



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 11

MEETING DATE: March 15, 2023

SUBJECT: Investment Manager Recommendation - International Developed Small Cap

SUBMITTED FOR: Consent **Deliberation and Action** **Receive and File**

RECOMMENDATION

Approve an investment of approximately \$100 million with Acadian Investment Management (Non-U.S. Small Cap Value Equity Strategy) and authorize the Chief Executive Officer to execute necessary documents and agreements; and authorize Staff to determine the most effective method for transitioning assets and execute any necessary documents or agreements to effectuate the transition of assets.

PURPOSE

This item complies with SCERS' Growth asset category Investment Policy Statement implementation protocols for public equity investment managers to have Staff and Consultant perform due diligence and make investment manager recommendations to the Board for consideration and final approval.

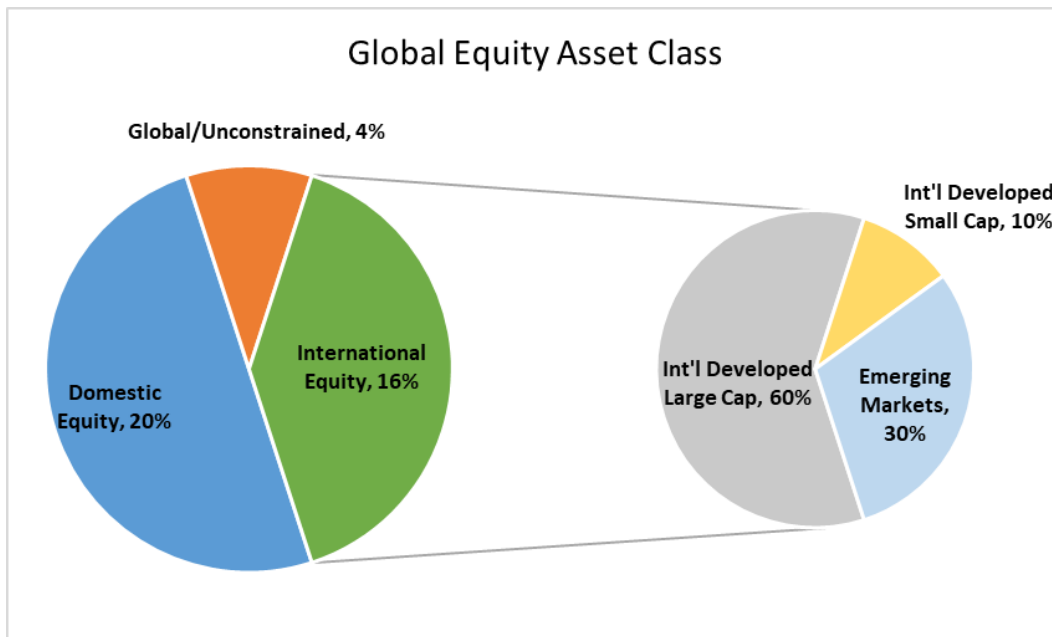
BACKGROUND

The investment objectives of the International Developed Small Cap Equity sub-asset class, which is a component of International Equity within the Global Equity asset class, and resides within the Growth asset category, include the following:

- Enhance total fund performance
- Invest in a diversified portfolio of international equity securities, across investment styles and market capitalizations, through externally managed strategies
- Earn net returns in excess of equity index benchmarks, primarily from the selection of investment managers
- Maintain reasonable levels of aggregate risk, as measured through standard deviation and tracking error.

The structure for SCERS' Global Equity asset class and International Equity are presented below.

Asset Class	Target %	Range
Global Equity	40%	36% - 44%
Sub-Asset Class	Target %	Range
Domestic Equity	20%	18% - 22%
International Equity	16%	14% - 20%
Global/Unconstrained Equity	4%	1% - 6%



At the September 2022 Board meeting, the Board approved initiating a manager search for the Developed Small Cap segment of the International Equity sub-asset class, within the Global Equity asset class. The Small Cap segment of International Developed Markets equity has a 10% target allocation, or approximately \$200 million. The segment is entirely actively managed, split evenly between a growth-oriented manager (William Blair) and a value-oriented manager. The search is being conducted to fill the value-oriented segment of the allocation due to the recent termination of Mondrian Investment Partners, with a target allocation of \$100 million for the manager being recommended.

MANAGER SEARCH SUMMARY

For the search, Staff and Verus performed extensive due diligence, which included screening the manager universe through investment manager databases and leveraging Verus' resources to help construct an initial list of potential candidates. Staff and Verus reviewed manager information sourced from both investment manager databases and received directly from managers. Staff and Verus conducted multiple rounds of interviews with potential candidates, including visiting the offices of the final candidates selected. Verus also conducted operational

due diligence on the final manager being recommended. The following managers were selected to interview with Staff and Verus during January and February 2023:

- Acadian Asset Management
- Harris Associates
- LSV Asset Management
- Thompson, Siegel & Walmsley (TSW)

Following the interviews, Staff and Verus continued the due diligence process, which included additional data requested from the managers and follow-up communications via call or email. While all manager candidates were highly qualified, this memo will focus on the recommendation of Acadian and the factors that differentiated it from the other managers.

RECOMMENDATION

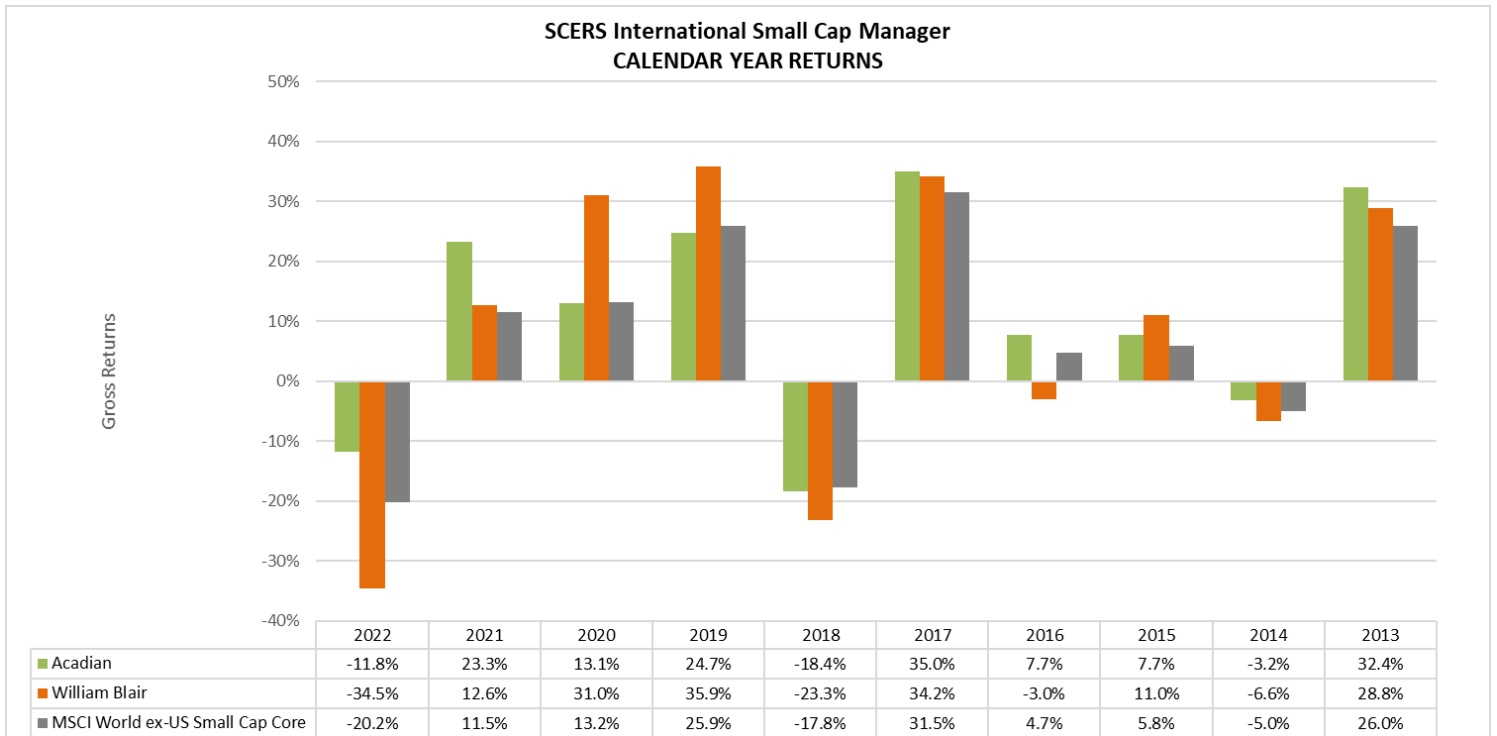
Staff and Verus recommend the addition of Acadian Asset Management to manage the value segment of SCERS' International Developed Small Cap Equity portfolio. Acadian uses a systematic process to construct a highly diversified portfolio of over 1,000 securities. Even with the diversified nature of the portfolio, the Acadian strategy has generated strong excess returns above the benchmark index, with high active share¹ and moderate tracking error². The investment process emphasizes stock selection based on quantitative models, which forecast the expected excess return for each stock. The Acadian portfolio is constructed to deliver the highest expected return, but with specific constraints to ensure a highly diversified portfolio (by country and sector/industry) with multiple factors driving return. Acadian's multiple factor approach allows the portfolio to deliver excess returns above the value benchmark³ over a range of market environments (i.e. without the value factor solely driving performance).

As noted previously, Staff and Verus recommend equal weighting the allocation across value (Acadian) and growth (William Blair) mandates, with each manager allocation approximately \$100 million. As part of the analysis performed, SCERS and Verus examined the calendar year returns for each manager, including the combined returns for the targeted International Small Cap portfolio. The performance chart below shows the historical calendar year performance for Acadian (Value), and current Growth manager William Blair, versus the MSCI World ex-US Small Cap Index.

¹ Active Share: Measures the percentage of stock holdings in a manager's portfolio that differs from the benchmark index. Calculated as the sum of the difference between the weight of each stock in the portfolio and its benchmark weight, divided by two.

² Tracking error: Measure of how a portfolio's returns differ compared to the benchmark, calculated as the standard deviation of the difference in returns between a portfolio and the benchmark.

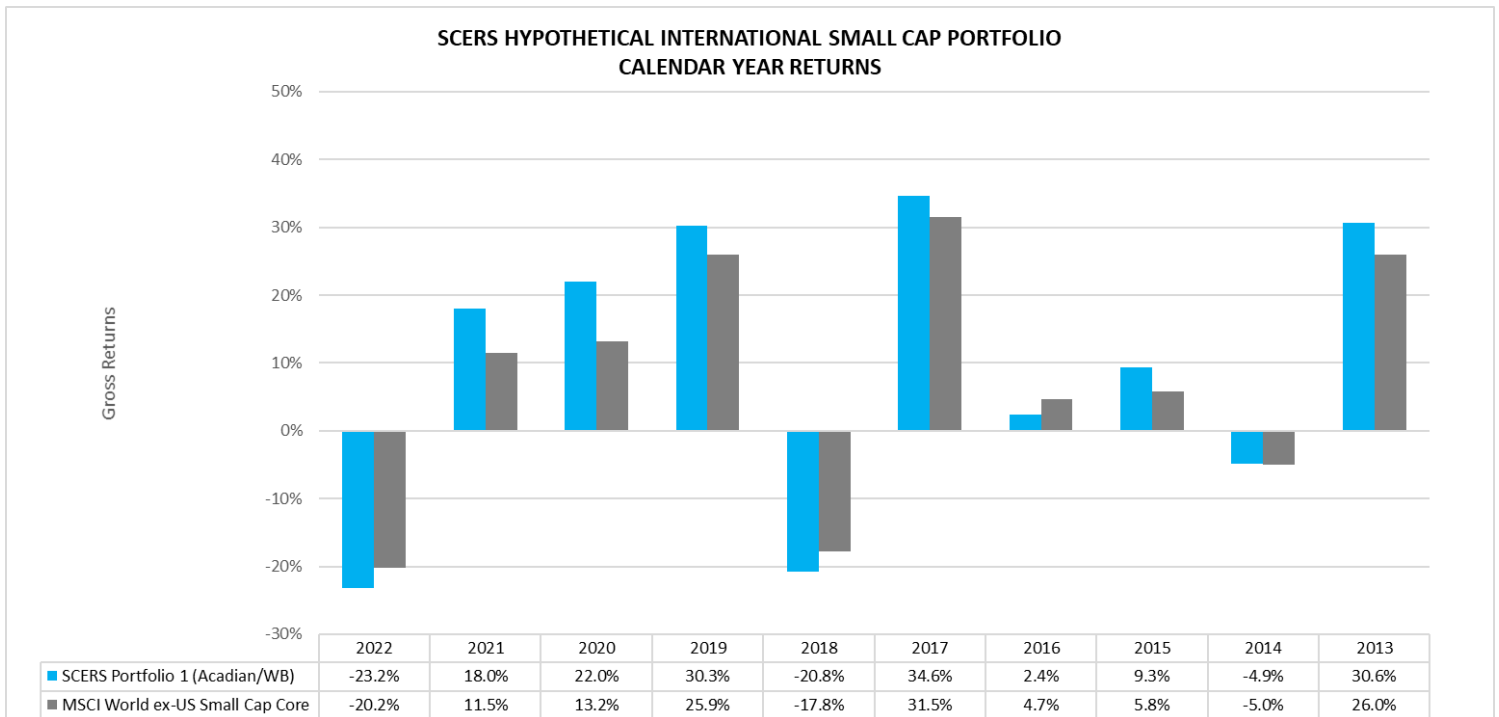
³ Value benchmark is the MSCI World ex-US Small Cap Value index



Source: SCERS, eVestment, as of December 31, 2022. Calendar Year Returns vs MSCI World ex-US Small Cap Index.

When considering portfolio construction, Staff also modeled the hypothetical historical performance of the proposed managers and strategies. The chart below assumes an equal weight allocation to each manager (Acadian and William Blair). As the chart shows, the combined portfolio would have outperformed the MSCI World ex-US Small Cap Index benchmark in seven out of the past ten years. Additionally, the magnitude of outperformance is significantly greater than the degree of underperformance⁴, resulting in average annualized excess return of +2.2%. While past performance does not guarantee future results, it helps provide confidence that the combined allocation of the strategies can generate meaningful outperformance versus the benchmark.

⁴ Average outperformance in years the portfolio outperformed the benchmark was +4.4%. Average underperformance in years the portfolio underperformed the benchmark was -2.8%.



Source: SCERS, eVestment, as of December 31, 2022. Assumes equal weight allocation for each year.

MANAGER REVIEW

The Verus report has detailed review of Acadian. Below is summary review of Acadian by Staff.

ACADIAN INVESTMENT MANAGEMENT

Firm History

Acadian Asset Management was founded in 1986 and is headquartered in Boston, Massachusetts. The Firm is a pioneer in systematic investment strategies, specializing in the active management of global and international equity strategies. Acadian has over \$83 billion in assets under management, focused primarily on public equity strategies (\$80B) and absolute return strategies (\$3B). The Firm has 373 employees across offices in London, Australia, and Singapore. Acadian is a wholly owned subsidiary of BrightSphere Investment Group, a Delaware corporation publicly listed on the NYSE.

Acadian is a quantitative, data-driven firm that operates with a fundamental belief that there are market inefficiencies and a systematic process is best suited to benefit from these inefficiencies. The Firm’s emphasis on international and emerging markets is based on the belief these markets have greater inefficiency than U.S. equity markets, which presents an opportunity to generate excess returns for investors. The inception date for Non-U.S. Equity strategies goes back several decades, with the Firm more recently expanding into other products and regional equity markets.

The Acadian Non-U.S. Small Cap Value strategy launched in 2005 and has approximately \$500 million in AUM. The broader Acadian Non-U.S. Small Cap Core strategy was launched in 1993 and has over \$8 billion in AUM.

Team

Acadian is led by Chief Investment Officer Brendan Bradley, Ph.D., who was over 25 years of investment experience and joined Acadian in 2004. The investment team emphasis is on research and technology that can support and improve the systematic investment approach employed by the Firm. The investment team consists of over 100 professionals split among investment data & analytics, global equity research, portfolio management, and implementation. The investment team averages over 16 years' experience and collectively has over 100 advanced analytical degrees.

Acadian employs a team-based approach to portfolio management. The equity portfolio management and implementation teams include 58 investment professionals. These teams are responsible for the application of the investment strategies, portfolio optimization, trading, and risk management. A dedicated subset of portfolio managers are focused on the core equity strategies, including the Non-U.S. Small Cap Value strategy.

INVESTMENT STRATEGY

Philosophy & Approach

Acadian's investment strategy employs a systematic, multi-factor approach to establish alpha return forecasts for a global universe of public equity securities. The multi-factor approach combines stock-specific fundamental factors (value, growth, quality), top-down macro forecasts (country and regional), and peer-relative forecasts. The goal is to identify stocks that exhibit favorable characteristics and have greater upside potential. Characteristics include:

- Attractive Valuation
- Positive Growth in earnings and cash flow
- Sound operating and balance sheet quality
- Favorable macro environment and industry dynamics

Acadian's models incorporate over 100 predictive factors, with greater weight applied to factors Acadian believes are most effective at forecasting returns. Individual factors are combined into aggregate factors based on similarities such as economic intuition and correlation. Each stock in the investment universe is scored based on exposure to the 100+ factors, which ultimately determines alpha return forecast for the stock. The systematic nature of the process allows Acadian to forecast returns for a wide range of stocks, estimated to be over 17,000 for the World ex-U.S. Small Cap Universe, on a daily basis.

Research Process

Acadian's research effort is focused on increasing the predictive accuracy of their models and forecasts to ensure the process best captures the insights of their investment team. Their goal is to increase the expected return of their strategies, via increasing the amount of "alpha" each

has access to. The firm achieves this by finding new alpha sources, enhancing existing ones and improving the transfer of alphas into their portfolios.

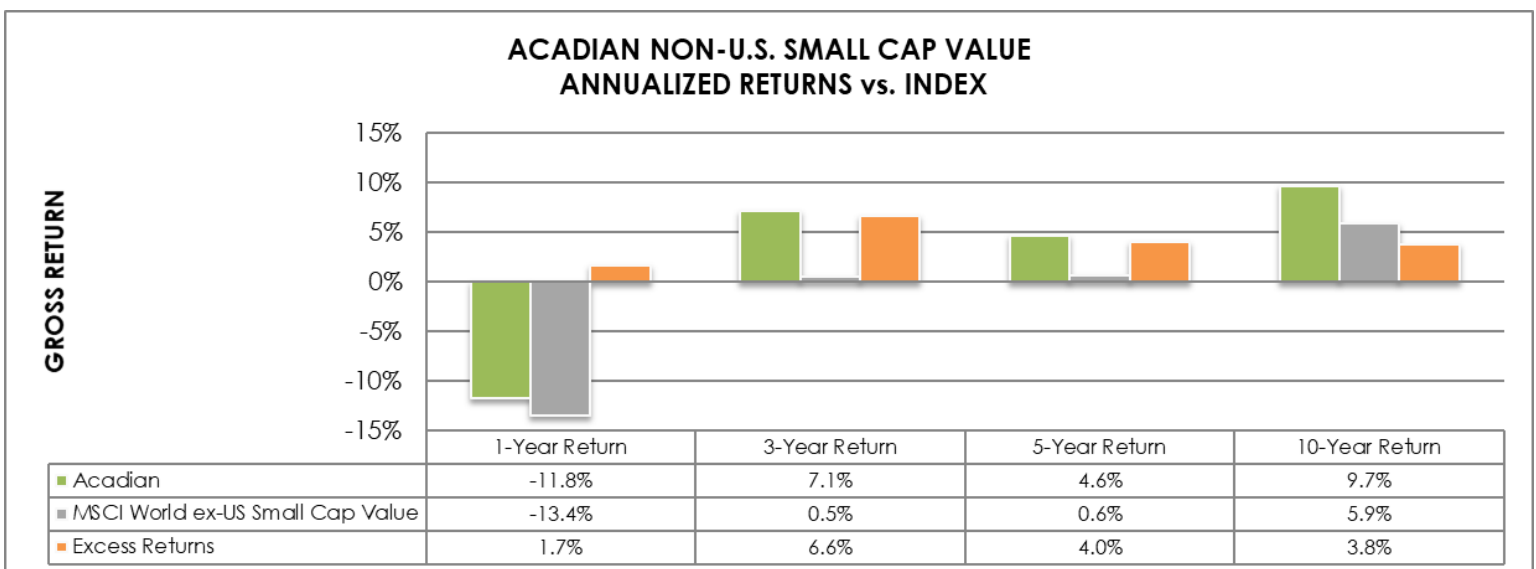
The research process is structured in a systematic manner. The process begins with idea generation, moving through testing and review, prior to final evaluation and implementation. The majority of research ideas are internally sourced. The investment team collects insights from a wide range of sources including industry, academia, data sources, and new statistical and machine learning techniques. Adjustments to the models and individual factors are implemented when they are incrementally additive to predictive accuracy and expected returns.

