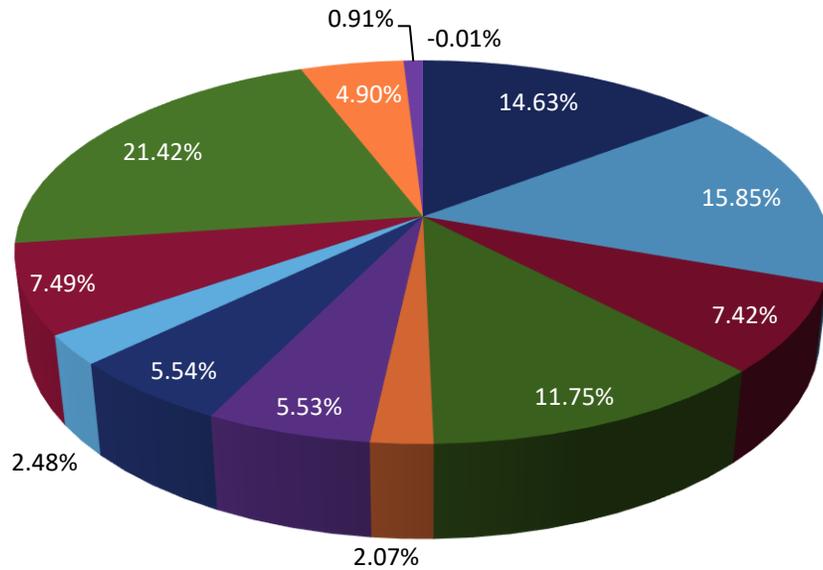
- Domestic Equity
- International Equity
- Global Equity
- Global Low Volatility
- US Fixed Income
- Opportunistic Credit
- High Yield
- Public REITs
- Private Real Estate
- Private Equity
- Global Public Infrastructure
- Marketable Alternatives
- Cash

- Domestic Equity
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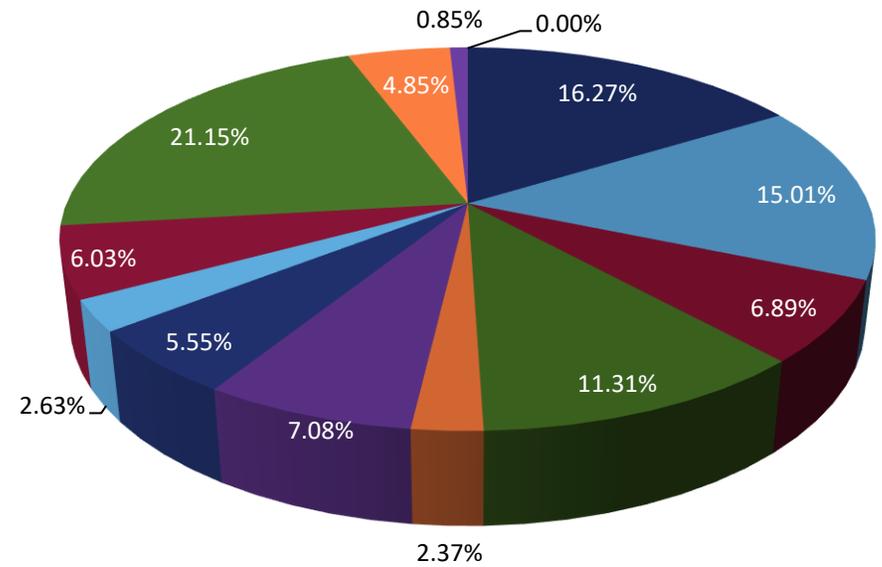
Expected Return and Risk

Periods Ended as of March 31, 2024

Contribution to Total Risk - Actual Allocation



Contribution to Total Risk - Target Allocation

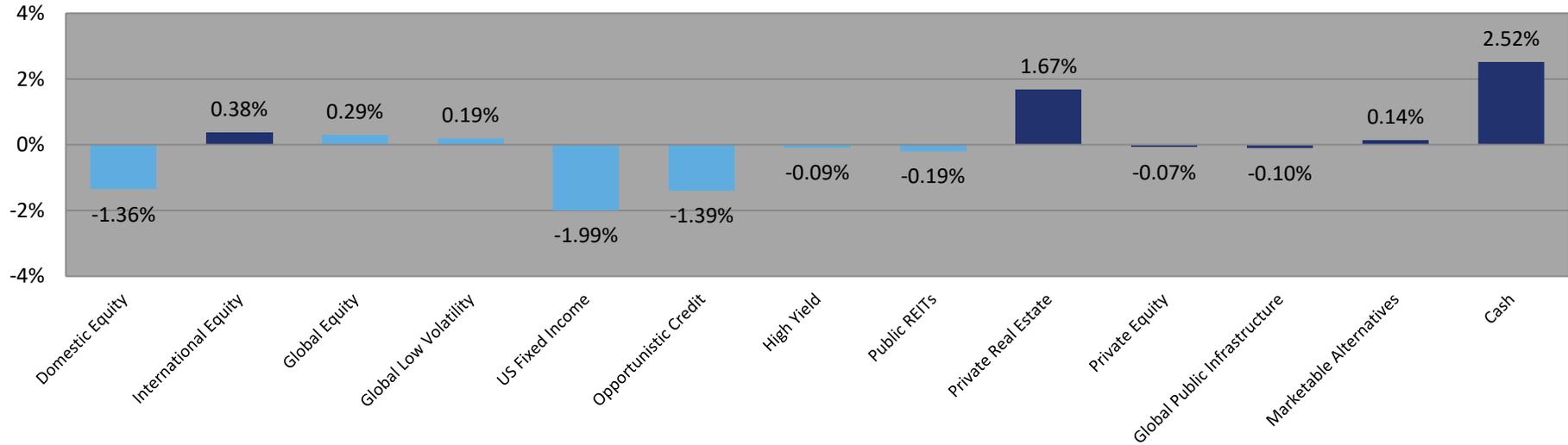


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|-----------------------|------------------------|--------------------------------|---------------------------|-----------------------|------------------------|--------------------------------|---------------------------|
| ■ Domestic Equity | ■ International Equity | ■ Global Equity | ■ Global Low Volatility | ■ Domestic Equity | ■ International Equity | ■ Global Equity | ■ Global Low Volatility |
| ■ US Fixed Income | ■ Opportunistic Credit | ■ High Yield | ■ Public REITs | ■ US Fixed Income | ■ Opportunistic Credit | ■ High Yield | ■ Public REITs |
| ■ Private Real Estate | ■ Private Equity | ■ Global Public Infrastructure | ■ Marketable Alternatives | ■ Private Real Estate | ■ Private Equity | ■ Global Public Infrastructure | ■ Marketable Alternatives |
| ■ Cash | | | | ■ Cash | | | |

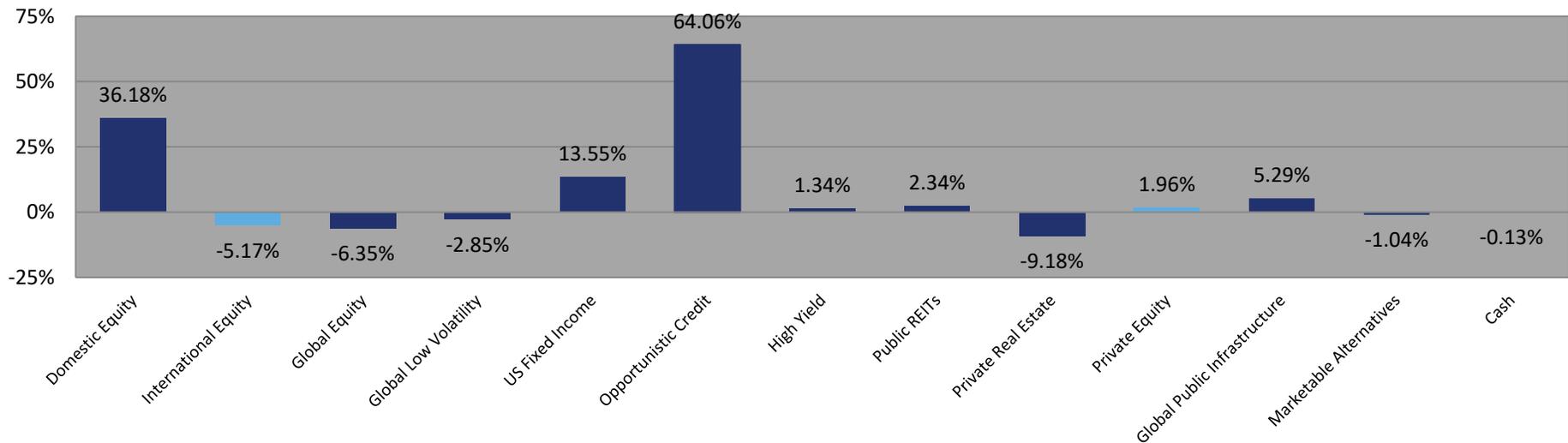
Expected Return and Risk

Periods Ended as of March 31, 2024

Asset Allocation Variance



Contribution to TF Tracking Error



1-Year Risk Statistics

Periods Ended March 31, 2024

	1 Year Standard Deviation	1 Year Sharpe Ratio	1 Year Tracking Error	1 Year Information Ratio
Dallas Total Fund	7.32	0.64	1.09	-2.70
Policy Index	7.76	0.98	0.00	
DOMESTIC EQUITY				
Domestic Equity Composite	14.95	1.41	2.90	-0.27
Custom Benchmark	13.81	1.58	0.00	
Systematic Financial	16.93	0.97	6.34	0.17
Russell 2000 Index	21.68	0.71	0.00	
Channing Capital	20.14	1.01	6.87	0.86
Russell 2000 Value Index	21.69	0.67	0.00	
Smith Graham	21.26	0.97	6.51	0.59
Russell Midcap Index	18.22	0.93	0.00	
T. Rowe Price	12.80	1.97	0.96	3.28
S&P 500 Index	13.04	1.70	0.00	
INTERNATIONAL EQUITY				
International Equity Composite	14.27	0.69	2.16	0.70
Custom Benchmark	14.49	0.58	0.00	
Acadian International	14.13	0.48	3.93	-0.34
MSCI AC World ex USA Small Cap (Net)	15.24	0.53	0.00	
AQR Capital Management	14.40	1.01	4.79	1.29
Custom Benchmark	14.44	0.58	0.00	
Ativo International	14.44	0.71	2.66	0.00
MSCI EAFE (Net)	14.46	0.71	0.00	
Baillie Gifford	18.00	0.32	6.48	-0.42
MSCI AC World ex USA (Net)	14.44	0.58	0.00	
Earnest Partners	13.92	0.77	3.82	0.58
MSCI AC World ex USA (Net)	14.44	0.58	0.00	

1-Year Risk Statistics

Periods Ended March 31, 2024

	1 Year Standard Deviation	1 Year Sharpe Ratio	1 Year Tracking Error	1 Year Information Ratio
GLOBAL EQUITY				
Global Equity Composite	12.07	1.21	2.51	-0.87
MSCI AC World Index (Net)	13.45	1.25	0.00	
Wellington	12.26	1.52	2.41	0.76
MSCI AC World Index (Net)	13.45	1.25	0.00	
Ariel Global	12.31	0.82	4.15	-1.63
MSCI AC World Index (Net)	13.45	1.25	0.00	
GLOBAL LOW VOLATILITY				
Global Low Volatility Composite	8.71	0.79	0.91	1.18
MSCI AC World Minimum Volatility Index (Net)	8.47	0.69	0.00	
Acadian Global Low Vol.	8.88	0.84	1.60	1.03
MSCI AC World Minimum Volatility Index (Net)	8.47	0.69	0.00	
REIT's				
REIT Composite	18.07	0.42	1.08	-0.75
Wilshire U.S. Real Estate Securities Index	18.51	0.45	0.00	
Adelante Capital Management	17.29	0.49	1.61	0.01
Wilshire U.S. Real Estate Securities Index	18.51	0.45	0.00	
CenterSquare	18.88	0.36	1.35	-1.20
Wilshire U.S. Real Estate Securities Index	18.51	0.45	0.00	
FIXED INCOME				
Fixed Income Composite	8.38	-0.38	1.46	0.04
Blmbg. U.S. Aggregate Index	6.99	-0.46	0.00	
Garcia Hamilton	9.06	-0.54	2.14	-0.80
Blmbg. U.S. Aggregate Index	6.99	-0.46	0.00	
Wellington Core Bond	7.37	-0.24	0.52	2.72
Blmbg. U.S. Aggregate Index	6.99	-0.46	0.00	

1-Year Risk Statistics

Periods Ended March 31, 2024

	1 Year Standard Deviation	1 Year Sharpe Ratio	1 Year Tracking Error	1 Year Information Ratio
Western Asset Management	8.75	-0.32	1.92	0.21
Blmbg. U.S. Aggregate Index	6.99	-0.46	0.00	
HIGH YIELD				
High Yield Composite	5.97	1.02	0.50	0.64
FTSE High Yield Cash Pay	6.01	0.96	0.00	
BlackRock	5.61	1.01	0.84	-0.13
FTSE High Yield Cash Pay	6.01	0.96	0.00	
Oaktree Capital Management	6.37	1.03	0.62	1.27
FTSE High Yield Cash Pay	6.01	0.96	0.00	
CREDIT OPPORTUNITIES				
Credit Opportunities Composite	4.86	1.45	0.93	0.98
Custom Benchmark	5.20	1.18	0.00	
Neuberger Berman	4.86	1.45	0.93	0.98
Custom Benchmark	5.20	1.18	0.00	
Global Listed Infrastructure				
Global Listed Infrastructure Composite	11.19	1.33	5.05	-1.21
Global Listed Infrastructure Benchmark	8.94	2.35	0.00	
Harvest Fund Advisors MLP	10.85	2.14	5.47	-0.94
Alerian MLP Index	9.19	3.08	0.00	
CIBC	11.90	1.92	6.75	-0.80
Alerian MLP Index	9.19	3.08	0.00	
C&S Global Listed Infrastructure	14.27	0.07	2.01	0.98
FTSE Global Core Infra. 50/50 Index (Net)	14.08	-0.07	0.00	

3-Year Risk Statistics

Periods Ended March 31, 2024

	3 Years Standard Deviation	3 Years Sharpe Ratio	3 Years Tracking Error	3 Years Information Ratio
Dallas Total Fund	9.11	0.31	1.99	0.09
Policy Index	10.36	0.26	0.00	
DOMESTIC EQUITY				
Domestic Equity Composite	17.59	0.44	3.32	-0.29
Custom Benchmark	17.61	0.50	0.00	
Systematic Financial	17.67	0.30	6.81	0.84
Russell 2000 Index	21.09	-0.02	0.00	
Channing Capital	20.97	0.16	6.60	0.23
Russell 2000 Value Index	21.19	0.09	0.00	
Smith Graham	20.88	0.45	7.16	0.58
Russell Midcap Index	19.23	0.27	0.00	
T. Rowe Price	17.31	0.64	1.05	1.10
S&P 500 Index	17.35	0.57	0.00	
INTERNATIONAL EQUITY				
International Equity Composite	16.76	0.04	2.45	0.11
Custom Benchmark	16.22	0.03	0.00	
Acadian International	17.16	0.07	3.96	0.49
MSCI AC World ex USA Small Cap (Net)	16.94	-0.04	0.00	
AQR Capital Management	16.20	0.08	4.18	0.13
Custom Benchmark	16.19	0.04	0.00	
Ativo International	16.81	0.13	3.02	-0.44
MSCI EAFE (Net)	16.62	0.21	0.00	
Baillie Gifford	20.85	-0.25	7.03	-0.84
MSCI AC World ex USA (Net)	16.19	0.04	0.00	
Earnest Partners	16.23	0.25	4.27	0.78
MSCI AC World ex USA (Net)	16.19	0.04	0.00	

3-Year Risk Statistics

Periods Ended March 31, 2024

	3 Years Standard Deviation	3 Years Sharpe Ratio	3 Years Tracking Error	3 Years Information Ratio
GLOBAL EQUITY				
Global Equity Composite	13.95	0.36	3.71	-0.13
MSCI AC World Index (Net)	16.39	0.34	0.00	
Wellington	16.47	0.30	2.93	-0.24
MSCI AC World Index (Net)	16.39	0.34	0.00	
Ariel Global	12.17	0.45	7.90	-0.01
MSCI AC World Index (Net)	16.39	0.34	0.00	
GLOBAL LOW VOLATILITY				
Global Low Volatility Composite	11.39	0.33	1.31	1.10
MSCI AC World Minimum Volatility Index (Net)	11.21	0.20	0.00	
Acadian Global Low Vol.	11.66	0.41	2.59	0.97
MSCI AC World Minimum Volatility Index (Net)	11.21	0.20	0.00	
REIT's				
REIT Composite	20.62	0.20	1.37	-0.09
Wilshire U.S. Real Estate Securities Index	21.31	0.20	0.00	
Adelante Capital Management	20.36	0.21	1.67	0.00
Wilshire U.S. Real Estate Securities Index	21.31	0.20	0.00	
CenterSquare	20.93	0.19	1.80	-0.13
Wilshire U.S. Real Estate Securities Index	21.31	0.20	0.00	
FIXED INCOME				
Fixed Income Composite	7.93	-0.57	1.16	0.29
Blmbg. U.S. Aggregate Index	7.14	-0.68	0.00	
Garcia Hamilton	8.15	-0.58	1.73	0.07
Blmbg. U.S. Aggregate Index	7.14	-0.68	0.00	

3-Year Risk Statistics

Periods Ended March 31, 2024

	3 Years Standard Deviation	3 Years Sharpe Ratio	3 Years Tracking Error	3 Years Information Ratio
HIGH YIELD				
High Yield Composite	8.25	0.05	0.73	0.40
FTSE High Yield Cash Pay	8.34	0.02	0.00	
BlackRock	7.95	0.07	0.83	0.46
FTSE High Yield Cash Pay	8.34	0.02	0.00	
Oaktree Capital Management	8.61	0.04	1.30	0.15
FTSE High Yield Cash Pay	8.34	0.02	0.00	
CREDIT OPPORTUNITIES				
Credit Opportunities Composite	7.11	-0.05	1.64	-0.21
Custom Benchmark	6.97	0.00	0.00	
Neuberger Berman	7.11	-0.05	1.64	-0.21
Custom Benchmark	6.97	0.00	0.00	
MLP's				
Global Listed Infrastructure Composite	15.00	1.12	5.02	-0.51
Global Listed Infrastructure Benchmark	16.94	1.15	0.00	
Harvest Fund Advisors MLP	17.08	1.43	6.18	-0.15
Alerian MLP Index	19.78	1.29	0.00	
CIBC	17.89	1.33	5.97	-0.27
Alerian MLP Index	19.78	1.29	0.00	

5-Year Risk Statistics

Periods Ended March 31, 2024

	5 Years Standard Deviation	5 Years Sharpe Ratio	5 Years Tracking Error	5 Years Information Ratio
Dallas Total Fund	10.66	0.46	2.29	-0.20
Policy Index	12.26	0.44	0.00	
DOMESTIC EQUITY				
Domestic Equity Composite	19.62	0.66	3.69	-0.11
Custom Benchmark	18.76	0.71	0.00	
Systematic Financial	21.47	0.51	7.15	0.33
Russell 2000 Index	23.68	0.36	0.00	
Channing Capital	24.99	0.43	7.11	0.26
Russell 2000 Value Index	24.70	0.36	0.00	
Smith Graham	26.06	0.59	9.57	0.49
Russell Midcap Index	21.00	0.51	0.00	
T. Rowe Price	18.39	0.80	1.09	0.85
S&P 500 Index	18.21	0.75	0.00	
INTERNATIONAL EQUITY				
International Equity Composite	18.37	0.37	2.33	0.56
Custom Benchmark	17.66	0.31	0.00	
Acadian International	19.18	0.38	4.20	0.28
MSCI AC World ex USA Small Cap (Net)	19.70	0.31	0.00	
AQR Capital Management	17.93	0.31	3.78	0.05
Custom Benchmark	17.44	0.31	0.00	
Ativo International	18.00	0.28	4.26	-0.36
MSCI EAFE (Net)	17.77	0.38	0.00	
GLOBAL EQUITY				
Global Equity Composite	15.21	0.57	3.61	-0.37
MSCI AC World Index (Net)	17.60	0.57	0.00	
Wellington	17.72	0.56	3.23	-0.03
MSCI AC World Index (Net)	17.60	0.57	0.00	

5-Year Risk Statistics

Periods Ended March 31, 2024

	5 Years Standard Deviation	5 Years Sharpe Ratio	5 Years Tracking Error	5 Years Information Ratio
Ariel Global	13.10	0.54	7.87	-0.37
MSCI AC World Index (Net)	17.60	0.57	0.00	
GLOBAL LOW VOLATILITY				
Global Low Volatility Composite	12.75	0.38	1.66	0.51
MSCI AC World Minimum Volatility Index (Net)	12.06	0.33	0.00	
Acadian Global Low Vol.	13.35	0.42	3.09	0.50
MSCI AC World Minimum Volatility Index (Net)	12.06	0.33	0.00	
REIT's				
REIT Composite	19.85	0.26	1.40	0.44
Wilshire U.S. Real Estate Securities Index	20.54	0.22	0.00	
Adelante Capital Management	19.47	0.26	1.73	0.34
Wilshire U.S. Real Estate Securities Index	20.54	0.22	0.00	
CenterSquare	20.28	0.26	1.83	0.37
Wilshire U.S. Real Estate Securities Index	20.54	0.22	0.00	
FIXED INCOME				
Fixed Income Composite	7.02	-0.13	2.00	0.27
Blmbg. U.S. Aggregate Index	6.08	-0.24	0.00	
Garcia Hamilton	6.80	-0.22	1.61	-0.04
Blmbg. U.S. Aggregate Index	6.08	-0.24	0.00	
HIGH YIELD				
High Yield Composite	9.08	0.30	1.43	0.18
FTSE High Yield Cash Pay	9.34	0.26	0.00	
BlackRock	9.19	0.31	2.44	0.18
FTSE High Yield Cash Pay	9.34	0.26	0.00	
Oaktree Capital Management	9.16	0.27	1.25	0.06
FTSE High Yield Cash Pay	9.34	0.26	0.00	

5-Year Risk Statistics

Periods Ended March 31, 2024

	5 Years Standard Deviation	5 Years Sharpe Ratio	5 Years Tracking Error	5 Years Information Ratio
CREDIT OPPORTUNITIES				
Credit Opportunities Composite	9.60	0.18	1.74	-0.05
Custom Benchmark	8.73	0.21	0.00	
Neuberger Berman	9.60	0.18	1.74	-0.05
Custom Benchmark	8.73	0.21	0.00	
MLP's				
Global Listed Infrastructure Composite	29.08	0.30	9.68	-0.30
Global Listed Infrastructure Benchmark	37.05	0.31	0.00	
Harvest Fund Advisors MLP	28.96	0.53	11.59	-0.12
Alerian MLP Index	38.48	0.44	0.00	
CIBC	32.29	0.46	8.26	-0.23
Alerian MLP Index	38.48	0.44	0.00	

10-Year Risk Statistics

Periods Ended March 31, 2024

	10 Years Standard Deviation	10 Years Sharpe Ratio	10 Years Excess Risk	10 Years Information Ratio
Dallas Total Fund	8.99	0.55	9.04	-0.05
Policy Index	10.14	0.50	10.17	
DOMESTIC EQUITY				
Domestic Equity Composite	16.26	0.68	16.29	-0.22
Custom Benchmark	15.52	0.75	15.54	
Systematic Financial	18.45	0.53	18.49	0.31
Russell 2000 Index	20.22	0.40	20.26	
Channing Capital	21.39	0.37	21.42	0.09
Russell 2000 Value Index	20.70	0.36	20.75	
Smith Graham				
Russell Midcap Index	17.19	0.56	17.22	
T. Rowe Price	15.30	0.84	15.31	0.69
S&P 500 Index	15.09	0.80	15.11	
INTERNATIONAL EQUITY				
International Equity Composite	15.52	0.32	15.53	0.47
Custom Benchmark	15.06	0.27	15.06	
Acadian International	16.43	0.36	16.46	0.35
MSCI AC World ex USA Small Cap (Net)	16.33	0.28	16.36	
AQR Capital Management	15.28	0.28	15.28	0.09
Custom Benchmark	14.94	0.26	14.95	
Ativo International				
MSCI EAFE (Net)				
GLOBAL EQUITY				
Global Equity Composite	13.42	0.54	13.42	-0.30
MSCI AC World Index (Net)	14.68	0.55	14.69	
Wellington	15.22	0.56	15.23	0.16
MSCI AC World Index (Net)	14.68	0.55	14.69	

10-Year Risk Statistics

Periods Ended March 31, 2024

	10 Years Standard Deviation	10 Years Sharpe Ratio	10 Years Excess Risk	10 Years Information Ratio
Ariel Global				
MSCI AC World Index (Net)				
GLOBAL LOW VOLATILITY				
Global Low Volatility Composite				
MSCI AC World Minimum Volatility Index (Net)				
Acadian Global Low Vol.				
MSCI AC World Minimum Volatility Index (Net)				
REIT's				
REIT Composite	17.26	0.41	17.31	0.10
Wilshire U.S. Real Estate Securities Index	17.77	0.39	17.81	
Adelante Capital Management	16.90	0.42	16.95	0.10
Wilshire U.S. Real Estate Securities Index	17.77	0.39	17.81	
CenterSquare				
Wilshire U.S. Real Estate Securities Index				
FIXED INCOME				
Fixed Income Composite	5.32	0.14	5.32	0.31
Blmbg. U.S. Aggregate Index	4.76	0.06	4.73	
Garcia Hamilton	5.21	0.08	5.21	0.09
Blmbg. U.S. Aggregate Index	4.76	0.06	4.73	
HIGH YIELD				
High Yield Composite	7.34	0.41	7.35	-0.05
FTSE High Yield Cash Pay	7.71	0.40	7.72	
BlackRock	7.36	0.43	7.36	0.03
FTSE High Yield Cash Pay	7.71	0.40	7.72	
Oaktree Capital Management	7.52	0.35	7.54	-0.42
FTSE High Yield Cash Pay	7.71	0.40	7.72	

10-Year Risk Statistics

Periods Ended March 31, 2024

	10 Years Standard Deviation	10 Years Sharpe Ratio	10 Years Excess Risk	10 Years Information Ratio
CREDIT OPPORTUNITIES				
Credit Opportunities Composite				
Custom Benchmark				
Neuberger Berman				
Custom Benchmark				
MLP's				
Global Listed Infrastructure Composite	25.22	0.18	25.26	0.06
Global Listed Infrastructure Benchmark	29.78	0.13	29.82	
Harvest Fund Advisors MLP	25.22	0.30	25.26	0.11
Alerian MLP Index	30.74	0.22	30.77	
CIBC	27.22	0.27	27.26	0.13
Alerian MLP Index	30.74	0.22	30.77	

Asset Allocation & Performance

DOMESTIC EQUITY

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
DOMESTIC EQUITY				
T. Rowe Price	12.79	16.07	10.96	4/1/2006
Standard & Poor's 500 +1%	12.60	16.19	11.36	
Value Added	0.19	-0.12	-0.40	
Systematic Financial	6.48	11.21	10.80	8/1/2003
Russell 2000 + 1.25%	1.16	9.46	10.31	
Value Added	5.32	1.75	0.49	
Channing Capital	3.81	10.15	7.59	12/1/2013
Russell 2000 Value + 1.25%	3.50	9.52	8.36	
Value Added	0.31	0.63	-0.77	
Smith Graham	10.22	14.84	10.76	1/1/2018
Russell Mid Cap + 2%	8.20	13.33	12.00	
Value Added	2.02	1.51	-1.24	

Asset Allocation & Performance

INTERNATIONAL EQUITY

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
INTERNATIONAL EQUITY				
Acadian International	2.28	7.60	8.20	4/1/1989
Custom Benchmark + 2%	2.40	8.38	7.98	
Value Added	-0.12	-0.78	0.22	
AQR Capital Management	2.50	6.04	3.92	4/1/2006
Custom Benchmark +1.5%	3.46	7.56	5.10	
Value Added	-0.96	-1.52	-1.18	
Ativo International	3.36	5.60	3.79	1/1/2018
MSCI EAFE Index (N) + 2%	6.89	9.48	7.03	
Value Added	-3.53	-3.88	-3.24	
Baillie Gifford	-4.70	5.51	5.51	4/1/2019
MSCI ACWI ex US + 2.00%	3.99	8.10	8.10	
Value Added	-8.69	-2.59	-2.59	
Earnest Partners	5.37	8.66	8.66	4/1/2019
MSCI ACWI ex US + 2.00%	3.99	8.10	8.10	
Value Added	1.38	0.56	0.56	

Asset Allocation & Performance

GLOBAL EQUITY

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
GLOBAL EQUITY				
Wellington	6.18	10.80	11.20	9/1/2012
MSCI ACWI (N) + 2%	9.11	13.14	12.23	
Value Added	-2.93	-2.34	-1.03	
Ariel Global	7.52	8.49	7.31	1/1/2018
MSCI ACWI (N) + 1.5%	8.56	12.58	10.56	
Value Added	-1.04	-4.09	-3.25	
Acadian Global Low Vol.	6.84	6.90	7.32	7/1/2015
MSCI ACWI (N) + 2%	9.11	13.14	11.44	
Value Added	-2.27	-6.24	-4.12	

Asset Allocation & Performance

REAL ESTATE

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
REAL ESTATE				
Adelante Capital Management	4.80	5.29	9.02	10/1/2001
Wilshire Real Est. Secs + 1%	5.65	5.49	10.20	
Value Added	-0.85	-0.20	-1.18	
CenterSquare	4.44	5.22	6.90	6/1/2018
Wilshire Real Est. Secs + 1%	5.64	5.49	7.14	
Value Added	-1.20	-0.27	-0.24	

Asset Allocation & Performance

FIXED INCOME

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
FIXED INCOME				
Garcia Hamilton	-2.41	0.25	1.79	11/1/2013
Bloomberg Aggregate + 0.5%	-1.97	0.86	2.08	
Value Added	-0.44	-0.61	-0.29	
HIGH YIELD				
Oaktree Capital Management	2.55	4.18	6.11	4/1/1988
FTSE HY Cash Pay + 1%	3.39	5.12		
Value Added	-0.84	-0.94		
BlackRock	2.78	4.56	5.83	10/1/2006
FTSE HY Cash Pay + 1%	3.38	5.11	7.18	
Value Added	-0.60	-0.55	-1.35	
CREDIT OPPORTUNITIES				
Neuberger Berman	1.96	3.28	4.89	2/1/2016
Custom Benchmark + 1%	3.34	4.49	6.15	
Value Added	-1.38	-1.21	-1.26	

Asset Allocation & Performance

MLP's

Periods Ended March 31, 2024

	Performance (%) net of fees			
	3 Years	5 Years	Since Inception	Inception Date
MLP's				
Harvest Fund Advisors MLP	28.92	13.61	8.70	1/1/2012
Alerian MLP Index + 1.5%	31.36	13.14	6.68	
Value Added	-2.44	0.47	2.02	
CIBC	27.89	11.89	8.63	1/1/2012
Alerian MLP Index + 1.5%	31.36	13.14	6.68	
Value Added	-3.47	-1.25	1.95	

Wilshire

ERF of the City of Dallas

Manager Performance Review - 1Q 2024

March 31, 2024

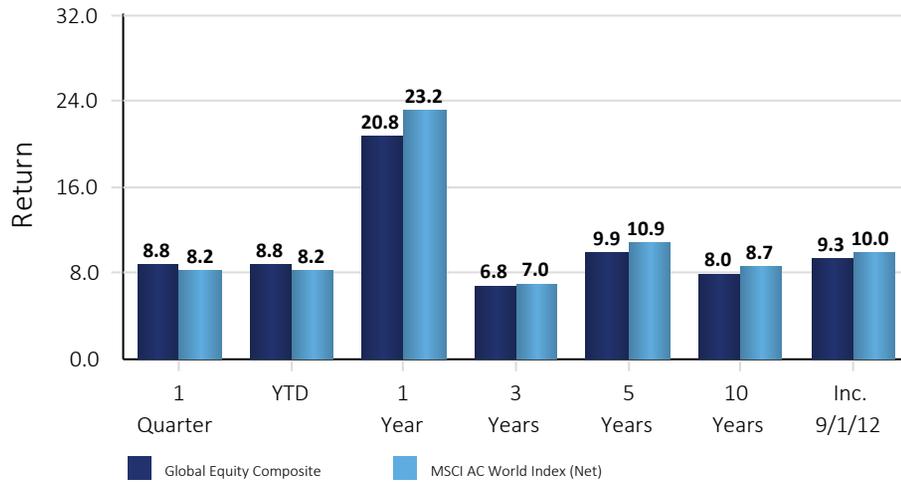
Global Equity Composite

Composite Performance Summary

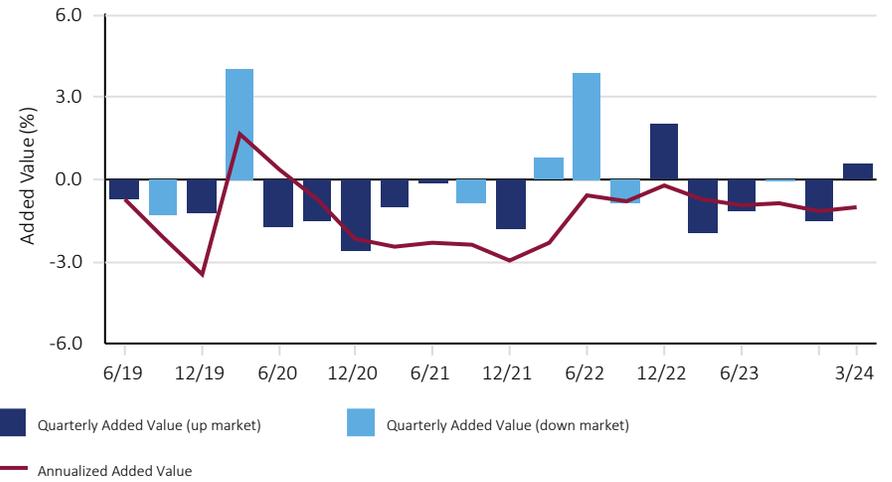
Global Equity Composite

Periods Ended March 31, 2024

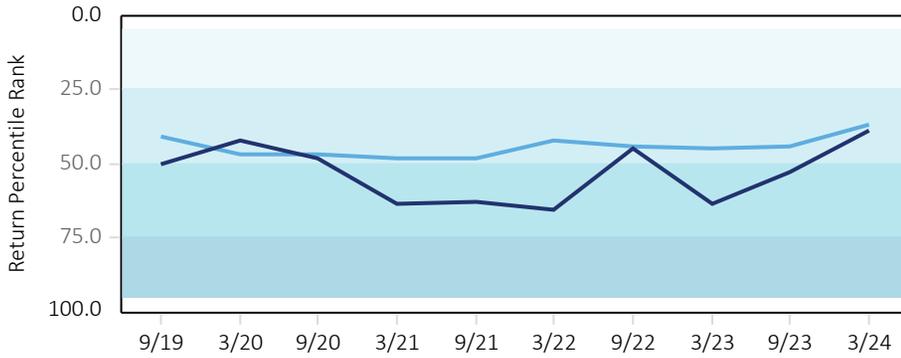
Comparative Performance



Added Value History

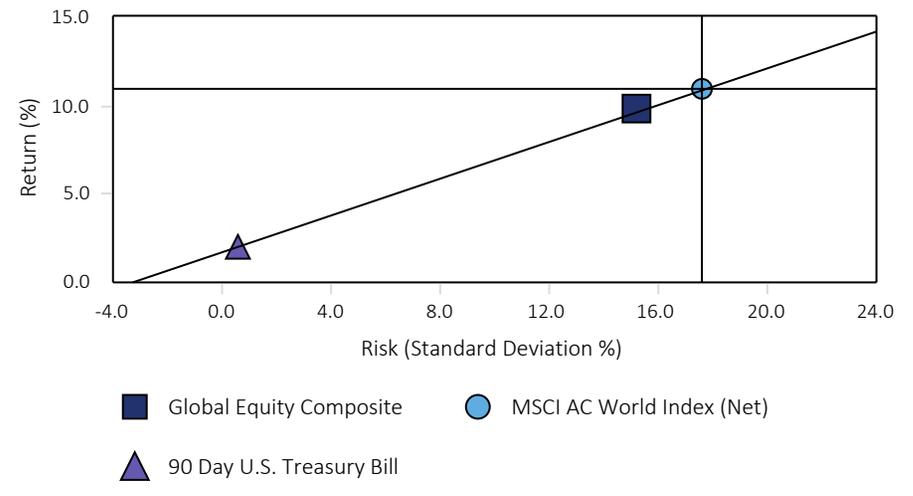


Rolling Percentile Rank: IM Global Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Global Equity Composite	10	0 (0%)	5 (50%)	5 (50%)	0 (0%)
Benchmark	10	0 (0%)	10 (100%)	0 (0%)	0 (0%)

Risk and Return 04/1/19 - 03/31/24

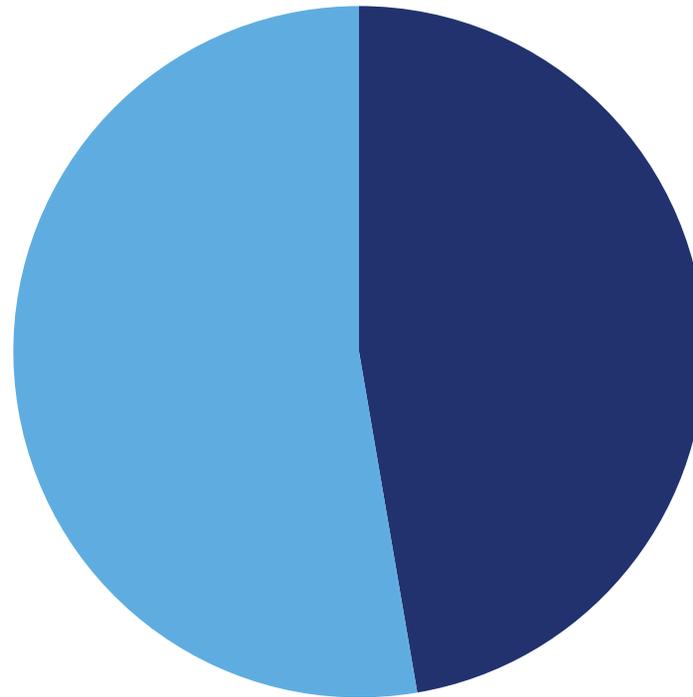


Asset Allocation By Manager

Global Equity Composite

Periods Ended March 31, 2024

Mar-2024 : 196,634,884.5



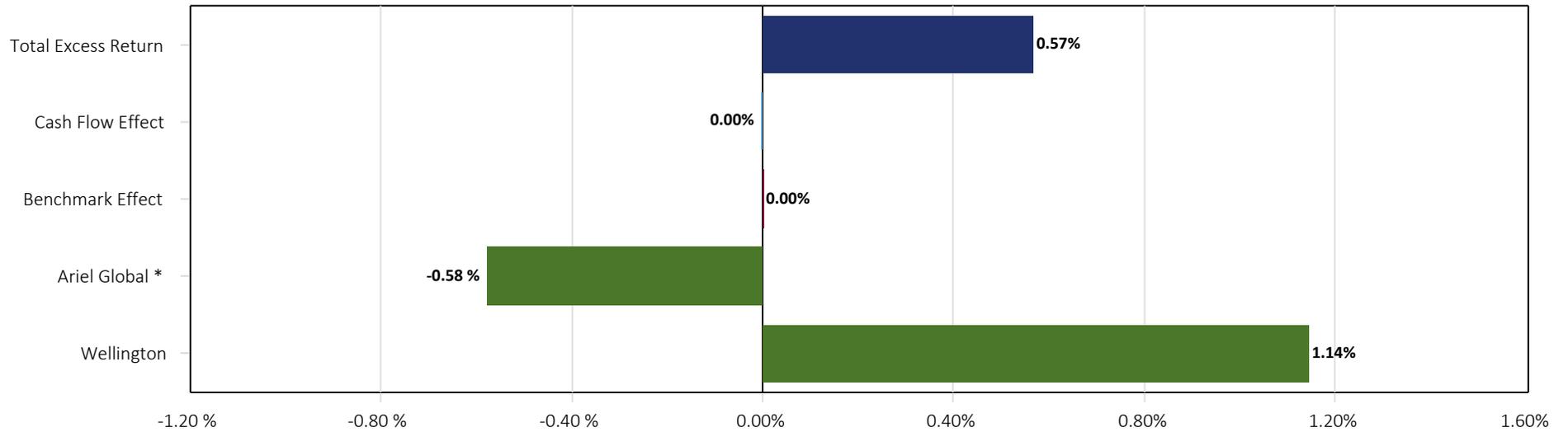
	Market Value \$	Allocation (%)
■ Ariel Global *	93,027,379	47.3
■ Wellington	103,607,505	52.7

Asset Class Attribution

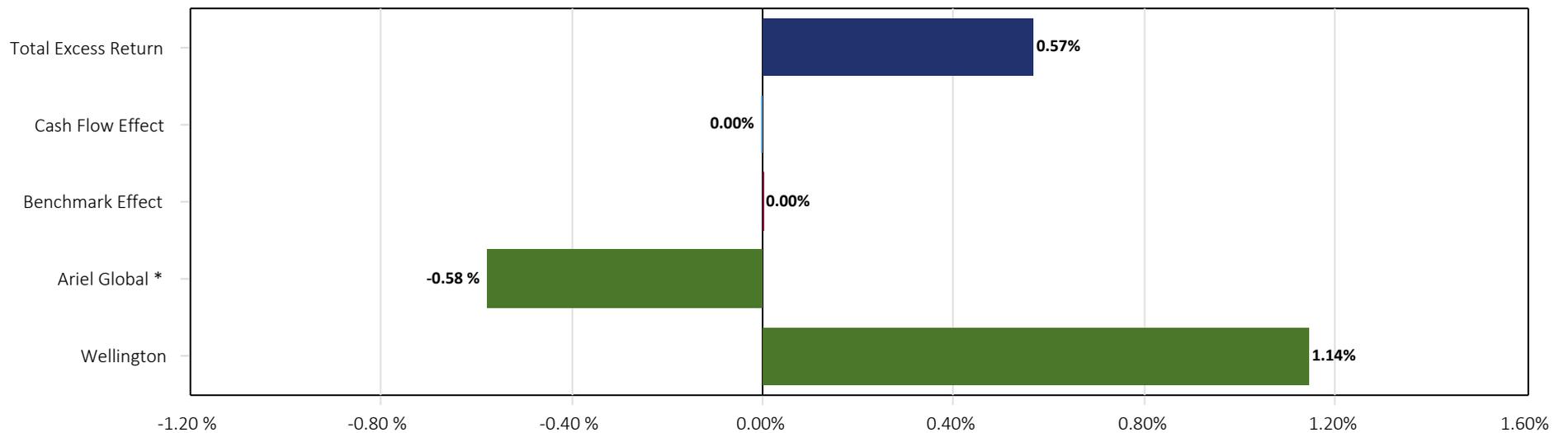
Global Equity Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

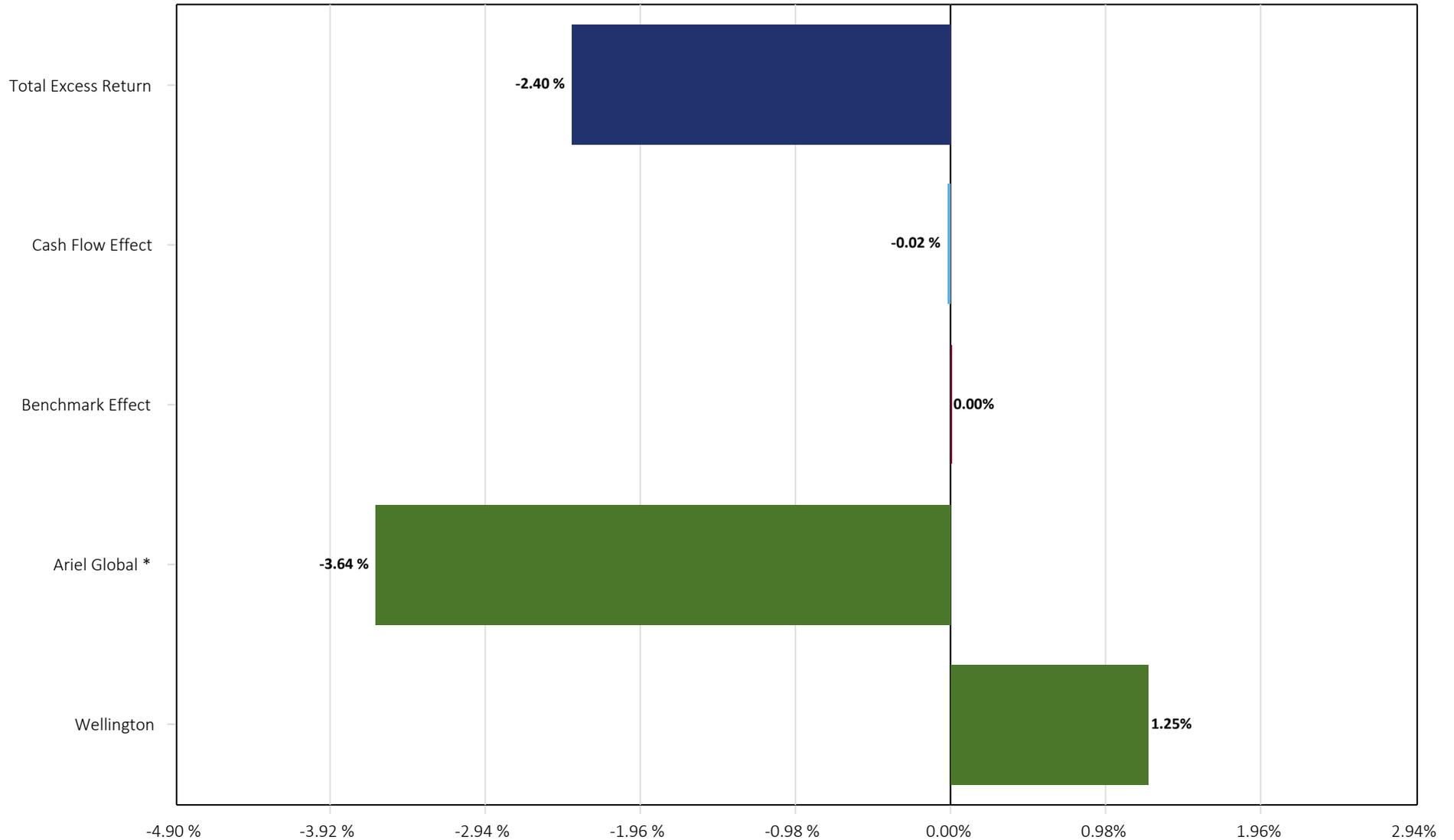


Asset Class Attribution

Global Equity Composite

Periods Ended 1 Year Ending March 31, 2024

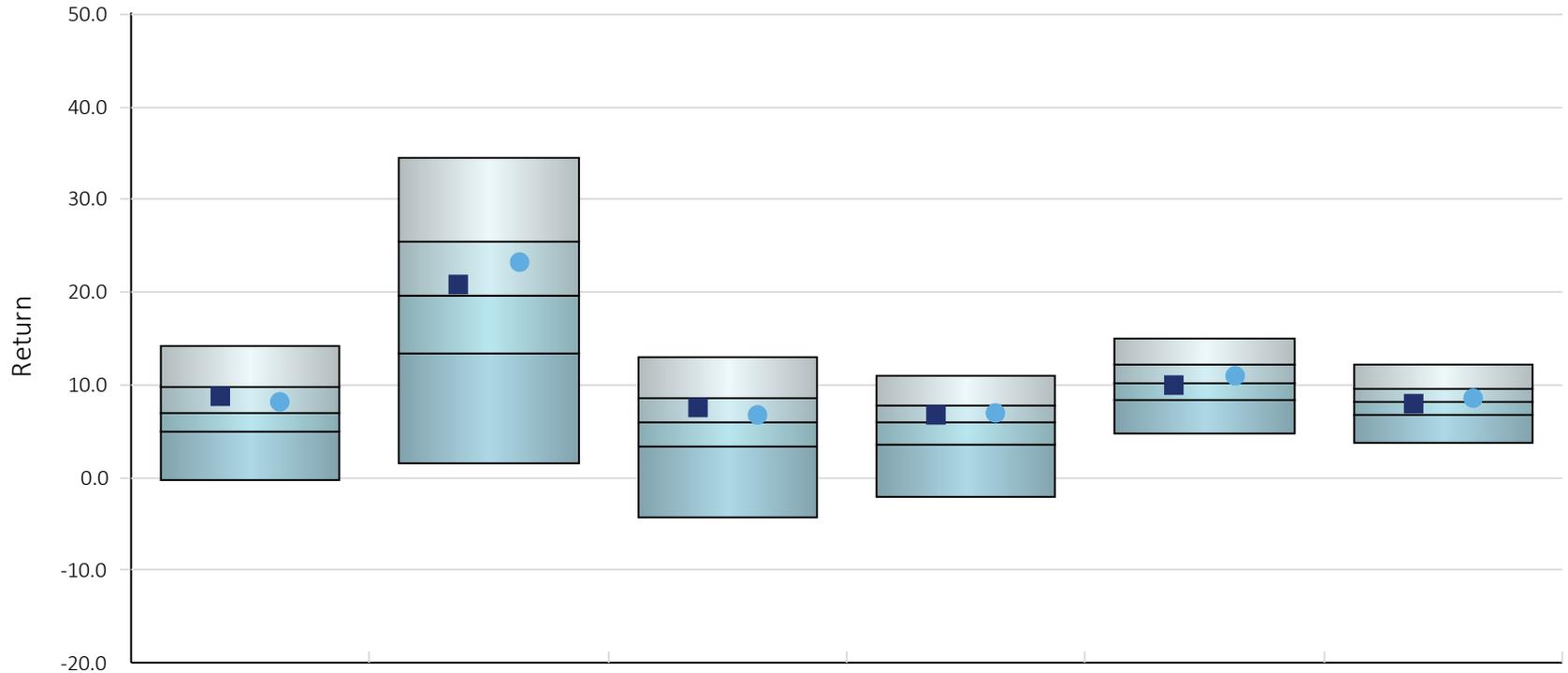
1 Year



Peer Group Analysis

Global Equity Composite

Periods Ended March 31, 2024



	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ Global Equity Composite	8.76 (33)	20.82 (44)	7.62 (34)	6.82 (39)	9.90 (54)	7.97 (55)
● MSCI AC World Index (Net)	8.20 (38)	23.22 (35)	6.79 (43)	6.96 (37)	10.92 (42)	8.66 (46)
5th Percentile	14.12	34.43	12.90	10.95	15.01	12.24
1st Quartile	9.78	25.43	8.63	7.79	12.23	9.65
Median	6.99	19.57	5.95	5.90	10.18	8.23
3rd Quartile	5.04	13.30	3.34	3.44	8.33	6.70
95th Percentile	-0.20	1.55	-4.41	-2.02	4.81	3.76
Population	463	459	449	431	395	283

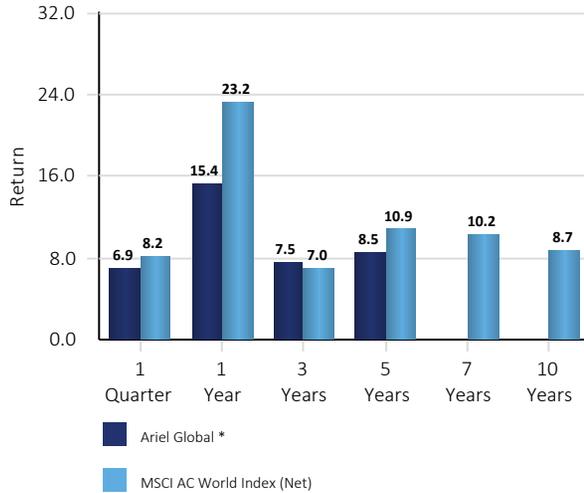
Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Performance Summary

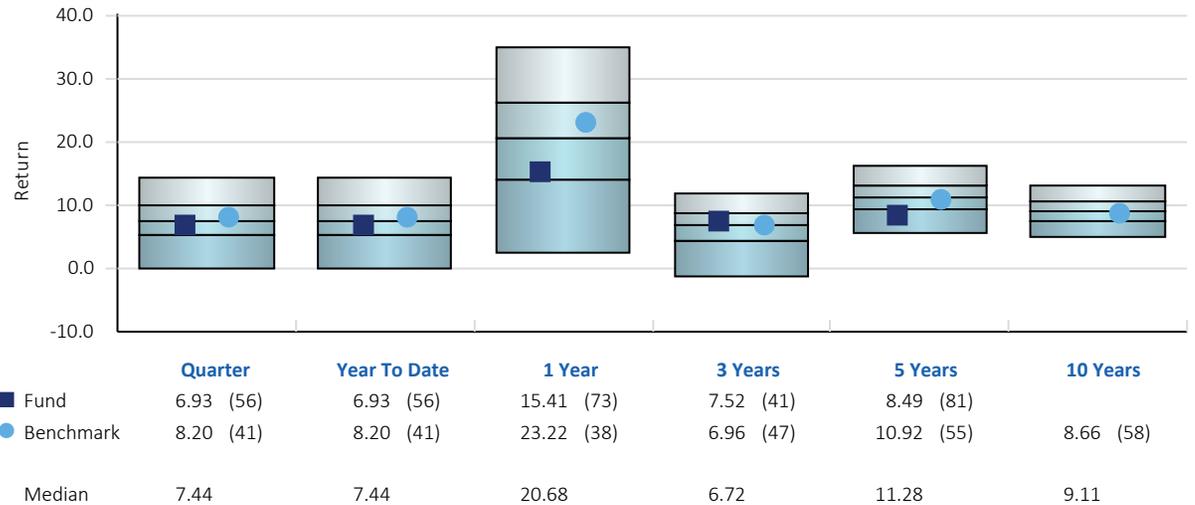
Ariel Global *

Periods Ended March 31, 2024

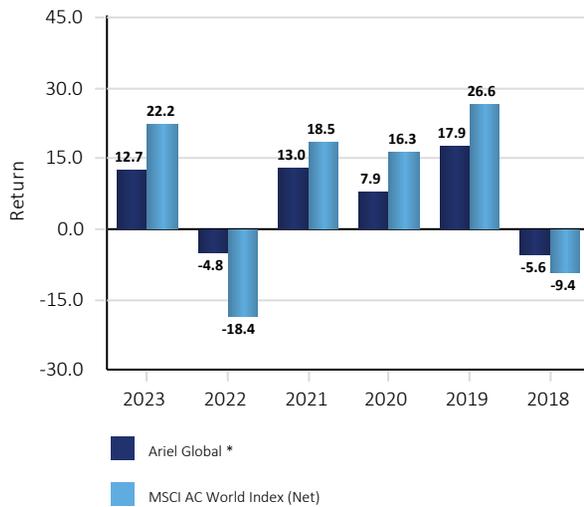
Comparative Performance



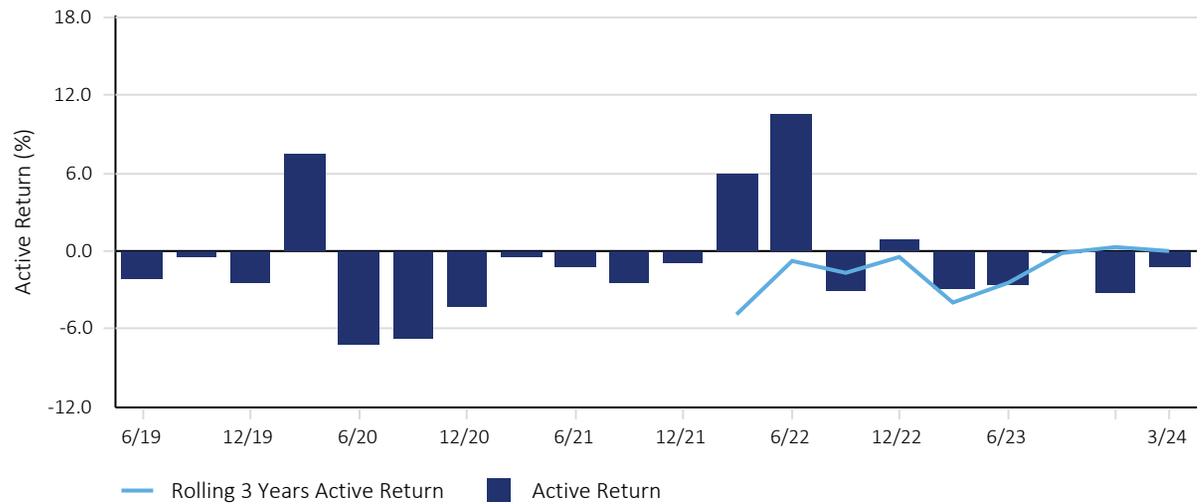
Peer Group Analysis: IM Global Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Ariel Global *

Periods Ended March 31, 2024

Portfolio Characteristics

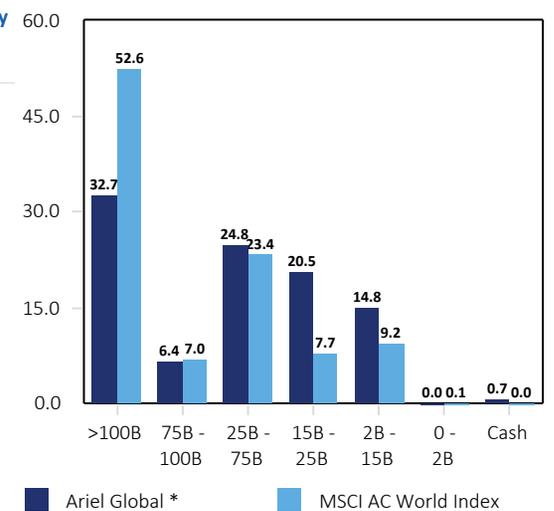
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	303,958,821,855	517,391,040,332
Median Mkt. Cap \$	29,142,386,019	13,737,395,824
Price/Earnings ratio	14.3	21.2
Price/Book ratio	2.1	3.8
5 Yr. EPS Growth (%)	3.0	13.2
Current Yield (%)	2.7	2.0
Beta (5 Years, Monthly)	0.68	1.00
Number of Stocks	59	2,841

Top 10 Holdings

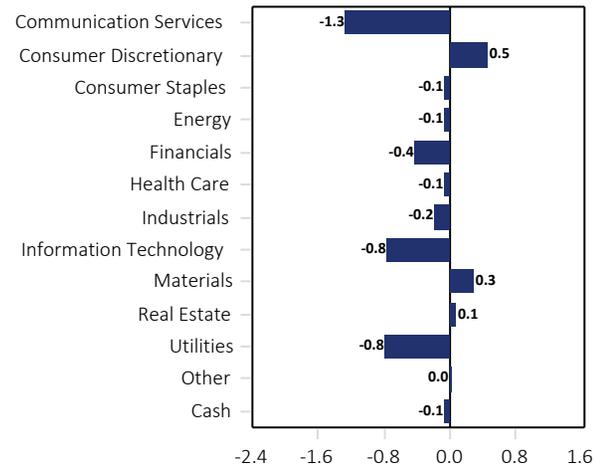
	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Microsoft Corp	7.3	4.1	3.2	12.1
Check Point Software Technologies Ltd	4.8	0.0	4.8	7.3
CIE Generale D.E. Michelin SA	4.6	0.0	4.6	7.0
DaVita Inc	4.1	0.0	4.1	31.8
Verizon Communications Inc	3.5	0.2	3.3	13.2
Baidu Inc	3.3	0.0	3.3	-11.6
NetApp Inc	3.2	0.0	3.2	19.8
Subaru Corp	3.1	0.0	3.1	25.9
Sanofi	3.0	0.2	2.8	-0.9
KBC Group NV	3.0	0.0	3.0	15.6

% of Portfolio 39.9 4.5 35.4

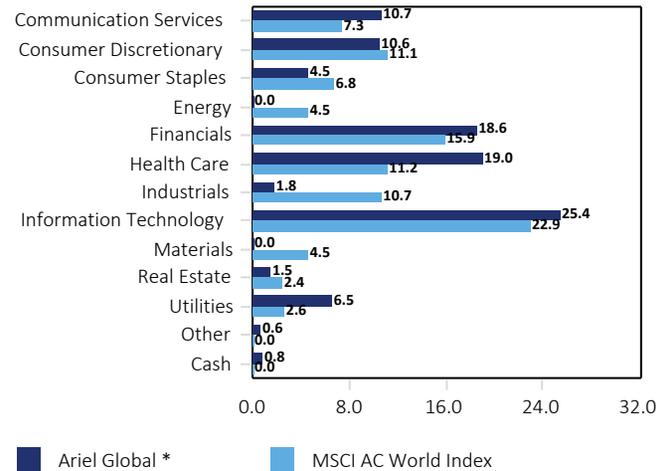
Distribution of Market Capitalization (%)



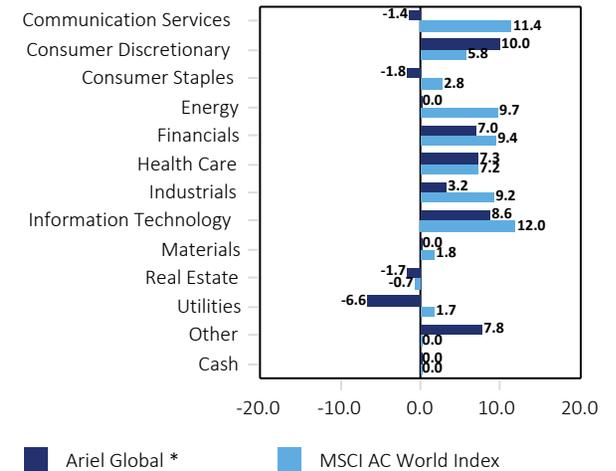
Total Attribution



Allocation



Performance

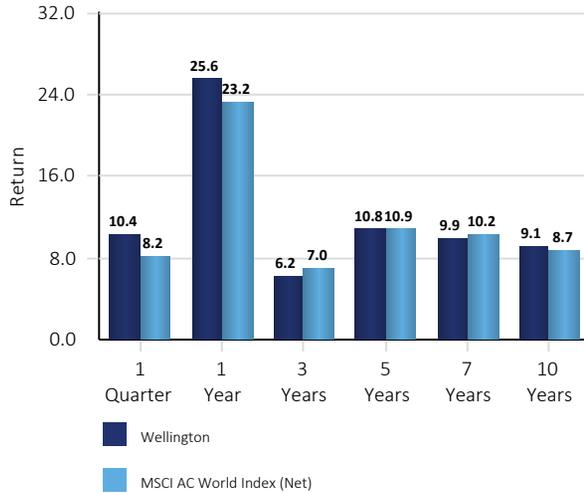


Performance Summary

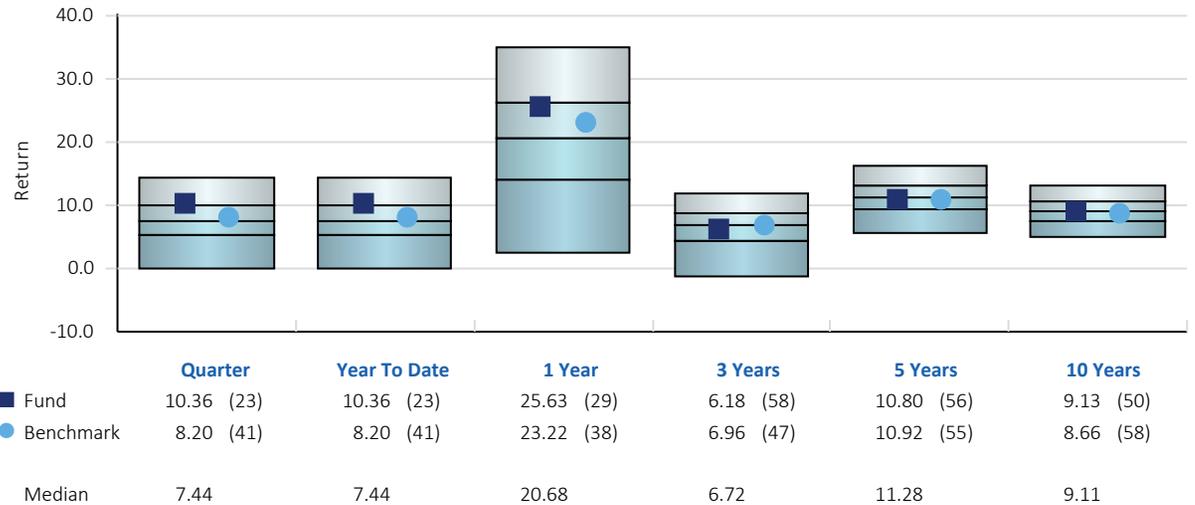
Wellington

Periods Ended March 31, 2024

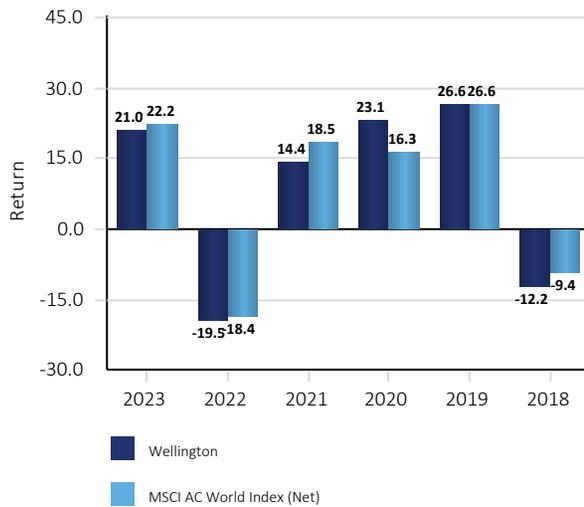
Comparative Performance



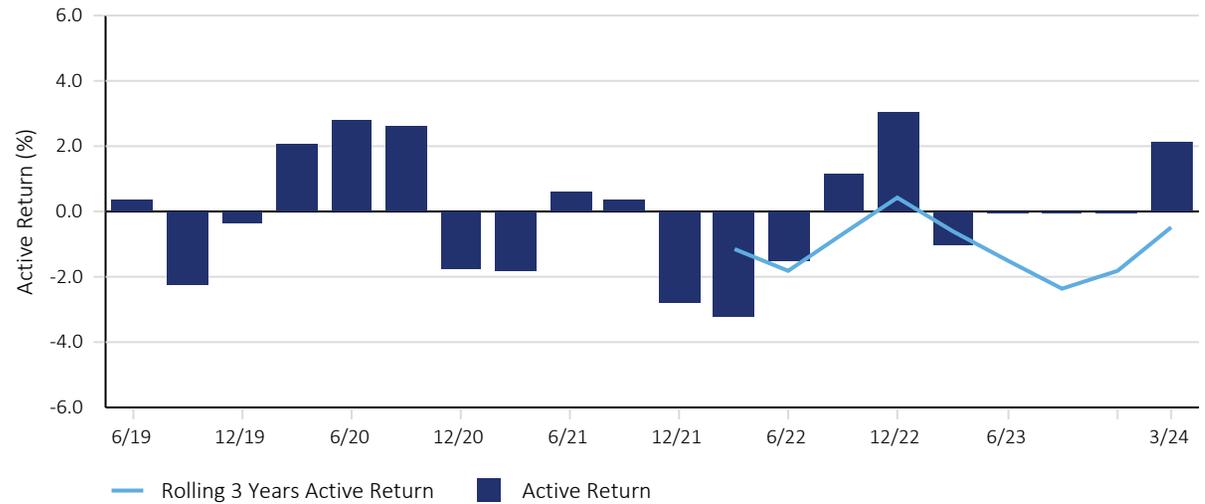
Peer Group Analysis: IM Global Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Wellington

Periods Ended March 31, 2024

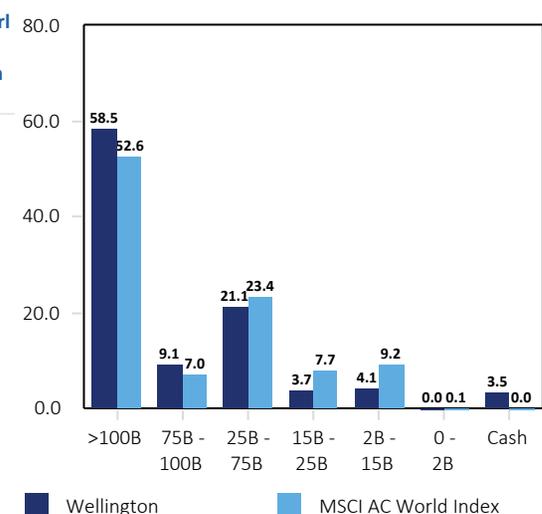
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	562,775,570,159	517,391,040,332
Median Mkt. Cap \$	83,412,435,537	13,737,395,824
Price/Earnings ratio	27.3	21.2
Price/Book ratio	4.3	3.8
5 Yr. EPS Growth (%)	12.1	13.2
Current Yield (%)	1.1	2.0
Beta (5 Years, Monthly)	0.99	1.00
Number of Stocks	84	2,841

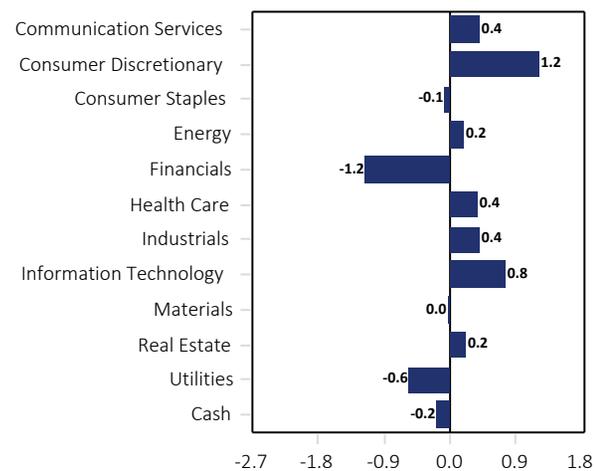
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Microsoft Corp	4.9	4.1	0.8	12.1
Amazon.com Inc	3.7	2.3	1.4	18.7
Alphabet Inc	3.6	1.1	2.5	8.0
NVIDIA Corporation	3.1	3.1	0.0	82.5
Meta Platforms Inc	2.9	1.5	1.4	37.3
SALESFORCE INC	2.1	0.4	1.7	14.6
Apple Inc	2.1	3.5	-1.4	-10.8
Taiwan Semiconductor Manufacturing Co Ltd	2.0	0.8	1.2	31.3
Visa Inc	2.0	0.6	1.4	7.4
Merck & Co Inc	1.9	0.5	1.4	21.8
% of Portfolio	28.3	17.9	10.4	

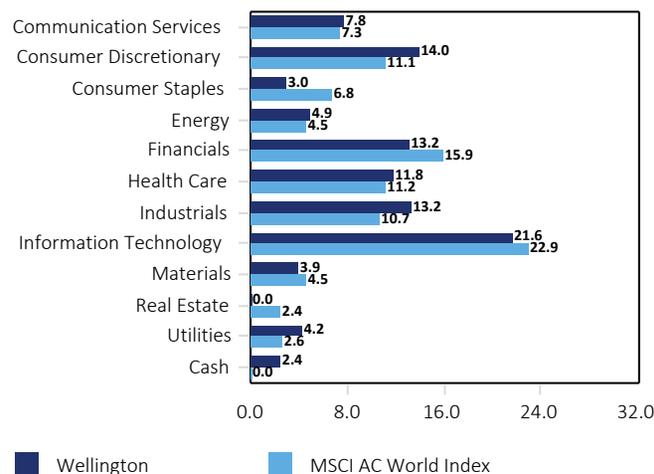
Distribution of Market Capitalization (%)



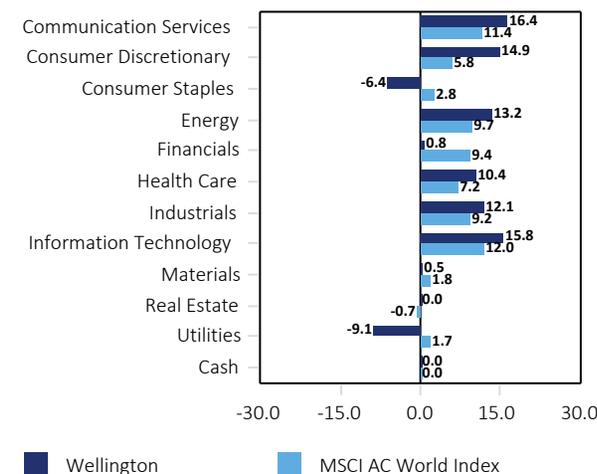
Total Attribution



Allocation



Performance



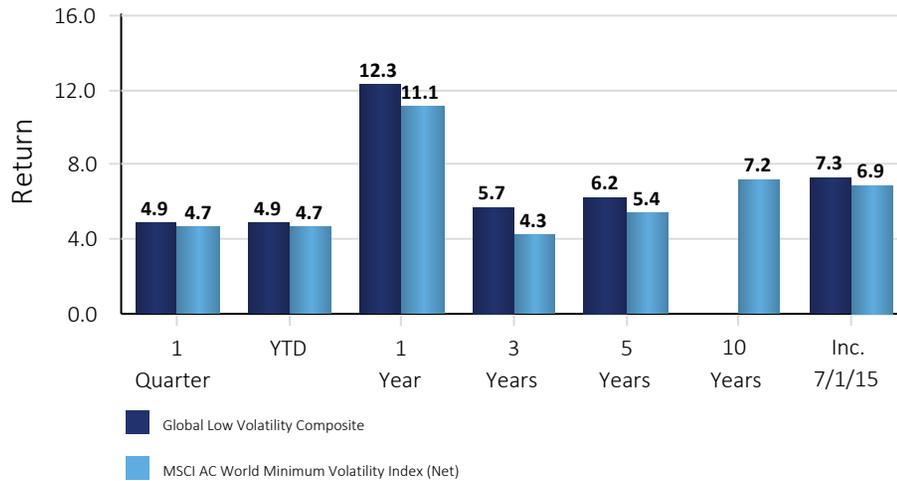
Global Low Volatility Composite

Composite Performance Summary

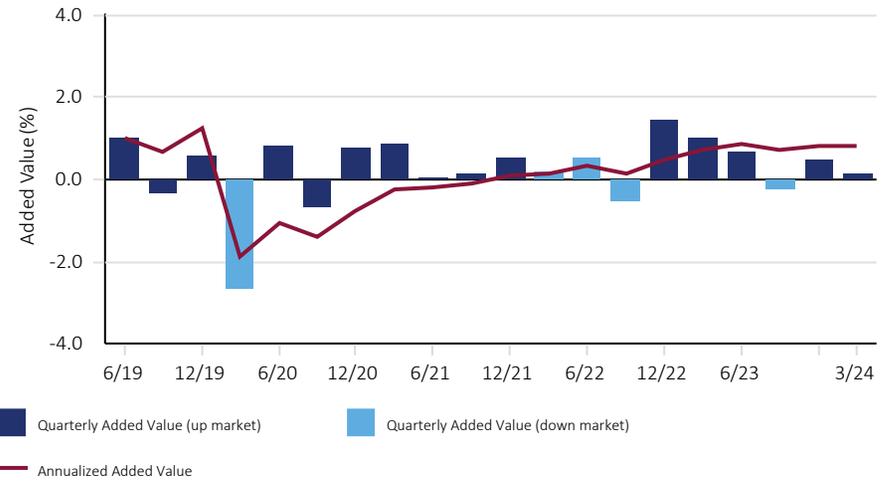
Global Low Volatility Composite

Periods Ended March 31, 2024

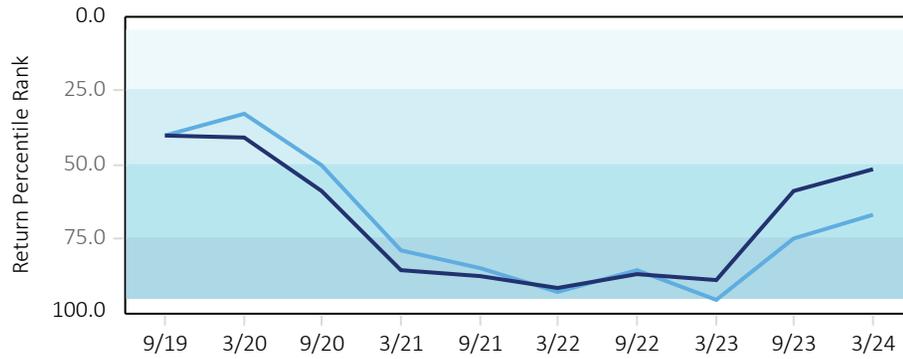
Comparative Performance



Added Value History

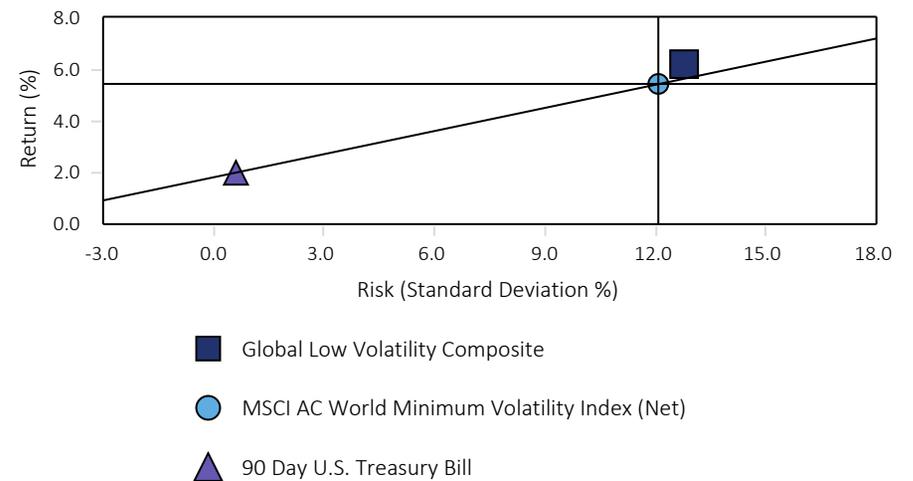


Rolling Percentile Rank: IM Global Equity (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Global Low Volatility Composite	10	0 (0%)	2 (20%)	3 (30%)	5 (50%)
Benchmark	10	0 (0%)	3 (30%)	2 (20%)	5 (50%)

