



Active Core Fixed Income

Pennsylvania State Employees' Retirement System

July 22, 2025

GIPS Composite Report on Pages 5 - 7

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All data presented are as of March 31, 2025, unless otherwise noted.

The data supplied by NISA are based on trade date and calculated according to NISA's pricing policies. NISA maintains the data only for its portfolio management, guideline verification and performance calculation purposes and the data may differ from the recordkeeper. NISA does not provide pricing, recordkeeping, brokerage or any related services. You should compare and verify the information on this report with the information on the statement from the recordkeeper. A summary of NISA's Pricing and Valuation policy is available upon request.

Some numbers have been rounded and may not sum to 100% or reported totals.

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7676 Forsyth Blvd., Suite 1100
St. Louis, MO 63105
P: 314.721.1900
F: 314.721.3041
www.nisa.com

NISA Innovates and Delivers for World-leading Organizations

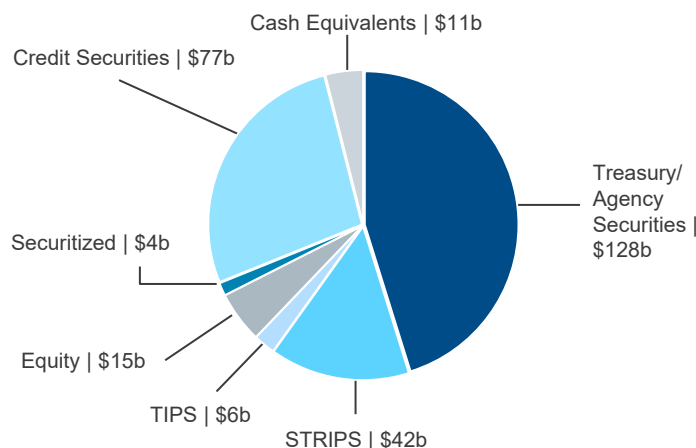
225
Institutional
Clients

\$432b
Under
Management

Based on *Pensions & Investments*¹ 2024 rankings published June 16, 2025, NISA was the:

- Largest manager of U.S. Institutional LDI assets
- Third largest manager of active U.S. bond assets
- Largest manager of overlay assets

PHYSICAL STRATEGIES | \$284b



Fixed Income | \$269b

- Liability Driven Investing
- Short and Core Duration
- Derivative Enhancement of Cash/Treasuries

Equity | \$15b

- Tax/Accounting Sensitive Direct Indexing

OVERLAY STRATEGIES | \$148b NOTIONAL

Liability Driven Strategies | \$91b

- Liability Hedging
- Glidepath Management

Beta Strategies | \$42b

- Rebalancing/Cash Securitization
- Portable Alpha
- Commodity Index Replication
- Currency Hedging

Systematic Strategies | \$15b

- Alternative Risk Premia
- Tail Risk Strategies

Absolute Return

- Liquid Hedge Fund Alternatives
- Alternative Risk Transfer

¹Source: Pensions & Investments (P&I). Rankings were based on U.S. institutional, tax-exempt assets managed internally (covered for overlay) as of December 31, 2024; published on June 16, 2025. NISA paid a standard fee to access the full set of data published by P&I. Some 369 investment management firms responded to the online questionnaire. To qualify, a firm must manage assets for U.S. institutional tax-exempt clients, such as qualified retirement plans, endowments or foundations, and answer the minimum required questions. Other survey participants may have reported overlay strategies on a basis other than notional values and, as such, direct comparison and rankings may not be appropriate. Visit www.pionline.com for more details, including past rankings and methodology.