Portfolio Construction

Acadian investment portfolios are structured on the fundamental belief that diversified portfolios are the best approach to capture returns from a systematic investment strategy. The portfolios are highly diversified, with the Non-U.S. Small Cap Value portfolio holding over 1,200 securities. Portfolios are constructed to offer the highest expected return through a portfolio optimization process. Portfolio optimization quantifies all aspects of the client mandate, including security correlations, risk target, estimated transaction costs, available liquidity, and any other client restrictions.

Despite holding a high number of securities, the portfolio is structured to generate attractive returns relative to the index benchmark. This is accomplished by holding a large number of securities not included in the benchmark. This has resulted in the portfolio having 80% active share, despite holding over 1,200 securities. To offset tracking risk by holding non-benchmark securities, the portfolio has specific guidelines around sector and country exposure relative to the benchmark index.

PERFORMANCE



Source: SCERS, eVestment, as of December 31, 2022

Acadian has delivered strong relative performance since inception and across multiple time periods. Performance is in the top decile over the 3-, 5-, and 10-year time periods. Acadian also has a delivered positive upside capture and low downside capture, delivering outperformance in both up and down markets. Additionally, Acadian’s outperformance versus the benchmark has been driven by alpha, with beta below 1.0, with moderate levels of volatility and tracking error, resulting in strong risk-adjusted returns. Performance statistics for Acadian are presented below.

Performance Risk & Efficiency Measures

	<u>3-Year</u>	<u>5-Year</u>	<u>7-Year</u>	<u>10-Year</u>
Annualized Returns	7.1%	4.6%	8.9%	9.7%
Annualized Alpha	6.54	3.98	3.71	3.85
Beta	0.95	0.96	0.95	0.95
Sharpe Ratio	0.28	0.17	0.45	0.55
Information Ratio	1.50	0.94	0.91	1.05
Tracking Error	4.42	4.26	4.01	3.60
Upside Capture	114.5	106.9	106.2	105.9
Downside Capture	93.0	92.4	91.9	89.1

Source: SCERS, eVestment, as of December 31, 2022.

MANAGEMENT FEES

Acadian does not currently offer a commingled fund for its Non-U.S. Small Cap Value Equity strategy. Therefore, SCERS will utilize a separately managed account structure with assets held by SCERS’ custodian. For separately managed accounts, Acadian offers either a tiered management fee (management fees based on level of AUM), or a performance-based fee structure. For an account size of \$100 million, the tiered management fee would be equal to 70 basis points (0.70%). Under the performance fee structure, the base fee would be lower but would allow Acadian to earn increased compensation dependent on performance above the benchmark index.

Staff and Verus recommend a performance- based fee structure. The structure offers a lower base fee with a performance fee earned when performance exceeds the benchmark. The break-even level where the performance-based fee and tiered standard fee are equivalent is at approximately 2.5% excess performance. Acadian can earn a higher overall fee based on greater levels of outperformance above the benchmark. The performance fee does include a cap, which provides for a maximum amount of management fees that would be paid by SCERS. Recommendation of the performance based fee is dependent upon the successful negotiation of all terms, including how the fee is calculated. If terms for the performance-based fee cannot be reached, then the standard tiered management fee based on AUM levels would apply.

TRANSITION OF ASSETS

SCERS terminated the previous international small value cap mandate with Mondrian Investment Partners in October 2022, with proceeds received during November 2022. To maintain market exposure during the manager search process, the assets were invested in a

total return swap that tracked the performance of the MSCI World ex-US Small Cap Value index. The total return swap has an expiration date of month end April 2023. The current market value of the total return swap, as of February month end, was approximately \$100.2 million. Upon expiration, the proceeds from the swap will be used to fund the mandate with the new international small cap value manager. Therefore, upon approval, SCERS is targeting to fund the new mandate in conjunction with the expiration of the swap, at April 2023 month end.

Staff requests that the Board authorize Staff to determine the most effective method for transitioning the assets and execute any necessary documents or agreements to effectuate the transition of assets. With the use of a separately managed account, SCERS will explore alternatives of using a transition manager or fund the new mandate with cash, which would allow the new manager to build the portfolio directly. Staff will update the Board on the chosen transition method. The funding of the new mandate is contingent upon completion of legal review and negotiation of a SCERS specific investment management agreement. Staff will also work with Overlay Program manager, State Street Global Advisors (SSGA), to adjust overlay exposures as the transition is taking place.

SUMMARY

Staff and Verus believe that adding Acadian to manage an international developed small cap value strategy will enhance SCERS' Global Equity asset class. Acadian has developed an investment strategy that has delivered significant outperformance versus peers and its benchmark.

ATTACHMENTS

- Board Order
- Verus Manager Recommendation and Search Presentation
- Acadian Presentation

Prepared by:

/S/

Brian Miller
Senior Investment Officer

Reviewed by:

/S/

Eric Stern
Chief Executive Officer

/S/

Steve Davis
Chief Investment Officer



Retirement Board Order

Sacramento County Employees' Retirement System

**Before the Board of Retirement
March 15, 2023**

AGENDA ITEM:

**Investment Manager Recommendation—International Developed
Small Cap**

THE BOARD OF RETIREMENT hereby approves Staff's recommendation to approve an investment of approximately \$100 million with Acadian Investment Management (Non-U.S. Small Cap Value Equity Strategy) and authorize the Chief Executive Officer to execute necessary documents and agreements; and authorize Staff to determine the most effective method for transitioning assets and execute any necessary documents or agreements to effectuate the transition of assets.

I HEREBY CERTIFY that the above order was passed and adopted on March 15, 2023 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:
(Present but not voting)

Keith DeVore
Board President

Eric Stern
Chief Executive Officer and
Board Secretary

Memorandum

To: Sacramento County Employees' Retirement System (SCERS) Board
From: John Nicolini, Senior Consultant
Brian Kwan, Senior Consultant
Date: March 15th, 2023
RE: Non-U.S. Small Cap Value Manager Search and Recommendation

Executive Summary

On September 21st, 2022, the SCERS Board approved the termination of Mondrian Investment Partners International Small Cap strategy and authorized a replacement search. Mondrian was terminated from the SCERS portfolio and an interim solution of passive exposure to the MSCI World ex USA Small Cap Value swap was implemented. Over the past five months, Staff and Verus, together, initiated and completed a comprehensive search process for one new international small cap value manager to replace Mondrian. We are recommending a \$100 million investment in Acadian Non-U.S. Small Cap Value.

Search Process

- 1) Initial search screen criteria were identified based on benchmark objective/manager style, investment process, track record, and minimum AUM. Eleven managers met the initial criteria for further analysis.
- 2) Staff and Verus prepared and reviewed both quantitative and qualitative information on each strategy including the manager's investment approach and process, organization, team stability, and alignment of interests. Based on additional data and analysis, and through a series of internal meetings and discussions, four managers were identified and agreed upon for further consideration and additional due diligence:
 - a. LSV Asset Management – International Small Cap Value
 - b. TSW – International Small Cap
 - c. Harris Associates – International Small Cap Equity
 - d. Acadian Asset Management – Non-U.S. Small Cap Value
- 3) Supplemental information was requested from each of the finalists including additional performance and attribution information. Staff and Verus further reviewed and discussed the additional information and developed an agenda and process for conducting virtual interviews with the portfolio managers for each of the strategies. Online interviews were held with each of the managers with a focus on better understanding the organization and team structure, investment strategy, decision making process, and attribution of performance over different market environments.

- 4) Staff and Verus reviewed due diligence materials, followed by meetings to discuss the finalists, and agreed Acadian stood out among the other finalists as having the most consistent attributes that SCERS was seeking for this mandate.

Verus Summary and Recommendation

Staff and Verus have performed and completed a thorough review of each of the international small cap value finalists and are recommending to the SCERS Board an investment of \$100 million in the Acadian Non-U.S. Small Cap Value strategy.

IQ RATING AS OF: 02/24/2023
RESEARCH UPDATE:

Acadian Asset Management LLC Non-U.S. Small-Cap Value Equity

Asset Class:	Equity	Verus IQ Rating:	IQ2
Sub-Asset Class:	Non-U.S. Small Cap Value	Flag:	
Strategy Inception:	12/1/2005	ESG Rating:	B
Benchmark:	MSCI World ex-US Small Cap Value-ND	Emerging Diverse:	
Performance Objective:	2% - 3% excess, net of fees	Risk Objective:	4% - 6% TE

Executive Summary

This strategy adheres to the same investment philosophy and quantitative model as the Non-U.S. Small Cap - Developed and All Country World ex-U.S. Small Cap strategies, except it will have more exposure to the firm's valuation factors. The strategy will exclude emerging markets and should be compared to the MSCI World ex-US Small Cap Value index.

The Non-US Small Cap Equity strategy is a quantitative strategy that is team-managed. The team's goal is to construct an optimal portfolio while keeping benchmark-relative risk to the client's desired level. Throughout the investment process, risk is controlled through the use of a proprietary risk estimation system in an effort to create portfolios that embody a mix of optimally correlated investment opportunities.

The strategy has several unique characteristics versus peers, one of which is the team's ability to digest large amounts of data in a structured way while identifying unique alpha factors. This is achieved by having a large team focused on a shared investment approach. The team focuses on maintaining an adaptive model that ensures the model remains effective as economic and market conditions evolve. The entire investment team participates in developing and implementing the research agenda, enhancing alignment across the firm. We view this as a differentiator versus peers. Uniquely, the team's risk model is built into the alpha model and in addition to limiting the amount of unintended risk that makes it into the portfolio, the team also credits the risk model with contribution to performance.

Acadian is wholly owned by BrightSphere, although participation in B shares provides equity-like participation in revenue. BrightSphere could sell the firm in the future, however, required signoff by Acadian senior management reassures us that any new ownership structure would be similar to the existing arrangement.

We expect this strategy to produce modest to significant outperformance over the MSCI World ex-US Small Cap Value equity benchmark with moderate tracking error and adherence to a value style over time. Performance may be challenged in narrow environments characterized by extreme fear or extreme greed.

Firm Assets:	\$93,628.52MM	Separate Accounts:	Available
Strategy Assets:	\$484.74MM	Commingled Vehicles:	
Location:	260 Franklin Street Boston Massachusetts, 02110	Mutual Funds:	
Key Persons:		Status (Open/Closed):	Active

Alignment - The investment product is supported by a robust and stable organizational and team structure.

Description:

Acadian Asset Management LLC is an SEC registered investment adviser based in Boston, Massachusetts that specializes in quantitative equity investments. Acadian is a subsidiary of BrightSphere Affiliate Holdings LLC, which is an indirect wholly owned subsidiary of US-based BrightSphere Investment Group Inc., a Delaware corporation publicly listed on the NYSE. Acadian exercises complete discretion over its investment philosophy, people and process, and is operated as a single independent entity.

Acadian was founded in 1986 as Acadian Asset Management Inc. In 1992, Acadian became an affiliate of Boston-based United Asset Management (“UAM”). UAM in turn was acquired in 2000 by Old Mutual plc, a publicly traded international financial services group listed in London and Johannesburg. The UAM affiliate firms, including Acadian, became the basis of Old Mutual’s US asset management business, Old Mutual Asset Management (OMAM) (now BrightSphere Investment Group Inc.). At the end of 2007, the assets and liabilities of Acadian Asset Management, Inc. merged into the newly created Acadian Asset Management LLC. The primary purpose of the merger was to enable Acadian to offer a new equity plan to key individuals via a Key Employee Limited Partnership, and no change of control resulted. In 2014, Old Mutual took OMAM (now called BrightSphere Investment Group plc, or BSIG) public in a NYSE-listed initial public offering. Through a series of secondary stock offerings, Old Mutual reduced its stake in OMAM to essentially zero by late 2017. Acadian has wholly owned investment advisory affiliates located in Sydney, Singapore, Tokyo, and London.

In terms of compensation, Acadian provides a majority of senior staff an opportunity for financial participation in the profitability of the firm through a Key Employee Limited Partnership implemented via Class B stock. Along with profit sharing and other long-term financial terms, Acadian employees and leadership continue to maintain significant ownership of the profitability of the firm.

Acadian manages a single core process that is custom-tailored to the objectives of the clients and overseen by a team of over 80 investment professionals. The overall investment team is headed by Acadian’s Chief Investment Officer, Brendan Bradley.

Justification:

The firm is an independently operated affiliate of BrightSphere Investment Group plc (BSIG) and although they do not provide equity ownership to key employees in the traditional sense, we view it positively that the firm provides an equity-like distribution through the Key Employee Limited Partnership (KELP) in which all senior PMs participate. With over \$60 billion in AUM, we believe that the firm is stable and profitable. BrightSphere has been public about their willingness to entertain offers. Accounting for the lion’s share of revenue and profits, Acadian senior management would have to sign off on any ownership changes, and any new partnership would be likely to have the same characteristics as Acadian’s current arrangement with BrightSphere.

Edge - The manager has articulated an inefficiency or market-based belief that informs its process.

Description:

Acadian believes markets are inefficient, and that such inefficiencies are caused in part by behaviorally based mispricing. Acadian applies fundamental insights in a systematic manner to attempt to exploit this mispricing and to find attractive stock opportunities. Further, the firm believes a successful investment approach must be multi-faceted

and adaptable. To that end, the team dynamically weights portfolio exposures by including forward looking factors to identify changes in market sentiment. The firm applies a structured, disciplined approach that emphasizes including the most recent information into portfolios by evaluating expected return three times within each 24-hour period. The firm believes qualities of outperforming stocks are multifaceted, and this leads to an investment approach that incorporates a broad array of factors.

The investment team is highly experienced, and the firm has been managing a wide range of equity portfolios since the late 1980s and non-US small cap equity mandates since 1993. The vast majority of the firm's research is internally sourced. While the team uses some external sources for idea generation and to gain access to the testable data, they prefer to do in-house research to verify all aspects of a project, reduce reliance on external parties, and preserve and protect the proprietary nature of the process. As such, factor ideas come from many different sources, including sell-side and academic literature, clients and consultants, and interesting new data sources proprietary to Acadian. The team is also focused on evaluating methodology and framework changes, such as new peer group definitions, portfolio construction approaches, and new risk factors. The idea generation and review processes are largely the same for these changes as they are for factors used in the return forecasting model.

Justification:

This strategy's edge is the team's ability to digest large amounts of data in a structured way while identifying unique alpha factors, many of which are behaviorally oriented to identify overlooked stocks. The firm's structure of a large team focused on a shared philosophy ensures efficiency in model implementation as well as managing its research agenda to ensure the model continually incorporates new insights. Many projects for enhancing the investment process come from the bottom-up, with participation from the entire research team including the broader investment team. The firm also dedicates significant resources to finding unique sources of data and the development of proprietary factors. Among these is the team of data scientists whose sole job is to look for issues with vendor data to identify errors that could lead to mispricing and alpha opportunities.

Implementation - The manager has described an investment approach which is sensible, repeatable.

Description:

The investment process starts with the return forecasting model. For the Non-US Small Cap Equity model, the model evaluates and projects expected return, risk and transaction costs for the universe of 17,000 non-US small cap companies. The model generates a market-relative return forecast for every investible stock in the universe after the close of each regional market.

The return forecasting process begins with a rigorous quantitative assessment of all stocks in the universe on a broad range of factors. There is simultaneous forecasting on 1) from a stock-specific perspective to attempt to predict how each stock will perform relative to its region-industry peers; 2) from a peer perspective to attempt to gain additional insight via non-obvious peer similarities; 3) from a top-down macro perspective to attempt to predict how each stock's country, industry group, and country-industry intersection will perform relative to their market peers.

At the individual stock level, Acadian use a wide range of more than 100 quantitative factors focused on valuation, earnings, quality, and price movements. At the peer level, they apply factors focused on peer fundamentals (value and quality), peer growth, and peer momentum. At the top-down level, they use factors related to valuation, risk, growth, technical, and economic indicators.

The final step in the forecasting framework is to combine stock-specific, peer, and top-down macro forecasts to arrive at a holistic total return forecast. Acadian update these views continuously, after the close of each regional market, which enables them to construct portfolios from their real-time and objective views on all stocks in the relevant universe.

The stock forecasts, combined with transaction costs and risk estimates, flow into a portfolio optimization system used to build portfolios. The optimizer trades off all aspects of the client mandate including benchmark, risk target, estimated transaction costs and available liquidity. It seeks to produce a portfolio with the highest return forecast relative to benchmark risk, net of transaction costs. The portfolio's current holdings with their risk and expected return characteristics are compared to the entire investment universe. Less attractive securities are sold from the portfolio while more attractive securities are purchased, as long as the cost of the buy and sell does not exceed the expected value-added to be gained. A typical portfolio holds 1300 stocks.

Acadian maintains a global team of investment professionals who are responsible for both Portfolio Construction and Trading (PCG). This group reviews the results of the optimization process to ensure that optimized portfolios are in compliance with investment objectives and mandate guidelines, after which the proposed trades and resulting portfolios are reviewed by the portfolio management team as an added measure of quality assurance.

Once trades are approved by both groups, the approved trades are loaded into a third-party Order Management System. Orders are then executed via an execution management system by the Acadian trading desk.

Acadian's research effort is led by Brendan Bradley, CIO and is supported by the entire investment team. There is a 15+ member Global Research team to research. Research efforts are focused on increasing the predictive accuracy of forecasts by capturing the insights of the entire team. The idea generation process for model updates is very collegial, collaborative, and team driven. The general approach is to develop economically intuitive hypotheses about potential factors, test the efficacy of all factors using in-sample and out-of-sample statistical techniques and critically review results as a group. The majority of research is internally sourced to maintain control over all aspects of a project and preserve the proprietary nature of insights. That said, the team are regularly aware of external sources of ideas including academic literature, new statistical techniques and sources of data. In addition to research on factors, the team also focus on evaluating methodology and framework changes such as new peer group definitions, portfolio construction and new risk factors.

Prior to implementation, the Investment Policy Committee (IPC) reviews any recommended changes to the investment models or processes. The IPC comprises all senior investment staff, with CIO Brendan Bradley having ultimate authority over whether a proposal will be implemented.

Justification:

Acadian takes a disciplined and structured approach to implementation of its forecasting model, and we believe frequent updating of forecasts at the close of each market is a differentiator. The ability to produce a forecast for all 17,000 stocks in their universe lends repeatability to the process. This broad application of their model also facilitates easy customization for client customization, typically without sacrificing alpha. We see involvement of the entire team in the research agenda which is primarily internally sourced as a clear advantage in ensuring the forecasting model continues to exploit market inefficiencies.

Optimal use of risk - The manager has an effective framework to assess and manage risk inherent in its process.

Description:

Acadian is aware of multiple sources of risk affecting the portfolio including market risk, security risk, currency risk, and active risk. They define active risk as expected standard deviation of portfolio returns relative to benchmark and consider it to be the primary measure of risk relative to the Non-US Small Cap strategy. The portfolio construction and review process includes a detailed analysis of the sources of portfolio risk, including stock, region, industry, size, and style factors. The team also track realized residual risk over rolling periods to ensure they are delivering a portfolio that meets client risk expectations.

To minimize market risk, they apply investability and liquidity screens to the investment universe and may exclude a market that doesn't meet minimum standards. Active weight per country is typically constrained to +/-6%, and active weight per sector is typically constrained to +/-8%. To manage stock specific risk, Acadian establishes maximum position sizes at an individual stock level based on recent volatility; maximum active weight is dynamic and typically limited to 2.25%. They also maintain a proprietary database of daily trading volume of all stocks in their universe and monitor firmwide holdings of illiquid stocks. Currency views are incorporated in the overall forecast for each market and stock in their universe rather than treated separately. Additionally, currency risk is evaluated overall in the portfolio construction process.

The equity investment management team oversees the risk controls utilized in the investment process. All mandated, firm, and regulatory restrictions applicable to a client's portfolio are coded into portfolio construction software and applied automatically to the account during each rebalance. The optimized portfolio undergoes a detailed review by investment personnel before it is approved for trading. This review focuses explicitly on sources of risk and compliance with stated risk targets. No portfolio is traded without sign-off from multiple members of the team.

The Enterprise Risk Officer is primarily responsible for enterprise risk management including identification of firm-wide risk as well as reporting to the Board.

Justification:

We view proprietary risk models as in line with best practice and believe Acadian's risk model is highly competitive versus peers. Also, the team's risk model is built into the alpha model and in addition to limiting the amount of unintended risk that makes it into the portfolio, active risk is expected to contribute to outperformance.

Understandable Performance - Historical and future performance sensitivities are consistent with the manager's process.

