BOARD OF PENSION TRUSTEES
FOR THE
CITY OF JACKSONVILLE RETIREMENT SYSTEM
Thursday, December 2, 2021 at 12:30 PM
City Hall Conference Room 3C
AGENDA

1. **CALL TO ORDER**

2. **PUBLIC COMMENT**

3. **INVESTMENT AND FINANCIAL MATTERS**

   a. Acadian Emerging Markets Equity Presentation

4. **INFORMATION**

   a. Next regular BOT meeting scheduled for Thursday, December 16, 2021, at 2 PM
   b. Manager Review Meeting with Baillie Gifford (International Growth Equity) scheduled for Thursday, January 6, 2022, at 12:30 PM

5. **PRIVILEGE OF THE FLOOR**

6. **ADJOURNMENT**

City of Jacksonville Retirement System

EMERGING MARKETS EQUITY

DECEMBER 2, 2021

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PRESENTATION TEAM

Kurt Livermore, CFA — Senior Vice President, Portfolio Manager

Kurt joined Acadian in 2015 and is a senior member of the Portfolio Management Team, focused on Core Equity strategies. Prior to joining Acadian, he was a portfolio manager for U.S. and global equity strategies at GlobeFlex Capital, and previously was a portfolio manager on quantitative U.S. equity market-neutral strategies at Matikos Capital/FrontPoint Partners. Kurt began his career at BlackRock. He earned a B.S. in business administration from the University of Arizona. Kurt is a CFA charterholder.

Adam Waclawsky, CFA, CAIA — Senior Vice President, Relationship Manager

Adam joined Acadian in 2015 and is a senior member of the Global Client Group. Adam is a Relationship Manager responsible for servicing clients in North America. Prior to joining Acadian, he worked in a number of client service and relationship management functions at Wellington Management and also served as an account manager at State Street Corp. Adam holds a B.A. in economics from the University of Massachusetts, Amherst. He is a CFA charterholder and a member of CFA Society Boston, as well as a CAIA charterholder and member of the CAIA Association.

OVERVIEW

OUR FIRM

MISSION

To be our clients' most valued resource for investment insight and success

- **Client-first** approach
- **Long-term** focus
- **Partnerships** add value beyond investment returns

CULTURE

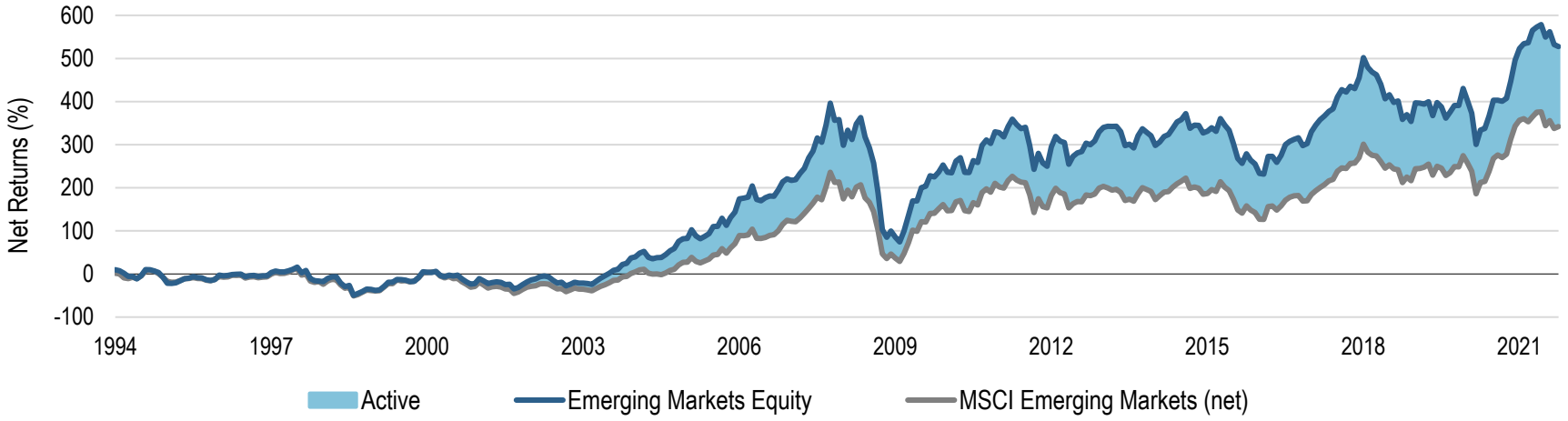
- **Collegial** and team-oriented
- **Transparent** decision making
- **Accountable** and objective evaluation of our decisions

INVESTMENT APPROACH

- **Pioneer** in quantitative investment management
- Philosophy rooted in **behavioral finance**
- **Disciplined** approach to investment decisions, risk management and trading

WHY ACADIAN IN THE EMERGING MARKETS?

- Pioneering investor in emerging markets equities, beginning in 1994
- Broad and mispriced security universe in an inefficient asset class
- Outperformance in 19 out of 27 years, with a since inception annualized return of 7.9% versus 5.5% for the benchmark as of October 31, 2021*



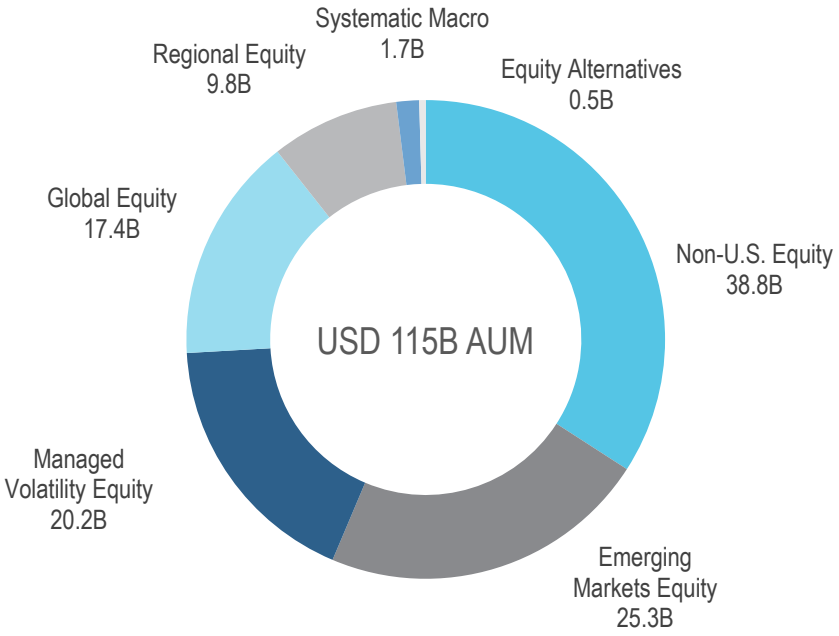
185% cumulative value-added net of fees

*Emerging Markets Equity Composite vs. the MSCI Emerging Markets benchmark. Before management fees in USD. Inception January 1, 1994.
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: MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