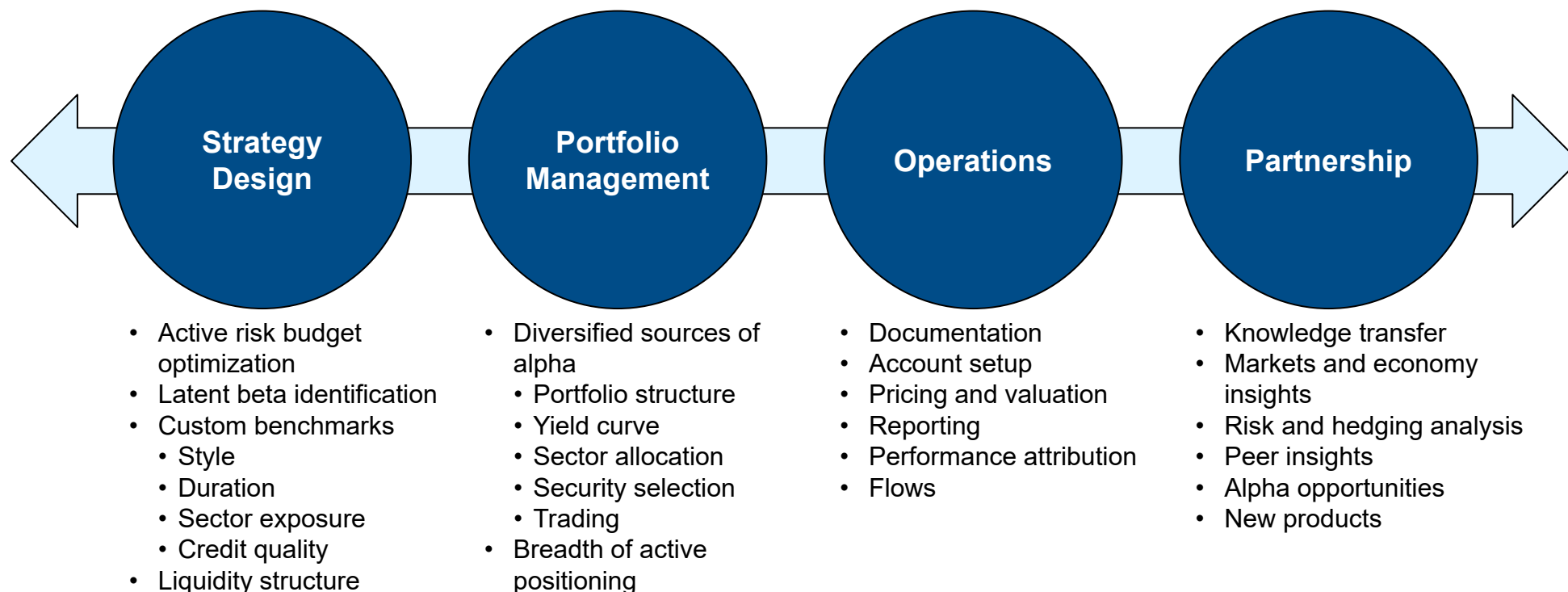
Strategic Partnership

NISA seeks to operate as a **genuine solutions provider** and **extension of staff** to clients.



Recipient of the *Greenwich Quality Leader in Overall U.S. Institutional Investment Management Service Quality in 2024* published on December 11, 2024, making it **eleven consecutive years**.¹

2014 2015 2016 2017 2018 2019
2020 2021 2022 2023 2024



¹Source: 2024 Greenwich Awards were announced by Coalition Greenwich on December 11, 2024. NISA paid a standard fee to access the full set of data published by Coalition Greenwich and for use of the Greenwich Quality Leader logo. Between February and September of 2024, Coalition Greenwich conducted interviews with 699 institutional investors from 563 of the largest tax-exempt funds in the United States. These U.S.-based institutional investors are corporate, public, union, healthcare and endowment and foundation funds, with either pension or investment pool assets greater than \$150 million. NISA was one of two 2024 recipients. Rankings do not represent any one client's experience because they reflect an average of experiences of clients who chose to participate. Visit www.greenwich.com for more details, including past rankings and methodology.

NISA – Core Broad Market Fixed Income Overview

Benchmark	Bloomberg U.S. Aggregate Index
Performance Objective	Annualized target alpha of 40 - 60 bps gross of fee over a typical market cycle, implying 27.5 - 47.5 bps of excess return net of the highest applicable investment management fee. ¹
Tracking Error Objective	20 - 40 bps of tracking error over a typical market cycle.
Fees	12.5 bps on the first \$1.5 billion ²
Selected Guidelines	<ul style="list-style-type: none">• Portfolio duration within +/- 0.50 years of the benchmark• Credit sector concentration shall not exceed benchmark weight + 10%• Rule 144A and Regulation S securities limited to 15%• Average portfolio credit quality no more than one credit rating below the average benchmark credit quality (e.g., A2 vs A3)

¹Target alpha represents the gross-of-fees target alpha that NISA seeks to achieve over a typical market cycle. The target alpha presented represents NISA's performance objectives and is not based on criteria or assumptions of the probability of occurrence of market events. Tracking error is the annualized standard deviation of the monthly difference between the portfolio and benchmark return. This is not a guarantee of performance, and there is the possibility of loss.

²Full fee schedule available upon request.

NISA Investment Advisors, LLC
Core Broad Market Fixed Income Composite

As of 03/31/2025

Composite Inception Date: April 1, 1994
Composite Creation Date: September 1, 1999

