



**Tuesday, September 2, 2025  
Public Markets Committee**

**1:00 P.M.**

**Virtual Meeting**

The link to view the meeting virtually can be found at [www.sib.wa.gov/meetings.html](http://www.sib.wa.gov/meetings.html)

**OR**

Members of the public may view the virtual meeting in person at the Washington State Investment Board Olympia Office located at 2100 Evergreen Park Drive SW, Olympia, WA 98502  
**Main Governing Board**

**1. Call to Order/Roll Call (1:00p)**

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**2. Adoption of Minutes (1:00-1:05)**

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A. Adoption of the June 3, 2025, Minutes

**3. Global Equity Manager Recommendation (1:05-2:20)**

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A. PineStone Asset Managment

**4. Break (2:20-2:30)**

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**5. Education Session (2:30-3:30)**

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A. Lower Carbon Equity Indices

**6. Executive Session (3:30-3:45)**

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A. Lower Carbon Equity Indices Continued

**7. Education Session (3:45-4:00)**

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A. Lower Carbon Equity Indices Conclusion

**8. Other Items (4:00-4:05)**

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**9. Adjourn (4:05p)**

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## PineStone Global Equity Strategy

Q2 2025

Prepared for: Washington State Investment Board — Public Markets Committee

Meeting Date: September 2, 2025



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I. Firm Overview

II. Investment Philosophy

III. Investment Process

IV. Appendix 1: Company Examples, Characteristics & Perf

V. Appendix 2: Bios, GIPS Reports & Disclosures



### Key information:

- Founded in March 2021 by Nadim Rizk
- 100% private, employee-owned
- Culture built on commitment to our clients, investment approach, and team
- Eclectic and stable 12-member Investment Team together since 2009 or earlier
- ~\$59.0\* billion (USD) in AUM as of June 30, 2025 across four aligned strategies (Global Equity, International Equity, US Equity, and Global Small-Cap Equity)
- Focused on a single Investment Philosophy and Process:

### Quality, Long-Term Investing

\*Source: PineStone Asset Management, Inc.; unaudited.

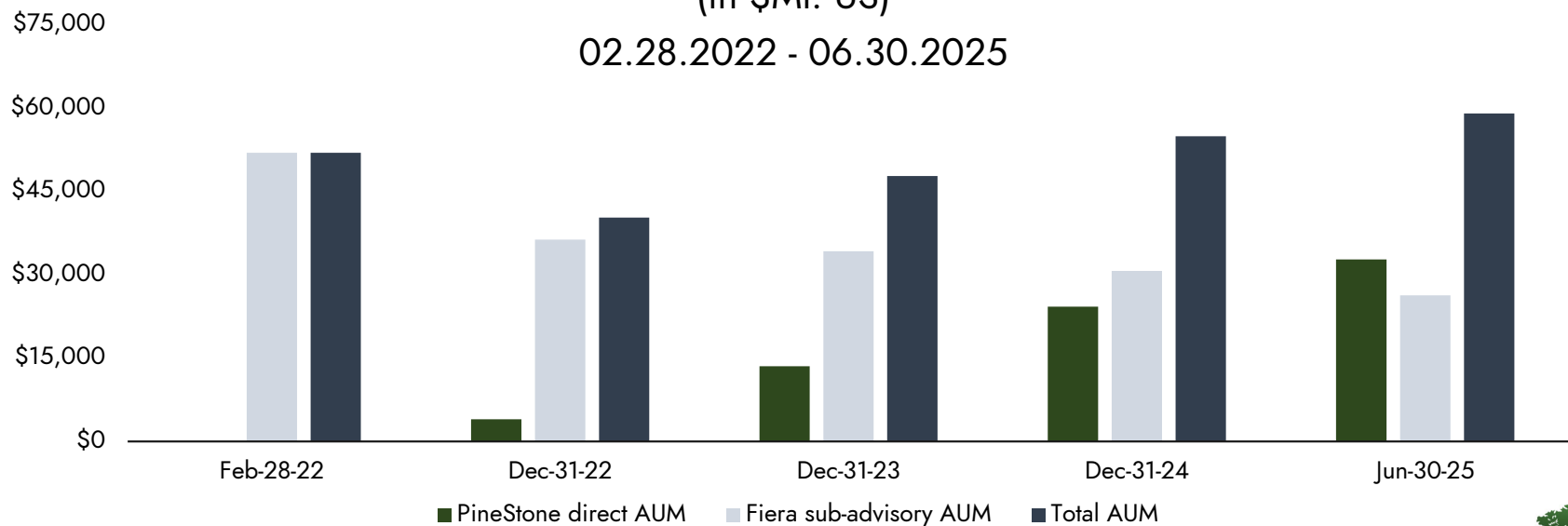


	Global Equity Strategy <sup>1</sup>	US Equity Strategy <sup>1</sup>	International Equity Strategy <sup>1</sup>	Global Small-Cap Equity Strategy <sup>1</sup>	Total <sup>1</sup>
AUM Directly Contracted by PineStone <sup>1</sup>	\$12,108 M	\$10,649 M	\$9,426 M	\$563 M	\$32,746 M
AUM as part of Fiera Capital Sub-Advisory <sup>1</sup>	\$14,480 M	\$4,851 M	\$6,933 M	\$0 M	\$26,264 M
Total <sup>1</sup>	\$26,588 M	\$15,500 M	\$16,359 M	\$563 M	\$59,010 M

### Direct AUM Growth since PineStone's independent business operations\*

(in \$Ml. US)

02.28.2022 - 06.30.2025



1. In US dollars as of June 30, 2025. Source: PineStone Asset Management 2025

\*Source: PineStone Asset Management 2025. Please note that PineStone began independent business operations on February 1, 2022.