ORGANIZATIONAL OVERVIEW

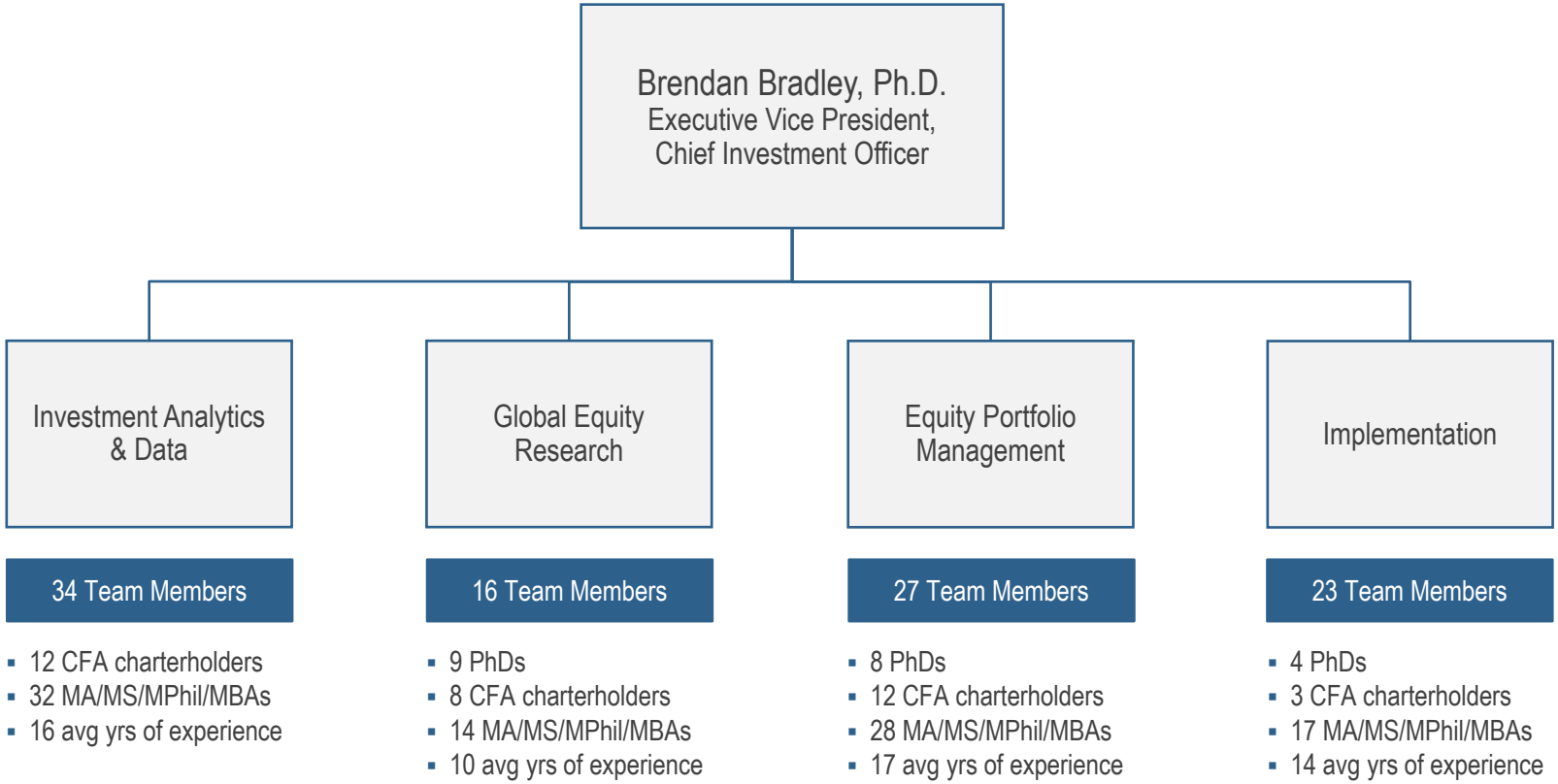
October 31, 2021

- 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 374-person team is focused on continuous research and innovation



Rounding is applied to the total firm AUM which includes $1028.2 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. For complete details regarding office locations please refer to affiliate office disclosures on the Legal Disclaimer page.

INVESTMENT TEAM OVERVIEW



REPRESENTATIVE INVESTOR LIST

Acadian invests on behalf of some of the world's largest and most sophisticated institutions.

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

- Integra Capital Management Corporation
- SEI

Taft-Hartley

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

Australia

- Equipsuper
- 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

■ = Denotes Emerging Markets Equity investors

Investor names appearing on this representative list consist of separate account clients and fund participants in Acadian managed funds that have been selected by Acadian Asset Management LLC from the group of investors who permit Acadian Asset Management LLC to utilize their name based upon their name recognition and to reflect the range of investor types we service. Investor names appearing on this list were not selected based on account performance and do not constitute an endorsement or recommendation of Acadian Asset Management LLC or our services.

PROCESS

INVESTMENT PHILOSOPHY

- Market inefficiencies caused by behavioral errors can be exploited
- Fundamental insights about mispricings can be best captured employing a systemic approach
- Investment process must be adaptive to account for changing market dynamics

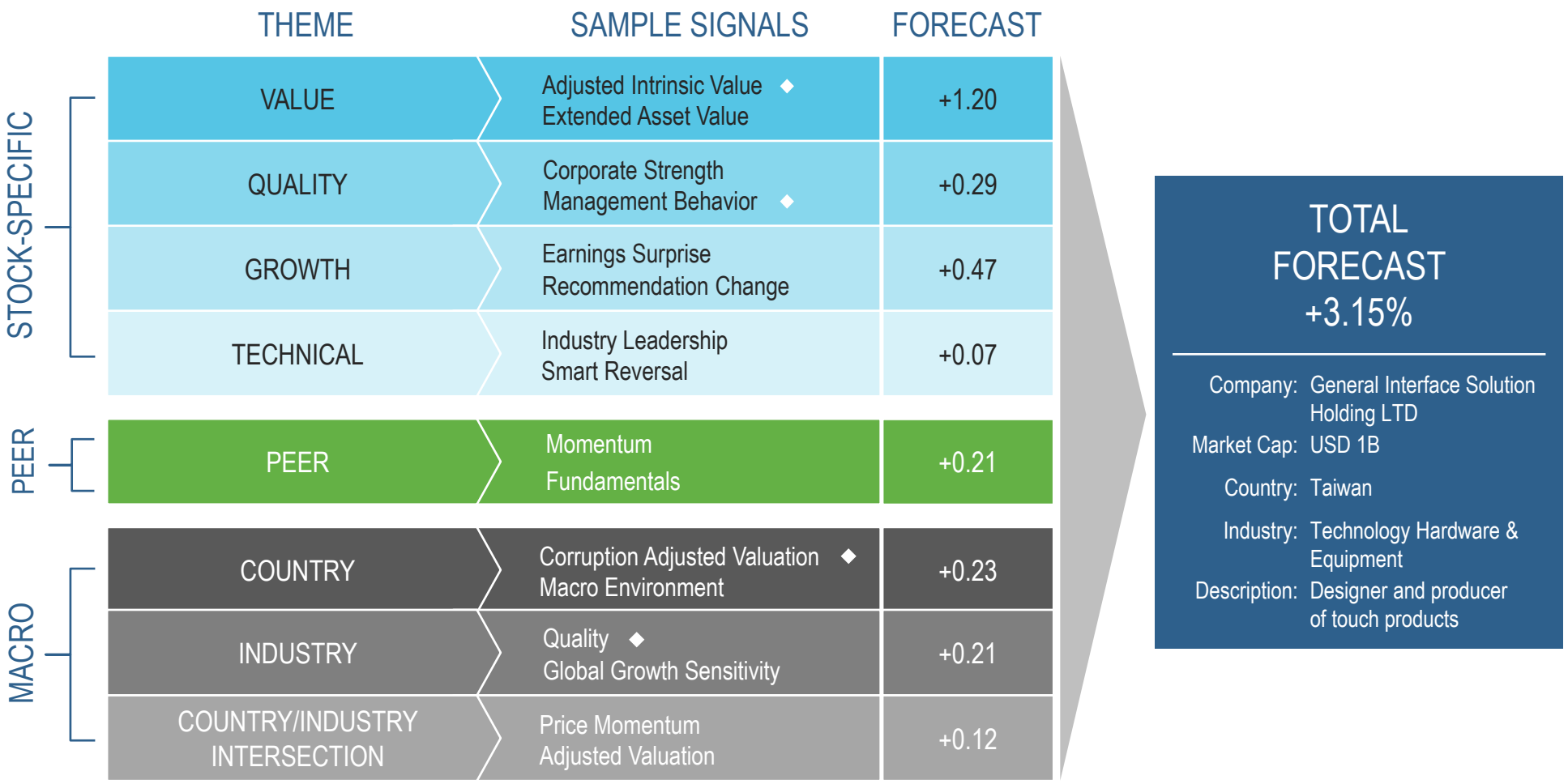
INVESTMENT PROCESS

Acadian's process is systematic, objective and consistent.

INVESTMENT UNIVERSE	STOCK FORECAST	PORTFOLIO CONSTRUCTION	TRADING
EMERGING MARKETS	OBJECTIVE RETURN FORECAST	DISCIPLINED PORTFOLIO CONSTRUCTION	COST EFFECTIVE TRADING
16,500 stock Investment universe	*Stock-specific:* Selection relative to traditionally defined peers + *Peer*: Overlooked information from alternative peer groups + *Macro:* Top-down group signals (industry and country)	Return forecasts Risk forecasts Transaction costs estimates Liquidity estimates	Structured trading process
ESG Issues Are Integrated Throughout	Integrated Factors, Active Research Agenda	Application of ESG Screens, Risk Management, Portfolio Tilting*	Portfolio Characteristics Report, Proxy Voting, Women & Minority Brokerage, Engagement Reporting

*ESG screens and portfolio tilts are implemented at client direction.
The information provided is for illustrative purposes only.