Year	Composite Gross-of-Fee Return	Composite Net-of-Fee Return	Benchmark Return	Excess Return Gross-of-Fee ¹	Excess Return Net-of-Fee ¹	3-Year Standard Deviation Composite	3-Year Standard Deviation Benchmark	Dispersion	# of Portfolios	Composite Assets	Firm Assets
2025 YTD	2.88%	2.84%	2.78%	0.10%	0.06%	7.54%	7.56%	-	7	4,965	198,957
2024	1.60%	1.45%	1.25%	0.35%	0.20%	7.81%	7.83%	0.02%	8	6,750	189,761
2023	5.88%	5.72%	5.53%	0.35%	0.19%	7.23%	7.24%	0.04%	7	4,370	210,342
2022	-12.47%	-12.61%	-13.01%	0.54%	0.40%	5.89%	5.85%	0.06%	7	3,291	193,938
2021	-1.28%	-1.43%	-1.54%	0.26%	0.11%	3.47%	3.40%	-	6	3,490	252,842
2020	8.56%	8.40%	7.51%	1.06%	0.89%	3.46%	3.40%	-	4	4,353	236,713
2019	8.88%	8.72%	8.72%	0.17%	0.00%	2.92%	2.91%	0.08%	7	6,614	209,423
2018	0.06%	-0.09%	0.01%	0.05%	-0.10%	2.89%	2.88%	-	6	5,037	174,719
2017	3.94%	3.78%	3.54%	0.39%	0.24%	2.85%	2.81%	-	5	2,847	156,612
2016	2.86%	2.70%	2.65%	0.21%	0.06%	3.06%	3.02%	-	5	2,712	131,170
2015	0.86%	0.71%	0.55%	0.31%	0.16%	2.97%	2.92%	-	5	4,039	118,151

Year	Composite Gross-of-Fee Return	Composite Net-of-Fee Return	Benchmark Return	Excess Return Gross-of-Fee ¹	Excess Return Net-of-Fee ¹	Tracking Error	Information Ratio Gross-of-Fee	Information Ratio Net-of-Fee
1 Yr	5.15%	4.99%	4.88%	0.27%	0.11%	0.07%	3.8	1.6
3 Yr	0.93%	0.77%	0.52%	0.41%	0.26%	0.15%	2.8	1.8
5 Yr	0.12%	-0.03%	-0.40%	0.52%	0.37%	0.23%	2.2	1.6
7 Yr	1.99%	1.83%	1.58%	0.41%	0.26%	0.21%	2.0	1.2
10 Yr	1.83%	1.68%	1.46%	0.37%	0.22%	0.19%	2.0	1.2
Since Inception	4.76%	4.60%	4.50%	0.26%	0.10%	0.26%	1.0	0.4

¹Excess Return Gross-of-Fee and Excess Return Net-of-Fee are included as supplemental information.
Past performance is not a guarantee of future performance. All dollar values are listed in USD millions.

Compliance Statement

NISA Investment Advisors, LLC claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. NISA Investment Advisors, LLC has been independently verified for the periods of January 1, 1995 through December 31, 2024. The verification report is available upon request.

A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report.

Composite Description

The NISA Core Broad Market Fixed Income Composite includes all of NISA's fully discretionary tax-exempt institutional fixed income portfolios with similar risk characteristics and investment objectives that are benchmarked to the Bloomberg Aggregate or comparable index. Portfolios are generally deemed to have similar investment objectives and risk characteristics if the portfolio's investment guidelines do not materially limit holding all securities in the Benchmark and to which NISA applies its tax-exempt active fixed income portfolio management strategy. As of January 1, 2024, there is no minimum portfolio size for inclusion in this composite. From January 1, 2006 through December 31, 2023, the minimum portfolio size was \$25 million. Prior to January 1, 2006, there was no minimum portfolio size. All returns are based in U.S. Dollars.

Benchmark Description

The Bloomberg U.S. Aggregate Index may be used for comparison purposes. The Bloomberg U.S. Aggregate Index is a broad-based fixed income index and consists of U.S. dollar denominated U.S. Government, investment grade corporate, sovereign and supranational, and federally taxable municipal bonds; U.S. Government mortgage-backed securities; and fixed rate asset-backed and commercial mortgage-backed securities.

Please see the attached Performance Appendix for additional information.

NISA Investment Advisors, LLC

Performance Appendix

As of 03/31/2025

The Firm

NISA Investment Advisors, LLC is an independent investment management firm and is registered in the United States as an investment adviser with the SEC and as a commodity trading advisor with the NFA. NISA is also registered as a portfolio manager in the Canadian provinces of Ontario, Alberta, British Columbia, Manitoba, and Quebec, and as a commodity trading manager in Ontario.

Reported Statistics

Composite Gross-of-Fee Return is the asset-weighted return, including realized and unrealized capital gains and losses, income received, accrued income and other earnings of the portfolios in the composite prior to the deduction of all fees and expenses that a client has paid or would have paid in connection with NISA's investment management services to the relevant portfolio. Gross-of-Fee returns have been reduced by the transaction costs paid by the portfolio, including but not limited to: commissions, bid-offer spreads, advisory fees paid to an underlying investment vehicle (e.g., ETFs), clearing and FCM fees.