Description:

The strategy seeks to outperform the MSCI World ex-US Small Cap Value benchmark over a market cycle by 2 - 3%, net of fees, at moderate levels of tracking error. The model attempts to exploit value, quality, growth and technical factors. The adaptive nature of the forecasting model means that the style of the portfolio may emphasize various degrees of value-orientation at different points in time. Pure play environments characterized by extreme fear or extreme greed are not likely to favor the Acadian approach .

Justification:

The portfolio has tended to outperform the MSCI World ex-US Small Cap Value benchmark by 2-4 percentage points over rolling 3-year periods. Despite the recent underperformance of the value factor, the strategy has maintain a margin of outperformance above the value- and core-style benchmarks. This is an outcome of the adaptive nature of the value-orientation within the portfolio. Performance has exhibited approximately 105%+ capture in both rising and falling markets and beta is approximately 1. Tracking error in recent years has been within the expected range of 4-6%. The product has tended to underperform periods of market inflection or extreme market exuberance, like in 2018 and 2019, respectively. However, given the team's focus on risk management, benchmark underperformance has tended to be limited.

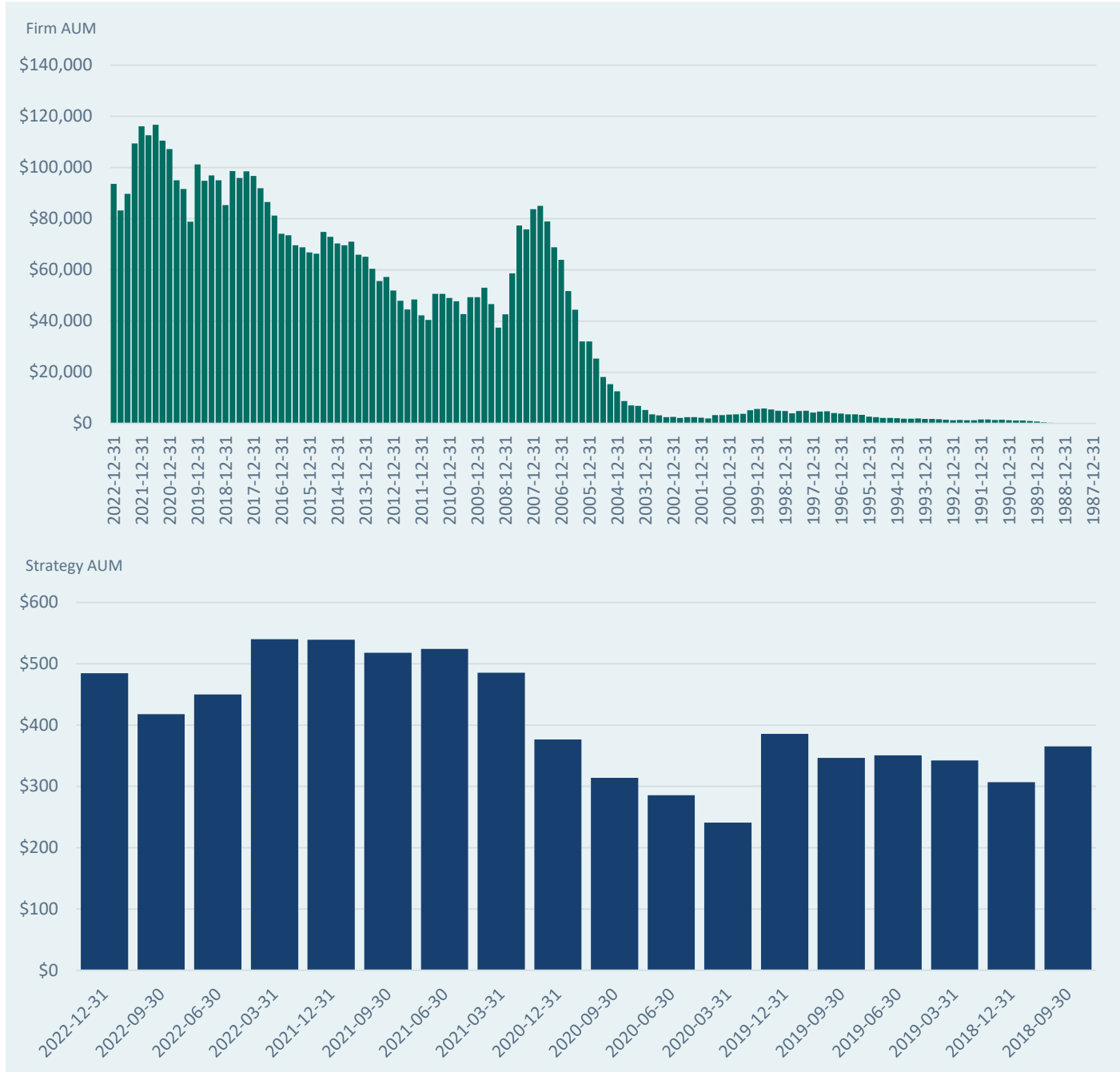
The manager has described an integration of ESG into their investment philosophy.

Acadian believe ESG issues go hand-in-hand with traditional investment issues. Although the investment process is quantitative, the signals incorporated in the forecasting model include both traditional investment factors and non-financial ESG signals that provide a more holistic view. The firm incorporate ESG issues in their bottom-up and top-down frameworks through the use of ESG-specific factors and those that capture ESG considerations indirectly. Acadian’s approach is differentiated by incorporating ESG factors directly into the alpha model and by holding these factors to the same standard of efficacy when considering them for inclusion in the context of the research approach. Acadian engage where they have significant holdings and believe there is an opportunity to improve corporate behavior on environmental, social and governance issues.

Monthly Returns

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	6.70	-	-	-	-	-	-	-	-	-	-	-
2022	-5.88	1.33	3.07	-5.69	0.06	-11.70	6.91	-2.49	-10.90	4.76	10.23	0.43
2021	0.64	5.68	4.39	5.94	3.18	-1.20	1.63	1.17	-3.91	2.72	-4.51	6.11
2020	-2.46	-9.22	-18.13	9.86	5.27	2.49	4.66	5.93	-0.87	-2.68	14.69	7.25
2019	8.77	1.53	0.11	1.31	-3.49	4.83	0.40	-3.31	1.72	3.61	2.89	4.53
2018	5.27	-3.13	-1.07	0.71	-0.42	-3.30	0.34	-0.39	-0.70	-9.12	-1.54	-6.06
2017	4.25	2.31	2.01	3.41	2.02	1.24	4.38	2.01	3.86	1.42	0.46	3.11
2016	-7.27	-0.46	8.64	1.96	-0.18	-2.84	6.73	-1.46	3.35	-1.11	-1.25	2.37
2015	-0.28	5.64	-0.69	4.98	0.30	-0.71	0.57	-4.67	-3.38	5.97	-0.65	0.97
2014	-1.26	6.27	0.58	0.22	1.16	1.86	-3.27	1.13	-5.43	-2.29	-0.62	-1.12

AUM Growth (\$Millions)



Author: Colleen Flannery
 Reviewer: Colleen Flannery

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PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



March 2023

Non-US Small Cap Value Search

Sacramento County Employees' Retirement System

Manager overview

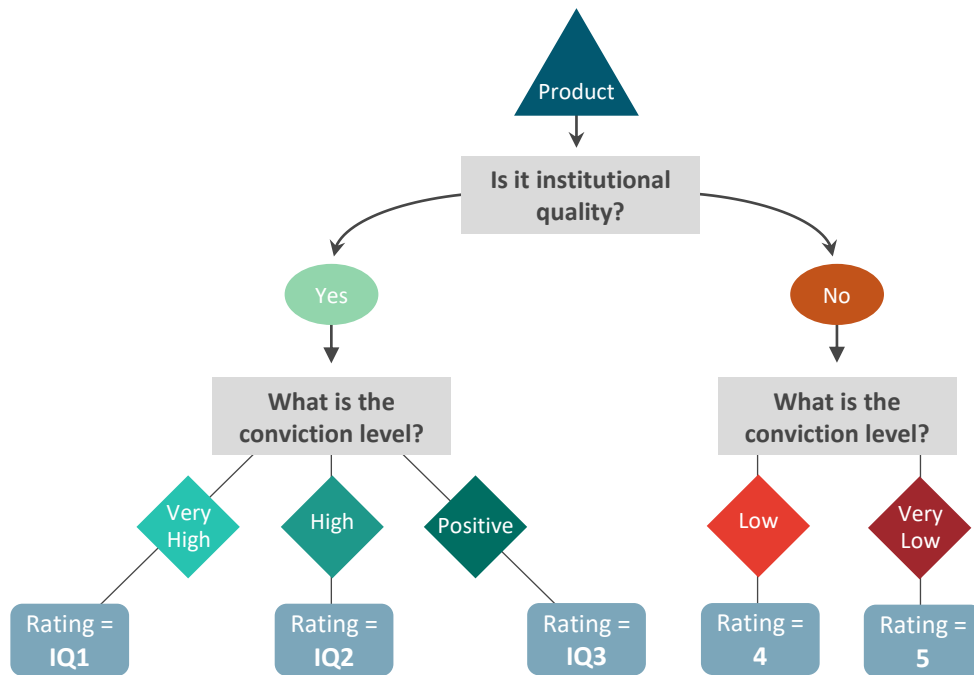
Manager rating system

The IQ Rating System communicates our conviction in investment products

There are two components to the rating:

- Institutional quality** – (IQ) The product meets or exceeds the standards of fiduciary care required by institutional investors and is suitable for use in clients’ portfolios.
- Conviction** – (1 to 5) Represents the conviction of our research teams in the distinguishing qualities of the product relative to its peers, with 1 as the highest rating and 5 the lowest.

PROCESS



Rating process simplified for illustrative purposes only

DEFINITIONS & GUIDELINES

Rating	Institutional Quality?	Conviction Level	Defining Characteristics	Recommendations
IQ1	Yes	Very High	Earns Verus’ highest conviction. Above-average characteristics most likely to achieve the strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios.
IQ2	Yes	High	Maintains Verus’ high conviction. Above-average characteristics most likely to achieve strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios.
IQ3	Yes	Positive	Meets institutional quality standards that can achieve desired investment results. Strengths outweigh weaknesses.	While IQ1 or IQ2 rated products are generally preferable, certain client needs may be better addressed by a highly specialized IQ3 product.
4	No	Low	Concerns with the product’s ability to meet institutional-quality standards.	Clients should re-evaluate retention or monitor closely.
5	No	Very Low	Significant issues inhibit the product’s ability to meet institutional-quality standards.	Verus recommends termination, immediately

Manager comparison

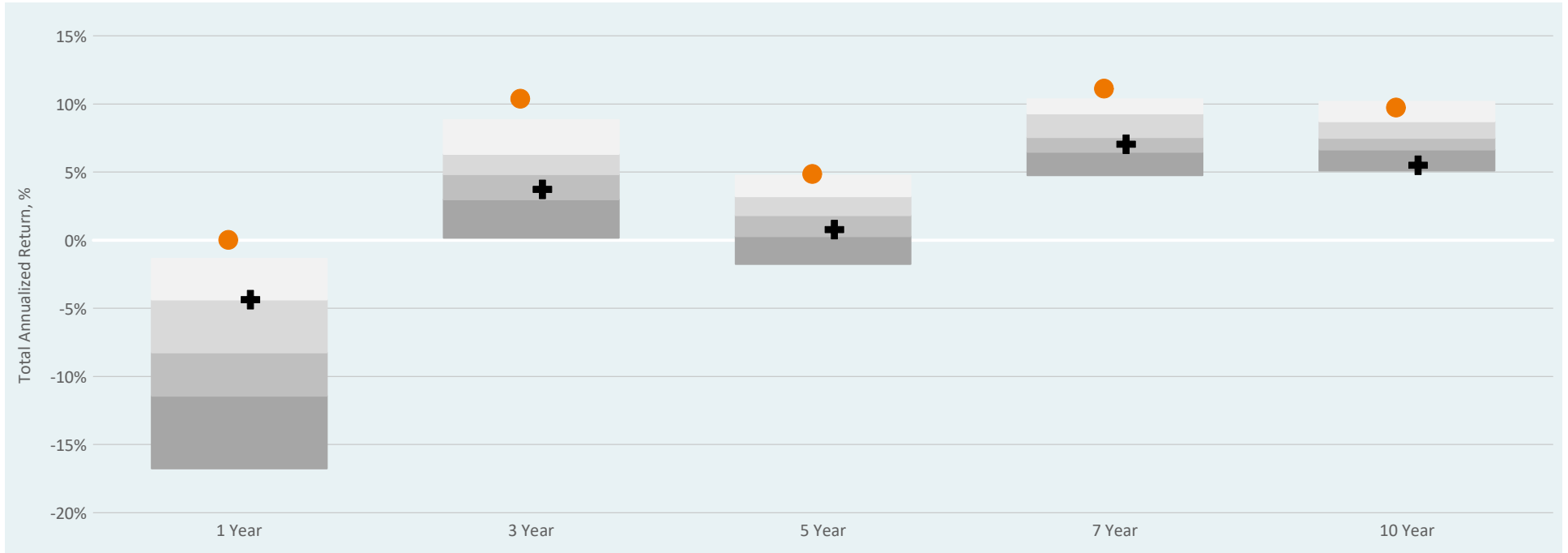
	Acadian
VERUS RATING	IQ2
FIRM OWNERSHIP	29% owned by 60 employees 71% owned by Brightsphere
FIRM NAME	Acadian Asset Management LLC
PRODUCT NAME	Non-U.S. Small-Cap Value Equity
FIRM TOTAL AUM (\$MM)	\$93,629
STRATEGY AUM (\$MM)	\$485
PREFERRED BENCHMARK	Dec-05
BENCHMARK	MSCI World ex-US Small Cap Value-ND
INVESTMENT APPROACH	Quantitative
SCREENING APPROACH	Bottom-Up
KEY ATTRIBUTES	Highly diversified Continuous research agenda

Performance Analysis

Performance comparison - as of January 2023

● Acadian + MSCI World Ex USA Small Value NR USD

PERFORMANCE TO DATE



EXCESS ANNUALIZED RETURN TO DATE, %

1 Year

3 Year

5 Year

7 Year

10 Year

Acadian

4.4

6.7

4.1

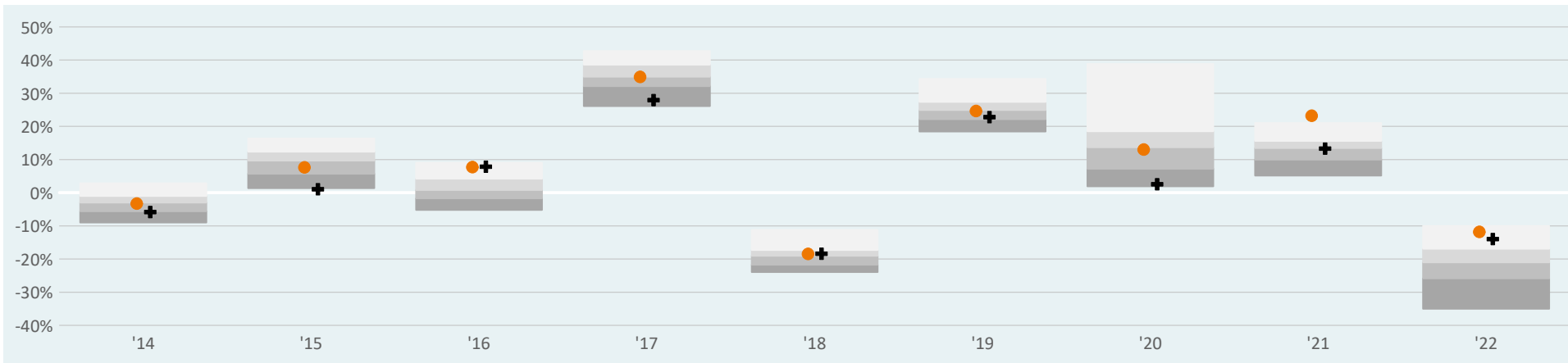
4.1

4.2

Calendar year performance

● Acadian + MSCI World Ex USA Small Value NR USD

ANNUAL PERFORMANCE



ANNUAL PERFORMANCE AND RANKING	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (YTD)
Acadian	-3.2	7.7	7.7	35.0	-18.4	24.7	13.1	23.3	-11.8	6.7
Rank	54	67	9	49	38	54	51	1	7	83
MSCI World Ex USA Small Value NR USD	-5.9	1.1	7.9	27.9	-18.4	22.8	2.6	13.3	-14.0	7.9
Rank	80	95	7	91	37	70	93	54	13	41

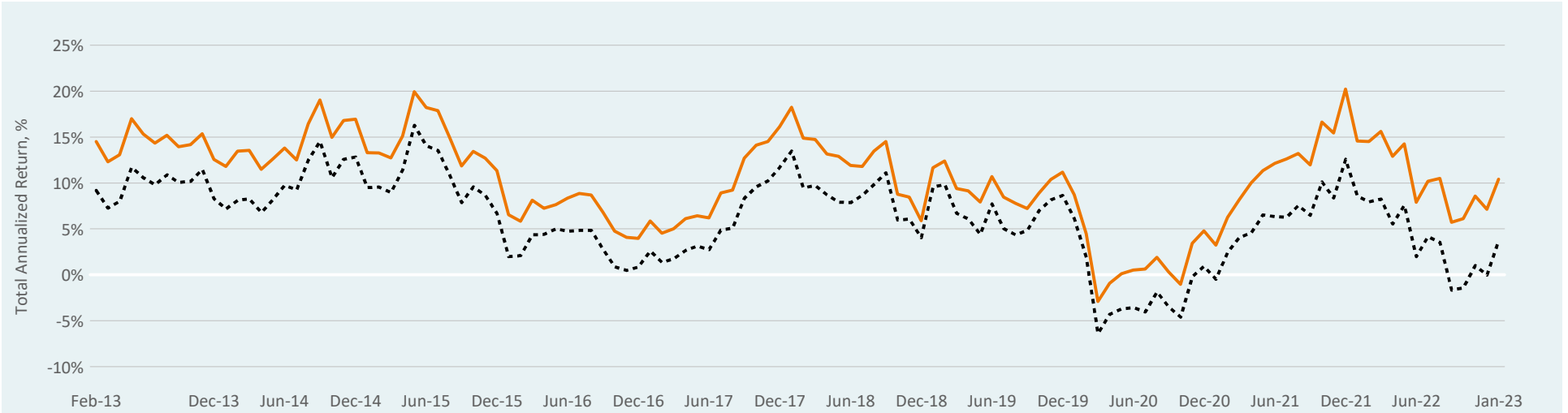
Performance summary - as of January 2023

	Acadian	MSCI World Ex USA Small Value NR USD
PERFORMANCE ANALYSIS - (5 Years)		
Alpha %	3.9	0.0
Beta	0.9	1.0
R-squared %	95.6	100.0
Sharpe Ratio	0.2	0.0
Treynor Ratio	0.0	0.0
Tracking Error %	4.3	0.0
Annualized Std Dev %	19.8	20.4
Information Ratio	0.9	---
Max Drawdown %	-29.9	-34.1
Calmar Ratio	0.2	0.0
Excess Ann. Return %	4.1	0.0
PERFORMANCE TO DATE		
1 Year	0.0	-4.4
3 Year	10.4	3.7
5 Year	4.9	0.8
7 Year	11.1	7.0
10 Year	9.7	5.5
Common Inception (Dec-05)	9.2	5.4
CALENDAR YEAR RETURNS		
2022	-11.8	-14.0
2021	23.3	13.3
2020	13.1	2.6
2019	24.7	22.8
2018	-18.4	-18.4
2017	35.0	27.9
2016	7.7	7.9
2015	7.7	1.1
2014	-3.2	-5.9
2013	32.4	27.7