STOCK FORECAST EXAMPLE

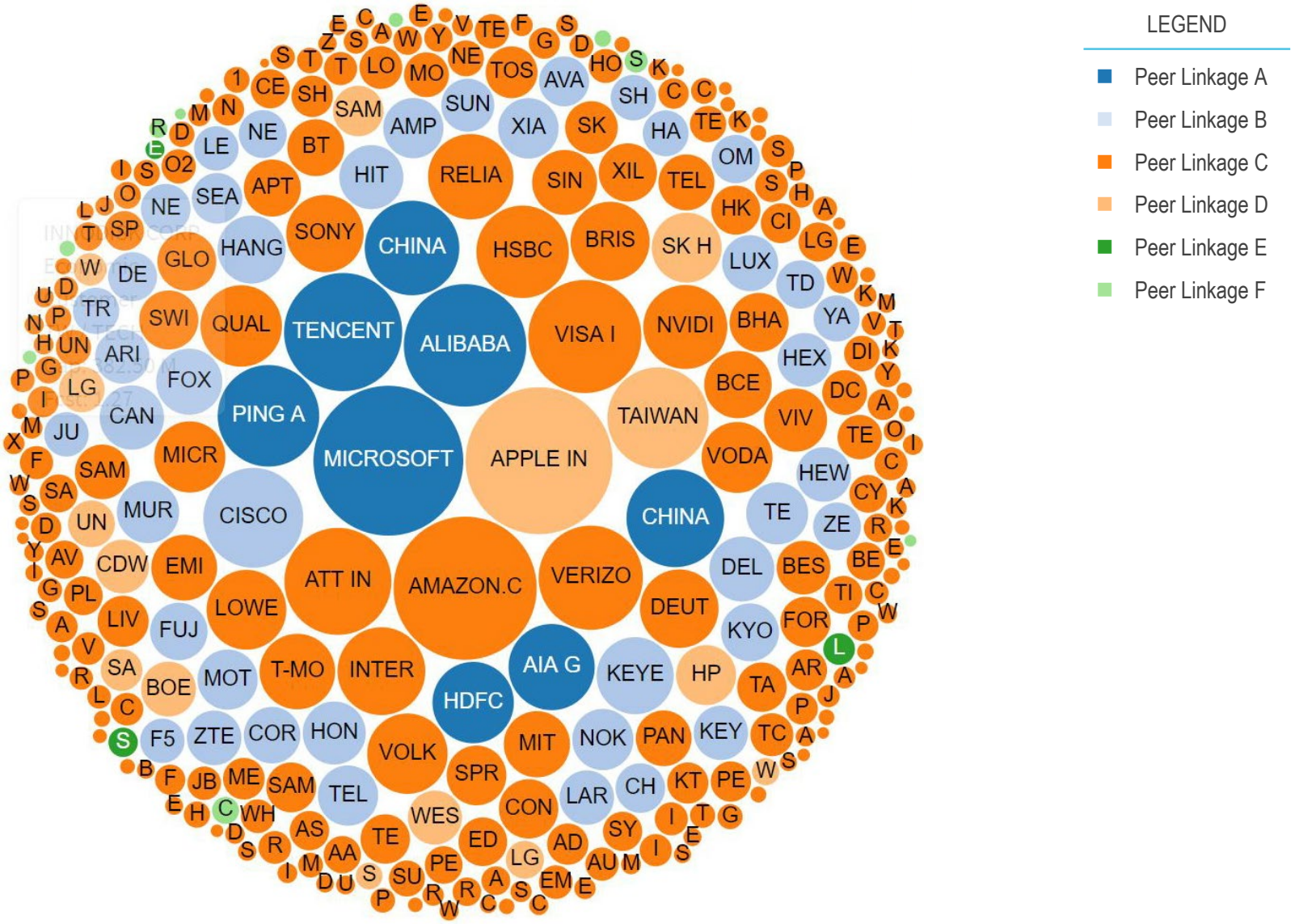


◆ Denotes integrated ESG factors

The total forecast includes an equity vs cash forecast of 0.18 that is applied universally across all stocks, as well as an EM vs. DM forecast of 0.22 that is applied to all stocks in the Emerging Markets universe.
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

Samsung Electronics Co., Ltd.


MICROSOFT
APPLE IN
TENCENT
ALIBABA
VISA I
TAIWAN
CHINA
AMAZON.C
ATT IN
VERIZO
CISCO
PING A
NVIDI
HSBC
BRIS
CHINA
SONY
QUAL
RELIA
SAMSUNG
AIA G
HDFC
INTER
T-MO
VOLK
SPR
MIT
NOK
PAN
KEYE
HP
DEUT
VODA
BCE
BHA
VIV
HEX
TD
LUX
SK H
SIN
XIL
TEL
HK
CI
OM
HA
SK
XIA
SUN
AMP
SAM
NE
BT
HIT
APT
SEA
HANG
GLO
DE
TR
SWI
FOX
CAN
JU
ARI
UN
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MICR
MUR
CDW
EMI
LOWE
FUJ
LIV
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MOT
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CON
LAR
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TC
TA
AR
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KYO
DEL
BES
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BE
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TE
HEW
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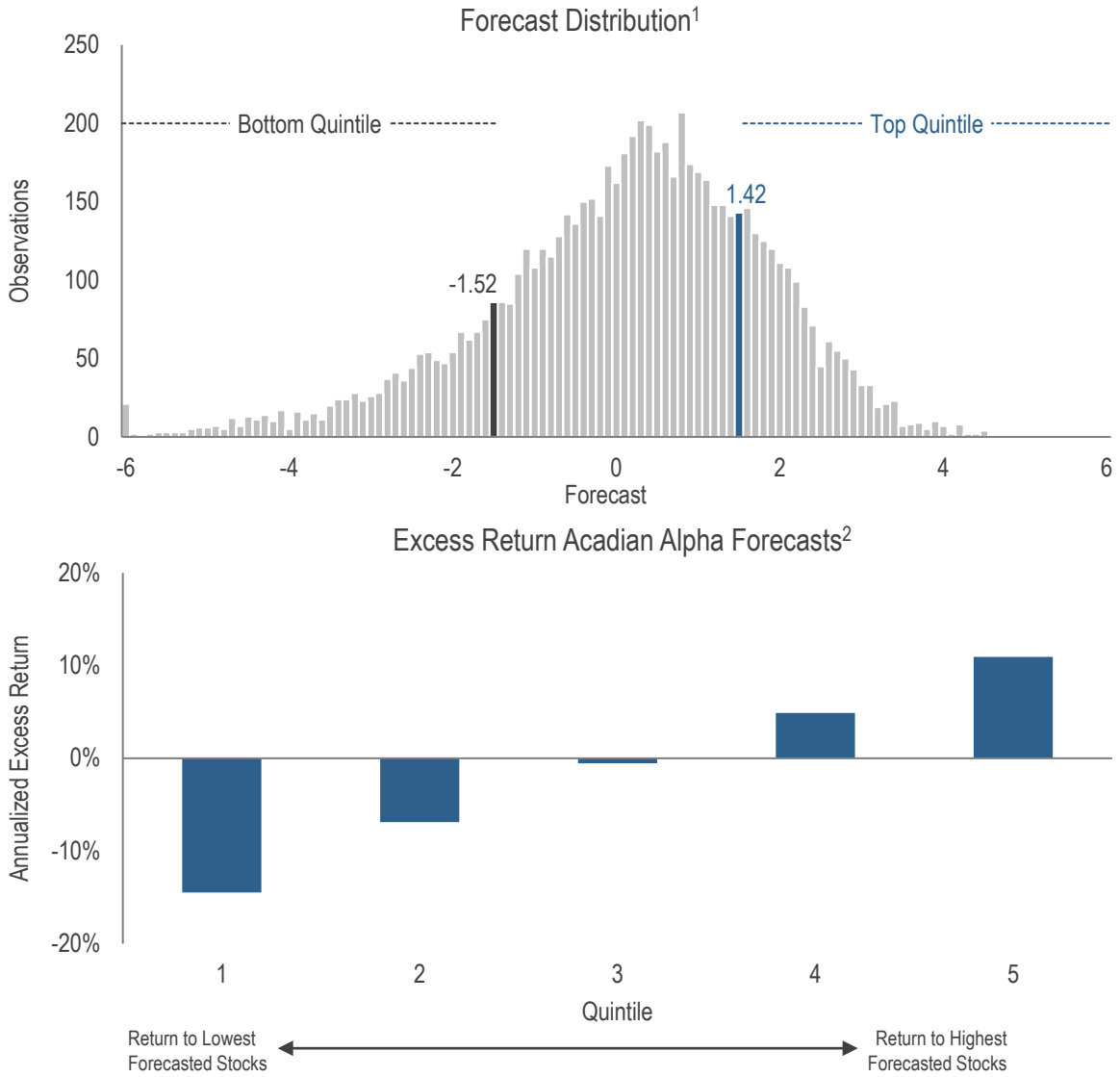
LG
CI
HK
TEL
XIL
SIN
SK H
BRIS
HSBC
CHINA
SONY
HANG
GLO
DE
TR
SWI
QUAL
TENCENT
ALIBABA
VISA I
NVIDI
BCE

STOCK FORECAST DISTRIBUTION AND RETURNS

Trailing 10 Years as of September 2021



Source: Acadian Asset Management LLC. For illustrative purposes only

[1]Source: Acadian's Emerging Markets universe with a market cap greater than $100M. 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.

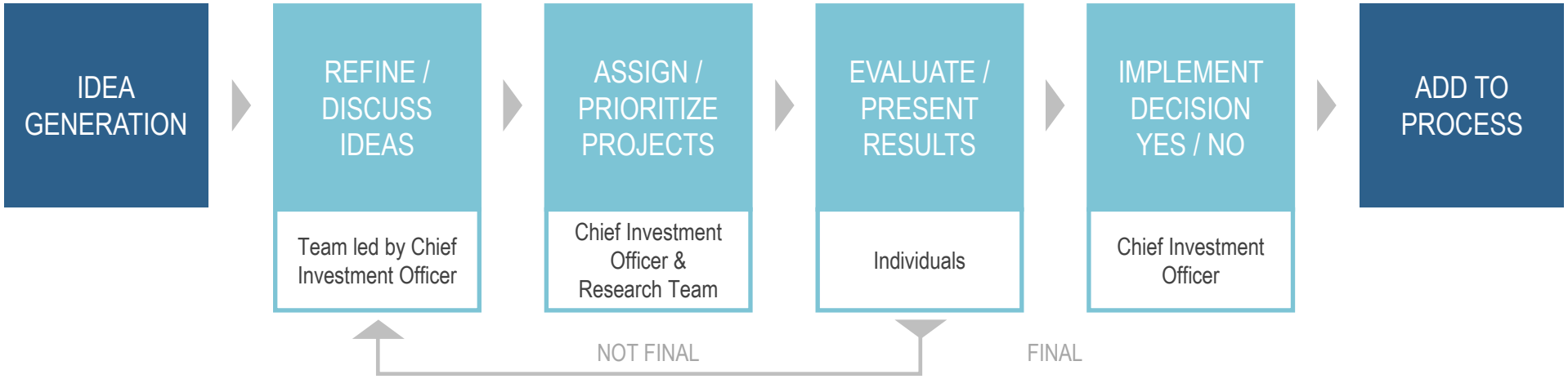
[2]This is not intended to represent investment returns generated by an actual portfolio. They do not represent actual trading or an actual account but were achieved by means of using Acadian's Emerging Markets universe of securities for the period specified above. Results do not reflect transaction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