Risk and Return 04/1/19 - 03/31/24

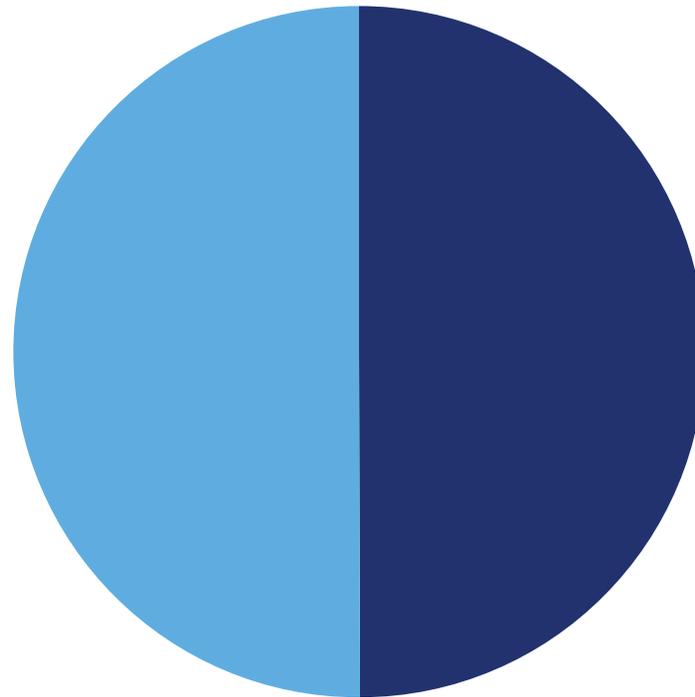


Asset Allocation By Manager

Global Low Volatility Composite

Periods Ended March 31, 2024

Mar-2024 : 378,447,133.1



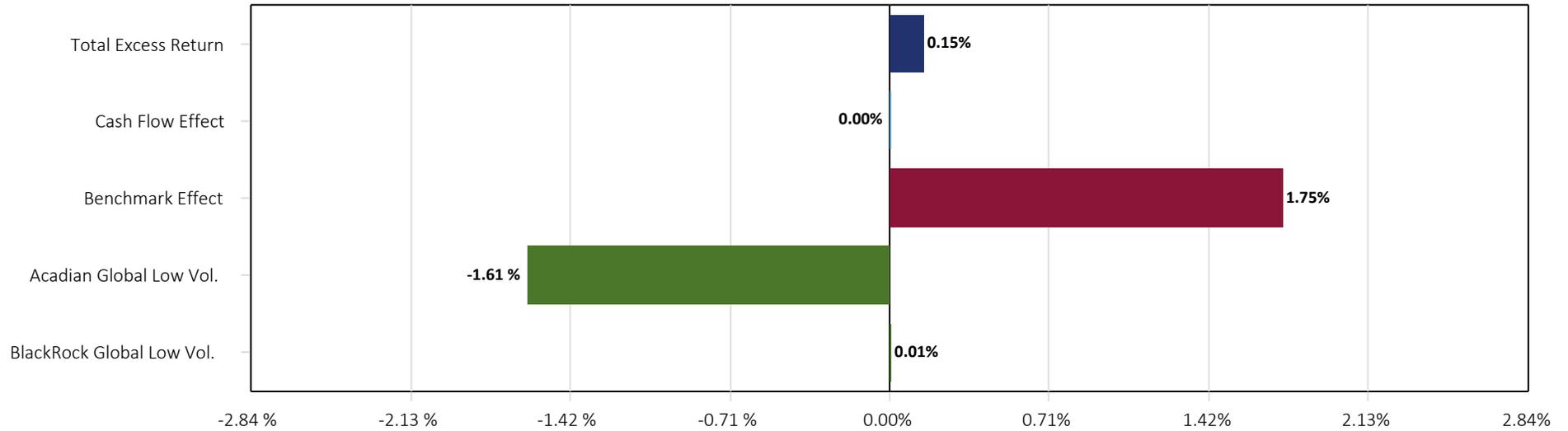
	Market Value \$	Allocation (%)
■ Acadian Global Low Vol.	189,061,482	50.0
■ BlackRock Global Low Vol.	189,385,651	50.0

Asset Class Attribution

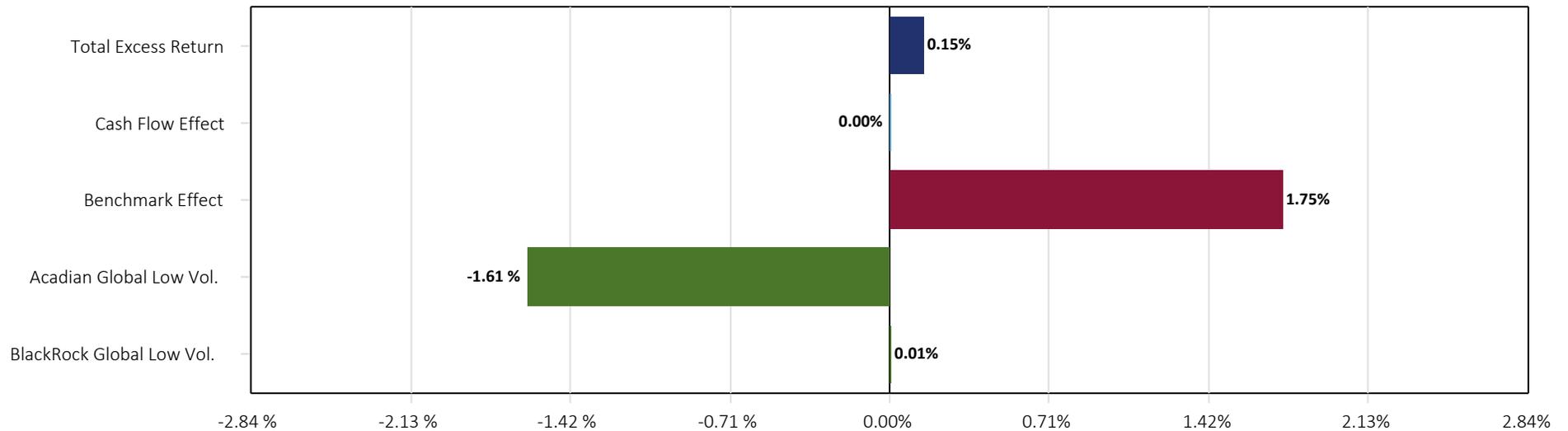
Global Low Volatility Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

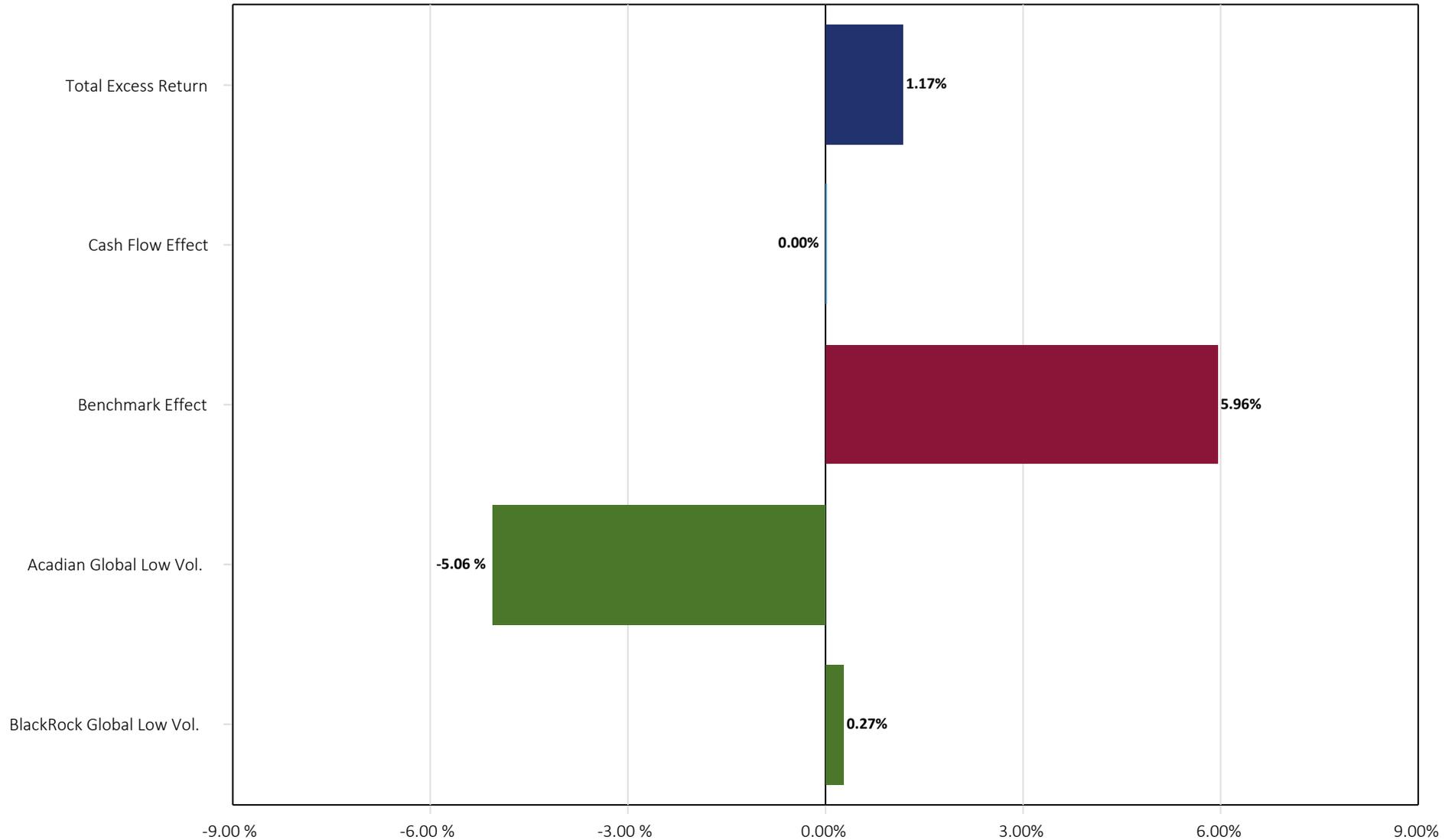


Asset Class Attribution

Global Low Volatility Composite

Periods Ended 1 Year Ending March 31, 2024

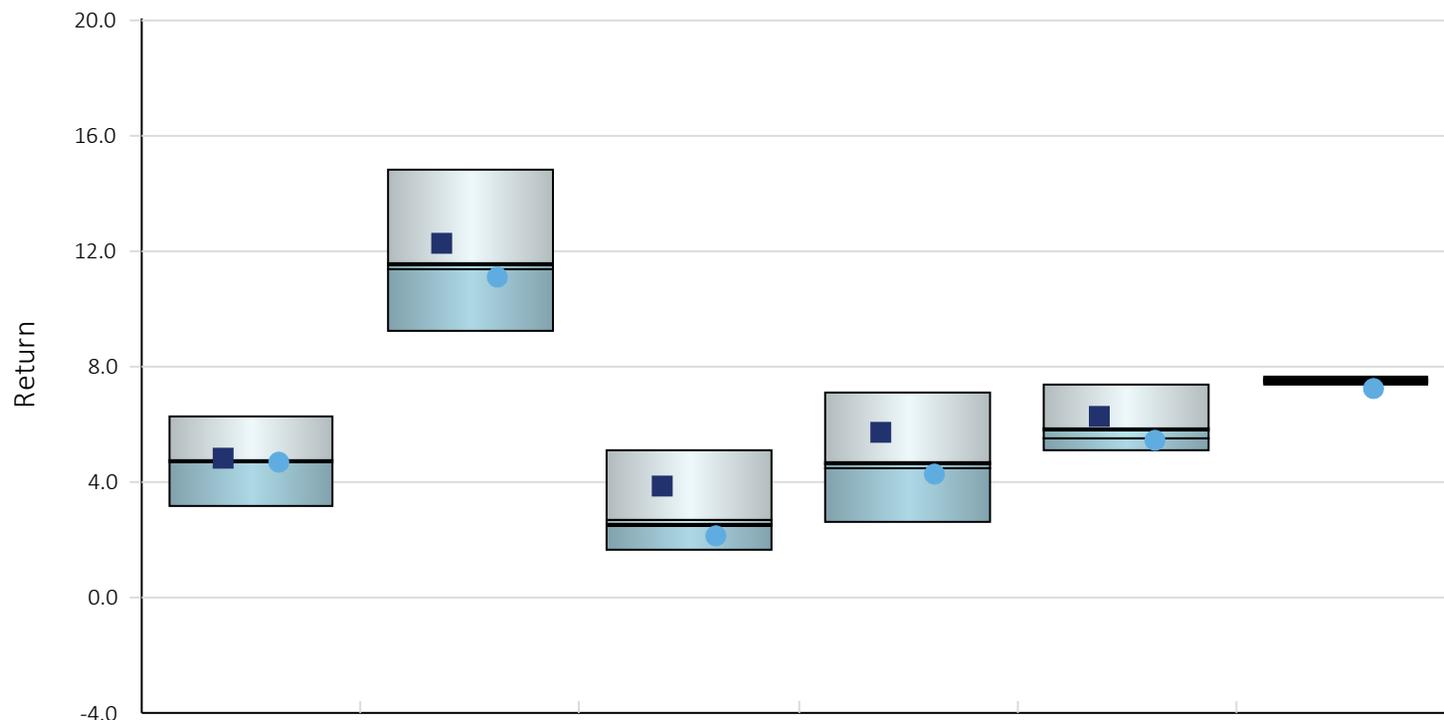
1 Year



Peer Group Analysis

Global Low Volatility Composite

Periods Ended March 31, 2024



■ Global Low Volatility Composite

● MSCI AC World Minimum Volatility Index (Net)

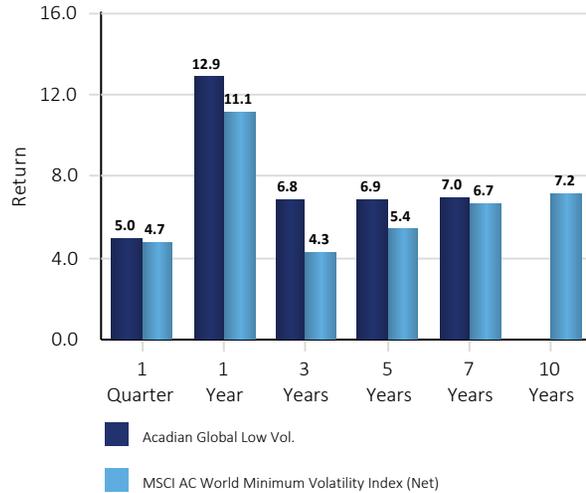
	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
Global Low Volatility Composite	4.86 (22)	12.28 (14)	3.88 (15)	5.75 (20)	6.25 (19)	
MSCI AC World Minimum Volatility Index (Net)	4.71 (63)	11.12 (91)	2.14 (91)	4.26 (93)	5.44 (87)	7.22 (100)
5th Percentile	6.30	14.84	5.07	7.11	7.41	7.65
1st Quartile	4.78	11.59	2.66	4.68	5.87	7.59
Median	4.72	11.53	2.54	4.59	5.79	7.52
3rd Quartile	4.71	11.37	2.47	4.48	5.53	7.45
95th Percentile	3.17	9.27	1.64	2.65	5.08	7.39
Population	49	49	49	49	34	2

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

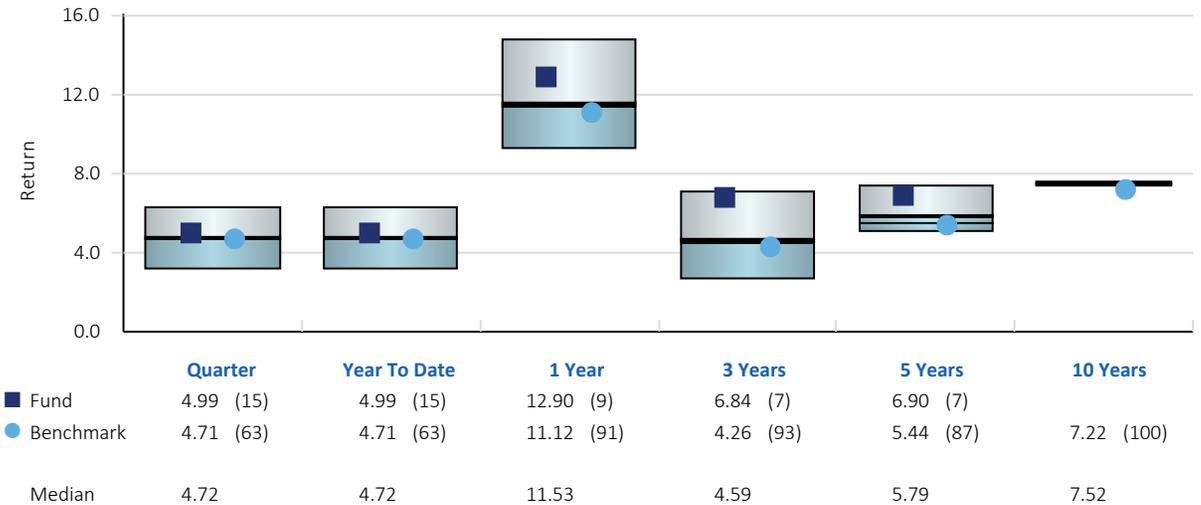
Performance Summary

Acadian Global Low Vol.
Periods Ended March 31, 2024

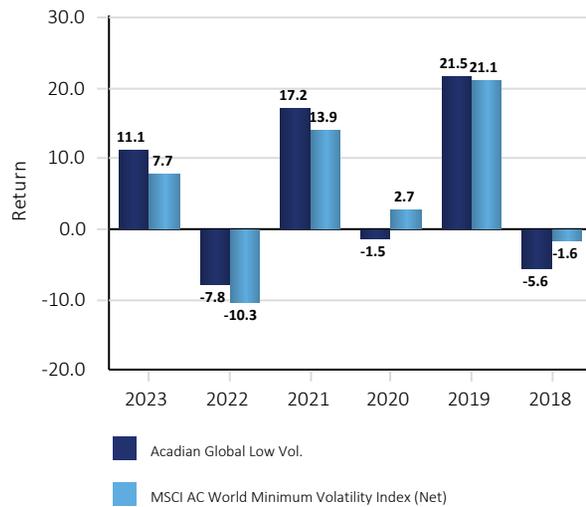
Comparative Performance



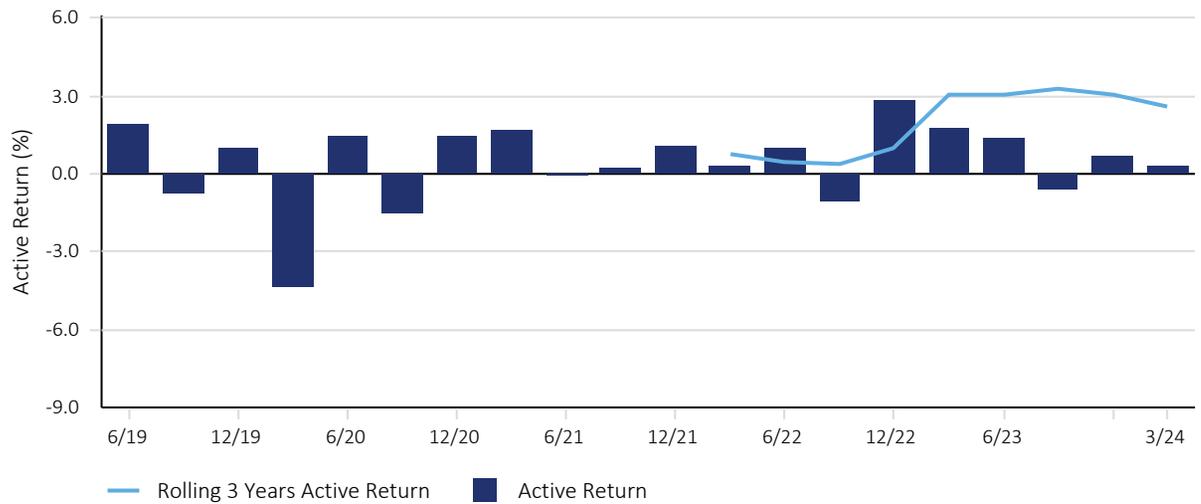
Peer Group Analysis: Global Low Volatility Equity Custom Peer Group



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Acadian Global Low Vol.

Periods Ended March 31, 2024

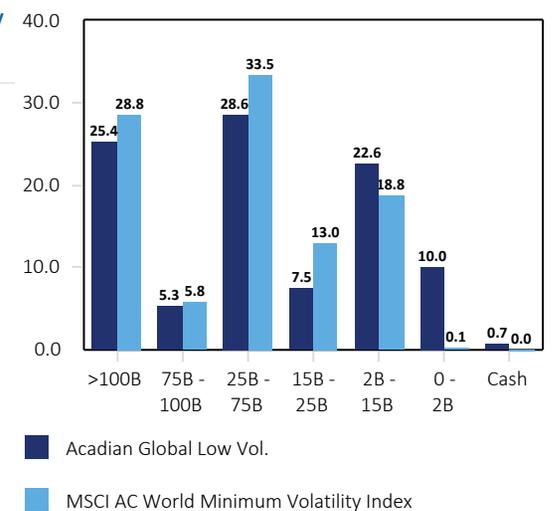
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	229,778,510,005	124,460,148,590
Median Mkt. Cap \$	1,177,398,187	17,845,759,725
Price/Earnings ratio	17.3	17.5
Price/Book ratio	4.5	3.3
5 Yr. EPS Growth (%)	10.7	10.4
Current Yield (%)	3.1	2.6
Beta (5 Years, Monthly)	1.08	1.00
Number of Stocks	316	376

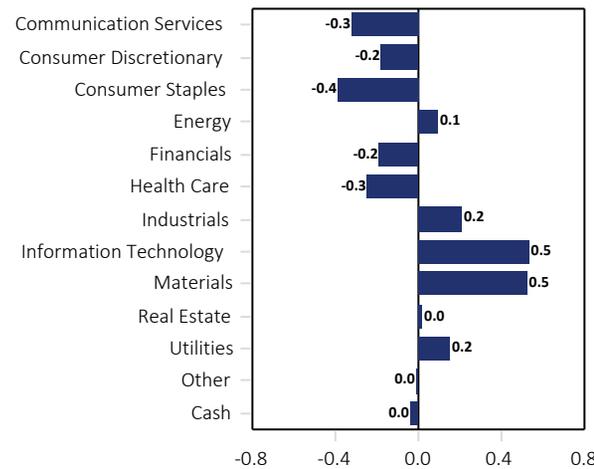
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	2.1	0.0	2.1	-10.8
Microsoft Corp	2.0	0.6	1.4	12.1
Colgate-Palmolive Co	1.5	0.4	1.1	13.6
Procter & Gamble Co (The)	1.5	0.9	0.6	11.4
Agricultural Bank of China Ltd	1.5	0.3	1.2	9.4
McKesson Corp	1.5	1.2	0.3	16.1
Church & Dwight Co Inc	1.5	0.5	1.0	10.6
Chemed Corp	1.5	0.0	1.5	9.9
Marsh & McLennan Companies Inc	1.5	0.9	0.6	9.1
Costco Wholesale Corp	1.5	0.0	1.5	11.2
% of Portfolio	16.1	4.8	11.3	

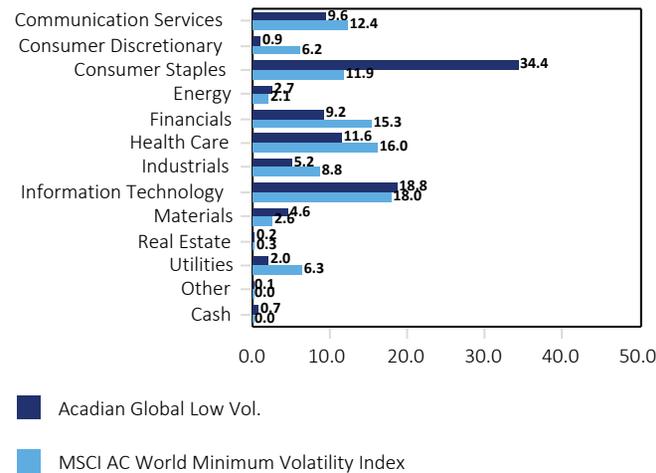
Distribution of Market Capitalization (%)



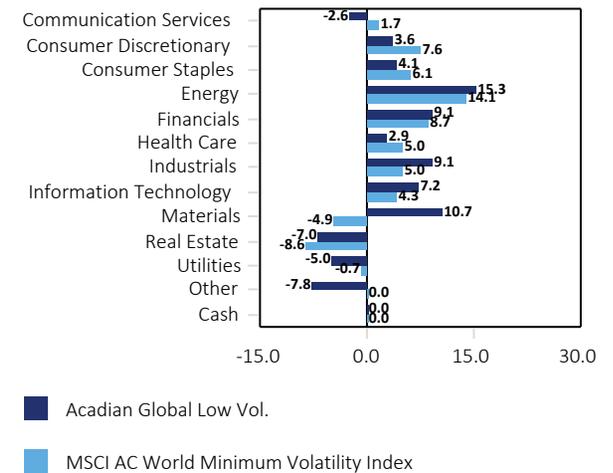
Total Attribution



Allocation



Performance

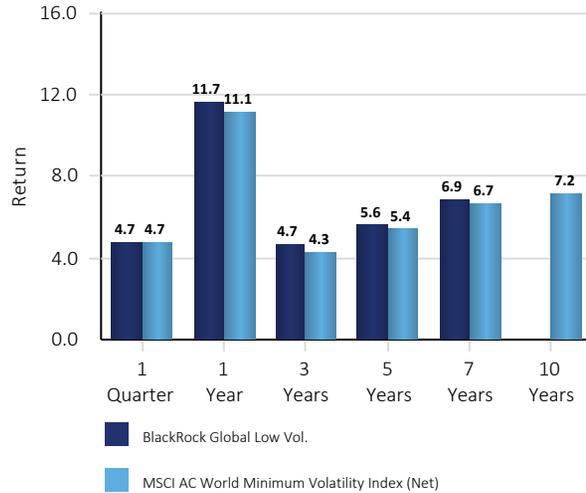


Performance Summary

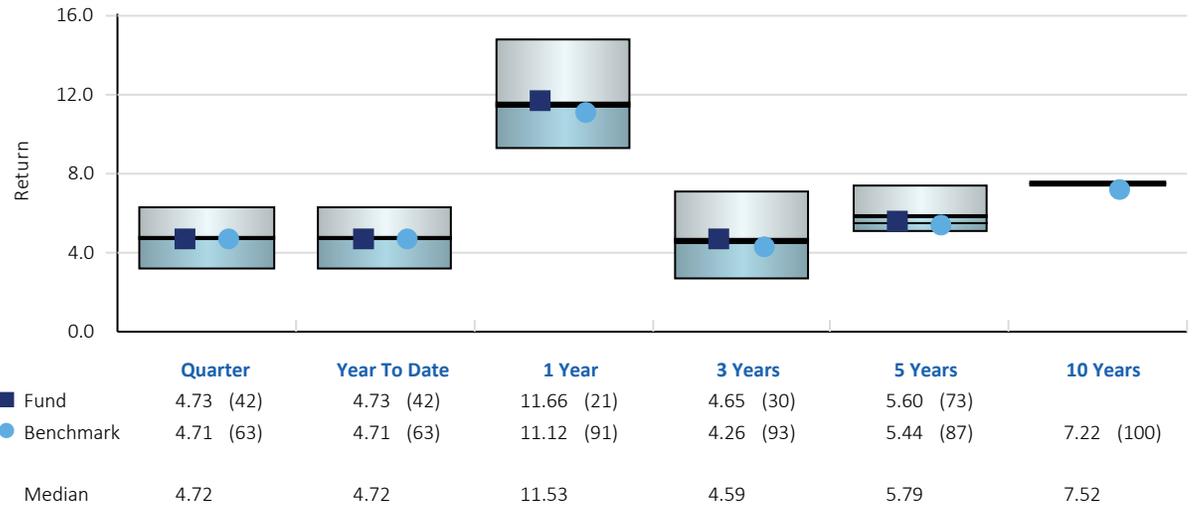
BlackRock Global Low Vol.

Periods Ended March 31, 2024

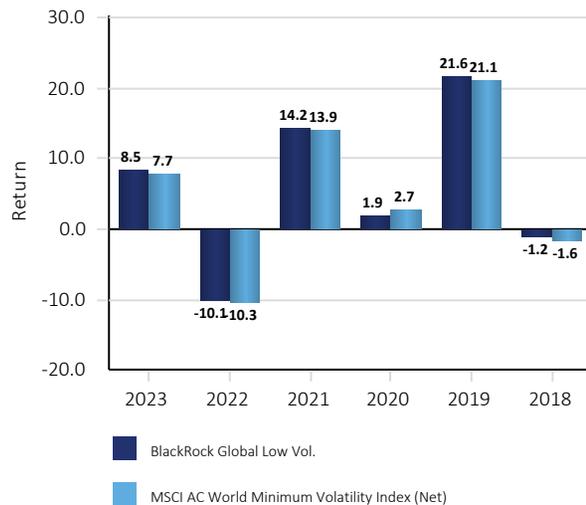
Comparative Performance



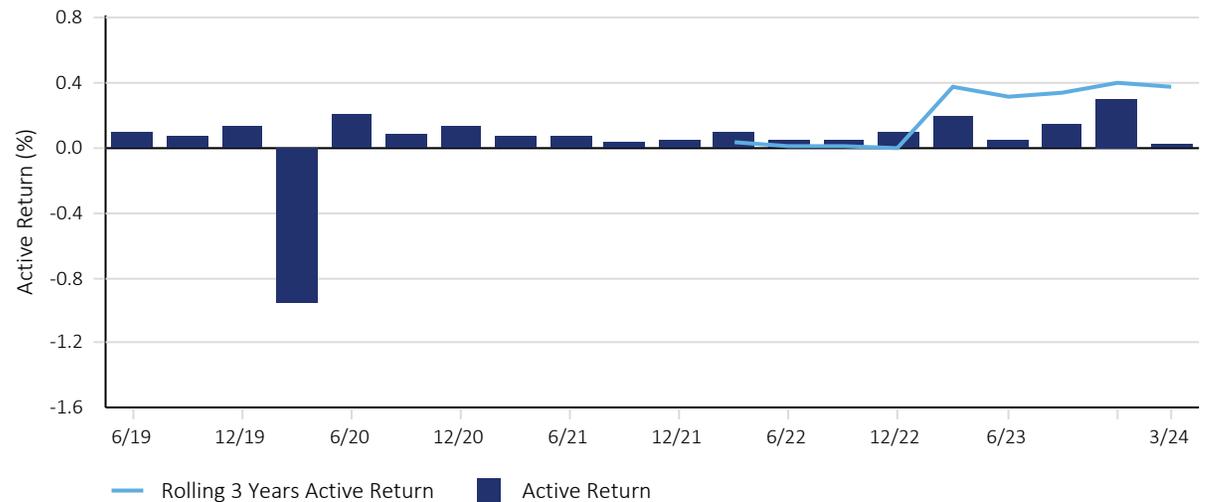
Peer Group Analysis: Global Low Volatility Equity Custom Peer Group



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

BlackRock Global Low Vol.

Periods Ended March 31, 2024

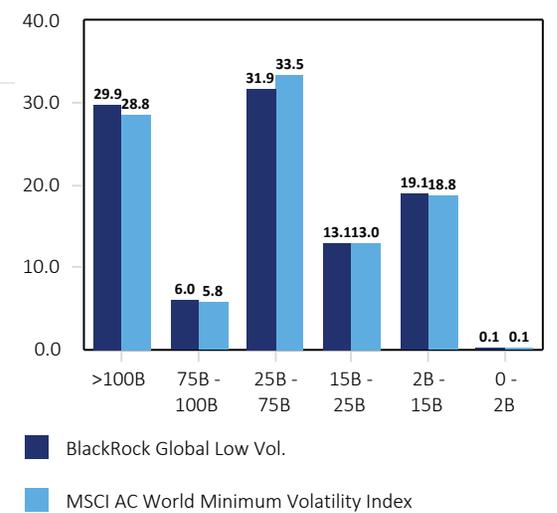
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	130,233,359,540	124,460,148,590
Median Mkt. Cap \$	17,856,702,223	17,845,759,725
Price/Earnings ratio	20.2	17.5
Price/Book ratio	3.4	3.3
5 Yr. EPS Growth (%)	10.6	10.4
Current Yield (%)	1.9	2.6
Beta (5 Years, Monthly)	1.02	1.00
Number of Stocks	387	376

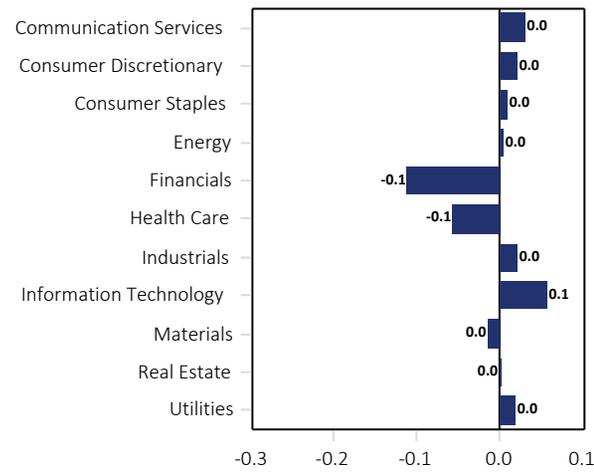
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Merck & Co Inc	1.6	1.7	-0.1	21.8
Waste Management Inc.	1.5	1.5	0.0	19.4
Motorola Solutions Inc	1.5	1.5	0.0	13.7
Cisco Systems Inc	1.4	1.5	-0.1	-0.4
Roper Technologies Inc	1.4	1.4	0.0	3.0
Walmart Inc	1.4	1.4	0.0	14.9
T-Mobile US Inc	1.2	1.2	0.0	2.2
Republic Services Inc.	1.2	1.2	0.0	16.1
PepsiCo Inc	1.2	1.2	0.0	3.8
McKesson Corp	1.2	1.2	0.0	16.1
% of Portfolio	13.6	13.8	-0.2	

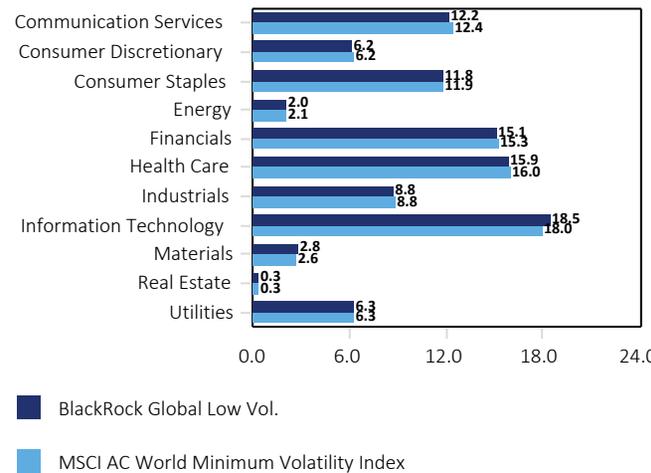
Distribution of Market Capitalization (%)



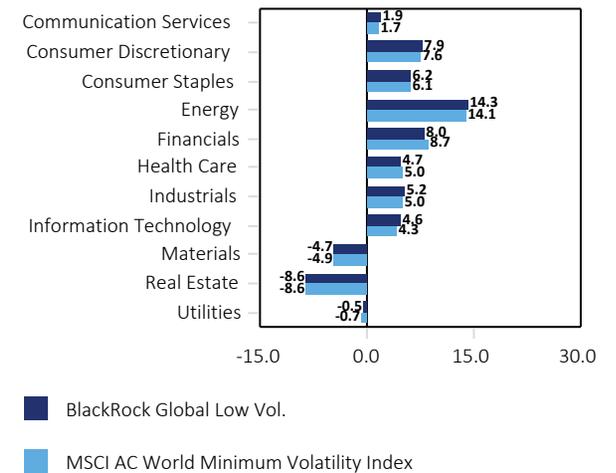
Total Attribution



Allocation



Performance



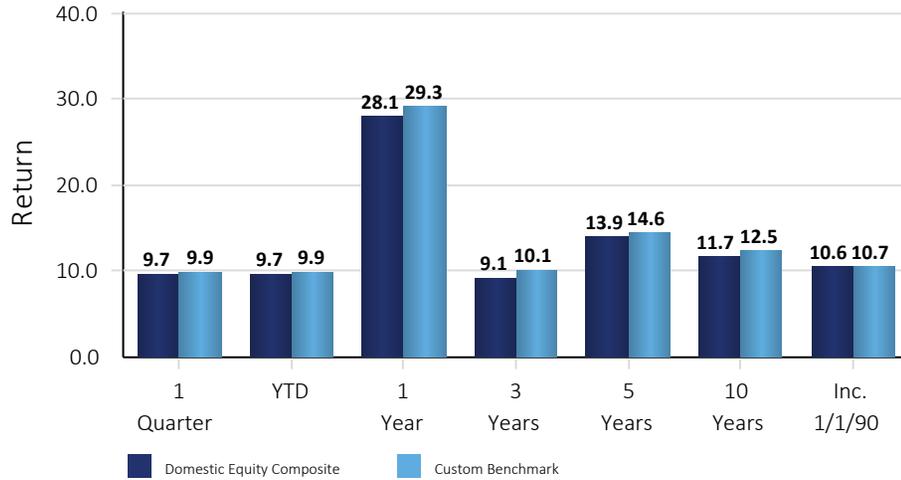
Domestic Equity Composite

Composite Performance Summary

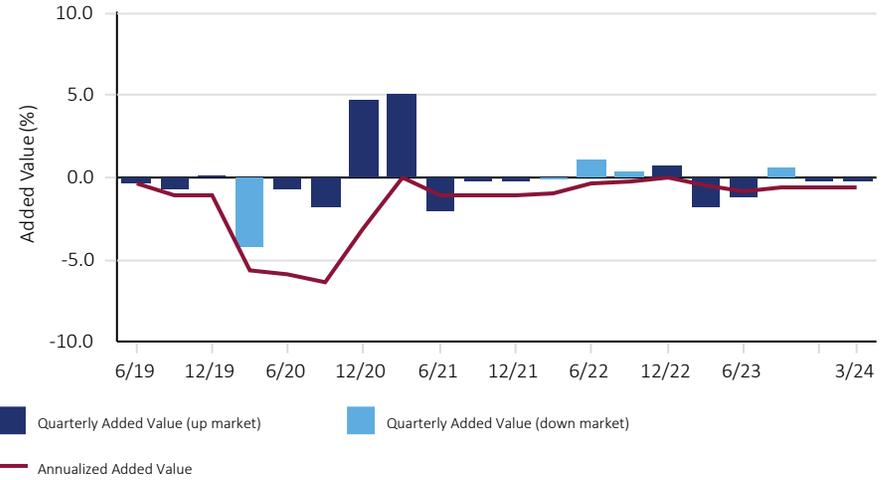
Domestic Equity Composite

Periods Ended March 31, 2024

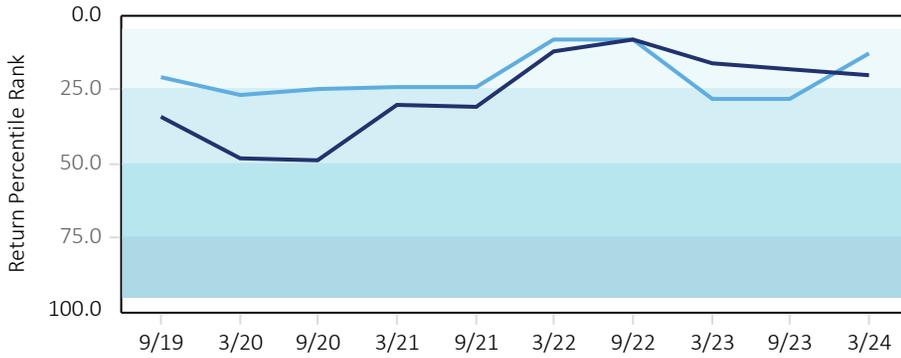
Comparative Performance



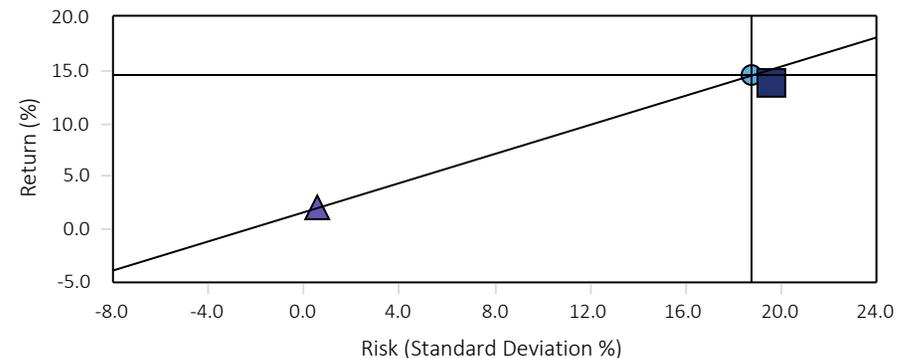
Added Value History



Rolling Percentile Rank: IM U.S. Equity ALL (MA)



Risk and Return 04/1/19 - 03/31/24



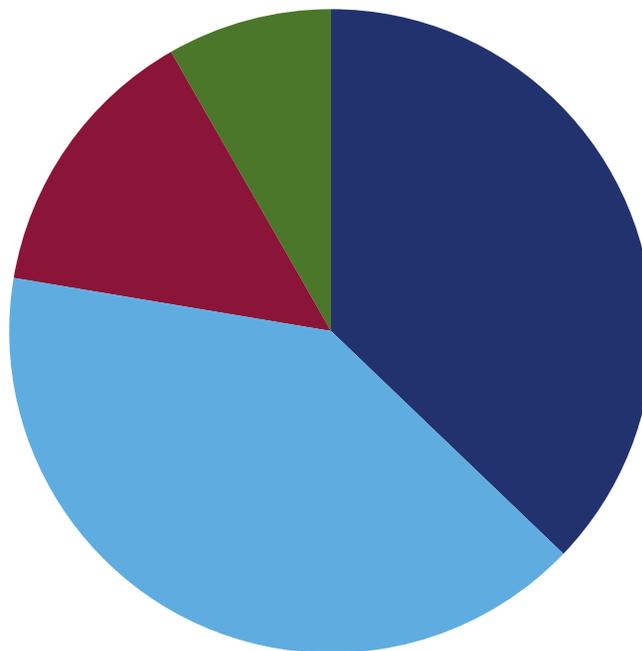
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Domestic Equity Composite	10	5 (50%)	5 (50%)	0 (0%)	0 (0%)
Benchmark	10	7 (70%)	3 (30%)	0 (0%)	0 (0%)

Asset Allocation By Manager

Domestic Equity Composite

Periods Ended March 31, 2024

Mar-2024 : 395,183,087.9



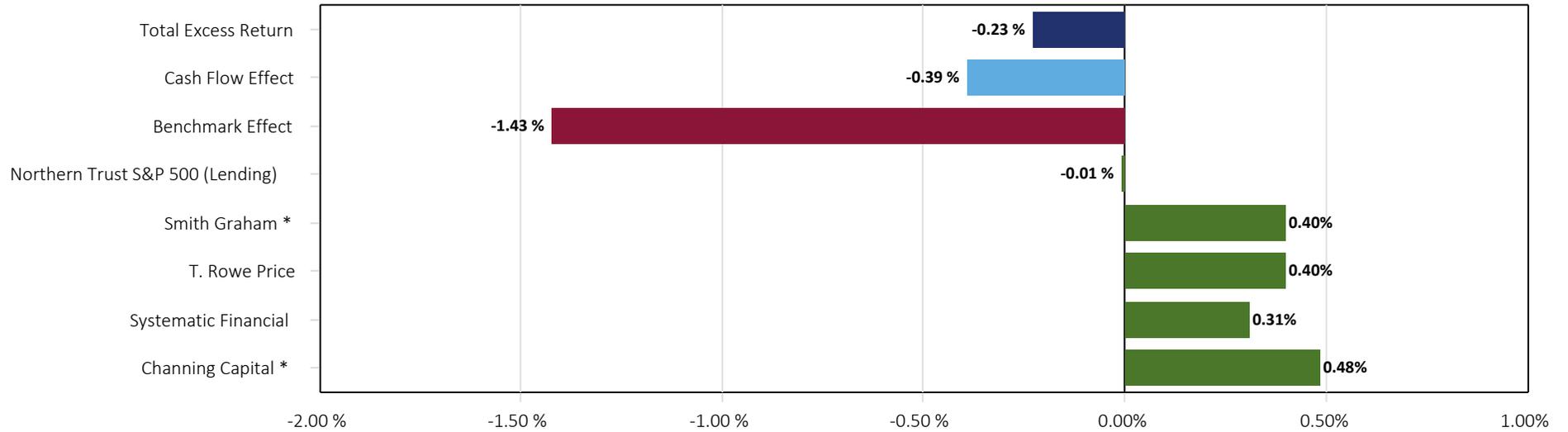
	Market Value \$	Allocation (%)
Northern Trust S&P 500 (Lending)	146,871,760	37.2
T. Rowe Price	159,962,864	40.5
Systematic Financial	55,593,297	14.1
Channing Capital *	32,755,166	8.3

Asset Class Attribution

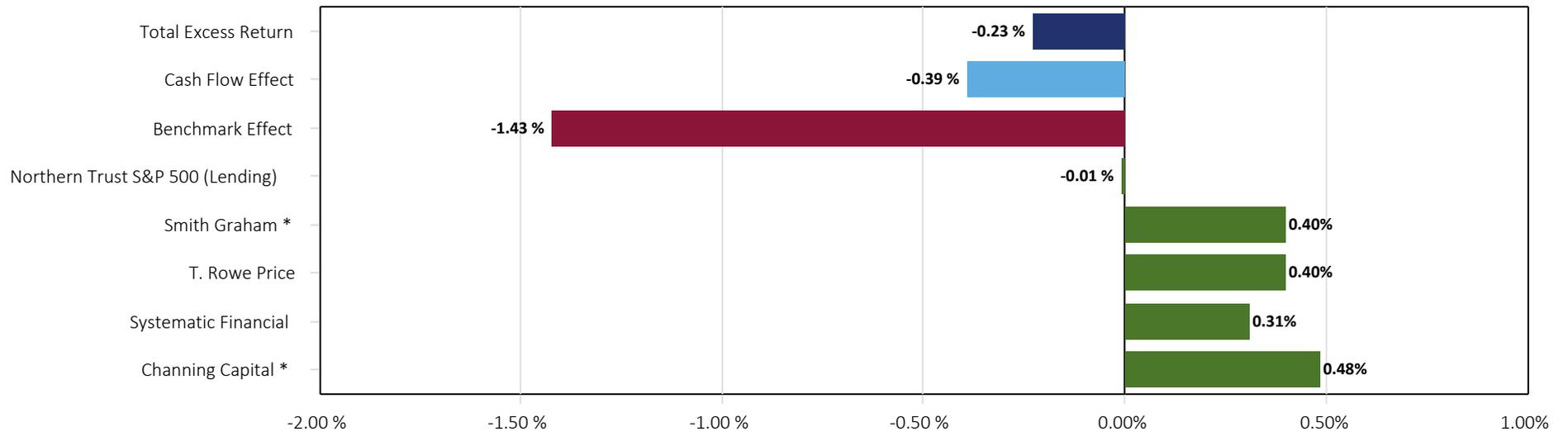
Domestic Equity Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

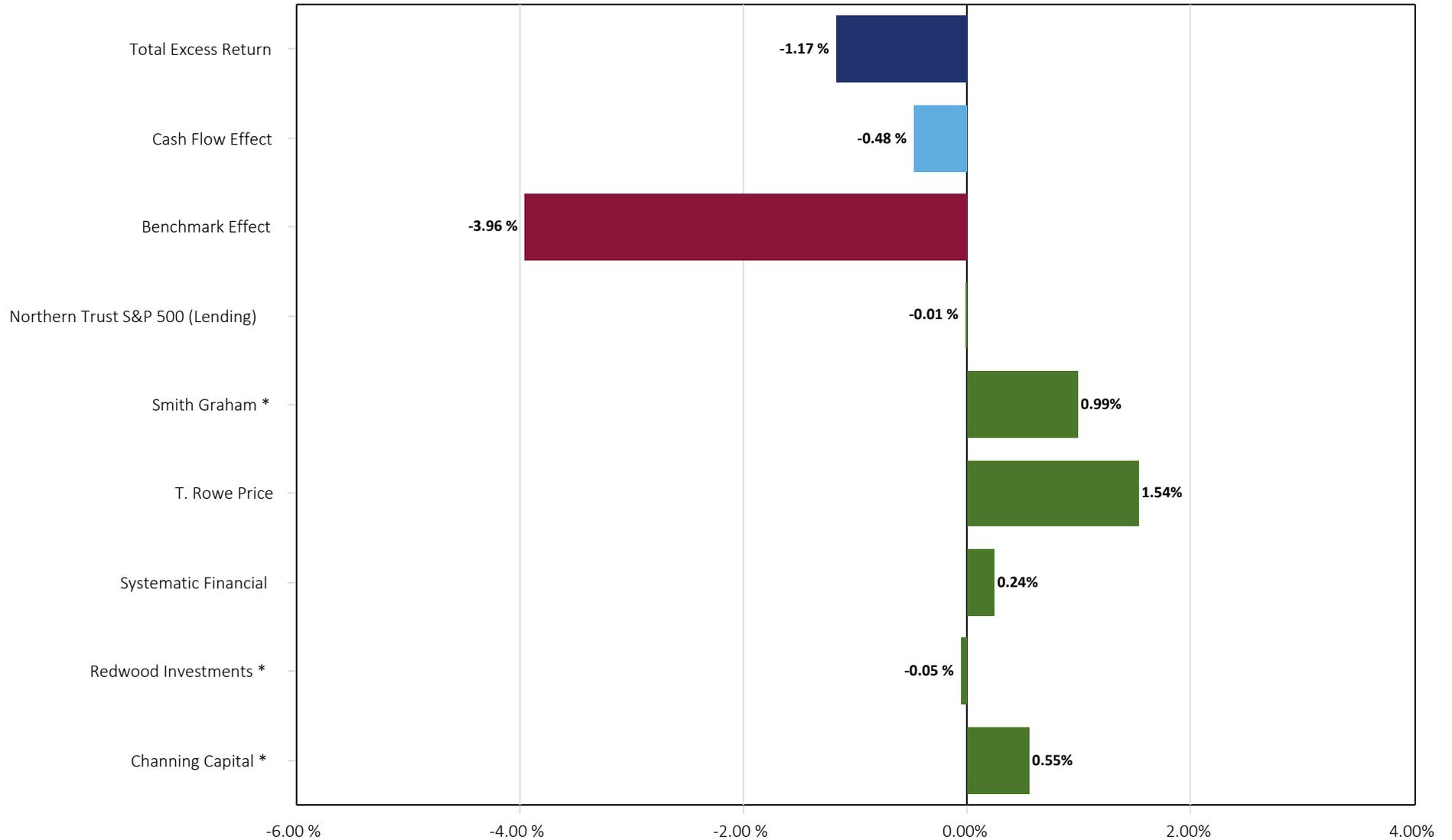


Asset Class Attribution

Domestic Equity Composite

Periods Ended 1 Year Ending March 31, 2024

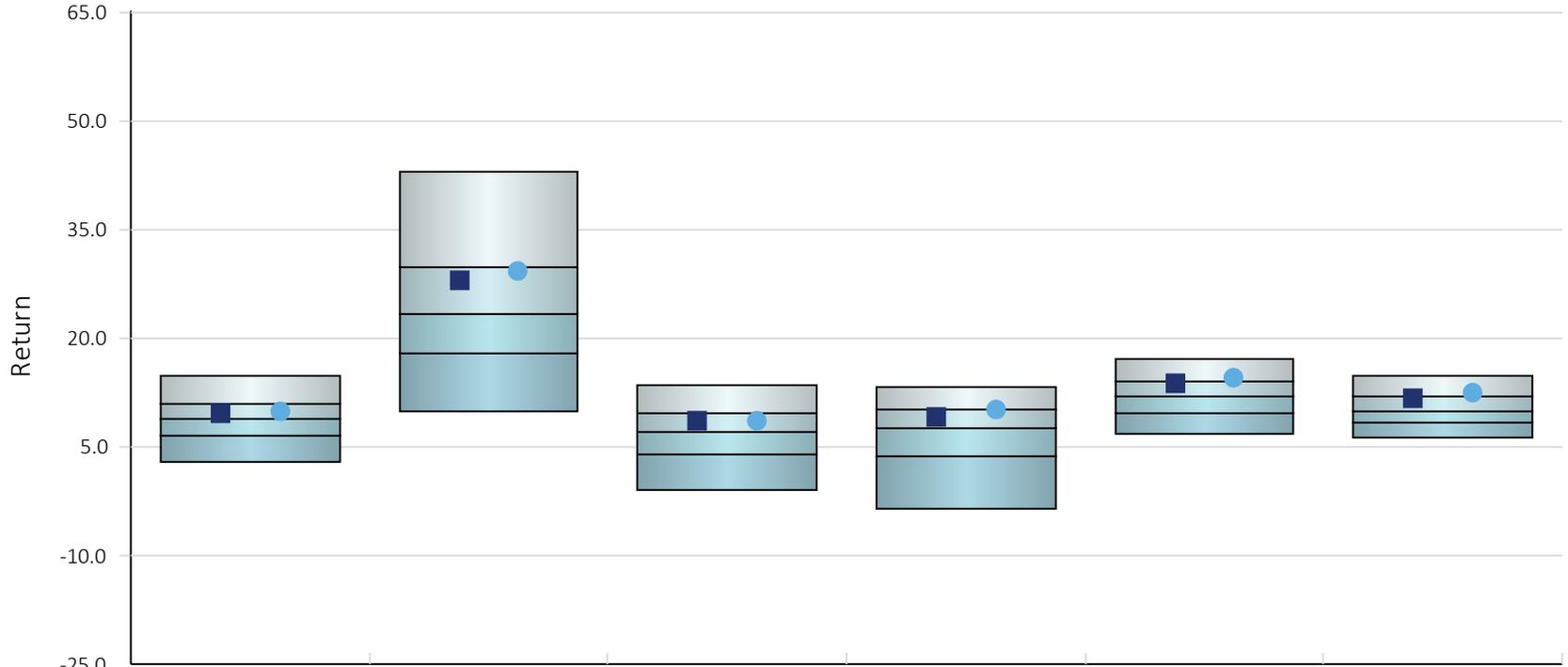
1 Year



Peer Group Analysis

Domestic Equity Composite

Periods Ended March 31, 2024



	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ Domestic Equity Composite	9.72 (41)	28.09 (33)	8.51 (39)	9.10 (37)	13.92 (28)	11.68 (31)
● Custom Benchmark	9.95 (39)	29.26 (28)	8.68 (37)	10.13 (27)	14.56 (21)	12.52 (21)
5th Percentile	14.90	42.95	13.65	13.18	17.24	14.85
1st Quartile	11.05	29.77	9.66	10.27	14.14	12.09
Median	8.91	23.27	7.17	7.66	11.88	9.79
3rd Quartile	6.45	17.96	4.09	3.69	9.62	8.29
95th Percentile	2.93	9.87	-1.01	-3.52	6.77	6.20
Population	1,773	1,762	1,736	1,704	1,637	1,374

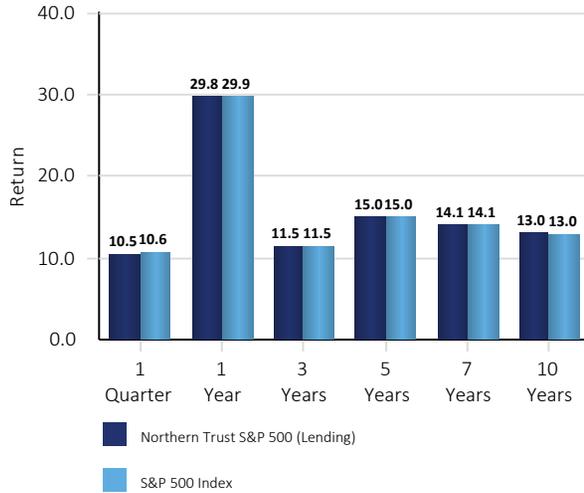
Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Performance Summary

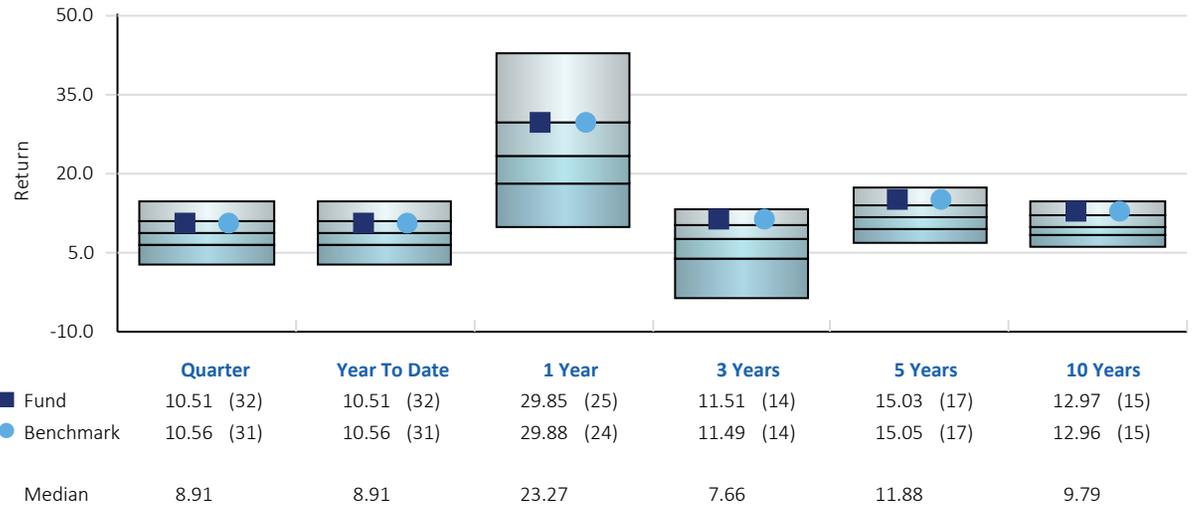
Northern Trust S&P 500 (Lending)

Periods Ended March 31, 2024

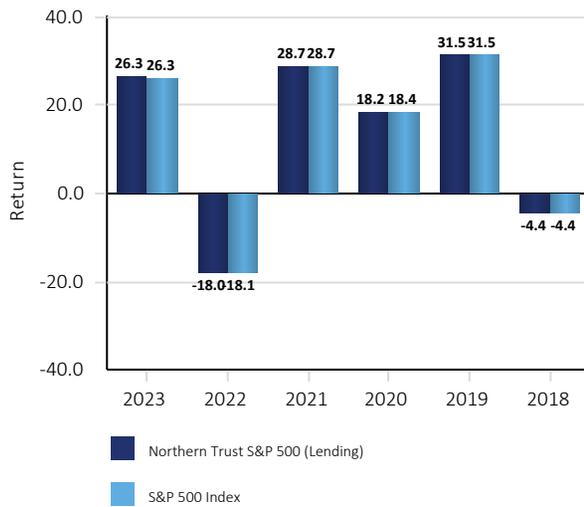
Comparative Performance



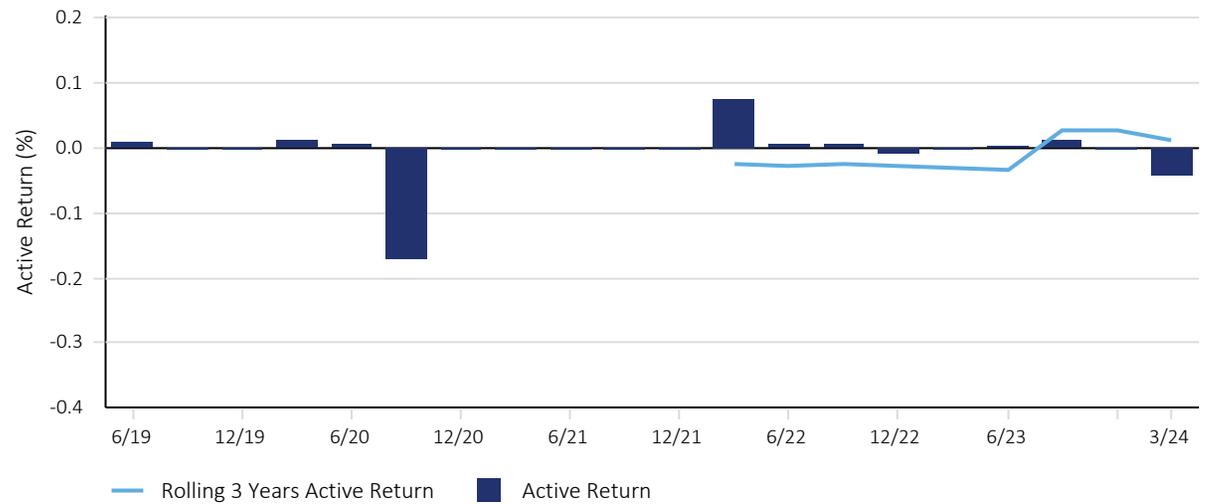
Peer Group Analysis: IM U.S. Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Northern Trust S&P 500 (Lending)

Periods Ended March 31, 2024

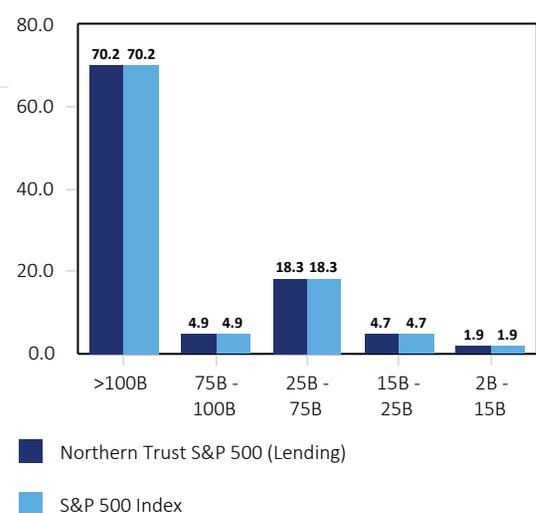
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	794,707,465,295	794,707,465,295
Median Mkt. Cap \$	35,312,234,440	35,312,234,440
Price/Earnings ratio	25.9	25.9
Price/Book ratio	4.7	4.7
5 Yr. EPS Growth (%)	15.2	15.2
Current Yield (%)	1.4	1.4
Beta (5 Years, Monthly)	1.00	1.00
Number of Stocks	503	503

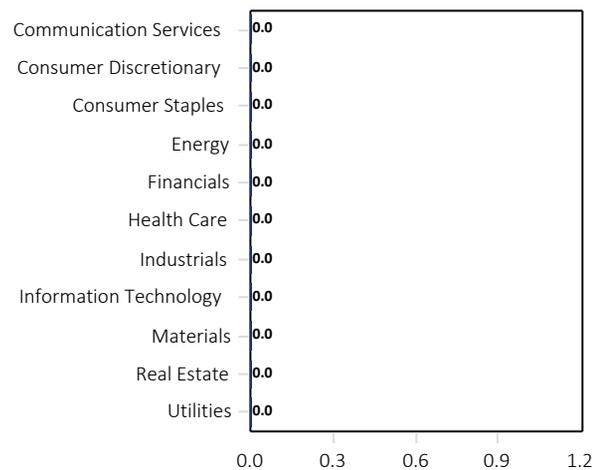
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Microsoft Corp	7.1	7.1	0.0	12.1
Apple Inc	5.6	5.6	0.0	-10.8
NVIDIA Corporation	5.1	5.1	0.0	82.5
Amazon.com Inc	3.7	3.7	0.0	18.7
Meta Platforms Inc	2.4	2.4	0.0	37.3
Alphabet Inc Class A	2.0	2.0	0.0	8.0
Berkshire Hathaway Inc	1.7	1.7	0.0	17.9
Alphabet Inc	1.7	1.7	0.0	8.0
Eli Lilly and Co	1.4	1.4	0.0	33.7
Broadcom Inc	1.3	1.3	0.0	19.2
% of Portfolio	32.0	32.0	0.0	

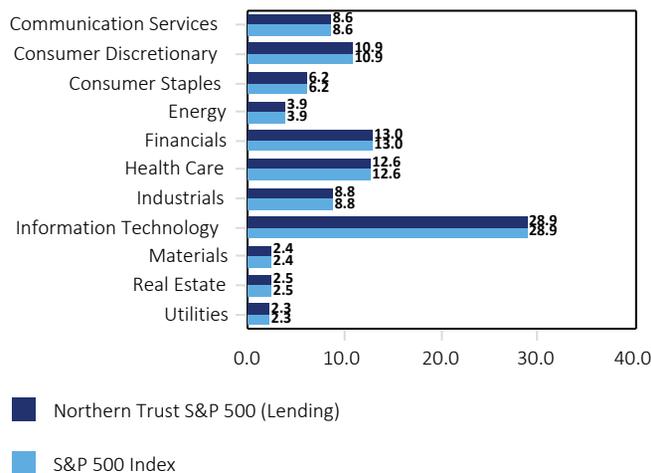
Distribution of Market Capitalization (%)



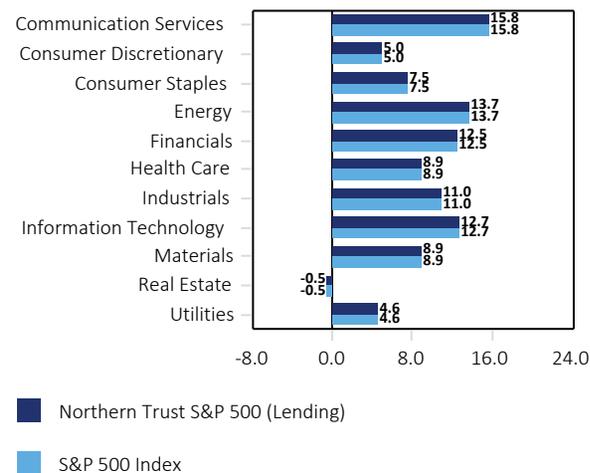
Total Attribution



Allocation



Performance

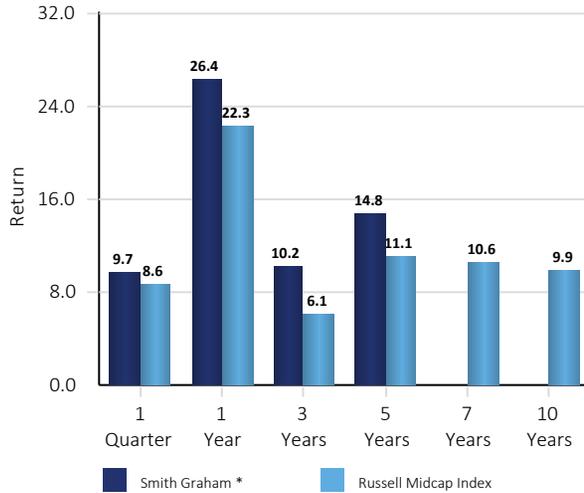


Performance Summary

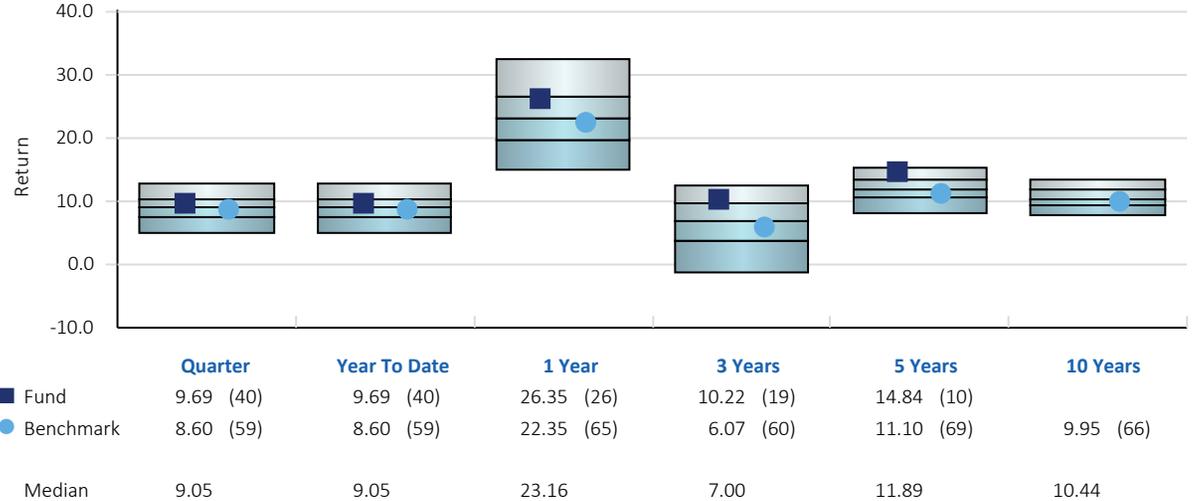
Smith Graham *

Periods Ended March 31, 2024

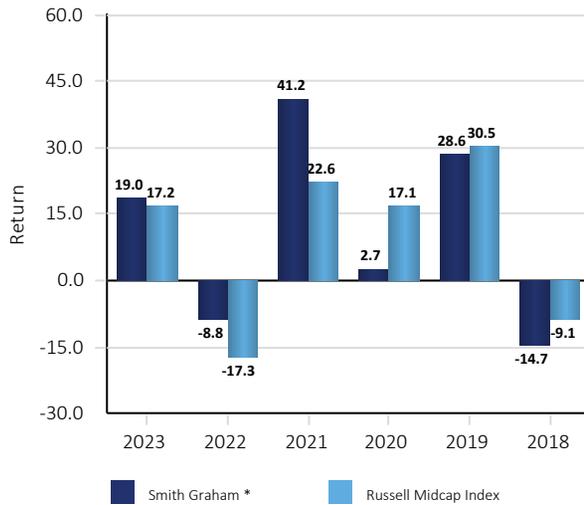
Comparative Performance



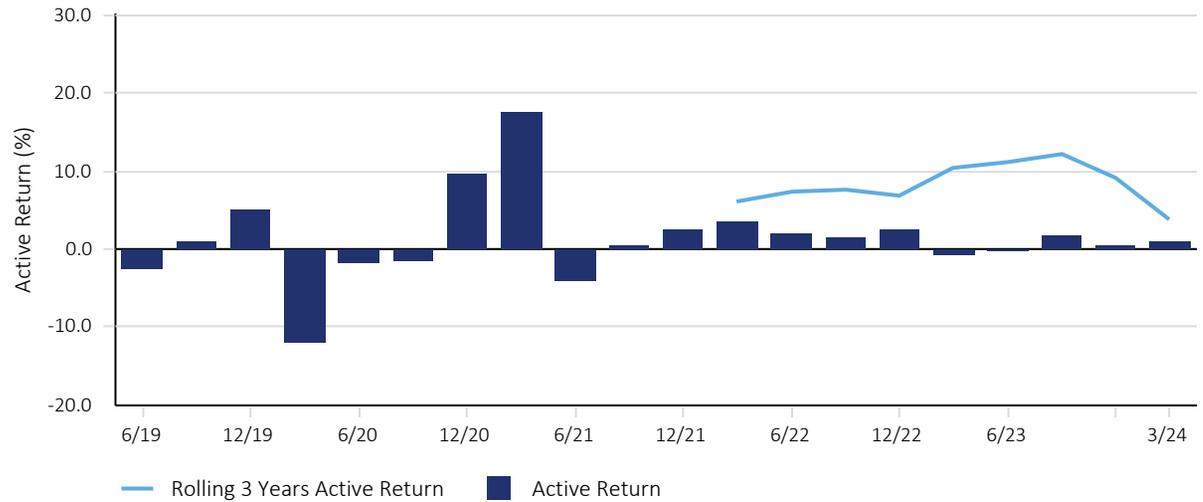
Peer Group Analysis: IM U.S. Mid Cap Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Smith Graham *

Periods Ended March 31, 2024

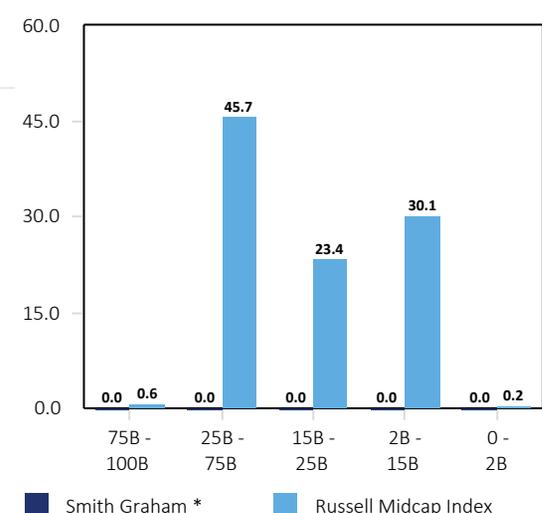
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$		27,592,813,957
Median Mkt. Cap \$		10,951,271,500
Price/Earnings ratio		21.1
Price/Book ratio		3.2
5 Yr. EPS Growth (%)		11.9
Current Yield (%)		1.5
Beta (5 Years, Monthly)	1.17	1.00
Number of Stocks	1	808

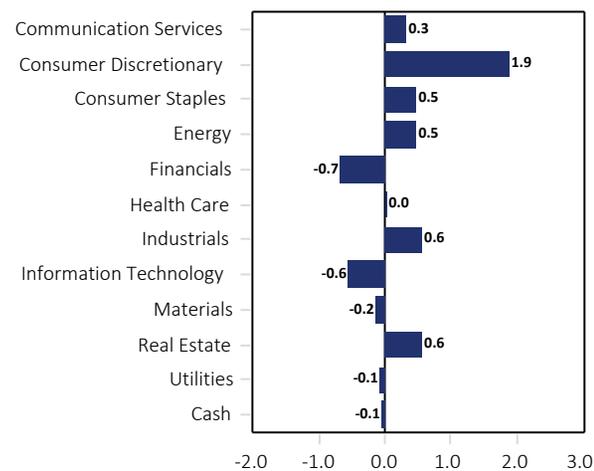
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Phillips 66	0.0	0.6	0.0	
Parker-Hannifin Corp	0.0	0.6	0.0	
CrowdStrike Holdings Inc	0.0	0.6	0.0	
Trane Technologies plc	0.0	0.6	0.0	
Amphenol Corp	0.0	0.6	0.0	
KKR & Co Inc	0.0	0.6	0.0	
TransDigm Group Inc	0.0	0.6	0.0	
PACCAR Inc	0.0	0.6	0.0	
Marvell Technology Inc	0.0	0.5	0.0	
Cintas Corp	0.0	0.5	0.0	
% of Portfolio	0.0	5.8	-5.8	

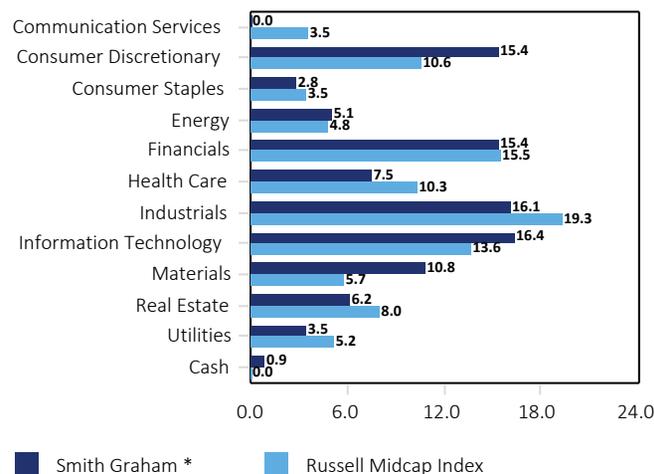
Distribution of Market Capitalization (%)



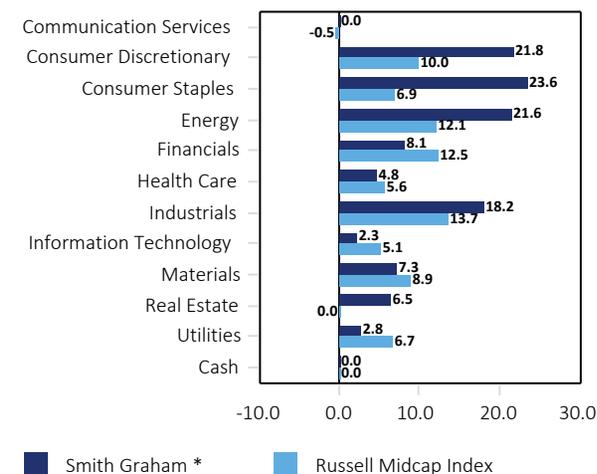
Total Attribution



Allocation



Performance

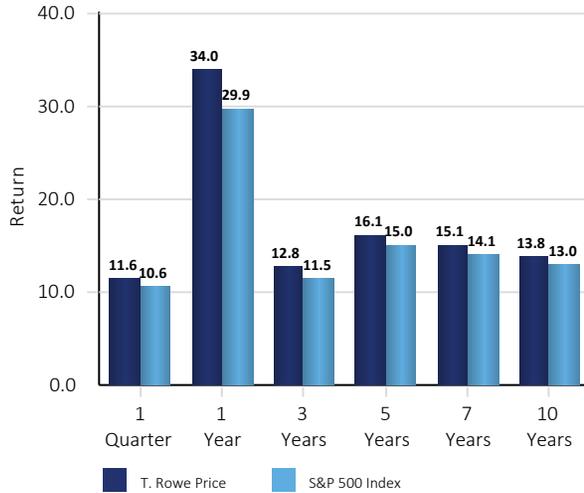


Performance Summary

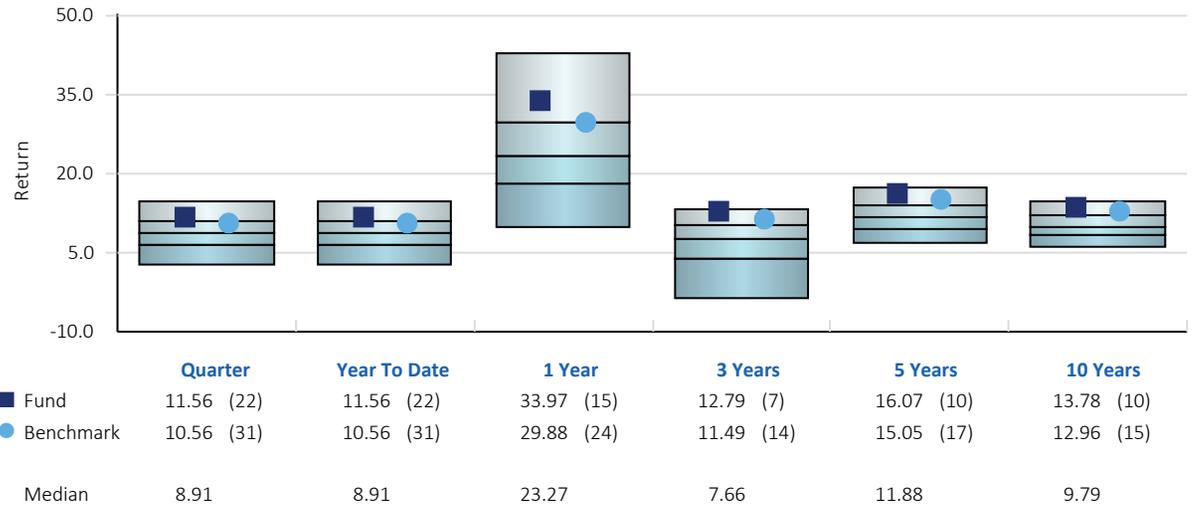
T. Rowe Price

Periods Ended March 31, 2024

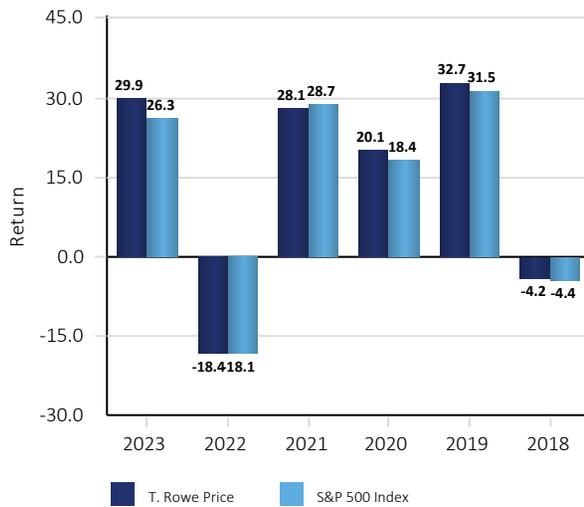
Comparative Performance



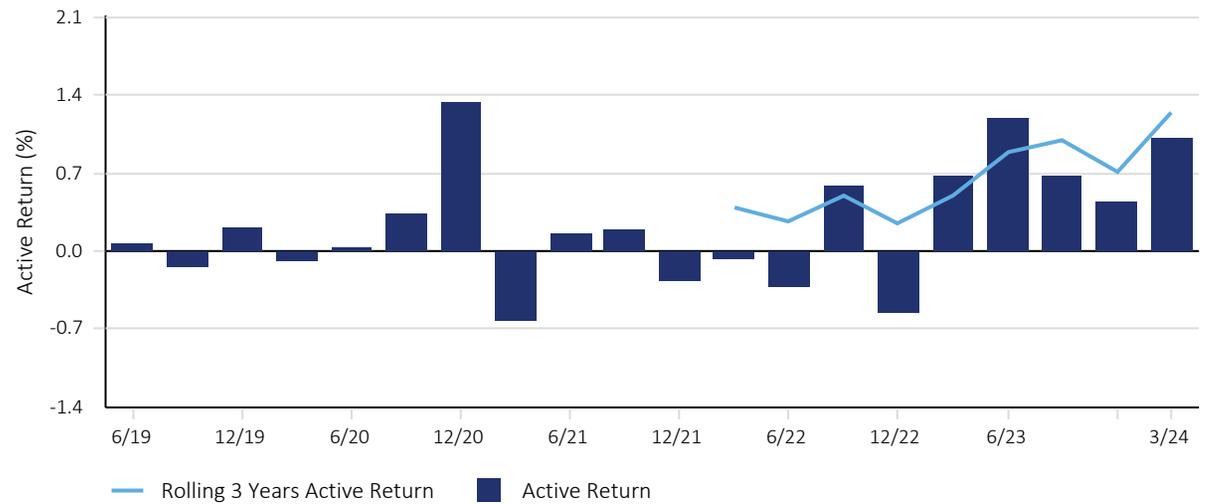
Peer Group Analysis: IM U.S. Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