Rolling performance

● Acadian + MSCI World Ex USA Small Value NR USD

TOTAL 36 MONTH ROLLING PERFORMANCE



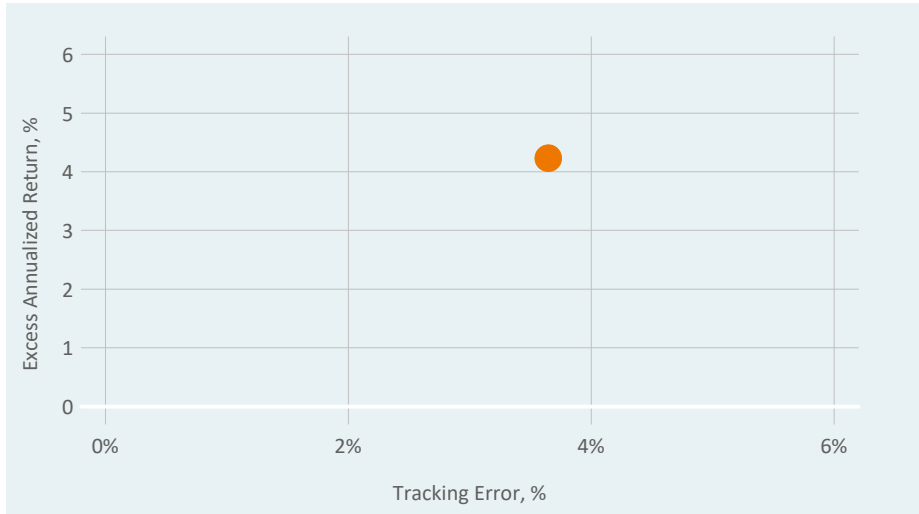
EXCESS 36 MONTH ROLLING PERFORMANCE



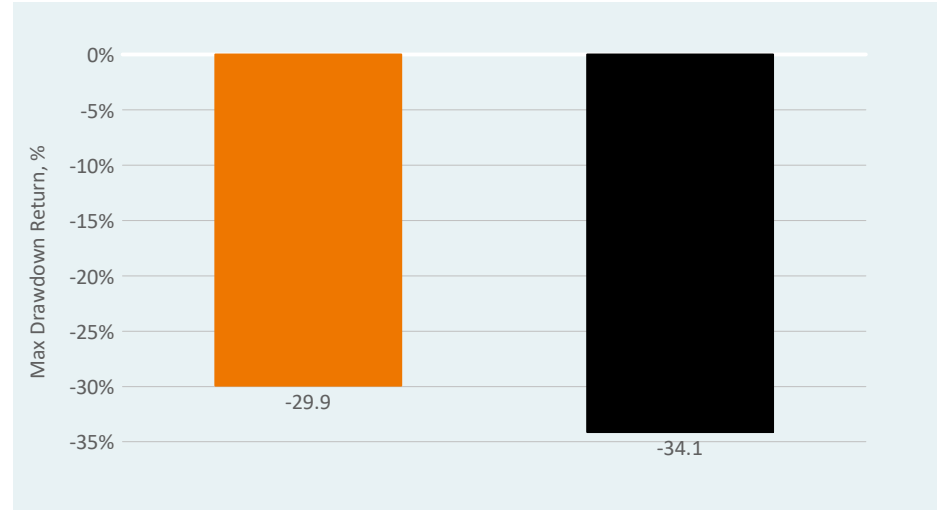
Performance statistics

● Acadian + MSCI World Ex USA Small Value NR USD

EXCESS PERFORMANCE VS. RISK, FEB-13 TO JAN-23



MAX DRAWDOWN RETURN, FEB-13 TO JAN-23



36 MONTH ROLLING ALPHA



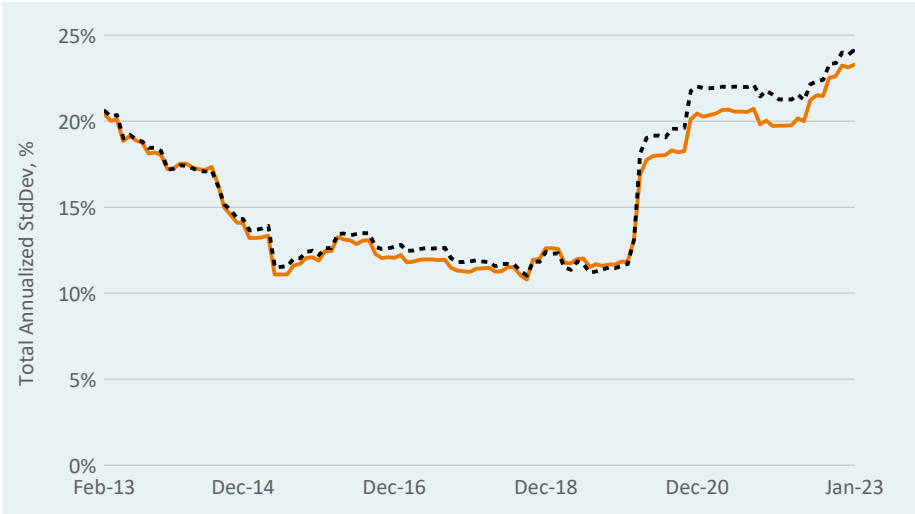
36 MONTH ROLLING BETA



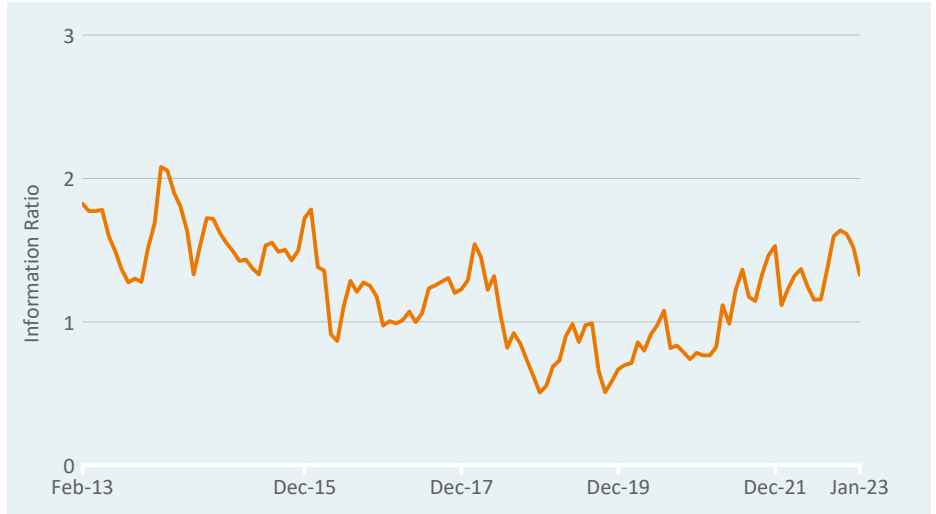
Performance statistics

● Acadian + MSCI World Ex USA Small Value NR USD

36 MONTH ROLLING RISK



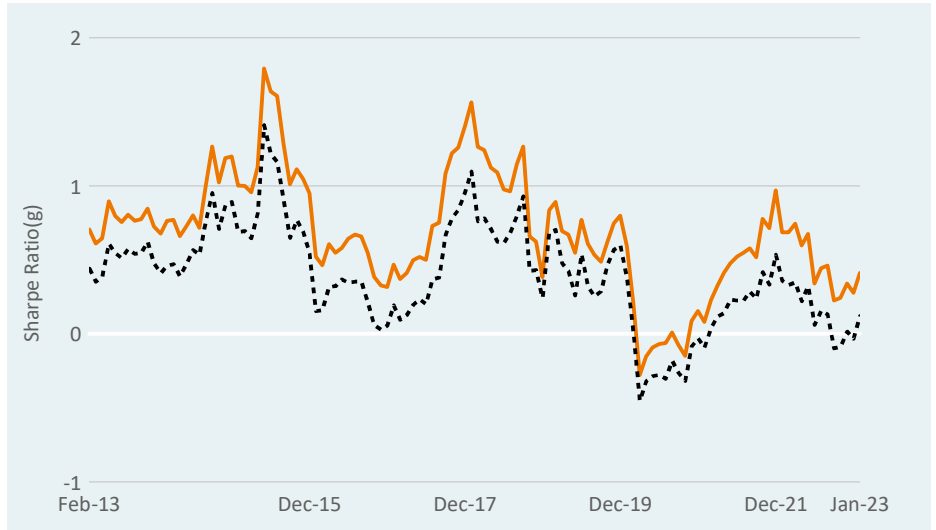
36 MONTH ROLLING INFORMATION RATIO



36 MONTH ROLLING TRACKING ERROR



36 MONTH ROLLING SHARPE RATIO(G)

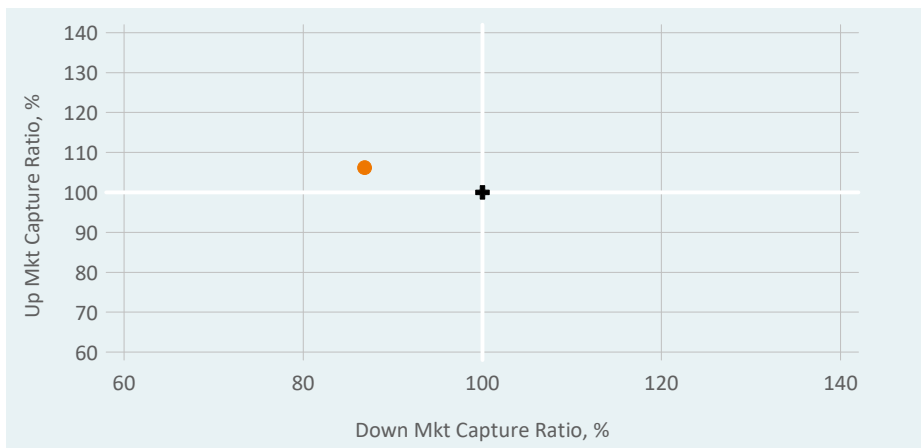


Style Analysis and Portfolio Analysis

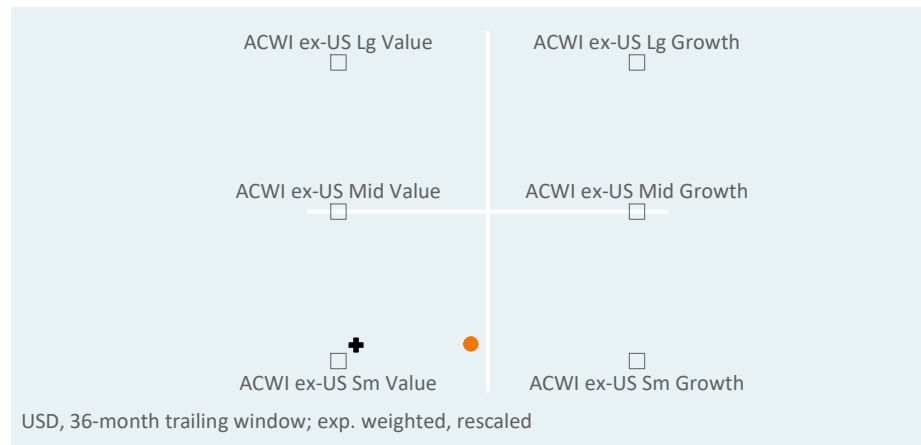
Style and portfolio comparison

● Acadian + MSCI World Ex USA Small Value NR USD

UP/DOWN MARKET CAPTURE, FEB-13 TO JAN-23



MSCI EX US STYLE, FEB-13 TO JAN-23



	Acadian
% HOLDINGS IN 10 LARGEST STOCKS	12.3%
ANNUAL TURNOVER	50.3%
CASH	1.0%
CURRENT DIVIDEND YIELD	4.1%
CURRENT P/E	6.8
CURRENT P/B	1.0
5 YEAR ROE	10.4%
PORTFOLIO HOLDINGS	1270
WGTD. AVG. MKT. CAP	\$ 2,530
MEDIAN MKT. CAP	\$ 537
MAX CASH POSITION	5.00
MAX POSITION SIZE	---

Up & down market analysis

● Acadian + MSCI World Ex USA Small Value NR USD

36 MONTH ROLLING UP MKT CAPTURE RATIO



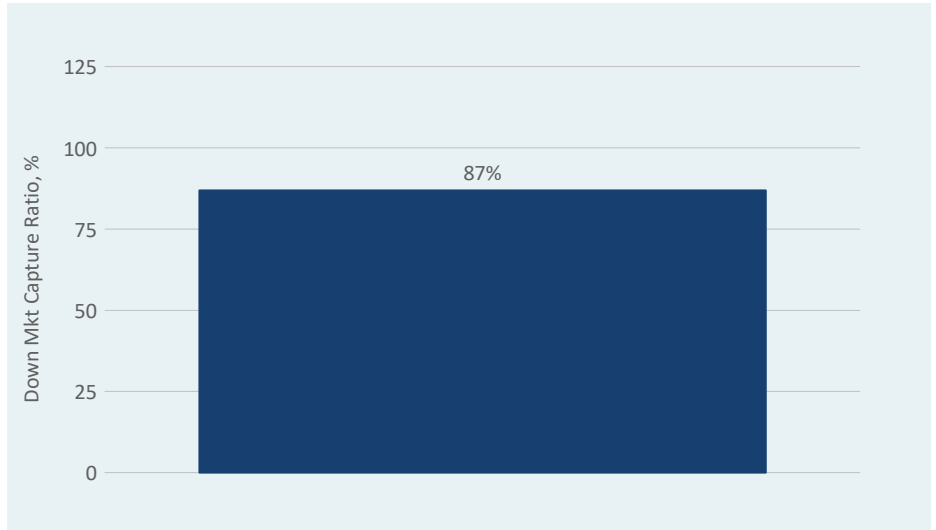
UP MARKET CAPTURE RATIO, FEB-13 TO JAN-23



36 MONTH ROLLING DOWN MKT CAPTURE RATIO

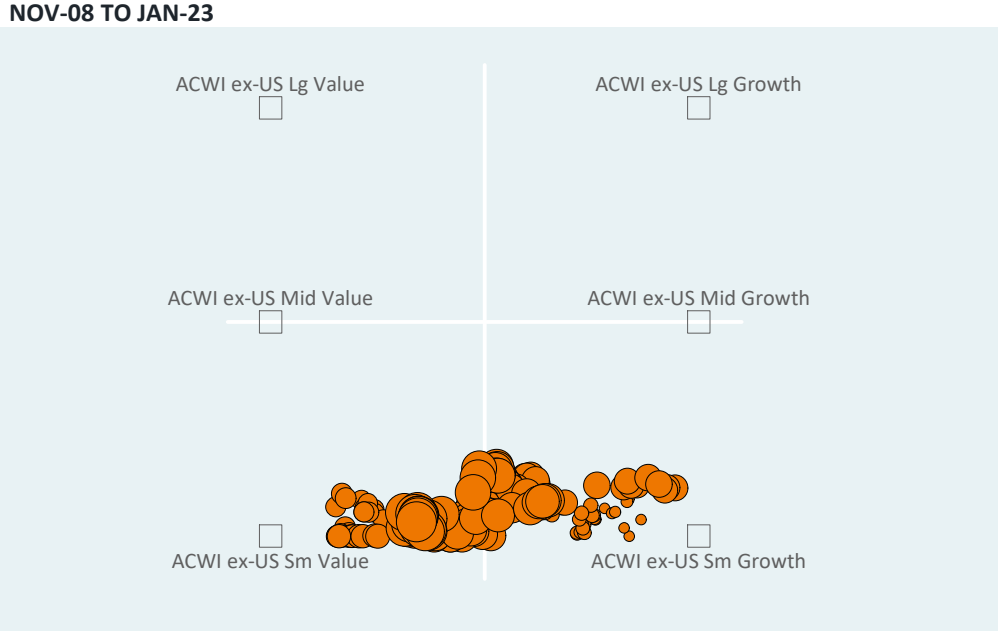


DOWN MARKET CAPTURE RATIO, FEB-13 TO JAN-23



Style analysis (MSCI EX US STYLE)

● Acadian + MSCI World Ex USA Small Value NR USD

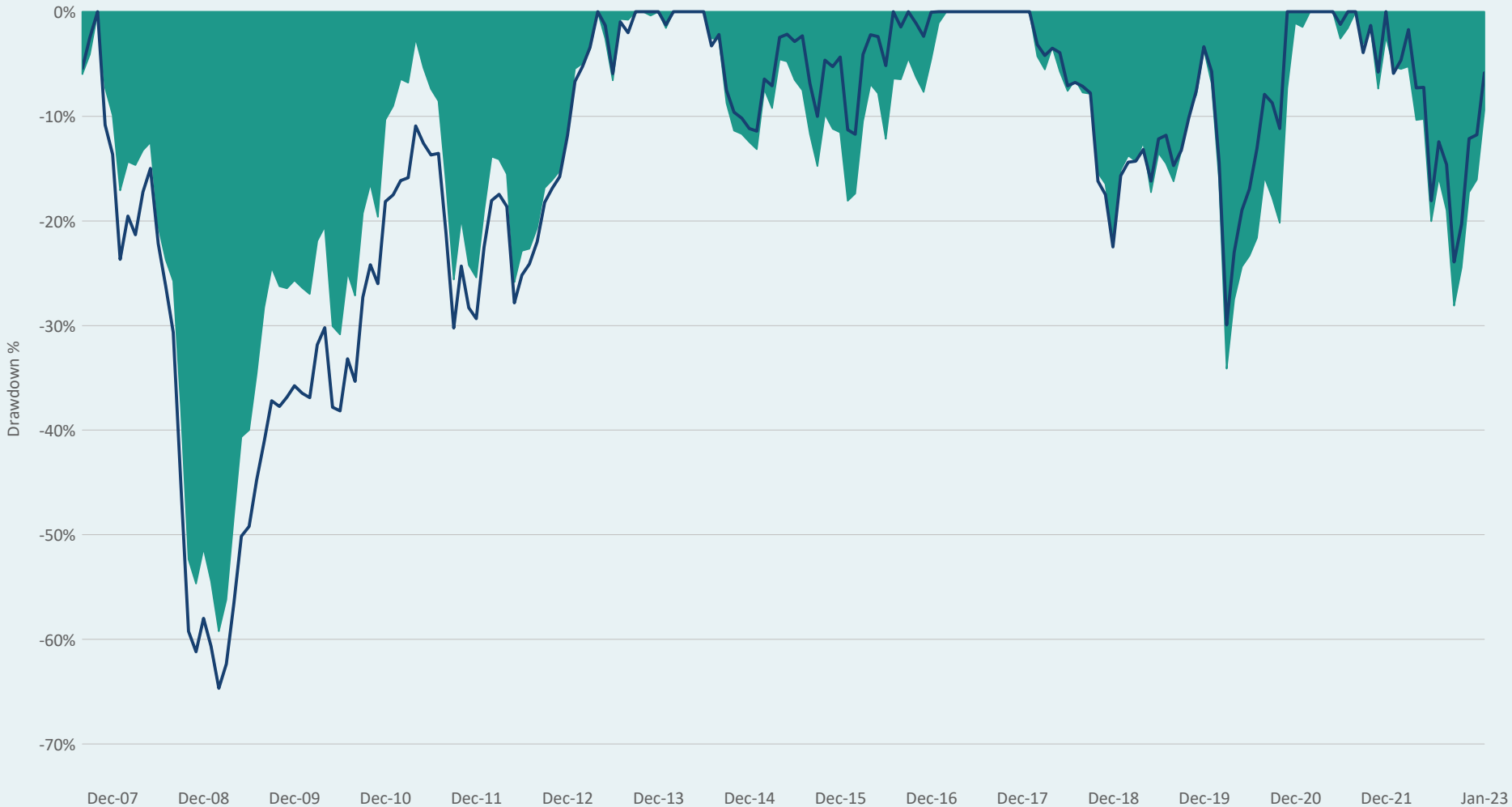


Risk Analysis

Historical drawdowns

CUMULATIVE PERFORMANCE EXTREMES

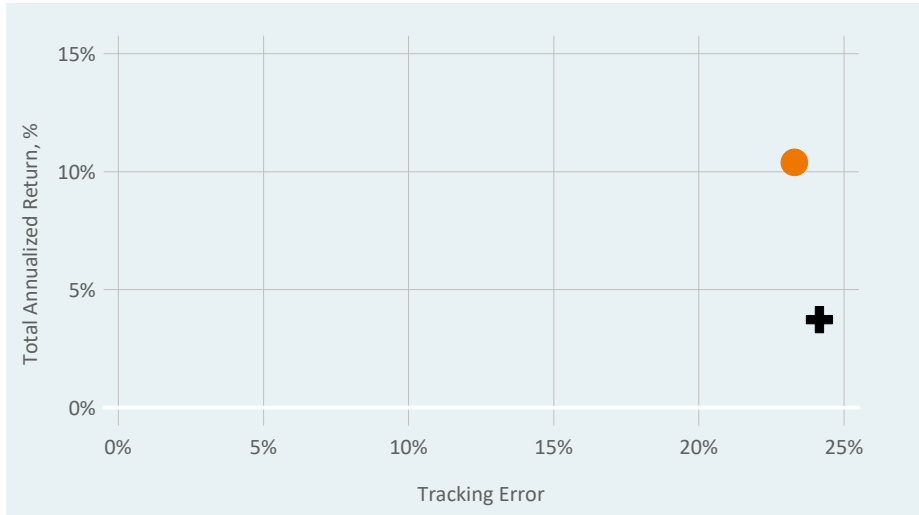
Cumulative Performance Extremes ■ Drawdown Return ■ Drawdown Benchmark Return