RISK MANAGEMENT AND PORTFOLIO CONSTRUCTION

Emerging Markets Equity

Active risk	4% - 6% tracking error
Market risk	Beta, volatility & size constrained to market
Security risk	2.25% active weight (dynamic)
Sector risk	+/- 6% active weight
Country risk	+/- 5% active weight
Factor crowding	Mitigate factor crowding through Dynamic Factor Weighting
Human oversight	Portfolio review, discretionary risk management

RESEARCH: PROCESS

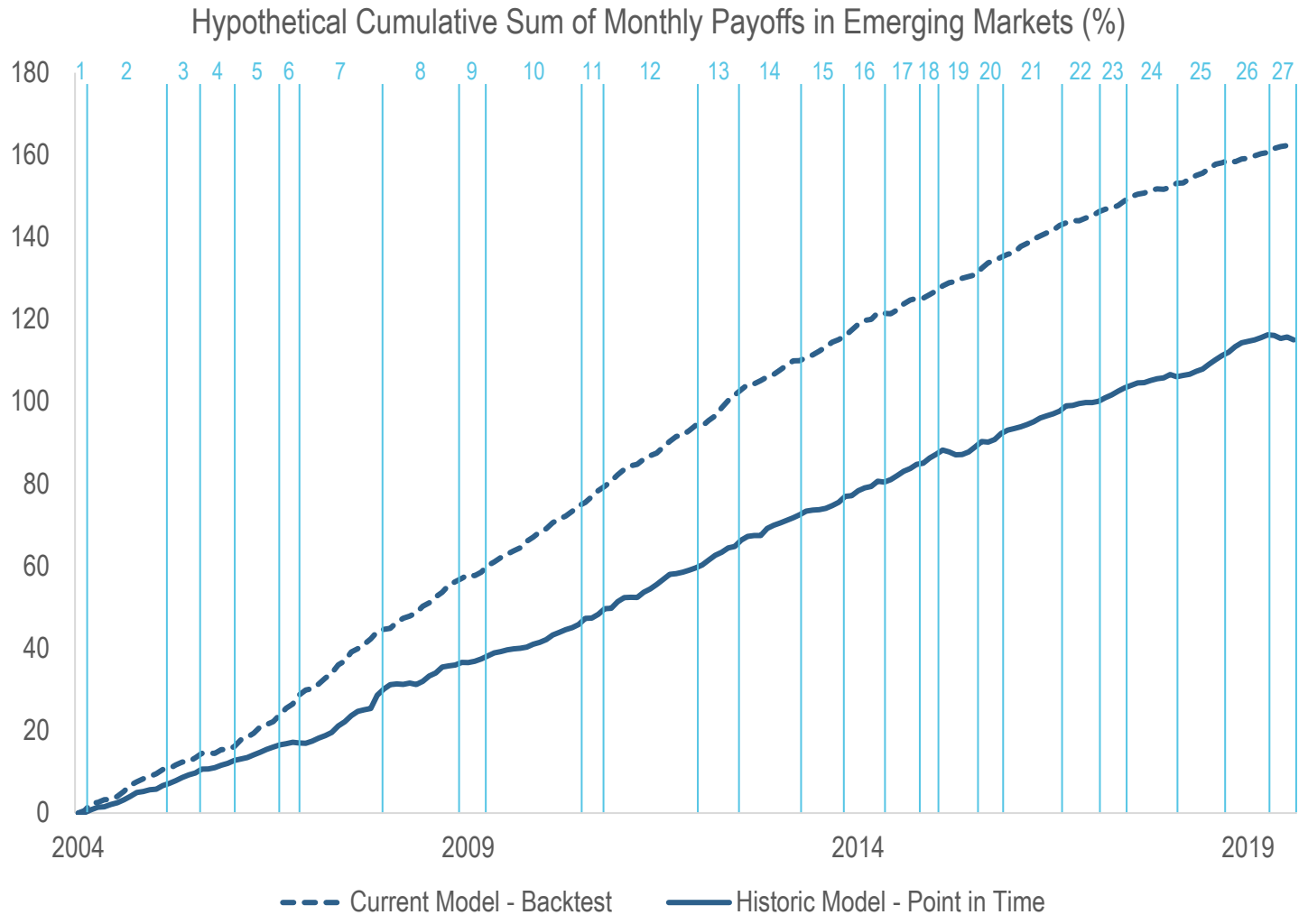


RESEARCH: REPRESENTATIVE PROJECTS

PROJECT THEMES	INVESTMENT PHILOSOPHY	REPRESENTATIVE PROJECTS
ESG	Investors don't fully appreciate competitive advantages of environmental technology leaders	Environmental Innovation
ALTERNATIVE DATA	Market participants neglect information present in hard-to-acquire leading indicators of firm performance	Mobility
MACHINE LEARNING	Investors underappreciate the complexity of information present in macroeconomic indicators	Macro Regime
MACRO	Investors do not fully understand the impact of macro cycle on industry valuations	Valuation Cyclicality
GROUP DESIGN	Investors fail to identify important but less obvious peer groups for stock comparisons	Proprietary Groupings

Source: Acadian Asset Management LLC. The information provided is for illustrative purposes only based on proprietary models.

RESEARCH: IMPACT



Historical Model Number	Correlation to Current Model
28 (Current)	1.00
27	0.99
26	0.92
25	0.92
24	0.87
23	0.86
22	0.83
21	0.81
20	0.79
19	0.76
18	0.74
17	0.68
16	0.66
15	0.65
14	0.63
13	0.64
12	0.65
11	0.66
10	0.60
9	0.56
8	0.54
7	0.52
6	0.42
5	0.40
4	0.18
3	0.27
2	0.26
1 (2004)	0.28

The chart presented here is a hypothetical illustration for educational purposes only showing the cumulative sum of monthly payoffs in Emerging Markets. The solid line represents the historic model's efficacy, while the dashed line represents the efficacy of the current model in a backcast. Source: Acadian investable universe with a market capitalization greater than $100MM. This is meant to be an educational illustrative example and is not intended to represent investment results generated by an actual portfolio. The payoffs do not represent actual trading or an actual account. Results do not reflect transaction costs, other implementation costs and do not reflect advisory fees or their potential impact. Hypothetical results are not indicative of actual future results. Every investment program has the opportunity for loss as well as profit.

CLIENT MANDATE

PORTFOLIO MANDATE – OCTOBER 31, 2021

Acadian Emerging Markets Equity II

PORTFOLIO NAME	Acadian Emerging Markets Equity II
STRATEGY	Emerging Markets
MANDATE	Equity investing in the emerging markets
INCEPTION DATE	Acadian Emerging Markets Equity II: April 8, 2009 City of Jacksonville Retirement System: January 20, 2011
MARKET VALUE	Acadian Emerging Markets Equity II: USD 2,019,984,250 City of Jacksonville Retirement System: USD 139,040,973
BENCHMARK INDEX	MSCI Emerging Markets

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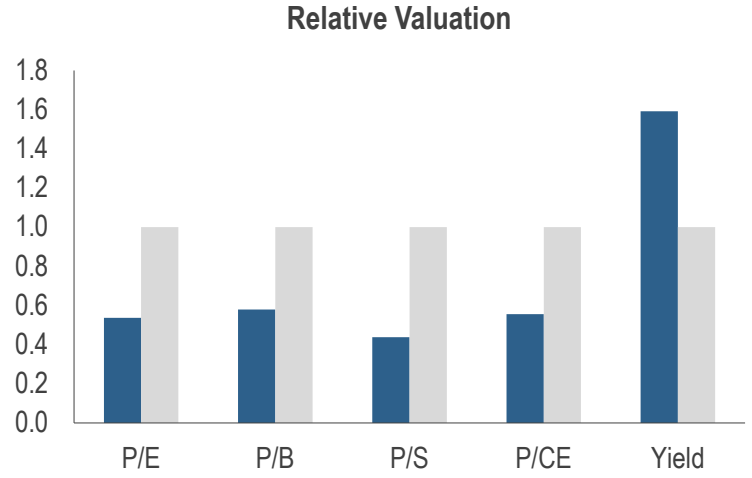
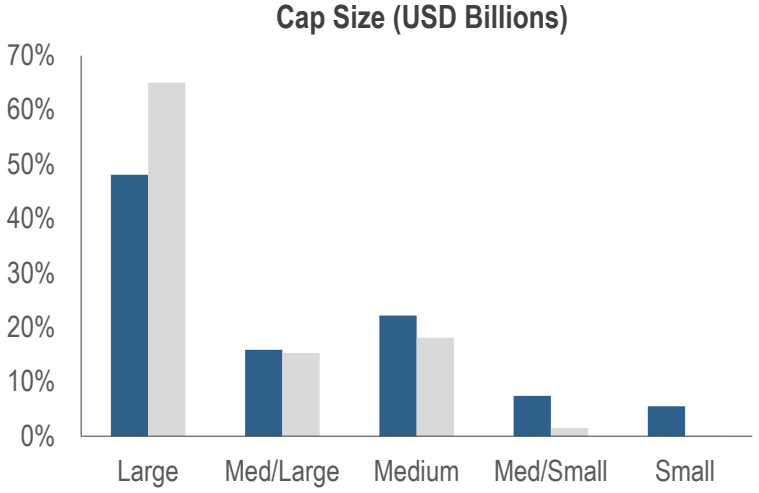
ACADIAN EMERGING MARKETS EQUITY II

Key Characteristics – October 31, 2021*

Valuation	Portfolio	Benchmark
Price/Earnings	8.1	15.1
Price/Book	1.1	1.9
Price/Sales	0.7	1.6
Price/Cash Earnings	5.5	9.9
Yield	3.5%	2.2%
Total Securities	643	1417



Cap Size (USD Billions)	Portfolio	Benchmark
Large > $20B	48.1%	65.0%
Med/Large $10-$20	15.9%	15.3%
Medium $3-$10	22.2%	18.1%
Med/Small $1.5-$3	7.4%	1.5%
Small < $1.5	5.5%	0.1%
Median	1.5	7.7
Weighted Average	93.1	139.8



Portfolio: Acadian Emerging Markets Equity II. **Benchmark**: MSCI Emerging Markets.