Composite Net-of-Fee Return is the Composite Gross-of-Fee Return reduced by the impact of all fees and expenses that a client has paid or would have paid in connection with NISA's investment management services to the relevant portfolio. The Composite Net-of-Fee Return is calculated by subtracting 1/12 of the highest tier of the current applicable model fee schedule from the monthly Composite Gross-of-Fee Return. In periods where the model fee was lower than the actual management fees incurred by the portfolio(s) in the composite, the actual investment management fee is applied. For strategies (e.g., liability-based strategies) that the strategy size for return denominator is different from the strategy size that the fee rate is based off, the fee rate is prorated with the strategy size for the return denominator and then used in the above Net-of-Fee return calculation. Net-of-Fee returns are not reduced by custodial fees paid to a custodian for safekeeping funds/securities or other third-party fees paid out of the account that are not related to the investment management services provided by NISA (e.g., investment consultant fees).

Benchmark Return includes unrealized gains and losses, accrued interest and income reinvested into the benchmark, as reported by the index provider(s).

Excess Return Gross-of-Fee is the difference between the Composite Gross-of-Fee Return and the Benchmark Return.

Excess Return Net-of-Fee is the difference between the Composite Net-of-Fee Return and the Benchmark Return.

3-Year Standard Deviation is the 3-year annualized ex-post standard deviation of monthly gross of fees returns. The 3-Year Standard Deviation is only presented for composites that have at least three calendar years of continuous history.

Tracking Error is the annualized standard deviation of the Excess Return Gross-of-Fee.

Information Ratio Gross-of-Fee is the Excess Return Gross-of-Fee divided by Tracking Error Gross-of-Fee (Tracking Error).

Information Ratio Net-of-Fee is the Excess Return Net-of-Fee divided by Tracking Error Net-of-Fee, which is the annualized standard deviation of the Excess Return Net-of-Fee.

Dispersion is the asset-weighted standard deviation of the difference between gross-of-fee portfolio return and Composite Gross-of-Fee Return. Only those portfolios that are included in the composite for the entire period are included. The mean return of the portfolios included in the dispersion calculation may differ from the Composite Gross-of-Fee Return. Dispersion is presented only in years in which more than five portfolios are included in the composite for the entire year.

Derivatives Use

NISA may utilize U.S. Treasury futures contracts from time to time to seek to better manage the yield curve exposure of the portfolio versus the benchmark. Such futures use is restricted to portfolios with investment guidelines that permit their use. U.S. Treasury futures are traded through a futures exchange clearinghouse, and otherwise exhibit interest rate characteristics similar to U.S. Treasury bonds.

Assets Under Management

Firm Assets do not include a measure of the amount of derivatives that NISA manages.

Significant Cash Flows

NISA's performance policies define Significant Cash Flows on a composite-specific basis. Effective August 01, 2018, the Significant Cash Flow threshold for the Core Broad Market Fixed Income Composite is 9.0% of the beginning of month market value. Significant Cash Flow thresholds prior to August 01, 2018 are available upon request. NISA generally calculates performance for a portfolio to remove the effect of a Significant Cash Flow by utilizing a temporary portfolio, as recommended by GIPS provision 3.B.2. However, a portfolio is omitted from the composite for the relevant period(s) if the client does not provide Sufficient Notice, as defined in our performance policies, for a withdrawal that qualifies as a Significant Cash Flow.

Fees

The standard annual advisory fee schedule offered for this product is as follows:

0.15% per annum on the first \$500 million, Negotiable on Balance.

Fees are negotiable for accounts of substantial size. A minimum fee may apply. Additional information regarding fees is in NISA's Form ADV Part 2A; available at www.adviserinfo.sec.gov.

NISA Investment Advisors, LLC

Performance Appendix

As of 03/31/2025

Firm Significant Events

Consistent with NISA's team approach to managing portfolios, NISA's Investment Committee, Model Portfolio team, and Portfolio Management Group are all involved in the portfolio management process. The Investment Committee, consisting of senior firm employees, focuses on investment strategies used to develop the profile for each portfolio. The Model Portfolio team (consisting of representatives from the Investment Committee, Credit Research, and Credit Portfolio Construction and Trading) further refines the Investment Committee's strategic themes and targeted sector positioning. Finally, the Fixed Income and Derivatives Portfolio Management Group is responsible for constructing portfolios and implementing portfolio strategy. Material turnover of senior membership of these groups in the past five years consists of the following:

- NISA was engaged in a multi-year planned succession and the last transition became effective January 1, 2021 with Jess Yawitz stepping down as NISA's CEO and David Eichhorn becoming NISA's CEO. In anticipation of this transition, effective June 1, 2020, David became the Chair of NISA's Investment Committee. Anthony Pope and Ken Lester assumed the role of Vice Chairs of the Investment Committee. Effective January 1, 2022, Jess retired from NISA and was no longer a member of the Investment Committee.
- Effective May 31, 2022, a senior member of NISA's Fixed Income and Derivatives Portfolio Management Group left his position to assume the role of Chief Operating Officer.
- A Director, Portfolio Management, who was a member of both the Investment and Management Committees, retired from NISA effective December 31, 2022.