T. Rowe Price

Periods Ended March 31, 2024

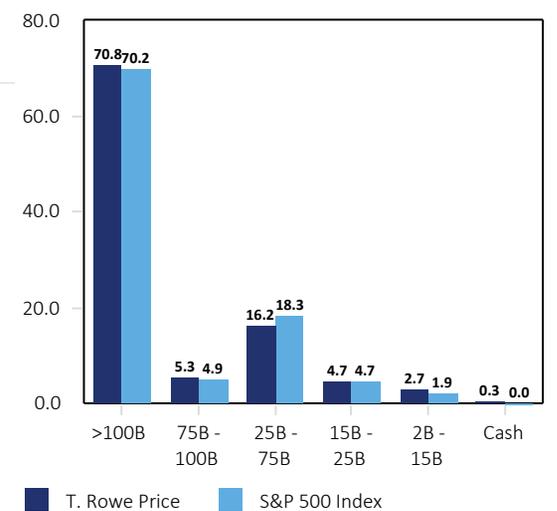
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	806,185,868,237	794,707,465,295
Median Mkt. Cap \$	55,123,473,500	35,312,234,440
Price/Earnings ratio	26.7	25.9
Price/Book ratio	4.9	4.7
5 Yr. EPS Growth (%)	16.2	15.2
Current Yield (%)	1.2	1.4
Beta (5 Years, Monthly)	1.01	1.00
Number of Stocks	307	503

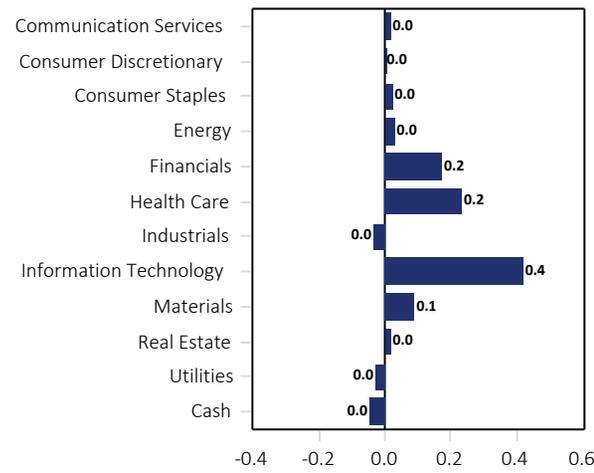
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Microsoft Corp	7.2	7.1	0.1	12.1
NVIDIA Corporation	5.5	5.1	0.4	82.5
Apple Inc	5.5	5.6	-0.1	-10.8
Amazon.com Inc	3.9	3.7	0.2	18.7
Meta Platforms Inc	2.5	2.4	0.1	37.3
Alphabet Inc	2.2	1.7	0.5	8.0
Eli Lilly and Co	1.6	1.4	0.2	33.7
Alphabet Inc Class A	1.5	2.0	-0.5	8.0
Berkshire Hathaway Inc	1.3	1.7	-0.4	17.9
JPMorgan Chase & Co	1.3	1.3	0.0	18.5
% of Portfolio	32.5	32.0	0.5	

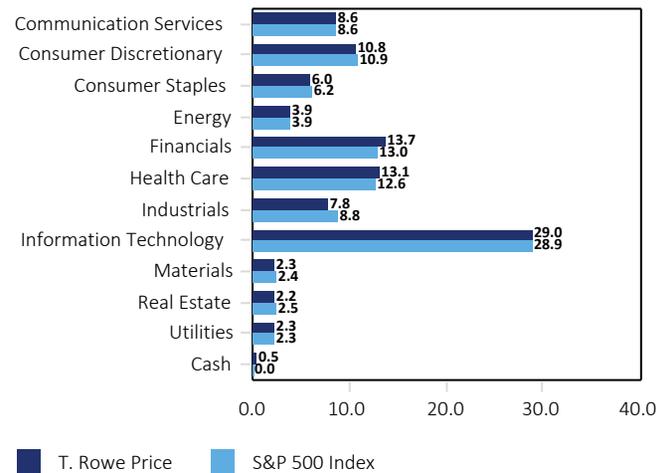
Distribution of Market Capitalization (%)



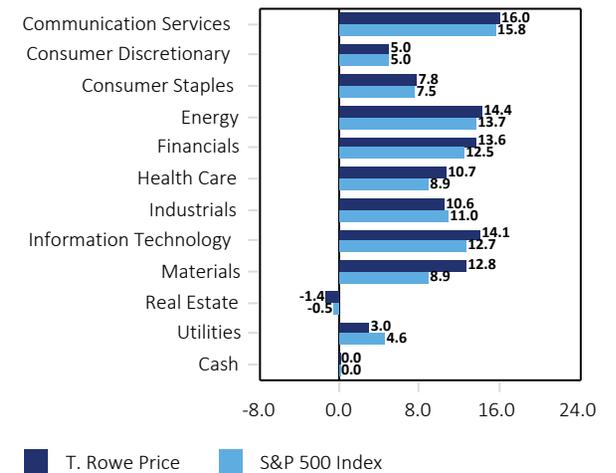
Total Attribution



Allocation



Performance

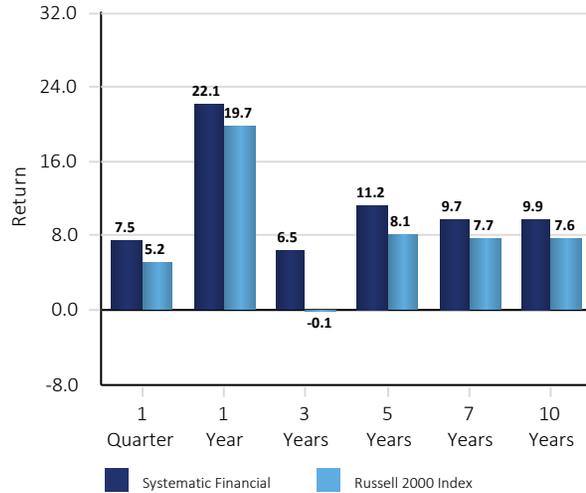


Performance Summary

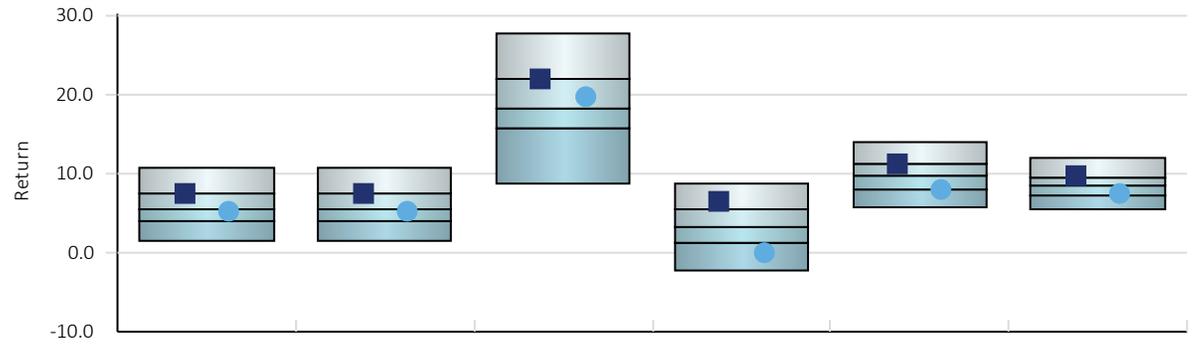
Systematic Financial

Periods Ended March 31, 2024

Comparative Performance

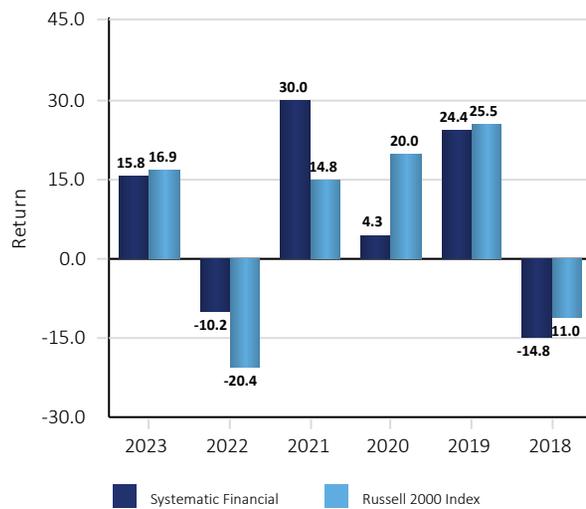


Peer Group Analysis: IM U.S. Small Cap Core Equity (SA+CF)

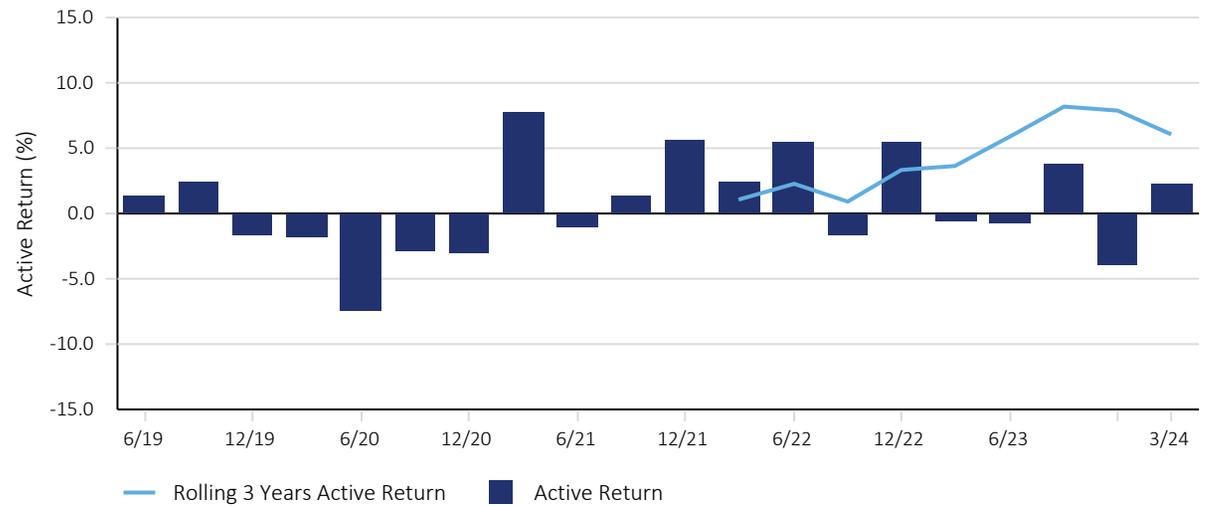


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
■ Fund	7.52 (24)	7.52 (24)	22.05 (25)	6.48 (18)	11.21 (27)	9.86 (19)
● Benchmark	5.18 (59)	5.18 (59)	19.71 (41)	-0.10 (86)	8.10 (73)	7.58 (71)
Median	5.62	5.62	18.13	3.36	9.63	8.57

Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Systematic Financial

Periods Ended March 31, 2024

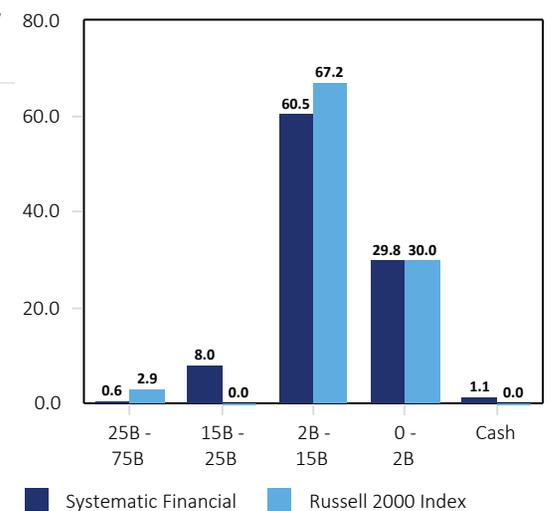
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	5,595,079,473	4,739,369,291
Median Mkt. Cap \$	2,740,355,395	933,188,500
Price/Earnings ratio	13.0	16.4
Price/Book ratio	2.0	2.6
5 Yr. EPS Growth (%)	14.3	13.7
Current Yield (%)	1.6	1.4
Beta (5 Years, Monthly)	0.87	1.00
Number of Stocks	159	1,945

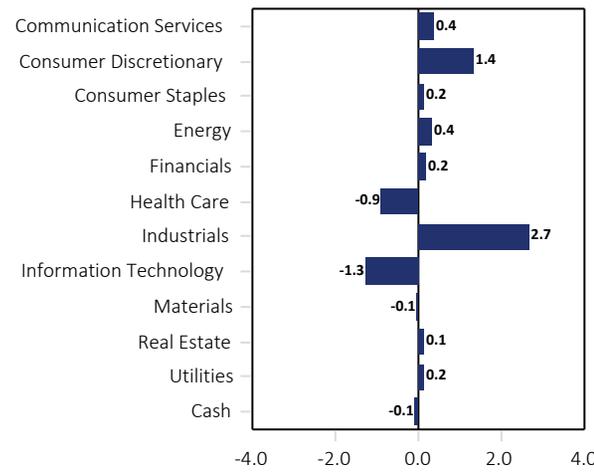
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
First Citizens BancShares Inc	2.6	0.0	2.6	15.3
Magnolia Oil & Gas Corp	2.1	0.2	1.9	22.6
EMCOR Group Inc.	1.8	0.0	1.8	62.7
Comfort Systems USA Inc	1.6	0.4	1.2	54.6
Mueller Industries Inc.	1.5	0.2	1.3	14.8
NorthWestern Energy Group Inc	1.4	0.1	1.3	1.4
KBR Inc	1.4	0.0	1.4	15.2
Onto Innovation Inc	1.3	0.3	1.0	18.4
OSI Systems Inc	1.2	0.1	1.1	10.7
LSI Industries Inc	1.2	0.0	1.2	7.8
% of Portfolio	16.1	1.3	14.8	

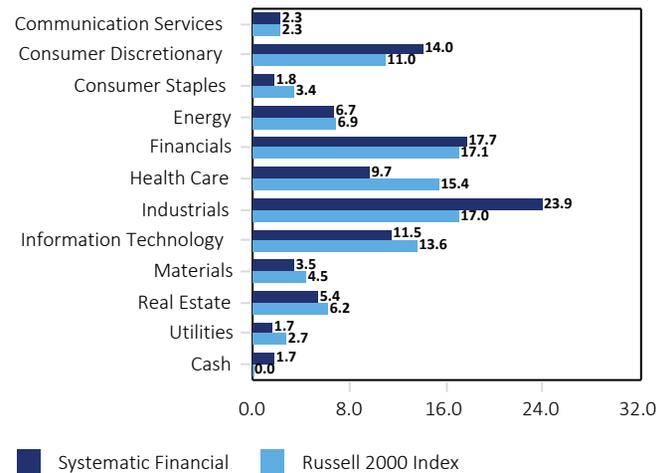
Distribution of Market Capitalization (%)



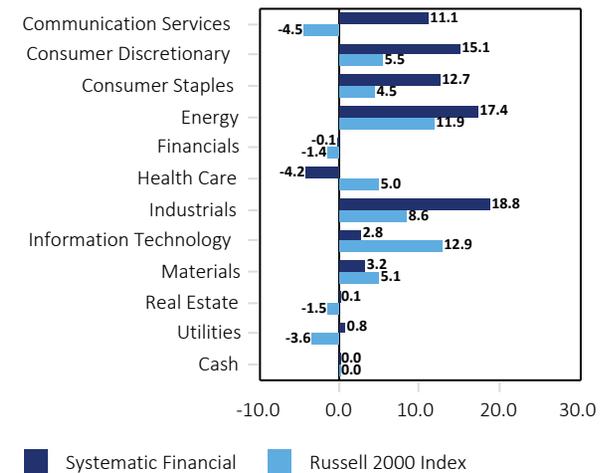
Total Attribution



Allocation



Performance

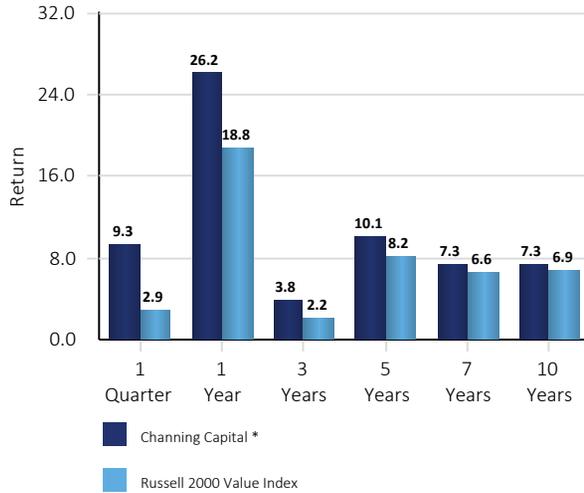


Performance Summary

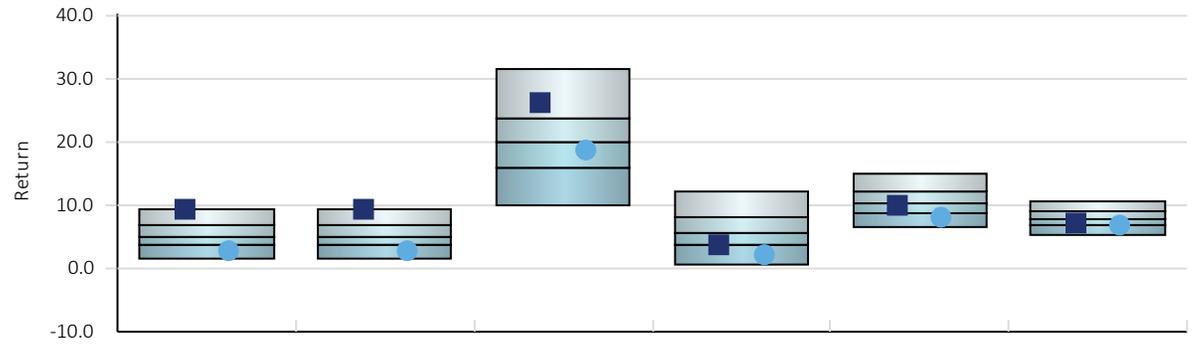
Channing Capital *

Periods Ended March 31, 2024

Comparative Performance

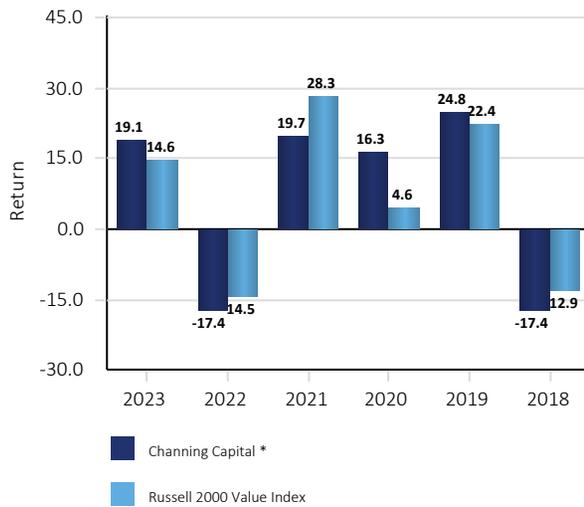


Peer Group Analysis: IM U.S. Small Cap Value Equity (SA+CF)

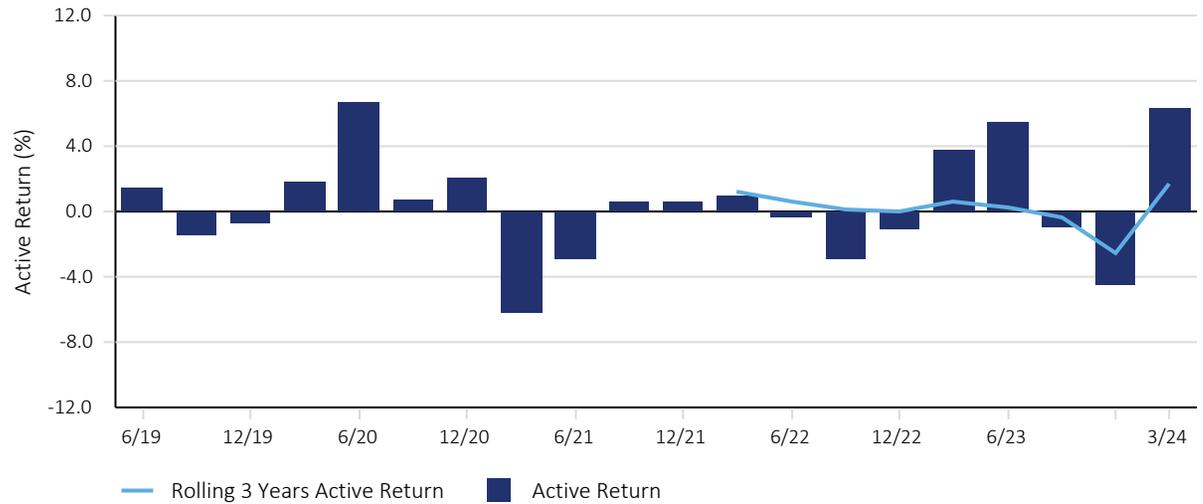


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
Fund	9.26 (7)	9.26 (7)	26.21 (18)	3.81 (73)	10.15 (54)	7.33 (66)
Benchmark	2.90 (89)	2.90 (89)	18.75 (60)	2.22 (86)	8.17 (84)	6.87 (81)
Median	5.03	5.03	19.91	5.52	10.31	7.88

Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Channing Capital *

Periods Ended March 31, 2024

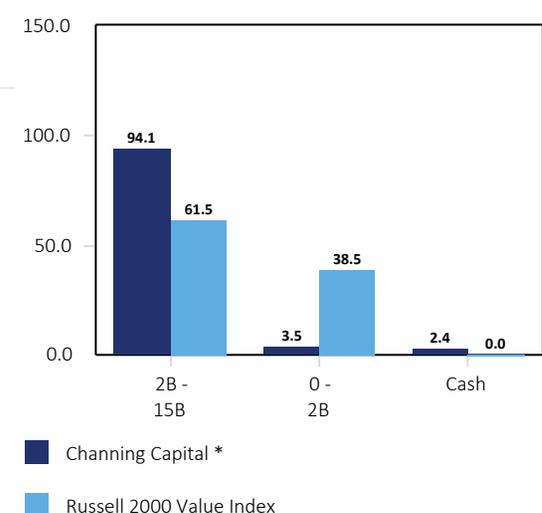
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	5,531,836,014	2,966,908,704
Median Mkt. Cap \$	5,629,147,310	829,697,250
Price/Earnings ratio	19.2	12.7
Price/Book ratio	2.3	1.7
5 Yr. EPS Growth (%)	11.3	8.3
Current Yield (%)	1.4	2.2
Beta (5 Years, Monthly)	0.97	1.00
Number of Stocks	45	1,419

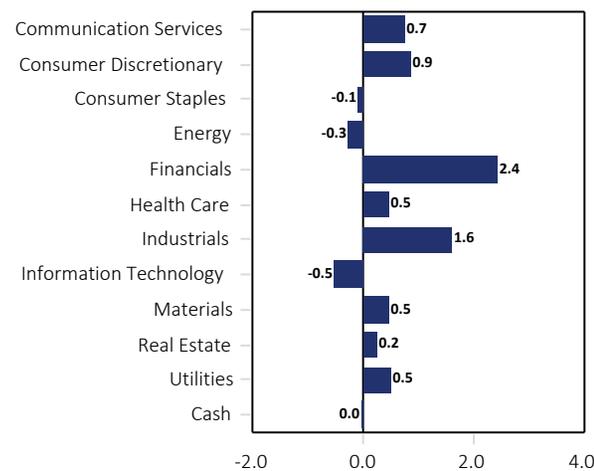
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Louisiana-Pacific Corp	2.9	0.0	2.9	18.9
Herc Holdings Inc	2.8	0.0	2.8	13.5
Enovis Corporation	2.8	0.0	2.8	11.5
Integer Holdings Corp	2.7	0.3	2.4	17.8
Evercore Inc	2.7	0.0	2.7	13.1
Belden Inc	2.7	0.1	2.6	20.0
Brink's Co (The)	2.7	0.0	2.7	5.3
Avient Corp	2.7	0.3	2.4	5.1
Southwest Gas Holdings Inc	2.6	0.4	2.2	21.5
Stifel Financial Corp.	2.6	0.0	2.6	13.7
% of Portfolio	27.2	1.1	26.1	

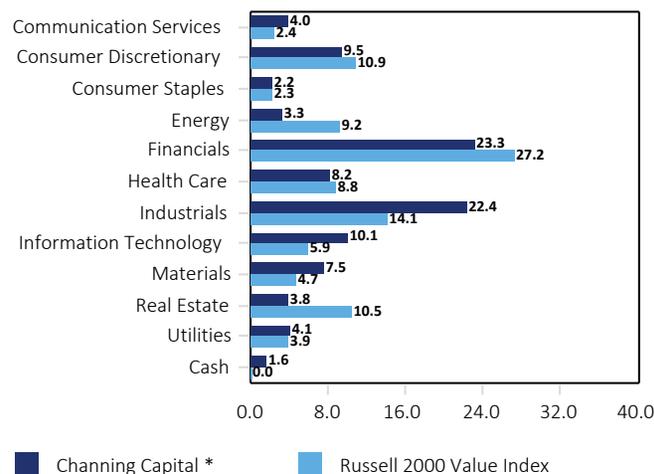
Distribution of Market Capitalization (%)



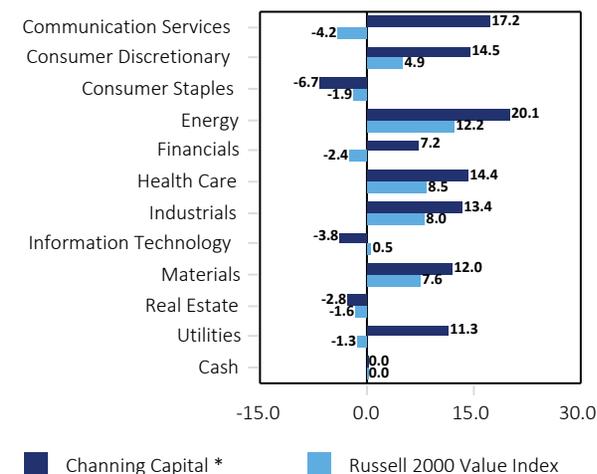
Total Attribution



Allocation



Performance



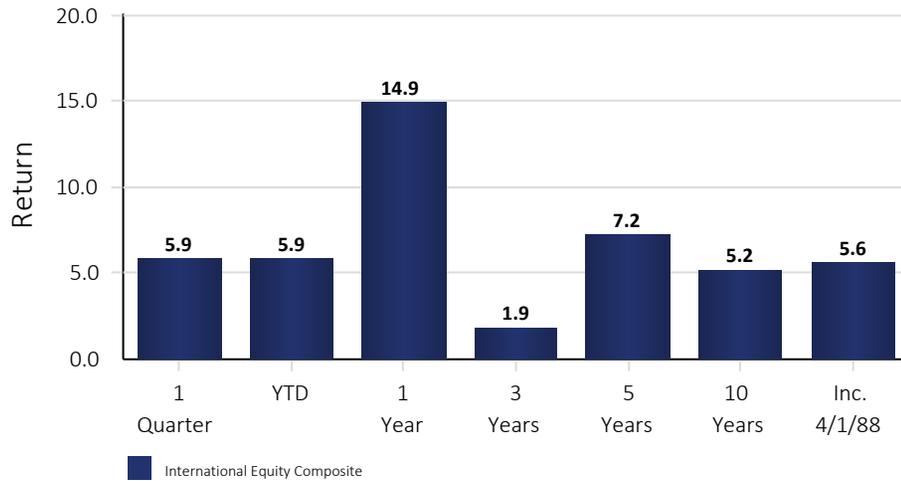
International Equity Composite

Composite Performance Summary

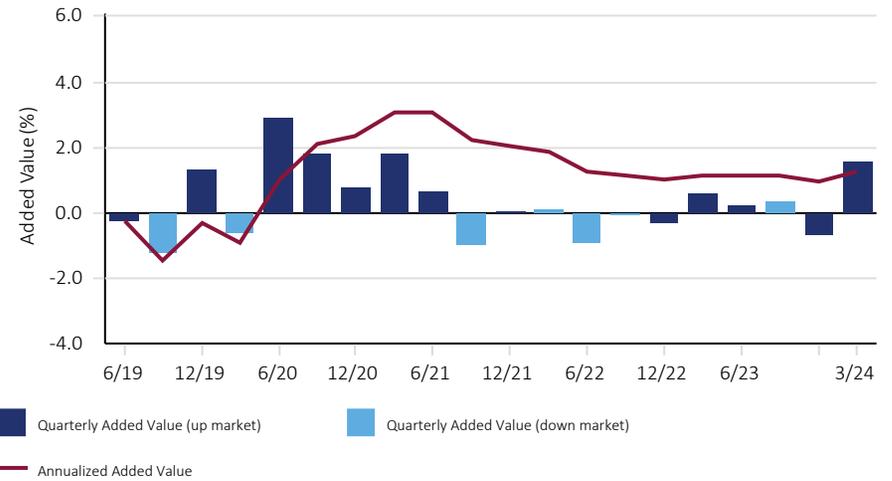
International Equity Composite

Periods Ended March 31, 2024

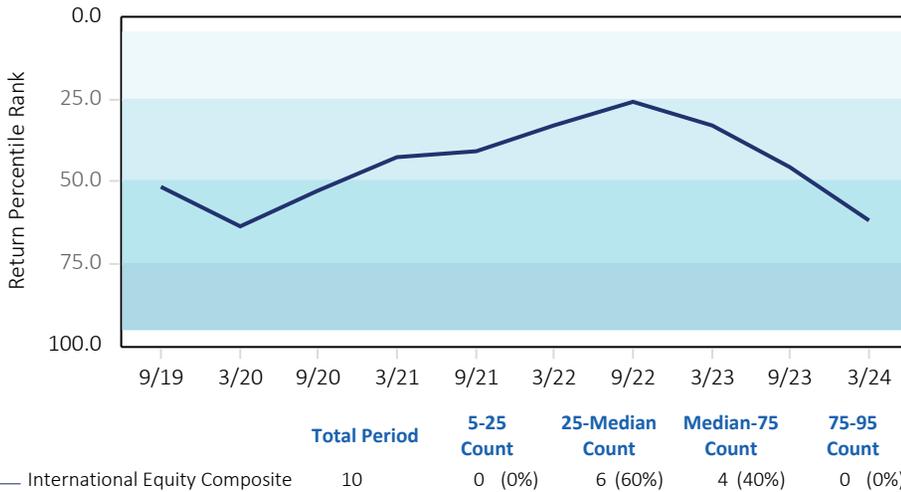
Comparative Performance



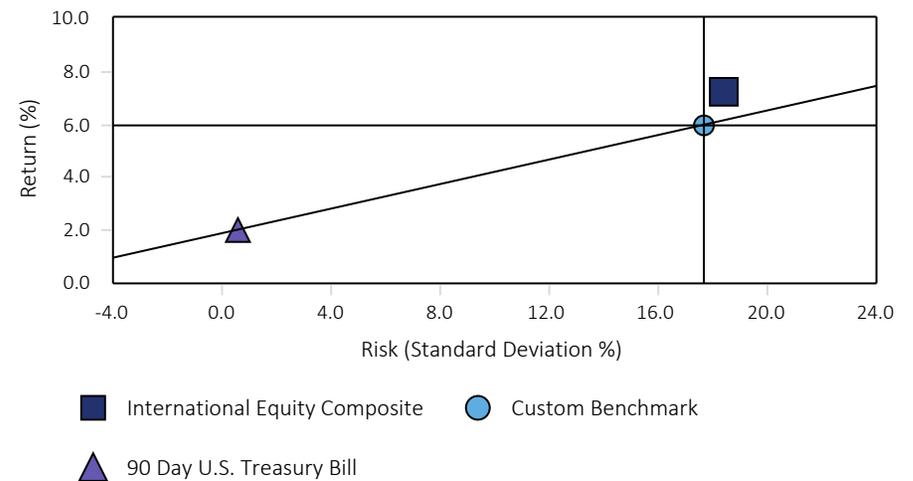
Added Value History



Rolling Percentile Rank: IM International Equity (SA+CF)



Risk and Return 04/1/19 - 03/31/24

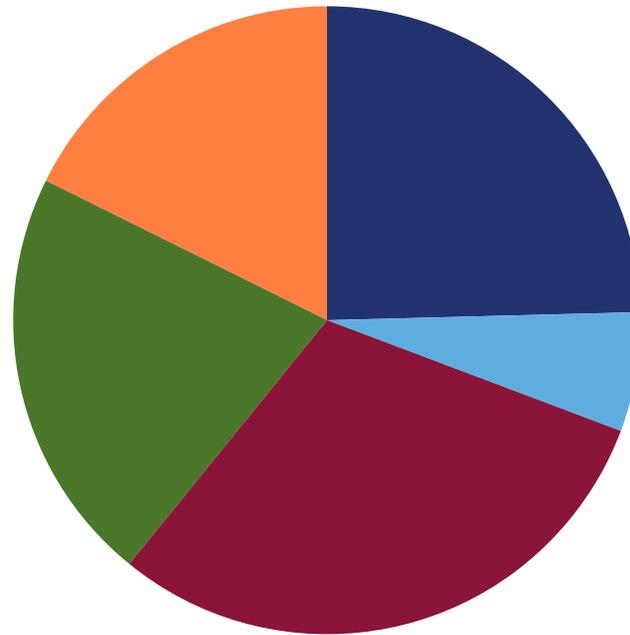


Asset Allocation By Manager

International Equity Composite

Periods Ended March 31, 2024

Mar-2024 : 441,230,641.0



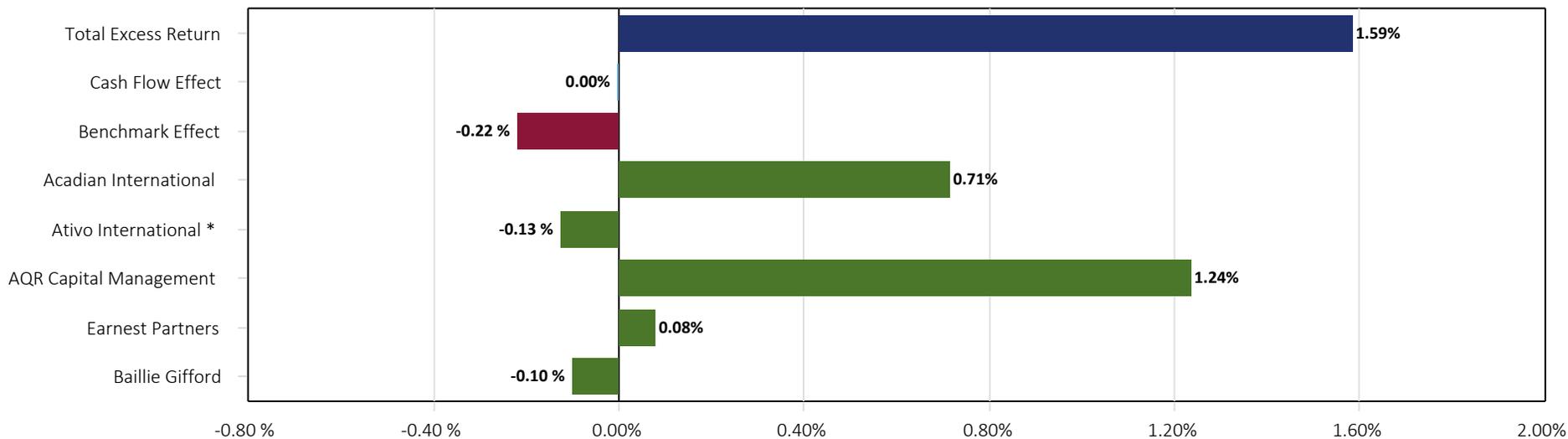
	Market Value \$	Allocation (%)
■ Acadian International	108,481,537	24.6
■ Ativo International *	27,129,696	6.1
■ AQR Capital Management	132,876,356	30.1
■ Earnest Partners	94,794,478	21.5
■ Baillie Gifford	77,948,575	17.7

Asset Class Attribution

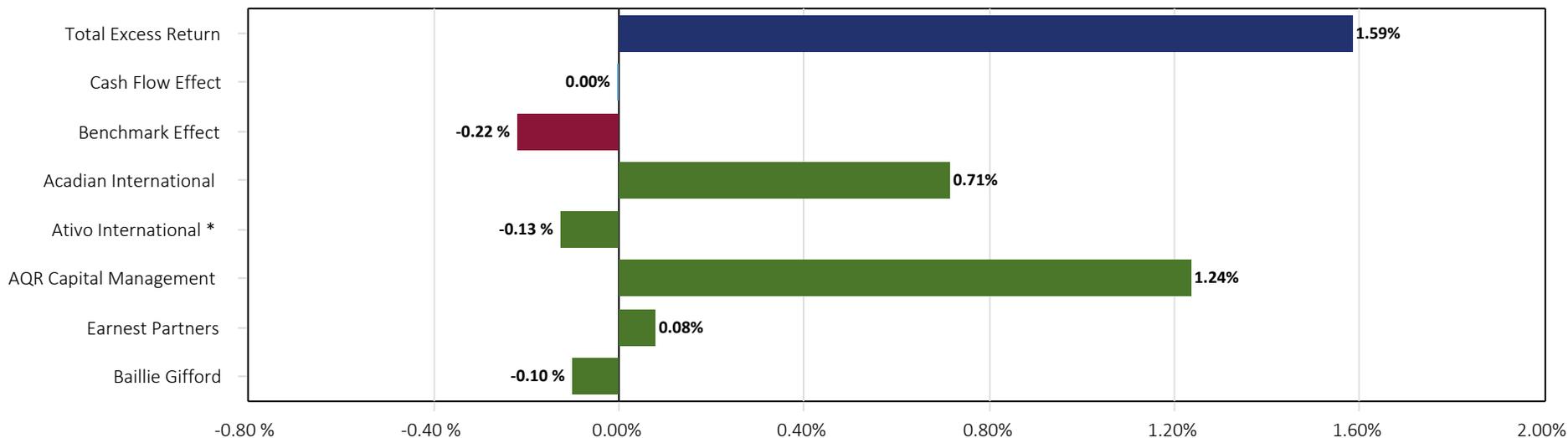
International Equity Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

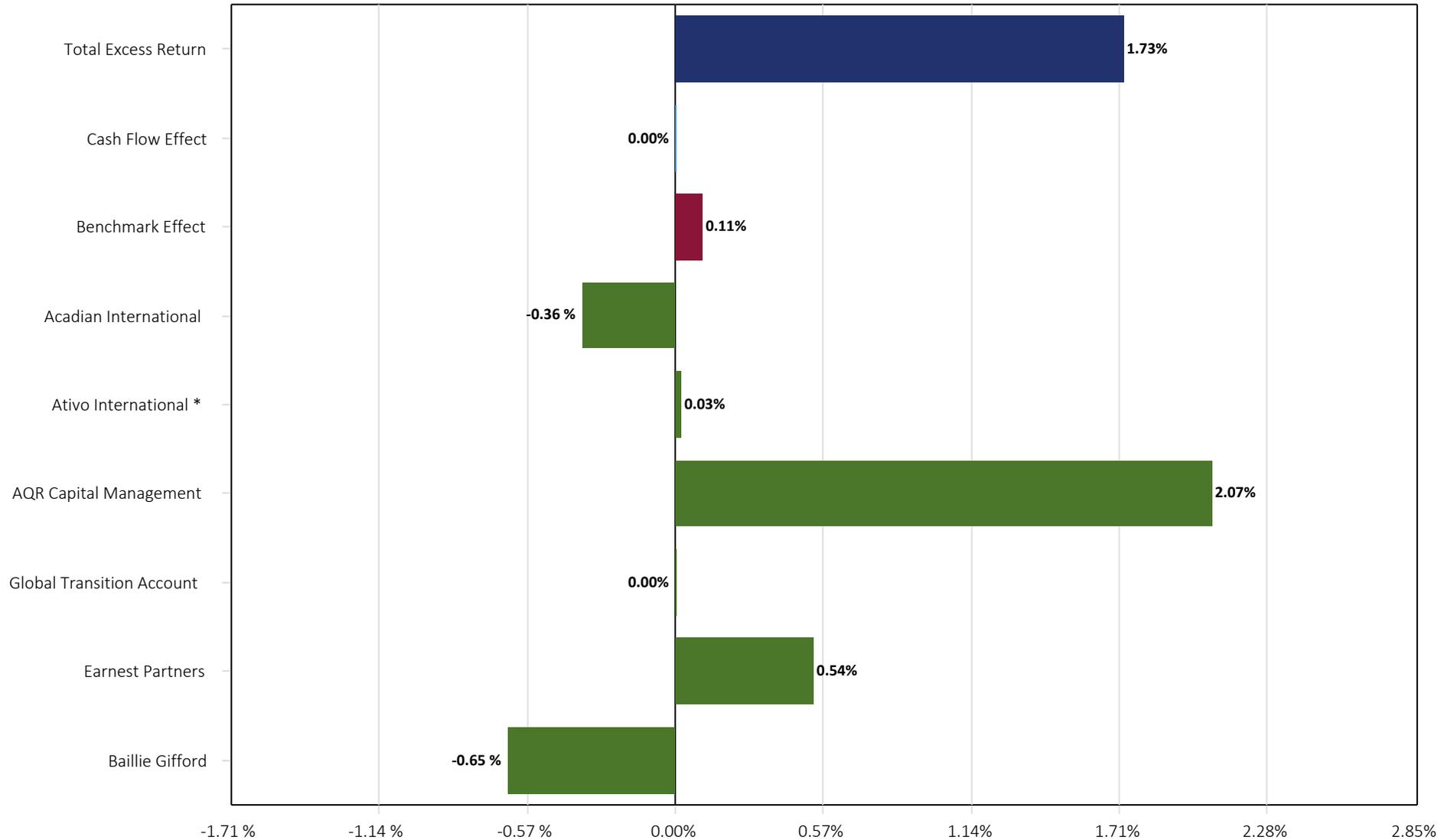


Asset Class Attribution

International Equity Composite

Periods Ended 1 Year Ending March 31, 2024

1 Year



Peer Group Analysis

International Equity Composite

Periods Ended March 31, 2024



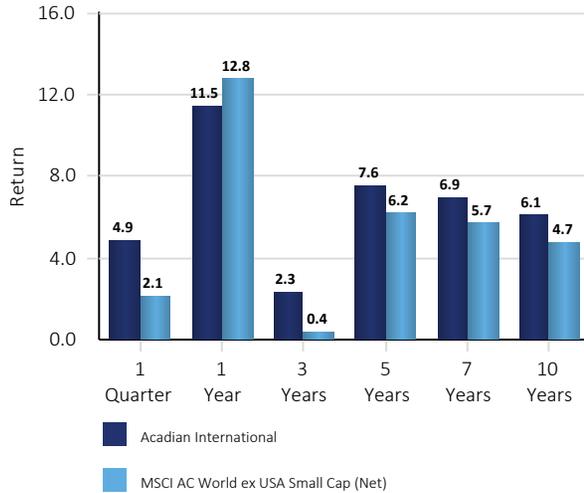
	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ International Equity Composite	5.91 (35)	14.93 (40)	3.61 (60)	1.88 (62)	7.24 (45)	5.20 (41)
● Custom Benchmark	4.33 (60)	13.20 (52)	3.24 (65)	1.72 (62)	6.00 (66)	4.32 (72)
5th Percentile	10.46	25.33	11.89	8.76	11.68	8.36
1st Quartile	6.76	17.19	7.06	4.98	8.44	5.84
Median	4.92	13.39	4.55	2.91	6.89	4.90
3rd Quartile	2.64	9.17	1.88	-0.14	5.31	4.24
95th Percentile	-1.09	0.57	-5.03	-7.88	1.86	2.60
Population	629	626	616	595	562	436

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

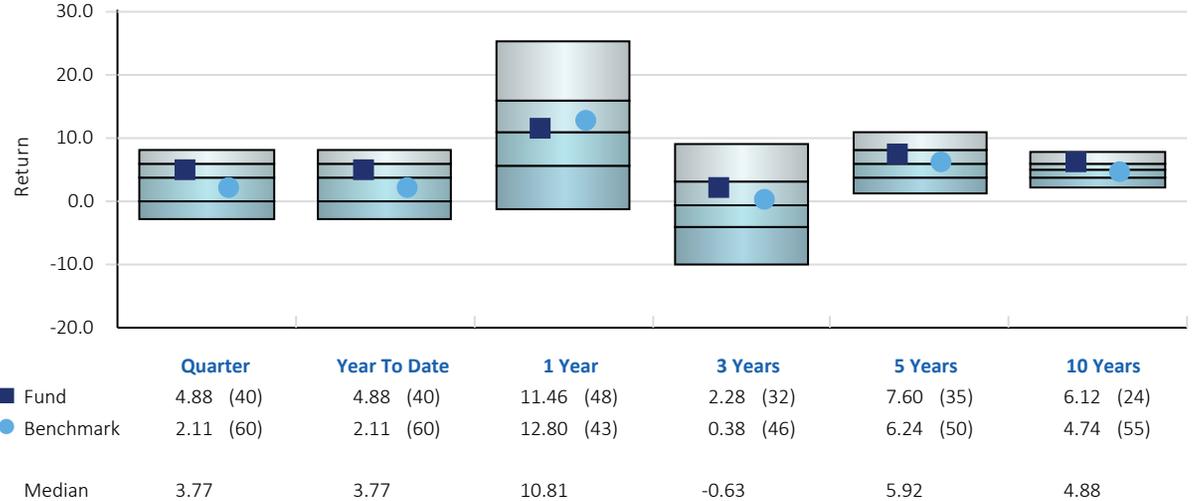
Performance Summary

Acadian International
Periods Ended March 31, 2024

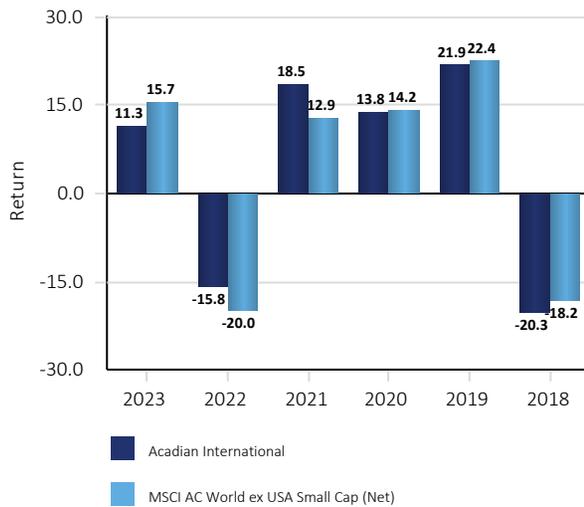
Comparative Performance



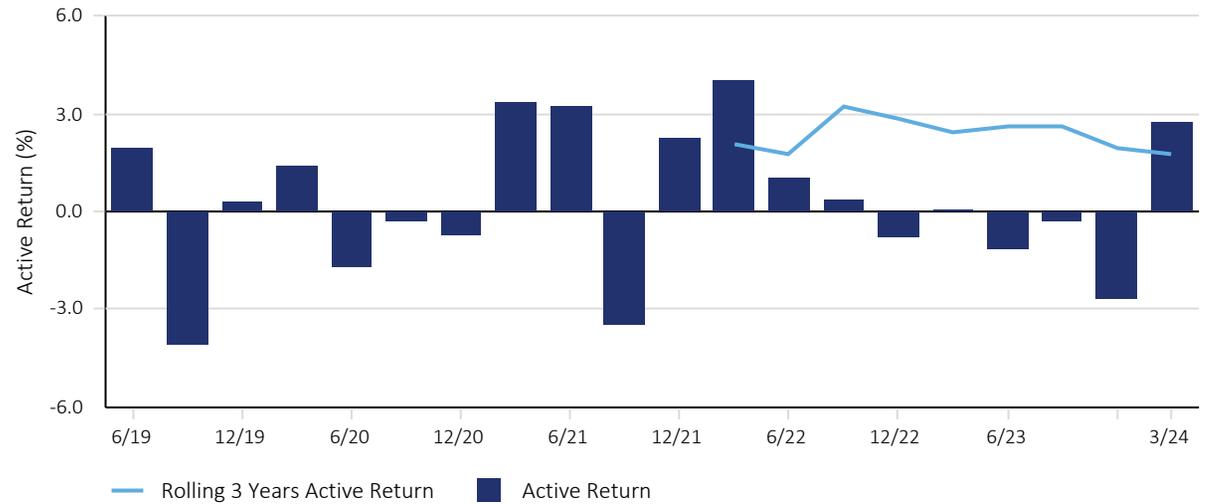
Peer Group Analysis: IM International Small Cap Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Acadian International

Periods Ended March 31, 2024

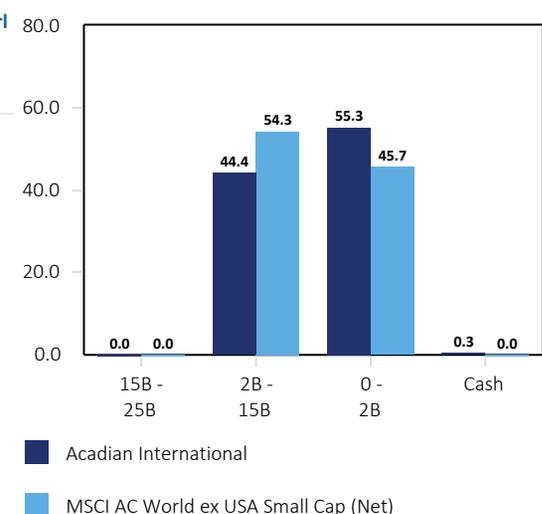
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	2,357,602,522	2,652,726,168
Median Mkt. Cap \$	781,228,319	1,098,260,312
Price/Earnings ratio	9.8	14.8
Price/Book ratio	2.1	2.3
5 Yr. EPS Growth (%)	13.9	9.7
Current Yield (%)	3.9	2.9
Beta (5 Years, Monthly)	0.95	1.00
Number of Stocks	521	4,424

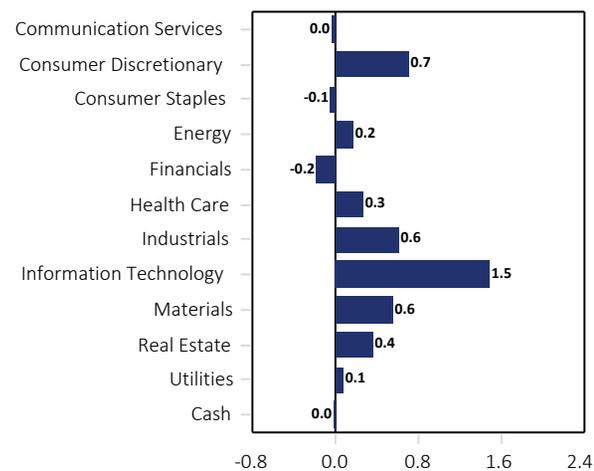
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Nova Ltd	1.6	0.1	1.5	29.1
Yangzijiang Shipbuilding Holdings Ltd	1.6	0.1	1.5	25.3
Russel Metals Inc	1.5	0.0	1.5	-2.8
BPER Banca SpA	1.4	0.1	1.3	41.5
MakeMyTrip Ltd	1.4	0.0	1.4	51.2
Iveco Group N V	1.4	0.1	1.3	65.6
Computacenter PLC, Hatfield Hertfordshire	1.3	0.1	1.2	-4.3
Dentsu Soken Inc	1.2	0.0	1.2	-19.9
Himax Technologies Inc	1.1	0.0	1.1	-11.9
Silicon Motion Technology Corp	1.1	0.0	1.1	26.5
% of Portfolio	13.6	0.5	13.1	

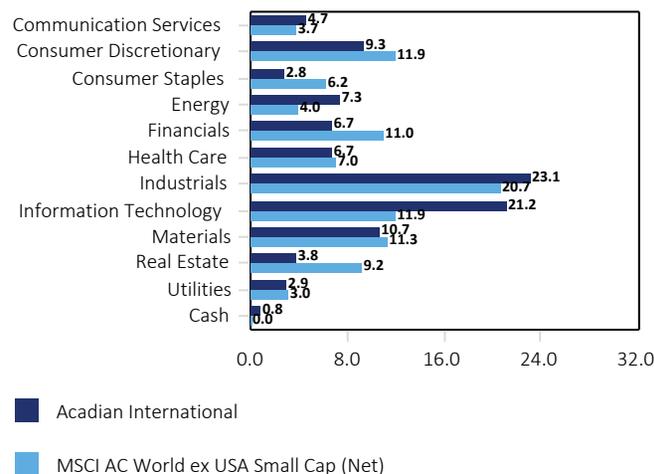
Distribution of Market Capitalization (%)



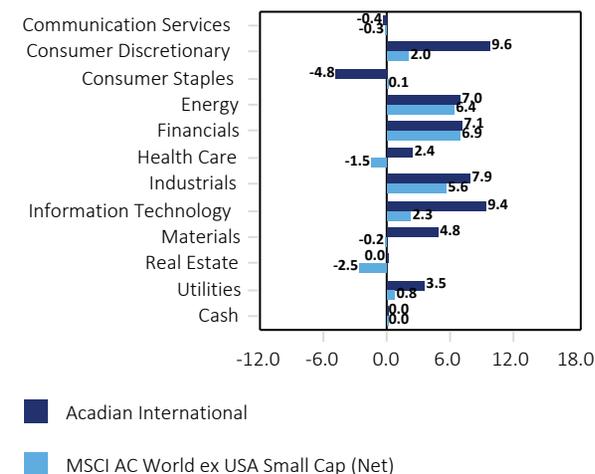
Total Attribution



Allocation



Performance

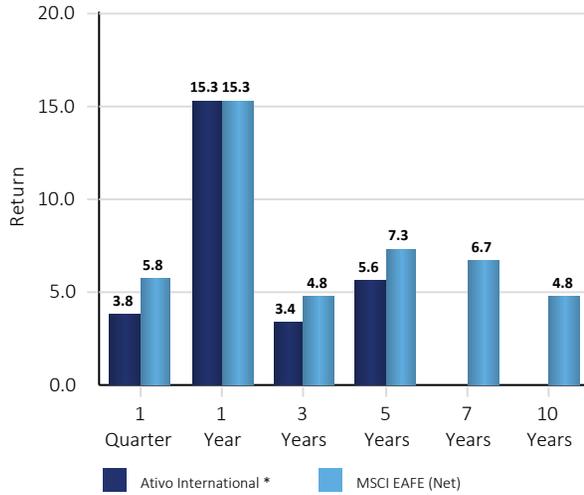


Performance Summary

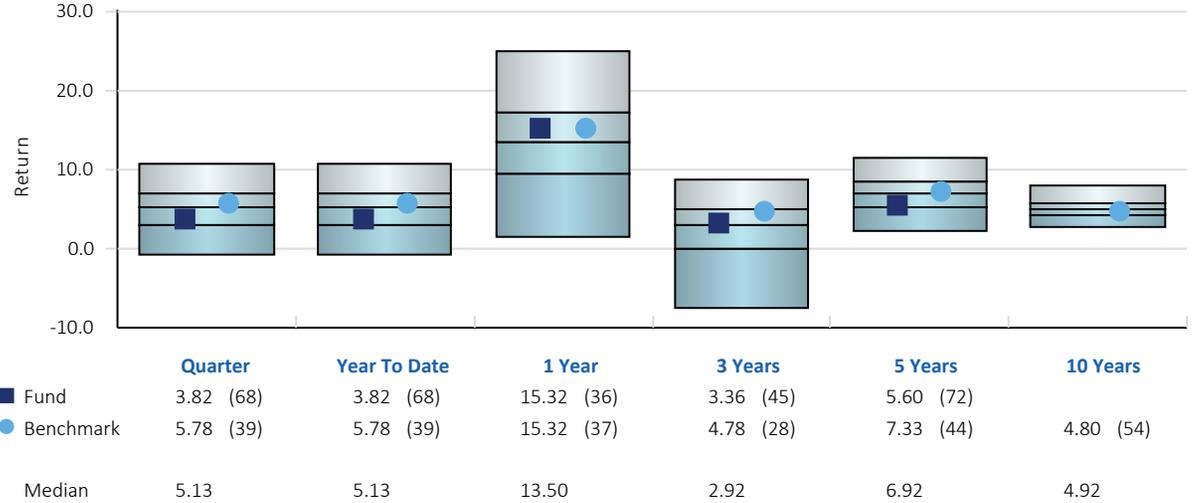
Ativo International *

Periods Ended March 31, 2024

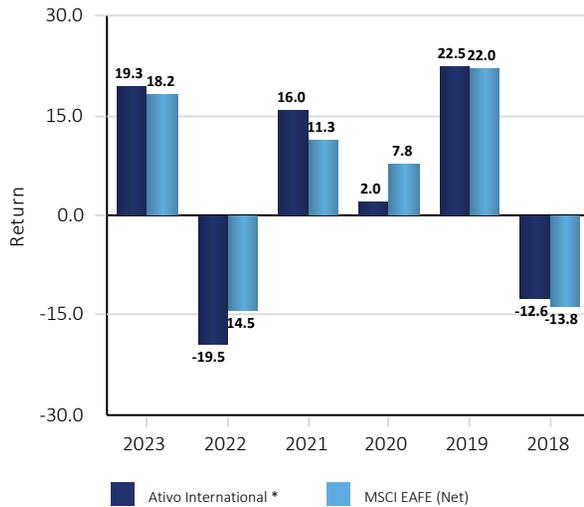
Comparative Performance



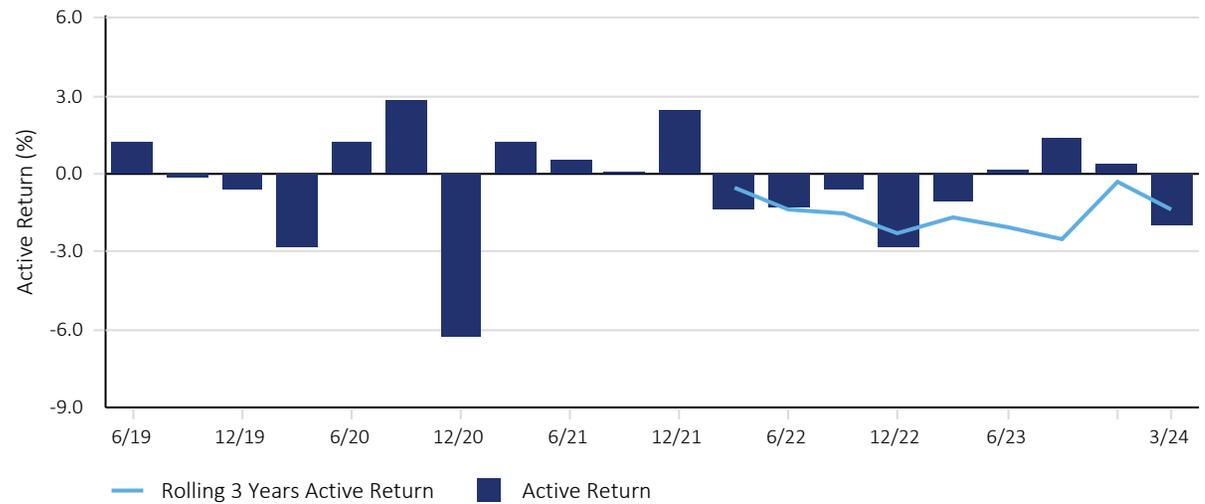
Peer Group Analysis: IM International Equity Developed Markets (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Ativo International *

Periods Ended March 31, 2024

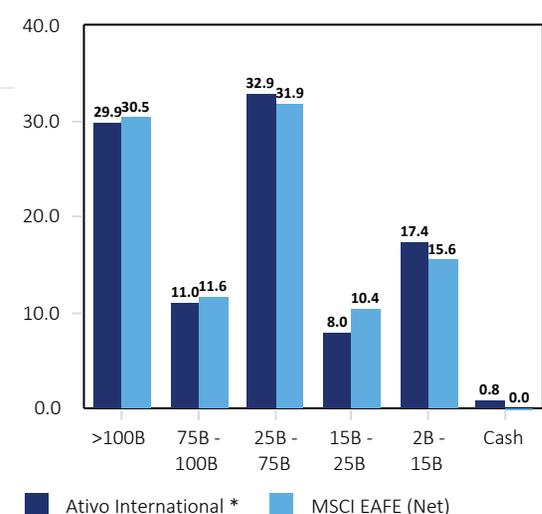
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	99,257,936,172	99,234,484,566
Median Mkt. Cap \$	40,040,435,323	13,873,468,589
Price/Earnings ratio	12.6	15.6
Price/Book ratio	2.3	2.7
5 Yr. EPS Growth (%)	9.9	8.5
Current Yield (%)	3.1	3.1
Beta (5 Years, Monthly)	0.98	1.00
Number of Stocks	127	768

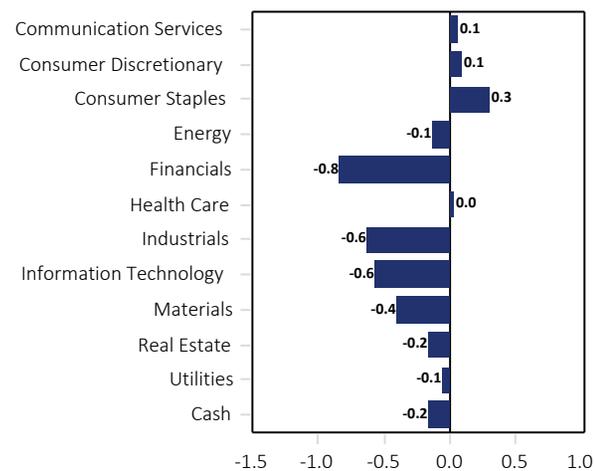
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Novo Nordisk A/S	2.6	2.5	0.1	24.2
ASML Holding NV	2.4	2.3	0.1	28.2
Nestle SA, Cham Und Vevey	1.6	1.7	-0.1	-8.4
LVMH Mt Henn Louis Vtn	1.4	1.5	-0.1	11.1
Novartis AG	1.3	1.2	0.1	-3.5
Astrazeneca PLC	1.3	1.2	0.1	1.4
Roche Holding AG	1.2	1.1	0.1	-8.6
HSBC Holdings PLC	1.1	0.9	0.2	0.5
Schneider Electric SA	1.1	0.7	0.4	12.8
Mitsui & Co Ltd	1.1	0.4	0.7	19.4
% of Portfolio	15.1	13.5	1.6	

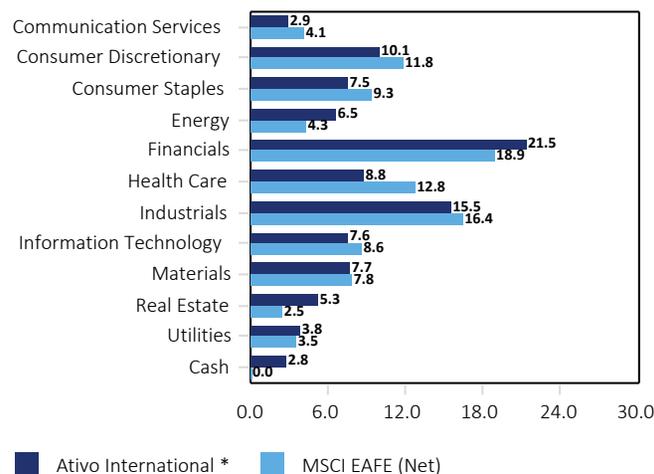
Distribution of Market Capitalization (%)



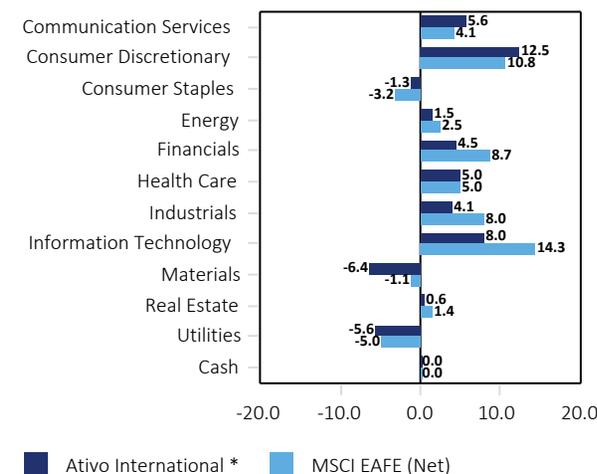
Total Attribution



Allocation



Performance

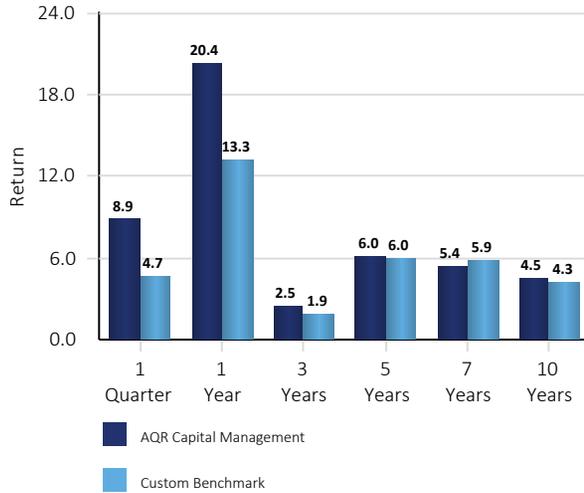


Performance Summary

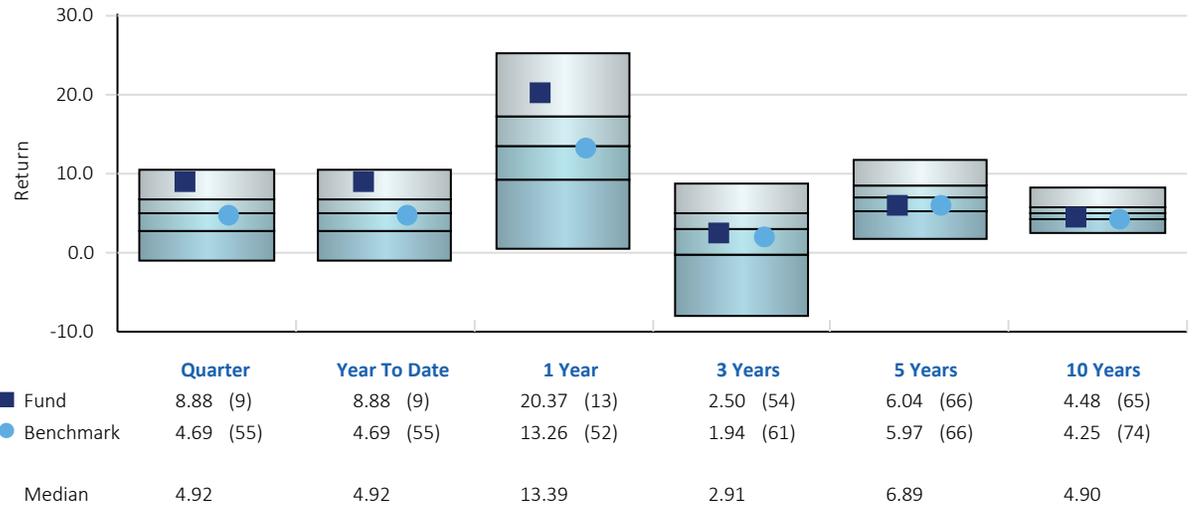
AQR Capital Management

Periods Ended March 31, 2024

Comparative Performance



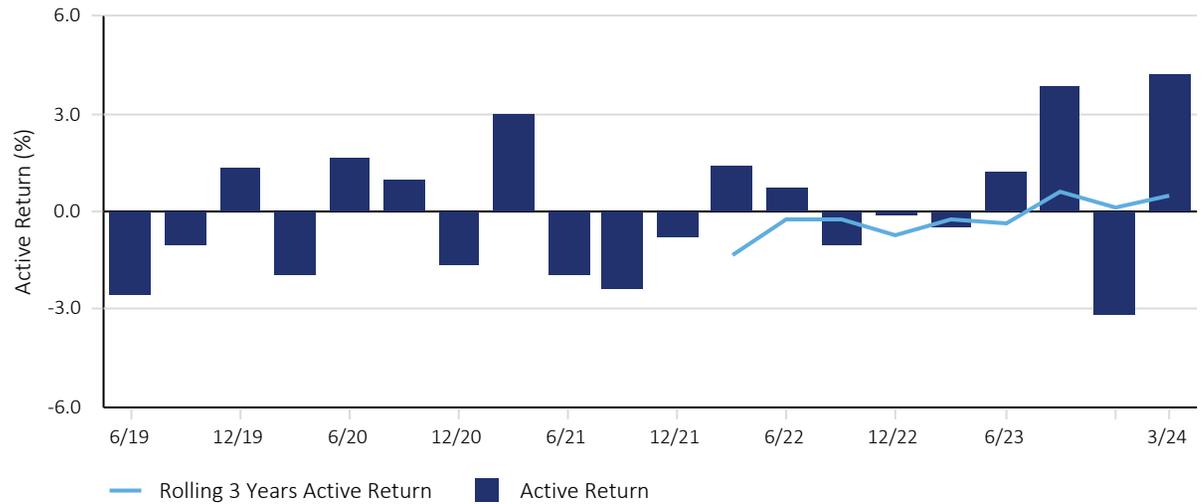
Peer Group Analysis: IM International Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

AQR Capital Management

Periods Ended March 31, 2024

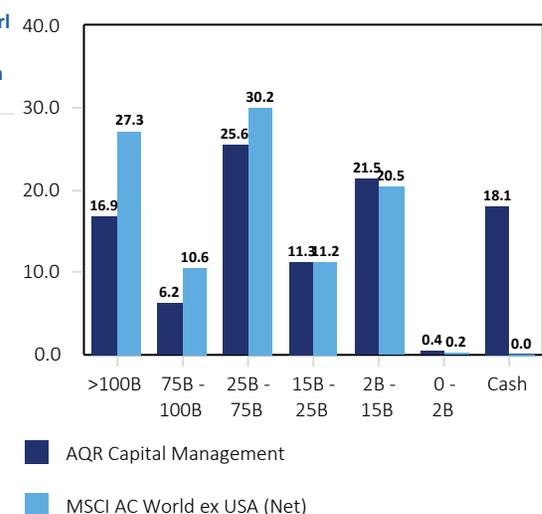
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	71,183,579,728	102,127,178,912
Median Mkt. Cap \$	16,371,017,102	10,143,557,748
Price/Earnings ratio	9.1	15.5
Price/Book ratio	2.2	2.6
5 Yr. EPS Growth (%)	13.9	9.4
Current Yield (%)	3.1	3.1
Beta (5 Years, Monthly)	1.01	1.00
Number of Stocks	472	2,231

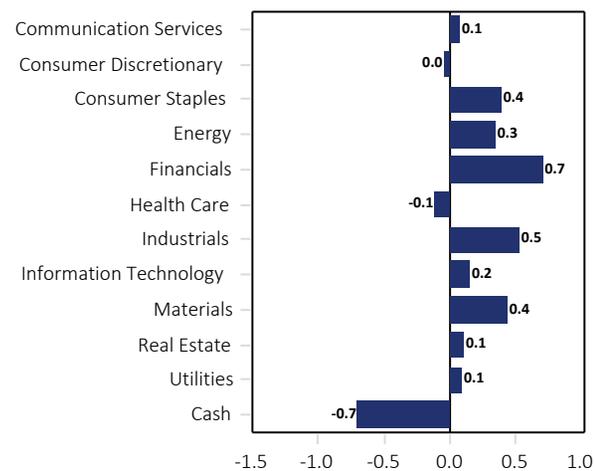
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Taiwan Semiconductor Manufacturing Co Ltd	1.8	2.3	-0.5	31.3
Novartis AG	1.4	0.8	0.6	-3.5
HSBC Holdings PLC	1.2	0.6	0.6	0.5
Tokyo Electron Ltd	1.1	0.5	0.6	46.8
ASML Holding NV	1.0	1.5	-0.5	28.2
Muenchener Rueckversicherungs	1.0	0.3	0.7	17.9
Suncor Energy Inc.	0.9	0.2	0.7	16.5
ABB Ltd	0.9	0.3	0.6	7.1
Rolls Royce Holdings PLC	0.9	0.2	0.7	41.1
Shopify Inc	0.9	0.4	0.5	-0.9
% of Portfolio	11.1	7.1	4.0	

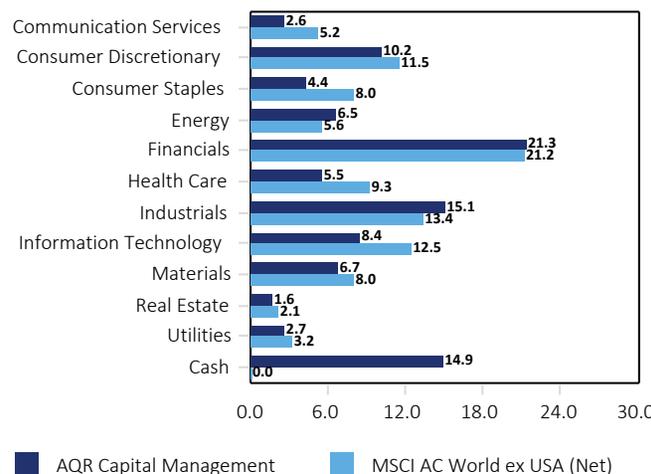
Distribution of Market Capitalization (%)



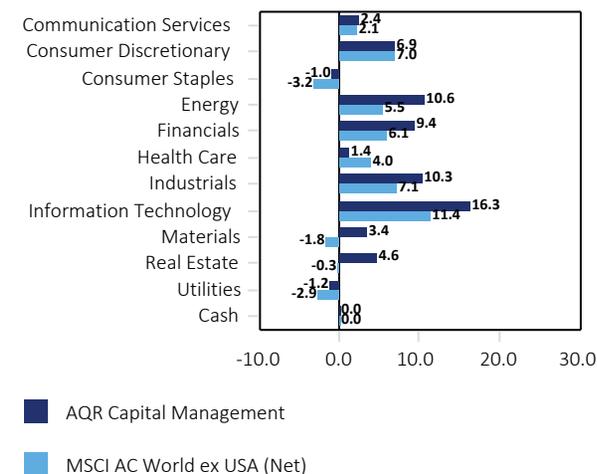
Total Attribution



Allocation



Performance

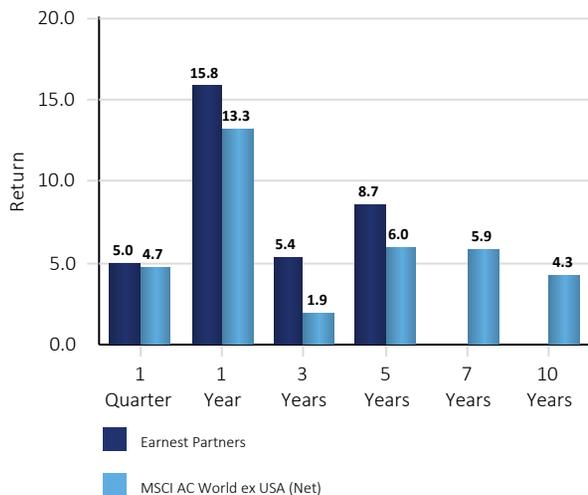


Performance Summary

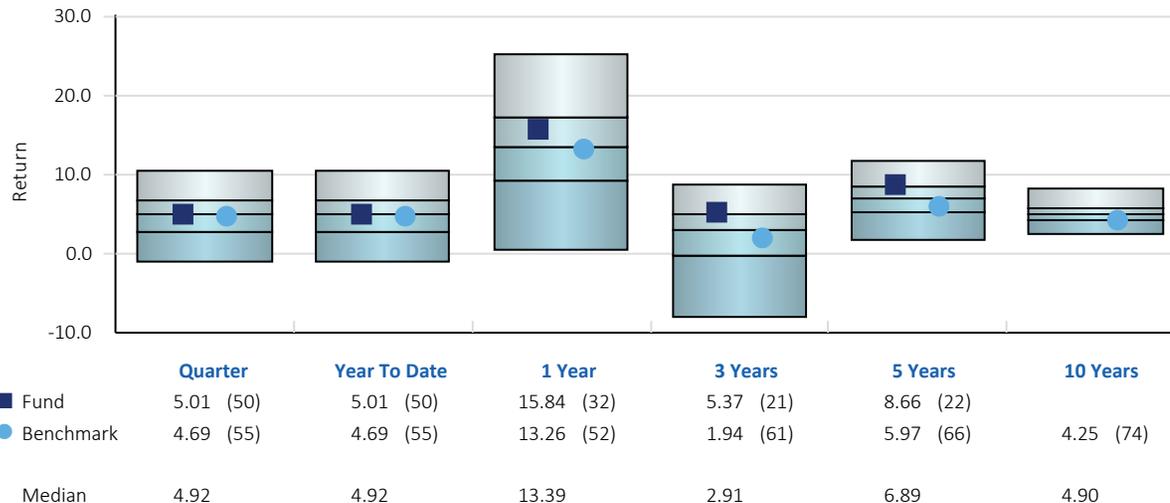
Earnest Partners

Periods Ended March 31, 2024

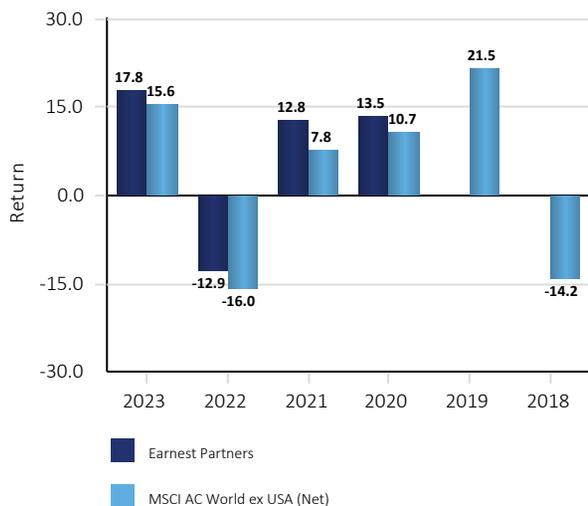
Comparative Performance



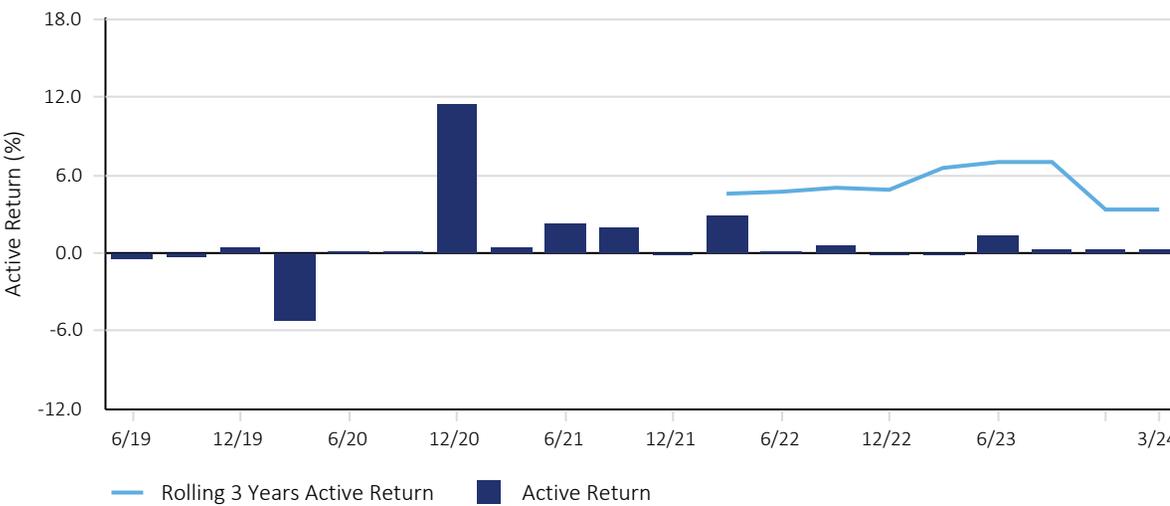
Peer Group Analysis: IM International Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Earnest Partners