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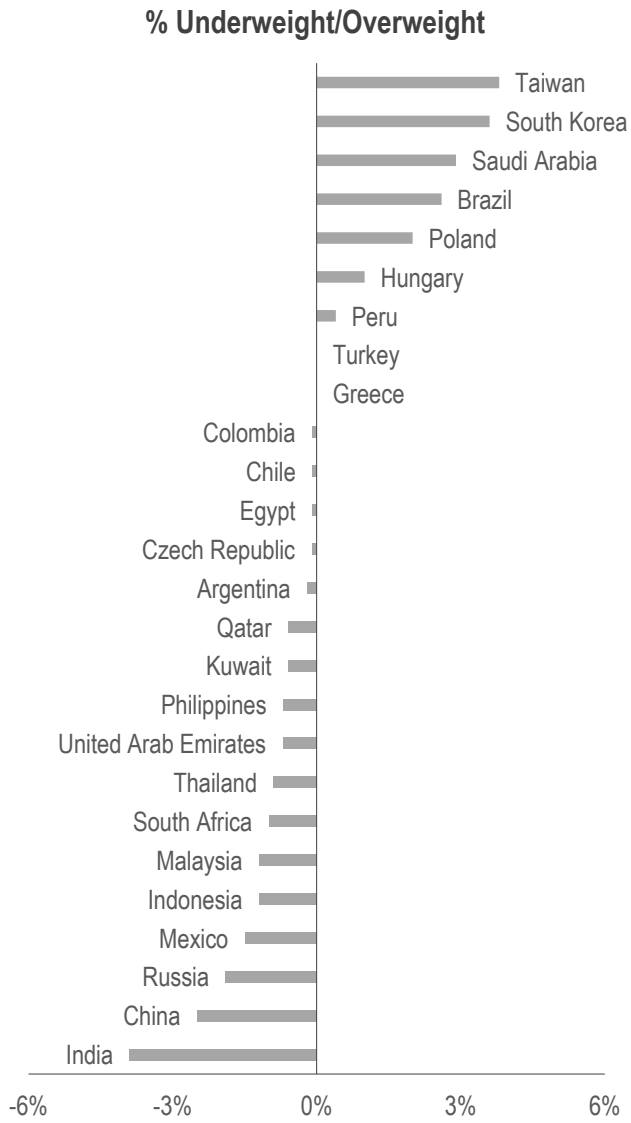
ACADIAN EMERGING MARKETS EQUITY II

Emerging Markets Allocations – October 31, 2021*

	Portfolio	Benchmark	Difference
Europe/Mid East/Africa	**15.3%**	**14.5%**	**0.8%**
Czech Republic	0.0	0.1	-0.1
Egypt	0.0	0.1	-0.1
Greece	0.2	0.2	0.0
Hungary	1.2	0.3	1.0
Kuwait	0.0	0.6	-0.6
Poland	2.8	0.8	2.0
Qatar	0.2	0.8	-0.6
Russia	2.1	4.1	-1.9
Saudi Arabia	6.3	3.4	2.9
South Africa	2.2	3.1	-1.0
Turkey	0.3	0.3	0.0
United Arab Emirates	0.1	0.8	-0.7
Latin America	**7.8%**	**6.8%**	**1.0%**
Argentina	0.0	0.2	-0.2
Brazil	6.6	4.0	2.6
Chile	0.3	0.4	-0.1
Colombia	0.0	0.2	-0.1
Mexico	0.4	1.9	-1.5
Peru	0.6	0.2	0.4
Asia	**75.9%**	**78.7%**	**-2.8%**
China	32.2	34.7	-2.5
India	8.1	12.0	-3.9
Indonesia	0.3	1.5	-1.2
Malaysia	0.2	1.3	-1.2
Pakistan	0.0	0.0	0.0
Philippines	0.0	0.7	-0.7
South Korea	15.8	12.2	3.6
Taiwan	18.5	14.7	3.8
Thailand	0.8	1.7	-0.9
Developed Markets	**0.0%**	**0.0%**	**0.0%**
Cash	**1.0**		



Portfolio: Acadian Emerging Markets Equity II. **Benchmark**: MSCI Emerging Markets.

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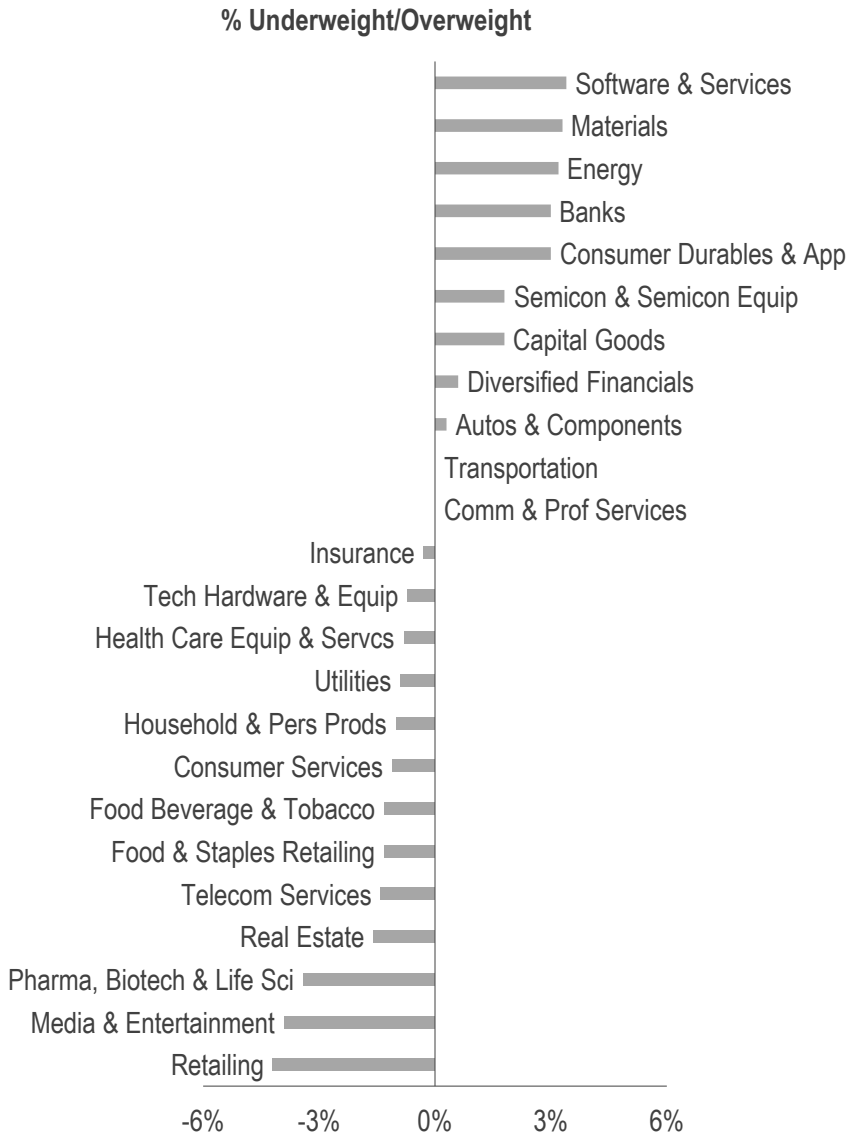
ACADIAN EMERGING MARKETS EQUITY II

Industry Allocations – October 31, 2021*

	Portfolio	Benchmark	Difference
Communication Services	**5.3%**	**10.6%**	**-5.3%**
Media & Entertainment	4.0	7.9	-3.9
Telecommunication Services	1.3	2.7	-1.4
Consumer Discretionary	**13.6%**	**15.5%**	**-1.9%**
Automobiles & Components	4.3	4.0	0.3
Consumer Durables & Apparel	4.7	1.7	3.0
Consumer Services	0.0	1.1	-1.1
Retailing	4.6	8.8	-4.2
Consumer Staples	**2.3%**	**5.8%**	**-3.5%**
Food & Staples Retailing	0.0	1.3	-1.3
Food, Beverage & Tobacco	2.3	3.6	-1.3
Household & Personal Products	0.0	1.0	-1.0
Energy	**9.0%**	**5.8%**	**3.2%**
Financials	**23.1%**	**19.6%**	**3.4%**
Banks	17.6	14.6	3.0
Diversified Financials	3.1	2.5	0.6
Insurance	2.3	2.6	-0.3
Health Care	**0.3%**	**4.6%**	**-4.3%**
Health Care Equipment & Services	0.2	1.0	-0.8
Pharmaceuticals, Biotechnology & Life Sciences	0.1	3.5	-3.4
Industrials	**6.7%**	**4.7%**	**2.0%**
Capital Goods	4.8	3.0	1.8
Commercial & Professional Services	0.1	0.1	0.0
Transportation	1.7	1.7	0.0
Information Technology	**25.2%**	**20.6%**	**4.6%**
Semiconductors & Semiconductor Equipment	11.3	9.5	1.8
Software & Services	6.2	2.8	3.4
Technology Hardware & Equipment	7.6	8.3	-0.7
Materials	**11.8%**	**8.5%**	**3.3%**
Real Estate	**0.4%**	**2.0%**	**-1.6%**
Utilities	**1.3%**	**2.2%**	**-0.8%**
Cash	**1.0**		



Portfolio: Acadian Emerging Markets Equity II. **Benchmark**: MSCI Emerging Markets.