Other Information

Actual portfolio holdings may differ from the holdings in the Benchmark. Market values used to compute the returns of the portfolios included in the composite are determined by NISA based on its Pricing and Valuation policy, which may result in prices different than those used by the index provider(s) to calculate the return of the Benchmark.

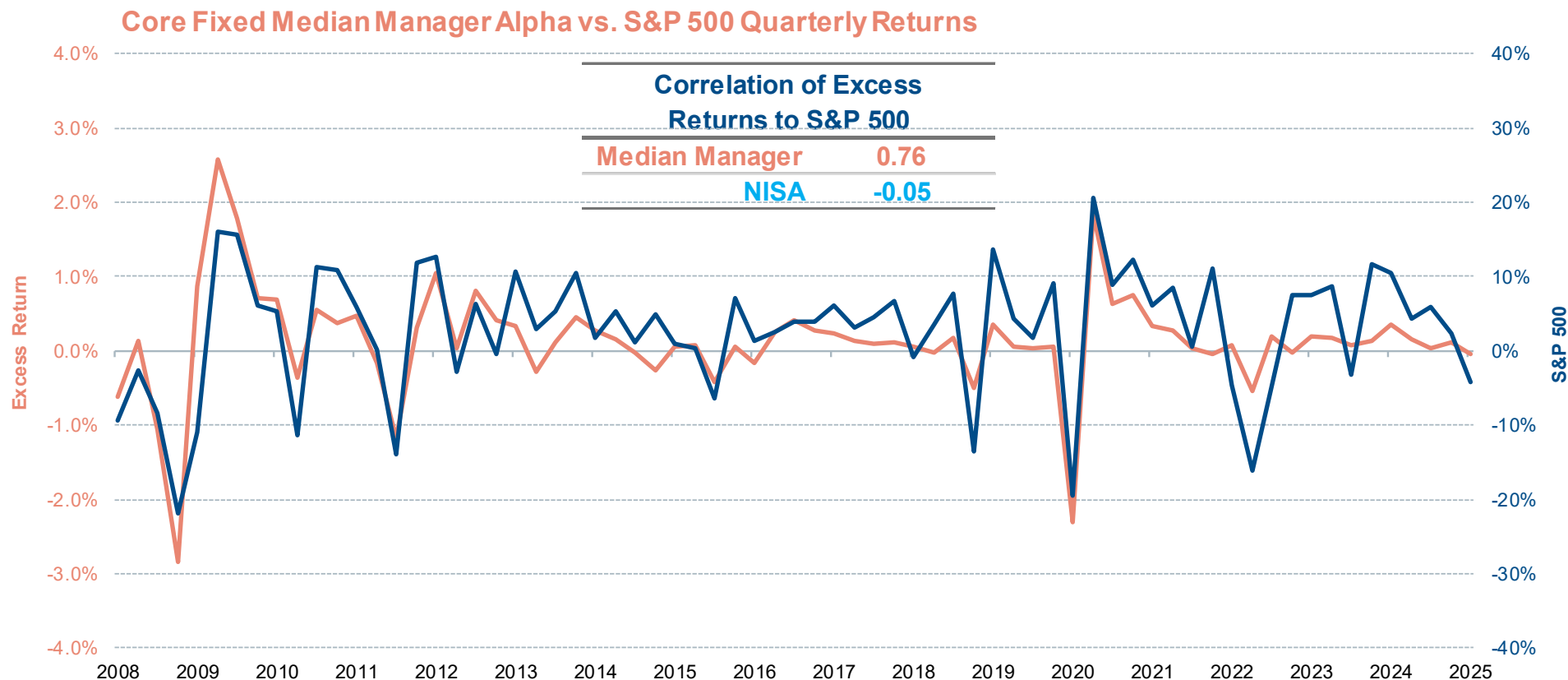
A complete list of composite descriptions and pooled fund descriptions for limited distribution pooled funds are available upon request. If the pooled fund or composite is more than ten years old, returns are shown for the previous ten calendar years. Returns for earlier periods are available upon request. Policies for valuing investments, calculating performance and preparing GIPS reports are available upon request.

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Median Asset Managers' Excess Returns Look Like Equity Beta¹

- Median Asset Manager is based on the median net of fee quarterly return of available Core investment manager separate accounts in the Nasdaq eVestment Analytics database for the entire period presented, which begins on January 1, 2008, chosen to include the effects of the credit crisis that began in 2008.
- Median Asset Manager quarterly returns were calculated by NISA using monthly returns available in Nasdaq eVestment.