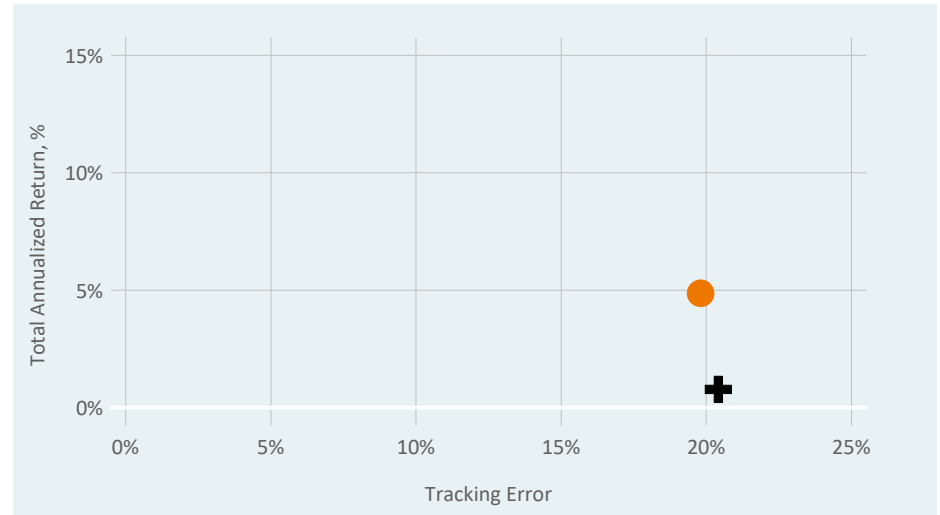
Risk vs. return

● Acadian + MSCI World Ex USA Small Value NR USD

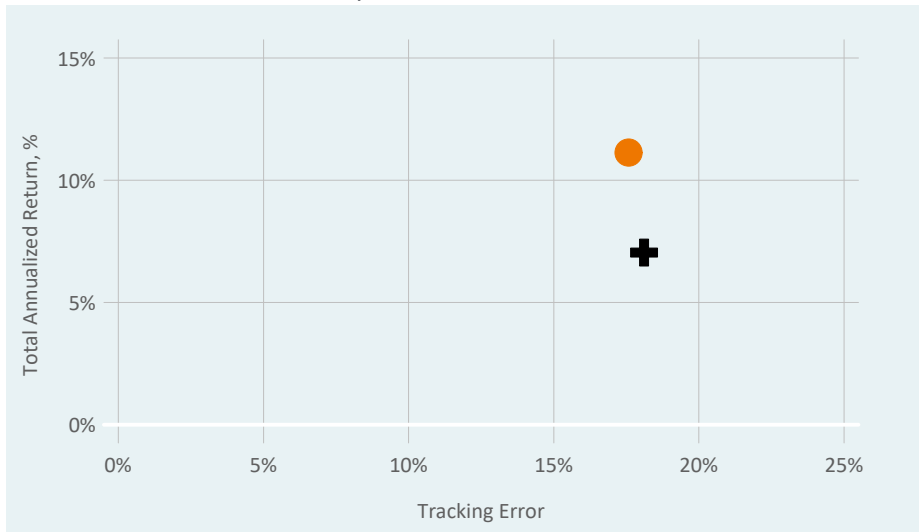
TOTAL PERFORMANCE VS. RISK, FEB-20 TO JAN-23



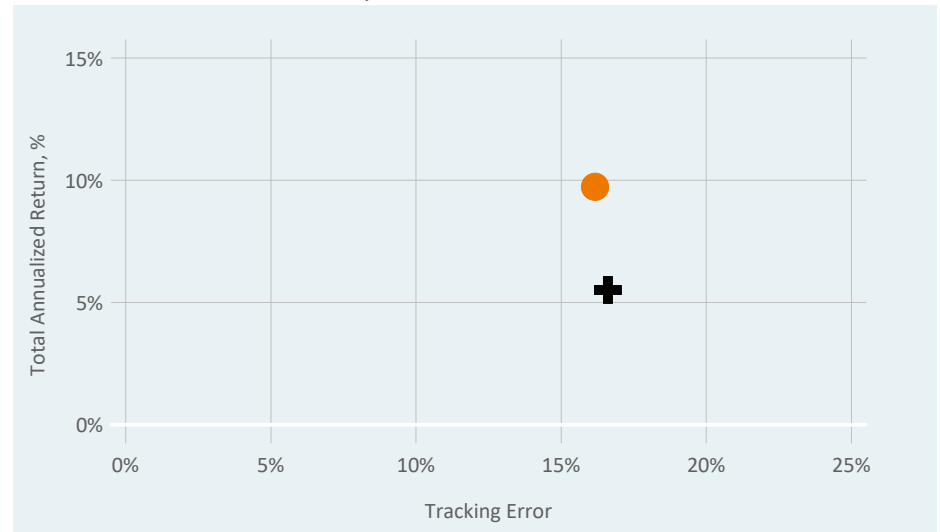
TOTAL PERFORMANCE VS. RISK, FEB-18 TO JAN-23



TOTAL PERFORMANCE VS. RISK, FEB-16 TO JAN-23



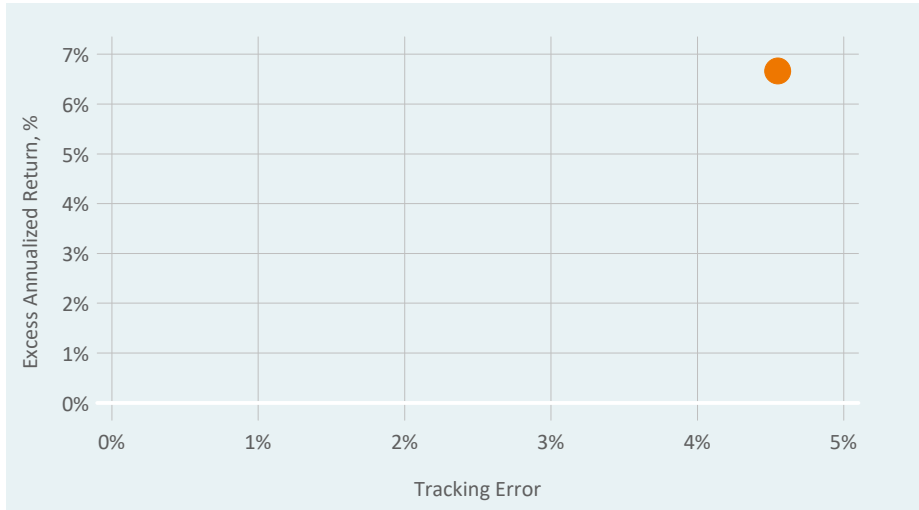
TOTAL PERFORMANCE VS. RISK, FEB-13 TO JAN-23



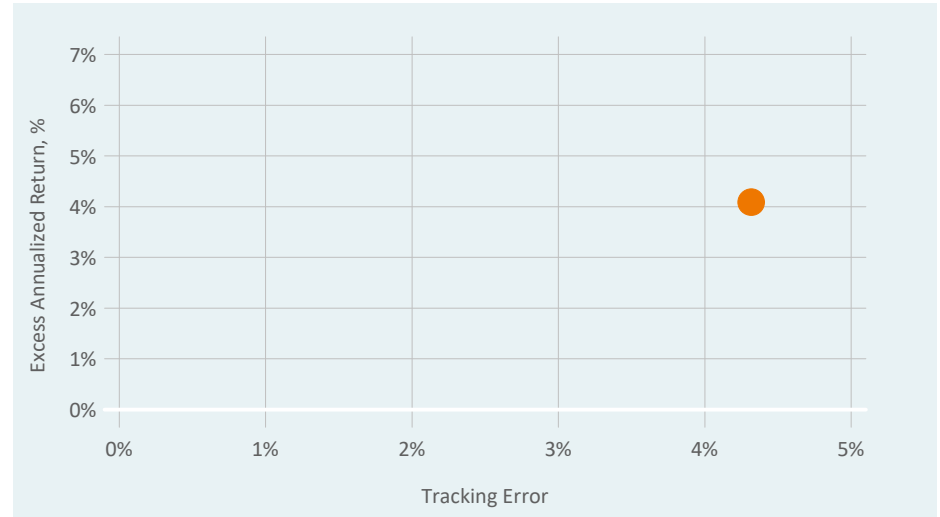
Performance efficiency

● Acadian + MSCI World Ex USA Small Value NR USD

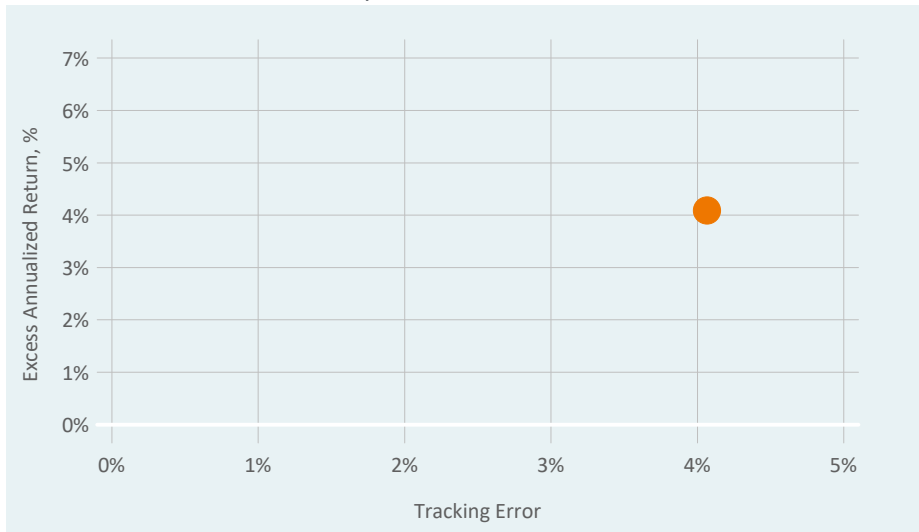
EXCESS PERFORMANCE VS. RISK, FEB-20 TO JAN-23



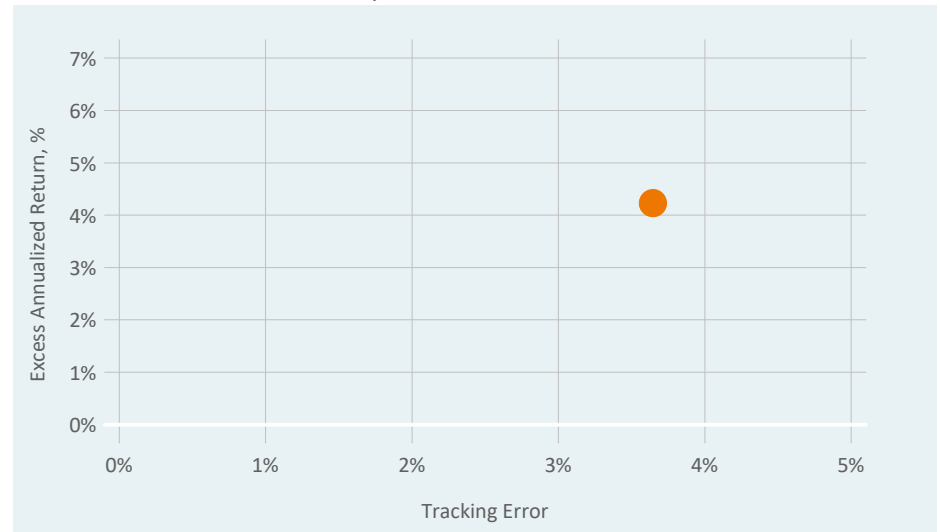
EXCESS PERFORMANCE VS. RISK, FEB-18 TO JAN-23



EXCESS PERFORMANCE VS. RISK, FEB-16 TO JAN-23



EXCESS PERFORMANCE VS. RISK, FEB-13 TO JAN-23



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Sacramento County Employees' Retirement System

Non-U.S. Small-Cap Value Equity

March 15, 2023

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Presentation Team

Scott Brymer, CFA — Senior Vice President, Portfolio Manager

Scott joined Acadian in 2006 and is a senior member of the Core Equity Team, focusing primarily on portfolio oversight and portfolio-related research. He was previously a member of the Portfolio Construction Group, where he specialized in simulation-based research, portfolio analytics, optimization, and trading. He earned a B.B.A. in finance from the University of Massachusetts at Amherst. Scott is a CFA charterholder and a member of CFA Society Boston.

Andrew Miller — Senior Vice President, Business Development

Andrew joined Acadian in 2004 and is a senior member of Acadian's Global Client Group, focusing on business development within public pension and Taft-Hartley funds. Prior to his current role, he worked in client service, business development, and operations functions at Acadian. Before joining Acadian, he worked in global custody at State Street Corporation. Andrew is a member of numerous public pension associations including: the National Association of State Retirement Administrators (NASRA), National Council on Teacher Retirement (NCTR), National Conference on Public Employee Retirement Systems (NCPERS), and the State Association of County Retirement Systems (SACRS). He also serves on the Fenway High School (Boston) Investment Committee. Andrew received an M.B.A. from Northeastern University and a B.A. from Wheaton College.



OVERVIEW

Systematic Investing Built On



Economic intuition & insights of a talented, experienced, diverse group of investors:

100+ person investment team | 1600+ years' collective experience
100+ advanced analytical degrees

PEOPLE

DATA

Extensive data repository supplemented by alternative data scouting effort:

200M+ daily observations | 55TB+ data
150+ global markets | 40K+ traded assets



Transforming information into insights:

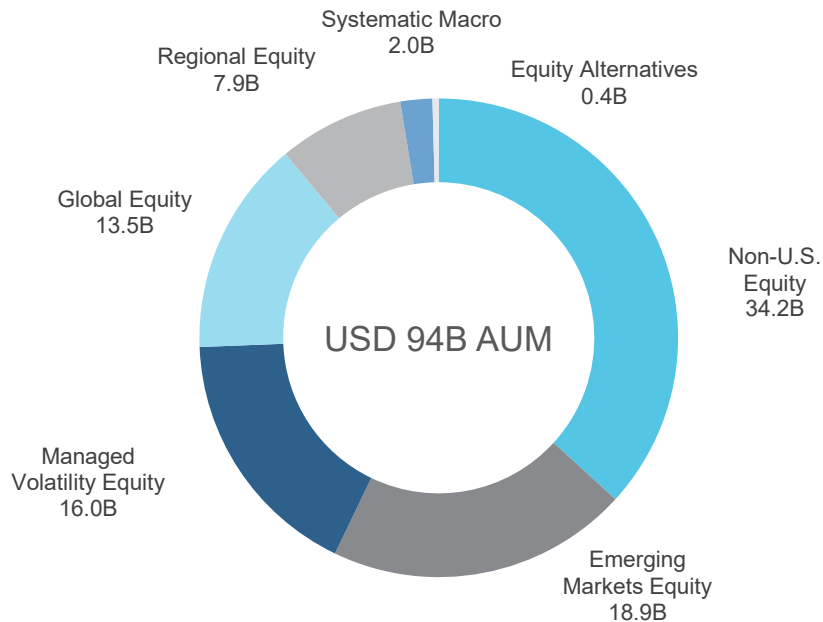
Robust technological infrastructure
Sophisticated analytical tools & portfolio attribution illuminate trends, relationships, and drivers of alpha

CLARITY

Organizational Overview

December 31, 2022

- Acadian has been a pioneer in systematic investing since our founding in 1986
- We believe that a systematic approach is well suited to delivering consistent risk-adjusted returns
- Our 387-person team is focused on continuous research and innovation



Rounding is applied to the total firm AUM which includes \$831.8 million in model advisory contracts where Acadian does not have trading authority. The individual strategy level assets under management (AUM) are rounded to the nearest decimal point and do not include model advisory assets.

**As a separate legal entity, Acadian Asset Management (Australia) Limited. This was initially established as a joint venture with Colonial First State Investments Limited and became a wholly owned entity on June 30, 2015.*

Investment Team – Equities



Representative Investors

Public

Employees' Retirement Fund of the City of Dallas
Florida State Board of Administration
Los Angeles County Employees Retirement Association
Massachusetts Pension Reserves Investment Management Board
Municipal Employees' Retirement System of Michigan
New York City Employees Retirement System
Ohio Public Employees Retirement System
Oregon Public Employees
Public School & Education Employee Retirement Systems of Missouri
Tennessee Consolidated Retirement System
Virginia Retirement System
West Virginia Investment Management Board

Corporate

3M Company
Altria Group
Dow Inc.
JM Family Enterprises, Inc.
Pfizer

Endowment/Foundation

Carnegie Mellon University
Cornell University
Georgia Tech Foundation
W.K. Kellogg Foundation

Sub-Advisory

Harbor Overseas Fund
Optimum International Fund
SEI

Taft-Hartley

North Atlantic States Carpenters Benefit Funds
Producer-Writers Guild of America Pension Plan

Australia

Equisuper
Colonial First State Investments Ltd.
Aware Super

Canada

Mouvement Desjardins
Ville de Montréal

Europe

Fidelity International
Hampshire County Council
Ireland Strategic Investment Fund
Kempen Capital Management
PKA A/S



PROCESS

Investment Philosophy

- Financial assets are often **mispriced** due to investors incorrectly processing information, having incomplete information, or both
- **Systematic** processes best capture inefficiencies arising from mispriced fundamental and market information
- Our **edge** comes from embracing new ideas and a continuous investment in people, technology, and data

Investment Process



World ex-U.S. Small-Cap

18,000 stock investment universe



Objective Return Forecast

Stock-specific

Selection within traditionally defined groups

+

Peer

Overlooked information from alternative peer groups

+

Macro

Top-down group signals (industry and country)



Disciplined Portfolio Construction

Multi-horizon forecasts

Proprietary risk models

Dynamic transaction cost modeling



Structured Trading Process

Systematic approach

Dynamic routing based on order profiling

Real-time oversight

Return Forecast Example

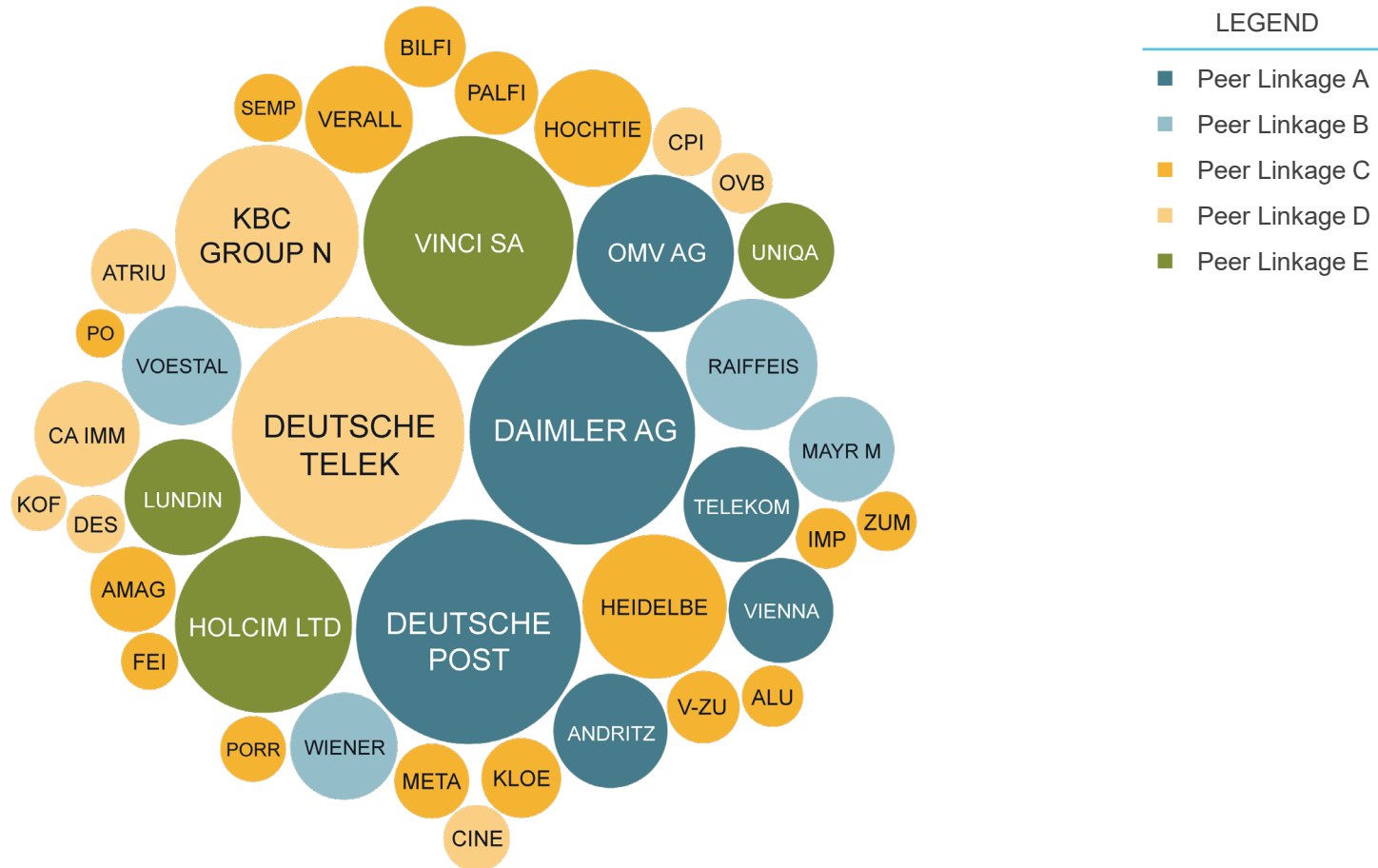
Model	Theme	Sample signals	Forecast
Stock-Specific	Value	→ Adjusted Intrinsic Value Extended Asset Value	+1.02
	Quality	→ Financial Strength Management Behavior	+0.49
	Growth	→ Earnings Surprise Recommendation Change	0.00
	Technical	→ Industry Leadership Smart Reversal	+0.13
Peer	Proprietary Networks	→ Momentum Fundamentals	+0.32
Macro	Country	→ Corruption Adjusted Valuation Macro Environment	+0.12
	Industry	→ Quality Global Growth Sensitivity	+0.16
	Country/Industry Intersection	→ Price Momentum Adjusted Valuation	+0.28

Total Forecast +2.15%	
Company: STRABAG SE	
Market Cap: USD 4B	
Country: Austria	
Industry: Capital Goods	
Description: Offers construction-related services	

Source: Acadian Asset Management LLC. The information provided is for illustrative purposes only based on proprietary models. There can be no assurance that the forecasts will be achieved. The selected stock is intended to be an example of the process and is not a recommendation to buy or sell this specific security.