Periods Ended March 31, 2024

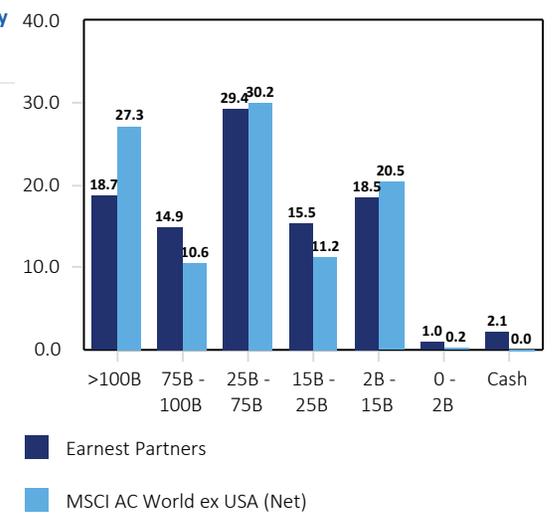
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	80,477,293,482	102,127,178,912
Median Mkt. Cap \$	28,958,870,663	10,143,557,748
Price/Earnings ratio	15.1	15.5
Price/Book ratio	2.5	2.6
5 Yr. EPS Growth (%)	10.1	9.4
Current Yield (%)	2.7	3.1
Beta (5 Years, Monthly)	1.10	1.00
Number of Stocks	67	2,231

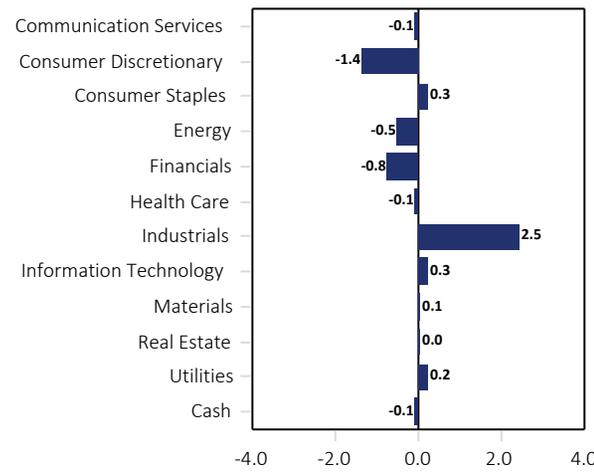
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Icon PLC	2.9	0.0	2.9	18.7
Safran SA	2.7	0.3	2.4	28.8
Taiwan Semiconductor Manufacturing	2.7	2.3	0.4	26.6
Hitachi Ltd	2.6	0.3	2.3	29.8
Leonardo SPA	2.4	0.0	2.4	52.4
RELX PLC	2.4	0.3	2.1	9.6
LONZA GROUP AG	2.3	0.2	2.1	
Denso Corp	2.3	0.1	2.2	27.4
ASML Holding NV	2.3	1.5	0.8	28.2
Nippon Sanso Holdings Corporation	2.3	0.0	2.3	17.6
% of Portfolio	24.9	5.0	19.9	

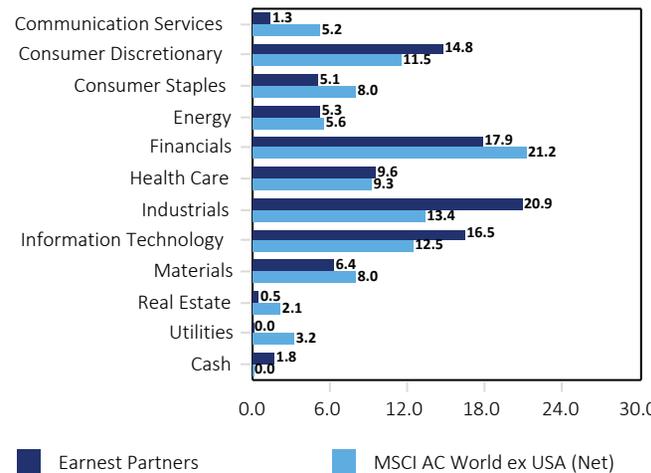
Distribution of Market Capitalization (%)



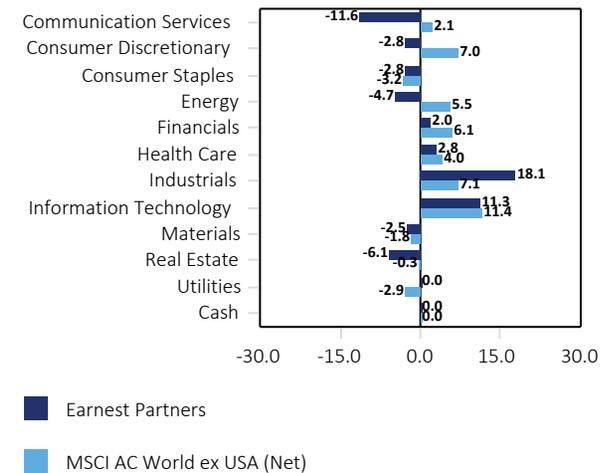
Total Attribution



Allocation



Performance

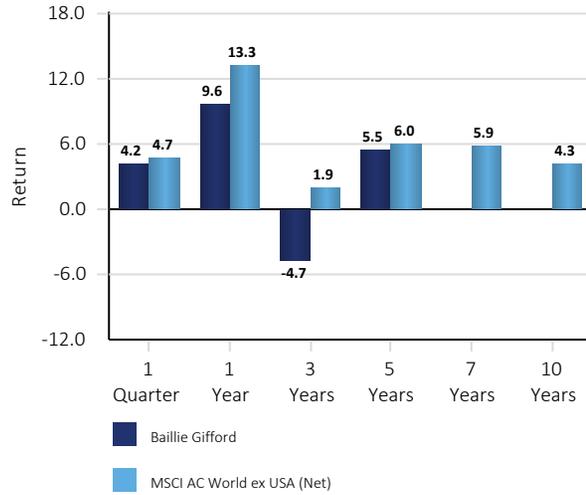


Performance Summary

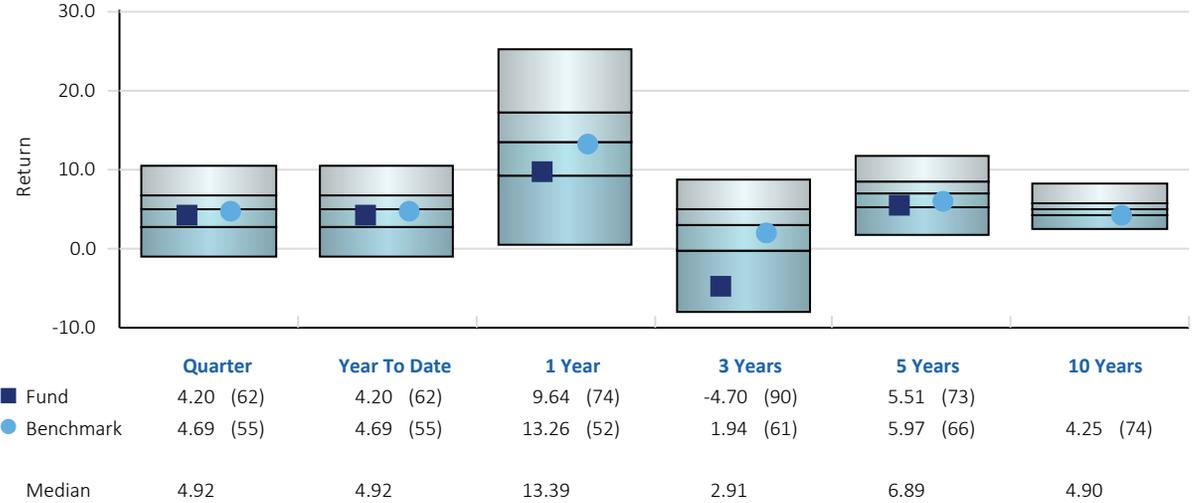
Baillie Gifford

Periods Ended March 31, 2024

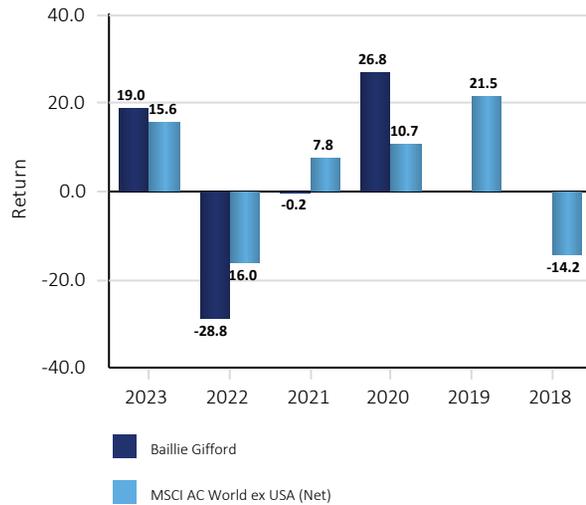
Comparative Performance



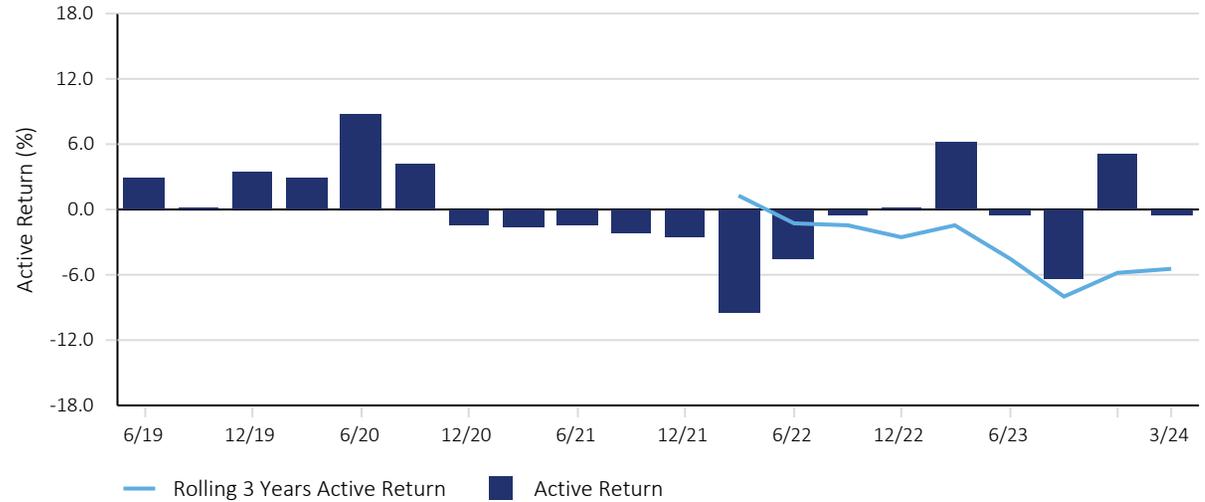
Peer Group Analysis: IM International Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Holdings & Attribution

Baillie Gifford

Periods Ended March 31, 2024

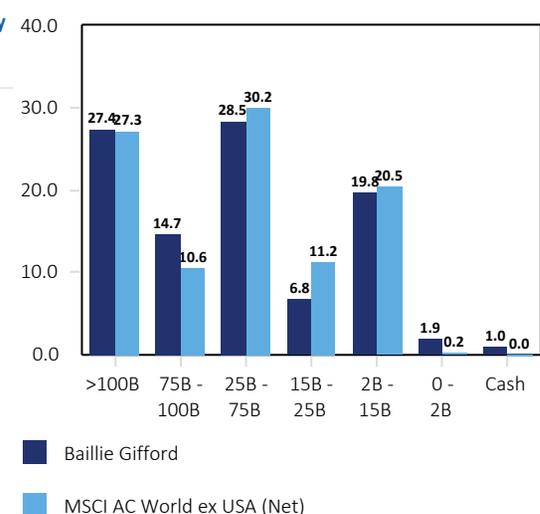
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	118,877,588,536	102,127,178,912
Median Mkt. Cap \$	28,888,870,485	10,143,557,748
Price/Earnings ratio	27.1	15.5
Price/Book ratio	3.8	2.6
5 Yr. EPS Growth (%)	15.5	9.4
Current Yield (%)	1.2	3.1
Beta (5 Years, Monthly)	1.12	1.00
Number of Stocks	84	2,231

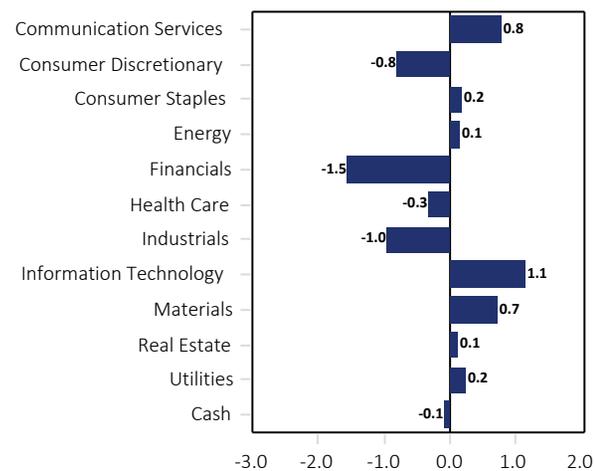
Top 10 Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Taiwan Semiconductor Manufacturing	4.7	2.3	2.4	26.6
MercadoLibre Inc	3.8	0.0	3.8	-3.8
SAP SE	3.4	0.8	2.6	26.5
Samsung Electronics Co Ltd	3.3	1.1	2.2	0.4
Ryanair Holdings PLC	3.0	0.0	3.0	10.0
CRH PLC	2.7	0.2	2.5	25.6
Kingspan Group PLC	2.2	0.1	2.1	5.3
Scout24 SE	2.2	0.0	2.2	6.5
Atlas Copco AB	2.0	0.1	1.9	-0.2
Rio Tinto Group	2.0	0.3	1.7	-11.4
% of Portfolio	29.3	4.9	24.4	

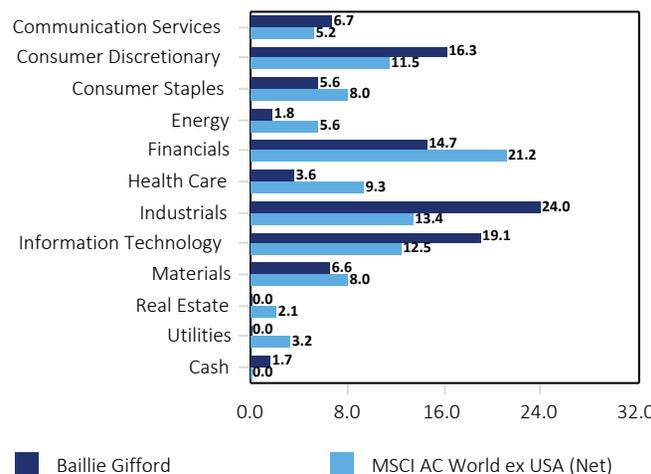
Distribution of Market Capitalization (%)



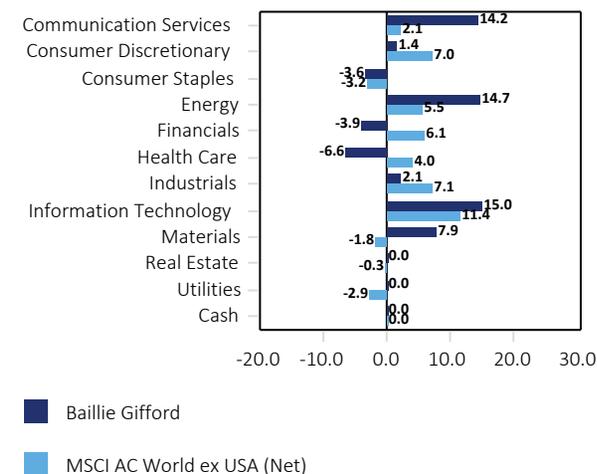
Total Attribution



Allocation



Performance



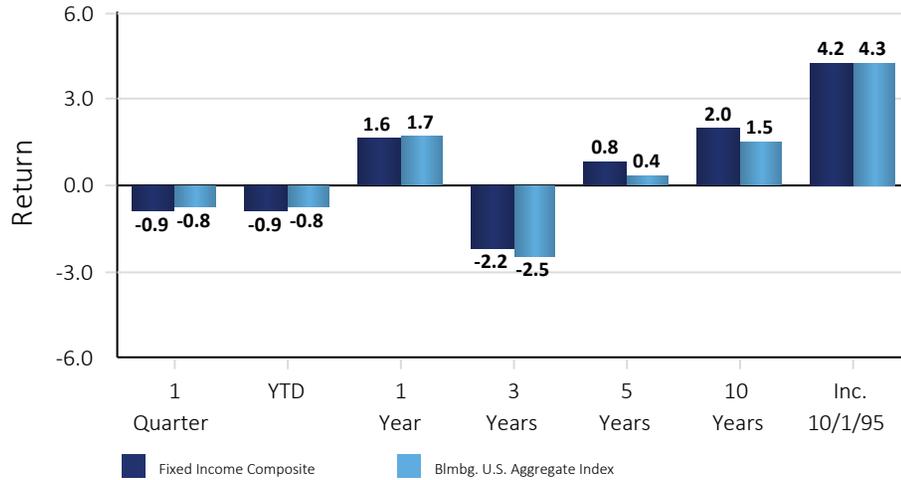
Fixed Income Composite

Composite Performance Summary

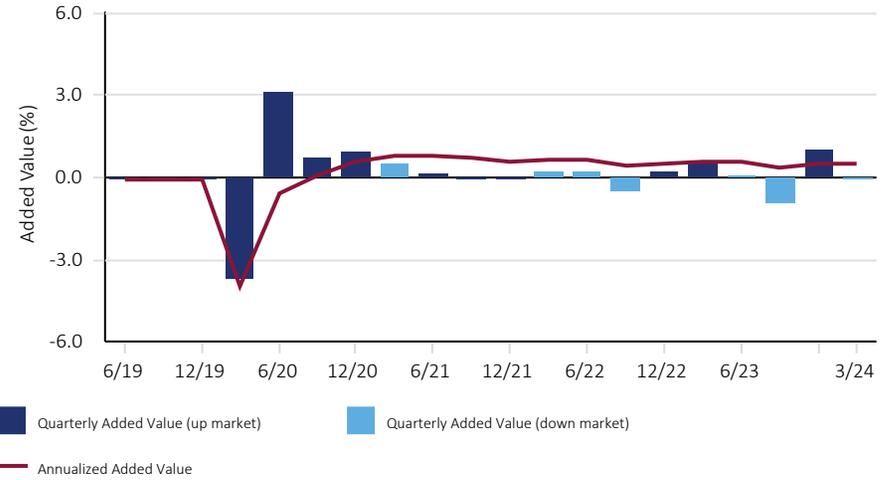
Fixed Income Composite

Periods Ended March 31, 2024

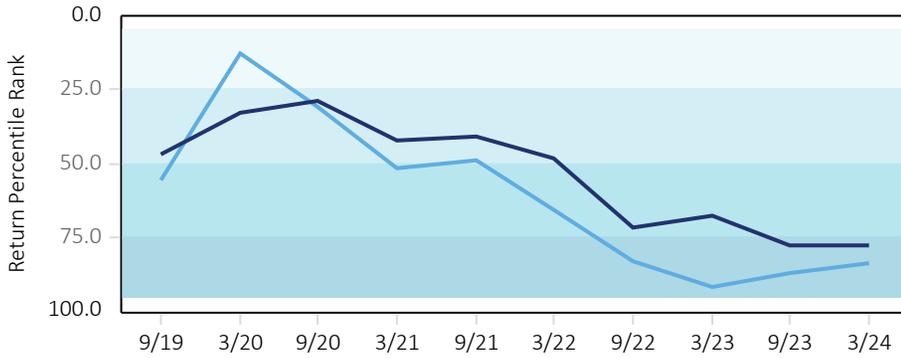
Comparative Performance



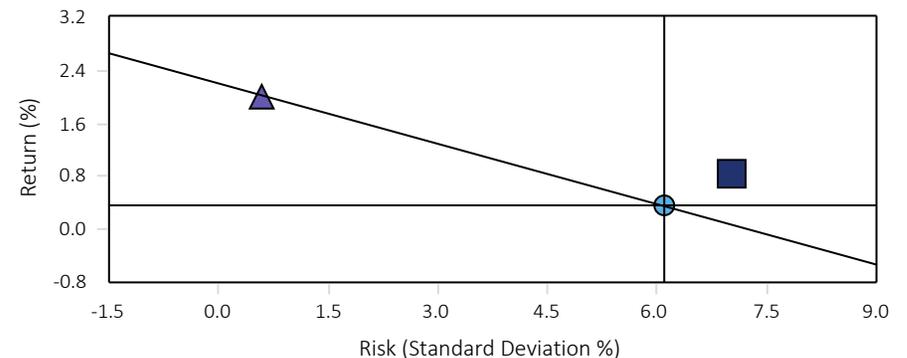
Added Value History



Rolling Percentile Rank: IM U.S. Fixed Income (SA+CF)



Risk and Return 04/1/19 - 03/31/24



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Fixed Income Composite	10	0 (0%)	6 (60%)	2 (20%)	2 (20%)
Benchmark	10	1 (10%)	2 (20%)	3 (30%)	4 (40%)

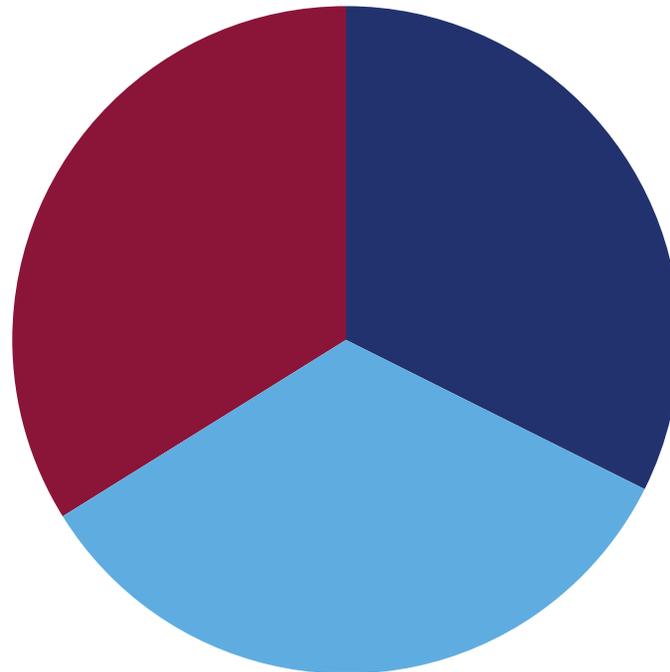
- Fixed Income Composite
- Blmbg. U.S. Aggregate Index
- 90 Day U.S. Treasury Bill

Asset Allocation By Manager

Fixed Income Composite

Periods Ended March 31, 2024

Mar-2024 : 576,263,095.0



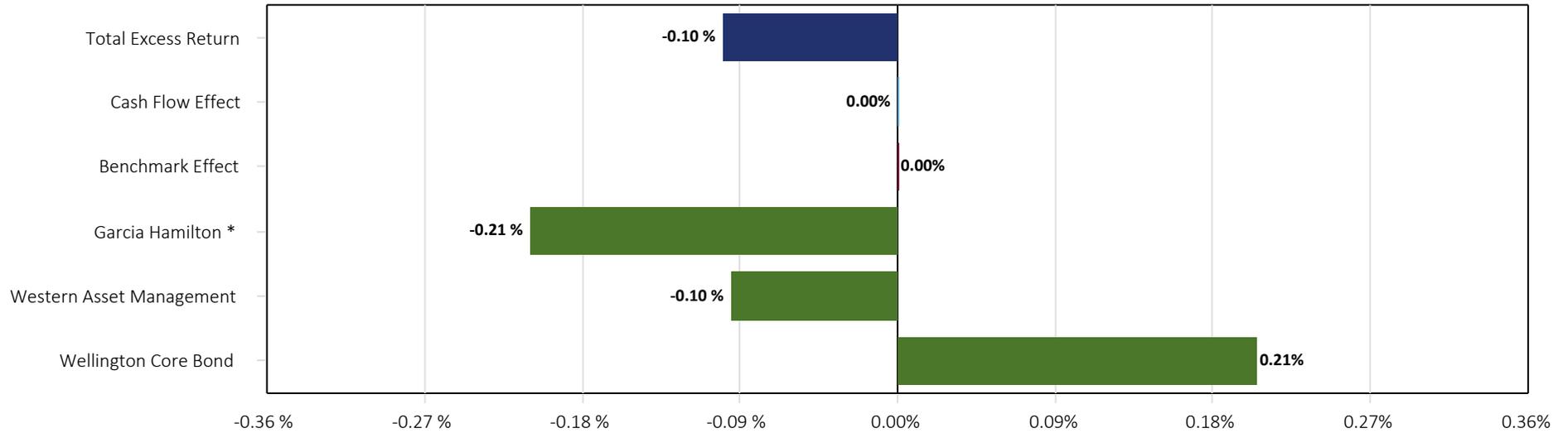
	Market Value \$	Allocation (%)
■ Garcia Hamilton *	186,584,496	32.4
■ Western Asset Management	194,556,998	33.8
■ Wellington Core Bond	195,121,601	33.9

Asset Class Attribution

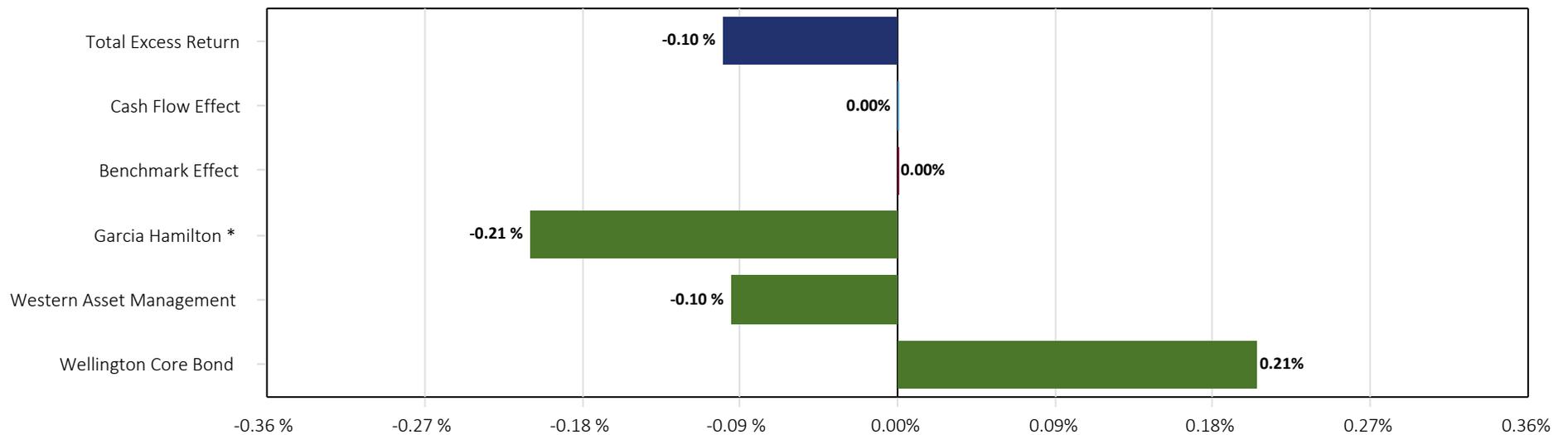
Fixed Income Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

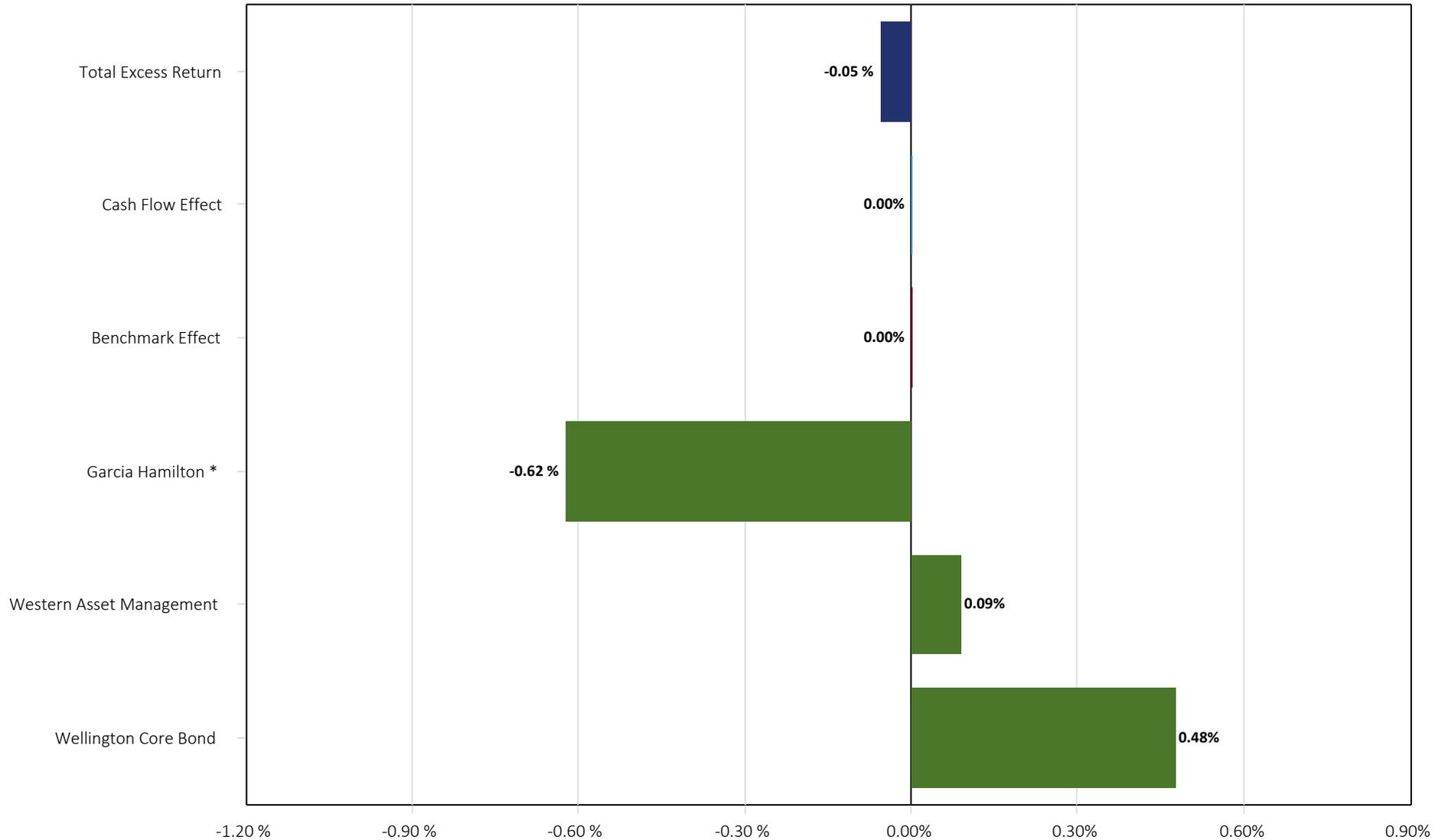


Asset Class Attribution

Fixed Income Composite

Periods Ended 1 Year Ending March 31, 2024

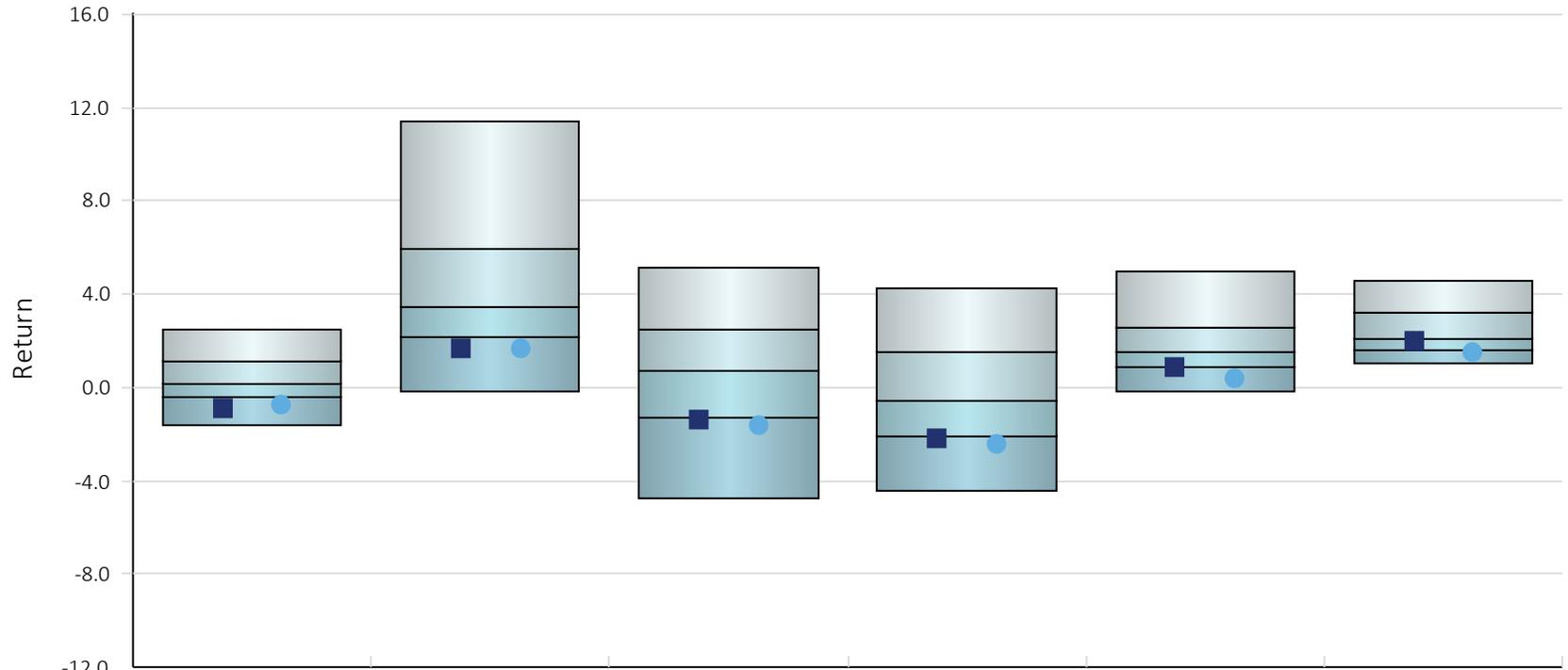
1 Year



Peer Group Analysis

Fixed Income Composite

Periods Ended March 31, 2024



	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ Fixed Income Composite	-0.88 (90)	1.64 (84)	-1.35 (76)	-2.18 (78)	0.83 (76)	1.98 (54)
● Blmbg. U.S. Aggregate Index	-0.78 (88)	1.70 (83)	-1.60 (81)	-2.46 (84)	0.36 (90)	1.54 (77)
5th Percentile	2.52	11.42	5.14	4.23	4.99	4.59
1st Quartile	1.11	5.96	2.49	1.53	2.57	3.21
Median	0.14	3.43	0.73	-0.58	1.53	2.07
3rd Quartile	-0.39	2.13	-1.31	-2.10	0.87	1.57
95th Percentile	-1.60	-0.15	-4.77	-4.46	-0.20	1.05
Population	1,156	1,150	1,125	1,090	1,059	917

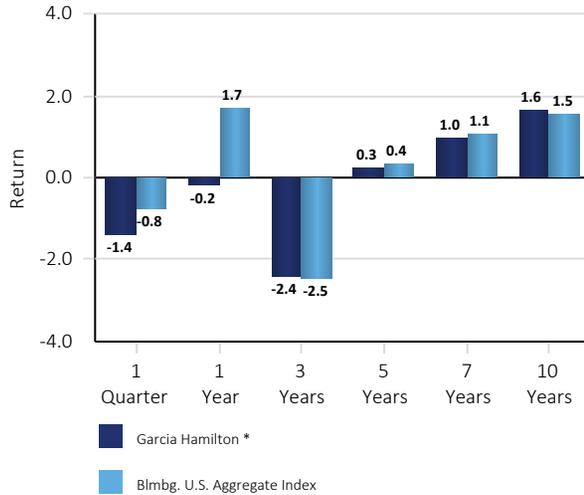
Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Performance Summary

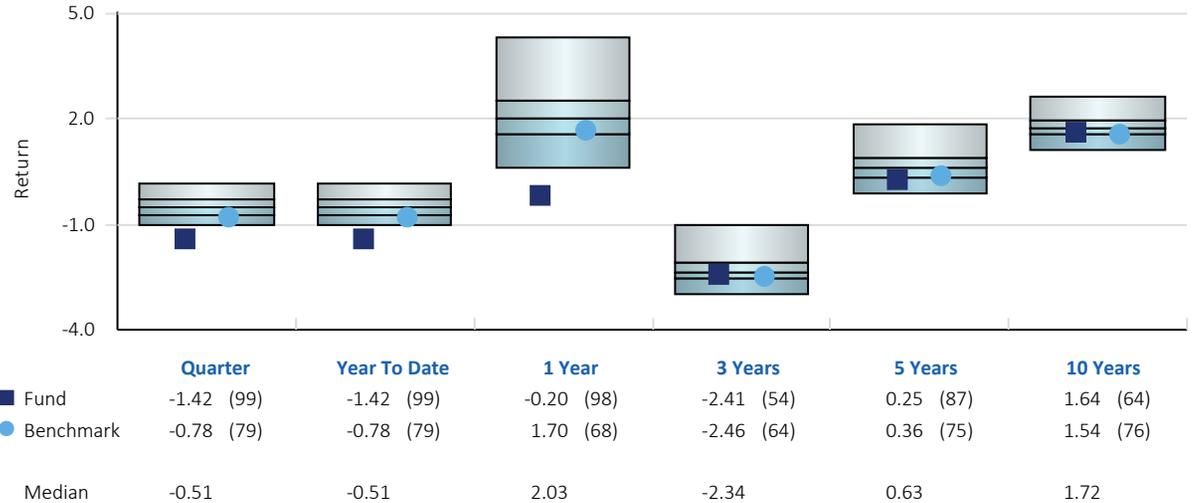
Garcia Hamilton *

Periods Ended March 31, 2024

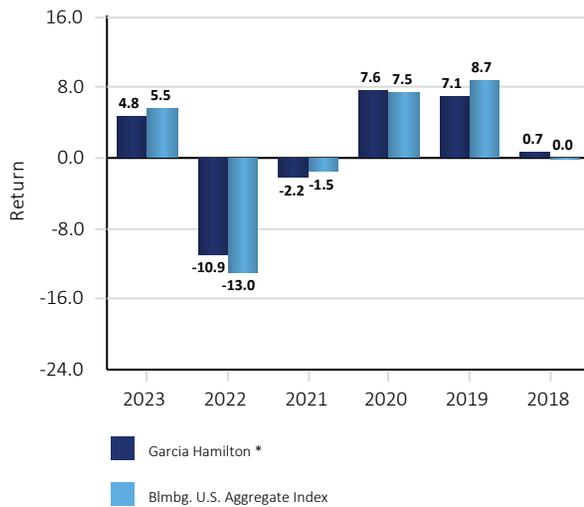
Comparative Performance



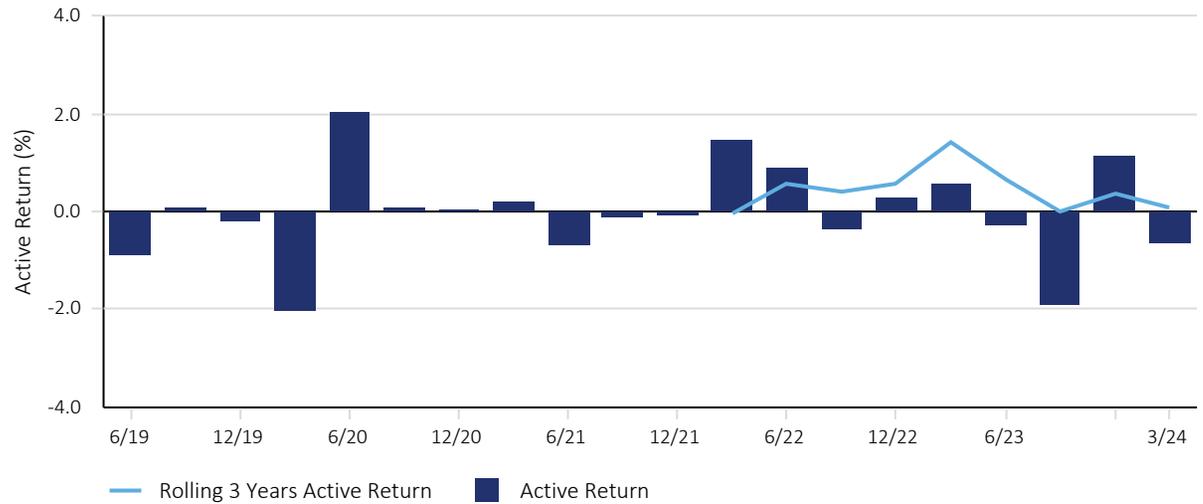
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance



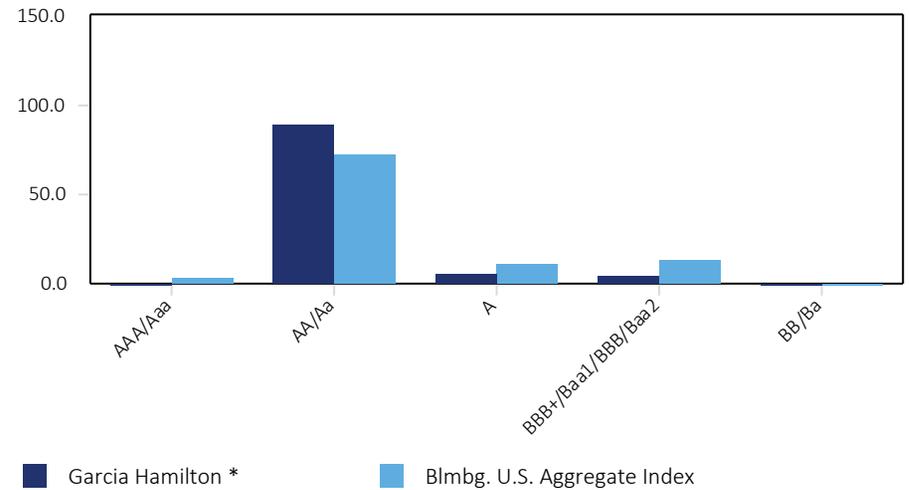
Portfolio Characteristics

Garcia Hamilton * vs Blmbg. U.S. Aggregate Index
 Periods Ended As of March 31, 2024

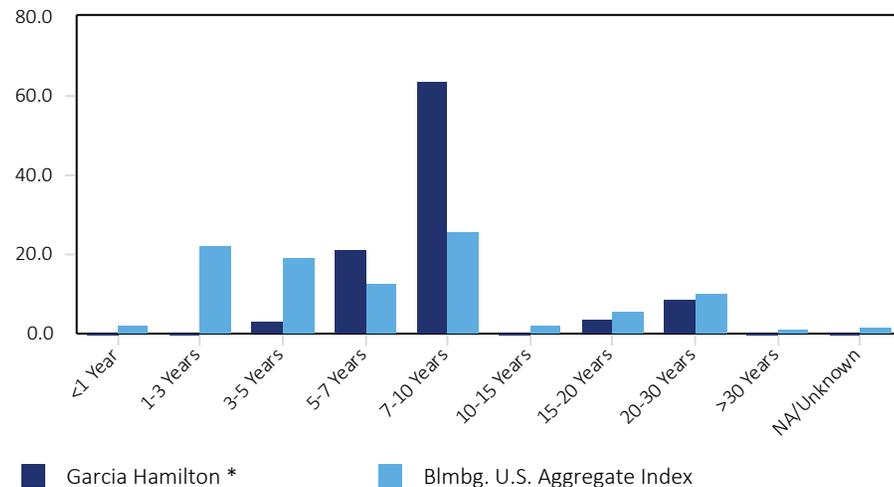
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	9.52	8.35
Avg. Quality	AA	AA
Convexity	0.20	0.29
Coupon Rate (%)	2.83	3.31
Current Yield		4.73
Modified Duration	7.42	6.02
Effective Duration	7.33	5.99
Spread Duration		
Yield To Maturity (%)	4.66	4.73
Yield To Worst	4.66	4.77
Market To Book Value		
Crediting Rate		
Crediting to Underlying Ratio		
Underlying Yield		

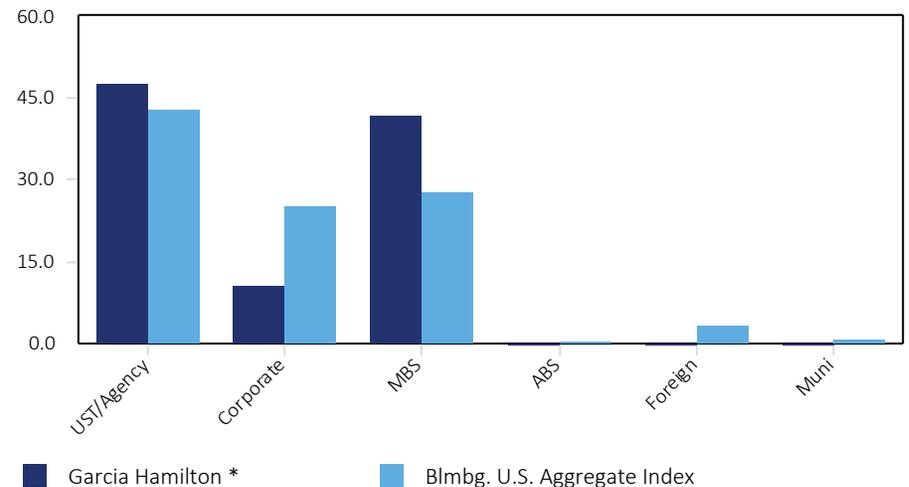
Credit Quality Distribution (%)



Maturity Distribution (%)



Sector Distribution (%)

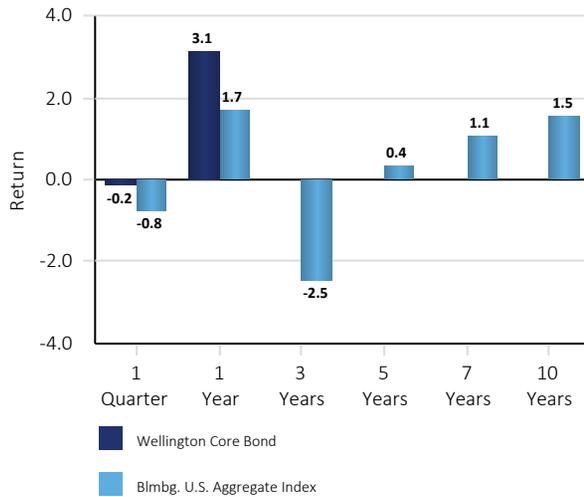


Performance Summary

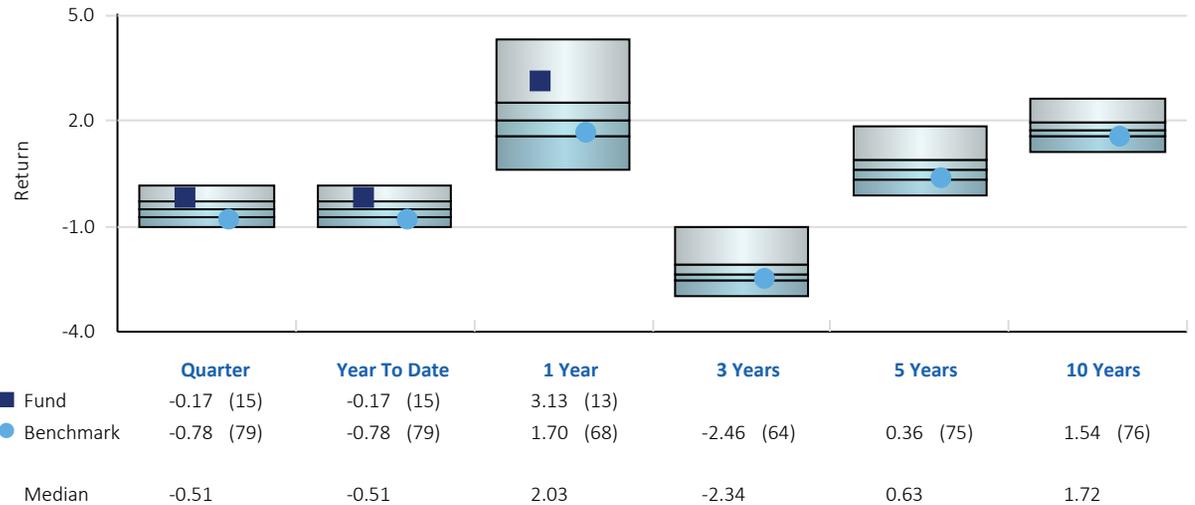
Wellington Core Bond

Periods Ended March 31, 2024

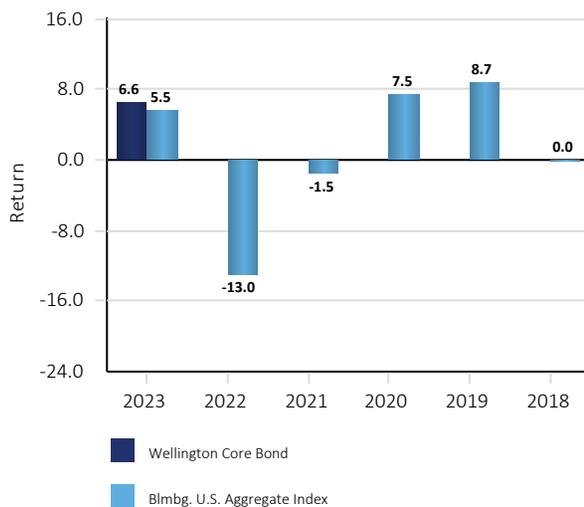
Comparative Performance



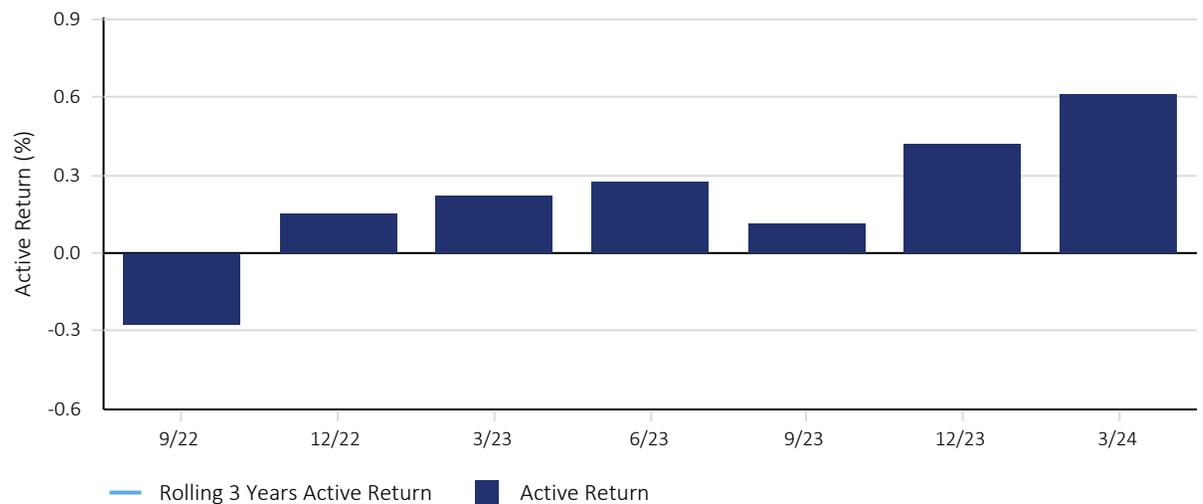
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

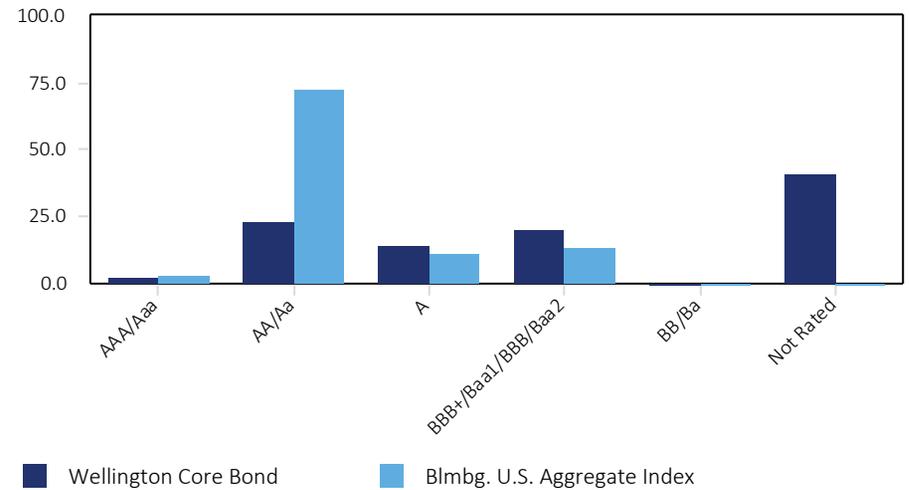
Wellington Core Bond vs Blmbg. U.S. Aggregate Index

Periods Ended As of March 31, 2024

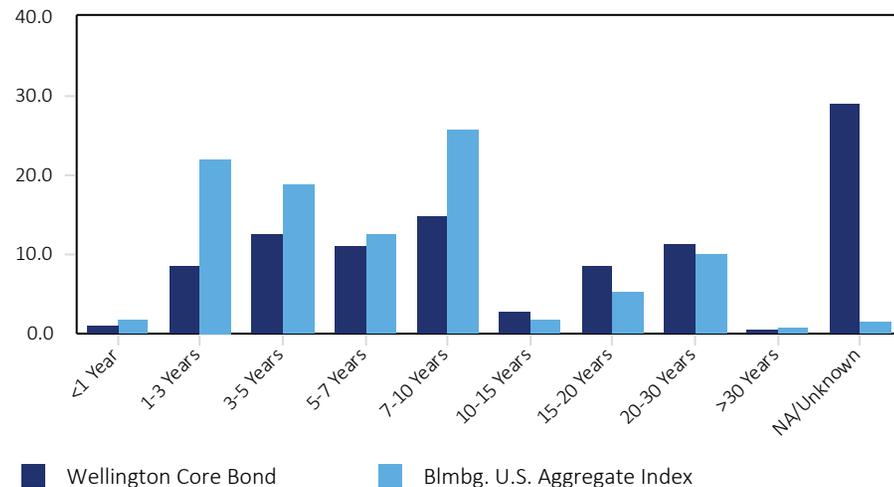
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	10.99	8.35
Avg. Quality	A	AA
Convexity	0.55	0.29
Coupon Rate (%)	3.82	3.31
Current Yield		4.73
Modified Duration	7.33	6.02
Effective Duration	7.71	5.99
Yield To Maturity (%)	5.25	4.73
Yield To Worst	5.25	4.77
Average Duration	7.34	6.02
Years to Maturity	10.99	8.35

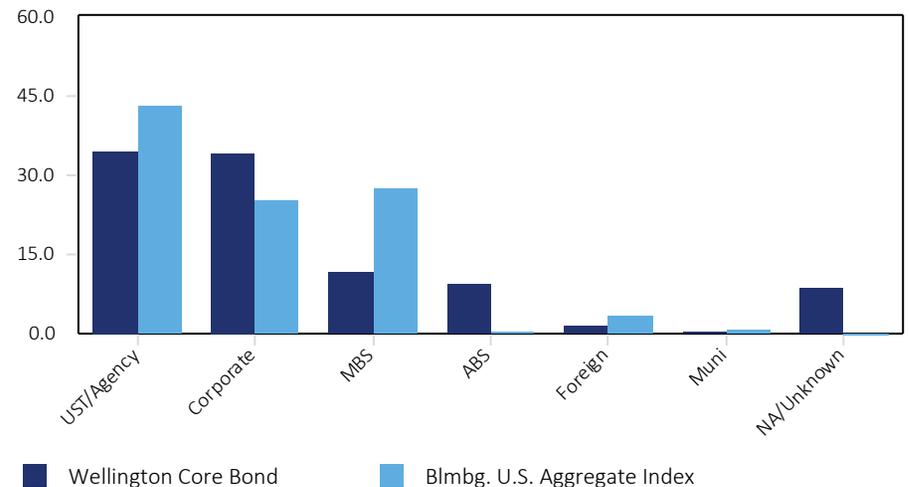
Credit Quality Distribution (%)



Maturity Distribution (%)



Sector Distribution (%)

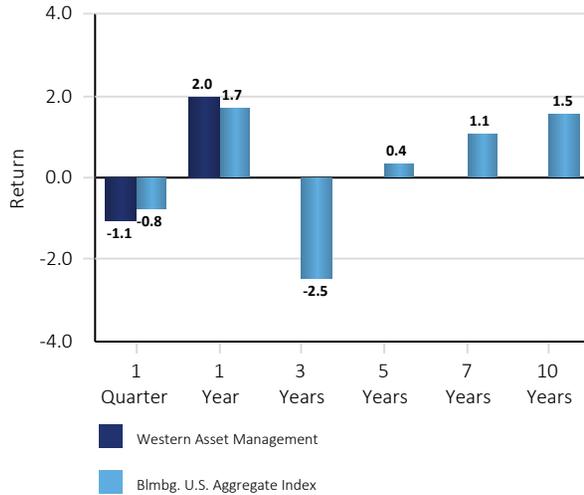


Performance Summary

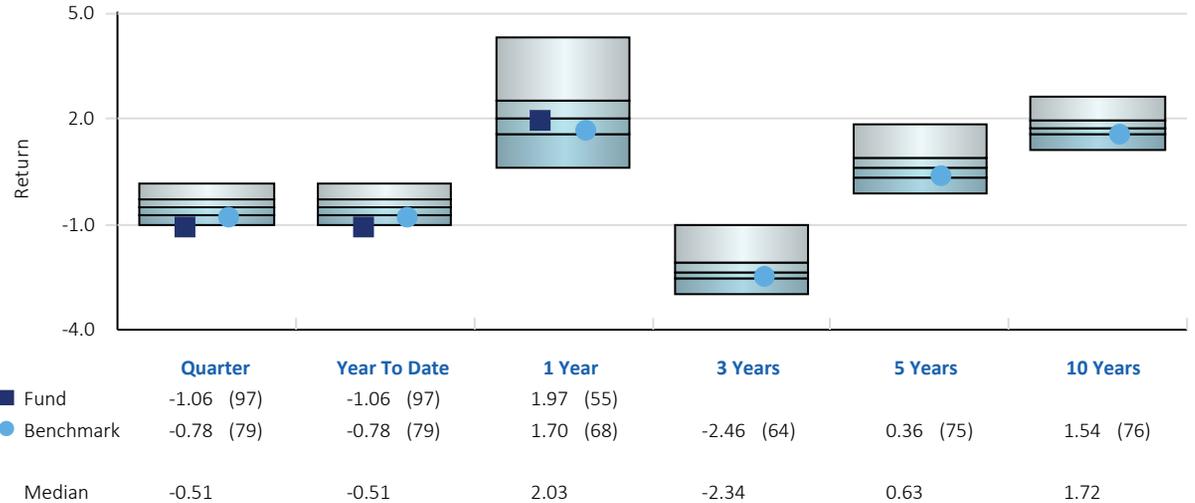
Western Asset Management

Periods Ended March 31, 2024

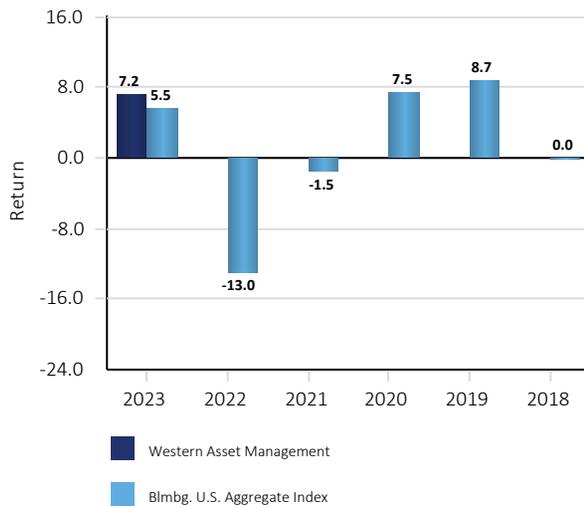
Comparative Performance



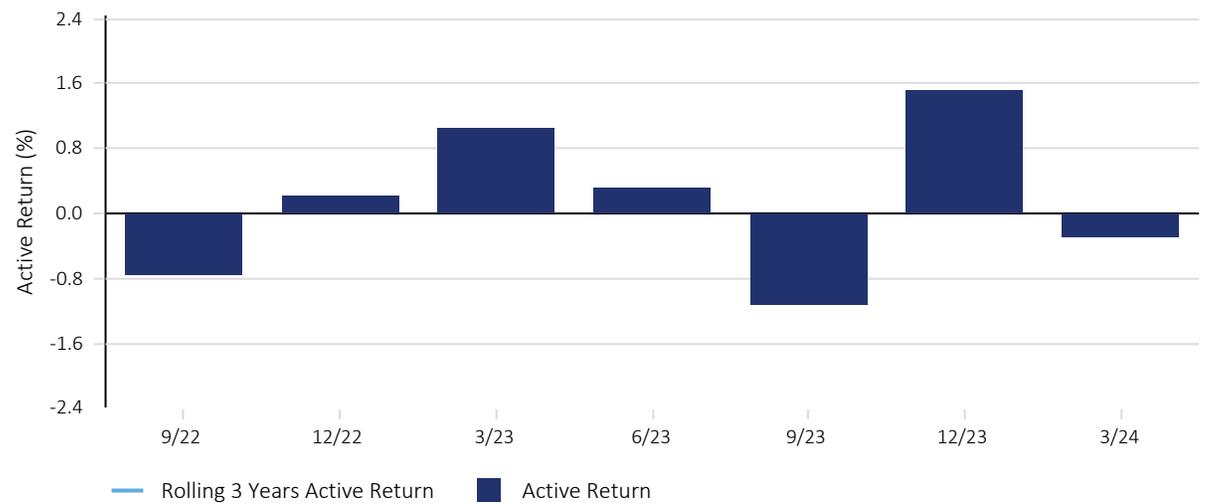
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

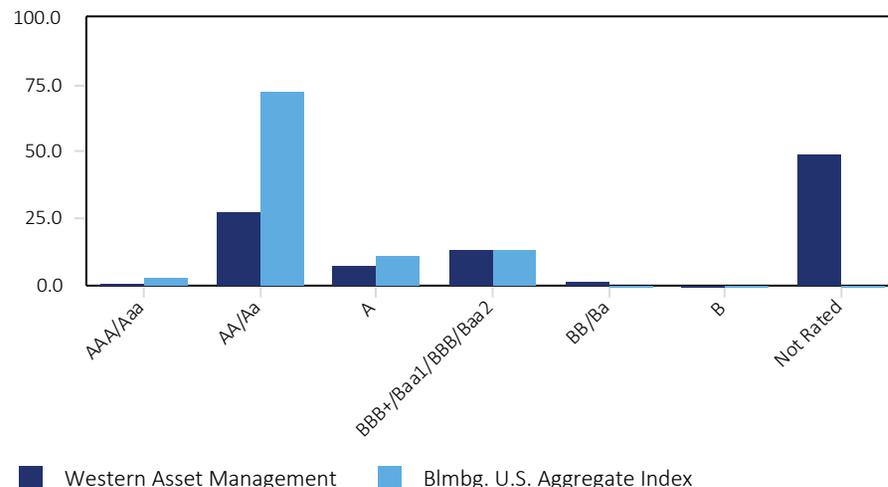
Western Asset Management vs Blmbg. U.S. Aggregate Index

Periods Ended As of March 31, 2024

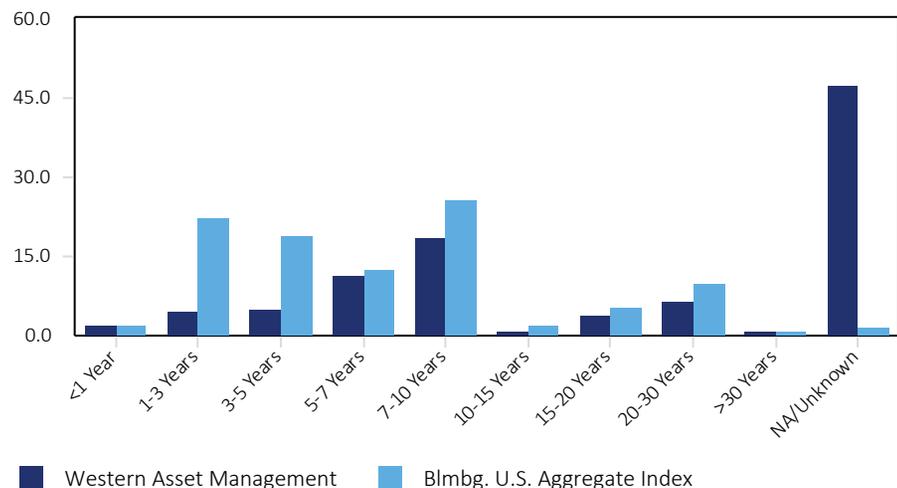
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	10.53	8.35
Avg. Quality	A	AA
Convexity	0.28	0.29
Coupon Rate (%)	3.91	3.31
Current Yield		4.73
Modified Duration	6.77	6.02
Effective Duration	6.61	5.99
Yield To Maturity (%)	5.37	4.73
Yield To Worst	5.37	4.77
Average Duration	6.81	6.02
Years to Maturity	10.53	8.35

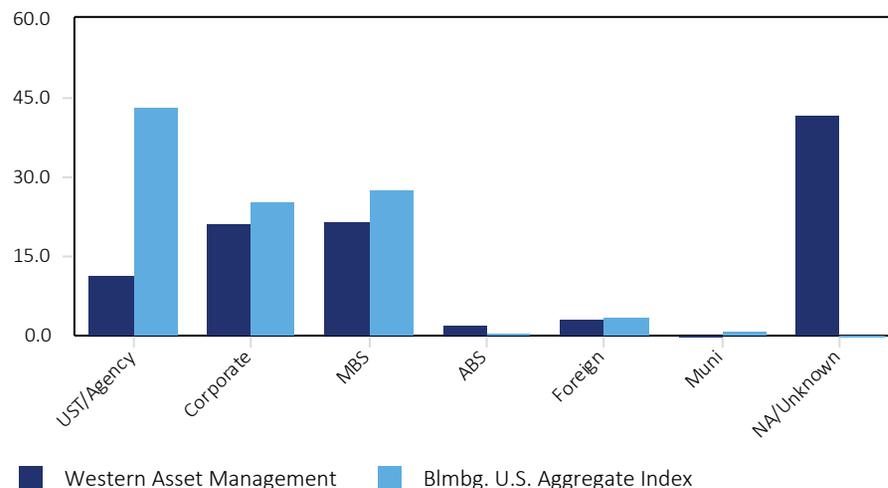
Credit Quality Distribution (%)



Maturity Distribution (%)



Sector Distribution (%)

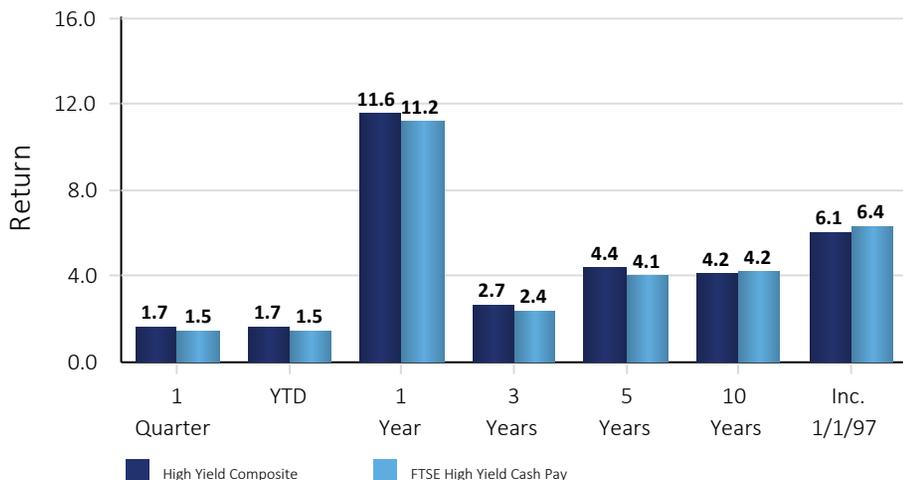


High Yield Composite

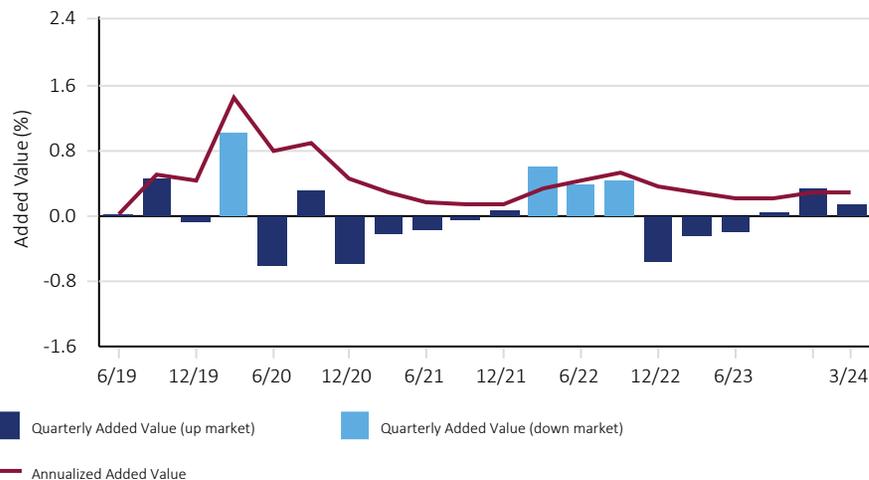
Composite Performance Summary

High Yield Composite
Periods Ended March 31, 2024

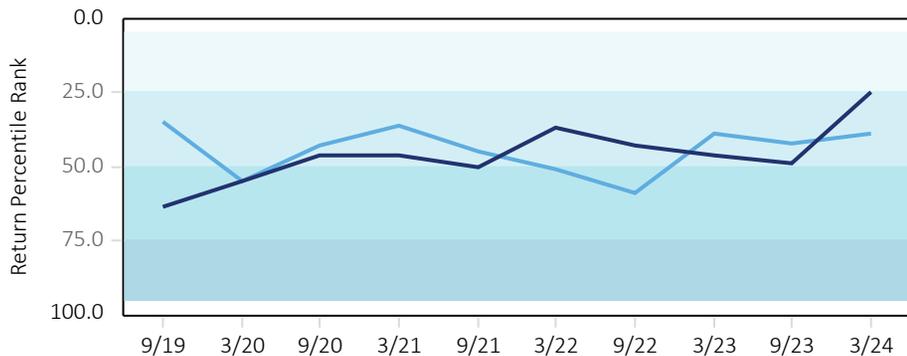
Comparative Performance



Added Value History

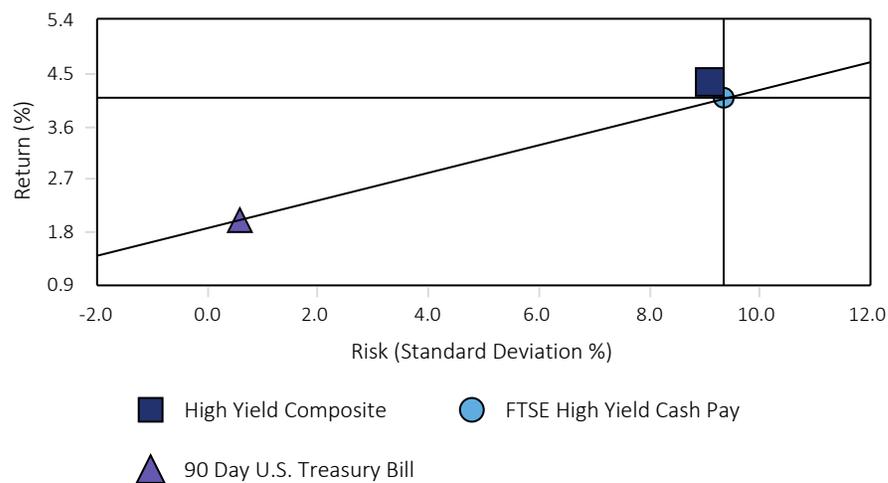


Rolling Percentile Rank: IM U.S. High Yield Bonds (SA+CF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— High Yield Composite	10	1 (10%)	7 (70%)	2 (20%)	0 (0%)
— Benchmark	10	0 (0%)	7 (70%)	3 (30%)	0 (0%)

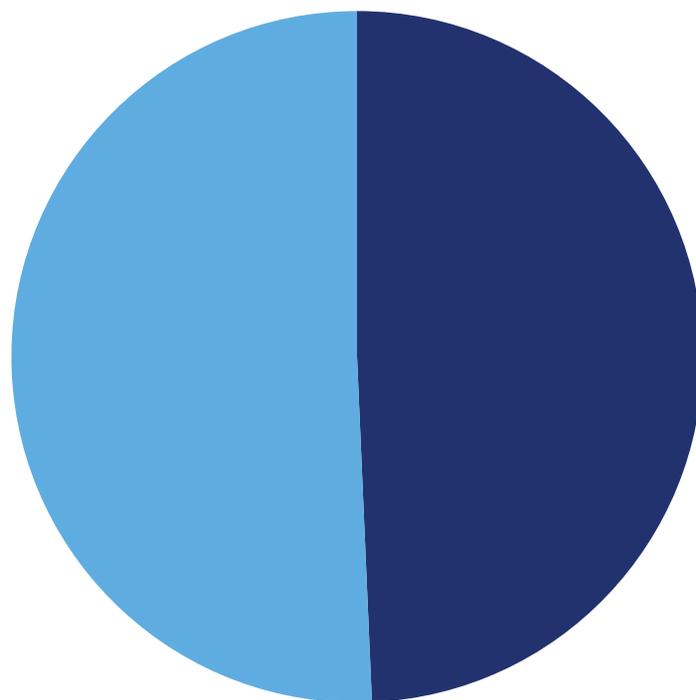
Risk and Return 04/1/19 - 03/31/24



Asset Allocation By Manager

High Yield Composite
Periods Ended March 31, 2024

Mar-2024 : 368,264,076.5



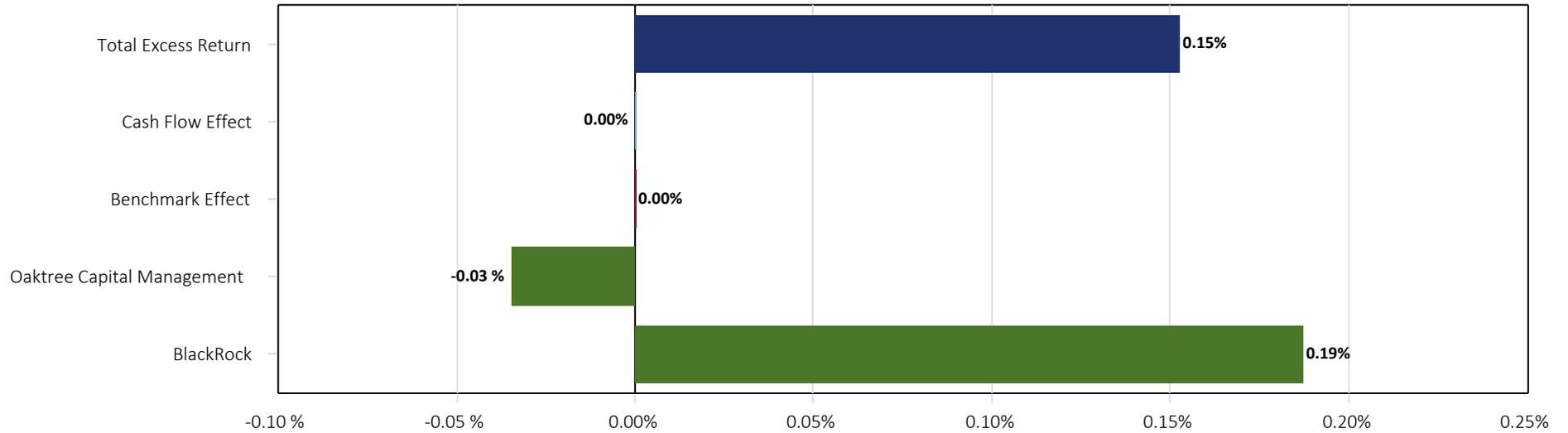
	Market Value \$	Allocation (%)
■ Oaktree Capital Management	181,619,565	49.3
■ BlackRock	186,644,512	50.7

Asset Class Attribution

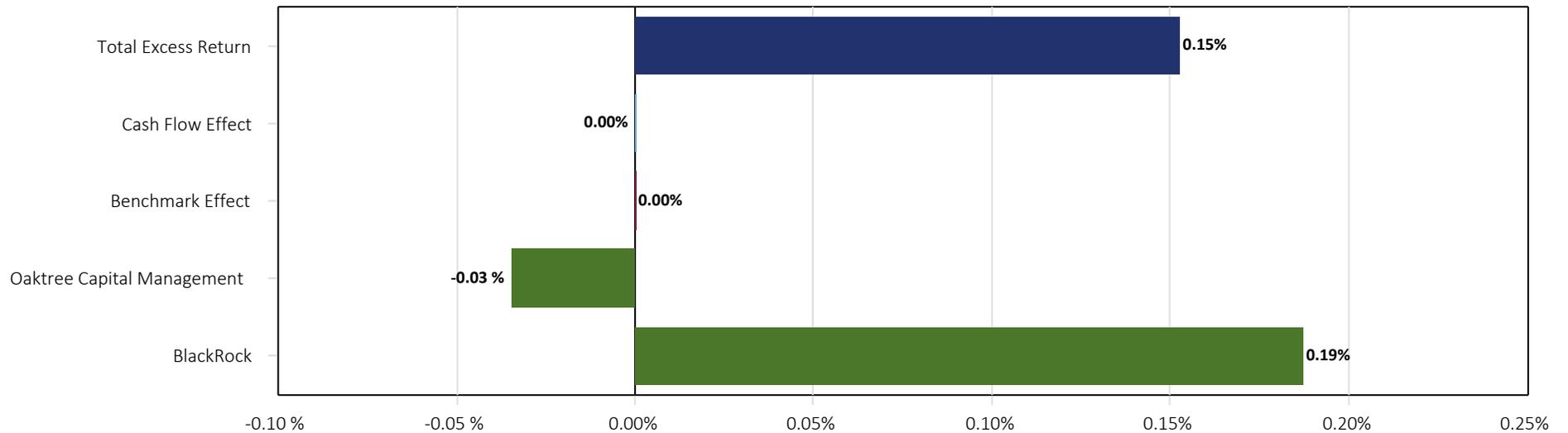
High Yield Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

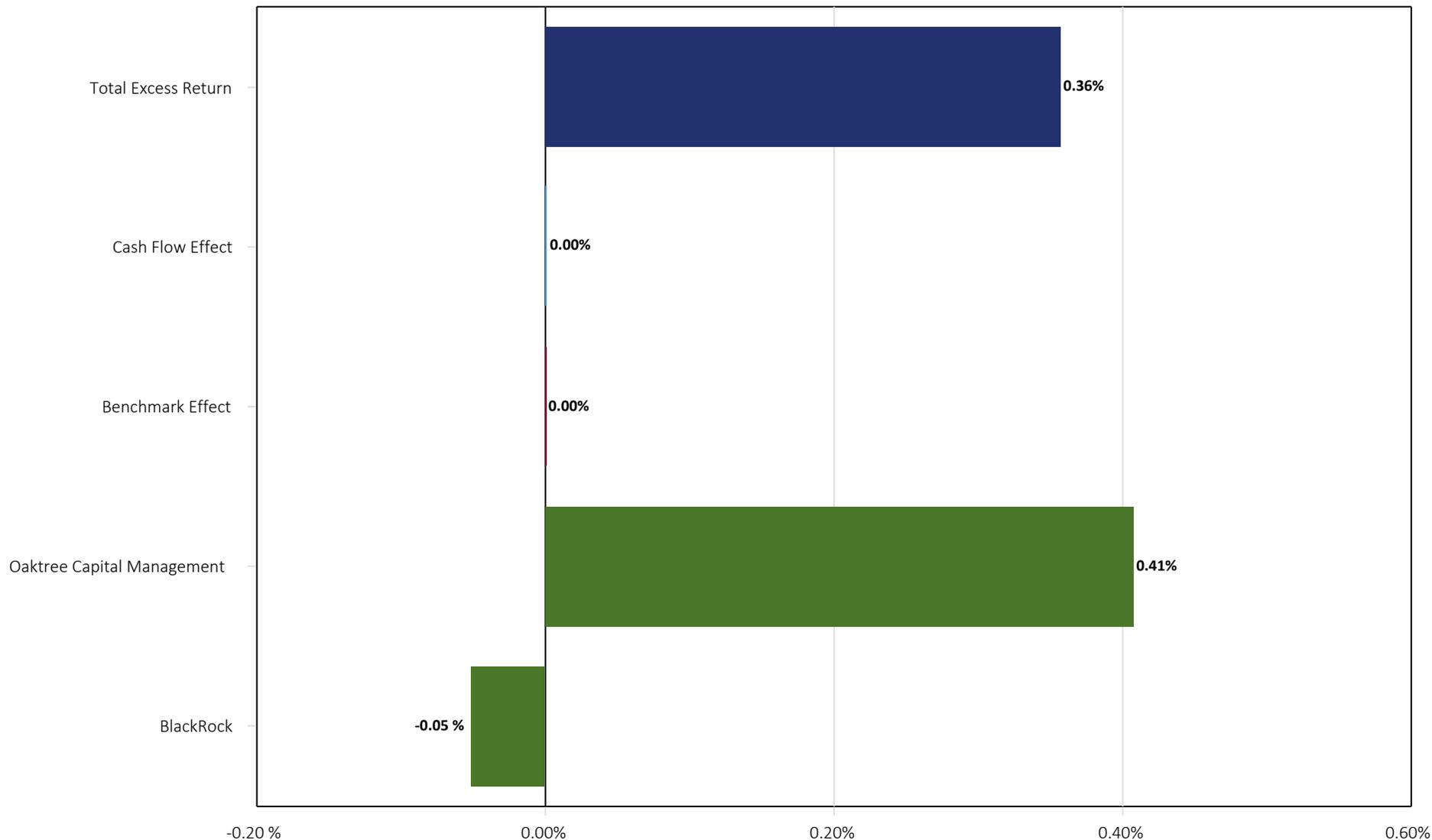


Asset Class Attribution

High Yield Composite

Periods Ended 1 Year Ending March 31, 2024

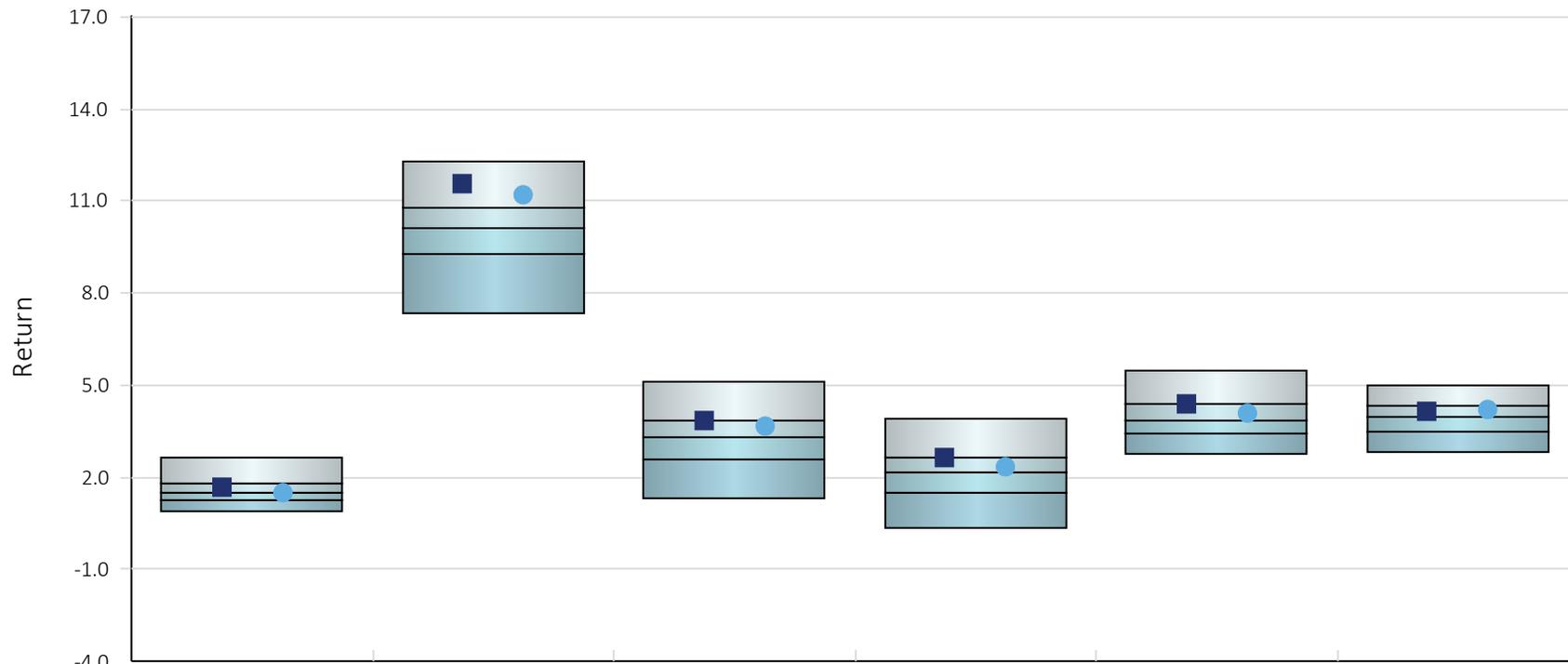
1 Year



Peer Group Analysis

High Yield Composite

Periods Ended March 31, 2024



	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ High Yield Composite	1.66 (36)	11.57 (11)	3.86 (26)	2.66 (25)	4.37 (25)	4.16 (35)
● FTSE High Yield Cash Pay	1.51 (48)	11.21 (16)	3.64 (33)	2.36 (39)	4.08 (38)	4.20 (33)
5th Percentile	2.66	12.30	5.09	3.91	5.47	4.96
1st Quartile	1.80	10.76	3.87	2.65	4.36	4.33
Median	1.50	10.12	3.30	2.15	3.85	3.98
3rd Quartile	1.23	9.26	2.57	1.47	3.43	3.51
95th Percentile	0.86	7.32	1.29	0.33	2.76	2.80
Population	126	126	126	124	122	105

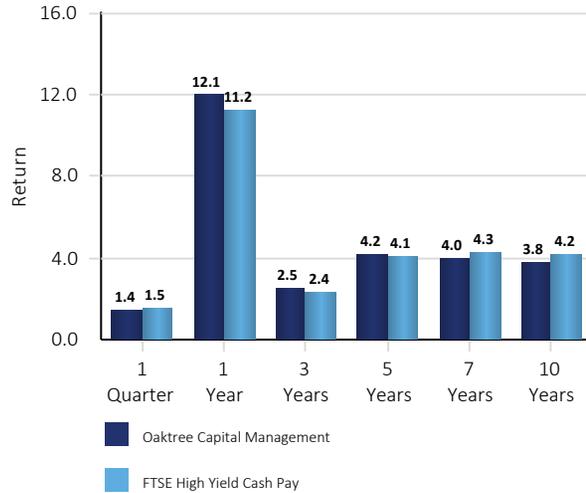
Parenteses contain percentile rankings.
Calculation based on quarterly periodicity.