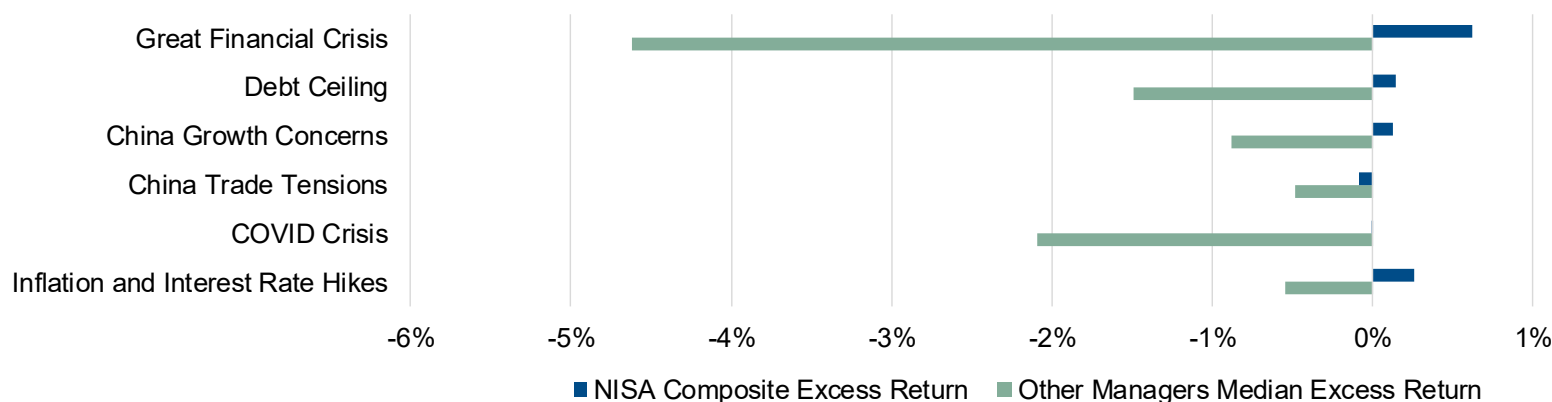
¹Median Manager excess returns does not include NISA excess returns

Note: There are shortcomings to using databases, including limitations on inclusiveness and survivorship bias. Benchmarks identified in the Nasdaq eVestment Analytics database are selected by the product's investment manager and may not be indicative of the true product benchmark. The analysis is based on data from 01/01/2008 through 03/31/2025 (chosen to include the effects of the credit crisis), from Nasdaq eVestment Analytics, Bloomberg, and Bloomberg Index Services Ltd. Results are further screened to exclude strategies with less than \$500mm in AUM, tracking error greater than 4%, and strategies that have not reported full net-of-fees returns for the reporting period. Neither NISA nor Nasdaq eVestment guarantee or warrant the accuracy, timeliness or completeness of the information provided by Nasdaq eVestment and are not responsible for any errors or omissions with respect to such information. Past performance is not a guarantee of future performance. NISA pays Nasdaq eVestment Analytics a standard fee for access to manager data. NISA's excess return are net of fees.

NISA's Core Broad Market Performance in Spread Widening Periods

NISA's Core Broad Market F.I. Composite during periods of credit spread widening vs. median monthly return of the universe of other Core F.I. managers in the Nasdaq eVestment database. This analysis uses net-of-fee returns.

Spread Widening Period	Start Date	End Date	SPTR Return	Benchmark Return	NISA Composite Excess Return	Other Managers Median Excess Return	NISA Excess Return vs Median Manager
Great Financial Crisis	December-07	November-08	-37.66%	1.45%	0.62%	-4.63%	5.26%
Debt Ceiling	April-11	November-11	-7.32%	4.89%	0.15%	-1.40%	1.55%
China Growth Concerns	April-15	February-16	-5.59%	1.40%	0.13%	-0.91%	1.03%
China Trade Tensions	September-18	December-18	-13.52%	1.64%	-0.09%	-0.50%	0.42%
COVID Crisis	December-19	March-20	-19.60%	3.15%	0.00%	-2.08%	2.08%
Inflation and Interest Rate Hikes	January-22	October-22	-13.21%	-13.86%	0.26%	-0.53%	0.78%
Since 12/31/2007 (annualized)	December-07	March-25	10.22%	2.87%	0.20%	0.54%	-0.34%



- NISA's approach has typically generated outperformance vs. other managers during periods of widening credit spreads¹.
- This aligns with NISA's view that true alpha does not come from systematically overweighting credit within fixed income portfolios.
- NISA has not outperformed in all periods. See pages 5 - 7 for NISA's full performance history. See page 8 for a peer comparison.

¹A spread widening period is defined as a period where the Bloomberg Aggregate OAS increased by greater than 15 bps peak to trough over a period of at least 3 months. Start and end dates are based on the months with the tightest and widest OAS at month-end.