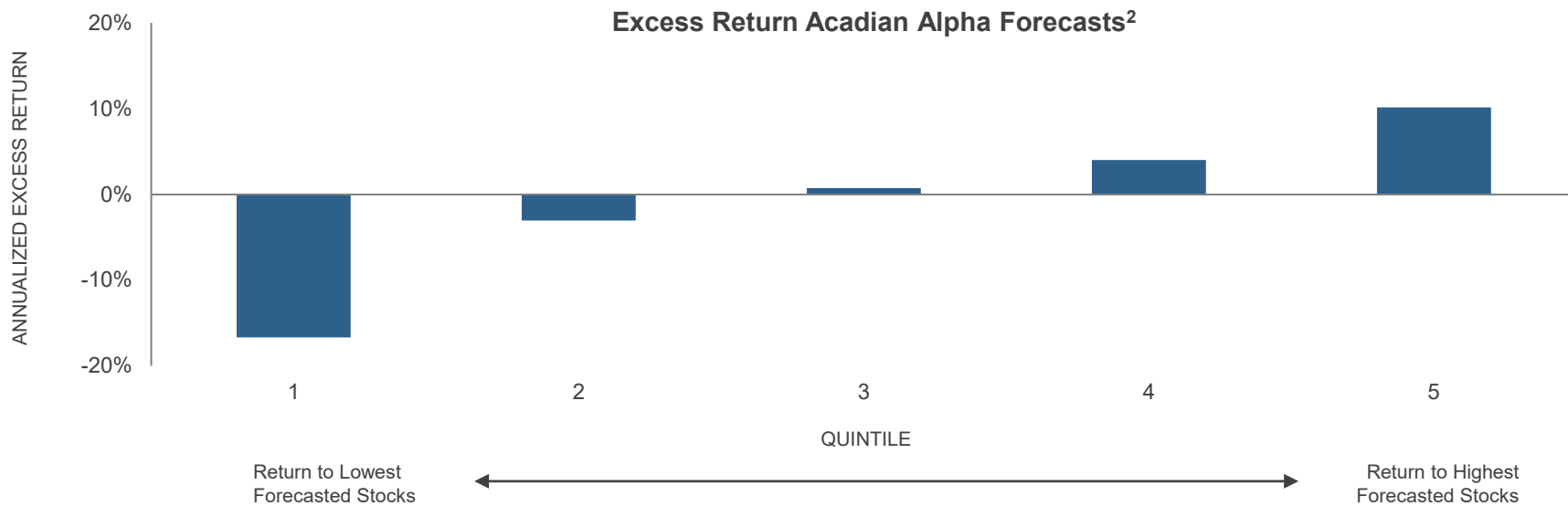
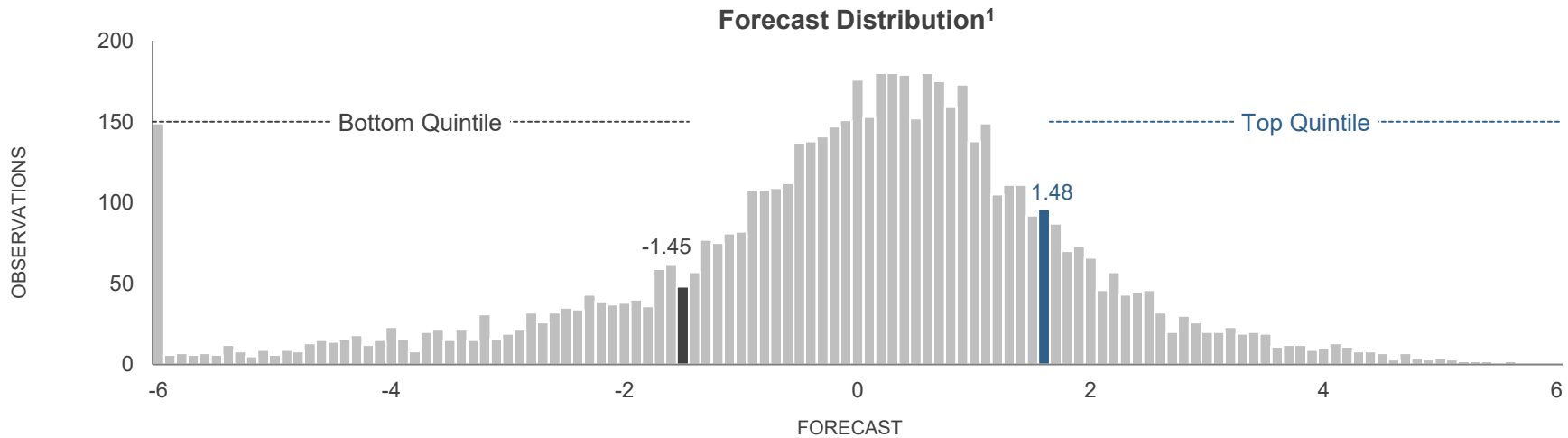
Stock Forecast Example: Mapping Peer Relationships

Strabag SE



Stock Forecast Distribution and Returns

Trailing 10 Years as of December 2022



Source: Acadian Asset Management LLC. For illustrative purposes only

¹Source: Acadian's EAFE Small-Cap universe with a market cap between \$100M – \$500M. Methodology: Observations represents the number of forecasts. The highlighted values represent the observations in the top and bottom quintiles. The information is not reflective of a particular time period and is provided for illustrative purposes only. The chart depicts our forecast distribution process based on proprietary models. There can be no assurance that the forecasts will be achieved.

²This is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual account but were achieved by means of using Acadian's EAFE Small-Cap universe of securities for the period specified above. Results do not reflect transaction costs or other implementation costs. Past performance is no guarantee of future results.



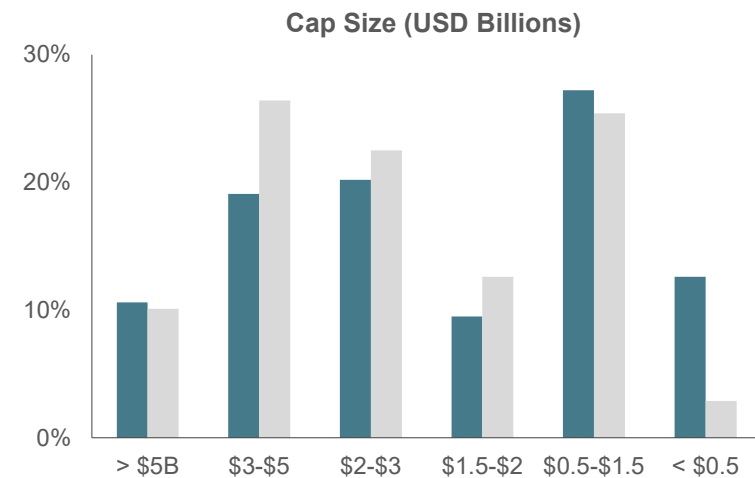
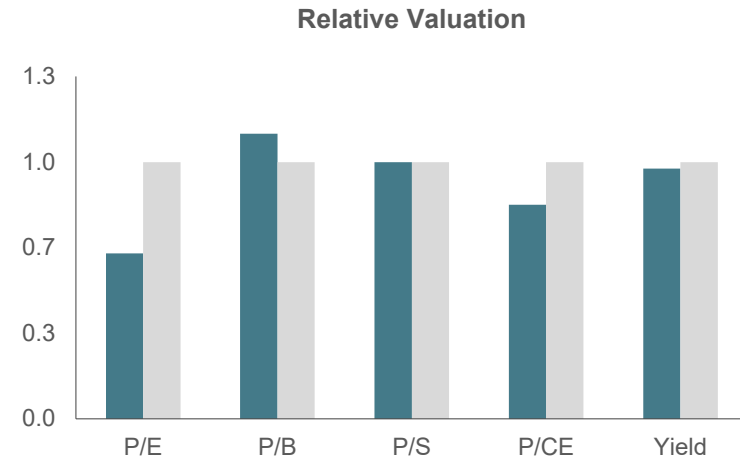
STRATEGY

Non-U.S. Small-Cap Value Equity

Key Characteristics – February 28, 2023*

Valuation	Portfolio	Benchmark
Price/Earnings	7.8	12.1
Price/Book	1.0	0.9
Price/Sales	0.6	0.6
Price/Cash Earnings	5.0	6.0
Yield	3.9%	4.0%
Total Securities	1370	1476

Cap Size (USD Billions)	Portfolio	Benchmark
> \$5B	10.6%	10.1%
\$3-\$5	19.1%	26.4%
\$2-\$3	20.2%	22.5%
\$1.5-\$2	9.5%	12.6%
\$0.5-\$1.5	27.2%	25.4%
< \$0.5	12.6%	2.9%
Median	0.6	1.2
Weighted Average	2.4	2.7



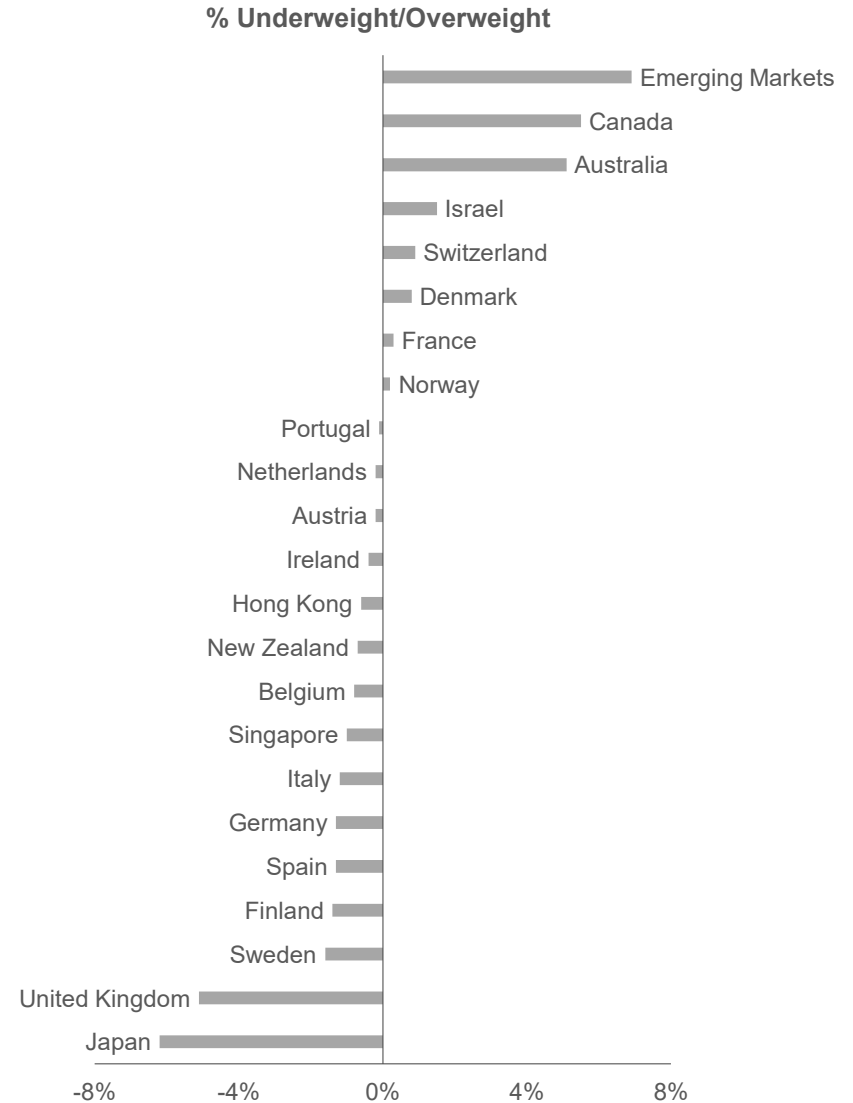
Portfolio: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value.

*Preliminary. The data presented here is for a representative portfolio and is supplemental to the composite performance disclosure page attached. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

Non-U.S. Small-Cap Value Equity

Regional Allocations – February 28, 2023*

	Portfolio	Benchmark	Difference
Continental Europe	26.9%	33.1%	-6.2%
Austria	1.4	1.6	-0.2
Belgium	0.6	1.4	-0.8
Denmark	2.4	1.6	0.8
Finland	0.2	1.6	-1.4
France	4.6	4.3	0.3
Germany	3.2	4.5	-1.3
Ireland	0.0	0.3	-0.3
Italy	2.8	4.0	-1.2
Netherlands	1.7	1.9	-0.2
Norway	2.4	2.3	0.2
Portugal	0.4	0.4	-0.1
Spain	1.3	2.6	-1.3
Sweden	1.8	3.4	-1.6
Switzerland	4.1	3.2	0.9
United Kingdom	9.0%	14.1%	-5.1%
Australia/New Zealand	14.2%	9.7%	4.4%
Australia	13.8	8.7	5.1
New Zealand	0.4	1.1	-0.7
Hong Kong/Singapore	2.1%	3.7%	-1.6%
Hong Kong	1.2	1.9	-0.6
Singapore	0.9	1.8	-1.0
Japan	21.5%	27.7%	-6.2%
North America	15.0%	9.5%	5.5%
Canada	15.0	9.5	5.5
Middle East	3.6%	2.1%	1.5%
Israel	3.6	2.1	1.5
Emerging Markets	6.9%	0.0%	6.9%
Cash	0.8		



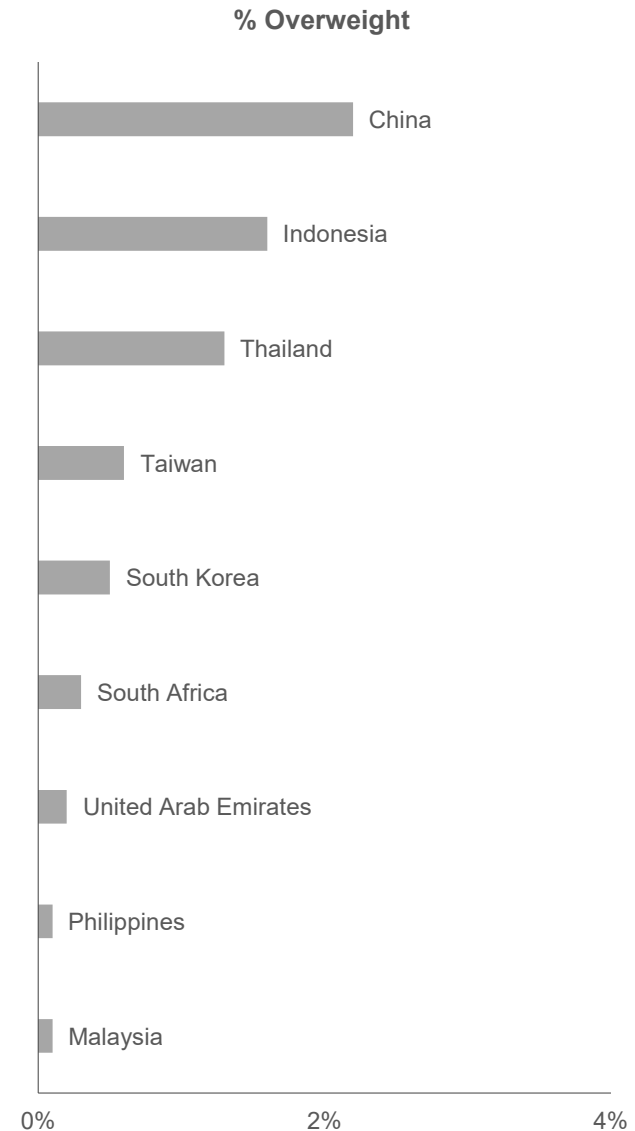
Portfolio: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value.

*Preliminary. The data presented here is for a representative portfolio and is supplemental to the composite performance disclosure page attached. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

Non-U.S. Small-Cap Value Equity

Emerging Markets Allocations – February 28, 2023*

	Portfolio	Benchmark	Difference
Europe/Mid East/Africa	0.5%	0.0%	0.5%
Greece	0.0	0.0	0.0
Kuwait	0.0	0.0	0.0
Poland	0.0	0.0	0.0
Qatar	0.0	0.0	0.0
South Africa	0.3	0.0	0.3
United Arab Emirates	0.2	0.0	0.2
Latin America	0.0%	0.0%	0.0%
Brazil	0.0	0.0	0.0
Mexico	0.0	0.0	0.0
Asia	6.3%	0.0%	6.3%
China	2.2	0.0	2.2
India	0.0	0.0	0.0
Indonesia	1.6	0.0	1.6
Malaysia	0.1	0.0	0.1
Philippines	0.1	0.0	0.1
South Korea	0.5	0.0	0.5
Taiwan	0.6	0.0	0.6
Thailand	1.3	0.0	1.3



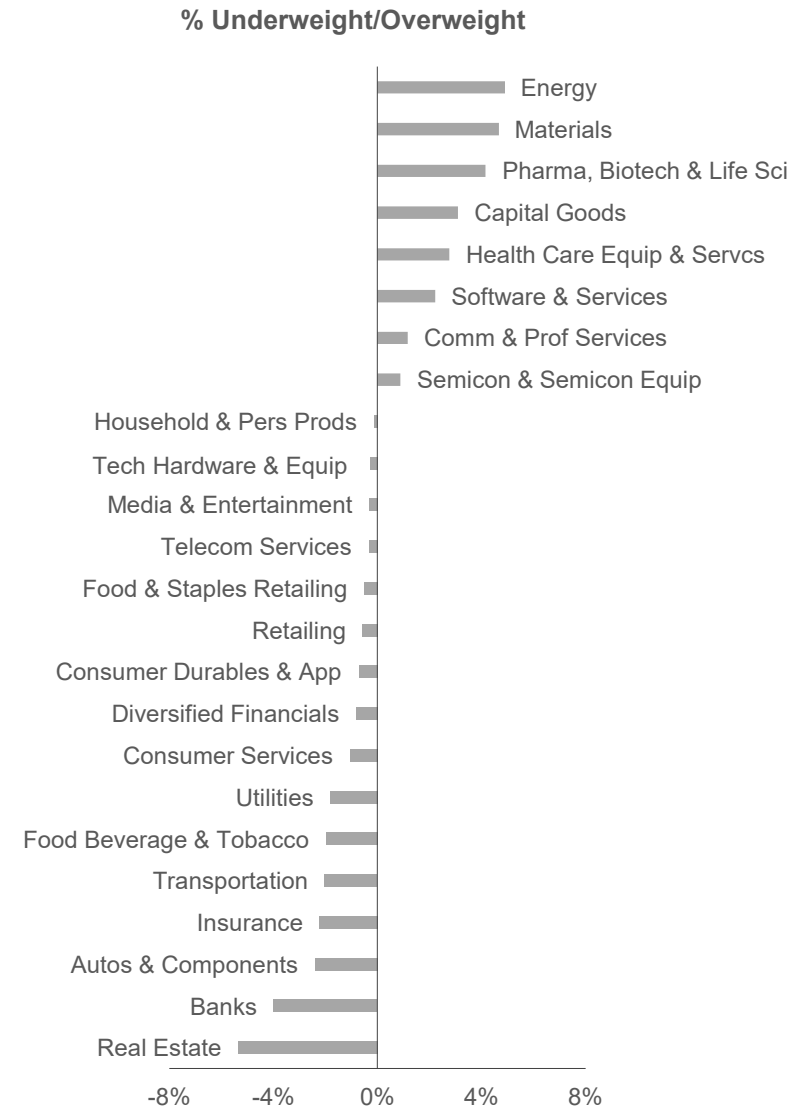
Portfolio: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value.