Performance Summary

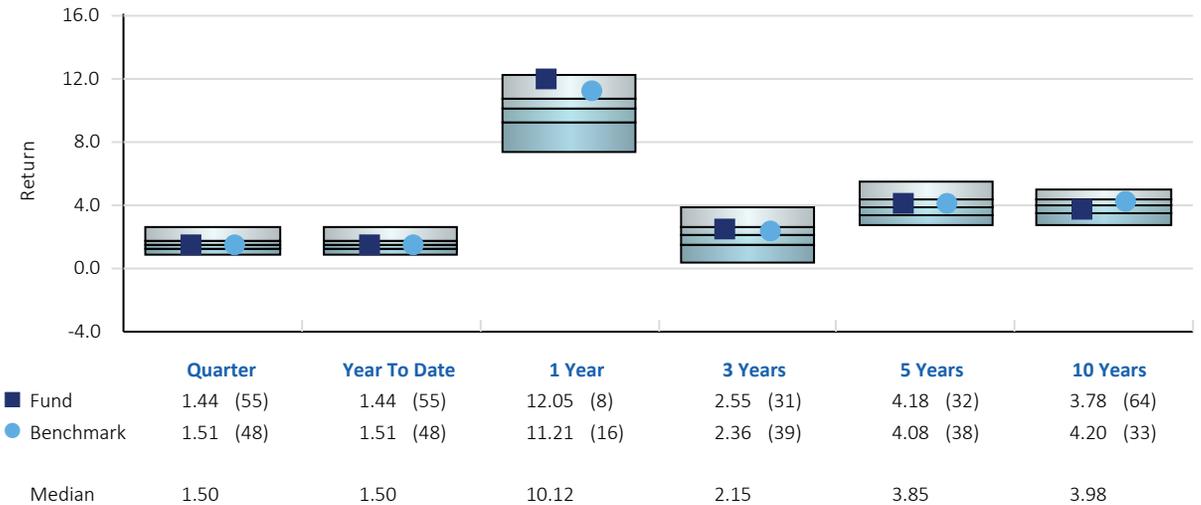
Oaktree Capital Management

Periods Ended March 31, 2024

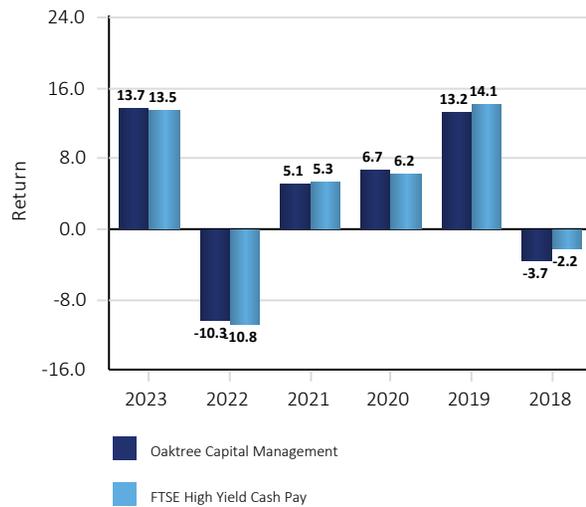
Comparative Performance



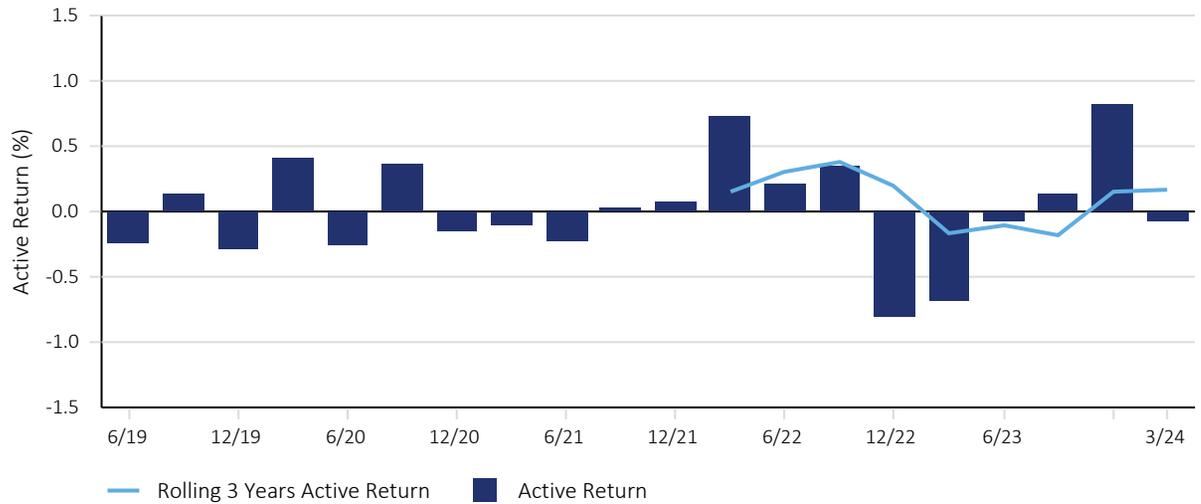
Peer Group Analysis: IM U.S. High Yield Bonds (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

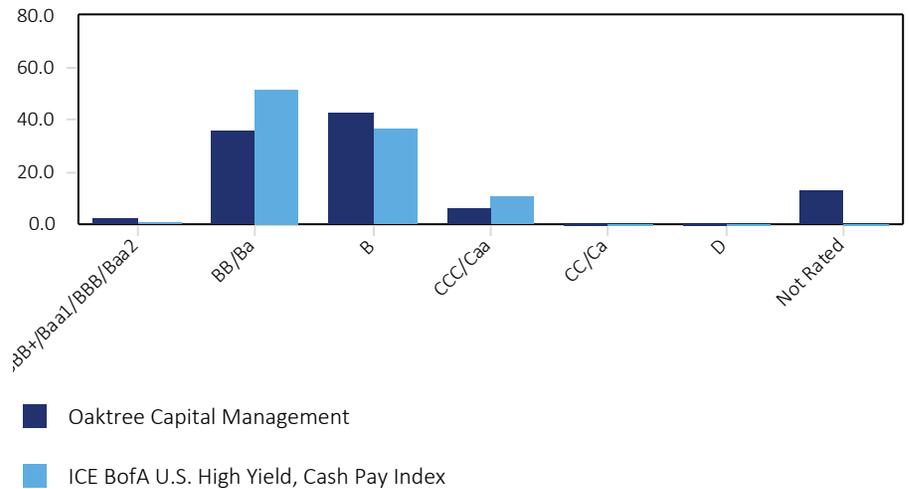
Oaktree Capital Management vs ICE BofA U.S. High Yield, Cash Pay Index

Periods Ended As of March 31, 2024

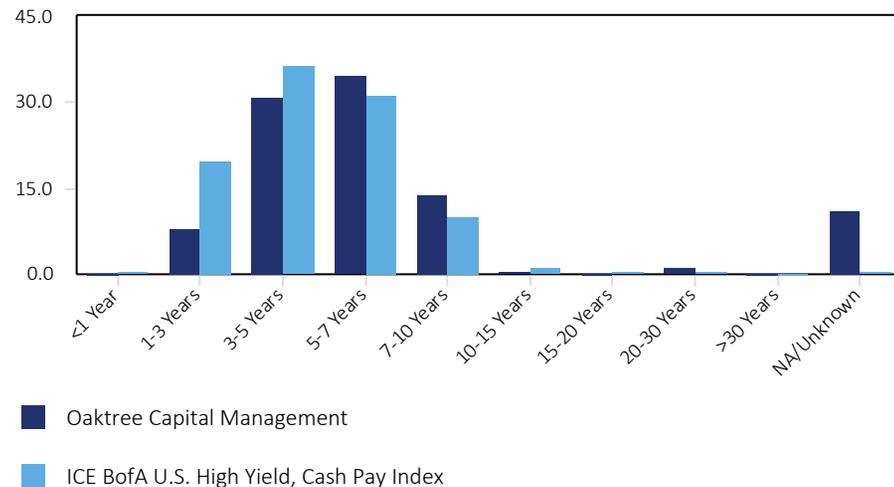
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	5.43	4.86
Avg. Quality	B	B
Convexity	-0.10	-0.08
Coupon Rate (%)	6.22	6.19
Current Yield		7.78
Modified Duration	4.32	3.88
Effective Duration	3.53	3.88
Spread Duration		
Yield To Maturity (%)	7.55	7.78
Yield To Worst	7.42	7.83
Market To Book Value		
Crediting Rate		
Crediting to Underlying Ratio		
Underlying Yield		

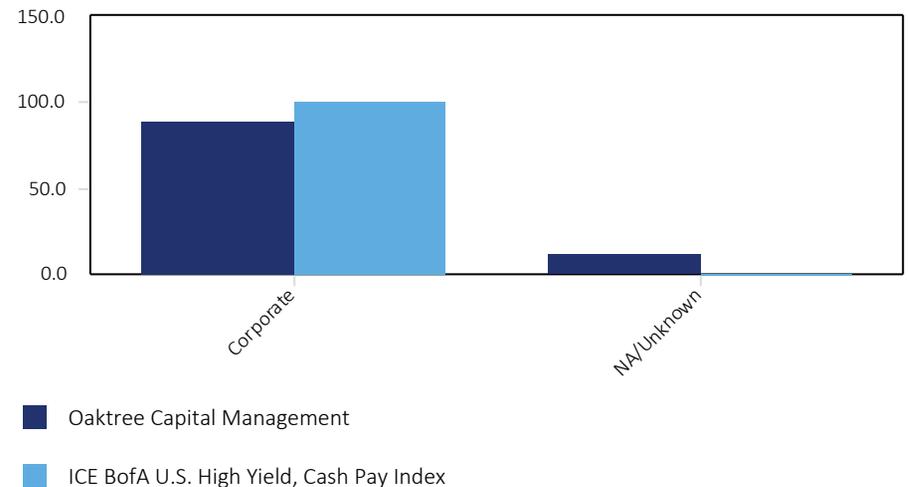
Credit Quality Distribution (%)



Maturity Distribution (%)



Sector Distribution (%)

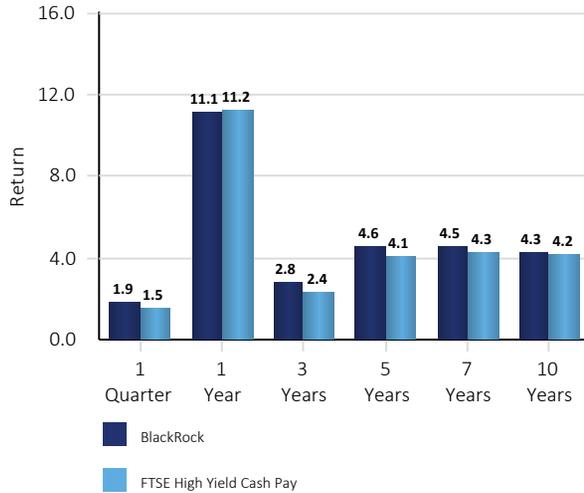


Performance Summary

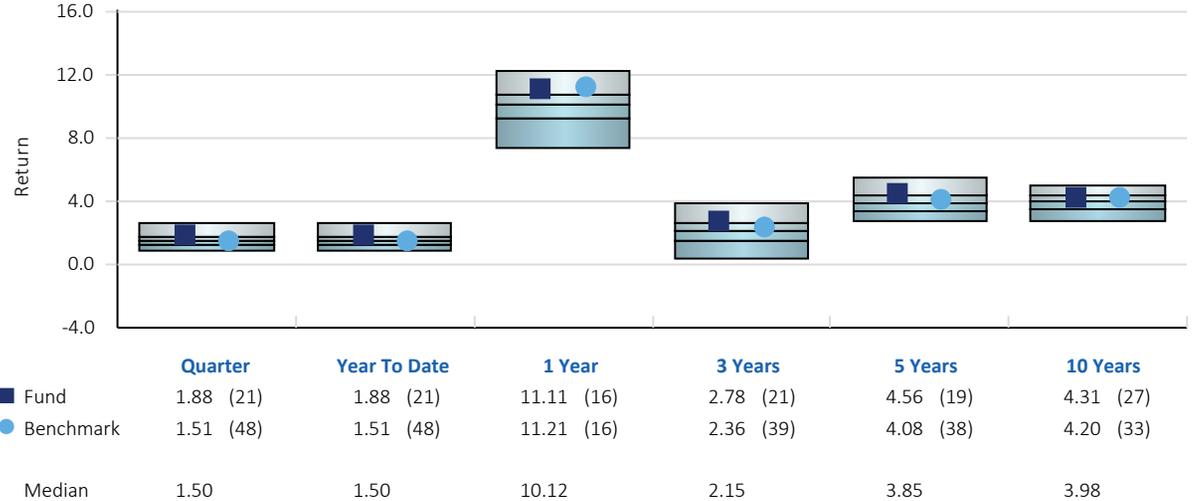
BlackRock

Periods Ended March 31, 2024

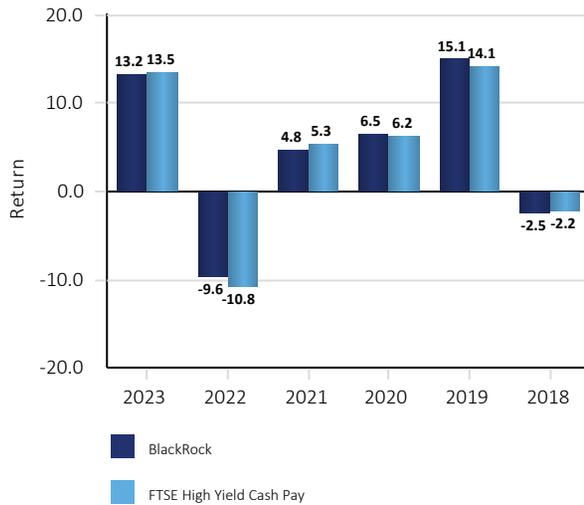
Comparative Performance



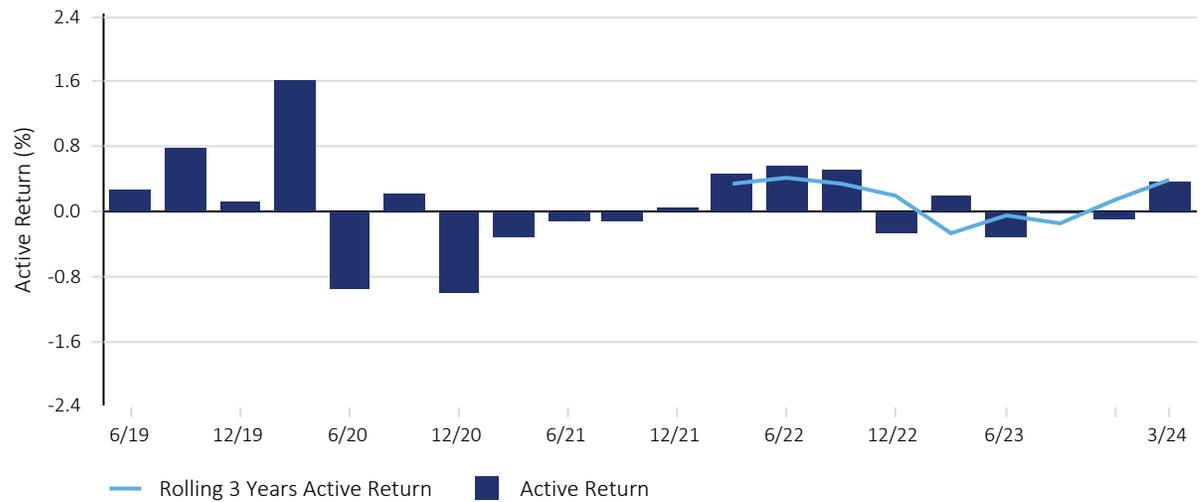
Peer Group Analysis: IM U.S. High Yield Bonds (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

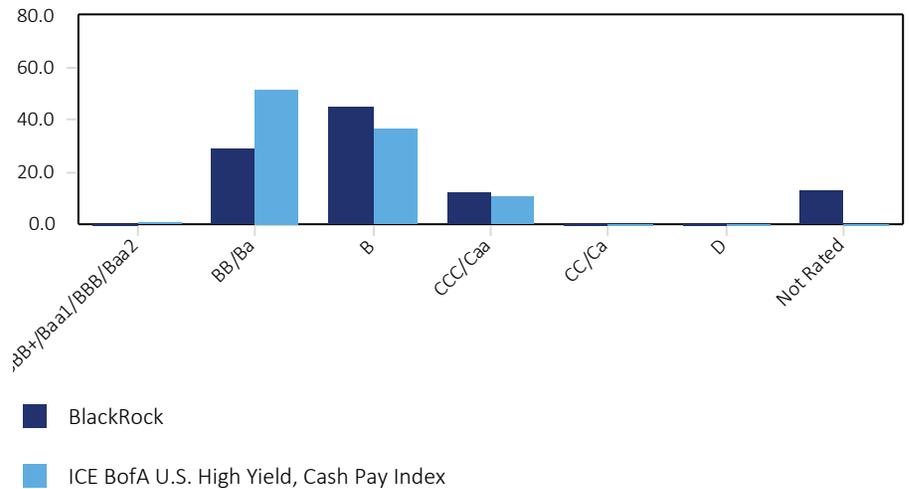
BlackRock vs ICE BofA U.S. High Yield, Cash Pay Index

Periods Ended As of March 31, 2024

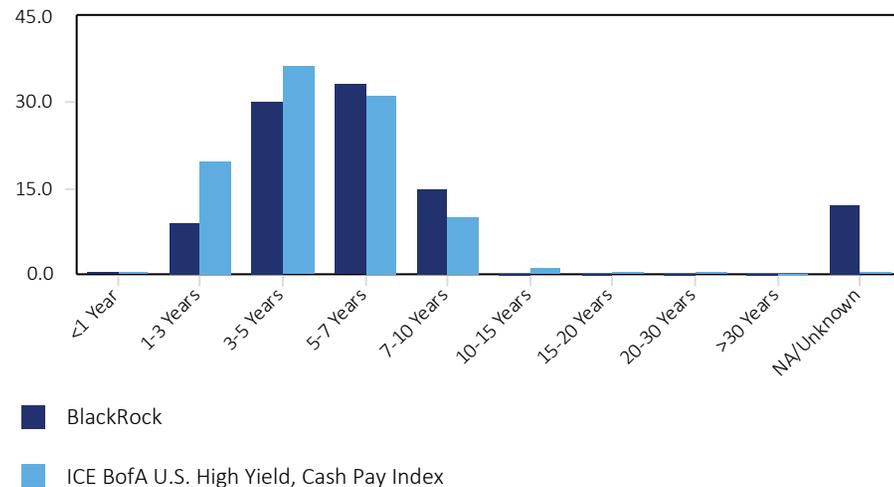
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	5.26	4.86
Avg. Quality	B	B
Convexity	-0.13	-0.08
Coupon Rate (%)	6.72	6.19
Current Yield		7.78
Modified Duration	4.21	3.88
Effective Duration	3.30	3.88
Spread Duration		
Yield To Maturity (%)	7.52	7.78
Yield To Worst	7.33	7.83
Market To Book Value		
Crediting Rate		
Crediting to Underlying Ratio		
Underlying Yield		

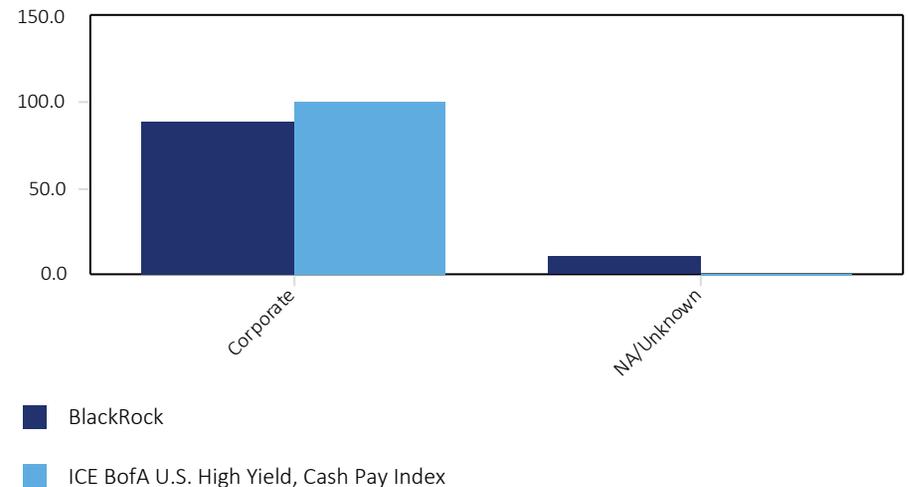
Credit Quality Distribution (%)



Maturity Distribution (%)



Sector Distribution (%)



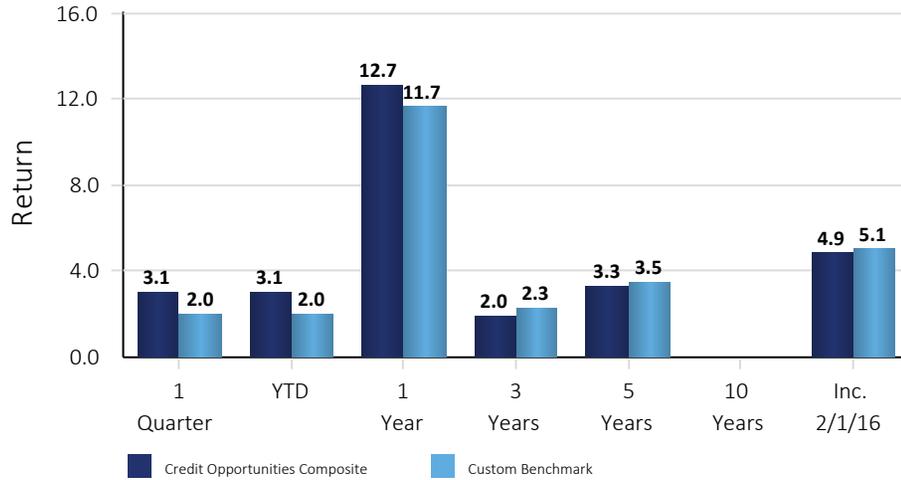
Credit Opportunities Composite

Composite Performance Summary

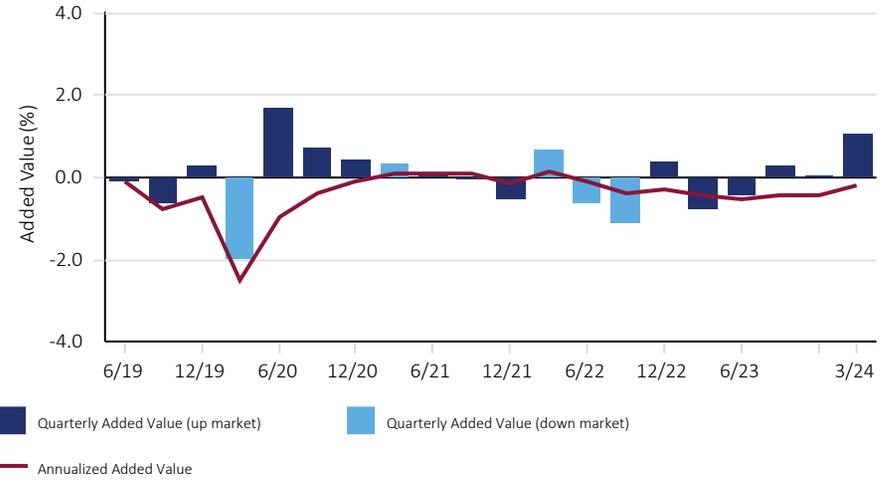
Credit Opportunities Composite

Periods Ended March 31, 2024

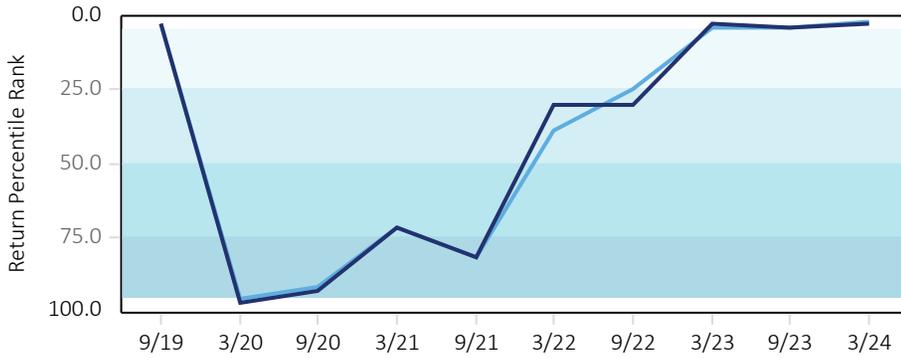
Comparative Performance



Added Value History

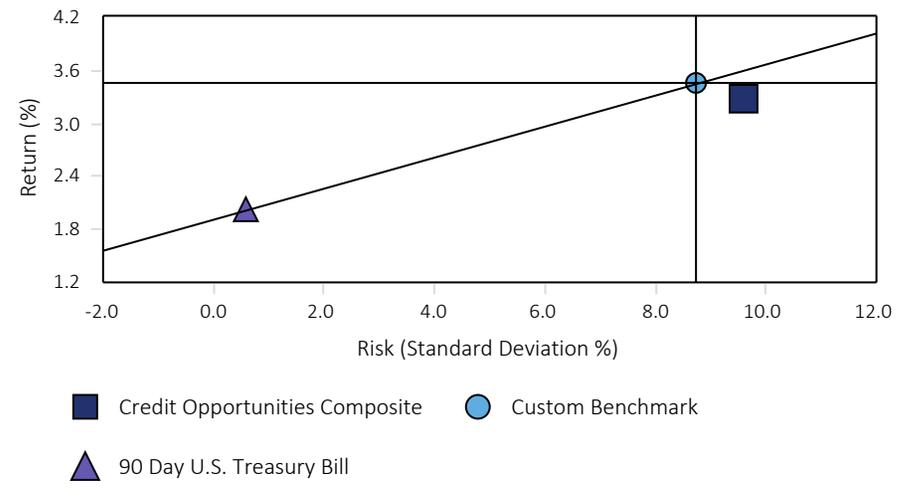


Rolling Percentile Rank: 1M U.S. Broad Market Core+ Fixed Income (S&P 500)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— Credit Opportunities Composite	10	4 (40%)	2 (20%)	1 (10%)	3 (30%)
— Benchmark	10	5 (50%)	1 (10%)	1 (10%)	3 (30%)

Risk and Return 04/1/19 - 03/31/24

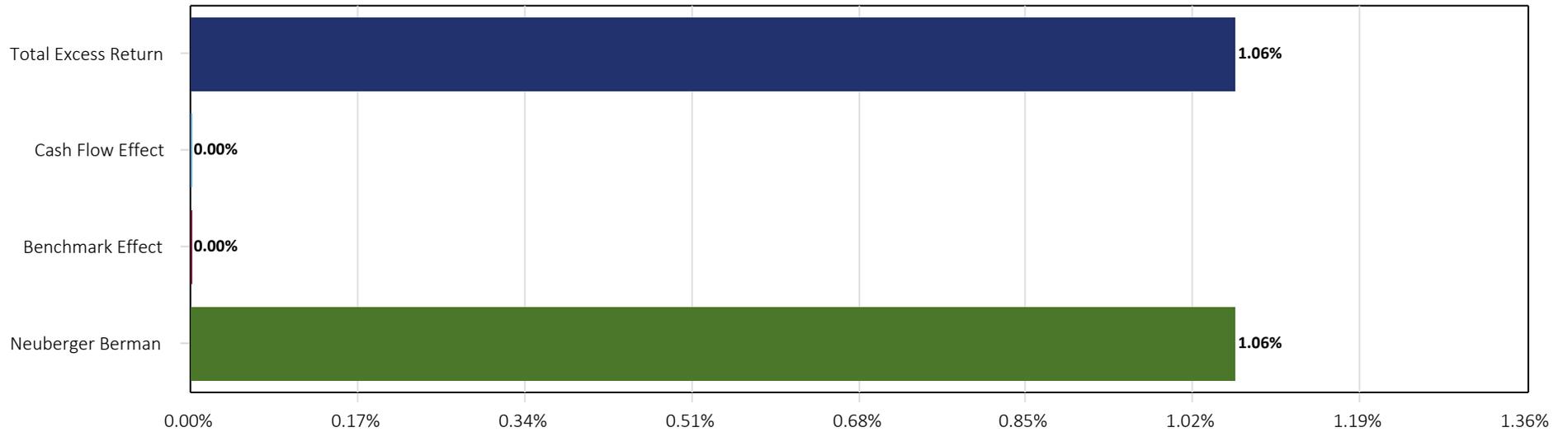


Asset Class Attribution

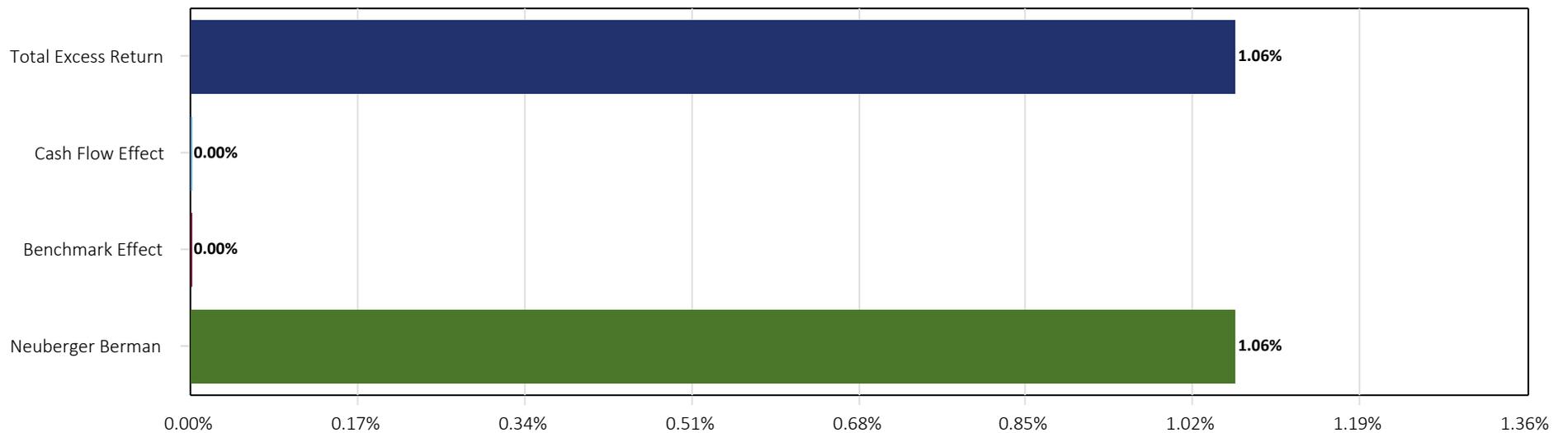
Credit Opportunities Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

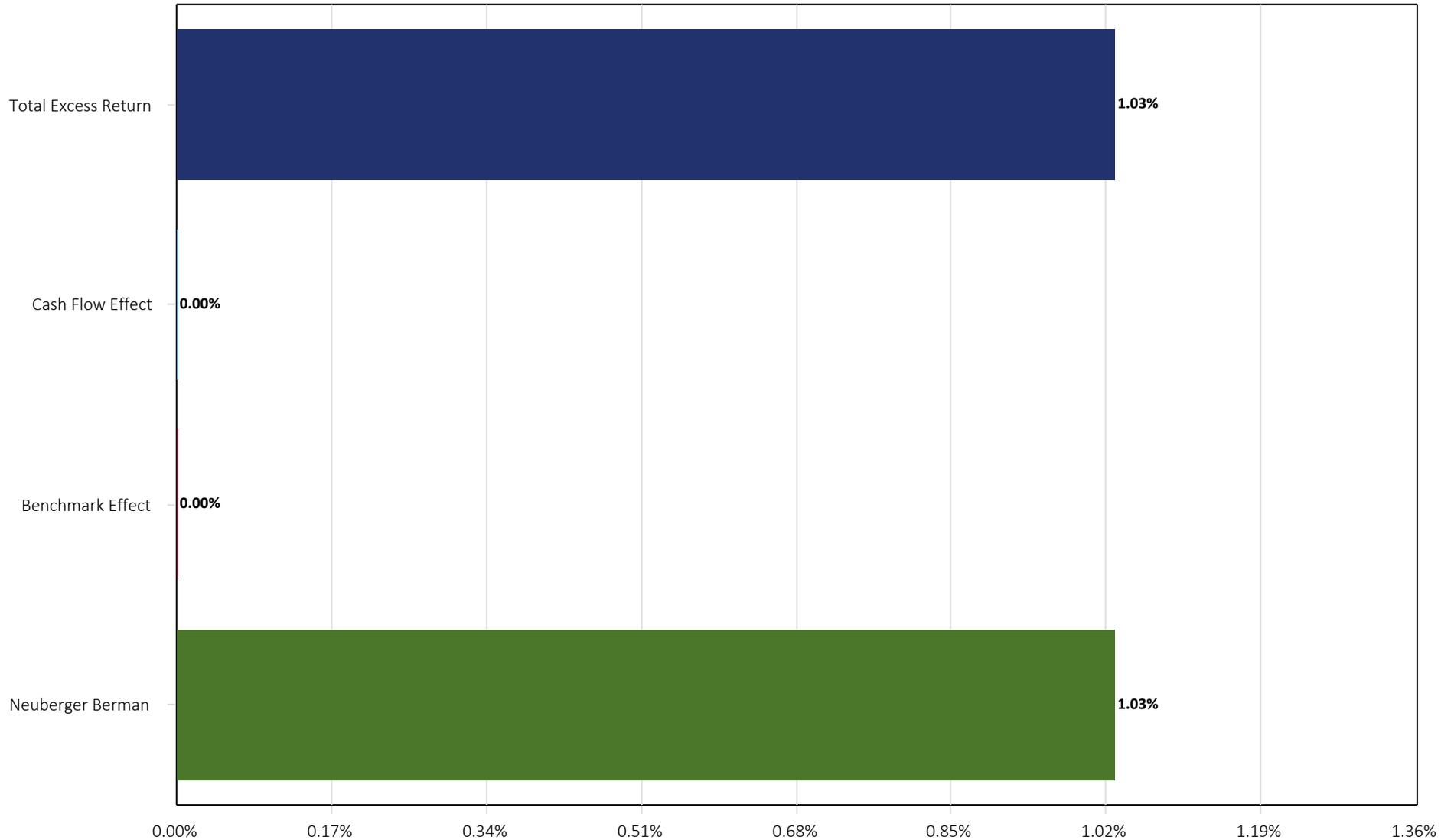


Asset Class Attribution

Credit Opportunities Composite

Periods Ended 1 Year Ending March 31, 2024

1 Year

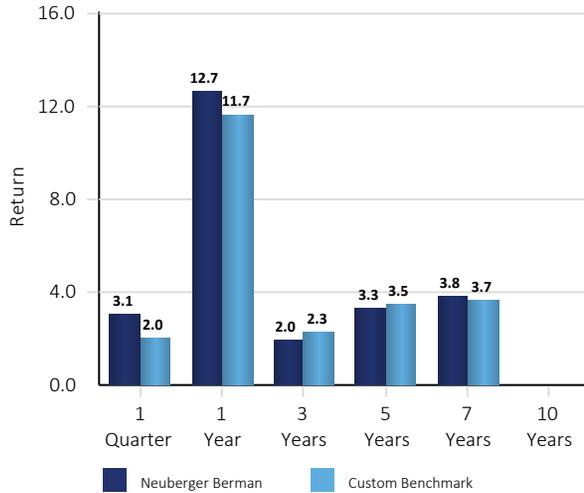


Performance Summary

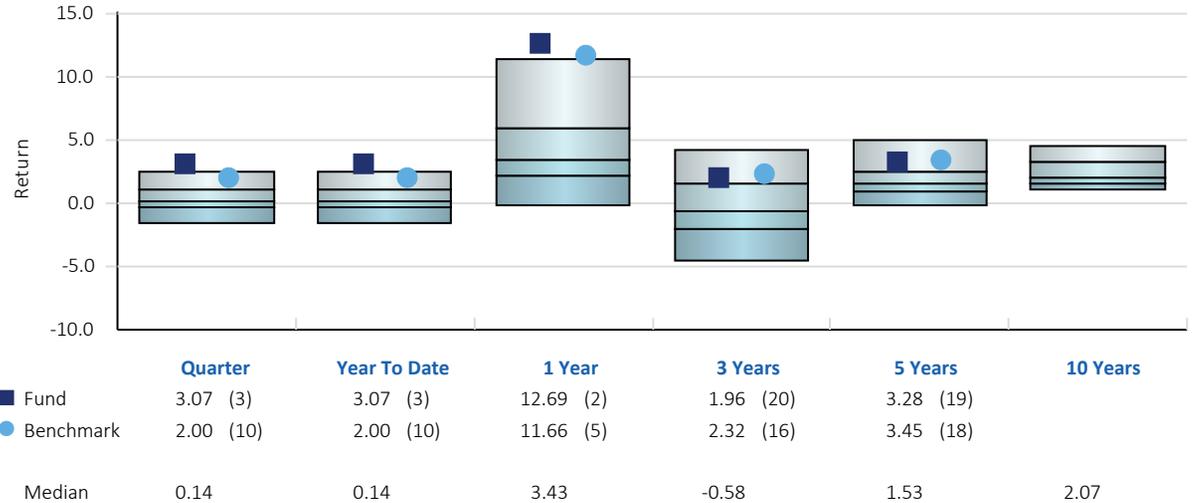
Neuberger Berman

Periods Ended March 31, 2024

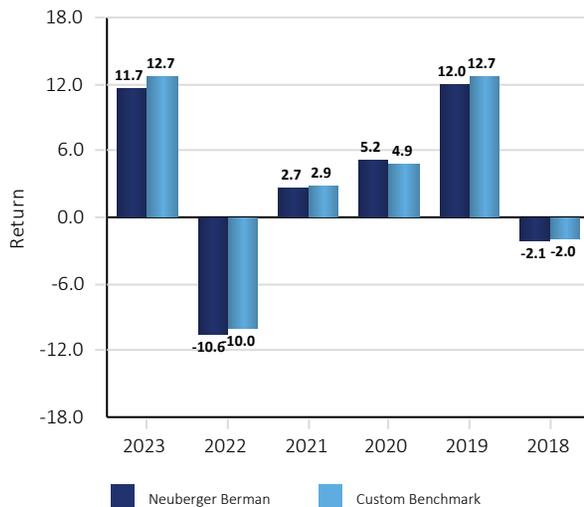
Comparative Performance



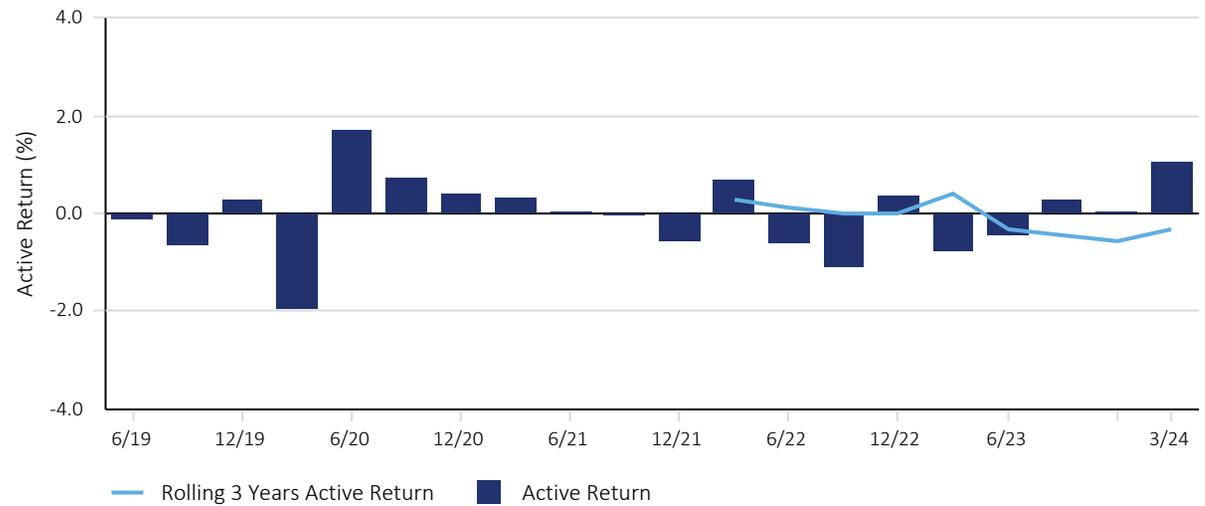
Peer Group Analysis: IM U.S. Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance



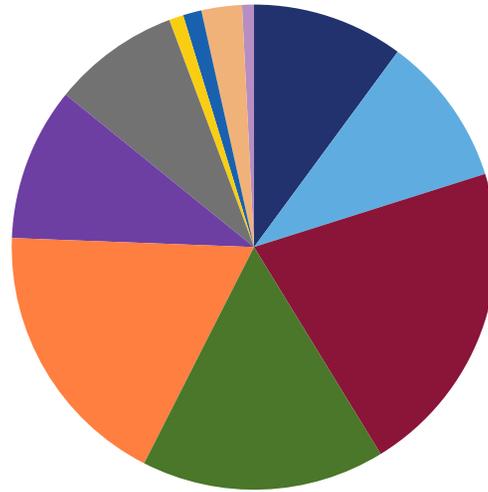
Total Real Estate Composite

Asset Allocation By Manager

Total Real Estate Composite

Periods Ended March 31, 2024

Mar-2024 : 426,192,265.0



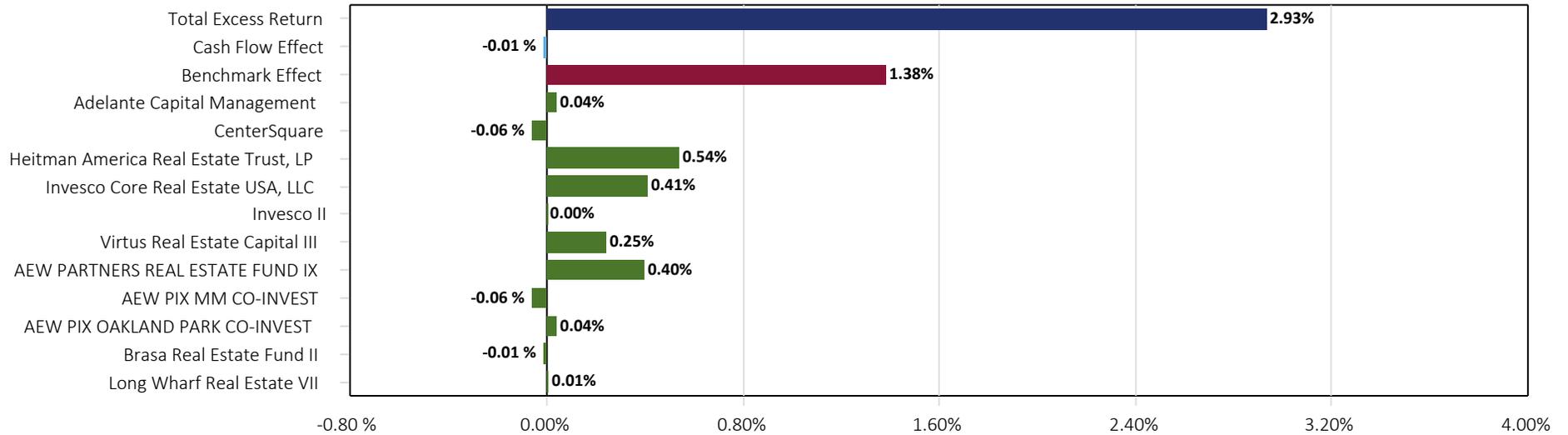
	Market Value \$	Allocation (%)
Adelante Capital Management	43,034,741	10.1
CenterSquare	42,722,569	10.0
Heitman America Real Estate Trust, LP	90,044,709	21.1
Invesco Core Real Estate USA, LLC	69,232,309	16.2
Invesco II	77,173,756	18.1
Virtus Real Estate Capital III	43,555,109	10.2
AEW PARTNERS REAL ESTATE FUND IX	36,167,711	8.5
AEW PIX MM CO-INVEST	4,091,447	1.0
AEW PIX OAKLAND PARK CO-INVEST	5,254,439	1.2
Brasa Real Estate Fund II	11,525,410	2.7
Long Wharf Real Estate VII	3,390,065	0.8

Asset Class Attribution

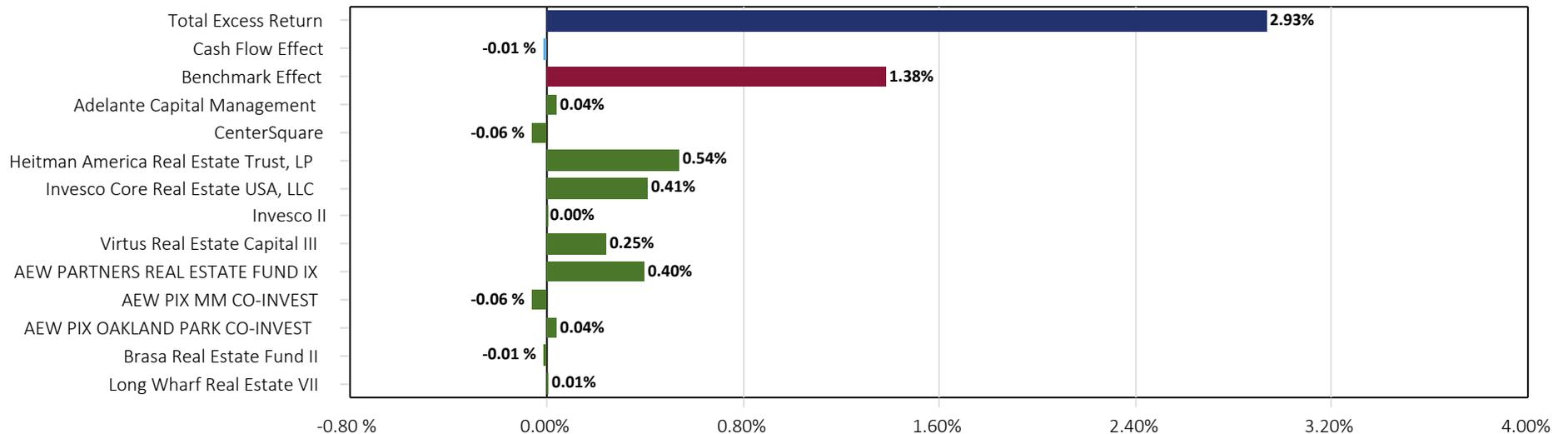
Total Real Estate Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

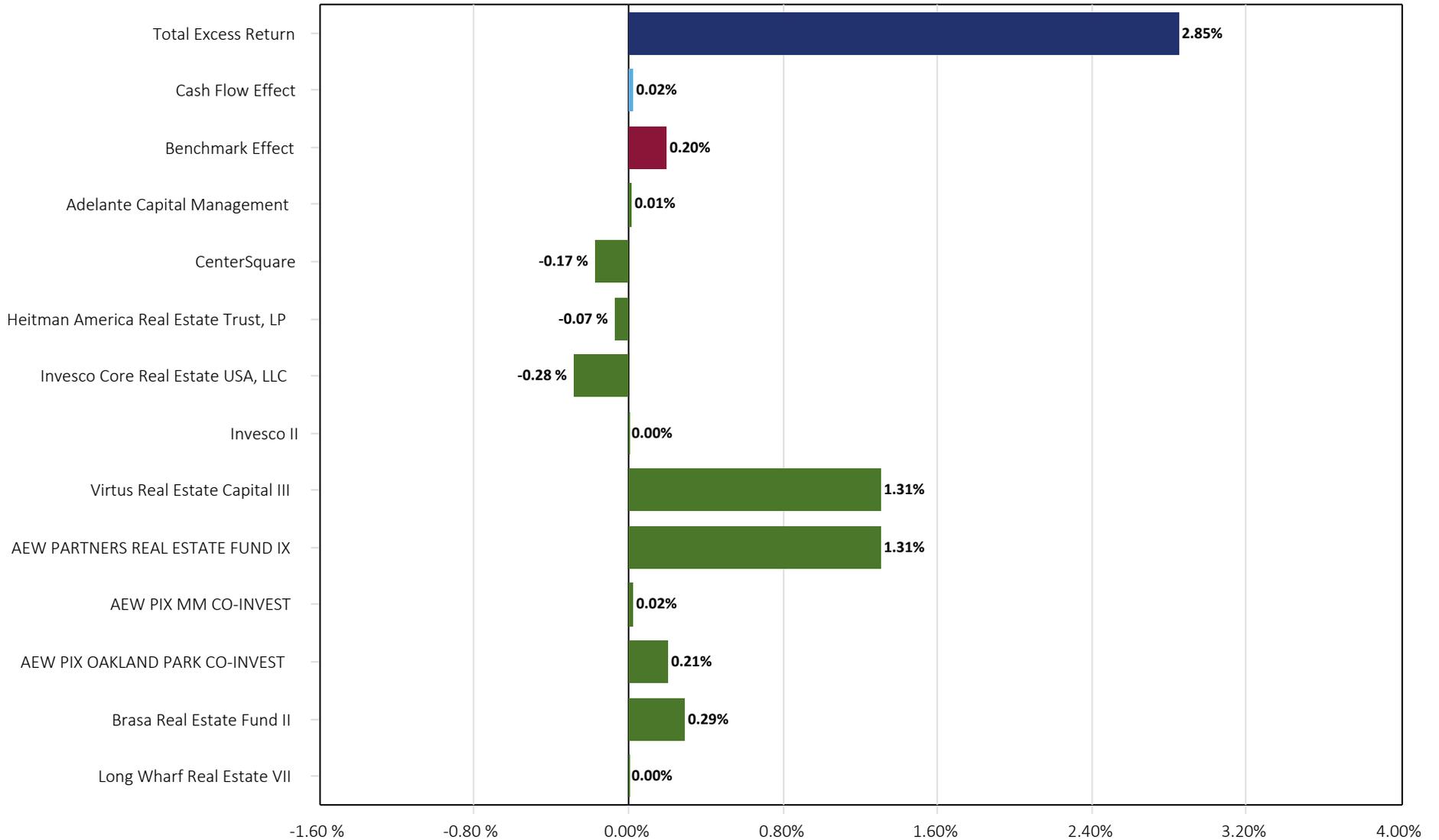


Asset Class Attribution

Total Real Estate Composite

Periods Ended 1 Year Ending March 31, 2024

1 Year

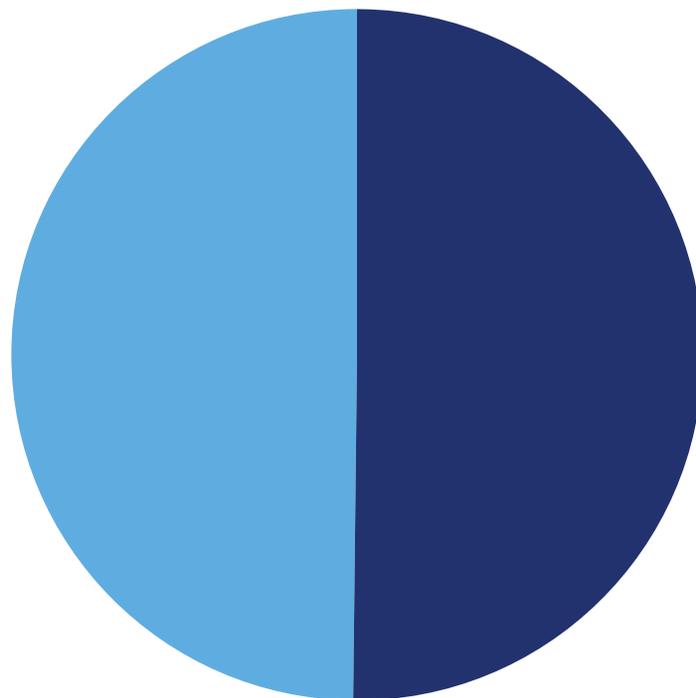


Asset Allocation By Manager

REIT Composite

Periods Ended March 31, 2024

Mar-2024 : 85,757,310.0



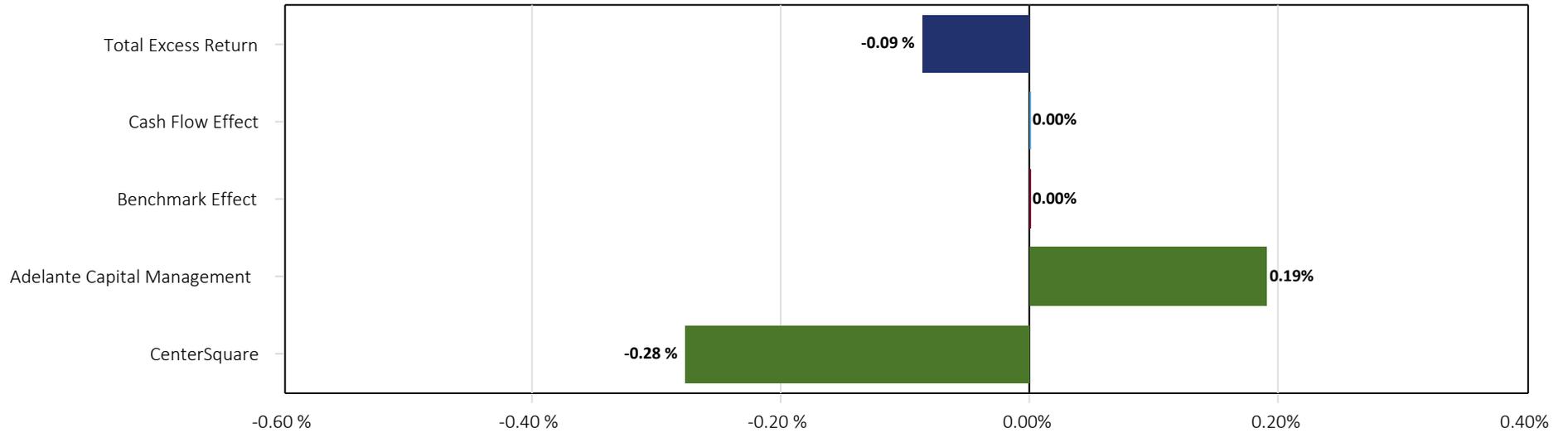
	Market Value \$	Allocation (%)
■ Adelante Capital Management	43,034,741	50.2
■ CenterSquare	42,722,569	49.8

Asset Class Attribution

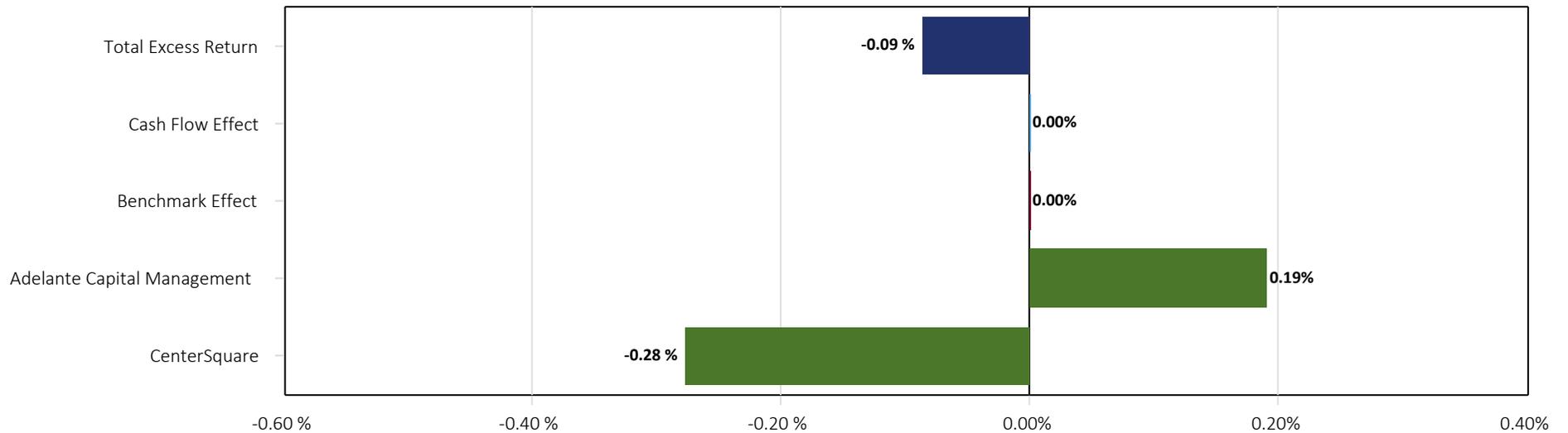
REIT Composite

Periods Ended March 31, 2024

1 Quarter



Year To Date

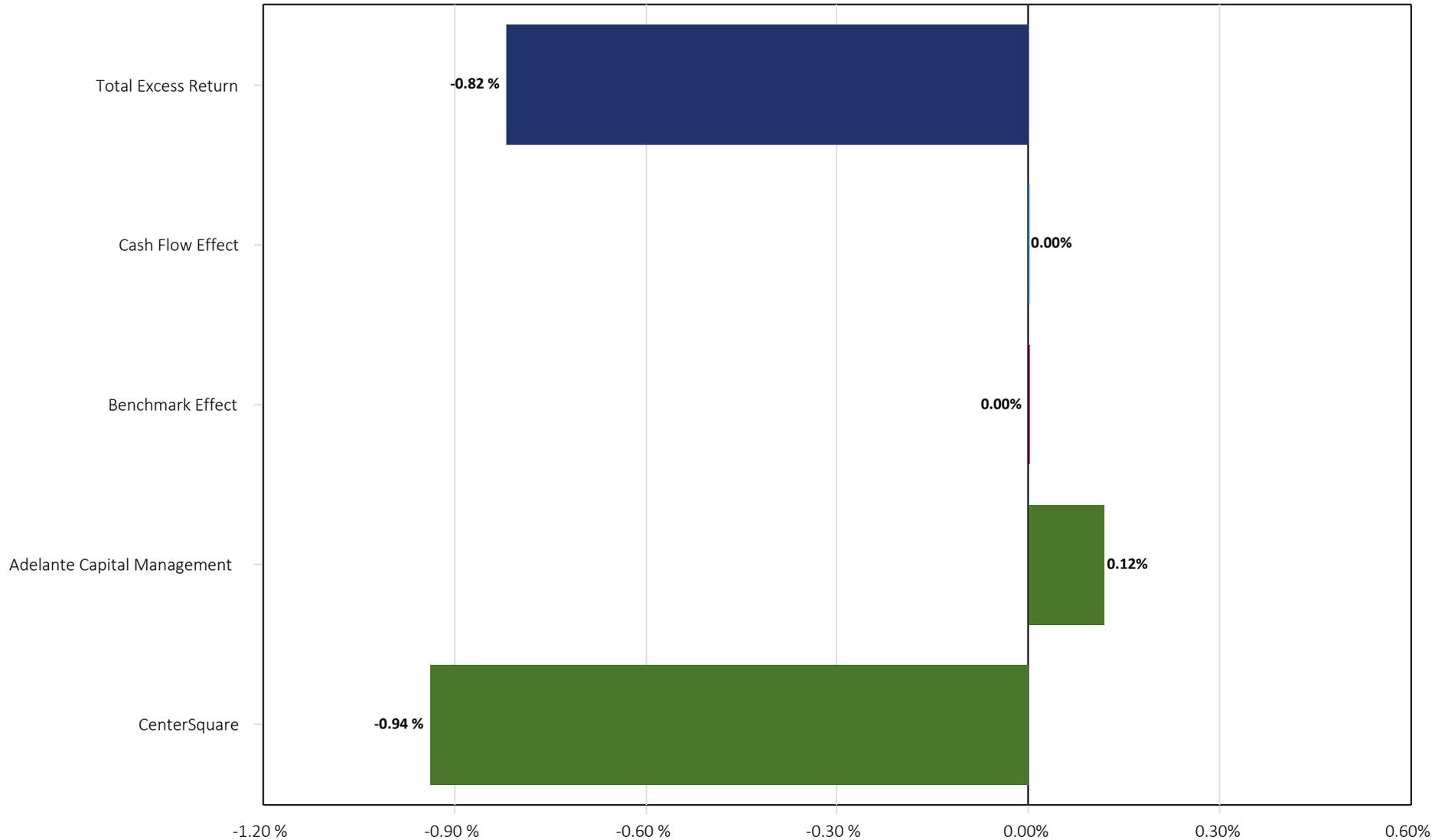


Asset Class Attribution

REIT Composite

Periods Ended 1 Year Ending March 31, 2024

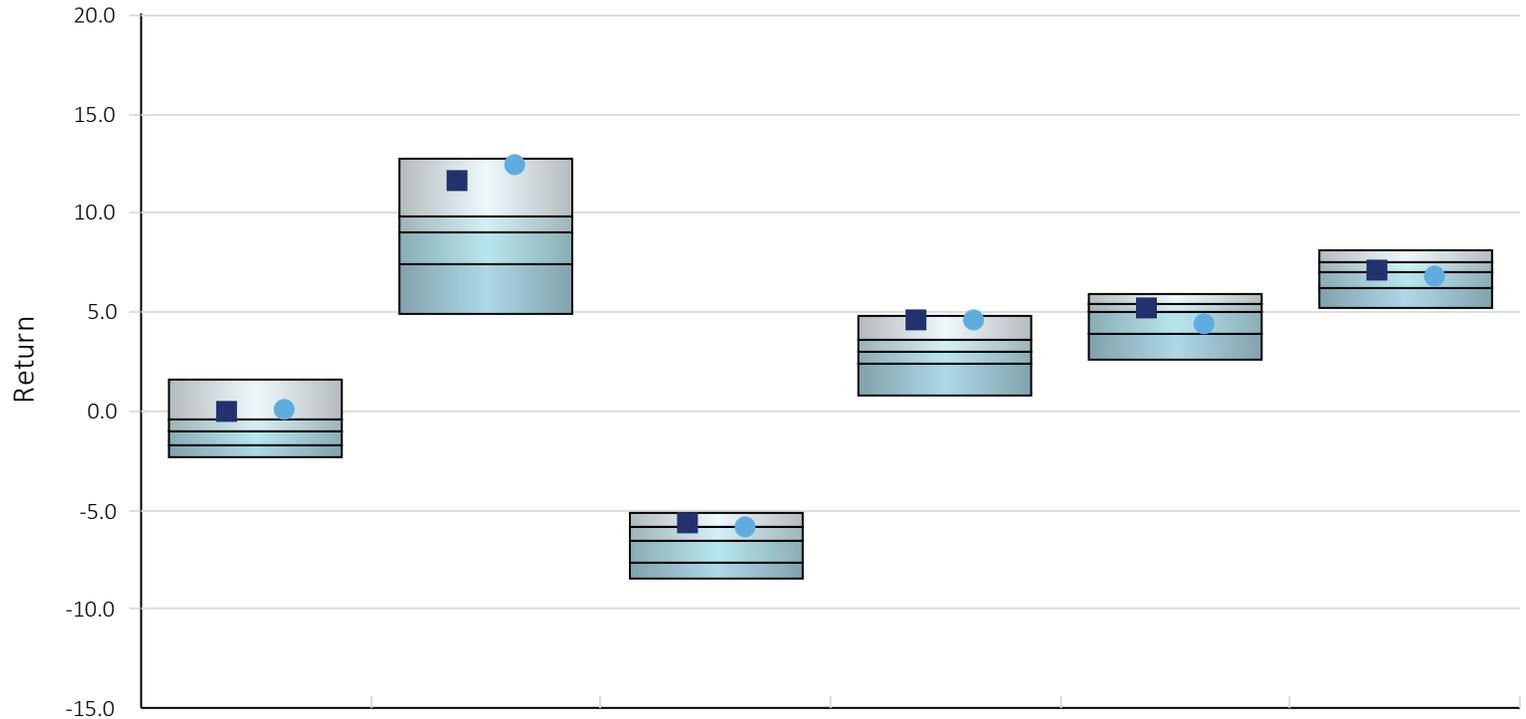
1 Year



Peer Group Analysis

REIT Composite

Periods Ended March 31, 2024



	1 Quarter	1 Year	2 Years	3 Years	5 Years	10 Years
■ REIT Composite	0.00 (11)	11.67 (14)	-5.63 (16)	4.62 (9)	5.25 (35)	7.09 (50)
● Wilshire U.S. Real Estate Securities Index	0.09 (10)	12.49 (9)	-5.85 (27)	4.60 (9)	4.45 (63)	6.86 (54)
5th Percentile	1.61	12.72	-5.12	4.81	5.95	8.17
1st Quartile	-0.46	9.80	-5.84	3.56	5.42	7.58
Median	-1.06	9.01	-6.56	2.96	4.98	7.03
3rd Quartile	-1.70	7.43	-7.62	2.35	3.88	6.23
95th Percentile	-2.36	4.88	-8.46	0.81	2.60	5.17
Population	38	38	37	33	30	27

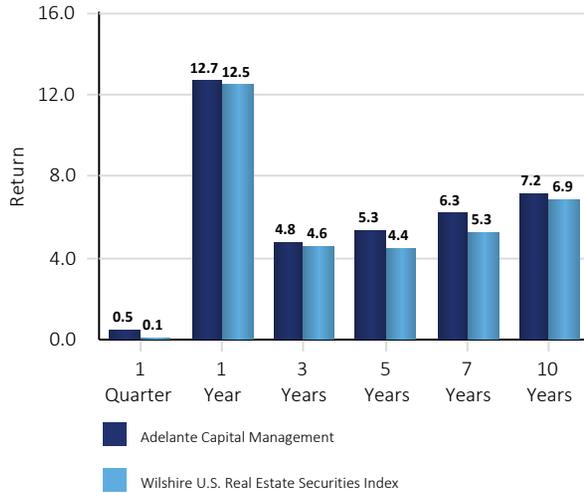
Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Performance Summary

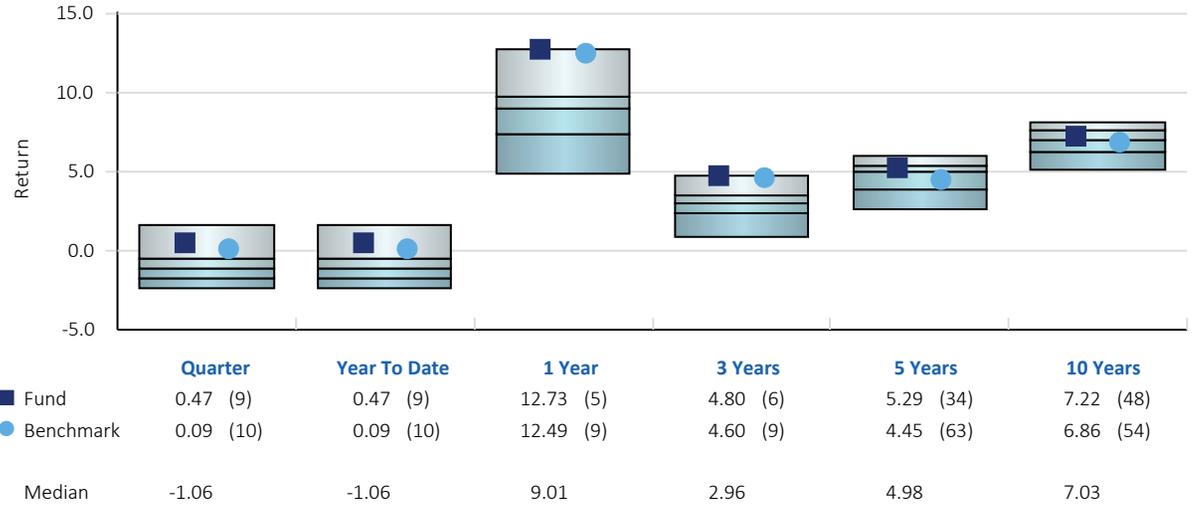
Adelante Capital Management

Periods Ended March 31, 2024

Comparative Performance



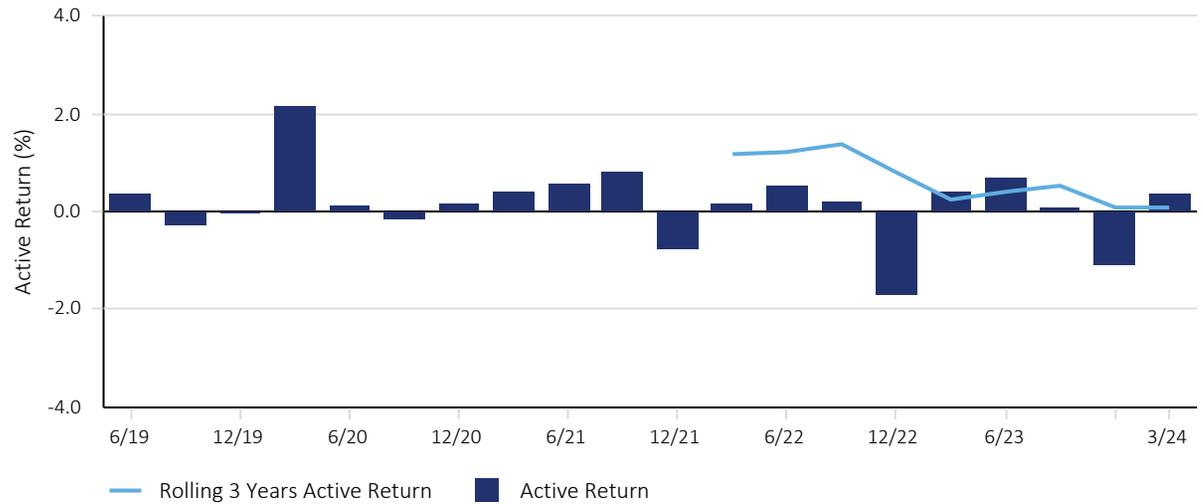
Peer Group Analysis: IM U.S. REIT (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