Note: There are shortcomings to using databases, including limitations on inclusiveness and survivorship bias. Benchmarks identified in the Nasdaq eVestment Analytics database are selected by the product's investment manager and may not be indicative of the true product benchmark. The analysis is based on data from 01/01/2008 through 03/31/2025 (chosen to include the effects of the credit crisis), from Nasdaq eVestment Analytics, Bloomberg, and Bloomberg Index Services Ltd. Results are further screened to exclude strategies with less than \$500mm in AUM, tracking error greater than 4%, and strategies that have not reported full net-of-fees returns for the reporting period. Neither NISA nor Nasdaq eVestment guarantee or warrant the accuracy, timeliness or completeness of the information provided by Nasdaq eVestment and are not responsible for any errors or omissions with respect to such information. Past performance is not a guarantee of future performance. NISA pays Nasdaq eVestment Analytics a standard fee for access to manager data. NISA's excess return are net of fees.

Please see the GIPS Composite Reports preceding this page for performance information and disclosures of the NISA Core Broad Market Fixed Income composite.

Portfolio Management Overview

We believe the following are key differentiators of NISA's portfolio management services.

Risk Control

Management of risk is central to NISA's investment approach. Given the strategic nature of client portfolios, tracking error, which adds material beta or tail-risks, is unwelcome.

Diversified Enhancement

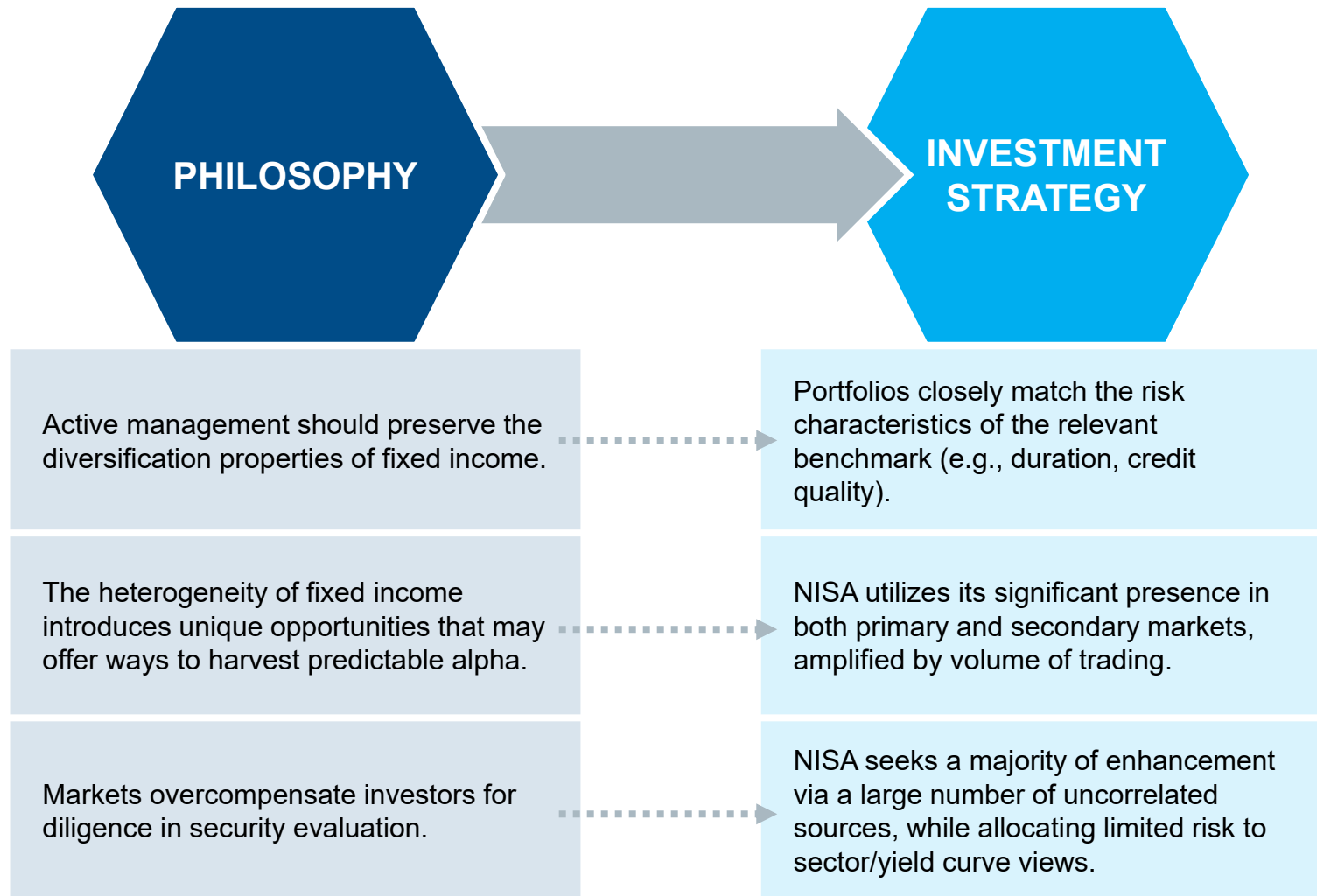
NISA seeks enhancement in both a top-down and bottom-up structure. NISA portfolios generally comprise a large number of diversified positions.