*Preliminary. The data presented here is for a representative portfolio and is supplemental to the composite performance disclosure page attached. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

Non-U.S. Small-Cap Value Equity

Industry Allocations – February 28, 2023*

	Portfolio	Benchmark	Difference
Communication Services	2.9%	3.6%	-0.7%
Media & Entertainment	2.4	2.8	-0.3
Telecommunication Services	0.5	0.8	-0.3
Consumer Discretionary	6.0%	10.7%	-4.8%
Automobiles & Components	1.0	3.4	-2.4
Consumer Durables & Apparel	1.6	2.3	-0.7
Consumer Services	0.8	1.9	-1.1
Retailing	2.6	3.1	-0.6
Consumer Staples	1.9%	4.5%	-2.6%
Food & Staples Retailing	0.8	1.3	-0.5
Food, Beverage & Tobacco	0.9	2.9	-2.0
Household & Personal Products	0.2	0.3	-0.1
Energy	10.4%	5.5%	4.9%
Financials	10.5%	17.6%	-7.1%
Banks	4.9	8.9	-4.0
Diversified Financials	4.4	5.3	-0.8
Insurance	1.1	3.4	-2.2
Health Care	8.6%	1.7%	6.9%
Health Care Equipment & Services	3.6	0.9	2.8
Pharmaceuticals, Biotechnology & Life Sciences	5.0	0.8	4.2
Industrials	23.0%	20.8%	2.2%
Capital Goods	17.0	13.9	3.1
Commercial & Professional Services	3.3	2.1	1.2
Transportation	2.7	4.7	-2.0
Information Technology	6.2%	3.4%	2.8%
Semiconductors & Semiconductor Equipment	1.7	0.8	0.9
Software & Services	3.0	0.7	2.2
Technology Hardware & Equipment	1.5	1.8	-0.3
Materials	17.5%	12.8%	4.7%
Real Estate	9.8%	15.2%	-5.4%
Utilities	2.4%	4.3%	-1.8%
Cash	0.8		



Portfolio: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value.

*Preliminary. The data presented here is for a representative portfolio and is supplemental to the composite performance disclosure page attached. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

Non-U.S. Small-Cap Value Equity

Top Ten Portfolio Holdings – February 28, 2023*

Name	Country	Industry	Portfolio (%)
REXEL S.A.	France	Capital Goods	1.6
LEONARDO SPA	Italy	Capital Goods	1.4
CENTRICA PLC	United Kingdom	Utilities	1.4
H&R REAL ESTATE INVESTMENT TRUST	Canada	Real Estate	1.2
INCITEC PIVOT FINANCE LLC	Australia	Materials	1.2
STELCO HOLDINGS INC	Canada	Materials	1.2
WHITEHAVEN COAL LTD	Australia	Energy	1.1
SIMS LTD	Australia	Materials	1.1
RUSSEL METALS INC.	Canada	Capital Goods	1.0
TECAN GROUP AG	Switzerland	Pharmaceuticals, Biotechnology & Life Sciences	0.9

Summary	Portfolio	Benchmark	Active Weight
% of Portfolio for Top 10 Active Weights	11.5	1.5	10.0
% of Portfolio for Top 20 Current Holdings	19.3	2.7	16.5
% of Non-Benchmark Portfolio Holdings	41.9		
Active Share of Portfolio	77.6		

Portfolio: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value.

*Preliminary. Portfolio holdings are subject to change and should not be considered a recommendation to buy or sell individual securities. The data presented here is for a representative portfolio and is supplemental to the composite performance disclosure page attached. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

Non-U.S. Small-Cap Value Equity Composite

Performance (Returns in USD – Before and After Management Fees)

Time Period	Composite (gross)*	Composite (net)*	Benchmark	Value-Added (gross) vs. Benchmark
2005 (Inception: Dec 1, 2005)	5.5%	5.5%	6.0%	(0.5)%
2006	40.7	39.7	31.8	8.9
2007	11.5	10.7	5.6	5.9
2008	(51.4)	(51.8)	(45.1)	(6.3)
2009	52.9	51.8	38.5	14.4
2010	27.4	26.5	19.8	7.6
2011	(13.7)	(14.3)	(15.1)	1.4
2012	24.8	23.9	21.0	3.8
2013	32.4	31.4	30.4	2.0
2014	(3.2)	(3.9)	(6.3)	3.1
2015	7.7	6.9	1.1	6.6
2016	7.7	6.9	7.9	(0.2)
2017	35.0	34.0	27.9	7.1
2018	(18.4)	(19.0)	(18.4)	0.0
2019	24.7	23.8	22.8	1.9
2020	13.1	12.2	2.6	10.5
2021	23.3	22.4	13.3	10.0
2022	(11.8)	(12.4)	(14.0)	2.2
2023 through February	5.1	5.0	5.7	(0.6)
One Year Annualized Return	(2.8)	(3.5)	(6.1)	3.3
Three Year Annualized Return	13.4	12.6	6.7	6.7
Five Year Annualized Return	5.2	4.4	1.3	3.9
Ten Year Annualized Return	9.4	8.6	5.4	4.0
Since-Inception Annualized Return	9.1	8.3	5.4	3.7
Since-Inception Annualized Standard Deviation	19.8	19.8	19.2	
Since-Inception Active Risk				4.2
Since-Inception Information Ratio				0.9

Composite: Non-U.S. Small-Cap Value Equity. **Benchmark:** MSCI World ex-U.S. Small-Cap Value (net) 2014-08-01 To Present, S&P EPAC Small-Cap Value (total) 2005-12-01 To 2014-08-01.

*Returns that include the most recent month are preliminary. Acadian Asset Management LLC claims compliance with the Global Investment Performance Standards (GIPS®). GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the composite will contain the same investments as the benchmark. Investors have the opportunity for losses as well as profits. Past performance is no guarantee of future returns. Past performance may differ significantly from future performance due to market volatility. The complete performance disclosure can be found in the composite performance disclosure page attached. Index Source: S&P Copyright (c) 2023, Standard & Poor's Financial Services LLC. All rights reserved. Index Source: MSCI Copyright MSCI 2023. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.



SUPPORTING EXHIBITS

Research: Representative Projects

Project Theme	Investment Thesis	Representative Project
ESG	Investors fail to recognize ESG information present in companies' written communications →	ESG Text Analysis
Alternative Data	Market participants fail to fully incorporate information embedded in corporate statements →	Event Announcements
Machine Learning	Alpha signals can have nonlinear payoffs and often interact with each other in complex ways →	Deep Learning Alpha
Macro	Investors underappreciate the impact of macro shocks on groups of stocks →	Macro Sensitivity
Group Networks	Current peer networks play different roles in defining future linkages →	Predicted Similarity

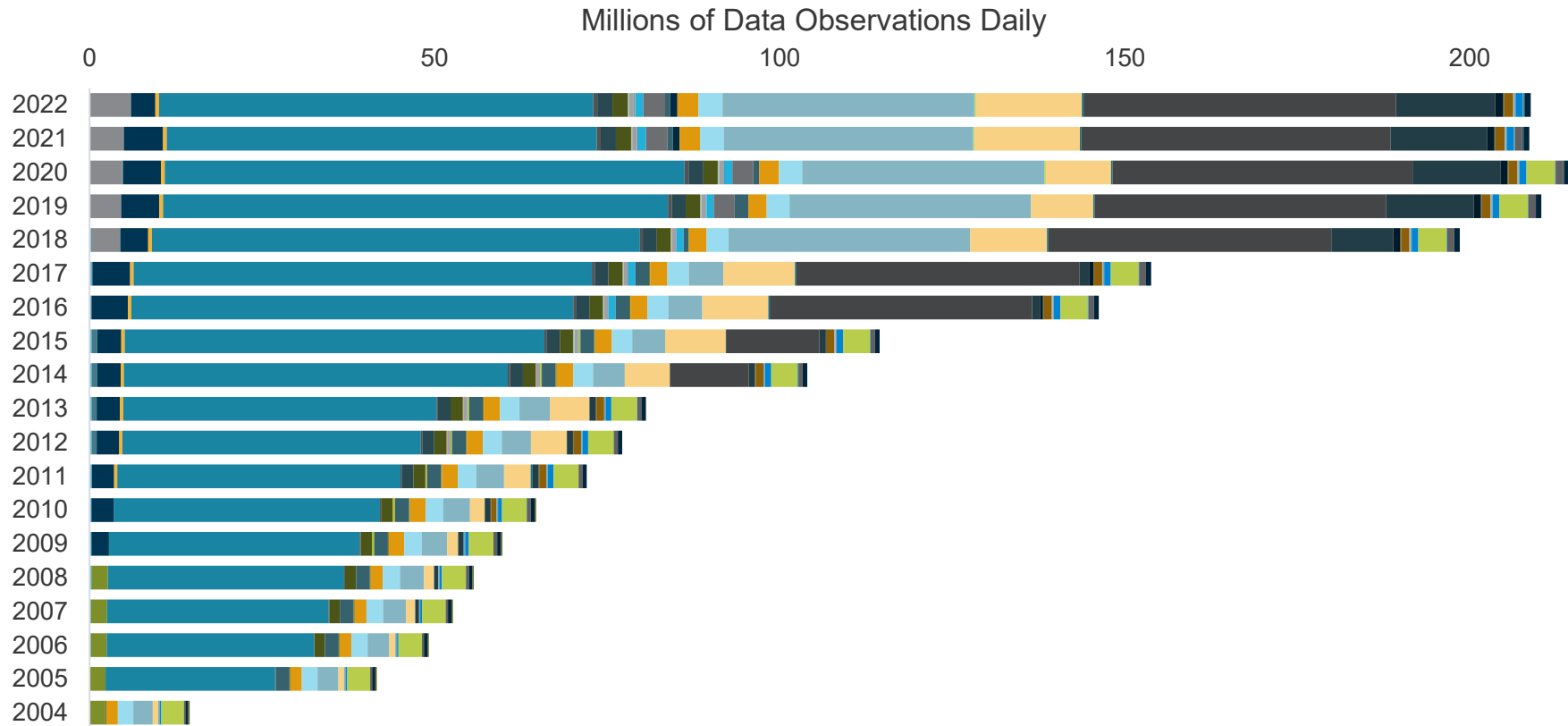
Global Data

43,500 COMPANIES
100 COUNTRIES

209 MILLION DAILY
OBSERVATIONS

55 TERABYTE
DATABASE

Daily data from over 40 sources including regulatory authorities, company websites, media sources, and industry trade organizations not available in standard vendor offerings:



Colors on the chart symbolize different data sources. Data as of January 2022.



BIOGRAPHIES

Investment Team

Brendan Bradley, Ph.D. – Executive Vice President, Chief Investment Officer

- 25 years of investment experience
- Member of the Acadian Board of Managers, Executive Management Team, Executive Committee, Responsible Investing Committee
- Ph.D. in applied mathematics from Boston University
- B.A. in physics from Boston College

Malcolm Baker, Ph.D. – Director, Research

- 21 years of investment experience
- Research consultant since 2006
- Robert G. Kirby Professor of Finance, Harvard Business School
- Ph.D. from Harvard University
- M.Phil. From Cambridge University
- B.A. from Brown University

James Dufort, CFA – Senior Vice President, Director, Investment Analytics & Data

- 20 years of Investment experience
- Member of Acadian’s Compliance and Risk Committee
- M.B.A. from Indiana University, Kelley School of Business
- B.S. in electrical engineering from Tufts University
- CFA charterholder

Ilya Figelman, CFA – Senior Vice President, Director, Multi-Asset Class Strategies

- 21 years of investment experience
- M.S. in mathematics of finance from New York University
- B.S. in systems engineering from Washington University
- CFA charterholder

Michael Gleason – Senior Vice President, Director, Equity Alternative

- 27 years of investment experience
- MSF from Northeastern University
- B.S. in management science from Bridgewater State University

Andy Moniz Ph.D., CFA – Senior Vice President, Director of Responsible Investing

Acadian Asset Management (U.K.) Limited

- 23 years of professional experience
- Ph.D. in natural language processing and information retrieval from Erasmus University
- MSc. in applied statistics from the University of London
- M.A. in economics from Cambridge University
- B.A. in economics from Cambridge University
- CFA charterholder and member of CFA Society U.K.

Ryan Taliaferro, Ph.D. – Senior Vice President, Director, Equity Strategies

- 21 years of professional experience
- Member of Acadian’s Executive Committee, Diversity & Inclusion Forum
- Ph.D. in business economics (finance) from Harvard University
- M.B.A. in finance and economics from the University of Chicago
- A.M. in economics from Harvard University
- A.M. and A.B. in physics from Harvard University

Alexandre Voitenok – Senior Vice President, Director, Implementation

- 22 years of investment experience
- Member of the Acadian Executive Committee
- M.Sc. in software engineering from Minsk Radio Engineering Institute

Vladimir Zdorovtsov, Ph.D. – Senior Vice President, Director, Global Equity Research

- 21 years of investment experience
- Ph.D. in finance from University of South Carolina
- M.B.A. from University of Arkansas
- B.A. in international economics from Sumy University, Ukraine

Francis Seah, CFA – Senior Vice President, Portfolio Manager and Managing Director, Acadian Singapore

Acadian Asset Management (Singapore) Pte Ltd

- 19 years of investment experience
- B.S. and M.S. from Nanyang Technological University
- CPA, Institute of Certified Public Accountants Singapore
- CFA charterholder and a member of CFA Singapore
- Computational Finance Certificate from Carnegie Mellon University

Joseph Bacchi – Senior Vice President, Head of Trading, Multi Asset Class Strategies

- 26 years of investment experience
- M.B.A. in international/executive management from St. John’s University
- B.S. in finance from St. John’s University

Jean Christophe (J.C.) De Beaulieu, CFA – Senior Vice President, Head of Investments, Australia

Acadian Asset Management (Australia) Limited

- 25 years of investment experience
- Advanced Master in financial techniques from ESSEC Business School
- D.E.A. in numerical analysis from Pierre and Marie Curie University and Ecole Polytechnique
- M.S. in mathematics from Pierre and Marie Curie University
- CFA Charterholder and member of CFA Society Boston

Investment Team

Brian Buzzelli – Senior Vice President, Head of Enterprise Data Management

- 32 years of professional experience
- M.B.A. from Katz Graduate School of Business, University of Pittsburgh
- M.S. in management of information systems from Katz Graduate School of Business, University of Pittsburgh
- B.S. in information and decision systems from Carnegie Mellon University

Joel Feinberg – Senior Vice President, Head of Trading

- 17 years of investment experience
- MSIM from Boston University
- B.B.A. in finance from the University of Massachusetts

Boris Kovtunenکو, Ph.D. – Senior Vice President, Head of Implementation Research

- 18 years of investment experience
- Ph.D. in economics from Harvard University
- M.A. in economics from New Economics School
- M.S. in physics from Moscow State University

Michael McCart, CFA – Senior Vice President, Head of Portfolio Analytics

- 25 years of investment experience
- B.S. in engineering and economics, University of Pennsylvania
- CFA charterholder and a member of CFA Society Boston

Jian Pan, CFA – Senior Vice President, Head of Quantitative Systems

- 29 years of professional experience
- M.S. in computer science from the University of Massachusetts
- B.S. industrial automation control from Nanjing University of Technology, China

Mark Birmingham, CFA – Senior Vice President, Lead Portfolio Manager, Managed Volatility

- 28 years of investment experience
- A.B. in computer science from Princeton University
- CFA charterholder and member of CFA Society Boston

Daniel Adamson – Senior Vice President, Portfolio Manager, Implementation

- 20 years of professional experience
- M.B.A. from Boston College
- B.A. in accountancy and management information systems from Miami University

Ioannis Baltopoulos – Senior Vice President, Portfolio Manager

- 14 years of professional experience
- M.Sc. in advanced computing from Imperial College London
- B.Sc. in computer science from the University of Kent

Pavel Bandarchuk, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

- 16 years of investment experience
- Ph.D. in international economics and finance from Brandeis University
- M.S. in finance from Brandeis University
- Diploma in international economics from Belarusian State University
- Certified FRM and CFA charterholder

Scott Brymer, CFA – Senior Vice President, Portfolio Manager

- 25 years of professional experience
- B.B.A. in finance from the University of Massachusetts Amherst
- CFA charterholder and a member of CFA Society Boston

Heidi Chen, CFA – Senior Vice President, Portfolio Manager

- 9 years of professional experience
- S.M. in computational science and engineering from Harvard University
- B.A. with Honors in mathematics from Williams College
- CFA charterholder and member of CFA Society Boston

Zhe Chen, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

Acadian Asset Management (Australia) Limited

- 14 years of professional experience
- Ph.D. in empirical finance from Macquarie University
- Bachelor of Engineering (bioinformatics), First Class Honours and University Medal, from the University of New South Wales
- Bachelor of Commerce (finance) from UNSW
- CFA charterholder

Thomas Dobler, Ph.D. – Senior Vice President, Portfolio Manager, Multi-Asset Class Strategies

- 27 years of investment experience
- Ph.D. in mathematics from Columbia University
- M.S. in mathematics from University of Illinois
- B.S. in mathematics from University of Vienna, Austria

Denys Glushkov, Ph.D. – Senior Vice President, Portfolio Manager, Research

- 17 years of professional experience
- Ph.D. in finance, University of Texas at Austin
- M.S. in economic cybernetics, Dnipropetrovsk State University (Ukraine)
- M.A. in economics, Central European University (Hungary)

Investment Team

Clifton Hill – Senior Vice President, Portfolio Manager, Multi–Asset Class Strategies

- 22 years of investment experience
- Member of Acadian’s Diversity & Inclusion Forum
- B.A. in political science from Brown University

Katrina Khouponsy, CFA – Senior Vice President, Portfolio Manager, Research

Acadian Asset Management (Australia) Limited

- 29 years of professional experience
- Bachelor in mathematics and finance (Hons) from the University of Technology, Sydney
- Graduate Diploma in applied finance and investments from the Securities Institute of Australia
- CFA charterholder

Kurt Livermore, CFA – Senior Vice President, Portfolio Manager

- 27 years of investment experience
- B.S. in business administration from University of Arizona
- CFA charterholder

Dmitry Olevsky, CFA – Senior Vice President, Portfolio Manager, Research

- 21 years of investment experience
- M.B.A. from Harvard Business School
- B.S. in structural engineering from Michigan Technological University
- FRM designation and CFA charterholder

Shailesh Parmar – Senior Vice President, Portfolio Manager, Multi Asset Class Strategies

- 16 years of investment experience
- M.B.A. in finance and economics from Columbia Business School
- B.A. in chemistry from Columbia University

Matthew Picone, CFA – Senior Vice President, Portfolio Manager, ESG Acadian Asset Management (Australia) Limited

- 19 years of professional experience
- Bachelor of Commerce in finance and econometrics from the University of Sydney
- CFA charterholder
- Member of the PRI Australian Advisory Committee

Mark Roemer – Senior Vice President, Portfolio Manager

- 27 years of professional experience
- M.S. in finance from London Business School
- M.S. in engineering from Stanford University
- B.S. in mechanical engineering from Virginia Polytechnic Institute & State University

Bin Shi, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

- 17 years of investment experience
- Ph.D. in industrial and systems engineering from Georgia Institute of Technology
- M.S. in operations research from Georgia Institute of Technology
- B.S. in mechanical engineering from Southeast University, China
- CFA charterholder

Olivia Tang, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research

- 13 years of professional experience
- Ph.D. in systems engineering, with a concentration in operations research, from Boston University
- B.S. in mathematics from Peking University (China)
- CFA Charterholder

Charles Augello, CFA – Senior Vice President, Lead Analyst, Integration, Multi–Asset Class Strategies

- 18 years of professional experience
- B.A. in engineering sciences and economics from Dartmouth College
- CFA charterholder

Anton Kapliy, Ph.D., CFA – Senior Vice President, Lead Analyst, Implementation

- 9 years of professional experience
- Ph.D. in high energy physics from University of Chicago
- B.A. in physics from University of Pennsylvania
- CFA charterholder and a member of CFA Society Boston

Rob Ricciarelli, CFA – Senior Vice President, Lead Analyst, IPD

- 27 years of professional experience
- M.B.A from Suffolk University
- B.S. in management and B.A. in psychology from the University of Massachusetts, Boston
- CFA charterholder

Jeffrey Sutthoff, CFA – Senior Vice President, Lead Analyst, Integration

- 28 years of professional experience
- M.B.A. in finance from Boston College
- B.S. in mathematics from Stetson University
- CFA charterholder

Mark Weissman – Senior Vice President, Lead Analyst, Research

- 17 years of investment experience
- B.S. in computer science, SUNY at Buffalo
- B.S. in chemical engineering from SUNY at Buffalo

Investment Team

Xiaoting Zhang, CFA, FRM – Senior Vice President, Lead Analyst, Integration

- 19 years of investment experience
- M.B.A. from the University of Chicago
- M.S. in financial mathematics from the University of Chicago
- M.S. in computer science from Loyola University Chicago
- B.A. in architecture from Tianjin University, China
- Certified FRM and CFA charterholder

Deborah Waters – Senior Vice President, Senior Trader, Implementation

- 33 years of professional experience
- B.S. in finance from Northeastern University

Dominique Abdi – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 10 years of investment experience
- M.S. in mathematics from New York University
- B.S. in mathematics with a minor in economics from University of Miami
- B.B.A. in finance with a minor in accounting from the University of Miami

Giuliano Amantini, Ph.D. – Vice President, Portfolio Manager

- 18 years of professional experience
- Ph.D. in engineering and applied sciences from Yale University
- M.S. in mathematical finance from Bocconi University
- M.S. in mechanical engineering from Yale University
- M.S. in aerospace engineering from La Sapienza University
- B.S. in mechanical engineering from Tor Vergata University

Paul Duchnowski, Sc.D. – Vice President, Portfolio Manager

- 16 years of investment experience
- B.S., M.S., and Sc.D. in electrical engineering from the Massachusetts Institute of Technology

Timothy Ellerton, CFA – Vice President, Portfolio Manager

Acadian Asset Management (U.K.) Limited

- 23 years of professional experience
- M.Sc. in mathematical trading & finance from the Bayes Business School at City University
- B.A. in law & society from the University of Exeter
- CFA charterholder and member of CFA Society U.K.