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ACADIAN EMERGING MARKETS EQUITY II

Top Ten Portfolio Holdings – October 31, 2021*

Name	Country	Industry	Portfolio (%)
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	Taiwan	Semiconductors & Semiconductor Equipment	4.8
TENCENT HOLDINGS LTD	China	Media & Entertainment	2.6
SAMSUNG ELECTRONICS CO LTD	South Korea	Technology Hardware & Equipment	2.6
ALIBABA GROUP HOLDING LTD	China	Retailing	2.4
CHINA CONSTRUCTION BANK CORP	China	Banks	2.3
AL RAJHI BANK	Saudi Arabia	Banks	2.2
HON HAI PRECISION INDUSTRY CO LTD	Taiwan	Technology Hardware & Equipment	2.2
KIA CORP	South Korea	Automobiles & Components	2.0
WIPRO LTD	India	Software & Services	1.9
HCL TECHNOLOGIES LTD	India	Software & Services	1.8

Summary	Portfolio	Benchmark	Active Weight
% of Portfolio for Top 10 Active Weights	19.0	3.1	16.0
% of Portfolio for Top 20 Current Holdings	40.3	24.5	15.8
% of Non-Benchmark Portfolio Holdings	16.7		
Active Share of Portfolio	72.8		

Portfolio: Acadian Emerging Markets Equity II. **Benchmark**: MSCI Emerging Markets.
*Preliminary. Portfolio holdings are subject to change and should not be considered a recommendation to buy or sell individual securities.
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CITY OF JACKSONVILLE RETIREMENT SYSTEM

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

Time Period	Portfolio (gross)*	Portfolio (net)*	Benchmark	Value-Added (gross) vs. Benchmark
2011 (Inception: Jan 20, 2011)	(16.1)%	(16.5)%	(19.2)%	3.1%
2012	23.4	22.5	18.2	5.2
2013	(1.6)	(2.3)	(2.6)	1.0
2014	2.3	1.5	(2.2)	4.5
2015	(17.5)	(18.0)	(14.9)	(2.6)
2016	13.9	13.2	11.2	2.7
2017	38.8	38.0	37.3	1.5
2018	(18.4)	(18.9)	(14.6)	(3.8)
2019	17.8	17.1	18.4	(0.6)
2020	12.5	11.9	18.3	(5.8)
2021 through October	6.8	6.3	(0.3)	7.1
One Year Annualized Return	25.1	24.4	17.0	8.1
Three Year Annualized Return	11.9	11.3	12.3	(0.4)
Five Year Annualized Return	9.1	8.5	9.4	(0.3)
Since-Inception Annualized Return	4.2	3.6	3.2	1.0
Since-Inception Annualized Standard Deviation	17.3	17.3	17.3	
Since-Inception Active Risk				3.5
Since-Inception Information Ratio				0.3

Portfolio: City of Jacksonville Retirement System. **Benchmark**: MSCI Emerging Markets (net).

*Returns that include the most recent month are preliminary. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian to that provided by the custodian and to contact us with any questions. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the portfolio 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: MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

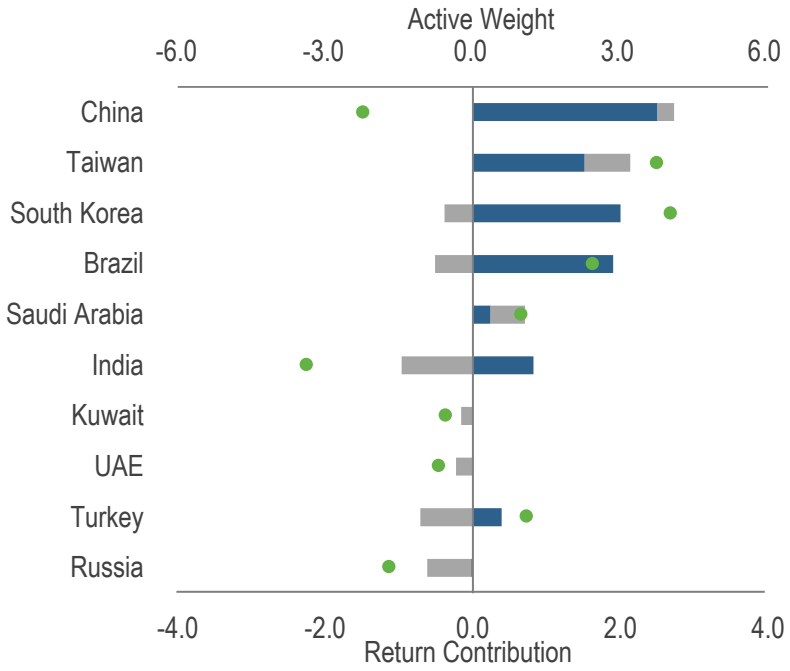
PERFORMANCE ATTRIBUTION

Acadian Emerging Markets Equity II
YTD through October 2021

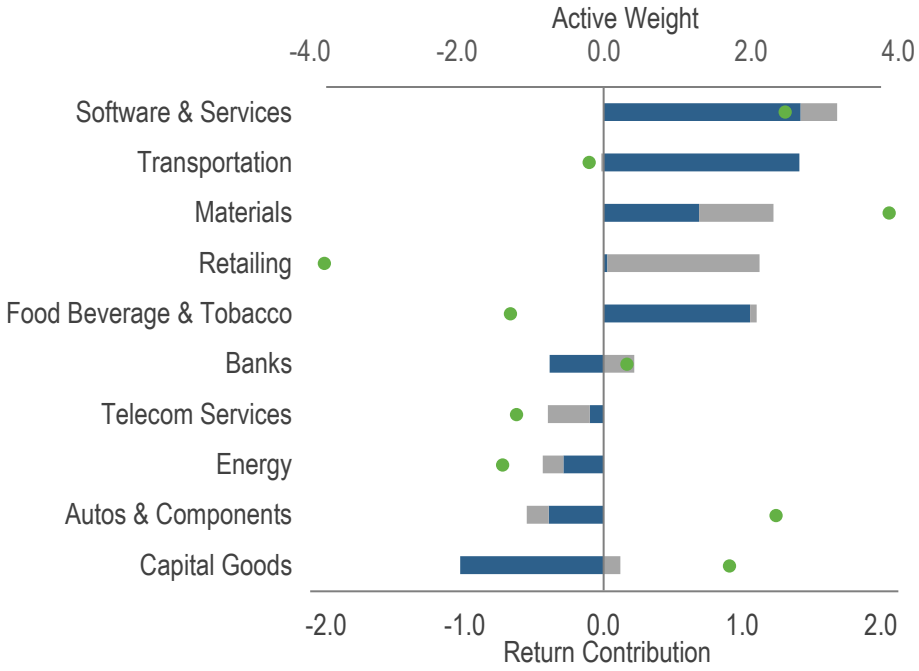
Country	
Stock Selection	9.68
Allocation	-2.46
Total	7.22

Industry	
Stock Selection	2.99
Allocation	4.22
Total	7.22

Top Five/Bottom Five



Top Five/Bottom Five



Portfolio: Acadian Emerging Markets Equity II. **Benchmark**: MSCI Emerging Markets (net).

*Preliminary. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian to that provided by the custodian and to contact us with any questions. Reference to the benchmark is for comparative purposes only and is not intended to indicate that the portfolio 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: MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

PORTFOLIO RETURN ATTRIBUTION

Acadian Emerging Markets Equity II

YTD through October 2021

	Q1 2021		Q2 2021		Q3 2021		QTD 2021*		Total	
	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)	Exposure(%)	Contrib(%)
Alpha	100.0	6.85	100.0	-0.01	100.0	3.44	100.0	-2.06	100.0	8.22
Value	38.1	3.34	36.6	-1.95	36.1	2.86	35.4	-1.69	36.8	2.56
Quality	18.0	0.46	15.3	-0.26	14.1	-1.31	13.3	0.07	15.5	-1.04
Growth	14.9	1.43	17.3	1.26	18.2	1.25	13.0	-0.07	16.4	3.87
Technical	7.0	-0.81	8.9	0.59	9.8	0.47	18.5	-0.33	9.5	-0.07
Peer	10.2	0.23	8.9	0.00	7.7	-0.20	7.3	0.11	8.8	0.15
Top-Down	11.8	2.19	13.1	0.34	14.0	0.36	12.5	-0.15	12.9	2.75
Residual		-0.02		-0.06		-0.14		0.06		-0.15
Risk		-1.90		2.24		-1.07		0.32		-0.40
Trading Costs		-0.27		-0.20		-0.14		-0.09		-0.70
Compounding		0.19		0.09		-0.08		0.01		0.25
Active Return		4.85		2.06		2.01		-1.75		7.22

*Returns represent a partial period.