Team Portfolio Management

All portfolios are team managed. Essential roles are played by NISA's Investment Committee, Portfolio Management and Investment Strategies groups.

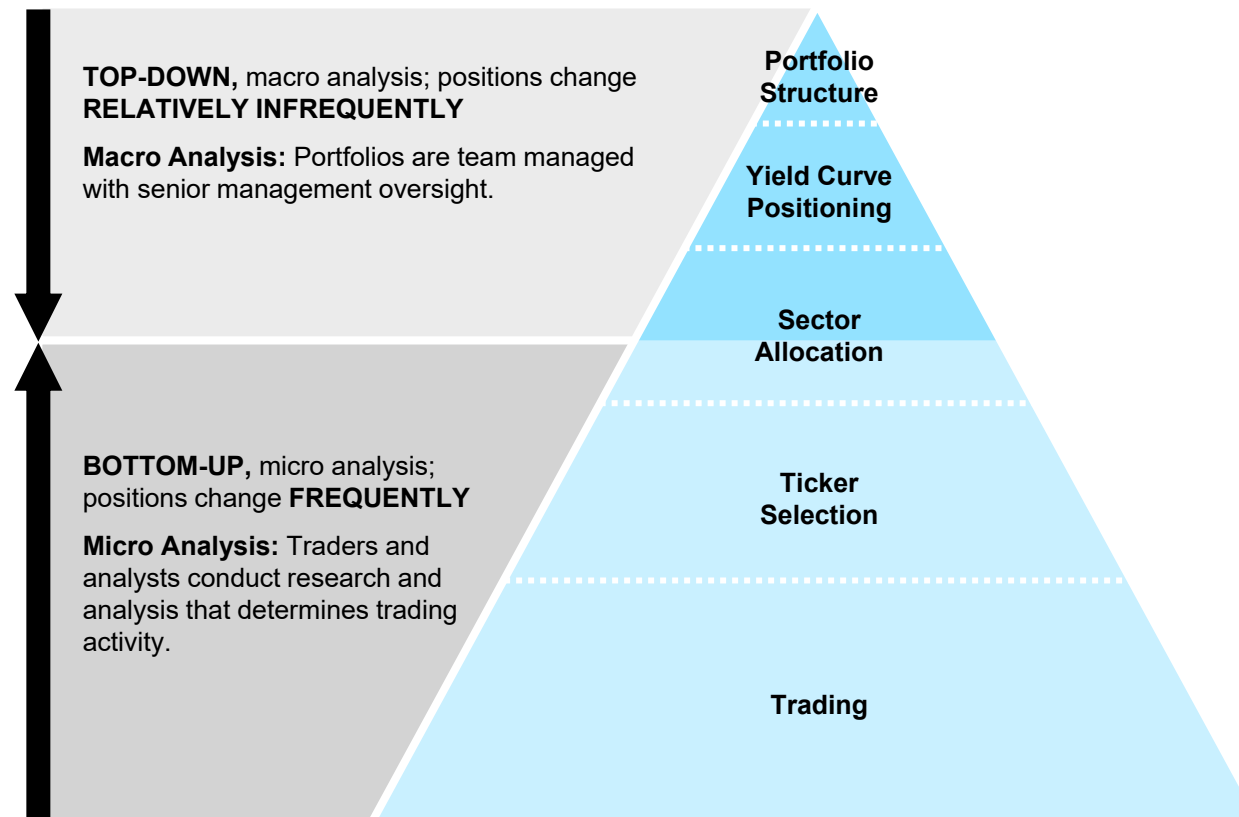
Portfolio Management

NISA's strategy is risk-controlled, focused on relative value.



Portfolio Management - Implementation

A combination of different types and numerous active decisions result in broadly diversified positions that seek to generate high risk adjusted excess return over a typical market cycle.



Portfolio Management – Areas of Enhancement Overview

We seek enhancement within each segment of the benchmark.

Government	Credit	Securitized
<ul style="list-style-type: none">• Used to managed liquidity and interest rate risk across the portfolio.• Macro and micro curve positioning occur along the Treasury yield curve, strategic views on the level of interest rate are generally not utilized.• Numerous issues across the Treasury complex provide opportunities for liquidity provisioning and micro curve trades.	<ul style="list-style-type: none">• Ticker selection based on issuer fundamentals and relative value.• Proactive CUSIP selection to capture opportunities presented by the heterogenous nature of credit securities and markets.• Unique structure provides the ability to act in a timely manner as a liquidity provider to the market.• Limited credit basis and sector positioning.	<ul style="list-style-type: none">• Positions based on evaluations of relative value and liquidity in securities (e.g. not systematic volatility selling).• Understanding of unique risk factors across securitized products and how those factors may influence relative value opportunities.• Diversified source of spread exposure relative to the overall portfolio.

Disclosure Information

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