Stephen Fang – Vice President, Portfolio Manager, Research

- 6 years of investment experience
- M.S. in computational science and engineering from Harvard University
- B.A. in mathematics and economics from Middlebury College

George Feng – Vice President, Portfolio Manager, Multi-Asset Class Strategies

- 24 years of investment experience
- M.A. in mathematics of finance from Columbia University
- B.S. in electrical engineering from New York University

Sean Geary, CFA – Vice President, Portfolio Manager

- 15 years of professional experience
- M.B.A. from Boston College
- M.S. in mechanical engineering from Boston University
- B.S. in physics from James Madison University
- CFA charterholder and member of CFA Society Boston

Katherine Hodsdon – Vice President, Portfolio Manager, ESG

- 12 years of professional experience
- M.S. in mathematics in finance from New York University
- B.S. in information & systems engineering from Lehigh University
- B.S. in integrated business & engineering from Lehigh University

Charles Johnson – Vice President, Portfolio Manager

- 21 years of professional experience
- M.S. in finance from Northeastern University
- M.B.A. from Northeastern University
- B.S. in finance from the University of Massachusetts at Dartmouth

John King – Vice President, Portfolio Manager

- 22 years of professional experience
- Associate's degree in computer technology from Southern Maine Community College

Dan Le, CFA – Vice President, Portfolio Manager

- 18 years of professional experience
- B.A. in psychology from Brown University
- CFA charterholder and a member of CFA Society Boston

Ken Masse, CFA – Vice President, Portfolio Manager

- 31 years of investment experience
- M.S. in finance from Boston College Carroll School of Management
- B.S. in finance from Bentley University
- CFA charterholder

Sam Mavandadi, Ph.D., CFA – Vice President, Portfolio Manager, Research

- 9 years of investment experience
- M.B.A. from INSEAD
- Ph.D. in electrical engineering from the University of Toronto
- M.A.Sc. in computer engineering from the University of Toronto
- B.A.Sc. in engineering science from the University of Toronto
- CFA charterholder and member of CFA Society Boston

Investment Team

Devin Nial – Vice President, Portfolio Manager, ESG

- 18 years of professional experience
- M.S. in finance from Boston College
- M.A. in computer science from Boston University
- B.A. in English literature from SUNY Albany

Brendan O’Leary, CFA – Vice President, Portfolio Manager, Research

- 10 years of professional experience
- B.S.E. in mechanical & aerospace engineering from Princeton University
- CFA charterholder

Aditya Panda – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 14 years of investment experience
- Master of financial engineering from UCLA
- Bachelor of engineering from the School of Electrical and Electronic Engineering, Nanyang Technical University, Singapore

Michael Ponikewicz – Vice President, Portfolio Manager, Multi Asset Class Strategies

- 11 years of investment experience
- M.B.A. with concentration in asset management from Boston College
- M.S. in finance from Boston College
- B.S. in industrial engineering from Pennsylvania State University

Jessica Song – Vice President, Portfolio Manager, Research

- 11 years of professional experience
- M.S. in mathematics in finance, Courant Institute of Mathematical Sciences, NYU
- M.S. in computer science from SUNY Stony Brook

Linda Wang – Vice President, Portfolio Manager, Research

- 10 years of investment experience
- Master of Finance from MIT’s Sloan School of Management
- B.S. in finance and accounting from Drexel University

Leonid Kritz – Vice President, Associate Portfolio Manager, Multi-Asset Class Strategies

- 7 years of investment experience
- M.S. in finance from the University of Texas—Dallas
- B.S. in mathematics and financial economics from the University of Maryland—Baltimore County
- Certified FRM

Mengxi Liu – Vice President, Associate Portfolio Manager, Research

- 8 years of professional experience
- Ph.D. in physics from Northeastern University
- B.Sc. in physics and economics from Peking University

Kyle McCarthy, CFA – Vice President, Associate Portfolio Manager, Implementation

- 17 years of professional experience
- B.S. in finance from Bentley University
- CFA charterholder and member of CFA Society Boston

Anna Papush, Ph.D. – Vice President, Associate Portfolio Manager,

- 9 years of professional experience
- Ph.D. in operations research from Massachusetts Institute of Technology
- B.A. in mathematics from Cornell University

Shivani Patnaik – Vice President, Associate Portfolio Manager

- 12 years of professional experience
- M.S. in mathematical finance from Boston University
- B.S. in chemical engineering from University of Maryland

Alexander Rikun – Vice President, Associate Portfolio Manager

- 13 years of professional experience
- Ph.D. in operations research from Massachusetts Institute of Technology
- B.S. in applied mathematics with a minor in economics from Columbia University

Louis Seng – Vice President, Associate Portfolio Manager, Implementation

Acadian Asset Management (Singapore) Pte Ltd

- 14 years of investment experience
- B.B.M in finance from Singapore Management University

Steven Wong –Vice President, Associate Portfolio Manager, Research Acadian Asset Management (Australia) Limited

- 12 years of professional experience
- Master of Finance from the University of New South Wales
- Bachelor of Commerce and Bachelor of Engineering from the University of New South Wales

Xunqi (Richie) Yu, CFA – Vice President, Associate Portfolio Manager

- 15 years of professional experience
- Ph.D. in electrical and computer engineering from the University of Miami
- M.S. in computational finance from Carnegie Mellon University, Tepper School of Business
- B.S. in information engineering from Wuhan University, School of Remote Sensing and Information Engineering
- CFA charterholder

James Coder, CFA – Vice President, Lead Analyst, Integration, Multi Asset Class Strategies

- 10 years of investment experience
- B.S. in finance from the University of Kansas
- CFA charterholder

Investment Team

Bhaskar Edara, CFA, FRM – Vice President, Lead Analyst, Implementation

- 28 years of professional experience
- M.S. in finance from Boston College
- B.Tech. in mechanical engineering from the National Institute of Technology, India
- Certified FRM and CFA charterholder

Lucas Manley, CFA – Vice President, Lead Analyst

- 19 years of investment experience
- M.S. in investment management from Boston University
- B.S. in business administration from Northeastern University
- CFA charterholder and a member of CFA Society Boston

Michael Moy – Vice President, Lead Analyst, Implementation

- 25 years of professional experience
- B.S. in finance from Suffolk University

Bernard Sim – Vice President, Lead Analyst, IPD Acadian Asset Management (Singapore) Pte Ltd

- 22 years of professional experience
- Bachelor of Commerce in finance from the Australia National University

Michael Vashevko – Vice President, Lead Analyst, Implementation

- 27 years of professional experience
- M.S. in applied mathematics and computer science from Belarusian State University

Shin Zhao, CFA – Vice President, Lead Analyst, Integration

- 20 years of professional experience
- M.S. in electrical and computer engineering from the University of Massachusetts
- B.S. in physics from the University of Science and Technology of China
- CFA charterholder

Ferdous Alam – Vice President, Senior Analyst, IPD

- 18 years of professional experience
- M.A. in economics from Texas Tech University
- B.B.A. in economics from Texas Tech University

Rei Cheong, CFA – Vice President, Senior Analyst, IPD

Acadian Asset Management (Singapore) Pte Ltd

- 19 years of professional experience
- Masters in Business Administration from the Singapore Management University
- Graduate Diploma in Financial Management from the Singapore Institute of Management
- Bachelor of Electrical Engineering from the National University of Singapore
- CFA charterholder

Soichi Hayashi – Vice President, Senior Analyst, Implementation

- 22 years of professional experience
- B.S. in computer science and physics from Henderson State University

Shi He – Vice President, Senior Analyst, Integration

- 5 years of professional experience
- M.S. in data science from Worcester Polytechnic Institute
- B.S. in computer science from Hubei University of Police, China

Michael Kelsey – Vice President, Senior Analyst, Implementation

- 21 years of professional experience
- M.B.A. from Northeastern University
- B.S. from Babson College

Anna Lang, CFA – Vice President, Senior Analyst, IPD

- 11 years of professional experience
- M.B.A. from Boston University
- B.S. in accounting from the International Slavic University
- CFA charterholder and a member of CFA Society Boston

Zhenan (Micky) Li, CFA – Vice President, Senior Analyst, IPD

- 12 years of investment experience
- M.S. in economics from Boston University
- B.S. in international business and trade from ShanDong University of Science & Technology
- B.S. in business management and administration from Cambridge College
- CFA charterholder and member of CFA Society Boston

Guy Mann – Vice President, Senior Analyst, Implementation

- 20 years of professional experience
- B.S. in computer science from Worcester Polytechnic Institute

Yevgen Revtsov, CFA – Vice President, Senior Analyst, Integration

- 10 years of professional experience
- B.S. in computer systems engineering from Boston University
- CFA charterholder

Kamlun Shek, Ph.D., CFA – Vice President, Senior Analyst, Integration, Multi-Asset Class Strategies

- 25 years of professional experience
- Ph.D. in mechanical engineering from Rensselaer Polytechnic Institute
- M.S. mechanics from Rensselaer Polytechnic Institute
- M.S. in computer science from Rensselaer Polytechnic Institute
- M.S. and B.S. in civil engineering from National Cheng Kung University, Taiwan
- CFA charterholder

Investment Team

Alagappan Solaiappan – Vice President, Senior Analyst, Data Engineering

- 18 years of professional experience
- M.E. in engineering from Anna University
- B.E. in engineering from Madurai Kamaraj University
- Sun Certified Enterprise Architect (SCEA)

Michael Szrom, CFA – Vice President, Senior Analyst, Implementation

- 6 years of professional experience
- B.S. in computer science and computer engineering from Northeastern University
- CFA charterholder

Carl Thunman – Vice President, Senior Analyst, Implementation

- 12 years of professional experience
- B.S. in engineering and computer science from Princeton University

Jason Withrow – Vice President, Senior Analyst, Integration

- 26 years of professional experience
- Member of Acadian’s Diversity & Inclusion Forum
- B.A. in computer science from the University of Rhode Island

Ted Zhang, CFA – Vice President, Senior Analyst, IPD

- 17 years of professional experience
- M.S. in finance from Bentley University
- B.S. accounting from Bentley University
- CFA charterholder and a member of CFA Society Boston

Antonio Constandinou – Vice President, Desk Quant

- 13 years of professional experience
- Bachelor of Commerce in finance from Concordia University, Montreal

Patrick Burek – Vice President, Trader, Multi-Asset Class Strategies

- 20 years of professional experience
- B.A. in government from Cornell University

Benjamin Hutchens, CAIA – Vice President, Trader, Implementation

- 16 years of professional experience
- M.S. in investment management from Boston University
- B.A. in international affairs and political science from Northeastern University
- CAIA charterholder

Jason Littlefield – Vice President, Trader, Implementation

- 18 years of professional experience
- M.S. in finance from Northeastern University
- B.S. in business administration, with a dual concentration in accounting and marketing, from Northeastern University

Sean Paylor – Vice President, Trader, Implementation

- 17 years of professional experience
- B.A. in sociology from Princeton University

Christopher Sinpraseuth – Vice President, Trader, Implementation Acadian Asset Management (Australia) Limited

- 19 years of professional experience
- Master of Commerce in finance and human resource management from the University of New South Wales
- University Foundation Studies of Commerce at St. Paul’s International College

Gregory Spyropoulos, CFA – Vice President, Credit Trader, Implementation

- 20 years of professional experience
- B.S. in finance from Bentley College
- CFA charterholder

Michele Goe, Ph.D. – Assistant Vice President, Associate Portfolio Manager

- 6 years of investment experience
- Member of Acadian’s Diversity & Inclusion Forum
- Ph.D. in materials science from Rochester Institute of Technology
- M.S.E. in operations research from the University of Michigan
- B.S.E. in mechanical engineering from the University of Michigan

Wesley Jeng, CFA – Assistant Vice President, Associate Portfolio Manager, Implementation

Acadian Asset Management (Australia) Limited

- 10 years of investment experience
- Dual Master’s Degree from UT Austin and ESCP Europe
- BA (Hons) from University of Nottingham
- CFA charterholder

Jeffrey Lobdell, CMT – Assistant Vice President, Associate Portfolio Manager, Implementation

- 15 years of professional experience
- M.B.A. in finance from the University of Massachusetts
- B.A. in communications from the University of Massachusetts
- CMT Charterholder

Vincent Tang – Assistant Vice President, Associate Portfolio Manager, Research

- 6 years of investment experience
- M. Eng. in financial engineering from Cornell University
- B. Econ in finance, with a minor in computer science, from Wuhan University

Investment Team

James Toppa, CFA, CAIA – Assistant Vice President, Associate Portfolio Manager, Implementation

- 15 years of professional experience
- B.S. in business administration from Bryant University
- CAIA charterholder
- CFA charterholder

Chong Chen – Assistant Vice President, Senior Analyst, Integration

- 8 years of professional experience
- M.A. in mathematics of finance from Columbia University
- M.S. in economics from Shanghai Jiao Tong University
- B.S. in finance and mathematics from Wuhan University

Anh Huynh – Assistant Vice President, Senior Analyst, Integration

- 9 years of professional experience
- M.Sc. in mathematics from the University of Washington
- B.Sc. in mathematics from MIT

Aashir Naqvi – Assistant Vice President, Senior Analyst, Implementation

- 4 years of professional experience
- B.S. in industrial engineering from Northeastern University

Diego Torres Patino, Ph.D. – Assistant Vice President, Senior Analyst, Implementation

- 8 years of investment experience
- Ph.D. in economics from Stanford University
- B.S. degrees in industrial engineering and in economics from Instituto Tecnológico Autónomo de México

Steven Wang – Assistant Vice President, Senior Analyst Acadian Asset Management (Australia) Limited

- 16 years of professional experience
- Bachelor of Engineering (software engineering), First Class Honours, from the University of New South Wales
- Bachelor of Commerce (finance) from the University of New South Wales

Nathan Zhang – Assistant Vice President, Senior Analyst, Integration, Multi-Asset Class Strategies

- 9 years of professional experience
- M.S. financial mathematics from The University of Chicago
- B.S. in actuarial sciences from The Ohio State University

Rajasekar (Raj) Karuppiah – Assistant Vice President, Data Engineer

- 17 years of professional experience
- B.E. in electrical and electronics engineering from Anna University, Chennai, India

Ian Chong, CFA – Assistant Vice President, Analyst, IPD Acadian Asset Management (Singapore) Pte Ltd

- 6 years of professional experience
- Master of IT in business (artificial intelligence) from Singapore Management University
- M.S. in applied finance from Singapore Management University
- Specialist diploma in data science (artificial intelligence) from Singapore Polytechnic
- Bachelor of Business and Commerce from Monash University
- CFA charterholder

Jianing Duan – Assistant Vice President, Analyst, Research

- 5 years of professional experience
- Ph.D. in mathematical finance from Boston University
- MSc in financial mathematics from University of Chicago
- BSc in applied mathematics from Peking University

Jerry Yu, Ph.D. – Assistant Vice President, Analyst, ESG

- 3 years of investment experience
- Ph.D. in political science and scientific computing from the University of Michigan
- M.A. in statistics from the University of Michigan
- M.A. in political science from Peking University
- B.A. in economics and political science from Peking University



APPENDIX

Annual Performance Disclosure

Non-U.S. Small-Cap Value Equity Composite

	Composite Return (%) Gross-of-Fees	Composite Return (%) Net-of-Fees	Benchmark Return (%)	Dispersion of Returns Within Composite (%)	Three-Year ex-Post Standard Deviation of Absolute Gross Returns		Number of Portfolios in Composite	Assets In Composite (\$MMs)	Total Firm Assets Under Management (\$MMs)
					Composite	Benchmark			
2013	32.4	31.4	30.4	n/a	17.0	17.1	1	417	65,153
2014	-3.2	-3.9	-6.3	n/a	13.9	14.0	1	374	70,339
2015	7.7	6.9	1.1	n/a	11.7	12.2	1	418	66,834
2016	7.7	6.9	7.9	n/a	11.9	12.5	1	414	74,174
2017	35.0	34.0	27.9	n/a	11.1	11.7	1	405	96,765
2018	-18.4	-19.0	-18.4	n/a	12.4	12.2	1	306	85,338
2019	24.7	23.8	22.8	n/a	11.7	11.4	1	385	101,232
2020	13.1	12.2	2.6	n/a	20.2	21.7	1	376	107,229
2021	23.3	22.4	13.3	n/a	19.4	21.2	1	539	116,160
2022	-11.8	-12.4	-14.0	n/a	22.8	23.5	1	484	92,796

Performance Inception: December 1, 2005. This composite was created on: May 1, 2021. All figures stated in USD.

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Methodology: Returns are net of foreign withholding taxes on dividends, interest, and capital gains. Since January 1, 2010 Acadian's methodology was augmented to produce a more accurate gross return figure by eliminating modest cash flows such as securities lending income and custodial fees which are regarded as independent of the investment management process; the reinvestment of all income and trading expenses continue to be included. Monthly composite results are asset-weighted by beginning-of-month asset values of member portfolios which are geometrically linked to arrive at the annual composite return. Net-of-fee performance is calculated on a monthly basis by deducting a model management fee equal to 1/12 of the highest annual management fee listed in the standard fee schedule for accounts shown below. The standard fee schedule for accounts managed with this product is 0.75% on the first \$50 million, 0.65% on the next \$50 million, and 0.5% thereafter. Management fees may vary according to the range of services provided, investment performance, and the amount of assets under management. Constituent portfolios are included from the first full month after inception to the present or the last full month prior to cessation of the client relationship with the firm. For example, an account that opened January 15, 2019 will be included beginning February 1, 2019. An account that terminated February 12, 2019 will be included through January 31, 2019. Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request.

Dispersion and Standard Deviation: Acadian's broad definitions are mainly the product of a highly customized process that may result in modest differences with regards to portfolio characteristics among constituents. All accounts managed with directly comparable investment objectives are included, though it's possible for members to utilize slightly different benchmarks in optimization and reporting. Although at times dispersion among constituents may be high, the long-term forecast for each portfolio is consistent with the overall composite. The 'Dispersion' statistic presented above uses gross of fee returns and is an annual, asset-weighted standard deviation calculation performed only on those portfolios who have been members for the entire calendar year. These figures are not applicable if there is only one portfolio in the composite for the full year. Thirty-six months are required to calculate the 'Three Year ex-Post Standard Deviation' statistic. These figures are not applicable if thirty-six months of composite returns are not available.

Composite Description: This composite invests in core-like small-cap value equities within non-U.S. equity markets. The focus is mainly on developed markets though some portfolios have limited emerging markets exposure. Complete lists of the firm's composite descriptions, limited distribution pooled fund descriptions, and broad distribution funds are available upon request.

Benchmark Description: The benchmark for the composite is MSCI World ex-U.S. Small Cap Value (net) from Aug 1, 2014 to present. From Dec 1, 2005 to Jul 31, 2014 the benchmark was S&P Small-Cap EPAC Value (total). The MSCI World ex-U.S. Small Cap Value Index is a free float-adjusted market capitalization index that is designed to measure the equity market performance of small cap securities in developed markets, excluding the U.S. with focus on securities exhibiting overall value style characteristics. These characteristics are defined using three variables: book value to price, 12-month forward earnings to price, and dividend yield. The S&P Small-Cap EPAC Value Index seeks to measure the equity market performance of small cap securities in developed markets within the Europe and Asia Pacific regions that represent the lowest 15% of float-adjusted market cap in each developed country and also display value style characteristics. These value stocks are measured using three factors: the ratios of book value, earnings, and sales to price.

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GLOBAL AFFILIATES

Boston London Singapore Sydney

ACADIAN-ASSET.COM