Adelante Capital Management

Periods Ended As of March 31, 2024

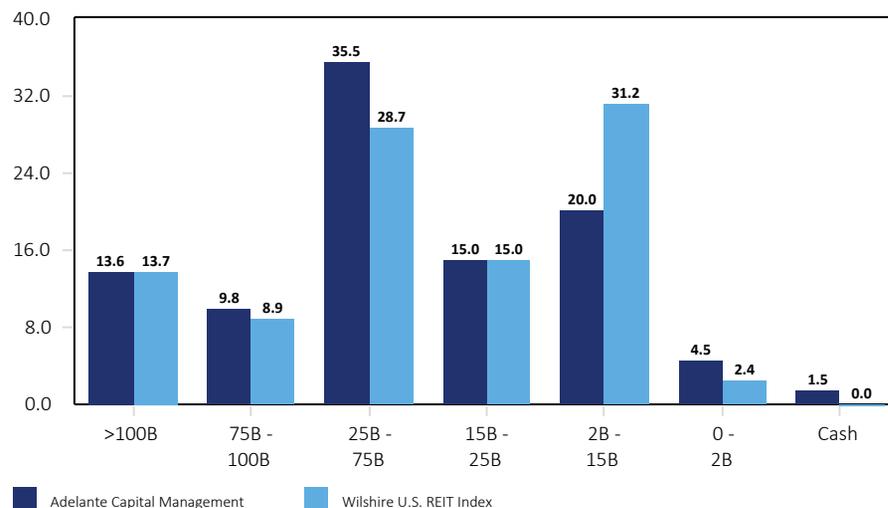
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	45,693,383,233	42,438,362,257
Median Mkt. Cap \$	15,405,915,958	3,749,216,735
Price/Earnings ratio	37.6	34.6
Price/Book ratio	2.4	2.4
5 Yr. EPS Growth Rate (%)	3.1	3.6
Current Yield (%)	3.5	3.8
Beta (5 Years, Monthly)	0.95	1.00
Number of Stocks	30	86

Top Ten Equity Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Prologis Inc	13.6	13.7	-0.1	-1.6
Equinix Inc	9.8	8.9	0.9	3.0
Welltower Inc	8.1	6.1	2.0	4.3
Public Storage	6.5	5.2	1.3	-3.9
Simon Property Group Inc	6.4	5.8	0.6	11.1
AvalonBay Communities Inc.	5.1	3.0	2.1	0.0
Digital Realty Trust Inc	4.8	5.1	-0.3	7.9
Equity Residential	4.7	2.7	2.0	4.3
Extra Space Storage Inc	3.5	3.5	0.0	-7.3
Alexandria Real Estate Equities Inc.	3.4	2.5	0.9	2.7
% of Portfolio	65.9	56.5	9.4	

Distribution of Market Capitalization (%)

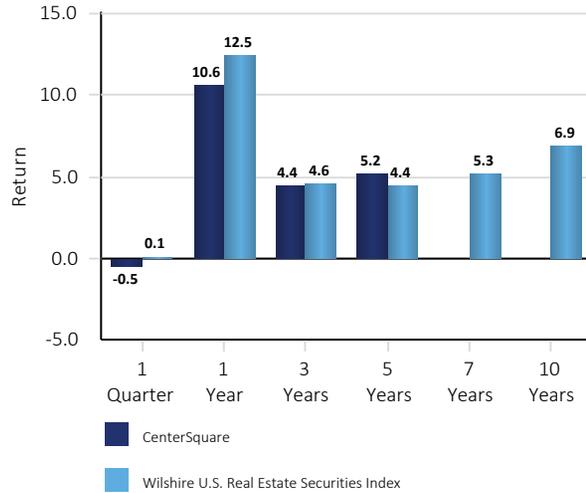


Performance Summary

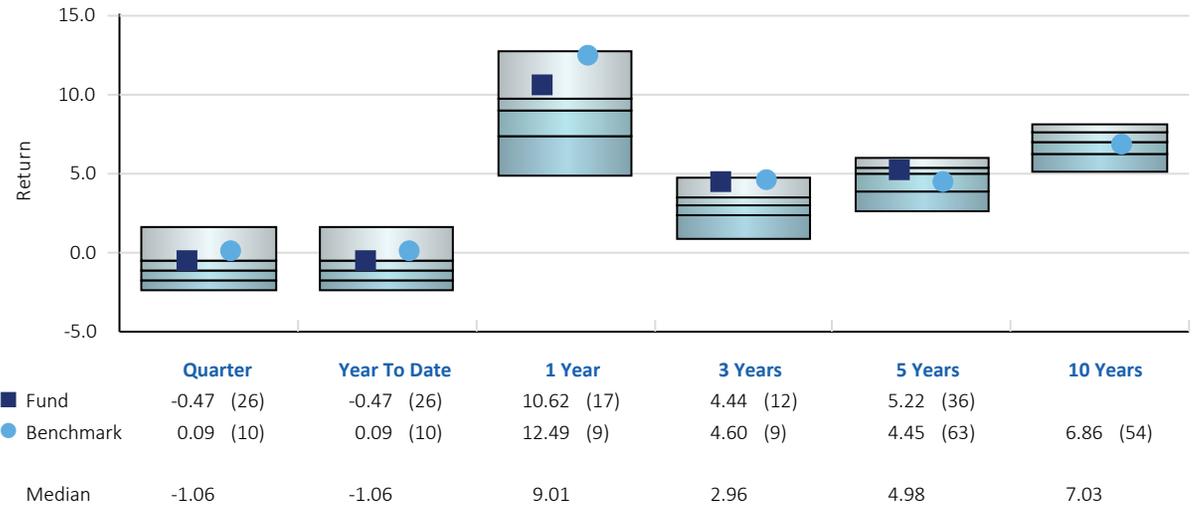
CenterSquare

Periods Ended March 31, 2024

Comparative Performance



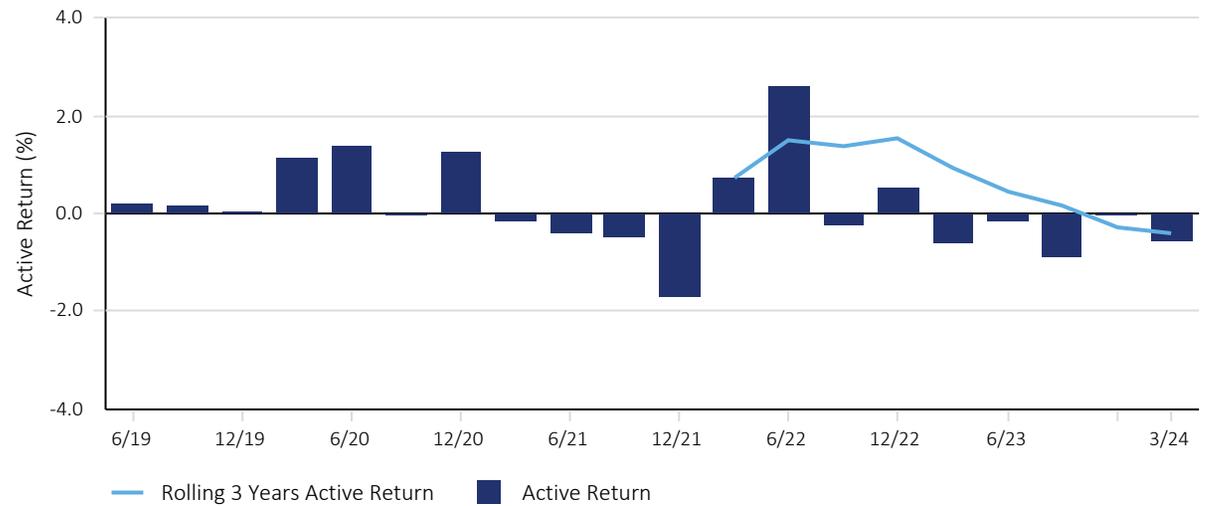
Peer Group Analysis: IM U.S. REIT (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Portfolio Characteristics

CenterSquare

Periods Ended As of March 31, 2024

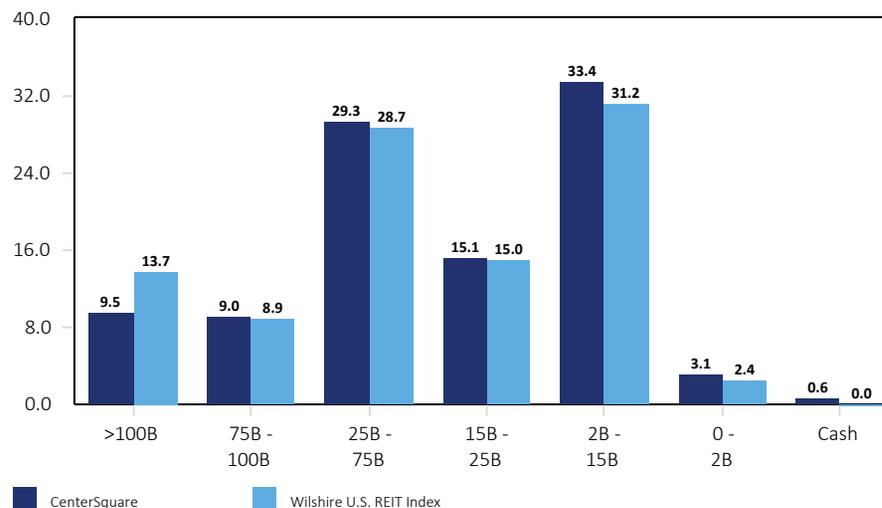
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	37,745,795,320	42,438,362,257
Median Mkt. Cap \$	9,026,684,955	3,749,216,735
Price/Earnings ratio	33.1	34.6
Price/Book ratio	2.2	2.4
5 Yr. EPS Growth Rate (%)	2.3	3.6
Current Yield (%)	4.1	3.8
Beta (5 Years, Monthly)	0.98	1.00
Number of Stocks	51	86

Top Ten Equity Holdings

	Portfolio Weight (%)	Index Weight (%)	Active Weight (%)	Quarterly Return (%)
Prologis Inc	9.5	13.7	-4.2	-1.6
Equinix Inc	8.5	8.9	-0.4	3.0
Welltower Inc	5.2	6.1	-0.9	4.3
Realty Income Corp	4.6	0.0	4.6	-4.4
Extra Space Storage Inc	4.2	3.5	0.7	-7.3
Public Storage	4.0	5.2	-1.2	-3.9
Digital Realty Trust Inc	4.0	5.1	-1.1	7.9
Simon Property Group Inc	3.6	5.8	-2.2	11.1
Ventas Inc.	3.4	2.0	1.4	-11.7
UDR Inc	3.2	1.4	1.8	-1.2
% of Portfolio	50.2	51.7	-1.5	

Distribution of Market Capitalization (%)



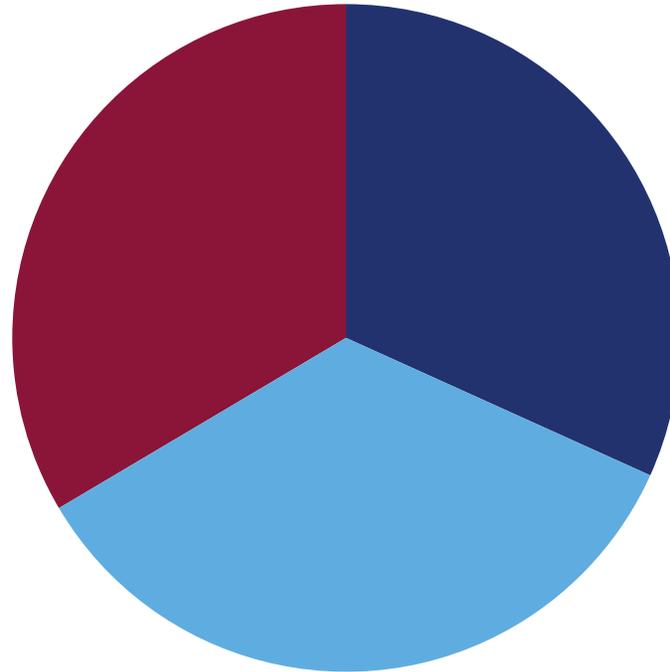
Global Listed Infrastructure

Asset Allocation By Manager

Global Listed Infrastructure Composite

Periods Ended March 31, 2024

Mar-2024 : 182,272,630.6



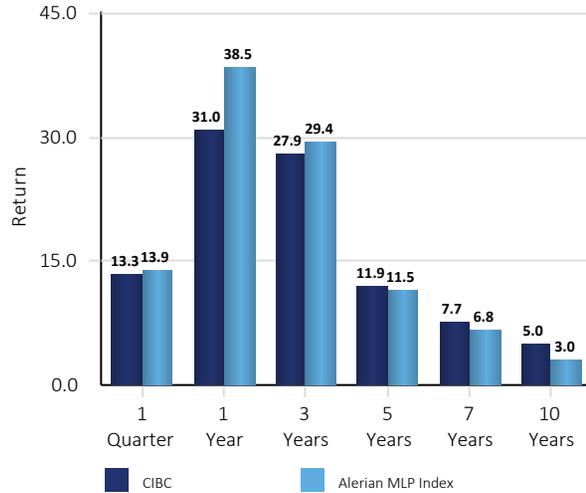
	Market Value \$	Allocation (%)
■ CIBC	57,870,690	31.7
■ Harvest Fund Advisors MLP	63,311,195	34.7
■ C&S Global Listed Infrastructure	61,090,746	33.5

Performance Summary

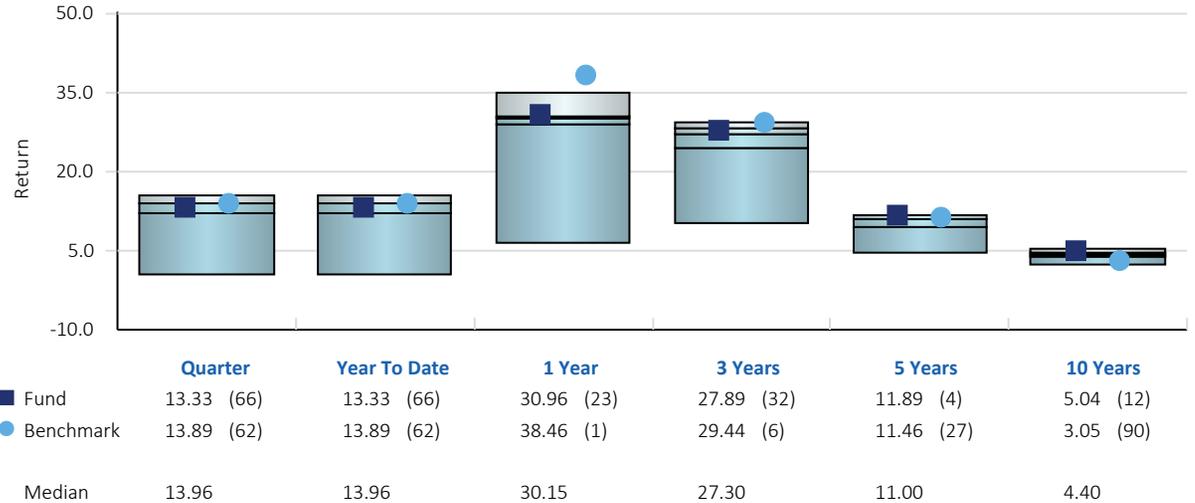
CIBC

Periods Ended March 31, 2024

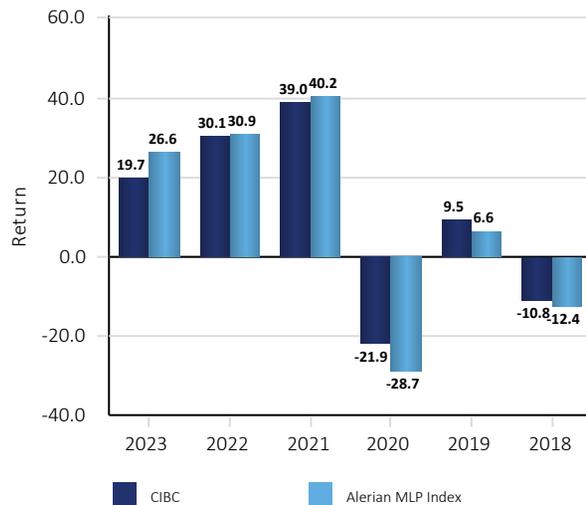
Comparative Performance



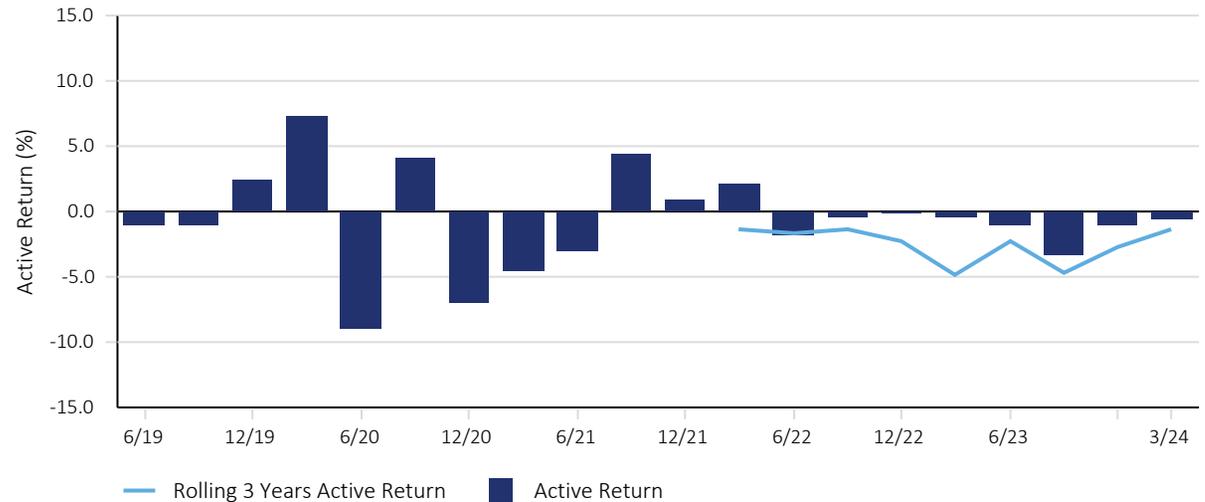
Peer Group Analysis: MLP Peers



Comparative Performance



Rolling 3 Years Performance

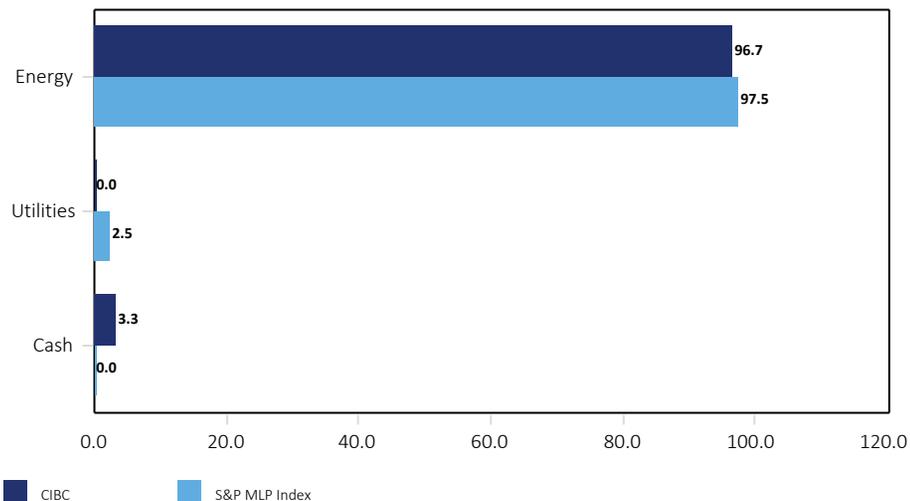


Portfolio Characteristics

CIBC

Periods Ended As of March 31, 2024

Sector Weights (%)



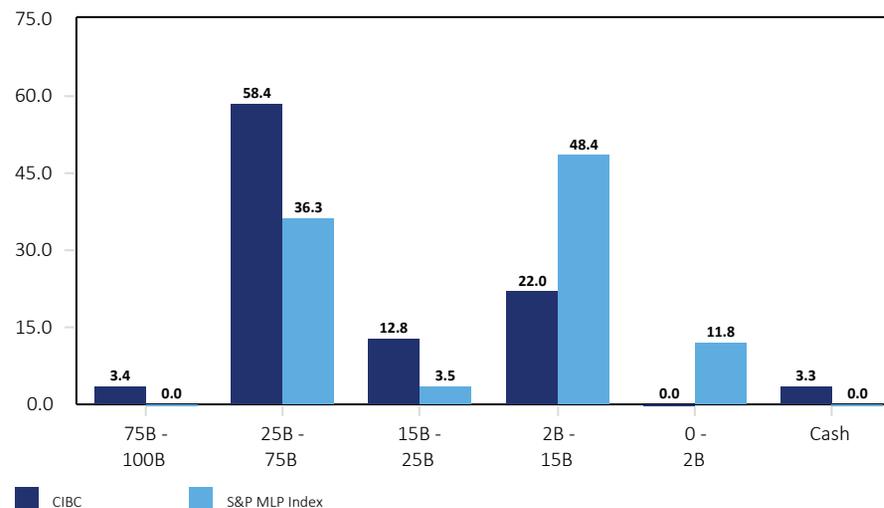
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	36,915,315,368	24,012,949,307
Median Mkt. Cap \$	40,703,245,800	3,360,801,740
Price/Earnings ratio	11.7	13.0
Price/Book ratio	2.6	2.5
5 Yr. EPS Growth Rate (%)	12.0	4.3
Current Yield (%)	5.8	7.6
Beta (5 Years, Monthly)	0.89	1.00
Number of Stocks	16	21

Top Ten Equity Holdings

	Portfolio Weight (%)	Quarterly Return (%)
Enterprise Products Partners LP	12.1	12.8
Energy Transfer LP	11.4	16.6
Targa Resources Corp	11.4	29.7
Plains All American Pipeline LP	10.7	18.2
MPLX LP	9.8	15.8
Cheniere Energy Inc	8.8	-5.3
Western Midstream Partners LP	6.1	23.9
ONEOK Inc	5.3	15.8
Williams Cos Inc. (The)	5.1	13.4
TC Energy Corp	3.6	4.7
% of Portfolio	84.3	

Distribution of Market Capitalization (%)

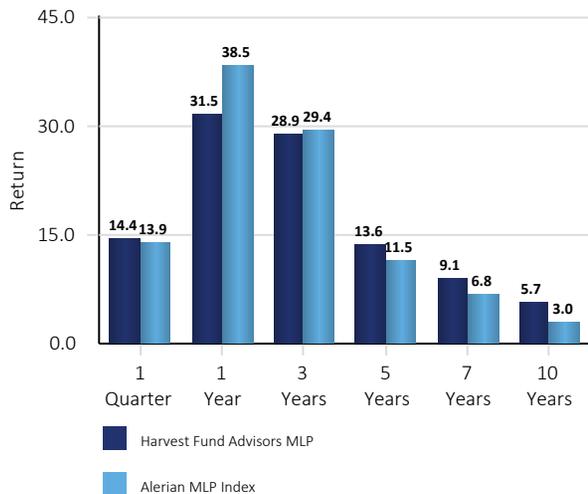


Performance Summary

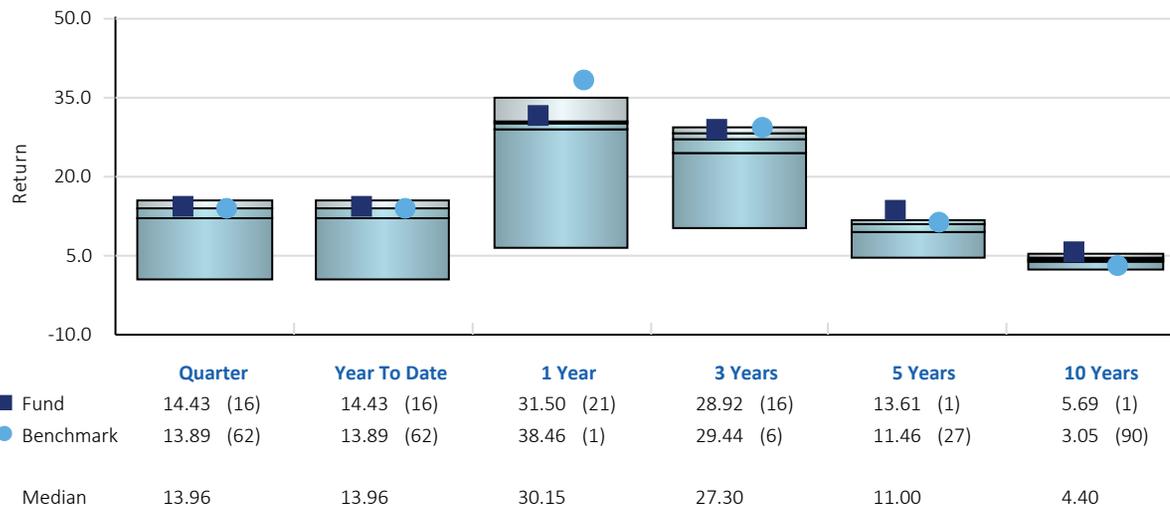
Harvest Fund Advisors MLP

Periods Ended March 31, 2024

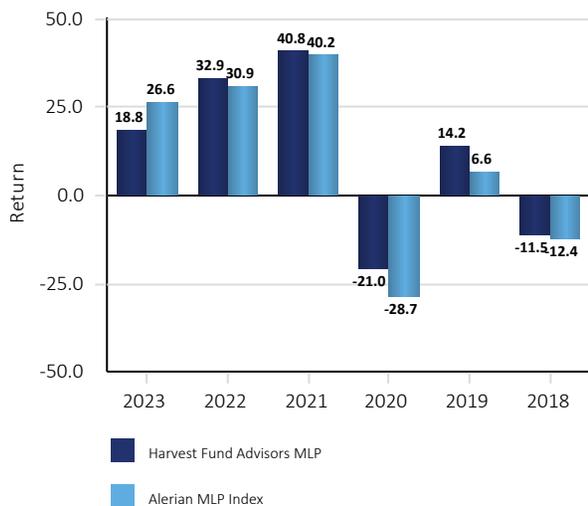
Comparative Performance



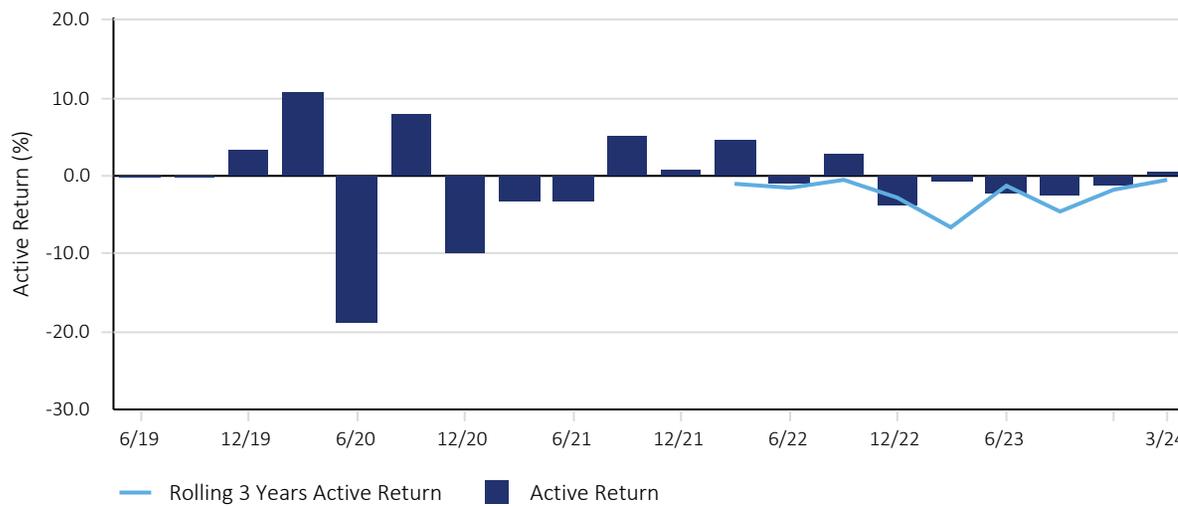
Peer Group Analysis: MLP Peers



Comparative Performance



Rolling 3 Years Performance

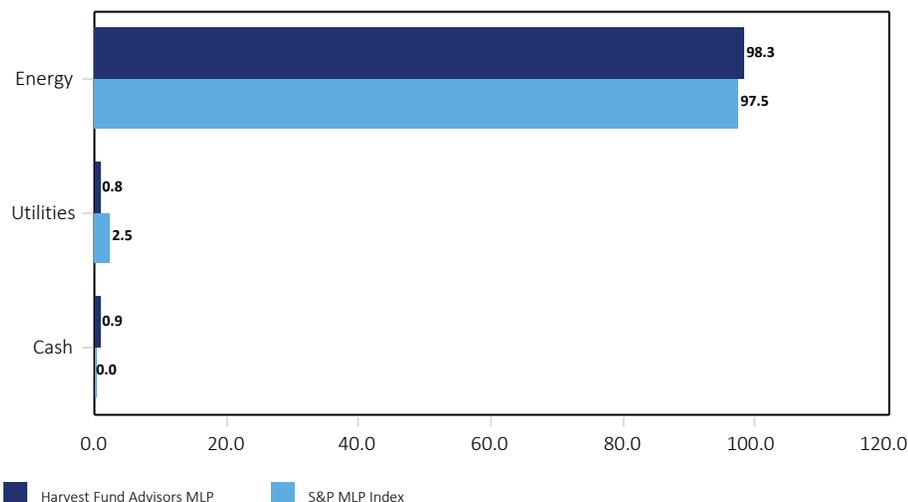


Portfolio Characteristics

Harvest Fund Advisors MLP

Periods Ended As of March 31, 2024

Sector Weights (%)



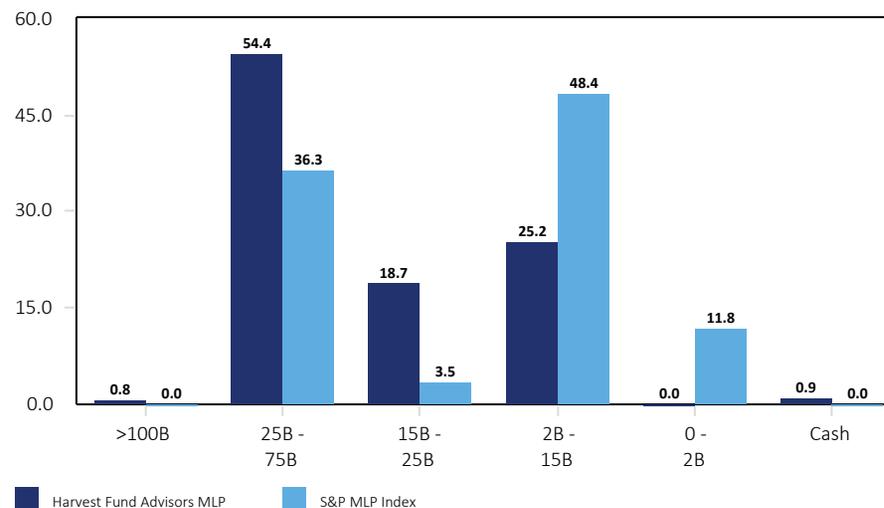
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap \$	34,785,193,434	24,012,949,307
Median Mkt. Cap \$	12,918,506,480	3,360,801,740
Price/Earnings ratio	11.6	13.0
Price/Book ratio	2.8	2.5
5 Yr. EPS Growth Rate (%)	12.9	4.3
Current Yield (%)	5.7	7.6
Beta (5 Years, Monthly)	0.80	1.00
Number of Stocks	21	21

Top Ten Equity Holdings

	Portfolio Weight (%)	Quarterly Return (%)
Targa Resources Corp	14.8	29.7
Energy Transfer LP	14.6	16.6
MPLX LP	14.3	15.8
Plains All American Pipeline LP	10.6	18.2
Cheniere Energy Inc	10.3	-5.3
Enterprise Products Partners LP	10.2	12.8
Western Midstream Partners LP	6.8	23.9
Williams Cos Inc. (The)	4.2	13.4
Pembina Pipeline Corp	4.0	4.1
NuStar Energy LP	2.9	26.8
% of Portfolio	92.7	

Distribution of Market Capitalization (%)

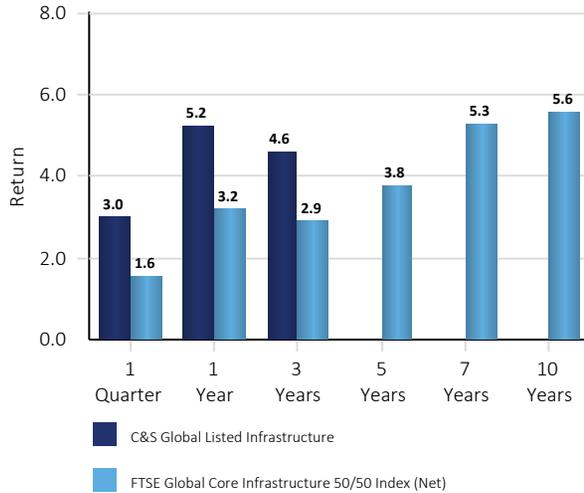


Performance Summary

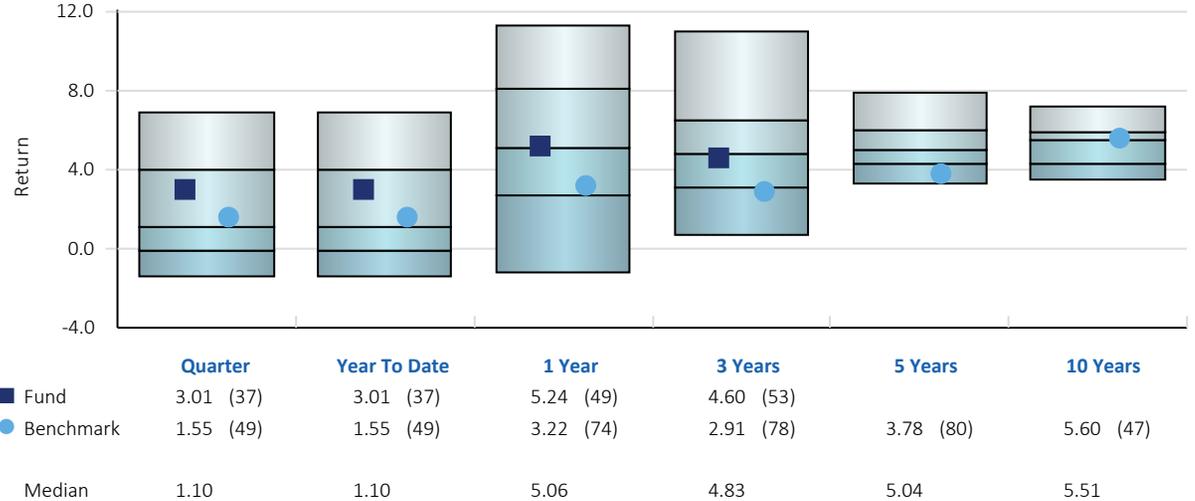
C&S Global Listed Infrastructure

Periods Ended March 31, 2024

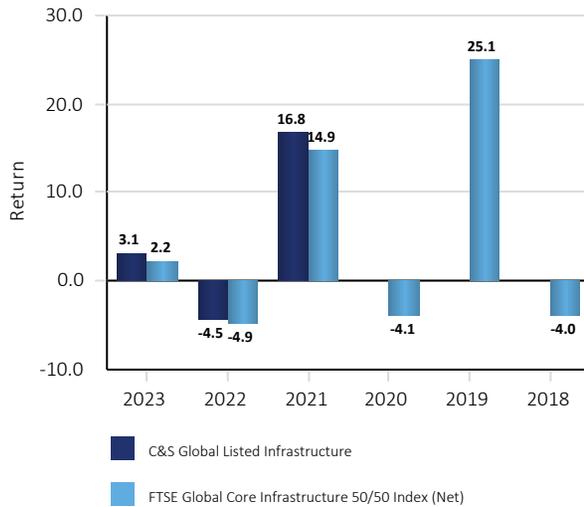
Comparative Performance



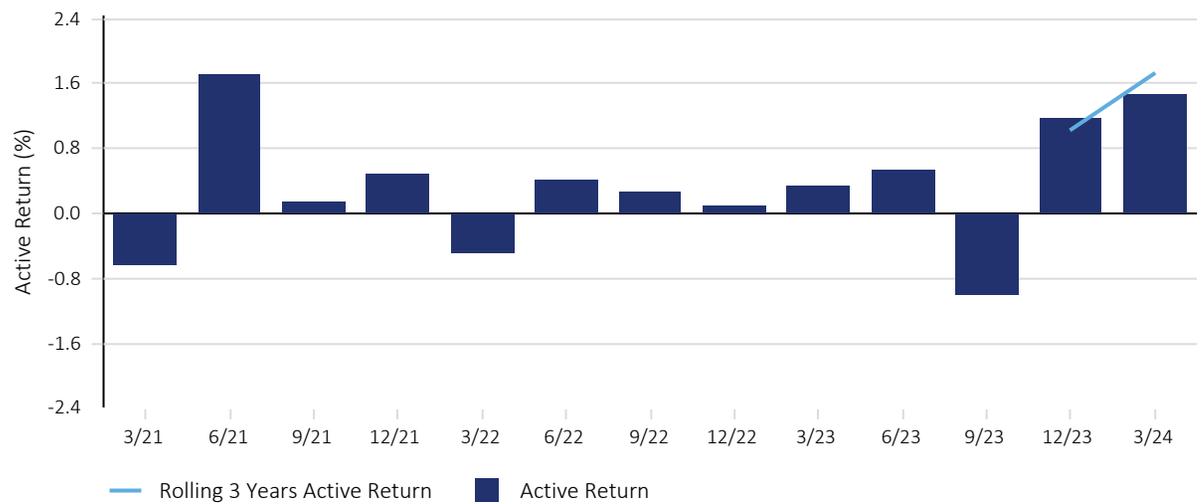
Peer Group Analysis: Global Infrastructure Securities Custom Universe



Comparative Performance



Rolling 3 Years Performance



Wilshire

Quarterly Market Review

March 31, 2024

Market Commentary

U.S. Equity

The U.S. stock market was up 9.9% for the first quarter and is up 29.3% for the past year. Nearly every sector was positive with the best performing being communication services (+14.3%) and energy (+13.0%). The worst performing and only negative sector was real estate (-1.2%). Small-cap underperformed large-cap by 230 basis points while growth stocks generally outperformed value. Large-cap growth stocks hold a massive advantage over large-cap value for the past 12 months.

The first cryptocurrency, Bitcoin, came into existence in 2009. It was to be the first truly decentralized global currency, driven by the technological breakthrough called blockchain. Adoption and scalability – including the tension between the speed of transactions and security and decentralization – have always been critical components to the maturation story of digital assets. In 2024, the U.S. SEC approved the first U.S.-listed exchange traded funds (ETFs) to track bitcoin. Since trading started in January, the four largest have grown to a combined \$33.5 billion in total assets while the price of bitcoin has grown by 66% during the first quarter.

Non-U.S. Equity

The European economy remains weak with consumers hesitant to spend, fewer exports and lower investment, all reflecting diminished economic demand. Recent data in England confirmed that their economy entered a technical recession during 2023. The outlook in China is improving due to stronger industrial activity and retail spending. Manufacturing saw growth in production and domestic orders during the quarter, but export orders fell.

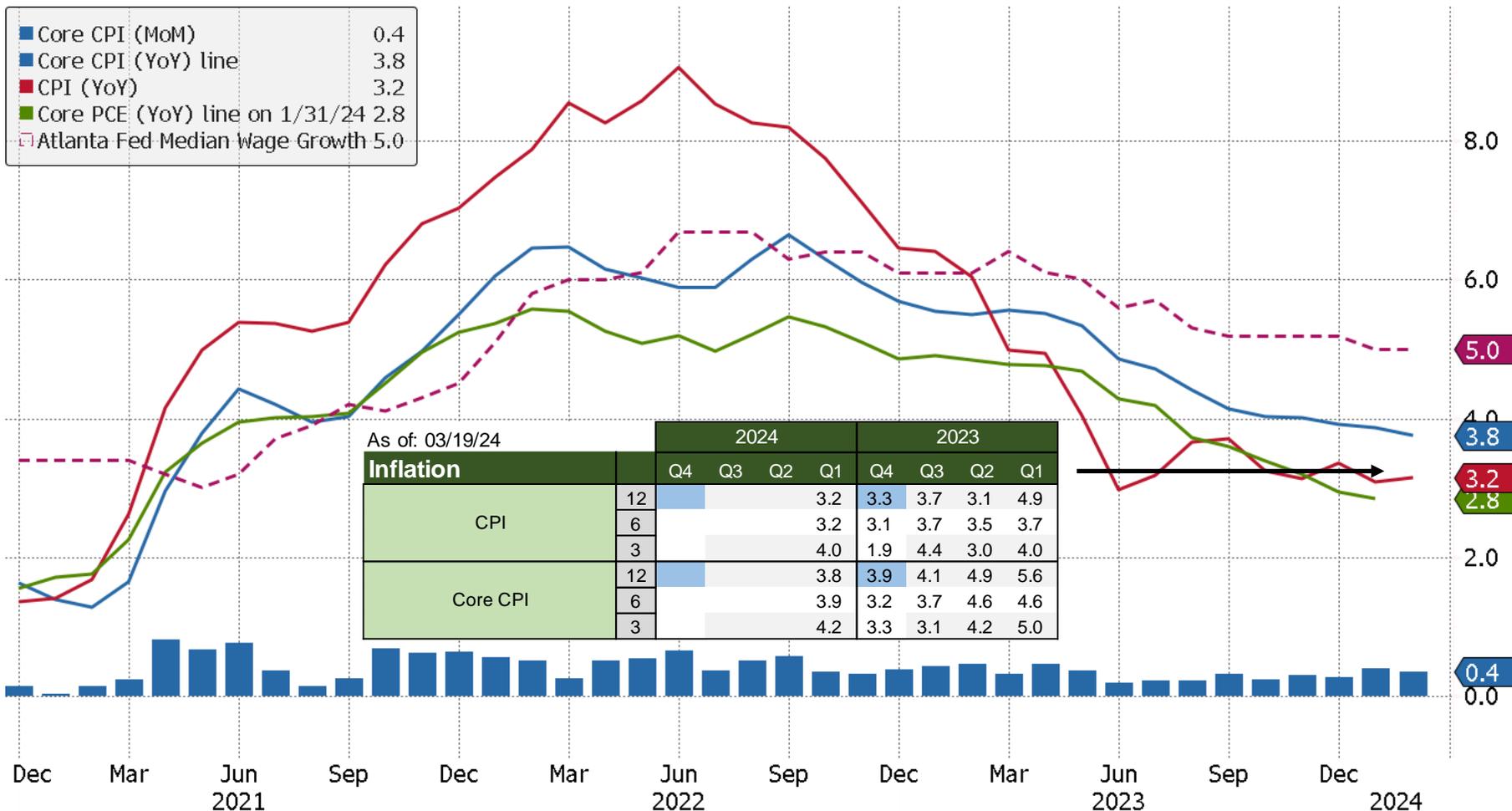
Fixed Income

The U.S. Treasury yield curve was up across nearly the entire maturity spectrum, and to a greater degree in the long end of the curve. The 10-year Treasury yield ended the quarter at 4.20%, up 32 basis points from December. High yield bond spreads were down -24 basis points, the lowest level in more than a year. The FOMC left the overnight rate unchanged, targeting a range of 5.25% to 5.50%. During a recent speech, Fed Chair Jerome Powell said that the central bank is in no hurry to raise rates, "This is an economy that doesn't feel like it's suffering from the current level of rates."

March 2024 Asset Class Assumptions

	EQUITY						FIXED INCOME							REAL ASSETS					
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-US Bond (Hdg)	Real Estate			Cmdty	Real Assets	US CPI
														US RES	Global RES	Private RE			
Compound Return (%)	4.50	5.50	5.75	5.85	5.10	7.65	4.00	5.05	5.00	4.35	6.25	8.20	3.05	5.80	5.95	6.15	6.30	6.90	2.30
Arithmetic Return (%)	5.85	7.00	8.75	7.50	6.45	11.40	4.00	5.15	5.45	4.50	6.70	8.95	3.15	7.20	7.20	7.05	7.45	7.65	2.30
Risk (%)	17.00	18.00	26.00	19.00	17.05	29.65	0.75	4.70	9.85	6.00	10.00	12.75	4.00	17.50	16.45	13.90	16.00	12.60	1.75
Yield (%)	1.35	2.90	2.45	2.75	1.90	0.00	4.00	5.35	5.40	4.65	9.70	5.10	3.95	4.05	4.05	2.60	4.00	3.60	0.00
Growth Factor Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.90	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00
Inflation Factor Exposure	-3.00	-1.00	3.00	0.10	-1.85	-4.25	0.00	-2.55	-6.85	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	1.00
CORRELATIONS																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.81	1.00																	
Emerging Mkt Stock	0.74	0.74	1.00																
Global ex-US Stock	0.84	0.95	0.89	1.00															
Global Stock	0.95	0.91	0.84	0.94	1.00														
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00											
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00										
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00									
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00								
Private Credit	0.67	0.55	0.57	0.59	0.67	0.44	0.00	0.24	0.30	0.00	0.75	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.67	0.65	0.39	0.26	0.22	1.00						
US RE Securities	0.57	0.47	0.44	0.49	0.56	0.49	-0.05	0.17	0.22	0.10	0.56	0.61	0.05	1.00					
Global RE Securities	0.63	0.56	0.54	0.59	0.64	0.55	-0.05	0.17	0.21	0.11	0.60	0.67	0.04	0.97	1.00				
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.57	0.62	0.05	0.78	0.77	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.61	0.62	0.66	0.68	0.66	0.56	-0.03	0.24	0.26	0.32	0.64	0.69	0.05	0.78	0.83	0.76	0.62	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.21	1.00

Inflation Stubbornly Settling Near 3%



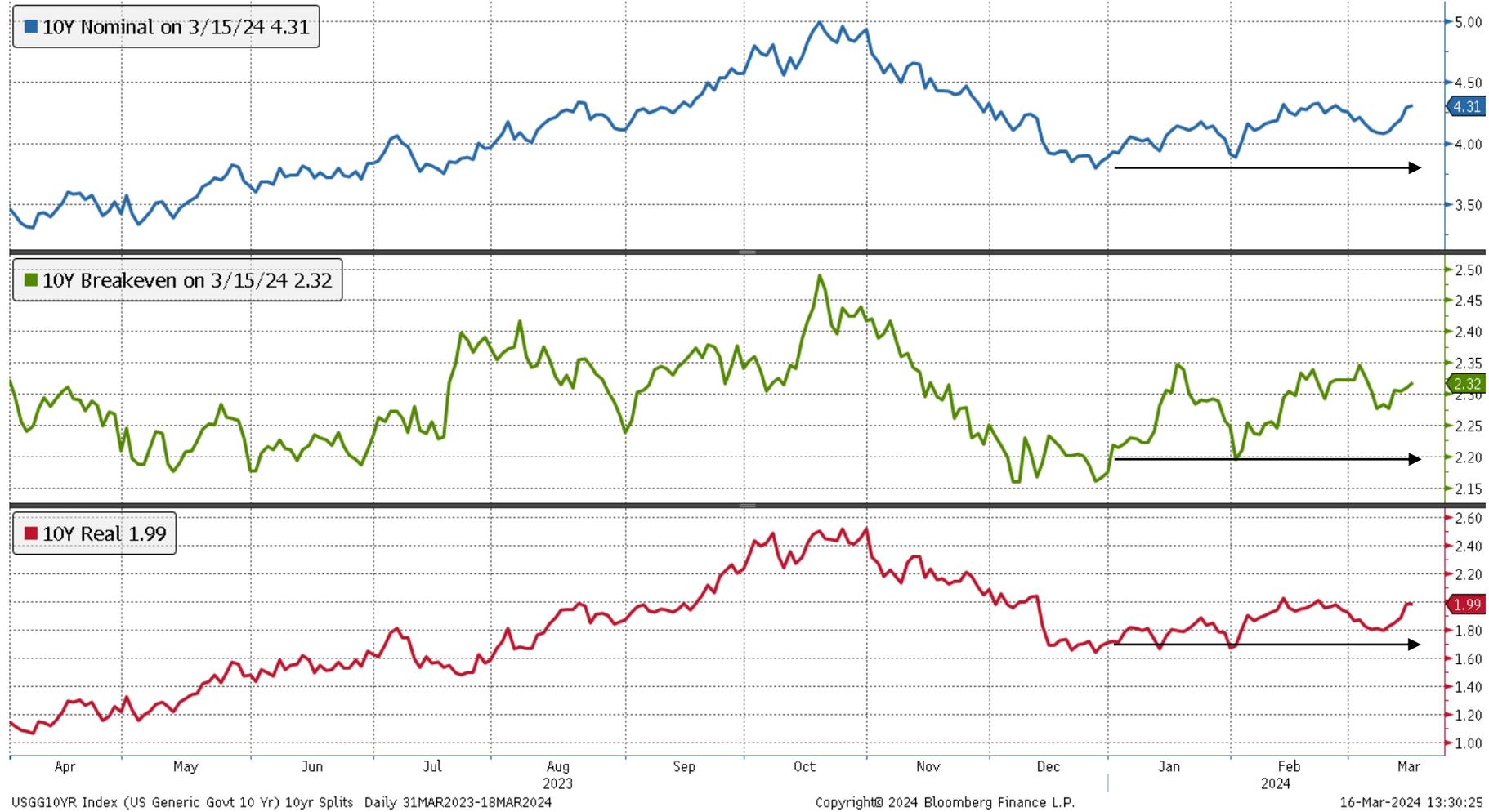
CPUPXCHG Index (US CPI Urban Consumers Less Food & Energy MoM SA) CPI & PCE Monthly 31DEC2020-29FEB2024

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16-Mar-2024 13:21:42

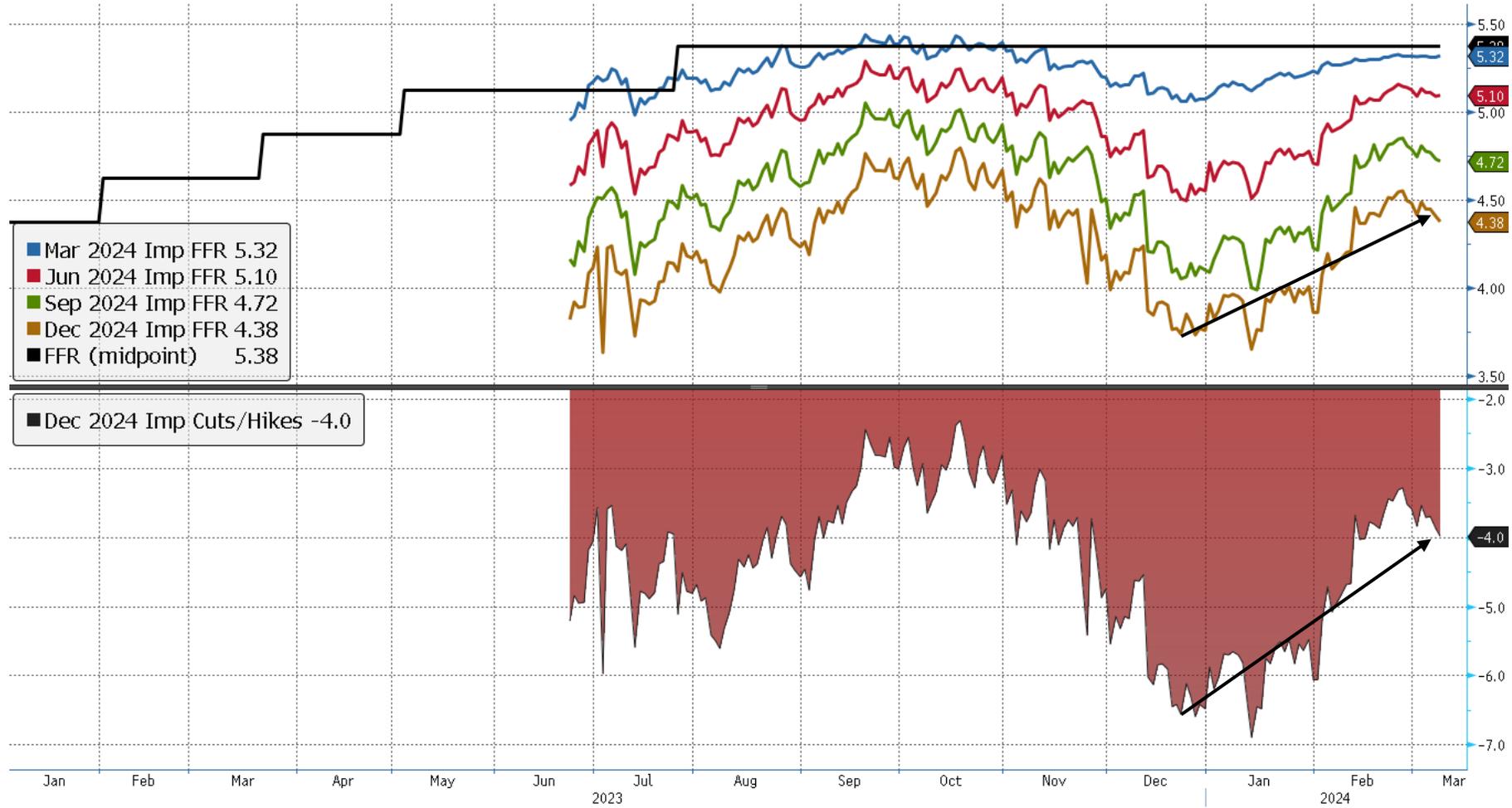
Data Source: Bloomberg

Inflation Expectations Driving Rates Volatility



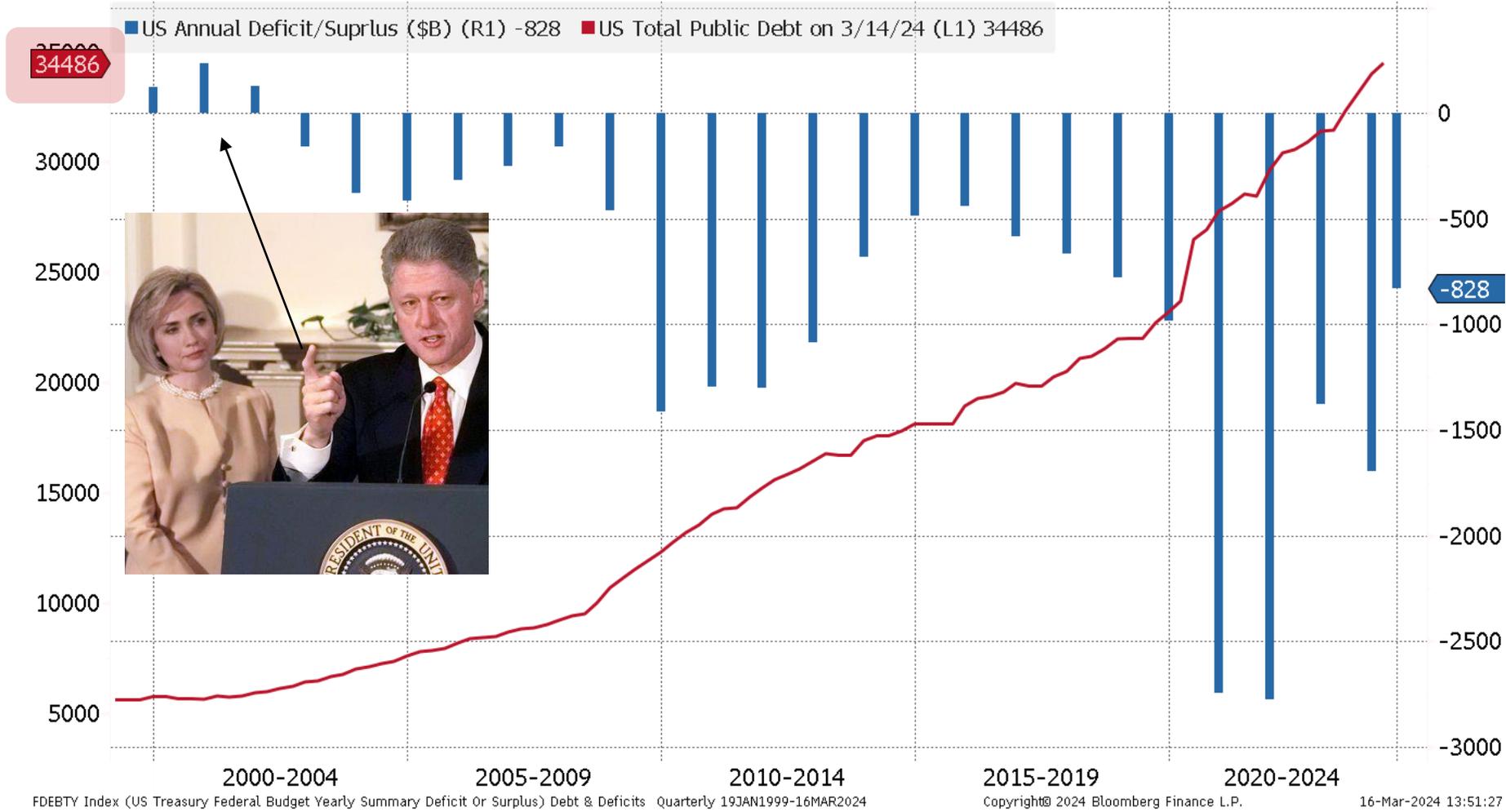
Data Source: Bloomberg

Markets Begin to Align with Fed's Median Expectations (i.e., Dot-plot)



Data Source: Bloomberg

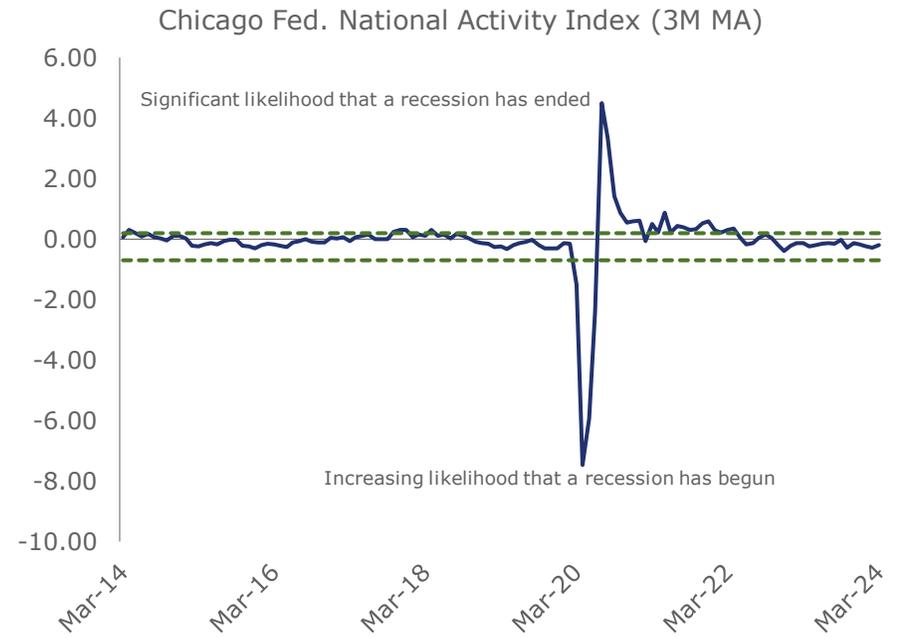
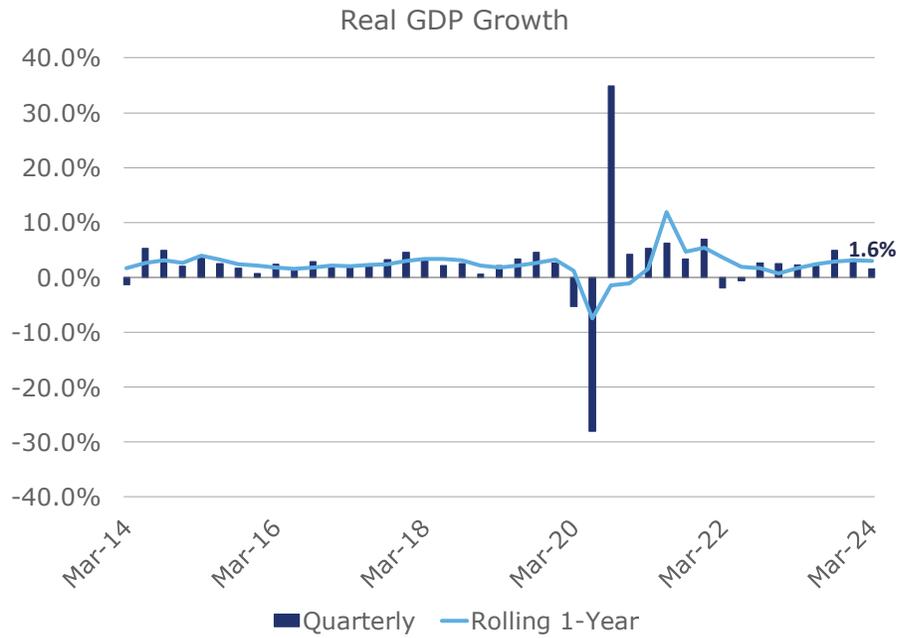
Meanwhile, Nobody Seems to Care About Debt/Deficits



Data Source: Bloomberg

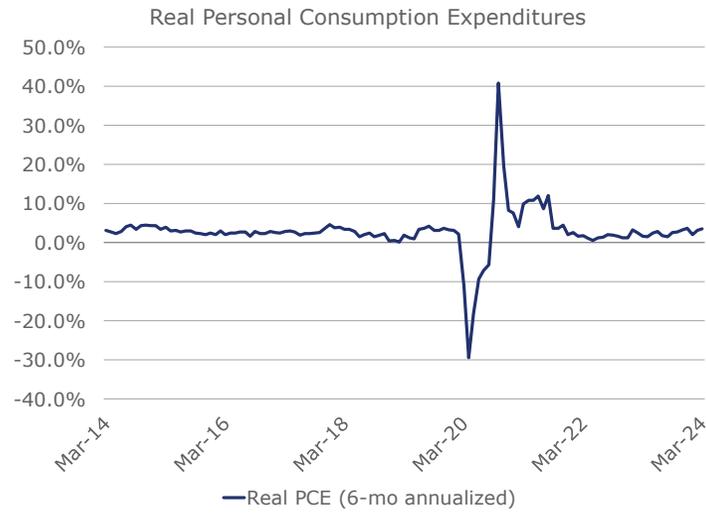
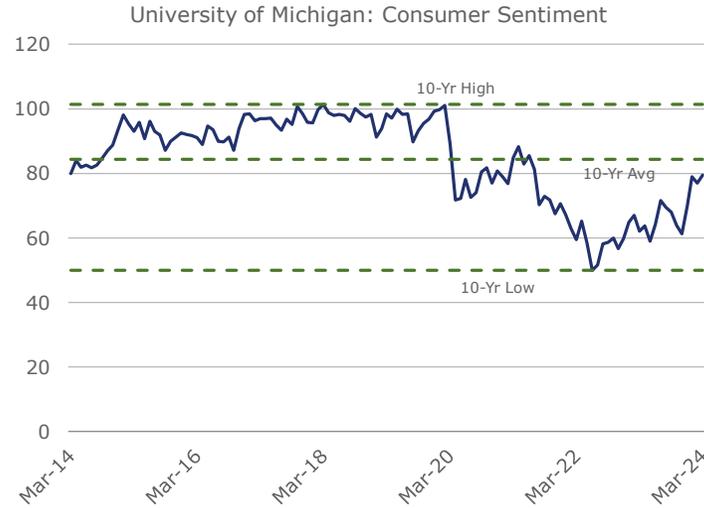
Economic/Market Activity

Economic Growth

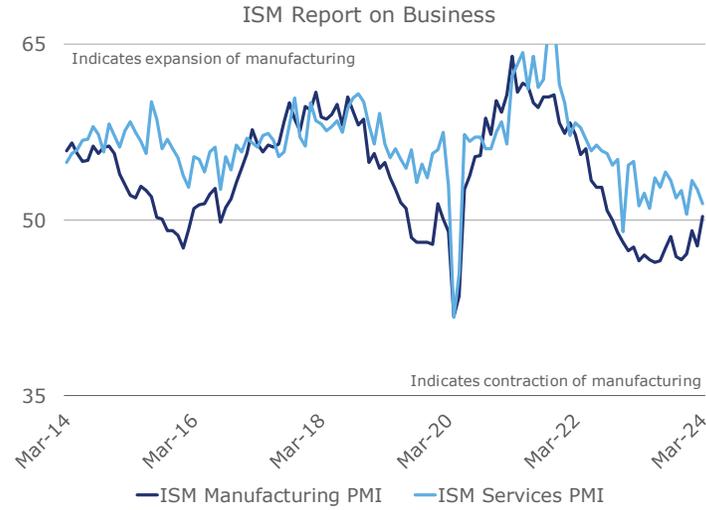


Data Sources: Bloomberg

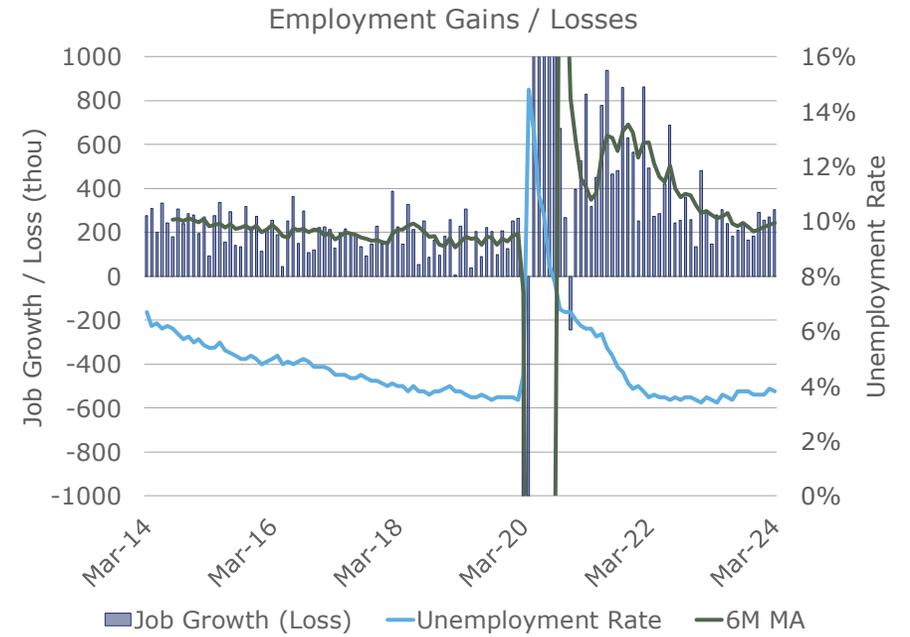
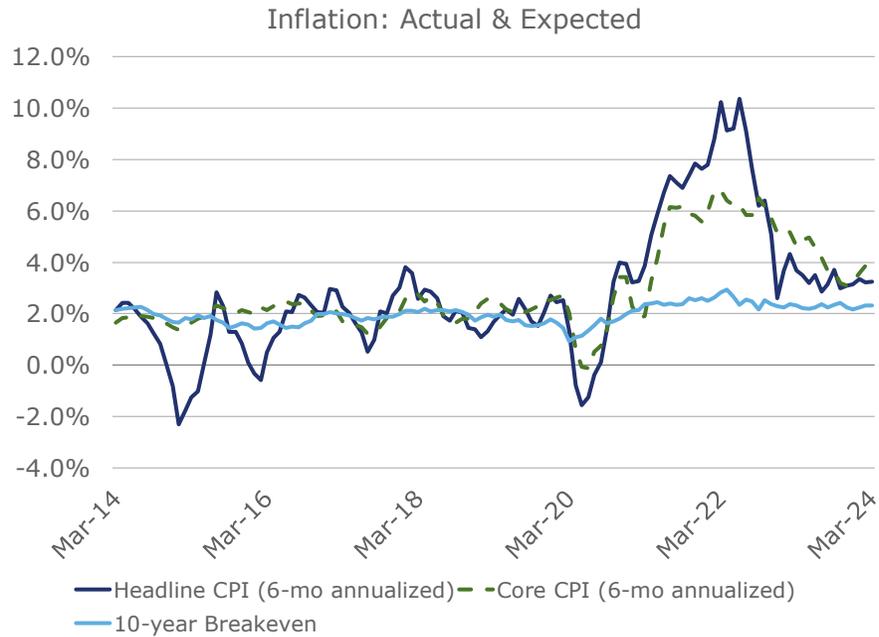
Consumer Activity



Business Activity



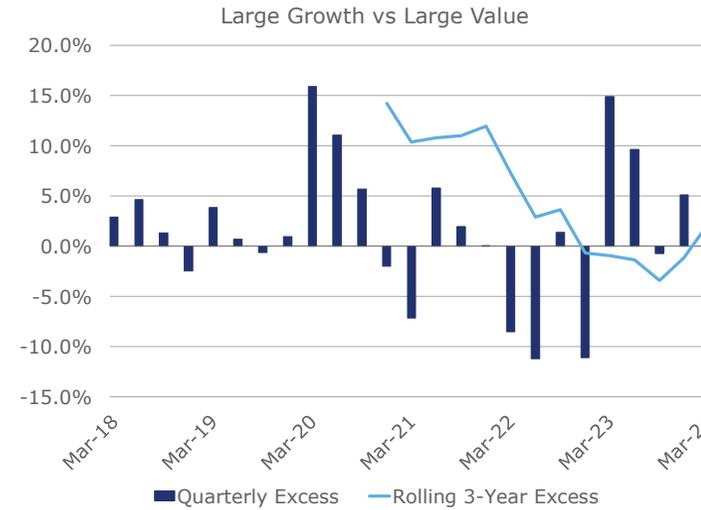
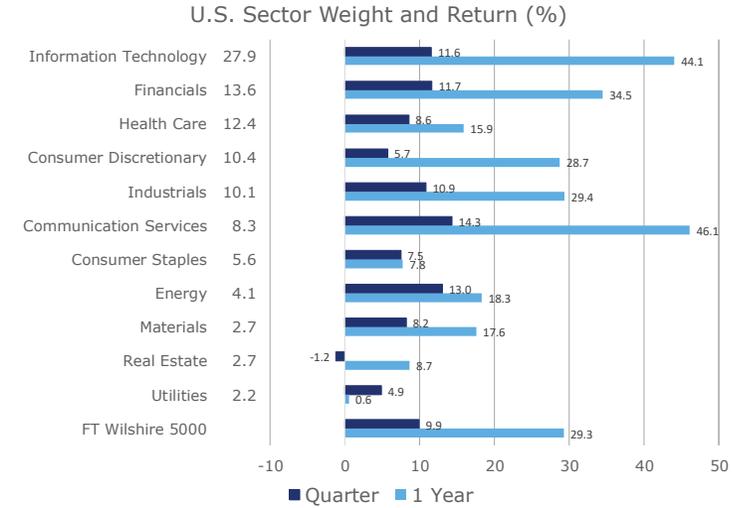
Inflation and Employment



Data Sources: Bloomberg

U.S. Equity Market

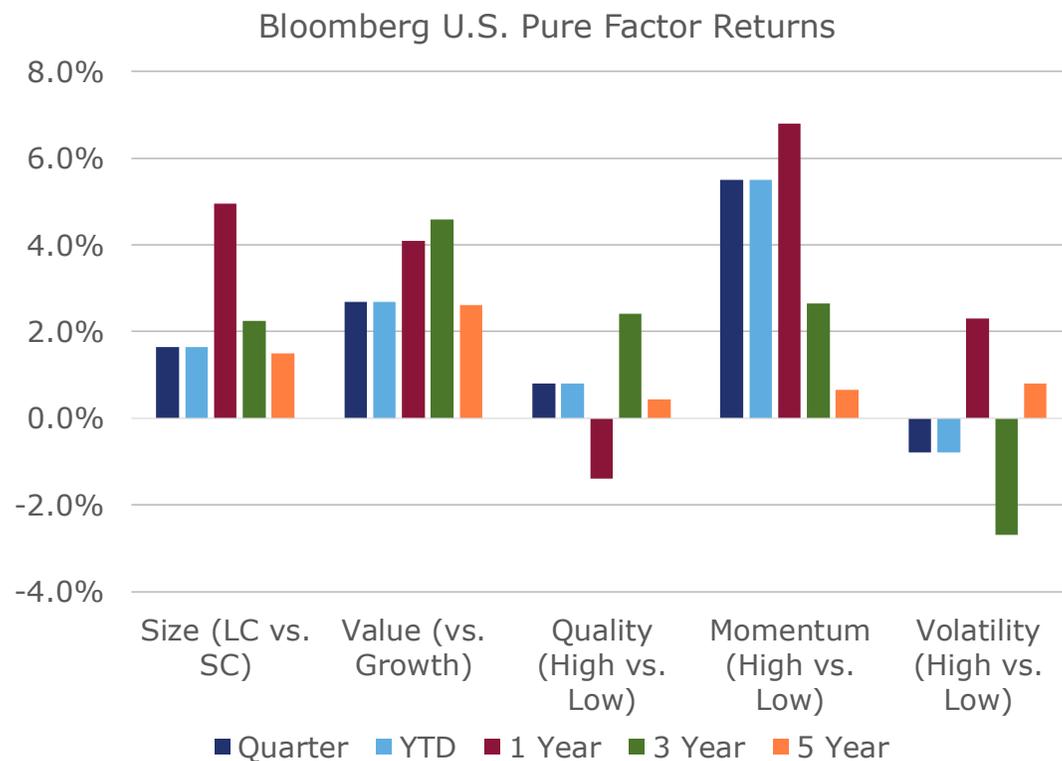
As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	9.9	9.9	29.3	10.1	14.6	12.5
FT Wilshire U.S. Large Cap	10.3	10.3	30.2	11.2	15.2	13.1
FT Wilshire U.S. Small Cap	8.0	8.0	24.1	4.6	10.4	9.4
FT Wilshire U.S. Large Growth	11.9	11.9	41.1	12.2	18.4	n/a
FT Wilshire U.S. Large Value	8.6	8.6	19.7	9.7	11.6	n/a
FT Wilshire U.S. Small Growth	8.2	8.2	23.0	1.8	9.6	n/a
FT Wilshire U.S. Small Value	7.8	7.8	25.1	7.1	10.8	n/a
Wilshire REIT Index	0.0	0.0	12.4	4.5	4.4	6.7
MSCI USA Min. Vol. Index	7.7	7.7	16.7	8.3	9.3	11.0
FTSE RAFI U.S. 1000 Index	10.0	10.0	25.6	10.8	13.9	11.2



Data Sources: Bloomberg, Wilshire Atlas

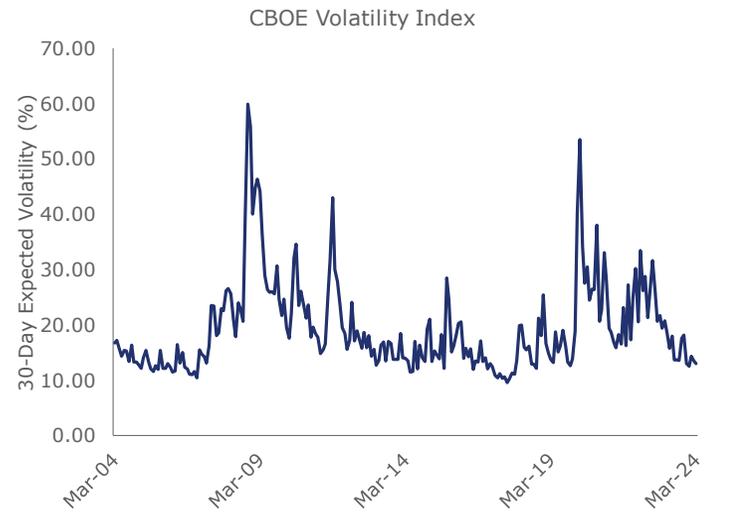
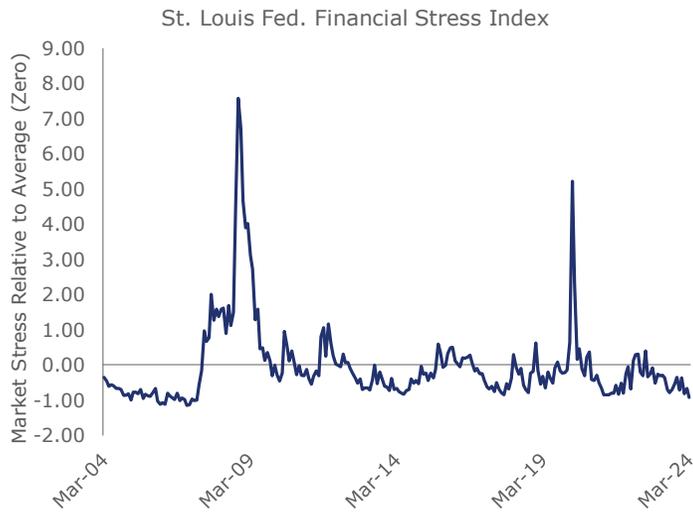
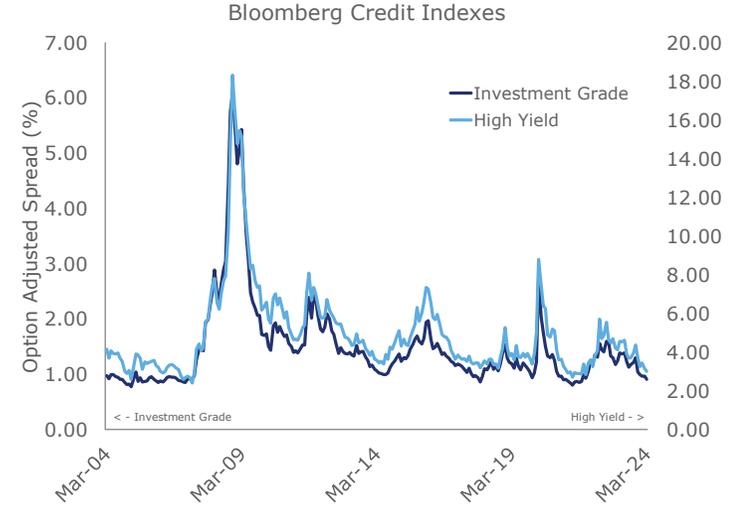
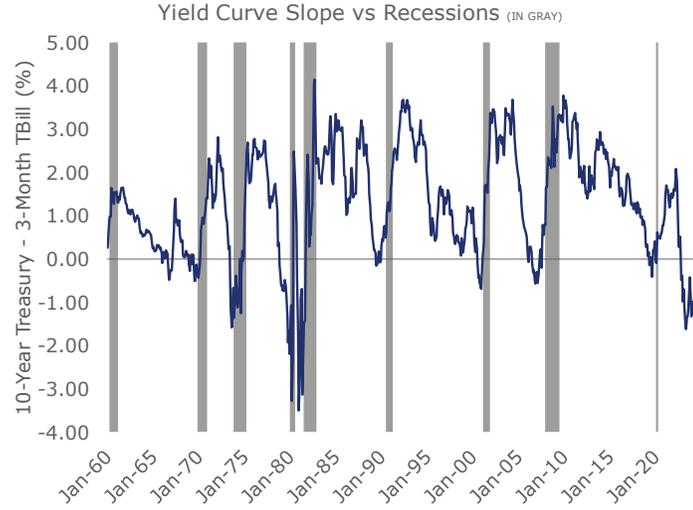
U.S. Factor Returns

- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg's Portfolio & Risk Analytics module
- Momentum had a strong quarter while high volatility detracted



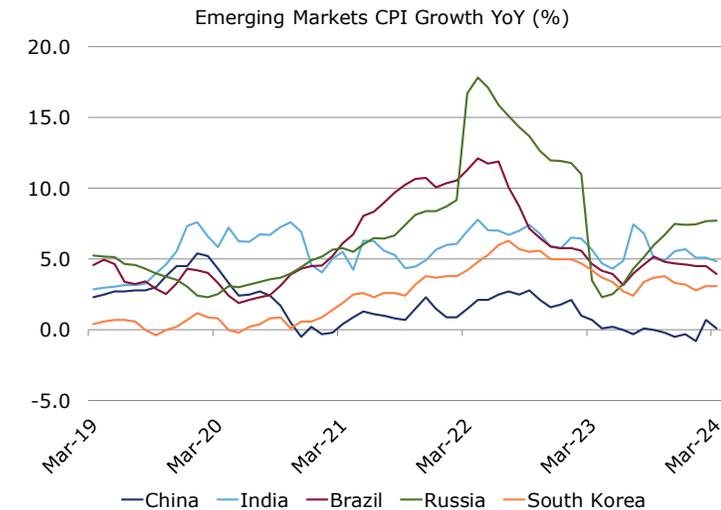
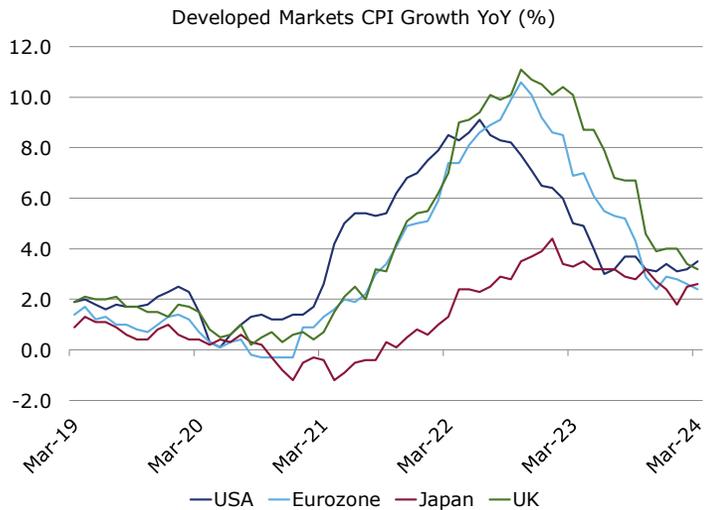
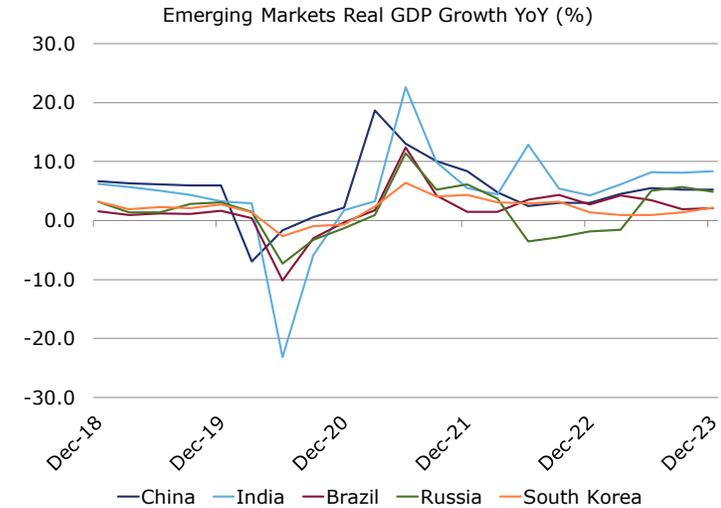
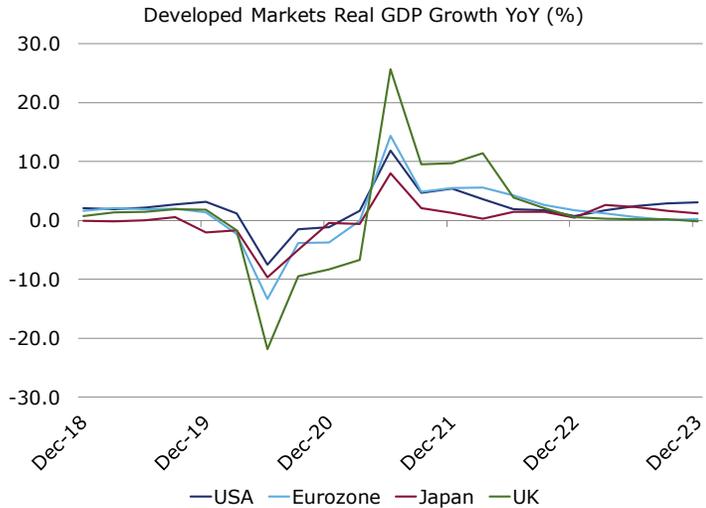
Data Sources: Bloomberg

Risk Monitor



Data Sources: Bloomberg

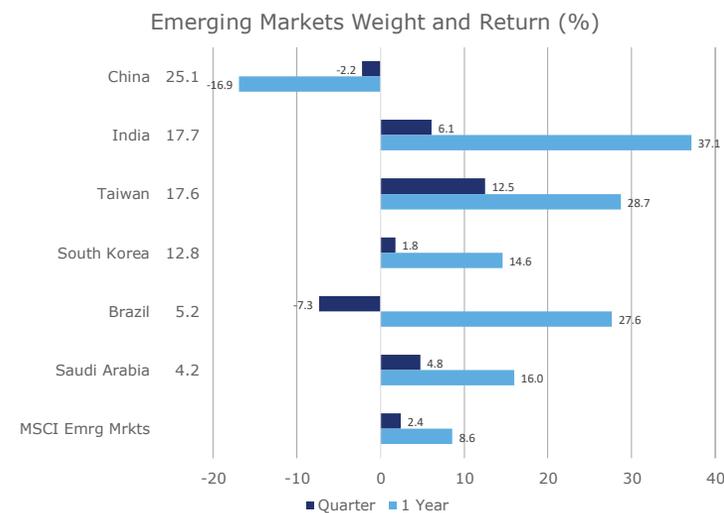
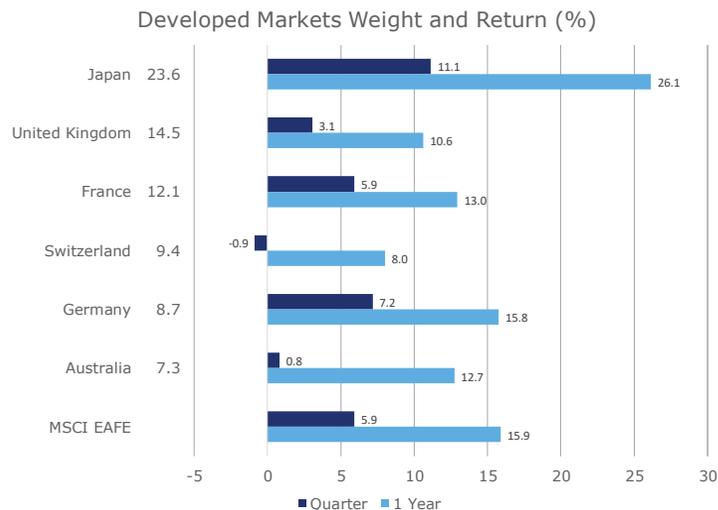
Non-U.S. Growth and Inflation



Data Sources: Bloomberg

Non-U.S. Equity Market

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	4.8	4.8	13.8	2.4	6.5	4.7
MSCI EAFE (\$G)	5.9	5.9	15.9	5.3	7.9	5.3
MSCI Emerging Markets (\$G)	2.4	2.4	8.6	-4.7	2.6	3.3
MSCI Frontier Markets (\$G)	5.7	5.7	16.0	2.8	0.8	0.7
MSCI ACWI ex-US Growth (\$G)	6.0	6.0	11.5	-0.5	6.6	5.5
MSCI ACWI ex-US Value (\$G)	3.4	3.4	16.2	5.1	6.2	4.0
MSCI ACWI ex-US Small (\$G)	2.2	2.2	13.4	0.8	6.7	5.2
MSCI ACWI Minimum Volatility	4.8	4.8	11.7	4.8	6.1	7.9
MSCI EAFE Minimum Volatility	2.4	2.4	8.8	2.1	2.9	4.7
FTSE RAFI Developed ex-US	5.6	5.6	17.8	6.7	8.2	4.9
MSCI EAFE LC (G)	10.1	10.1	19.4	10.0	9.9	8.2
MSCI Emerging Markets LC (G)	4.6	4.6	11.1	-2.0	4.8	6.1

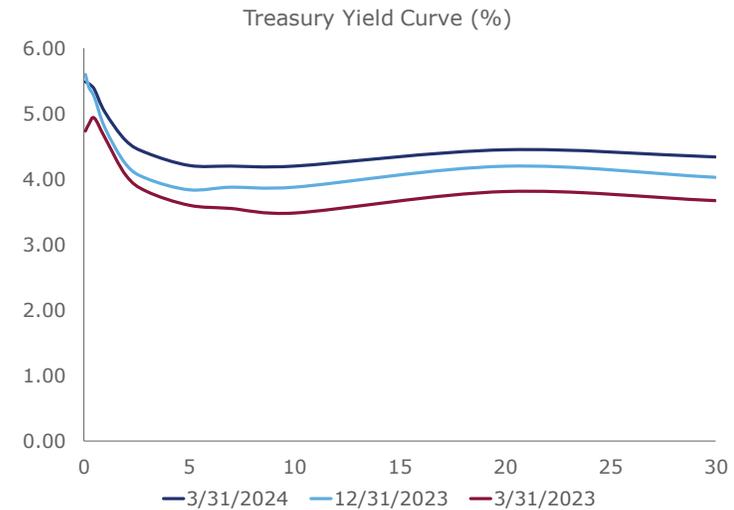
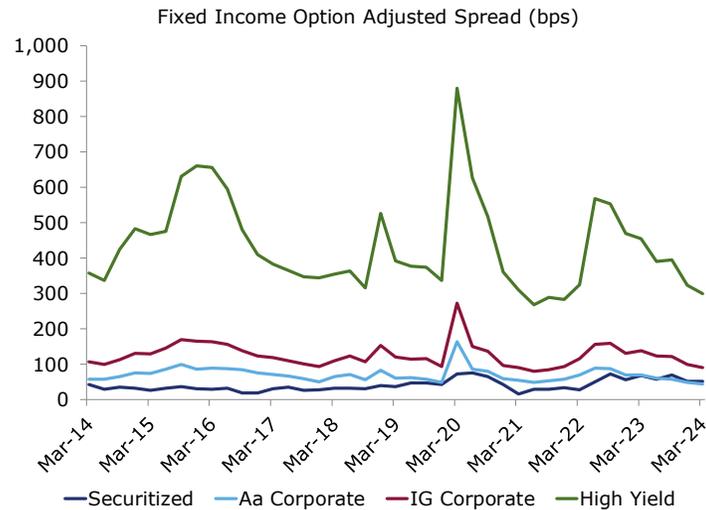


Data Sources: Bloomberg

U.S. Fixed Income

As of 3/31/2024	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.8	6.2	-0.8	-0.8	1.7	-2.5	0.4	1.5
Bloomberg Treasury	4.4	6.0	-1.0	-1.0	0.1	-2.7	-0.1	1.0
Bloomberg Gov't-Rel.	4.9	5.3	-0.4	-0.4	2.5	-1.6	0.7	1.7
Bloomberg Securitized	5.1	5.9	-0.9	-0.9	1.6	-2.7	-0.3	1.2
Bloomberg Corporate	5.3	7.0	-0.4	-0.4	4.4	-1.9	1.5	2.6
Bloomberg LT Gov't/Credit	5.0	14.0	-2.4	-2.4	-1.1	-6.0	-0.6	2.3
Bloomberg LT Treasury	4.4	15.3	-3.3	-3.3	-6.1	-8.0	-2.8	1.2
Bloomberg LT Gov't-Rel.	5.5	11.6	-1.3	-1.3	2.1	-4.1	-0.1	2.7
Bloomberg LT Corporate	5.5	12.9	-1.7	-1.7	3.4	-4.3	1.0	3.1
Bloomberg U.S. TIPS *	4.2	7.3	-0.1	-0.1	0.5	-0.5	2.5	2.2
Bloomberg High Yield	7.7	3.2	1.5	1.5	11.2	2.2	4.2	4.4
S&P/LSTA Leveraged Loan	9.4	0.3	2.5	2.5	12.5	6.0	5.5	4.5
Treasury Bills	5.3	0.3	1.3	1.3	5.3	2.6	2.0	1.4

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

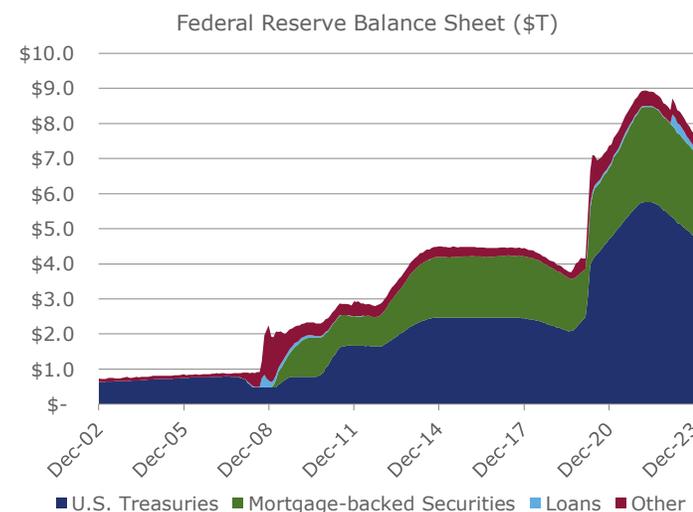
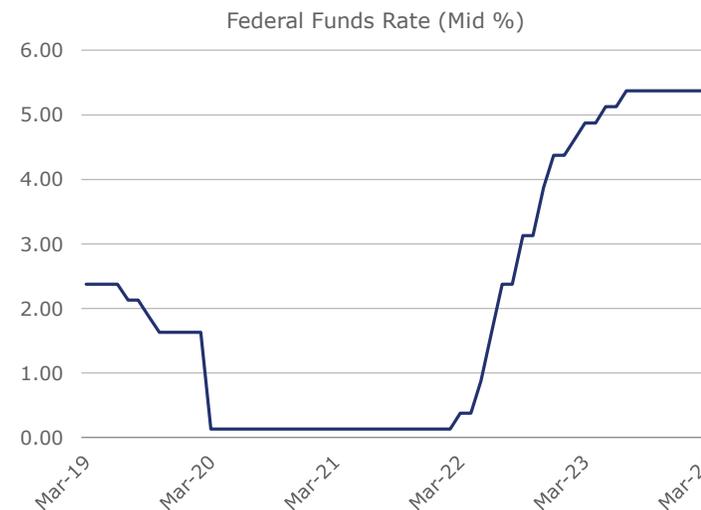


Data Sources: Bloomberg

Federal Reserve

- The Federal Open Market Committee has left their overnight rate unchanged since July of 2023
- QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis
- The Fed’s balance sheet has begun to shrink again during the past year

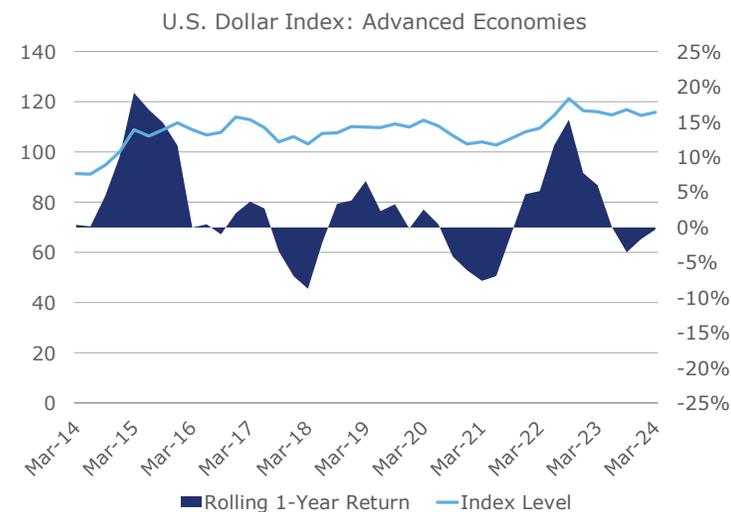
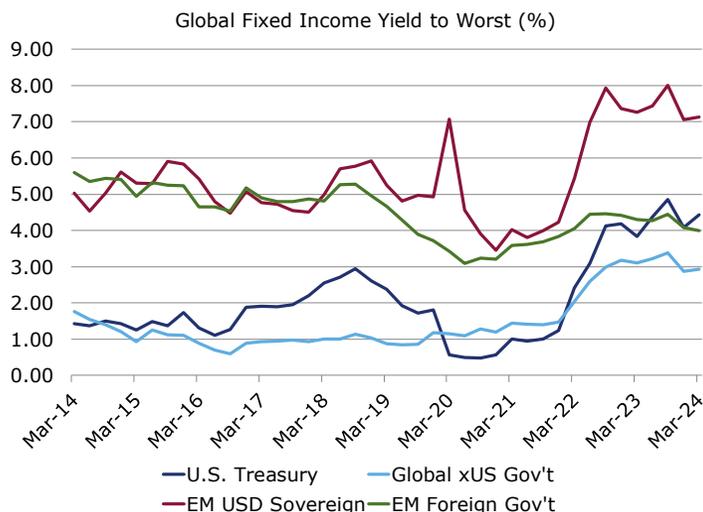
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779



Non-U.S. Fixed Income

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-3.2	-3.2	-0.7	-6.5	-2.5	-1.4
Bloomberg Global Aggregate xUS *	0.6	0.6	5.9	-0.4	1.0	2.6
Bloomberg Global Inflation Linked xUS	-3.2	-3.2	-1.4	-8.3	-2.9	-0.9
Bloomberg Global Inflation Linked xUS *	-0.9	-0.9	0.3	-3.7	-0.6	2.9
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	1.5	1.5	8.4	-1.5	1.1	2.9
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-1.1	-1.1	2.6	-0.3	1.4	1.1
Bloomberg EM Local Currency Gov't *	1.8	1.8	8.1	2.7	3.1	3.1
Euro vs. Dollar	-2.3	-2.3	-0.5	-2.7	-0.8	-2.4
Yen vs. Dollar	-6.8	-6.8	-12.2	-9.9	-6.0	-3.8
Pound vs. Dollar	-0.8	-0.8	2.3	-2.9	-0.6	-2.7

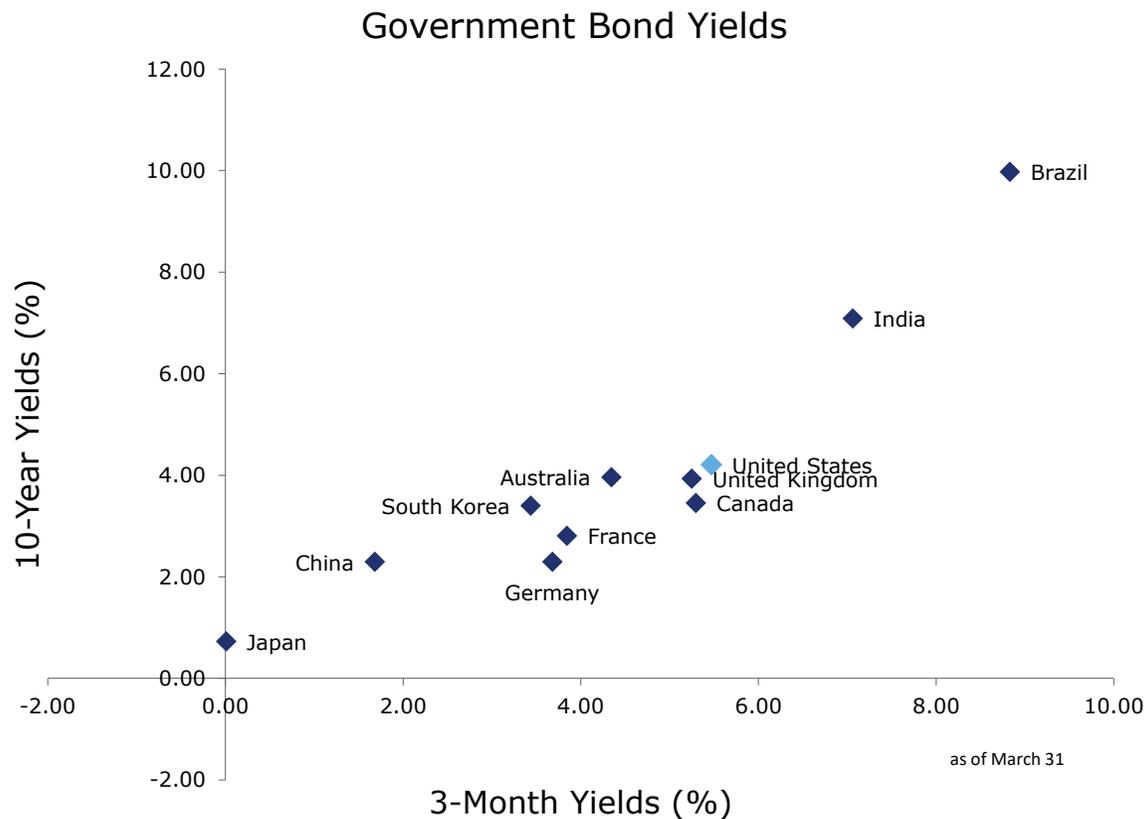
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

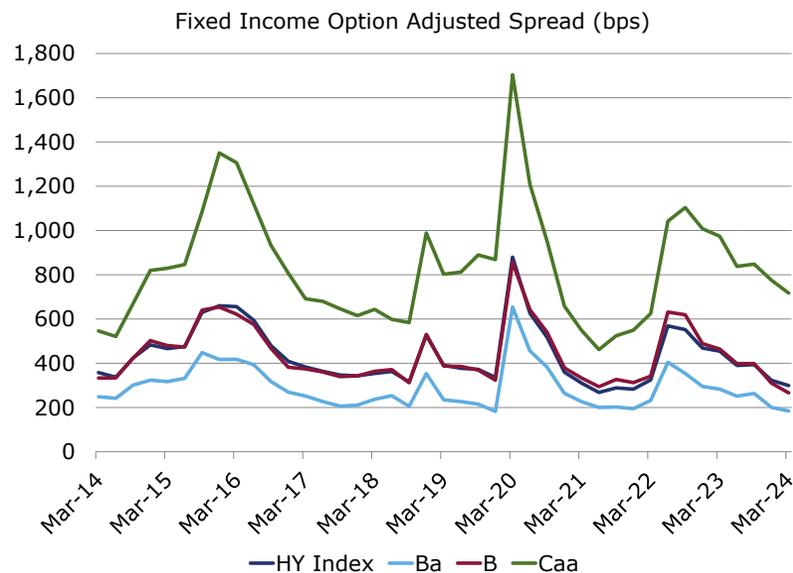
Short-term rates have turned positive in most larger countries; longer-term rates near 4.0% in the U.K. and Australia



Data Sources: Bloomberg

High Yield Bond Market

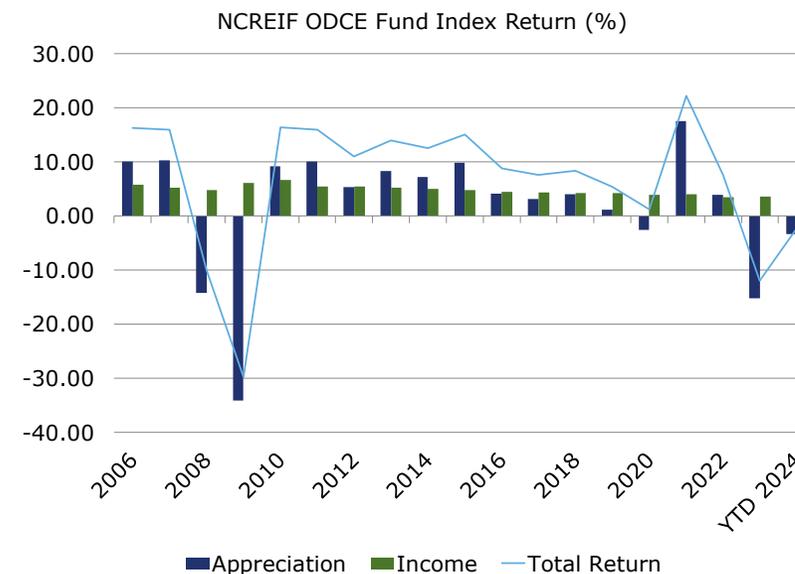
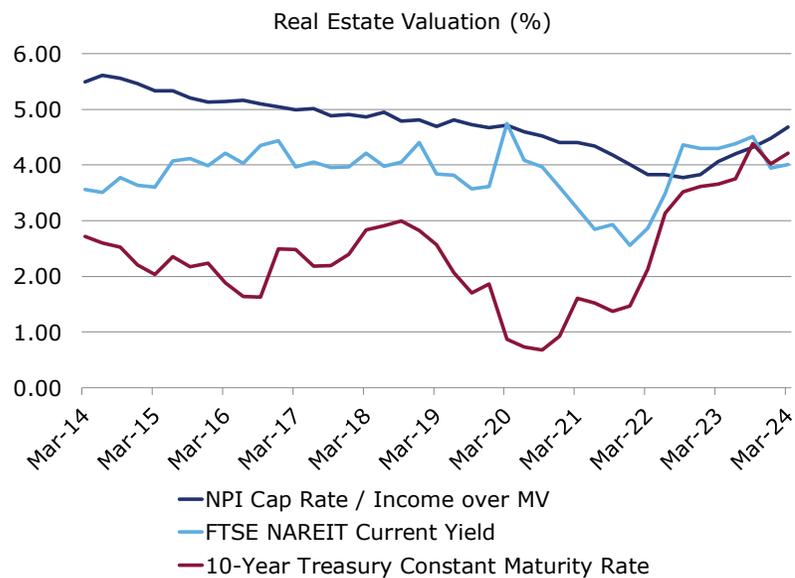
As of 3/31/2024		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		7.7	1.5	1.5	11.2	2.2	4.2	4.4
S&P LSTA Leveraged Loan		9.4	2.0	2.0	12.2	5.5	5.1	4.1
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	47.9%	6.5	1.1	1.1	9.1	1.8	4.6	4.8
B U.S. High Yield	38.4%	7.4	1.4	1.4	11.5	2.4	4.0	4.1
Caa U.S. High Yield	12.5%	11.9	2.1	2.1	16.6	2.4	3.1	3.9
Ca to D U.S. High Yield	1.2%	19.9	13.2	13.2	36.7	5.1	3.0	-2.7



Data Sources: Bloomberg

Real Assets

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-0.1	-0.1	0.5	-0.5	2.5	2.2
Bloomberg Commodity Index	2.2	2.2	-0.6	9.1	6.4	-1.6
Bloomberg Gold Index	7.4	7.4	12.1	8.5	10.2	4.8
Wilshire Global RESI Index	-0.1	-0.1	12.1	2.7	2.7	5.2
NCREIF ODCE Fund Index	-2.4	-2.4	-11.3	3.4	3.5	6.8
NCREIF Timberland Index	2.1	2.1	9.9	11.0	7.0	5.8
FTSE Global Core Infrastructure 50/50	1.8	1.8	4.1	3.7	4.6	6.4
Alerian Midstream Energy	10.2	10.2	24.6	20.5	10.5	4.8
Bitcoin	66.7	66.7	149.5	6.3	76.9	65.3



Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

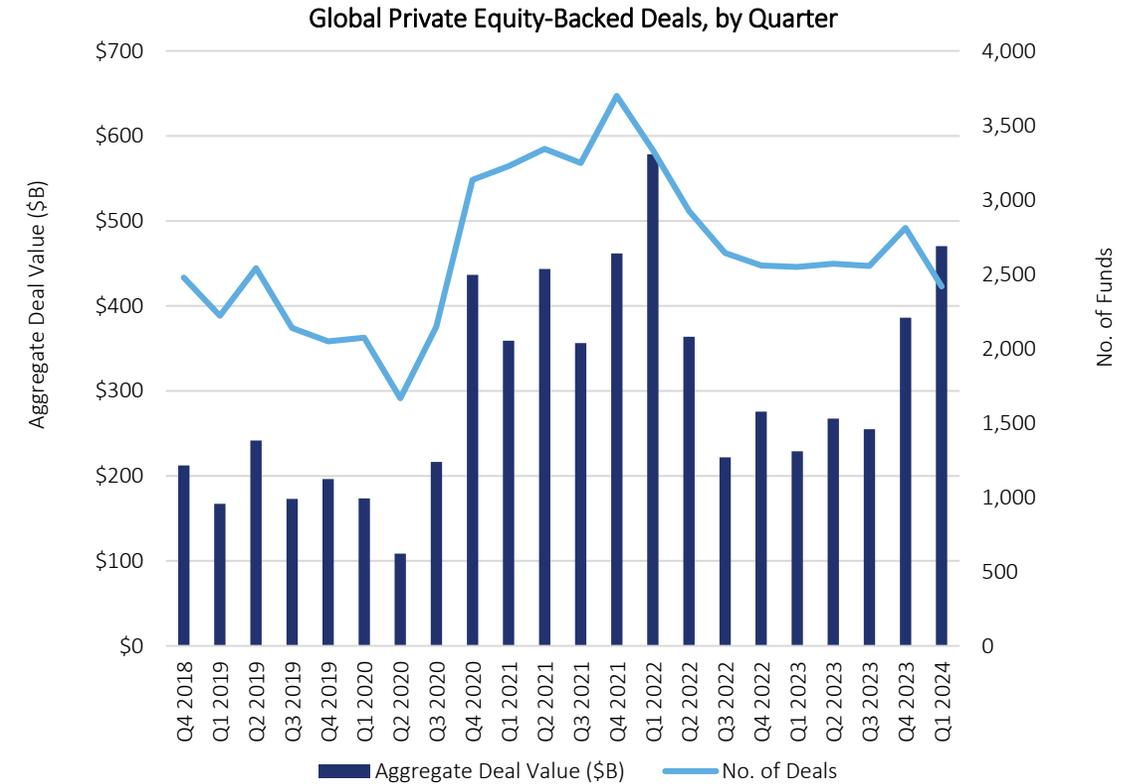
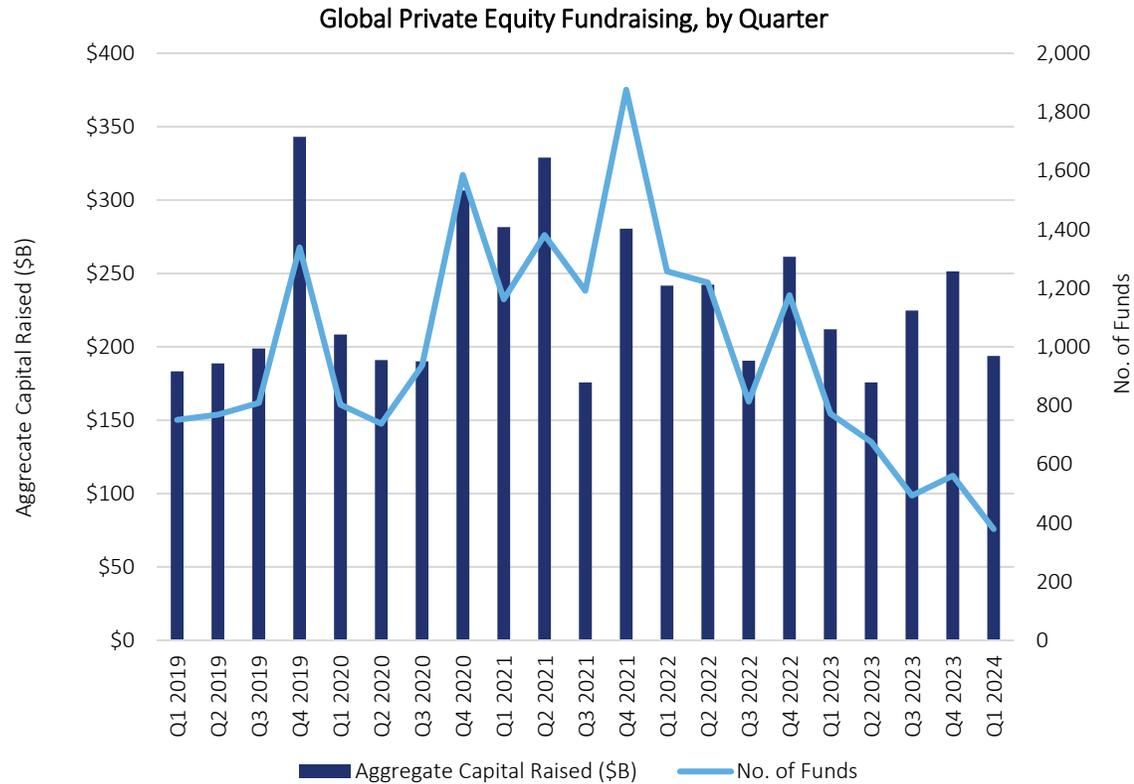
Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 3/24
2019	2020	2021	2022	2023	2024 YTD	
U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 26.1%	U.S. Equity 9.9%	U.S. Equity 14.6%
REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Developed 18.9%	Developed 5.9%	Developed 7.9%
Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 16.1%	Emrg Mrkts 2.4%	Commodities 7.2%
Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 13.4%	High Yield 1.5%	REITs 4.4%
High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	Emrg Mrkts 10.3%	T-Bills 1.3%	High Yield 4.2%
Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	Core Bond 5.5%	REITs 0.0%	Emrg Mrkts 2.6%
U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	T-Bills 5.1%	U.S. TIPS -0.1%	U.S. TIPS 2.5%
Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	U.S. TIPS 3.9%	Core Bond -0.8%	T-Bills 2.0%
T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Commodities -1.3%	Commodities -4.6%	Core Bond 0.4%

Data Sources: Bloomberg Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

Appendix: Private Market Trends

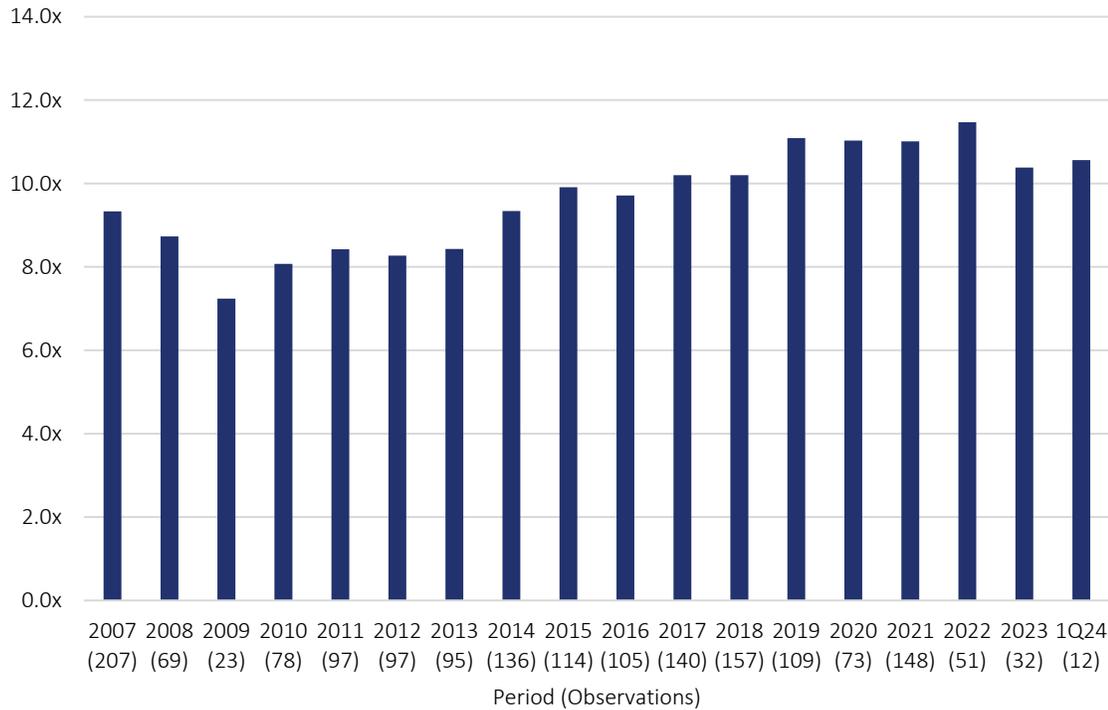
Private Equity – Fundraising & Investment Activity



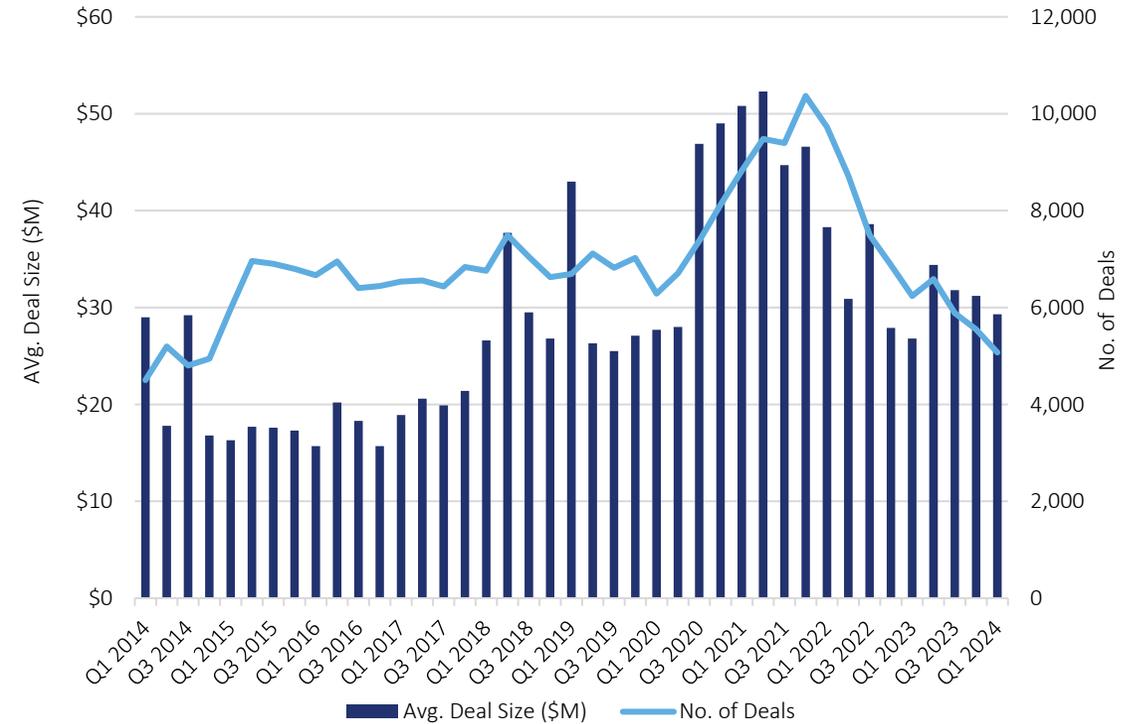
Source: Preqin as of April 17, 2024.

Private Equity – Pricing & Valuations

LBO Purchase Price Multiples



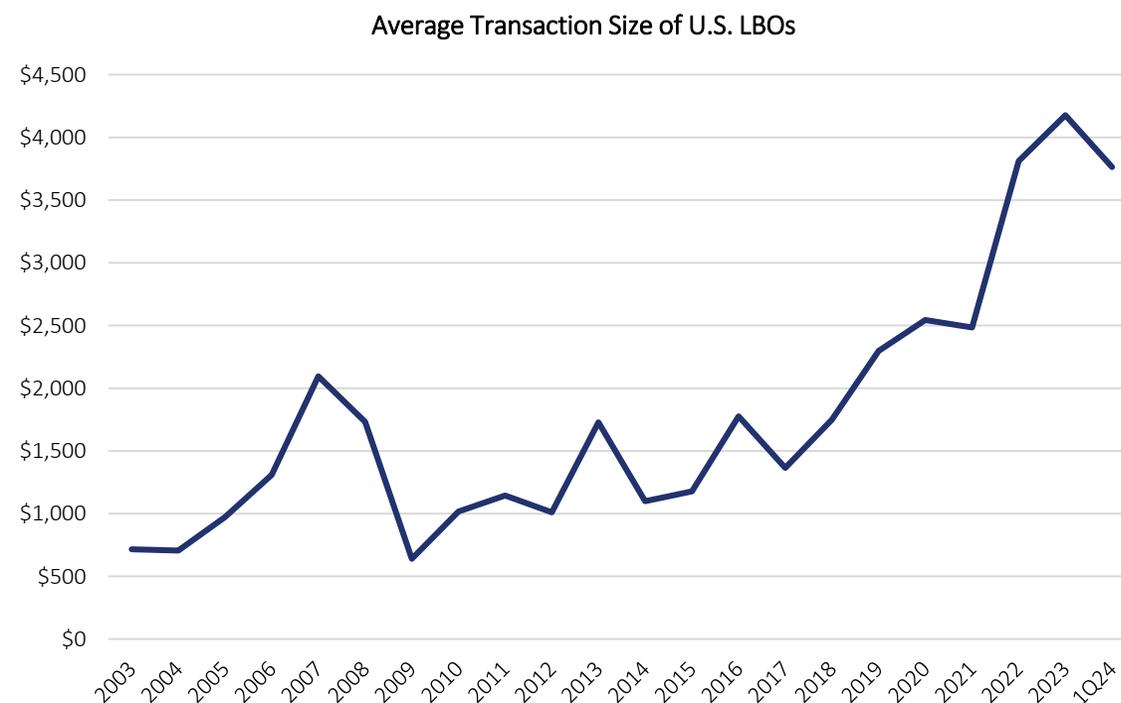
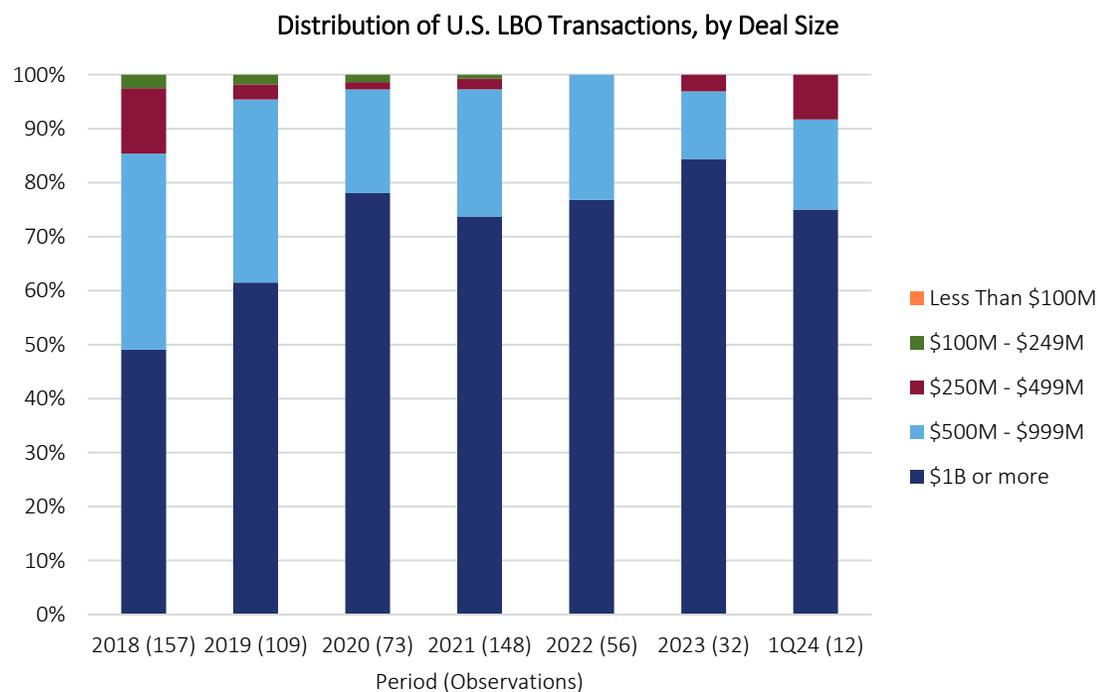
Global Venture Capital Deals, by Quarter



Source: S&P LCD Q1 2024 Report; Preqin as of April 17, 2024.

U.S. Investment Activity by Deal Size

- Deal volume has increased in Q1 2024 compared to average quarterly volume in 2023 though a majority of deals stay in the upper, large cap market.
- Average LBO transaction size decreased in Q1 2024 with an increase in the number of LBO transactions in the middle market.

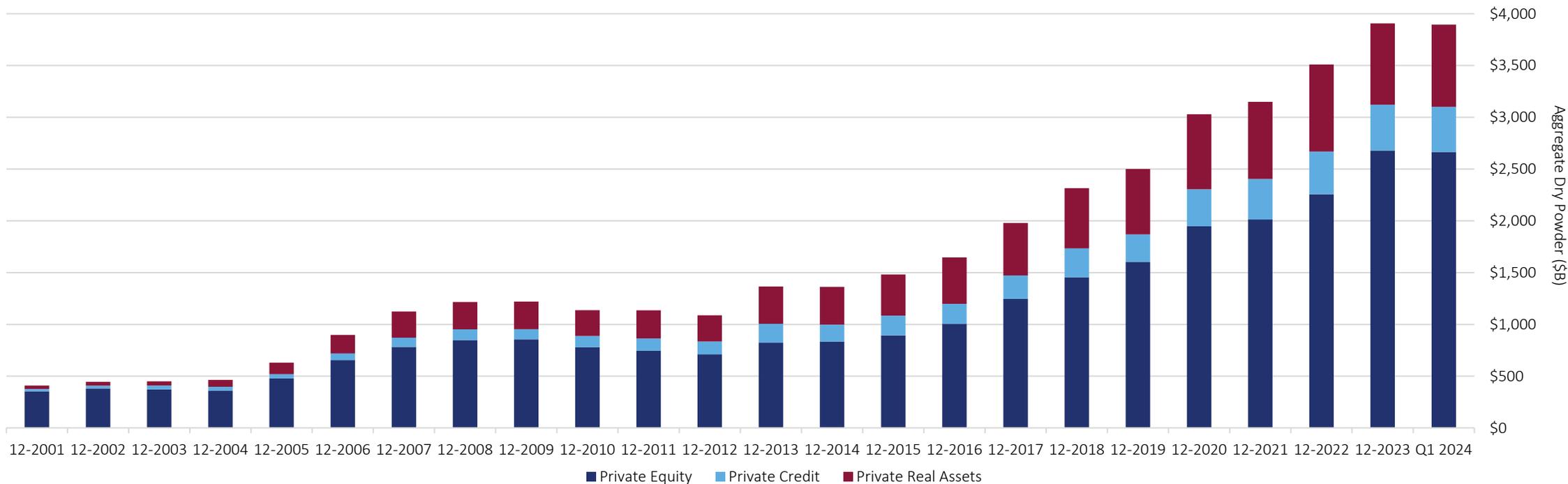


Source: S&P LCD Q1 2024 Report.

Private Capital Dry Powder

- Global private capital dry powder remains elevated, with all asset classes near record high levels of dry powder.
- Private equity comprises approximately 70% of total dry powder as of March 31, 2024, and continues to drive heightened levels of dry powder.

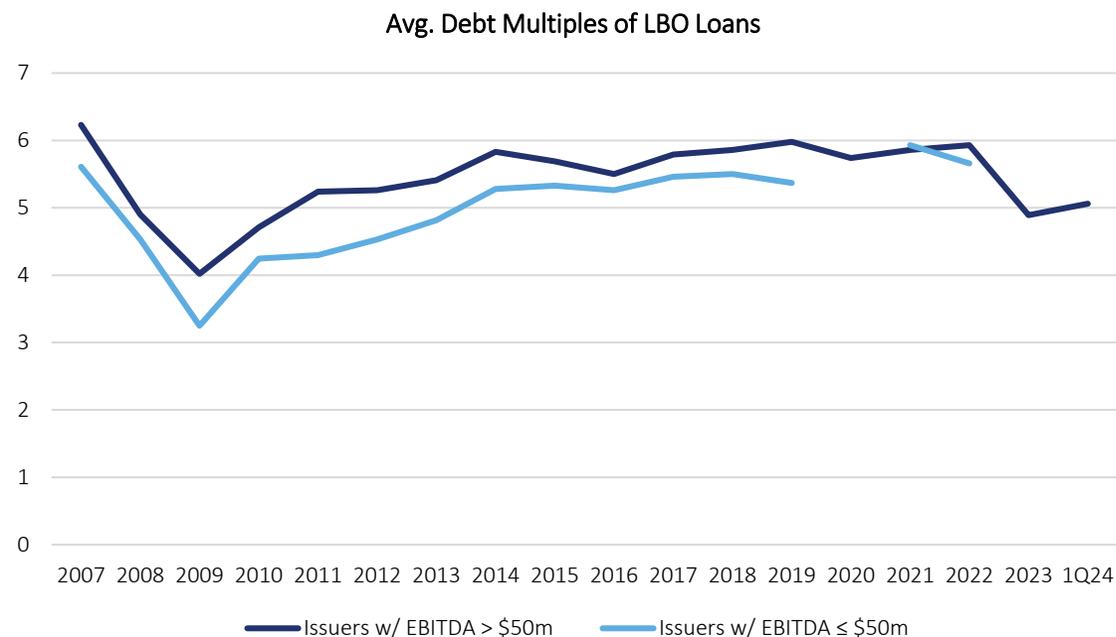
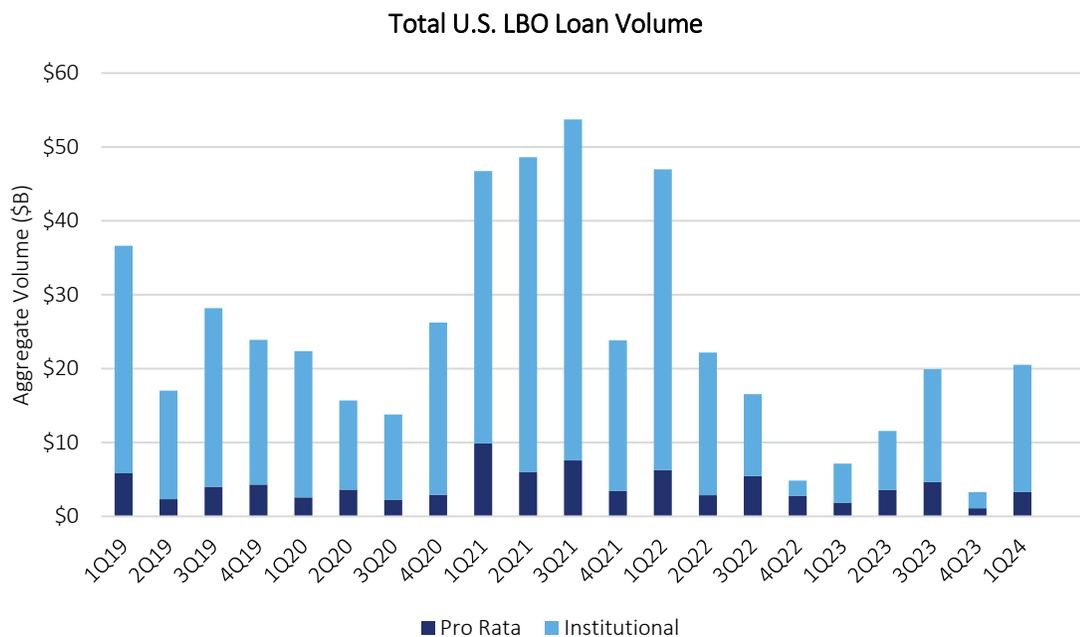
Global Private Capital Dry Powder, at Month



Source: Preqin as of April 17, 2024.

Private Equity – U.S. Debt Markets

- Q1 2024 saw ~\$20 billion in supporting loan issuance, rebounding to levels similar to Q3 2023.
- Debt multiples of sponsor-backed, large corporate loans stay approximately the same as 2023 at ~5.0x, but lower than recent years with debt multiples just under 6.0x.

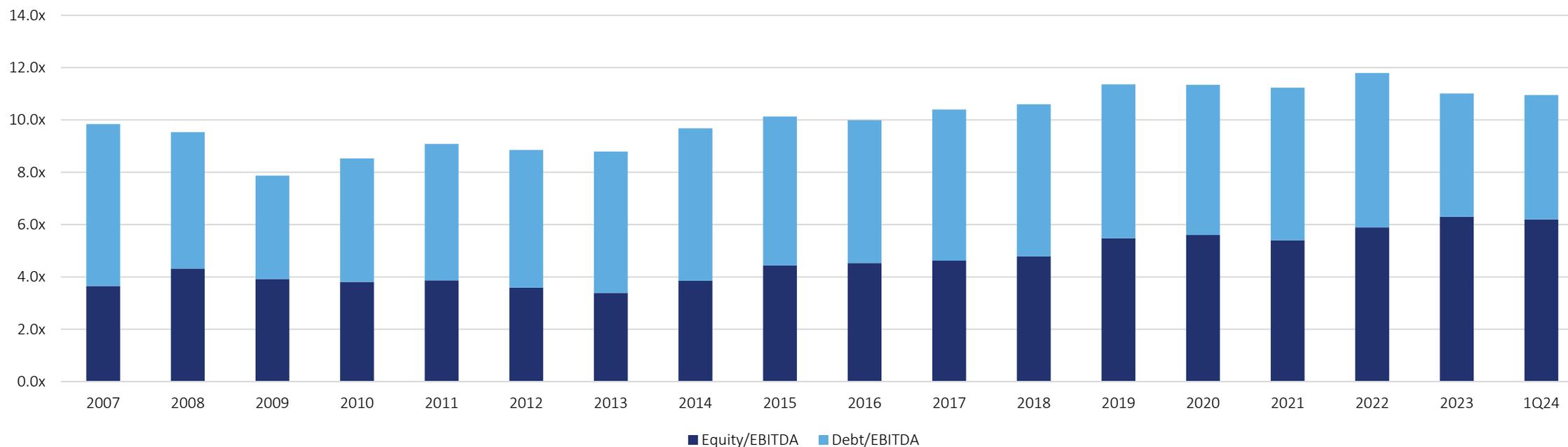


Source: S&P LCD Q1 2024 Report.

Private Equity – U.S. LBO Purchase Price Multiples

- Q1 2024 all in purchase price multiples are consistent with 2023 purchase price multiples, with equity continuing to contribute a majority of capital.
- Debt contributions in Q1 2024 are 43% of purchase price multiples.

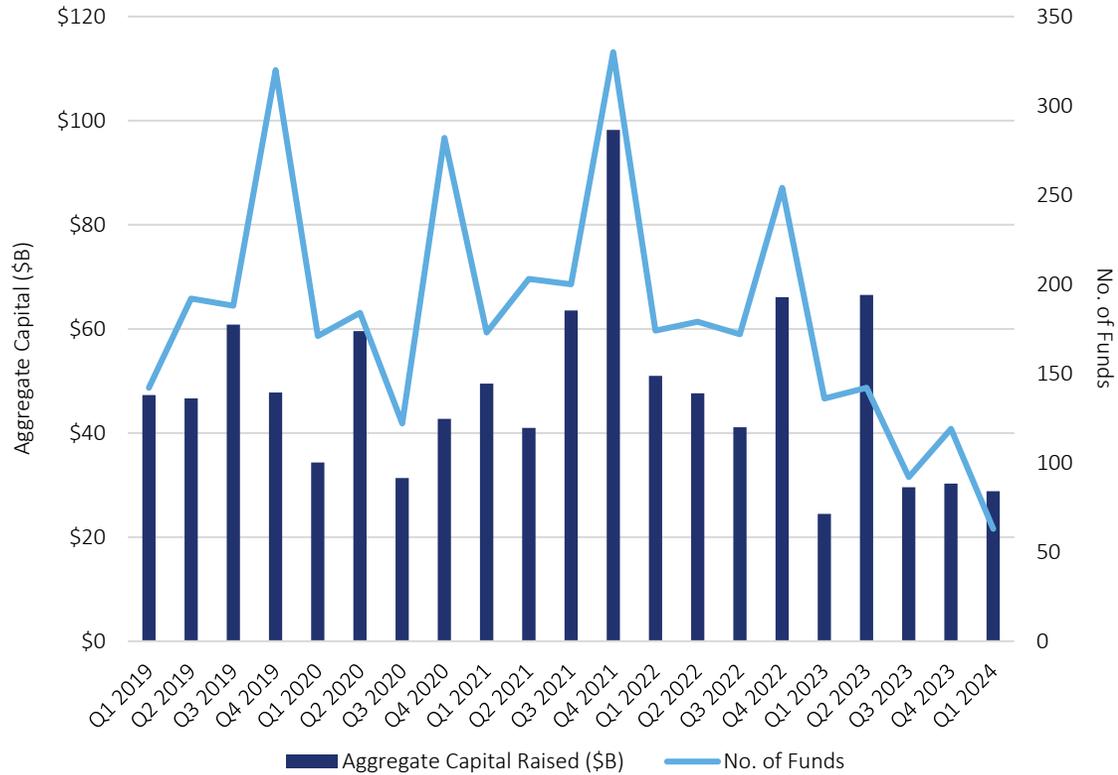
LBO Purchase Price Multiples



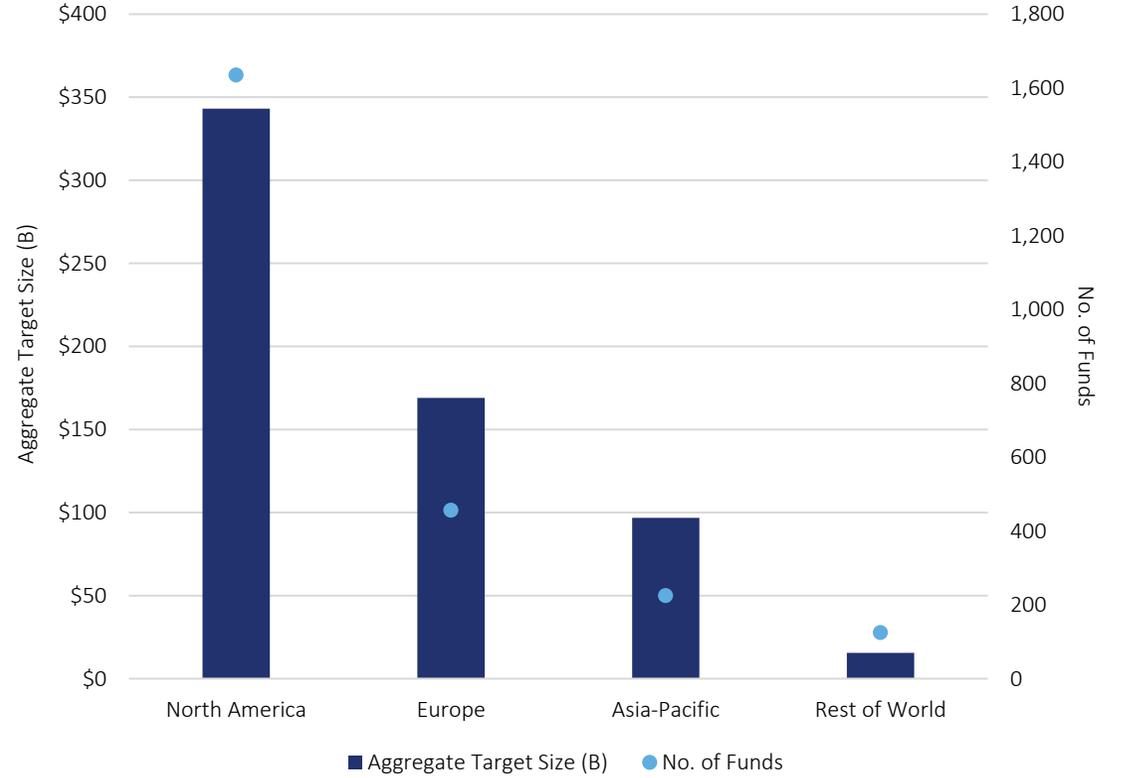
Source: S&P LCD Q1 2024 Report.

Private Real Assets – Real Estate Fundraising Activity

Global Real Estate Fundraising

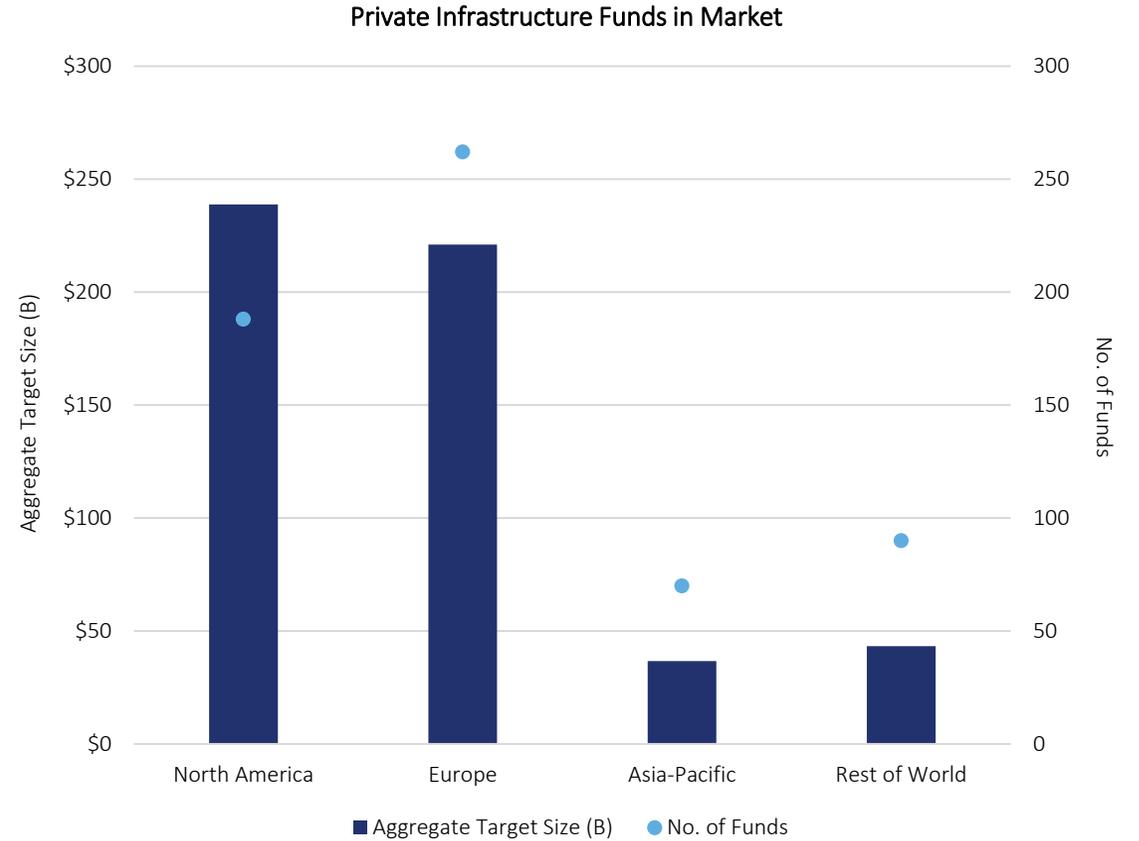
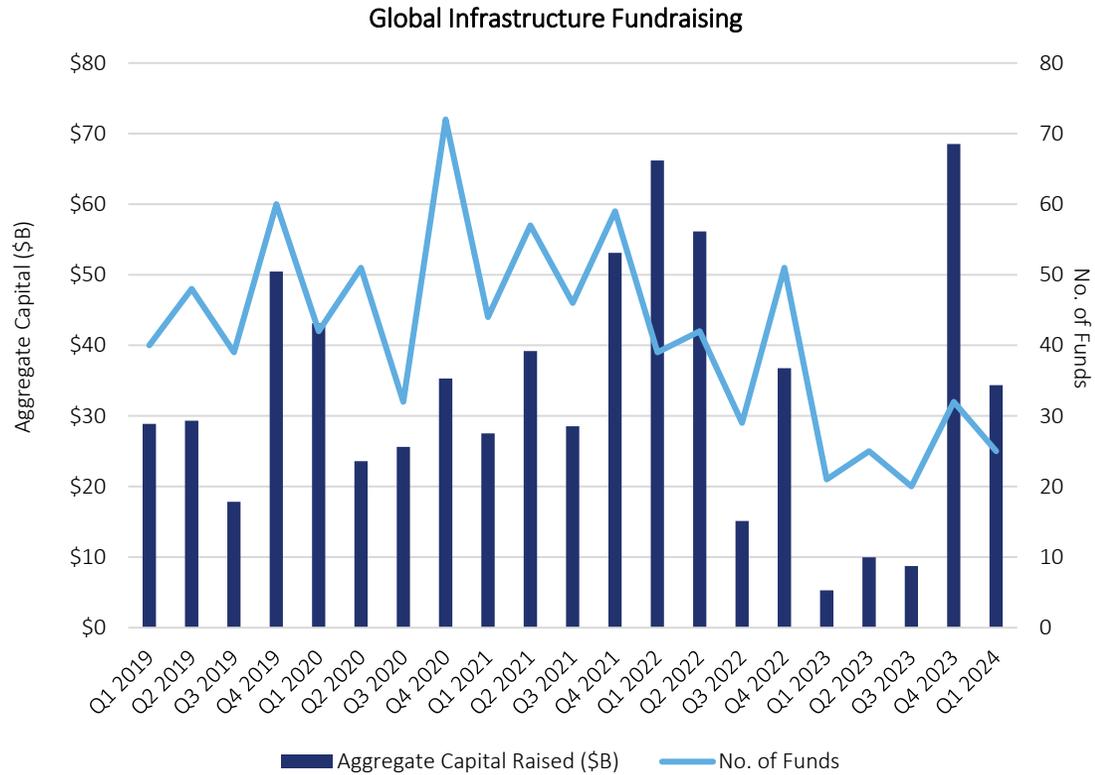


Private Real Estate Funds in Market



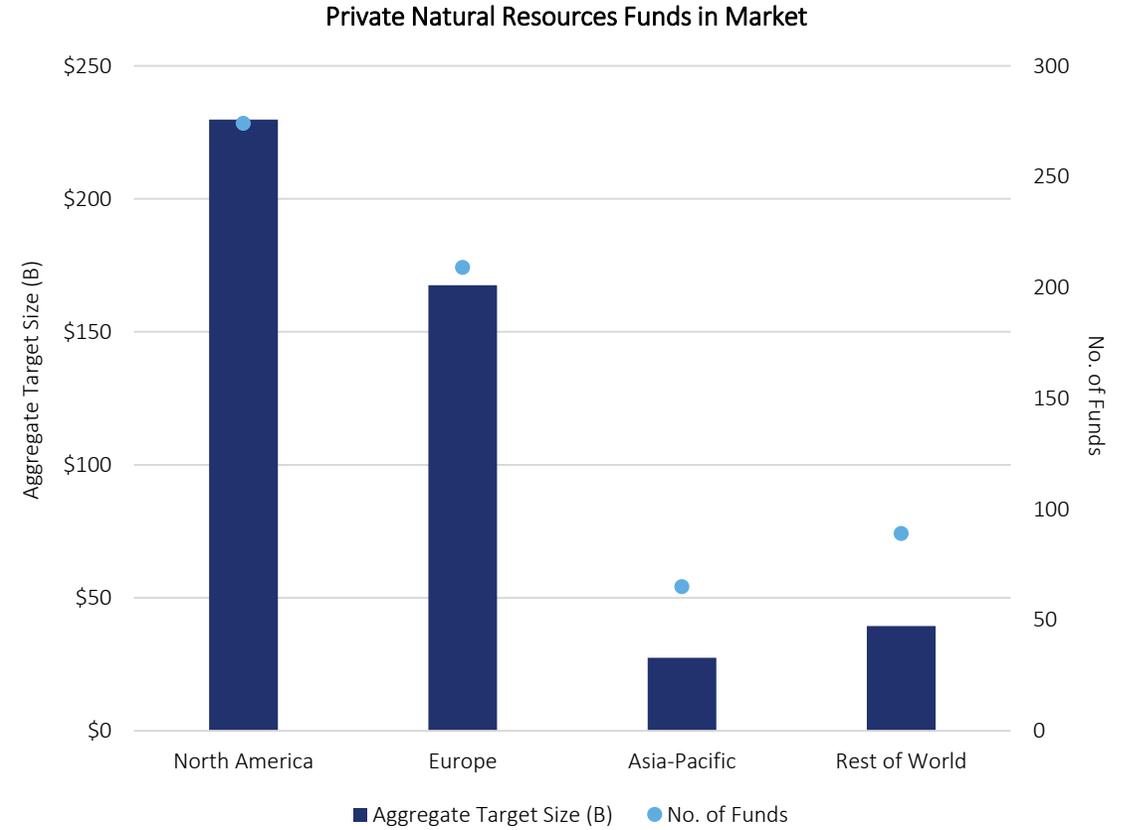
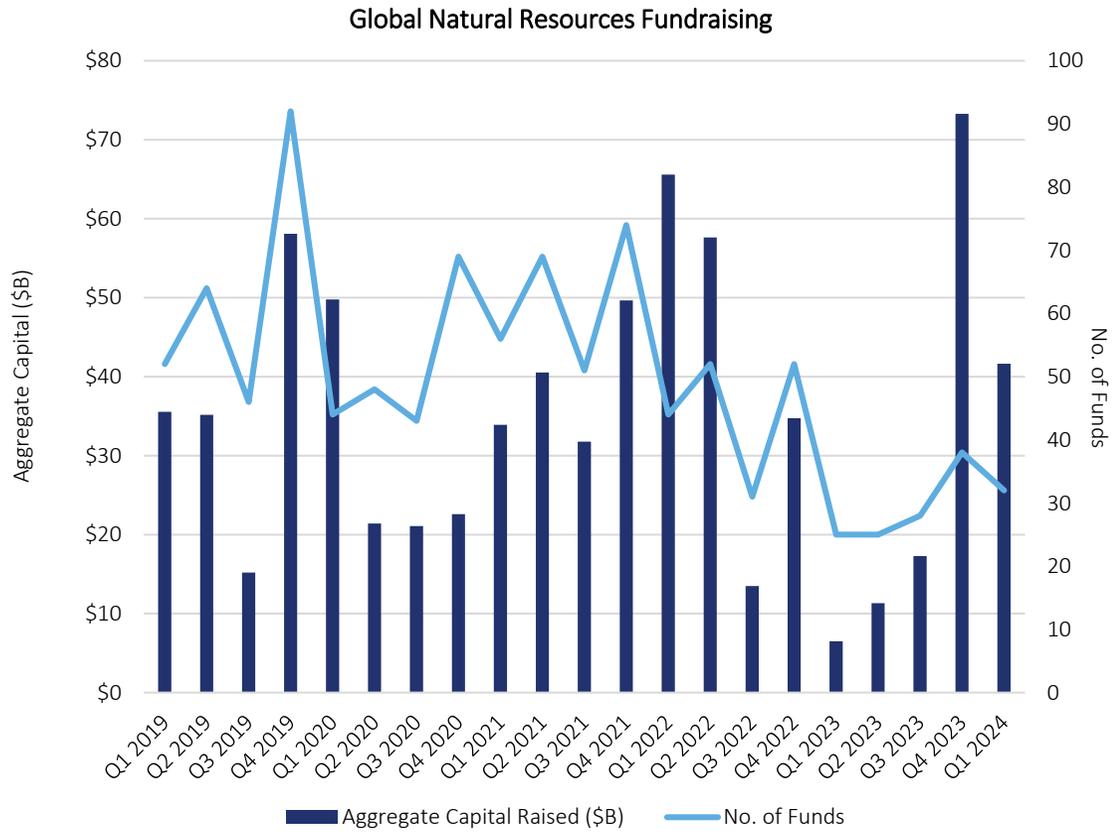
Source: Preqin as of April 17, 2024.

Private Real Assets – Infrastructure Fundraising



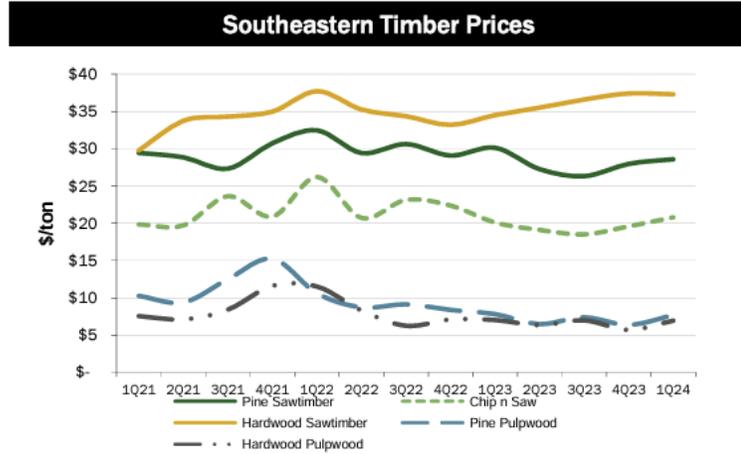
Source: Preqin as of April 17, 2024.

Private Real Assets – Natural Resources Fundraising

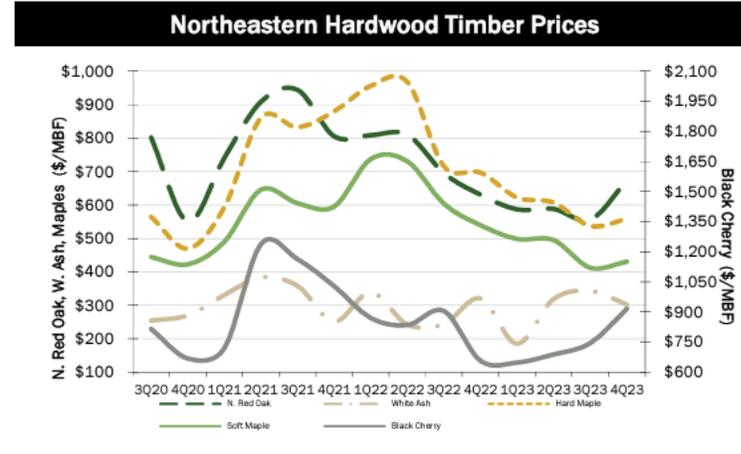


Source: Preqin as of April 17, 2024.

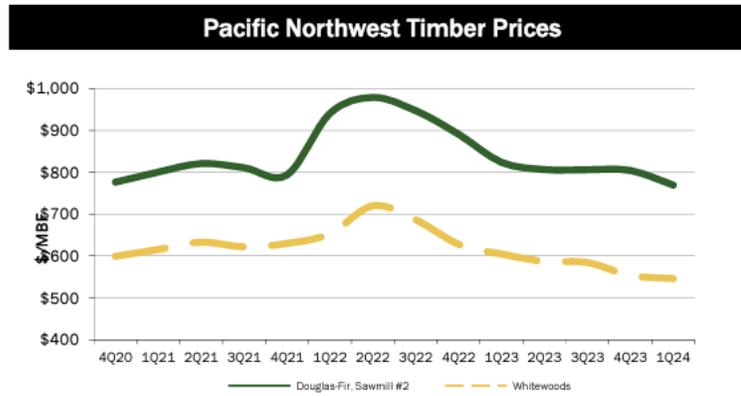
Timber Investments



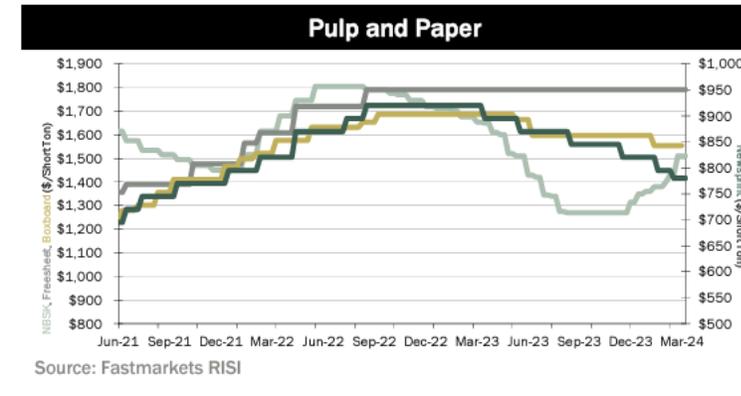
Source: Forest2Market®



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region



Source: Fastmarkets RISI - Log Lines®

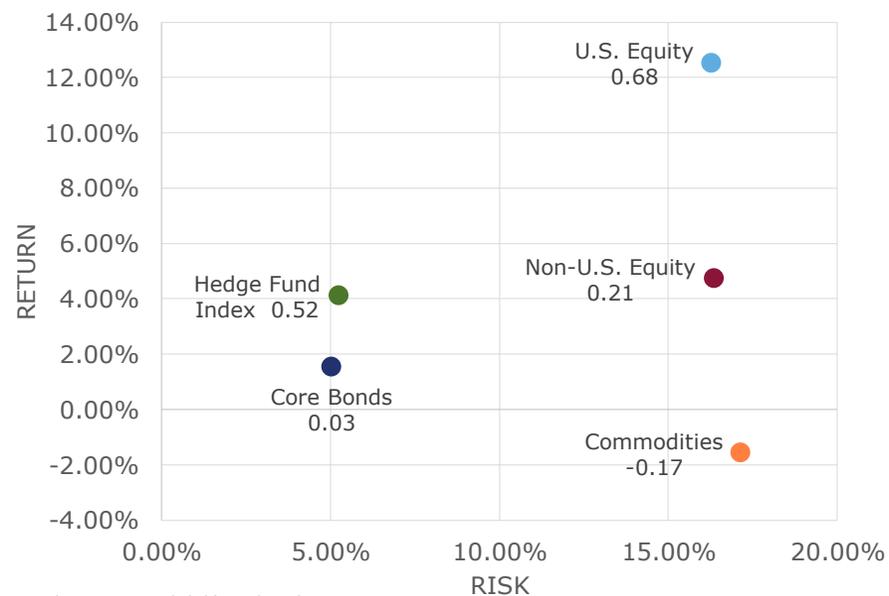


Source: Fastmarkets RISI

Hedge Fund Performance

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Credit Suisse Hedge Fund Index	3.5	3.5	9.4	5.2	6.0	4.1
Event Driven	2.5	2.5	10.6	3.5	5.4	2.8
Global Macro	2.7	2.7	5.1	6.4	7.2	4.8
Long/Short Equity	5.5	5.5	12.5	5.3	6.5	5.0
Multi-Strategy	2.8	2.8	9.8	5.6	5.8	5.0
FT Wilshire 5000	9.9	9.9	29.3	10.1	14.6	12.5
MSCI ACWI ex-US (\$G)	4.8	4.8	13.8	2.4	6.5	4.7
Bloomberg Aggregate	-0.8	-0.8	1.7	-2.5	0.4	1.5
Bloomberg Commodity Index	2.2	2.2	-0.6	9.1	6.4	-1.6

10-Year Risk / Return



Note: Sharpe Ratio is included for each market segment

Data Source: Bloomberg

DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

May 14, 2024

- Issue:** Ariel Investments
- Attachments:** None
- Discussion:** Ariel Investments is an ERF Global Equity manager with \$84 million currently under management for the Fund.
- After significant organizational change and product underperformance, Ariel was placed on watch in September 2023.
- Since the departure of lead portfolio manager Rupal J. Bhansali in August of 2023, Henry Mallari-D'Auria was appointed Chief Investment Officer of Global and Emerging Markets Equities. His primary goals have been to stabilize and improve investment performance. ERF Staff recommends extending the Ariel watch period for six months while we continue to closely monitor their progress.
- Staff recommends Ariel remain on watch for six months during which time we will continue to monitor the organization and performance. Staff has discussed this recommendation with Wilshire and we are in agreement regarding this course of action.
- Recommendation:** Suggested motion for approval is as follows: Move to approve extending Ariel Investments watch period for six months.

DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

May 14, 2024

Issue: Ativo Capital Management LLC

Attachments: None

Discussion: Ativo Capital Management LLC (Ativo) is an International Equity manager hired in 2018 with \$33M currently under management for ERF.

Ativo was placed on watch in Q3 2023 due to organizational and performance related concerns. Since that time, we have seen stabilization in both areas.

Staff recommends Ativo remain on watch for six months during which time Staff will continue to monitor the organization and performance. Staff has discussed this recommendation with Wilshire and we are in agreement regarding this course of action.

Recommendation: Suggested motion for approval is as follows: Move to approve extending the Ativo Capital Management LLC watch period for six months.

Northern Trust Global Securities Lending

Prepared for: **Employees' Retirement Fund of the City of Dallas**

Date: May 14th 2024

PRESENTED BY:

Enayet Mawla

Sr Relationship Manager
Securities Lending
Email: em125@ntrs.com
Tel: 312-444-3170

Kathy Stevenson

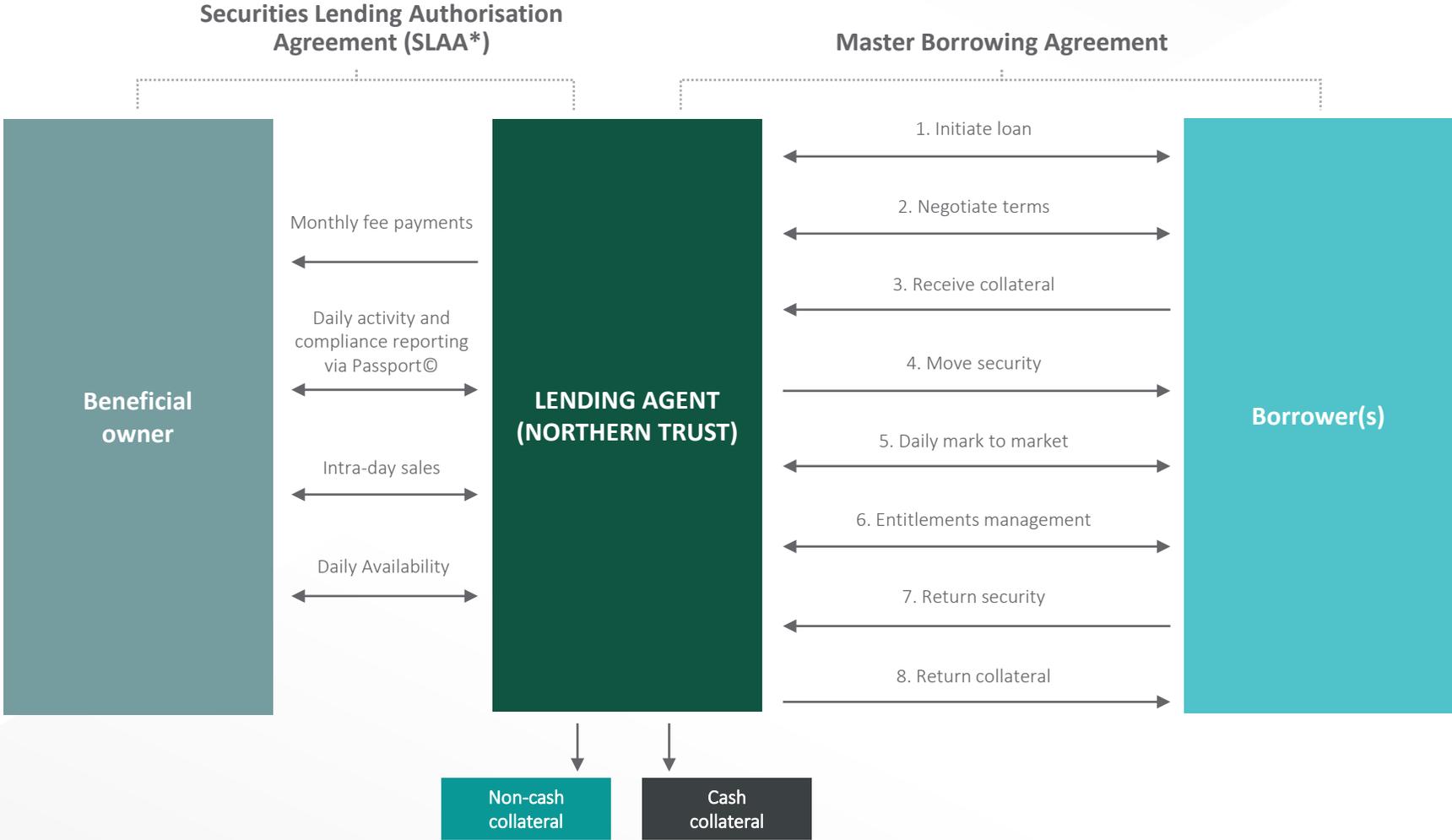
Client Executive
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Tel: 312-557-0124

Jonathan Klocke

Client Service Manager
Public Funds and Taft Hartley
Email: jak12@ntrs.com
Tel: 312-557-2944

Securities Lending transaction process

The life cycle of a loan



*Sample agreements available upon request

Northern Trust's Securities Lending Program (USD)

Northern Trust has been a global industry leader in securities lending for almost 40 years. Our size, scale and technological innovation generates material value for our clients.

\$158B

ON LOAN WITH
10.61% UTILISATION



\$165B

COLLATERAL HELD
23% CASH AND 77% NON-CASH COLLATERAL



35

LENDING MARKETS
INCLUDING CSDS



438

PARTICIPATING CLIENTS FROM
31 COUNTRIES



67

APPROVED UNIVERSAL BANKS
AND BROKER DEALERS



Aa2 / AA- / AA

TOP TIER CREDIT RATINGS



Top Ten Parent Borrowers (by Loan Volume):

BNP Paribas

Citigroup

Bank of America

Societe Generale

J.P. Morgan Chase

Royal Bank of Canada

UBS AG

National Bank of
Canada

Credit Agricole

Barclays Plc

\$1.49tn

OF LENDABLE ASSETS



A single global platform,
with an integrated forecast engine
to enhance returns and a robust risk
management with independent risk
committees

Securities Lending Promotes Efficiency and Liquidity in Financial Markets



Promotes market liquidity!

- Allows price discovery and the arbitrage of pricing inefficiencies
- Supports the development of the capital markets by facilitating various investment strategies
- Important part of risk and liquidity management
- Integral component of developed securities market for investors



Who lends securities?

- Long-term, institutional investors of assets lend securities within their portfolio strategy
- Asset owners
- Asset managers



Why lend securities?

- Enhance portfolio returns
- Offset or eliminate costs of custody
- Benefit from well-managed risks



Who borrows securities?

- Investment banks
- Prime brokers
- Local brokers
- Other intermediaries
- Investment funds
- Prop traders
- Market makers



Why borrow securities?

- Hedging
- Directional trading
- Arbitrage strategies
- Fulfilling settlement obligations
- Financing trades

Securities Lending



CASH COLLATERAL REINVESTMENT

- Inflation rates are slowing, albeit not quickly, or without some fluctuations along the way. Major central banks are holding rates steady, but signaling cuts to begin as early as mid-year if incoming economic data supports the move
- US interest rates firmly in economically restrictive territory
- Strong employment statistics continue to create an economic backdrop in which wage and price inflation are unlikely to decline quickly
- Central banks are weighing the risks of cutting too soon and allowing inflation to reaccelerate; versus the concern of keeping rates high too long and causing a recession
- Key uncertainty for the short duration markets is to predict the timing of the cuts, as well as the pace and cadence of the cycle.
- The longer-term question remains what the 'neutral' rate will be once the Fed stops cutting. Current Summary of Economic Projections (SEP) continue to indicate around 2-2.5% but the debate continues regarding whether it will be higher



EQUITY DEMAND

- Equity valuations posted gains in March for the fifth consecutive month, seeing global stocks record their longest positive monthly streak since 2021. There were broad-based returns across regions and sectors closing out a strong first quarter for global stocks. The MSCI World closed up for the month 2.5% and 8.5% for the quarter.
- Overall lending volumes increased for the month, primarily supported by the equity market appreciation and seasonal balance increases in APAC and EMEA. Specials activity did remain broadly challenged, with a refinancing theme on some key US hard to borrow names. There was some positive signs of returning engagement from fundamentals with selected shorting supporting revenues, in particular EMEA.
- Quarter-end binding constraints once again saw borrower focus switch to balance sheet management and capital usage over the regulatory period. Volume growth around this time can be challenged more broadly as borrowers look to optimize their books and apply additional caution to new flows.



FIXED INCOME DEMAND

- United States: US policymakers voted unanimously to maintain the 5.25-5.50% interest rate range this month, on hold for a fifth consecutive meeting. Repo rates and lending rebates tick higher of the quarter-end Easter holiday.
- United Kingdom: The Bank of England's Monetary Policy Committee (MPC) left rates unchanged at a 16-year high of 5.25% this month. No significant change in borrower demand for gilts or credit issuance.
- Europe: The European Central Bank maintained its benchmark deposit rate at 4% during its meeting this month. German bunds remain the asset most sought in financing activity.
- Emerging Markets: Uncertainty around the timing of Fed rate cuts and policymaker guidance of a shallower easing cycle is weighing on sentiment for EM assets. EM assets sought on liquidity and geopolitical risk.

Managing Risk

Risk management is instrumental to our program

BORROWER

Borrower defaults and collateral is not sufficient to cover

Mitigating factors:

- Credit review of borrowers
- Over-collateralization / Daily marking
- Indemnification
- Risk Analysis tools



TRADE SETTLEMENT

Fund sells securities and borrower doesn't return in time for trade to settle

Mitigating factors:

- Timely communication
- Automated reallocations
- Trade settlement protection



INTEREST RATE

Loan rebate rate exceeds earnings on cash collateral investments

Mitigating factors:

- Weekly gap analysis
- Shared risk
- Stress testing of portfolio



CASH COLLATERAL REINVESTMENT

Cash collateral investment becomes impaired or decreases value

Mitigating factors:

- Client approved guidelines
- Dedicated team of fixed income research analysts
- Daily automated compliance



Borrower Risk Management – Approval Process

Our borrower selections follow stringent approval procedures and financial viability standards



FINANCIAL RESPONSIBILITY AND COMPLIANCE

- Each borrower and parent borrower must provide audited financial statements
- Borrowers must be financially sound and in compliance with regulatory capital requirements
- We also focus on condition and creditworthiness of the borrower's parent organization



LIMIT SETTING PROCESS

- Established framework to set borrower credit limits to reduce concentration risk via three tests:
- Credit Exposure relative to the borrower's capital
- Size of our exposure to the borrower relative to their total borrowing and to Northern Trust's total lending program



PERFORMANCE

- Each borrower's operating and trading performance is reviewed on an on-going basis
- Each borrower's level and distribution of loans outstanding is continuously monitored
- Automated systems allow in-depth monitoring of credit exposure to each borrower to ensure that credit exposures are maintained within limits



RATINGS

- Independent public debt ratings are available on all of our parent borrowers
- Vast majority of parent borrowers have long-term credit ratings of A or better and short-term ratings of A-1 or better from at least one NRSRO

Overall Collateral Management

Northern Trust accepts both cash and non-cash collateral.

Loans are initially collateralized according to market convention at 102%, 105% or higher

- All loans are marked to market daily
- Collateral maintenance margins may vary by collateral type or market events

Variety of cash collateral options available:

- Daily monitoring of portfolio reinvestment guidelines using Blackrock Solutions' Aladdin® software
- Stringent management of interest rate sensitivity

Standard collateralization:

- Fixed income loan versus cash, fixed income or equity collateral
- Equity loans versus cash, fixed income or equity collateral



Non-cash Collateral

- Custom collateral options
- Bilateral and tri-party arrangements of high grade collateral may include:
 - *OECD Government and Agency Securities*
 - *Equities*
 - *Supranationals*
 - *Corporate Bonds*
 - *ETFs*



Cash Collateral

- Custom collateral options
- Multiple currencies
 - *USD*
 - *EUR*
 - *GBP*
 - *AUD*
 - *JPY*

Reinvestment Risk Management



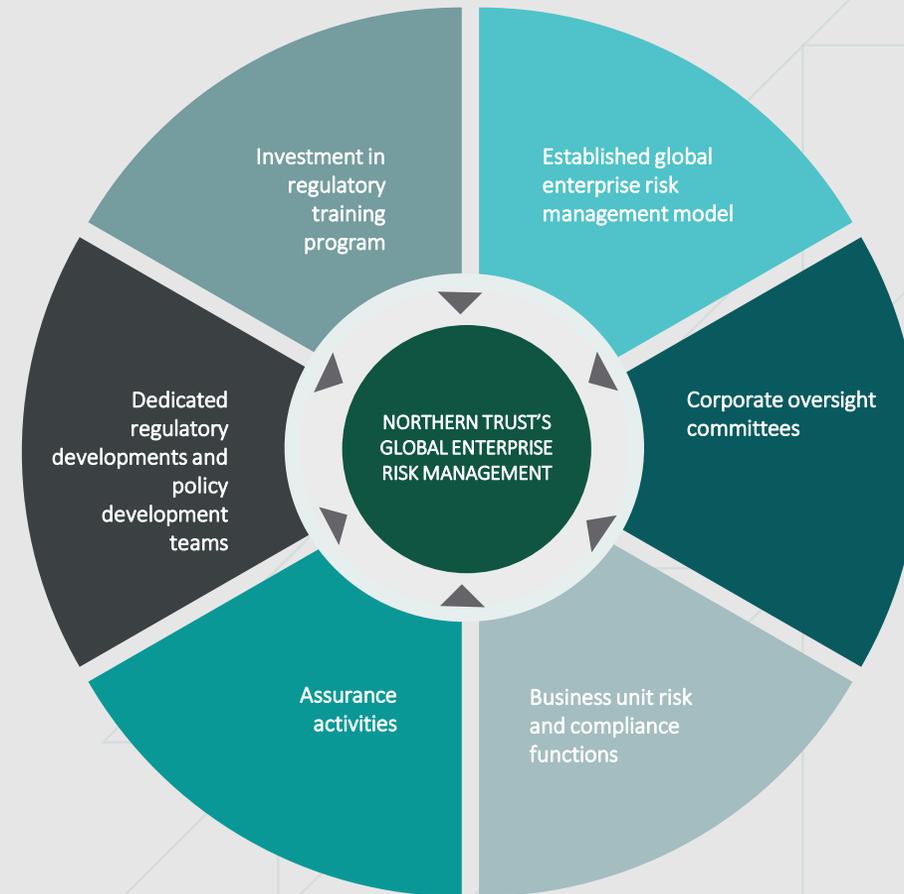
Cash Collateral Reinvestment Risk Management

- Risks surrounding collateral for loans are minimized by robust collateral/loan exposure modeling, strict collateral requirements and reinvestment guidelines, daily mark-to-market practices, and cash reinvestment in pre-approved money market instruments
- On a quarterly basis, the Northern Trust Asset Management (AM) Investment Risk team conducts various stress tests on the securities lending cash collateral reinvestment portfolios. More frequent ad-hoc testing is done if certain market conditions are triggered.
 - 5 individual stress tests are applied to the portfolios to assist risk analysts in assessing the magnitude of market stress necessary for a portfolio's market-based Net Asset Value (NAV) to reach 99.50:
 - Interest rate increase
 - Increase in shareholder redemptions
 - Default of portfolio issuer(s)
 - Downgrade of portfolio issuer(s)
 - Widening of credit spreads
 - Scenario analyses, which combine selected individual stress tests, are formulated and applied to observe potential impacts to a fund's market-based NAV
 - The analysis is summarized and an investment risk analyst produces a write-up with detailed observations and recommendations
 - The stress test analysis is presented to the Securities Lending Collateral Committee

Compliance Monitoring

Compliance is integrated into our investment process

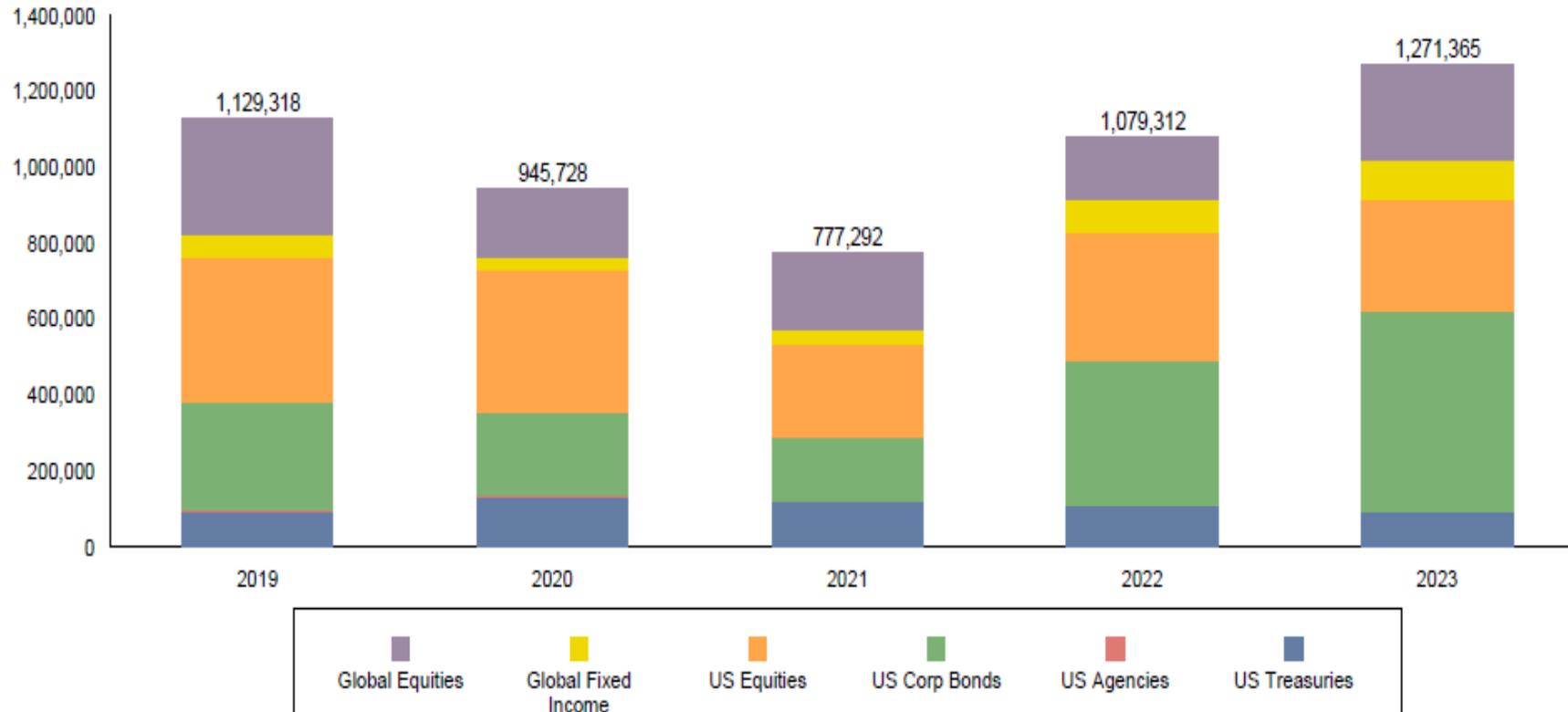
- Independent oversight from portfolio management is provided through an automated compliance system and a formal peer review process
- The Blackrock Aladdin® trading system validates the appropriateness of each security purchase against the guidelines before the investment is considered
- Aladdin system programming also subject to compliance reviews



Summary of Lending Program

Employees' Retirement Fund of the City of Dallas Net Earnings for 5 Years

Net Earnings



\$6,502,303

GROSS REVENUE

\$5,203,015

NET REVENUE

USD Cash, US
Treasuries &
Agencies, OECD Debt
and Equities

COLLATERAL ACCEPTANCE

Top 10 Securities By Earnings Summary - 2023

TOP 10 SECURITIES AND EARNINGS SUMMARY

From 01 Jan 2023 to 29 Dec 2023

Rank	Security ID	Security Name	Net Earnings	Total Spread
1	29446M102	ADR EQUINOR ASA SPONSORED ADR	29,771.13	266.80
2	464288513	MFC ISHARES IBOXX \$ HIGH YIELD CORPORATE	28,957.73	143.87
3	83001AAC6	PVTPL SIX FLAGS ENTMT CORP NEW SR NT 5.	22,870.04	945.70
4	559080106	#REOG/MAGELLAN MERGER ONEOK 0002684779 0	18,664.70	119.13
5	594972AF8	MICROSTRATEGY INC 6.125% DUE 06-15-2028	14,982.23	1,146.34
6	13123XBF8	PVTPL CALLON PETROLEUM CO 7.5%	14,747.42	161.91
7	58502BAE6	MEDNAX INC 5.375% DUE 02-15-2030	13,225.86	512.76
8	143658BS0	CARNIVAL CORP 10.5% DUE 06-01-2030	12,685.14	376.62
9	4732495	TELENOR ASA ORD NOK6	12,528.00	788.86
10	91282CDY4	UNITED STATES TREAS NTS 1.875% DUE	11,828.99	13.74
Total top 10			180,261.24	117.52
Total Estimated Earnings From 01 Jan 2023 To 29 Dec 2023			1,271,365.36	37.86

The top 10 securities represent 14.18% of the total earnings

Revenue Comparison: Jul – Dec 2023 VS Jan – Jun 2023

Security Type	Market Value (USD)		% on Loan	Gross Earnings (USD)	On Loan Spread (bp)	Gross BP Return (bp) *	Net Earnings (USD)
	Avg. on Loan	Avg. Available					
From July, 2023 to December, 2023							
US Treasuries	84,101,386	101,696,415	82.7%	78,308	18.2	15.1	62,649
US Agencies	43,210	7,803,201	0.6%	81	36.5	0.2	65
US Corp Bonds	142,778,988	391,344,540	36.5%	335,482	46.0	16.8	268,457
US Equities	117,013,039	739,944,850	15.8%	188,954	31.6	5.0	151,196
Global Fixed Income	25,151,220	116,347,104	21.6%	66,766	51.9	11.2	53,422
Global Equities	69,032,852	508,841,835	13.6%	166,025	47.1	6.4	132,846
Total	438,120,695	1,865,977,946	23.5%	835,616	37.3	8.8	668,634
From January, 2023 to June, 2023							
US Treasuries	54,002,166	93,334,657	57.9%	39,075	14.4	8.3	31,262
US Agencies	0	4,634,926	0.0%	0	0.0	0.0	0
US Corp Bonds	150,255,372	395,249,931	38.0%	322,244	42.7	16.2	257,877
US Equities	109,274,717	749,961,402	14.6%	184,819	33.6	4.9	147,895
Global Fixed Income	22,959,478	112,057,014	20.5%	62,016	53.7	11.0	49,623
Global Equities	37,337,260	548,271,144	6.8%	145,075	77.3	5.3	116,074
Total	373,828,993	1,903,509,073	19.6%	753,229	40.1	7.9	602,731
Variance							
US Treasuries	30,099,220	8,361,758	24.8%	39,233	3.8	6.7	31,388
US Agencies	43,210	3,168,275	0.6%	81	36.5	0.2	65
US Corp Bonds	-7,476,385	-3,905,391	-1.5%	13,238	3.3	0.6	10,580
US Equities	7,738,322	-10,016,551	1.2%	4,135	-2.0	0.1	3,301
Global Fixed Income	2,191,742	4,290,091	1.1%	4,750	-1.8	0.2	3,800
Global Equities	31,695,592	-39,429,310	6.8%	20,950	-30.2	1.1	16,771
Total	64,291,702	-37,531,127	3.8%	82,387	-2.8	0.9	65,903

Revenue Breakout - Q1 2024

Security Type	Market Value (USD)		% on	Gross	On Loan	Gross BP	Net
	Avg. on Loan	Avg. Available	Loan	Earnings (USD)	Spread (bp)	Return (bp) *	Earnings (USD)
US Treasuries	119,115,208	135,774,450	87.7%	53,310	17.7	15.5	42,650
US Agencies	139,662	11,795,056	1.2%	106	30.1	0.4	85
US Corp Bonds	143,340,585	412,709,421	34.7%	151,260	41.7	14.5	121,041
US Equities	87,648,330	700,855,627	12.5%	68,433	30.9	3.9	54,757
Global Fixed Income	26,561,919	124,397,364	21.4%	30,775	45.8	9.8	24,625
Global Equities	64,361,727	512,740,127	12.6%	58,486	35.9	4.5	46,799
Total	441,167,432	1,898,272,045	23.2%	362,371	32.5	7.6	289,957

Investment Profile: Core STIF Cash Collateral Fund

December 31, 2023

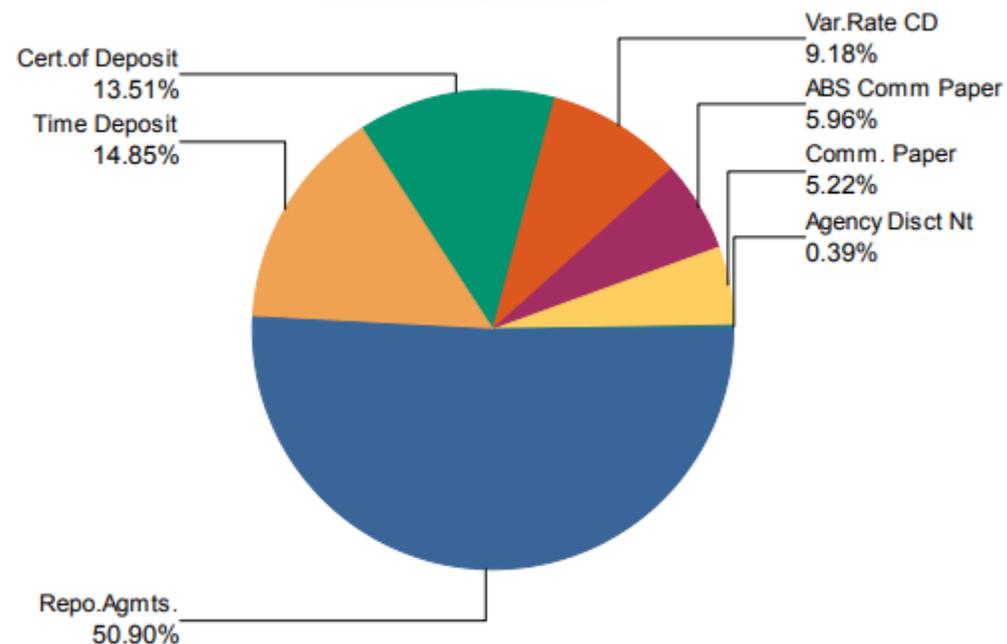
CORECOLL - NT Coll SL Core S/T Inv Fund - USD

Characteristics			
Total Book Value (in USD)	12,026,576,023		
Weighted Average Maturity (Interest Reset Date)	24 Days		
Weighted Average Maturity (Maturity Date)	73 Days		
Average Equivalent Quality Rating			
Total Number of Issues	84		
Quality Distribution		Percentage	
A1+ (SHORT TERM)	63.48%		
A1 (SHORT TERM)	14.19%		
Other	22.33%		
Maturity Breakdown Distribution		Interest Reset	Maturity Date
Overnight	77.68%	22.31%	
16 - 30 Days	0.67%	2.46%	
31 - 60 Days	4.43%	18.47%	
61 - 97 Days	6.96%	41.14%	
98 - 180 Days	8.18%	11.06%	
181 - 270 Days	2.08%	4.15%	
271 - 366 Days	0.00%	0.42%	

CORECOLL - NT Coll SL Core S/T Inv Fund - USD

Industry/Sector Distribution	Percentage
Banking Ind.	27.07%
Broker/Dealer	44.25%
Finance & Ins	5.96%
Govt Agencies	0.39%
Other	22.33%

Cash Collateral Asset Class Breakdown



NOTE: This information was created using the best unaudited data available to us and may not be completely reliable, accurate, or timely. Data is prepared on a settled basis, which may differ from traded basis data on the Cash Collateral Holdings report. "Traded Basis" reflects pending trades.

Transparency and Information Delivery

Customized reports to help monitor your securities lending activity.

Daily reporting

- Executive summary
- Securities loaned – detail
- Borrower utilization – summary by borrower
- Account utilization – loan detail, summary by account
- Collateral – by security type, country and detail holdings

Monthly reporting

- Performance scorecard:
 - Account earnings and performance
 - Security level detail
 - Client by asset type and account earnings
 - Date range comparison
- Historical statistics graph
- Earnings statement – summary and detail

PERFORMANCE SCORECARD: LENDING & INVESTMENT BREAKDOWN

Securities Lending
Performance Scorecard - Lending and Investment Breakdown
For Month, XXXX
(USD) **

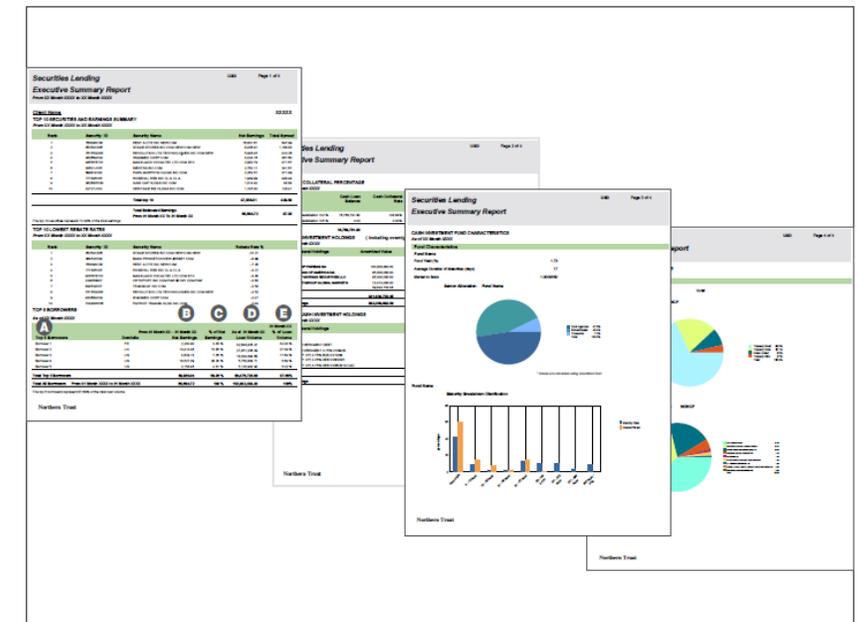
Client Name

A	Market Value (USD)		D	E			F			G	H
	Avg. on Loan	Avg. Available		Loan	Lending	Investment	Total	Lending	Investment		
US Treasuries	211,903,355	1,488,600,984	14.2%	48,982	1,118	50,100	26.8	0.6	27.5	3.9	4
US Agencies	0	267,258,503	0.0%	0	0	0	0.0	0.0	0.0	0.0	0
US Corp Bonds	12,753,975	1,065,955,926	1.2%	5,966	1,775	7,741	54.3	16.2	70.5	0.8	1
US Equities	322,832,262	5,716,414,795	5.6%	85,838	5,864	91,701	30.9	2.1	33.0	1.9	7
Global Sovereign	5,876,174	892,770,862	0.7%	5,196	892	6,088	102.7	17.6	120.3	0.8	1
Global Agencies	156,024	73,136,210	0.2%	67	33	120	64.7	24.9	89.5	0.2	1
Global Corp Bonds	6,407,433	540,876,166	1.2%	2,836	1,161	3,996	51.4	21.0	72.4	0.9	1
Global Equities	357,216,326	4,344,698,657	8.2%	436,046	10,542	446,588	141.8	3.4	145.2	11.9	37
Total	817,144,648	14,388,712,134	6.4%	684,848	21,888	806,336	74.1	2.7	76.8	4.8	60

When cash is taken as collateral on applicable loans, Rebates are based on an industry (standard) overnight benchmark rate.
* Gross Basis Point Return equals On Loan Spread multiplied by % on Loan. GBPR is the measure of total return on a given asset class or portfolio.
** Market Value and Earnings were converted using the month-end FX rate.

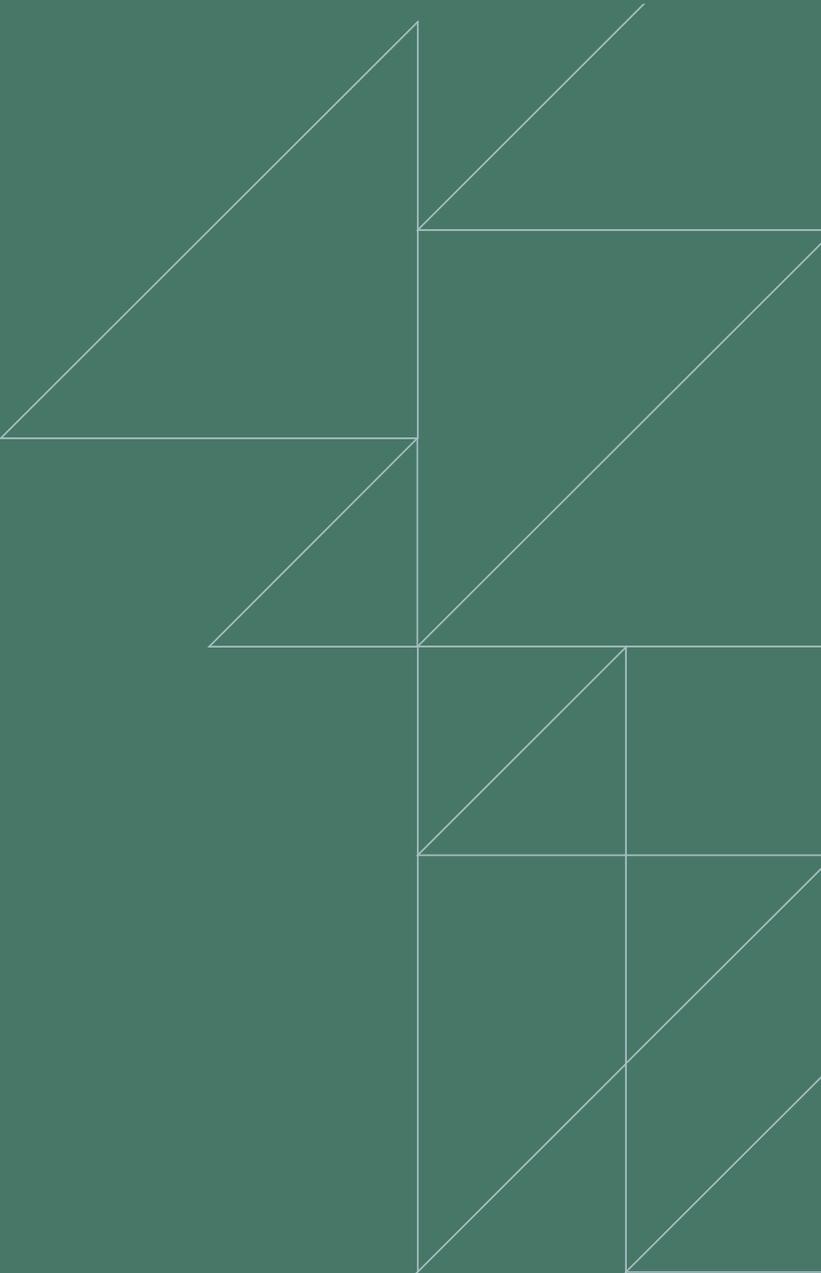
Northern Trust

EXECUTIVE SUMMARY REPORT



NORTHERN TRUST GLOBAL SECURITIES LENDING

Regulatory



Moving to T+1

Securities Lending



The 24-hour reduction in the settlement cycle means a 24-hour reduction in the time available to recall positions on loan to satisfy pending trades.



Effective communication with your managers (if applicable) and your Northern Trust team will be imperative.



Northern Trust is investing in their Securities Lending business to ensure readiness for a T+1 environment. These developments include:



- Enhanced automation of the recall process
- Increased frequency of recall issuance
- Improved reallocation of loans to minimize recalls where possible
- Earlier identification of sales with loan positions that need to be recalled
- More efficient application of recalled loans to satisfy T+1 sales



The securities lending industry is still discussing how the move to T+1 will impact certain timeframe standards (e.g. instruction deadlines).



Northern Trust is acutely plugged in to industry conversations and well positioned to continue to provide a world class program to securities lending clients.

What is happening?

Global markets are moving towards shortened standard settlement cycles to reduce costs, increase market efficiencies and reduce settlement and counterparty risk. After a recent period where the majority of Global Markets were on a synchronised T+2 settlement cycle, more markets are moving to T+1.

The US, Canada and Mexico will move to a T+1 settlement cycle on the weekend of 27/28th May 2024, and the major EMEA markets are broadly expected to follow suit in the future.

SEC Rule 10C-1a

Overview of the Regulation

The US Securities and Exchange Commission (SEC) adopted a modified version of proposed Rule 10c-1 on reporting of securities loans which requires the reporting of securities lending transactions via a central repository.

Purpose of the Regulation

Provide transparency in the securities lending market by:

- Making securities lending price (fee & rebate) information publicly available
- Removing 'asymmetries' between different market participants

Requirements of the Regulation

Lenders of securities (or their lending agents) must:

- Provide the material terms of securities lending transactions to a registered national securities association (RNSA), which is expected to be the Financial Industry Regulatory Authority (FINRA) by the end of each day.
- Certain loan terms will remain confidential, including legal names of parties to the loan
- RNSA will create unique identifiers to track each transaction

Additional Resources

SEC Fact Sheet
<https://www.sec.gov/files/34-98737-fact-sheet.pdf>

SEC Rule 10c-1a (full text)
<https://www.sec.gov/files/rules/final/2024/34-98737.pdf>

Impact to Clients

Key Takeaways

The SEC is focused on improving the operation of the securities lending market. The Commission believes the ruling will reduce cost of short selling, improve price discovery and liquidity in the markets.

According to the SEC, the subsequent benefits include:

- “a reduction of the information disadvantage faced by end borrowers and beneficial owners in the securities lending market,
- improved price discovery in the securities lending market,
- increased competition among providers of securities lending analytics services,
- reduced administrative costs for broker-dealers and lending programmes, and
- improved balance sheet management for financial institutions”.

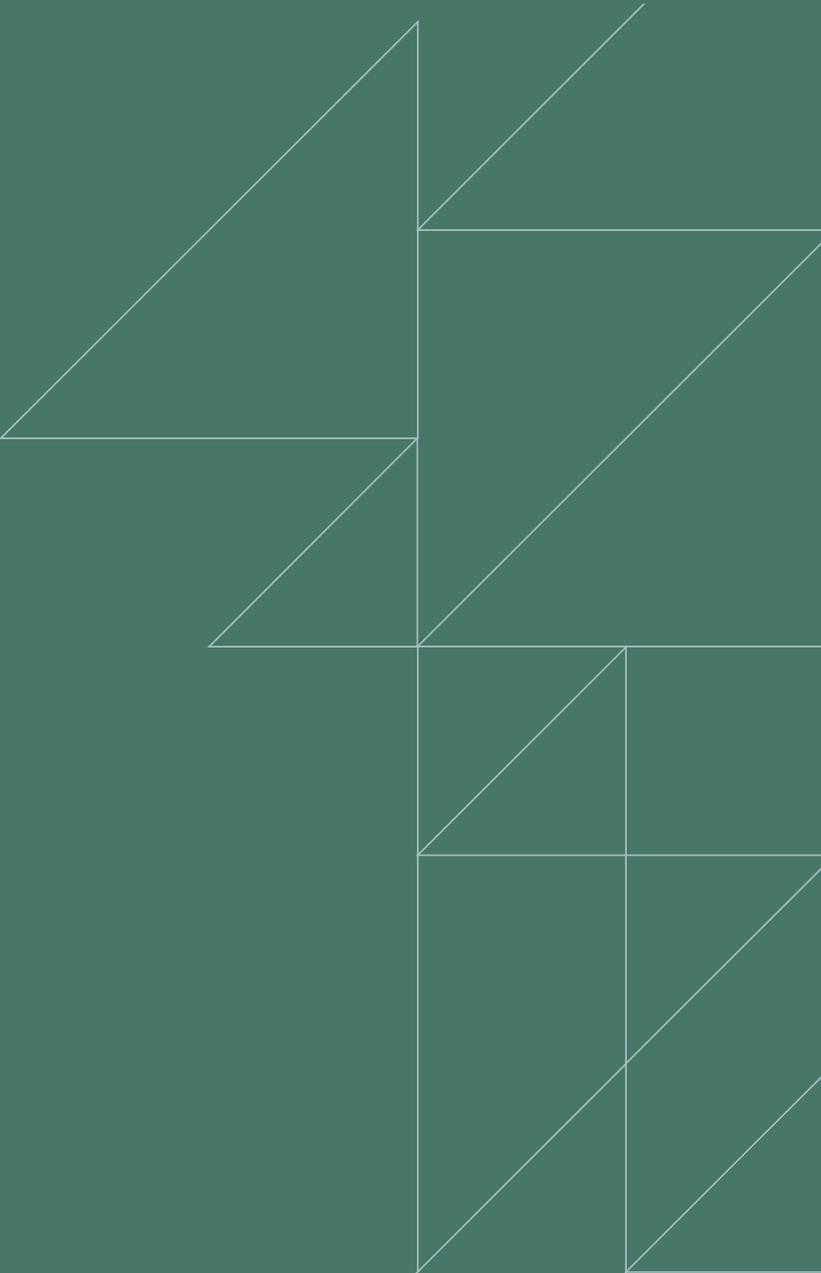
Timeline

Broadly, market participants will have a 26-month total compliance period for reporting lenders (first loans to be reported in 2025).

As the regulation evolves, we will keep our clients updated.

NORTHERN TRUST GLOBAL SECURITIES LENDING

Appendix



How Revenue is Generated

Example: Northern Trust lends \$25 million of US Equity

Non-Cash Loan

The \$25 million market value loan is for 30 days collateralized by a US Treasury.

1	Receive non-cash collateral valued at \$25,500,000 (102%)	
2	Fee charged to borrower on the value of the loan (20 bps)	\$4,167
3	Gross revenue (gross spread 20 bps) credited to client monthly	\$4,167
4	Monthly lender's fee (@ 20%)	<u>\$833.4</u>
5	Net client earnings	\$3,333.6

Cash Loan

The \$25 million market value loan is for 30 days collateralized with cash (OBFR at 1.00%).

1	Receive cash collateral valued at \$25,500,000 (102%)	
2	Cash collateral invested in a collateral pool at yield of 1.10%	\$23,375
3	Rebate paid to borrower at rate of 0.80%	\$(17,000)
4	Gross Revenue (gross spread 30 bps)	<u>\$6,375</u>
5	Monthly lender's fee (@ 20%)	<u>\$1,275</u>
6	Net client earnings	\$5,100

Client Service Team

EXECUTIVE:



Lori Paris

*Head of Client Management, NA
Securities Finance*
Tel: 312 557 2234
Email: lmc3@ntrs.com

CLIENT SERVICING:



Enayet Mawla

Securities Finance Relationship Manager
Tel: 312-444-3170
Email: em125@ntrs.com



Megan Mullen

Securities Finance Account Manager
Tel: 312 444 4205
Email: mzm42@ntrs.com

SUPPORT FUNCTIONS:

Trading	Risk
Product Development	Compliance
Operations & Technology	Credit
Asset Management (Cash Reinvestment)	Legal

Executive:

Oversight of relationship for Securities Lending products

Relationship Manager:

Coordinates all components of your securities lending program to ensure superior service, providing risk-adjusted returns, reviewing opportunities, and providing solutions where required

Account Manager:

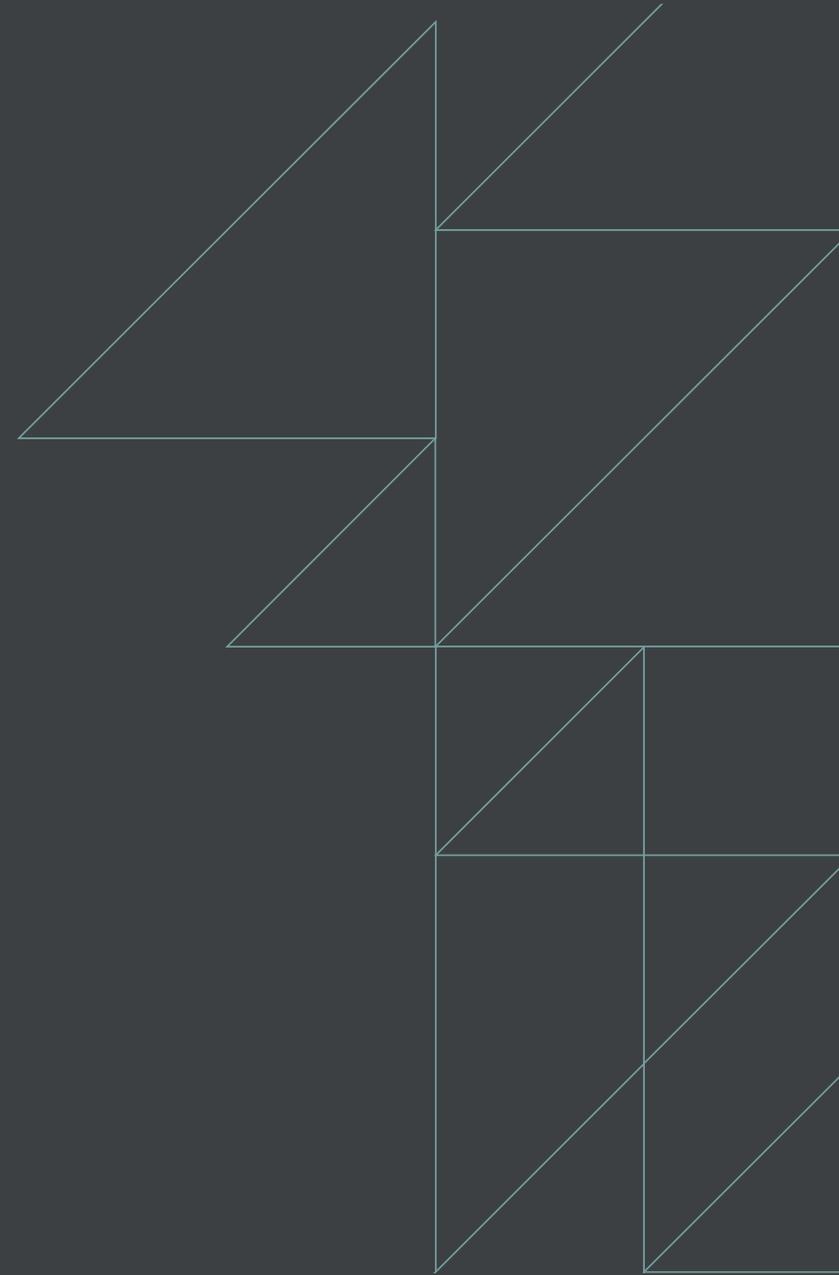
Supports relationship manager by handling daily servicing and reporting needs for clients

Support Function Experts:

Work together to achieve performance objectives within the risk framework and create customized solutions



NORTHERN
TRUST



DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

May 14, 2024

Issue: Milliman Inc.

Attachments: None

Discussion: In December 2023, the Board approved an agreement with Milliman to conduct research and analysis of a Funding Soundness Restoration Plan (FSRP) in the amount not to exceed \$85,000. The services of Milliman does not replace Gabriel Roeder & Smith, the ERF Boards designated Actuary.

The Texas Pension Review Board has decided that the Employees' Retirement Fund must establish a Funding Soundness Restoration Plans (FSRP). FSRPs are developed by Texas public retirement systems and their sponsors to improve the funding status of financially distressed plans. The requirement was established by the Texas Legislature in 2015 and updated in 2021.

In addition, Dallas City Code 40A-4 states at least every five plan years, or per state law, whichever is sooner, the board shall provide 60 days' notice to the city manager:

- 1) that the board intends to engage a second actuarial firm to perform an actuarial peer review/audit; and
- 2) the name of the actuarial firm the board intends to engage.

In March 2024, the City of Dallas released a request for proposals to conduct an independent audit of ERF's appropriateness, adequacy, and effectiveness of investment practices and performance. The City's request also mirrors Senate Bill 322 requirements established in 2019. At the May 9, 2023, meeting the ERF Board approved revisions to the investment policy which complies with Senate Bill 322.

At the request of the ERF staff, Milliman has agreed to amend the existing agreement and to perform an actuarial peer review/audit and other services as deemed necessary by the Board and staff.

Since December 2023, Milliman has provided several contractual deliverables to include:

- Milliman provided research and forecasted cost analysis, the ERF Executive Director presented an update to the City Council / Ad Hoc Committee on Pensions in December 2023.
- Milliman also sent a pre-qualifying FSRP proposal to the State of Texas Pension Review Board (PRB) that resulted in a tentative approval of the ERF 2025 proposed plan. This action was not in the original scope of work and cost an additional \$20,000.
- Milliman conducted a market compensation study of seventy-five civilian positions at the City of Dallas. This study found that the market rate of pay for most civilian positions are below market rate.

Year to date, Milliman has rendered \$105,000 worth of services. Milliman has agreed to modify their scope of work and conduct the required peer review according to 40A – 4 for an additional \$55,000.

Recommendation: Suggested motion for approval is as follows: Motion to approve a modified agreement with Milliman Inc. to provide additional actuary services to ERF and increase the not to exceed amount from \$85,000 to \$160,000 subject to legal review and authorize the Board Chair to sign.

Advanced Investments Management

Monday, July 22-Wednesday, July 24, 2024
Wharton San Francisco, San Francisco, CA

[Event Overview](#)

[Agenda](#)

[Hotel/Travel](#)

Through the International Foundation's partnership with the Wharton School, Foundation members have the opportunity to engage with Wharton faculty who are the most cited, most published faculty of all top-tier business schools. With a profound influence on global business, Wharton faculty members are the sought-after, trusted advisors of corporations and governments worldwide.

One such opportunity is to attend Advanced Investments Management at Wharton | *San Francisco*.

Advanced Investments Management is for those who have a solid grasp of investment management fundamentals and are looking for the next step in their education. Participants will learn the latest trends in performance analysis and management, discussing advanced asset-allocation topics. The 3 day program is held every other year at Wharton | *San Francisco* and the format is part lecture/discussion and part interactive case study.

Benefits of Attending ↓

- Learn best practices in the management of your fund and running your training program.
- Understand legal and regulatory requirements.
- Identify ideas and opportunities by networking with peers who face similar challenges.
- Receive valuable written resource materials.

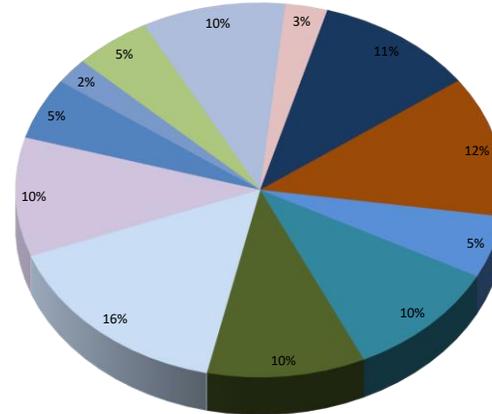
Asset Allocation: Actual vs. Target

April 30, 2024

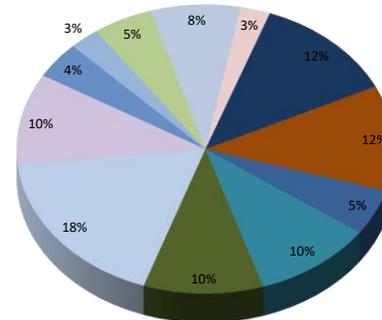
	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
EQUITY				
CHANNING CAPITAL	30,666,198.56	0.85		
SYSTEMATIC	52,817,570.33	1.46		
<i>Total Small Cap</i>	83,483,768.89	2.30		
SMITH GRAHAM		0.00		
T. ROWE PRICE	153,798,025.56	4.24		
<i>Total Domestic/Enhanced equity</i>	153,798,025.56	4.24		
NTGI S&P 500 EQUITY INDEX	140,874,238.21	3.89		
<i>Total Index</i>	140,874,238.21	3.89		
<i>Total Domestic</i>	378,156,032.66	10.43	12.00	-1.57
ACADIAN	106,327,111.81	2.93		
AQR CAPITAL	132,238,446.85	3.65		
ATIVO	26,525,379.37	0.73		
BAILLIE GIFFORD	75,914,635.17	2.09		
EARNST PARTNERS	92,051,858.96	2.54		
<i>Total International</i>	433,057,432.16	11.95	11.50	0.45
ARIEL	89,143,897.99	2.46		
WELLINGTON MGMT	101,188,731.10	2.79		
<i>Total Global Equity</i>	190,332,629.09	5.25	5.00	0.25
ACADIAN-LVG	184,706,982.96	5.10		
BLACKROCK	184,516,988.57	5.09		
SANCTIONED ASSET PORTFOL	26,211.90	0.00		
<i>Total Global Low Volatility Equity</i>	369,250,183.43	10.19	10.00	0.19
FAIRVIEW CAPITAL	105,752,882.00	2.92		
GROSVENOR GCM - CFG	167,618,688.00	4.62		
HAMILTON LANE	99,297,827.95	2.74		
<i>Total Private Equity</i>	372,669,397.95	10.28	10.00	0.28
TOTAL EQUITY	1,743,465,675.29	48.09	48.50	-0.41
FIXED INCOME				
GARCIA HAMILTON	180,146,440.80	4.97		
WESTERN ASSET MANAGEMENT	188,452,778.82	5.20		
WELLINGTON-CORE BOND	190,145,221.65	5.25		
<i>Total Core Fixed Income</i>	558,744,441.27	15.41	17.50	-2.09
BLACKROCK-HY	185,701,003.76	5.12		
OAKTREE	179,960,946.54	4.96		
<i>Total High Yield</i>	365,661,950.30	10.09	10.00	0.09
NEUBERGER BERMAN	188,640,419.49	5.20		
<i>Total Credit Opportunistic</i>	188,640,419.49	5.20	4.00	1.20
<i>Total Private Credit</i>	-	-	-	-
Total Fixed Income	1,113,046,811.06	30.70	34.00	-3.30
REAL ESTATE				
CENTERSQUARE-SL	39,894,582.69	1.10		
<i>Total REITS</i>	79,512,594.85	2.19	2.50	-0.31
ATLANTIC TRUST	57,448,032.50	1.58		
HARVEST FUND	63,011,505.34	1.74		
COHEN & STEERS	60,051,099.50	1.66		
<i>Total Global Listed Infrastructure</i>	180,510,637.34	4.98	5.00	-0.02
AEW PARTNERS	45,513,597.00	1.26		
BRASA CAPITAL MGMT	13,938,207.00	0.38		
HEITMAN	86,835,272.96	2.40		
INVESCO	65,052,092.68	1.79		
INVESCO - SL	76,724,830.00	2.12		
LONG WHARF CAPITAL	3,390,065.00	0.09		
VIRTUS REAL ESTATE CAP	46,570,176.00	1.28		
<i>Total Real Estate</i>	338,024,240.64	9.32		
Total Real Assets	598,047,472.83	16.50	15.00	1.50
DAVIDSON KEMPNER INST PTRS	49,925,617.00	1.38		
HUDSON BAY CAPITAL	49,232,022.00	1.36		
<i>Total Diversifying Strategies</i>	99,157,639.00	2.74	2.50	0.24
CASH ACCOUNT	71,342,227.76	1.97		

TOTAL FUND \$ 3,625,059,825.94 \$ 100.00 \$ 100.00 \$ (0.00)

Gross Actual Allocation



Target Allocation



Wilshire

ERF of the City of Dallas

Monthly Investment Summary

April 30, 2024

Monthly Index Performance

Periods Ended April 30, 2024

	Performance (%)				
	1 Month	1 Quarter	1 Year	3 Years	5 Years
U.S. Equity					
FT Wilshire 5000 Index	-4.36	4.05	22.36	6.65	12.65
S&P 500 Index	-4.08	4.29	22.66	8.06	13.19
FT Wilshire 4500 Index	-6.74	3.22	16.28	-0.11	7.82
MSCI USA Minimum Volatility Index	-3.69	1.43	10.74	5.53	8.01
U.S. Equity by Size/Style					
FT Wilshire U.S. Large Cap Index	-4.01	4.17	23.26	7.72	13.35
FT Wilshire US Large Cap Growth Index	-4.17	4.43	33.89	8.06	16.40
FT Wilshire US Large Cap Value Index	-3.86	3.81	13.01	6.96	9.89
FT Wilshire U.S. Small Cap Index	-6.61	3.58	17.01	0.79	8.12
FT Wilshire US Small Cap Growth Index	-7.00	3.44	15.95	-2.01	7.32
FT Wilshire US Small Cap Value Index	-6.22	3.74	18.05	3.42	8.58
FT Wilshire U.S. Micro Cap Index	-7.87	0.21	10.48	-6.72	5.30
Non-U.S. Equity (USD)					
MSCI AC World ex USA (Net)	-1.80	3.84	9.32	0.35	5.03
MSCI ACWI ex USA Minimum Volatility Index (Net)	-1.00	1.29	4.33	1.62	3.12
MSCI EAFE (Net)	-2.56	2.49	9.28	2.86	6.18
MSCI Emerging Markets (Net)	0.45	7.83	9.88	-5.69	1.89
MSCI AC World ex USA Small Cap (Net)	-1.46	2.38	9.54	-1.60	5.47
U.S. Fixed Income					
Blmbg. U.S. Aggregate Index	-2.53	-3.02	-1.47	-3.54	-0.16
Blmbg. U.S. Treasury: Long	-6.09	-7.10	-12.26	-10.63	-3.65
Blmbg. U.S. Long Corporate Index	-4.94	-5.72	-2.41	-6.43	-0.20
Blmbg. U.S. TIPS Index	-1.69	-1.94	-1.35	-1.55	2.07
Blmbg. U.S. Credit Index	-2.49	-2.71	0.76	-3.02	0.78
Blmbg. U.S. Corp: High Yield Index	-0.94	0.52	9.02	1.51	3.72
Morningstar LSTA U.S. Leveraged Loan	0.65	2.43	12.03	6.04	5.27

Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Global Equity Composite	-3.20	4.62	5.28	14.85	4.44	8.55	8.96	9/1/2012	190,332,521	5.25
Global Low Volatility Composite	-2.44	0.92	2.30	6.40	4.14	5.49	6.92	7/1/2015	369,223,972	10.18
Domestic Equity Composite	-4.31	4.79	4.99	22.78	5.88	11.99	10.38	1/1/1990	378,156,033	10.43
International Equity Composite	-1.84	4.06	3.96	12.01	0.01	6.38	5.60	1/1/1990	433,105,544	11.94
Fixed Income Composite	-2.76	-3.25	-3.62	-1.78	-3.38	0.24	4.13	10/1/1995	560,333,857	15.45
High Yield Composite	-0.70	0.86	0.95	9.50	2.12	3.94	6.03	1/1/1997	365,661,674	10.08
Credit Opportunities Composite	-0.64	1.83	2.41	11.12	1.29	2.95	4.76	2/1/2016	188,640,419	5.20
Total Real Estate Composite	-2.35	-2.14	-2.93	-3.49	4.69	4.99	6.41	1/1/1990	417,536,835	11.52
Global Listed Infrastructure Composite	-0.97	8.87	8.94	17.32	17.48	6.28	6.03	1/1/2012	180,510,637	4.98
Private Equity Composite	0.00	-1.32	-1.36	0.69	13.61	12.29	13.09	6/1/2009	371,978,104	10.26
Marketable Alternatives Composite	1.27	2.77	2.77	7.20			6.31	10/1/2022	99,157,639	2.73
Managed Short Term Composite	0.43	1.29	1.78	5.42	2.75	2.08	2.82	1/1/1990	71,342,289	1.97
Dallas Total Fund	-1.91	1.07	1.14	7.06	3.47	5.81	8.66	1/1/1985	3,625,979,524	100.00
Policy Index	-2.18	1.96	1.80	9.31	2.98	5.97	9.20			

Asset Allocation & Performance

Domestic Equity

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Systematic Financial Russell 2000 Index	-4.99 -7.04	4.64 1.73	2.15 -2.22	18.88 13.32	3.77 -3.18	9.16 5.83	10.48 8.53	8/1/2003	52,817,570	13.97
Channing Capital Russell 2000 Value Index	-6.38 -6.37	4.79 0.93	2.29 -3.66	19.88 14.03	0.37 -0.67	7.70 5.96	6.85 6.29	12/1/2013	30,666,199	8.11
Domestic Equity Small Cap Composite	-5.51	4.55	2.06	17.92	0.03	7.86	9.17	6/1/2003	83,483,769	22.08
T. Rowe Price S&P 500 Index	-3.85 -4.08	4.82 4.29	7.27 6.04	26.00 22.66	9.27 8.06	14.24 13.19	10.66 9.96	4/1/2006	153,798,026	40.67
Northern Trust S&P 500 (Lending) S&P 500 Index	-4.08 -4.08	4.25 4.29	6.00 6.04	22.63 22.66	8.08 8.06	13.17 13.19	10.60 10.56	1/1/1995	140,874,238	37.25
Domestic Equity Composite Custom Benchmark ¹	-4.31 -4.36	4.79 4.05	4.99 5.16	22.78 22.36	5.88 6.67	11.99 12.66	10.38 10.52	1/1/1990	378,156,033	100.00

¹ Domestic Equity Composite Custom Benchmark: FT Wilshire 5000 (2Q99-Present); S&P 500 (1Q90-1Q99)

Asset Allocation & Performance

International Equity

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Acadian International	-1.99	2.00	2.80	9.00	-0.57	6.80	8.11	4/1/1989	106,327,064	24.55
Custom Benchmark ¹	-1.46	2.38	0.62	9.54	-1.60	5.47	5.79			
Ativo International	-2.24	1.34	1.49	10.67	1.54	4.64	3.37	1/1/2018	26,521,000	6.12
MSCI EAFE (Net)	-2.56	2.49	3.08	9.28	2.86	6.18	4.43			
AQR Capital Management	-0.44	7.95	8.40	18.12	1.69	5.71	3.88	4/1/2006	132,291,363	30.54
Custom Benchmark ²	-1.80	3.84	2.81	9.32	0.35	5.03	3.43			
Baillie Gifford	-2.61	1.35	1.48	6.82	-6.42	4.00	4.87	4/1/2019	75,914,635	17.53
MSCI AC World ex USA (Net)	-1.80	3.84	2.81	9.32	0.35	5.03	5.49			
Earnest Partners	-2.89	4.26	1.97	11.92	3.20	7.34	7.89	4/1/2019	92,051,483	21.25
MSCI AC World ex USA (Net)	-1.80	3.84	2.81	9.32	0.35	5.03	5.49			
International Equity Composite	-1.84	4.06	3.96	12.01	0.01	6.38	5.60	1/1/1990	433,105,544	100.00
Custom Benchmark ³	-1.75	3.64	2.50	9.36	0.07	5.09	4.61			

¹ Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3Q09-Present); MSCI EAFE Small Cap (4Q99-2Q09); S&P/Citigroup Eur/Pac EMI Index (2Q96-3Q99); MSCI EAFE (2Q89-1Q96)

² AQR Custom Benchmark: MSCI ACWI x-US (2Q10-Present); MSCI EAFE (1Q06-1Q10)

³ International Equity Composite Custom Benchmark: MSCI ACWI x-US IMI (2Q10-Present); MSCI ACWI x-US (1Q99-1Q10); Wilshire Non-US/Non-SA (2Q96-4Q98; MSCI EAFE (4Q89-1Q96)

Asset Allocation & Performance

Global Equity

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Ariel Global	-4.17	2.57	2.47	8.89	5.37	7.22	6.50	1/1/2018	89,143,790	46.84
MSCI AC World Index (Net)	-3.30	4.02	4.63	17.46	4.27	9.44	8.22			
Wellington	-2.33	6.43	7.78	20.26	3.67	9.40	10.89	9/1/2012	101,188,731	53.16
MSCI AC World Index (Net)	-3.30	4.02	4.63	17.46	4.27	9.44	9.63			
Global Equity Composite	-3.20	4.62	5.28	14.85	4.44	8.55	8.96	9/1/2012	190,332,521	100.00
MSCI AC World Index (Net)	-3.30	4.02	4.63	17.46	4.27	9.44	9.63			

Asset Allocation & Performance

Global Low Volatility

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Acadian Global Low Vol.	-2.30	1.09	2.57	7.02	5.48	6.11	6.97	7/1/2015	184,706,983	50.03
MSCI AC World Index (Net)	-3.30	4.02	4.63	17.46	4.27	9.44	8.75			
MSCI AC World Minimum Volatility Index (Net)	-2.62	0.66	1.97	5.24	2.42	4.70	6.54			
BlackRock Global Low Vol.	-2.57	0.76	2.04	5.79	2.80	4.86	6.86	7/1/2015	184,516,989	49.97
MSCI AC World Minimum Volatility Index (Net)	-2.62	0.66	1.97	5.24	2.42	4.70	6.54			
Global Low Volatility Composite	-2.44	0.92	2.30	6.40	4.14	5.49	6.92	7/1/2015	369,223,972	100.00
MSCI AC World Minimum Volatility Index (Net)	-2.62	0.66	1.97	5.24	2.42	4.70	6.54			

Private Equity Summary

Periods Ended as of April 30, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple ¹
Hamilton Lane Secondary Fund II	106,651	25,000,000	22,058,532	31,222,789	Jul-09	13.4%	1.4
Hamilton Lane Secondary Fund III	2,313,112	30,000,000	23,372,292	28,674,658	Nov-12	9.5%	1.3
Hamilton Lane Secondary Fund IV	13,460,845	30,000,000	25,907,343	28,531,630	Mar-17	16.7%	1.6
Hamilton Lane Secondary Fund V	49,453,822	65,000,000	43,128,993	15,614,650	Mar-20	17.3%	1.5
Hamilton Lane Secondary Fund VI-A	6,130,610	30,000,000	4,471,334	36,435	Feb-23	59.1%	1.4
Hamilton Lane Fund VII Composite	12,968,634	50,000,000	45,600,834	56,618,108	Jan-10	5.9%	1.5
Hamilton Lane Fund VIII (Global)	14,864,093	30,000,000	22,270,594	19,031,416	Nov-12	6.8%	1.5
GCM Grosvenor - Partnership, L.P.	22,263,613	75,000,000	94,485,722	138,802,151	Jun-11	14.1%	1.7
GCM Grosvenor - Partnership II, L.P. (2014)	43,000,591	60,000,000	72,758,185	72,443,967	Jul-14	14.7%	1.6
GCM Grosvenor - Partnership II, L.P. (2015)	56,883,258	30,000,000	45,118,226	11,913,802	Dec-15	13.3%	1.5
GCM Grosvenor - Partnership II, L.P. (2017)	33,226,633	30,000,000	30,891,286	10,457,194	Jan-18	13.7%	1.4
GCM Grosvenor - Advance Fund, L.P.	7,367,659	10,000,000	6,681,653	345,493	Jun-21	11.8%	1.2
GCM Grosvenor - Partnership II, L.P. (2022)	4,876,934	20,000,000	4,934,719	5,461	May-22	-6.3%	1.0
Fairview Capital - Lone Star Fund I	51,564,024	40,000,000	33,903,847	16,021,490	Aug-15	13.4%	2.0
Fairview Capital - Lone Star Fund II	35,253,716	30,000,000	23,306,717	509,173	Dec-18	12.2%	1.5
Fairview Capital - Lone Star Fund III - A	14,999,477	25,000,000	14,953,620	-	Apr-21	-1.6%	1.0
Fairview Capital - Lone Star Fund III - B	680,050	20,000,000	689,462	-	Dec-22	-41.3%	1.0
Fairview Capital - Private Markets Fund VI	2,564,382	10,000,000	3,070,484	210,556	Apr-22	-9.3%	0.9
Total Private Equity Composite	371,978,104	610,000,000	517,603,844	430,438,972	Jul-09	12.9%	1.6

Public Market Equivalent (PME) ²

570,546,623

16.7%

¹ Total Value to Paid-in Capital ("TVPI") multiple calculation = $(\text{market value} + \text{distributions}) / \text{capital called}$

² The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

Private Real Estate Summary

Periods Ended as of April 30, 2024

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple ¹
Invesco II	76,724,830	65,188,333	65,188,333	17,113,260	Jan-14	5.2%	1.4
Total Direct Private Real Estate	76,724,830	65,188,333	65,188,333	17,113,260	Jan-14	5.2%	1.4

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
Heitman America Real Estate Trust	86,835,273	75,000,000	88,210,161	97,418,467	Dec-10	6.6%	2.1
Invesco Core Real Estate USA	65,052,093	75,000,000	75,000,000	99,391,420	Oct-10	10.2%	2.2
Total Core Private Real Estate	151,887,366	150,000,000	163,210,161	196,809,887	Oct-10	8.7%	2.1

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	TVPI Multiple
AEW Partners Real Estate Fund IX	36,167,711	45,000,000	34,074,074	1,507,895	Mar-21	5.3%	1.1
AEW PIX MM Co-Invest	4,091,447	10,000,000	4,773,585	654,987	Nov-21	-0.3%	1.0
AEW PIX Oakland Park Co-Invest	5,254,439	5,000,000	5,000,000	542,858	Feb-22	7.4%	1.2
Virtus Real Estate Capital III	46,570,176	43,281,585	43,040,863	3,714,853	Jan-21	7.8%	1.2
Brasa Real Estate Fund II	13,938,207	20,000,000	14,921,996	889,136	Jul-22	-0.5%	1.0
Long Wharf Real Estate Partners VII	3,390,065	20,000,000	3,701,305	-	Mar-23	-17.6%	0.9
Total Value-Add Private Real Estate	109,412,045	143,281,585	105,511,822	7,309,729	Jan-21	5.4%	1.1

¹ Total Value to Paid-in Capital ("TVPI") multiple calculation = (market value + distributions) / capital called

Asset Allocation & Performance

Real Estate

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Adelante Capital Management	-7.94	-4.34	-7.51	2.15	-0.50	3.57	8.59	10/1/2001	39,618,012	49.83
Wilshire U.S. Real Estate Securities Index	-7.81	-4.11	-7.73	2.83	-0.78	2.80	8.68			
CenterSquare	-6.62	-3.24	-7.06	1.94	-0.48	3.79	5.57	6/1/2018	39,894,583	50.17
Wilshire U.S. Real Estate Securities Index	-7.81	-4.11	-7.73	2.83	-0.78	2.80	4.54			
REIT Composite	-7.28	-3.79	-7.28	2.05	-0.49	3.68	8.70	10/1/2001	79,512,595	100.00
Wilshire U.S. Real Estate Securities Index	-7.81	-4.11	-7.73	2.83	-0.78	2.80	8.68			

Asset Allocation & Performance

Global Listed Infrastructure

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
CIBC	-0.73	11.13	12.50	26.41	25.00	12.07	8.51	1/1/2012	57,448,033	31.83
CIBC Policy ¹	-1.22	7.72	12.50	34.46	25.98	11.49	4.96			
Harvest Fund Advisors MLP	-0.47	12.12	13.88	28.49	26.26	13.84	8.60	1/1/2012	63,011,505	34.91
Harvest Policy ²	-1.22	7.72	12.50	34.46	25.98	11.49	4.96			
C&S Global Listed Infrastructure	-1.70	3.68	1.26	1.14	2.52		5.67	10/1/2020	60,051,100	33.27
FTSE Global Core Infrastructure 50/50 (Net)	-1.35	2.69	0.18	-0.30	1.30		5.56			
Global Listed Infrastructure Composite	-0.97	8.87	8.94	17.32	17.48	6.28	6.03	1/1/2012	180,510,637	100.00
Global Listed Infrastructure Benchmark ³	-1.25	6.46	9.34	25.06	19.72	6.35	2.97			

¹ CIBC Policy: Alerian Midstream Energy Index (5/24-Present); Alerian MLP Index (1Q12-4/24)

² Harvest Policy: Alerian Midstream Energy Index (5/24-Present); Alerian MLP Index (1Q12-4/24)

³ Global Listed Infrastructure Benchmark: 75% Alerian Midstream Energy Index / 25% FTSE Global Core Infrastructure 50/50 (5/24-Present)
75% Alerian MLP / 25% FTSE Global Core Infrastructure 50/50 (4Q20-4/24); Alerian MLP (1Q12-3Q20)

Asset Allocation & Performance

Fixed Income

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Garcia Hamilton	-3.45	-4.35	-4.82	-4.20	-3.69	-0.43	1.44	11/1/2013	180,146,441	32.15
Blmbg. U.S. Aggregate Index	-2.53	-3.02	-3.28	-1.47	-3.54	-0.16	1.31			
Western Asset Management	-3.12	-3.60	-4.14	-1.80			-0.48	7/1/2022	188,492,411	33.64
Blmbg. U.S. Aggregate Index	-2.53	-3.02	-3.28	-1.47			-0.53			
Wellington Core Bond	-1.76	-1.83	-1.92	0.61			0.71	7/1/2022	191,695,005	34.21
Blmbg. U.S. Aggregate Index	-2.53	-3.02	-3.28	-1.47			-0.53			
Fixed Income Composite	-2.76	-3.25	-3.62	-1.78	-3.38	0.24	4.13	10/1/1995	560,333,857	100.00
Blmbg. U.S. Aggregate Index	-2.53	-3.02	-3.28	-1.47	-3.54	-0.16	4.16			

Asset Allocation & Performance

Opportunistic Credit

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Neuberger Berman	-0.64	1.83	2.41	11.12	1.29	2.95	4.76	2/1/2016	188,640,419	
Custom Benchmark ¹	-0.81	1.29	1.18	9.82	1.61	3.06	4.94			

¹ Custom Benchmark: 33% Morningstar LSTA U.S. Leveraged Loan Index / 33% ICE BofA U.S. High Yield Constrained Index / 33% JPM EMBI Global Diversified

Asset Allocation & Performance

High Yield

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Oaktree Capital Management	-0.91	0.40	0.51	9.65	1.91	3.72	6.17	2/1/1997	179,960,947	49.22
FTSE High Yield Cash Pay	-0.94	0.49	0.56	9.00	1.68	3.60	6.28			
BlackRock	-0.49	1.31	1.38	9.36	2.33	4.16	5.77	10/1/2006	185,700,727	50.78
FTSE High Yield Cash Pay	-0.94	0.49	0.56	9.00	1.68	3.60	6.04			
High Yield Composite	-0.70	0.86	0.95	9.50	2.12	3.94	6.03	1/1/1997	365,661,674	100.00
FTSE High Yield Cash Pay	-0.94	0.49	0.56	9.00	1.68	3.60	6.29			

Asset Allocation & Performance

Marketable Alternatives

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Davidson Kempner	1.19	3.22	3.22	8.17			6.78	10/1/2022	49,925,617	50.35
HFRI Event-Driven Total Index	1.64	2.33	6.60	11.46			10.15			
Hudson Bay Capital	1.36	2.32	2.32	6.22			5.84	10/1/2022	49,232,022	49.65
HFRI Relative Value Total Index	1.05	2.54	3.86	8.22			6.98			
Marketable Alternatives Composite	1.27	2.77	2.77	7.20			6.31	10/1/2022	99,157,639	100.00
Marketable Alternatives Policy ¹	1.35	2.44	5.24	9.86			8.58			

¹ Marketable Alternatives Policy: 50% HFRI Event-Driven Total Index / 50% HFRI Relative Value Total Index

Asset Allocation & Performance

Cash

Periods Ended April 30, 2024

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Cash Account	0.43	1.29	1.78	5.42	2.75	2.08	3.14	1/1/1988	71,342,289	100.00
Managed Short Term Composite	0.43	1.29	1.78	5.42	2.75	2.08	2.82	1/1/1990	71,342,289	100.00

At A Glance

For period ended April 30, 2024

	2023		2024	
	This Month	YTD	This Month	YTD
Retirements				
Age	16	78	14	63
Service	2	10	5	7
Rule of 78	5	30	8	34
QDRO	<u>2</u>	<u>4</u>	<u>0</u>	<u>0</u>
<i>Total</i>	25	122	27	104
Disability Retirements				
Service	0	0	0	0
Non-service	<u>2</u>	<u>2</u>	<u>0</u>	<u>0</u>
<i>Total</i>	2	2	0	0
Benefits Paid	\$ 27,199,655.93	\$ 108,637,824.83	\$ 28,740,944.99	\$ 115,440,860.81
Refunds	\$ 1,311,117.85	\$ 3,903,367.93	\$ 1,024,954.26	\$ 4,006,312.04
Number of refunds	113	285	84	318
*Contributions	\$ 10,584,139.30	\$ 43,681,866.00	\$ 17,589,188.88	\$ 52,847,639.80

Members on record at month end					
	Retirees & beneficiaries	Disabilities	Actives	Tier A Actives	Tier B Actives
Jan	7,903	122	8,015	3,453	4,562
Feb	7,922	121	7,986	3,408	4,578
Mar	7,937	121	8,067	3,386	4,681
April	7,947	121	8,022	3,349	4,673
May					
June					
July					
Aug					
Sep					
Oct					
Nov					
Dec					