Source: Acadian and MSCI Emerging Markets (net)

This report utilizes average exposures and factor returns alongside total contributions, which can result in periods where positive average exposure and positive average factor return do not result in positive contribution because of the timing effect between exposures and factor returns. More precisely, if both exposures and returns were time-varying, with higher exposures corresponding to negative factor return periods and lower exposures corresponding to positive factor return periods, we can have negative total contribution despite having positive average exposure and factor return. Past performance is no guarantee of future returns. Past performance may differ significantly from future performance due to market volatility. Investors have the opportunity for loss as well as profit. The complete performance disclosure can be found in the composite performance disclosure page attached. The information provided has been prepared by Acadian from our internal records. It is not intended to replace the official records of your account that you receive directly from the custodian. You are encouraged to compare the information provided to you by Acadian Asset Management LLC to that provided by the custodian and to contact us with any questions. Index Source: MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

SUPPORTING EXHIBITS

OUR COMMITMENT TO RESPONSIBLE INVESTING (RI)

- *Philosophy:* ESG is material and hence fully integrated into our investment process
- *Collaboration:* Internal RI committee of senior leaders; active in industry-leading working groups
- *Commitment:* Acadian was the first quantitative manager signatory of the PRI (October 2009)

2020 PRI Scores[1]
Strategy and Governance: A+
Incorporation: A+
Active Ownership: A

[1]Acadian Asset Management has been awarded these scores for the specific modules above. These as well as additional module scores can be found in the assessment report which is compiled from Acadian's responses to the PRI Reporting Framework. The Transparency Report showing these responses is available on PRI's website. The scores are not indicative of any strategy performance returns nor are they indicative of future performance.

WORLD EQUITY VALUATION

October 31, 2021*

Universe	Index	Price/ Earnings	Price/ Book	Price/ Sales	Price/ Cash	Yield
Emerging Markets	MSCI Emerging Markets	15.1	1.9	1.6	9.9	2.2%
Emerging Markets Small-Cap	MSCI EM Small-Cap	18.2	1.6	1.1	10.3	2.1%
Europe	MSCI Europe	18.9	2.2	1.7	10.4	2.5%
Frontier Markets	MSCI Frontier 15% Country Capped	15.5	2.1	2.6	10.0	2.8%
Japan Large-Cap	TOPIX	17.1	1.3	0.9	8.9	2.1%
Non-U.S. Equity	MSCI EAFE	18.8	1.9	1.6	10.5	2.5%
Non-U.S. Micro-Cap	MSCI World ex-U.S. Micro-Cap	31.2	0.9	0.7	7.2	1.7%
Non-U.S. Small-Cap Equity	MSCI EAFE Small-Cap	23.5	1.6	1.1	11.3	2.0%
U.S. Large-Cap	S&P 500	26.5	4.9	3.2	17.7	1.3%
U.S. Micro-Cap	MSCI U.S. Micro-Cap	-27.1	1.9	1.0	-63.9	1.0%
U.S. Small-Cap	Russell 2000	60.6	2.7	1.6	20.1	1.0%
World	MSCI World	23.9	3.4	2.5	14.9	1.7%

*Preliminary. Data Source: MSCI, TOPIX, Russell, and S&P.

It is not possible to invest directly in any index. Reference to the benchmark is for comparative purposes only. Every investment program has an opportunity for loss as well as profit. Past performance is no guarantee of future results.

Index Sources: Standard & Poor's, Russell, Morgan Stanley Capital International and Russell/Nomura. MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI. Copyright © 2021, Standard & Poor's Financial Services LLC. All rights reserved. Russell Investments Copyright© Russell Investments 1998 – 2021. All rights reserved.

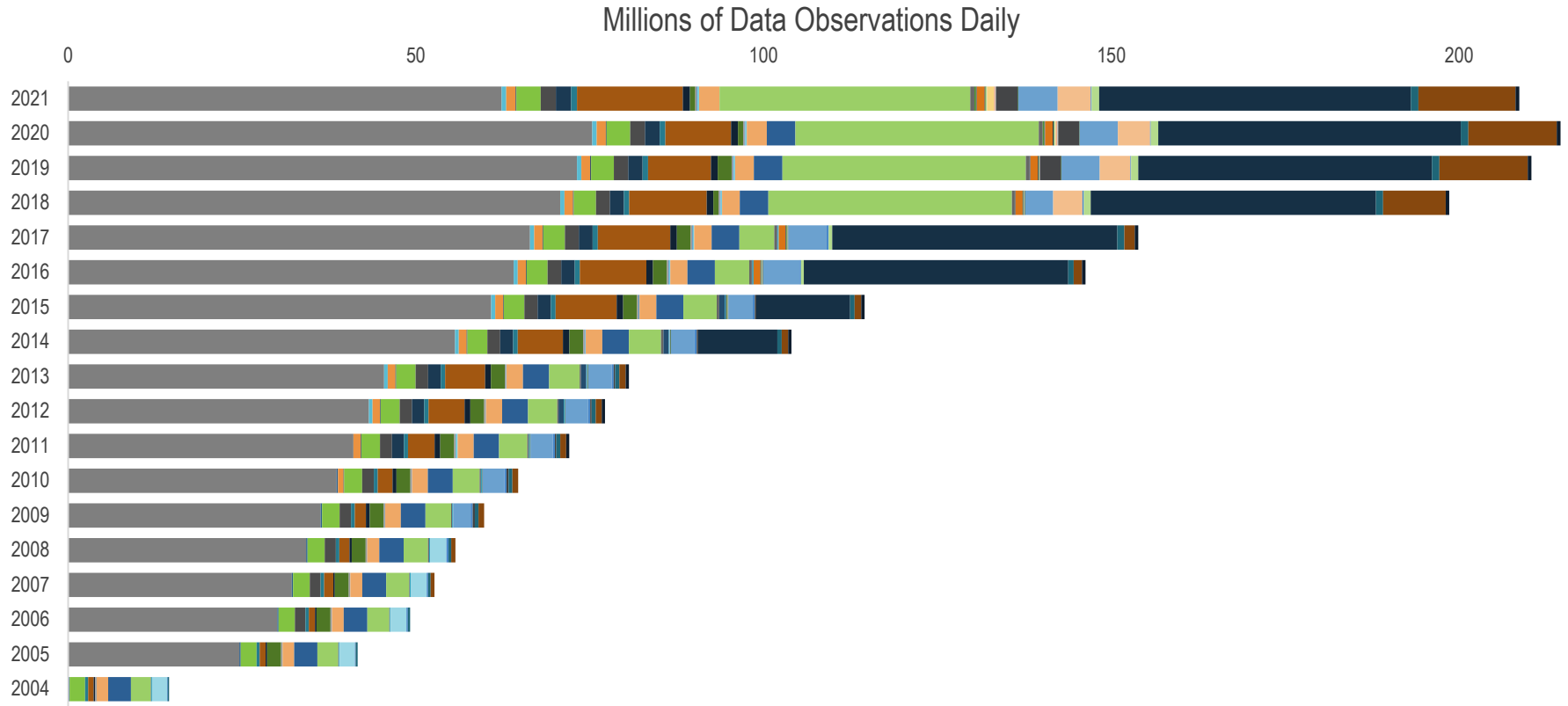
GLOBAL DATA

43,000 COMPANIES
100 COUNTRIES

209 MILLION DAILY OBSERVATIONS

32 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 2021.

BIOGRAPHIES

INVESTMENT TEAM

Brendan O. Bradley, Ph.D. – Executive Vice President, Chief Investment Officer
- 23 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 P. Baker, Ph.D. – Director, Research
- 19 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
- 18 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 A. Figelman, CFA – Senior Vice President, Director, Multi-Asset Class Strategies
- 19 years of investment experience
- M.S. in mathematics of finance from New York University
- B.S. in systems engineering from Washington University
- CFA charterholder

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

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Acadian Asset Management (U.K.) Limited
- 21 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.

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- 19 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

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

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- 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

Joseph M. Bacchi – Senior Vice President, Head of Trading, Multi Asset Class Strategies
- 24 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

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Acadian Asset Management (Australia) Limited
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- 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

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- 30 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

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- MSIM from Boston University
- B.B.A. in finance from the University of Massachusetts

Boris I. Kovtunenko, Ph.D. – Senior Vice President, Head of Implementation Research
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- Ph.D. in economics from Harvard University
- M.A. in economics from New Economics School
- M.S. in physics from Moscow State University

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- Bachelor in mathematics and finance (Hons) from the University of Technology, Sydney
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- CFA charterholder

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- B.S. in structural engineering from Michigan Technological University
- FRM designation and CFA charterholder

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- Member of the PRI Australian Advisory Committee

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- B.A. in economics from Wheaton College

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- 23 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

INVESTMENT TEAM

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Acadian Asset Management (Singapore) Pte Ltd
- 17 years of investment experience
- B.S. and M.S. from Nanyang Technological University
- CPA, Institute of Certified Public Accountants Singapore
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- Computational Finance Certificate from Carnegie Mellon University

Bin Shi, Ph.D., CFA – Senior Vice President, Portfolio Manager, Research
- 15 years of investment experience
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INVESTMENT TEAM

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- M.S. in computer science from SUNY Stony Book

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- CFA charterholder

INVESTMENT TEAM

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- CFA charterholder and a member of CFA Society Boston

John King – Vice President, Lead Analyst, Integration
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- Associate's degree in computer technology from Southern Maine Community College

Karthik Kumar – Vice President, Lead Analyst, Integration
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- M.S. in quantitative and computational finance from Georgia Institute of Technology
- Bachelor of Technology, major in mechanical engineering from Indian Institute of Technology – Roorkee

Michael Moy – Vice President, Lead Analyst, Implementation
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- B.S. in finance from Suffolk University

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Acadian Asset Management (Singapore) Pte Ltd
- 20 years of professional experience
- Bachelor of Commerce in finance from the Australia National University

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- B.A. in computer science from Boston University

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- CFA charterholder

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- B.S. in chemical engineering from SUNY at Buffalo

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Ferdous Alam –Vice President, Senior Analyst, IPD
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- B.B.A. in economics from Texas Tech University

Gary Artinian – Vice President, Senior Analyst, Integration
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- M.S. in industrial engineering from Rensselaer Polytechnic Institute
- B.S. in electrical and computer engineering (dual degree) from Rensselaer Polytechnic Institute

Ajay Kalra– Vice President, Senior Analyst, Implementation
- 22 years of professional experience
- M.S. in Mechanical engineering from the University of Pittsburgh
- B.S. in mechanical engineering from the Indian Institute of Technology (BHU)
- Certificate in Computational Finance from Oregon Graduate Institute

Anna Lang, CFA – Vice President, Senior Analyst, IPD
- 9 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

Devin Nial – Vice President, Senior Analyst, ESG
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- M.S. in finance from Boston College
- M.A. in computer science from Boston University
- B.A. in English literature from SUNY Albany

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- 23 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

Alagappan Solaiappan – Vice President, Senior Analyst, Data Engineering
- 16 years of professional experience
- M.E. in engineering from Anna University
- B.E. in engineering from Madurai Kamaraj University
- Sun Certified Enterprise Architect (SCEA)

Vadim Storozhuk – Vice President, Senior Analyst, Implementation
- 25 years of professional experience
- M.S. in physics from Ohio State University
- B.S. in physics from Moscow Institute of Physics and Technology

INVESTMENT TEAM

Jason J. Withrow – Vice President, Senior Analyst, Integration
- 24 years of professional experience
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- B.A. in computer science from the University of Rhode Island

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- 15 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

Benjamin R. Hutchens, CAIA – Vice President, Trader, Implementation
- 14 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 D. Littlefield – Vice President, Trader, Implementation
- 16 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
- 15 years of professional experience
- B.A. in sociology from Princeton University

Michele Goe, Ph.D. – Assistant Vice President, Associate Portfolio Manager
- 4 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
- 8 years of investment experience
- Dual Master's Degree from UT Austin and ESCP Europe
- BA (Hons) from University of Nottingham
- CFA charterholder

Leonid Kritz – Assistant Vice President, Associate Portfolio Manager, Multi-Asset Class Strategies
- 5 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

Anna Papush, Ph.D. – Assistant Vice President, Associate Portfolio Manager,
- 7 years of professional experience
- Ph.D. in operations research from Massachusetts Institute of Technology
- B.A. in mathematics from Cornell University

Shivani Patnaik – Assistant Vice President, Associate Portfolio Manager
- 10 years of professional experience
- M.S. in mathematical finance from Boston University
- B.S. in chemical engineering from University of Maryland

Rei Cheong, CFA – Assistant Vice President, Senior Analyst, IPD
Acadian Asset Management (Singapore) Pte Ltd
- 17 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

Shi He – Assistant Vice President, Senior Analyst, Integration
- 3 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 – Assistant Vice President, Senior Analyst, Implementation
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- M.B.A. from Northeastern University
- B.S. from Babson College

Yevgen Revtsov, CFA - Assistant Vice President, Senior Analyst, Integration
- 8 years of professional experience
- B.S. in computer systems engineering from Boston University
- CFA charterholder

Michael Szrom – Assistant Vice President, Senior Analyst, Implementation
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- B.S. in computer science and computer engineering from Northeastern University

Felicco Toney – Assistant Vice President, Senior Analyst, Data Engineering
- 7 years of professional experience
- B.S. in electrical engineering and computer science from MIT

Diego Torres Patino, Ph.D. – Assistant Vice President, Senior Analyst, Implementation
- 6 years of investment experience
- Ph.D. in economics from Stanford University
- B.S. degrees in industrial engineering and in economics from Instituto Tecnologico Autonomo de Mexico

INVESTMENT TEAM

Chong Chen – Assistant Vice President, Analyst, Integration
- 6 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

Matthew D. Gunn, Assistant Vice President, Analyst, Global Equity Research
- 2 years of professional experience
- Ph.D. in finance from the University of Chicago Booth School of Business
- M.B.A. with a dual concentration in economics and analytical finance from the University of Chicago
- B.A.S. in economics and symbolic systems with a concentration in artificial intelligence from Stanford University

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

Zhenan Li, CFA – Assistant Vice President, Analyst, IPD
- 10 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

Chang Liu – Assistant Vice President, Analyst, Research
- 3 years of professional experience
- S.M. in computational science and engineering from Harvard University
- M.S. in finance from Massachusetts Institute of Technology
- B.A. in philosophy, history of mathematics and science from St. John's College

Jeffrey S. Lobdell, CMT – Assistant Vice President, Analyst, Implementation
- 13 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

Aashir Naqvi – Assistant Vice President, Analyst, Implementation
- 2 years of professional experience
- B.S. in industrial engineering from Northeastern University

Vincent Tang – Assistant Vice President, Analyst, Research
- 4 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

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

George Wei – Assistant Vice President, Analyst, IPD
- 4 years of professional experience
- M.S. in business analytics from the College of William and Mary
- B.S. in public finance from Central University of Finance and Economics, Beijing, China

Patrick Burek – Assistant Vice President, Trader, Multi-Asset Class Strategies
- 18 years of professional experience
- B.A. in government from Cornell University

APPENDIX

HYPOTHETICAL PERFORMANCE DISCLOSURE

Hypothetical performance results have many inherent limitations, some of which are described below. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual performance results subsequently achieved by any particular trading program.

One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results.

ANNUAL PERFORMANCE DISCLOSURE

Emerging Markets 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			
2011	-17.8	-18.6	-18.4	1.3	25.0	25.8	29	11,157	42,200
2012	23.9	22.7	18.2	1.3	21.4	21.5	25	15,054	51,903
2013	-1.1	-2.1	-2.6	1.5	19.2	19.0	26	17,206	65,153
2014	2.6	1.6	-2.2	1.4	15.7	15.0	29	18,467	70,339
2015	-16.0	-16.8	-14.9	1.4	13.6	14.1	28	13,803	66,834
2016	14.4	13.3	11.2	0.7	15.4	16.1	28	14,867	74,174
2017	39.3	38.0	37.3	1.6	15.2	15.4	28	20,910	96,765
2018	-17.4	-18.3	-14.6	0.8	15.0	14.6	28	17,421	85,338
2019	18.0	16.9	18.4	1.0	14.9	14.2	30	19,615	101,232
2020	13.5	12.4	18.3	1.2	19.6	19.6	29	19,336	107,229

Performance Inception: January 1, 1994. This composite was created on: February 1, 1994. All figures stated in USD.

Acadian Asset Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Acadian Asset Management has been independently verified for the periods January 1, 1994 through December 31, 2020[1]. A copy of the verification report is available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report. 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. Acadian Asset Management is an investment adviser specializing in global equity management. Acadian Asset Management is defined to include assets managed by Acadian Asset Management LLC, an investment adviser registered with and regulated by the United States Securities and Exchange Commission, as well as assets managed by its wholly-owned affiliates, Acadian Asset Management (Australia) Limited (ABN 41 114 200 127), Acadian Asset Management Singapore Pte Ltd, (Registration Number: 199902125D) is licensed by the Monetary Authority of Singapore, and Acadian Asset Management (UK) Limited, authorized and regulated by the Financial Conduct Authority of the United Kingdom. On June 30, 2015, Acadian acquired the assets of Acadian's Australian office.

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 1% on the first $50 million, 0.75% on the next $50 million, 0.65% on the next $50 million, and 0.5% thereafter. Prior to October 1, 2012 the standard fee schedule was 1.0% on the first $50 million and 0.75% thereafter. The combined, all-in maximum fee that includes management and operating expenses for the Acadian Emerging Markets Equity CIT Fund, which is included in the composite, is 0.95% on all assets. The standard management fee schedule and total expense ratio for the Acadian Emerging Markets Equity Fund, which is included in the composite, are 0.75% on all assets and 0.87%, respectively. The standard management fee schedule and total expense ratio for the Acadian Emerging Markets Equity II Fund, which is included in the composite, are 0.75% on all assets and 0.88%, respectively. 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 emerging equity markets with no developed 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 Emerging Markets wherein a combination of gross and net (of dividends and withholding taxes) is used since the net version isn't publicly available until January 2001. The net version of MSCI Emerging Markets was retroactively applied effective July 1, 2012. The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets.

Index Source: MSCI Copyright MSCI 2021. All Rights Reserved. Unpublished. PROPRIETARY TO MSCI.

[1]Ashland Partners verified Acadian's GIPS Compliance claim through March 31, 2017. ACA Compliance Group acquired Ashland's GIPS Verification unit and provided subsequent verifications.

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