**Nadim Rizk, MBA, CFA**  
CEO & CIO

Team: 16 Years, Industry: 28 Years



**Andrew Chan, CIM, M.Sc.**  
Head of Research  
Industrials | IT

Team: 16 Years, Industry: 24 Years



**Thomas Horvath, MBA, CFA, CAIA**  
Small Cap: Lead Portfolio Manager  
Health Care | Consumers | IT

Team: 15 years, Industry: 17 Years



**Ayssar Fernandez, CFA**  
Lead Analyst  
IT | Consumers

Team: 8 Years, Industry: 8 Years



**Nick Cileli, CFA**  
Senior Analyst  
Financials

Team: 16 Years, Industry: 28 Years



**Dominic Tremblay, M.Sc., CFA**  
Senior Analyst  
Health Care | Financials

Team: 15 Years, Industry: 21 Years



**Ivana Miladinovic, CFA**  
Small Cap: Lead Analyst  
Industrials, Financials, IT

Team: 10 Years, Industry: 15 Years



**Juhua Shi, MBA, CFA**  
Senior Analyst  
IT | Comm. Services

Team: 12 Years, Industry: 18 Years



**Wen Qing Xu, CFA**  
Senior Analyst  
Consumers

Team: 9 Years, Industry: 9 Years



**Jackson Roy**  
Small Cap: Junior Analyst  
Generalist

Team: 1 Year, Industry: 1 Year



**Stephano Pascali**  
Analyst  
Industrials | Materials, Energy

Team: 2 Years, Industry: 2 Years



**Athanassios Douzepis**  
Junior Analyst  
Health Care | IT

Team: <1 Year, Industry: <1 Year

## 1. ALIGNMENT

- Employee firm ownership
- Investment Team compensated on long-term total portfolio performance
- Invested in our strategies alongside our clients

## 2. RESEARCH

- Rigorous, structured, and repeatable processes
- Seasoned, diverse team
- Proprietary reports, models, and tools all internally developed with multiple layers of quality controls

## 3. MINDSET

- “Time Edge”: patient, disciplined, and never lured by market darlings
- Relentless commitment to our investment approach
- Invested in companies for 10-20+ years providing a differentiated perspective on the business

We believe one can achieve superior and sustainable returns by investing in a concentrated portfolio of high-quality companies and holding them for the very long run.

How do we define high-quality companies?

## FUNDAMENTALLY



Sustainable competitive advantages and high barriers to entry



Attractive organic growth drivers



Proven track record



Strong management and company culture



Disciplined capital allocation

## FINANCIAL RESULTS



High and sustainable return on invested capital (ROIC)



Ample long-term growth potential at high incremental ROIC



Strong and predictable free cash flow



Consistent compounding of shareholder value over the long-term



Capital preservation



We have been shareholders in most of our companies for more than a decade

Percentage of existing portfolio companies by holding period:





## EXPLORATION

- Internal proprietary screens and ranking process
- Company meetings
- Ideas stemming from existing portfolio holdings
- External research and publications
- Internal idea sharing and discussions

## BOTTOM-UP

- Initial View Document
- Comprehensive proprietary financial models and long-term projections
- Assess fair value and expected target return range
- Grade companies based on assessment of quality – proprietary T.I.M.E. Score

## DIVERSIFICATION

- Weekly Equity Team Meeting
- Presentation on investment thesis, recommendation, and Devil's Advocate report
- Constructive critique and debate
- Final decisions taken by Lead PM
- Gradually build positions based on confidence in quality, risk assessment and return expectations
- Diversified by end-market exposure

## CAPITAL PRESERVATION

- Rigorous focus on the risk of permanent capital loss done on the security-level and portfolio-level
- Obsession with understanding all risks
- Diversification
- Frequent, disciplined review of holdings



## PROPRIETARY SCREENING & RANKING PROCESS

*(customizable by region, sector, industry, etc.)*

### 1. SCREENING

#### CAPITALIZATION

Market Cap greater \$5B USD

#### LIQUIDITY

Average daily volumes greater than \$15M USD

#### PROFITABILITY

Profitable business over the past 7 years

#### LEVERAGE

Net debt to EBITDA Ratio below 3.5x

#### ROIC

5-Year average ROIC greater than 10%



### 2. RANKING

#### QUALITY (50%)

- ROIC, operating margins, cyclicalities, leverage

#### VALUATION (30%)

- Trailing and forward earnings multiples

#### GROWTH (20%)

- Trailing and forward revenue growth

### Objective:

To organize the “Best Of Breed” companies with quality-growth attributes at attractive valuations.

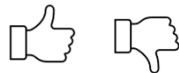


## Long-list Candidates

(approximately 50 companies per annum)

PineStone Initial View: 6-8 pages

- Condensed research report



## Short-list Candidates

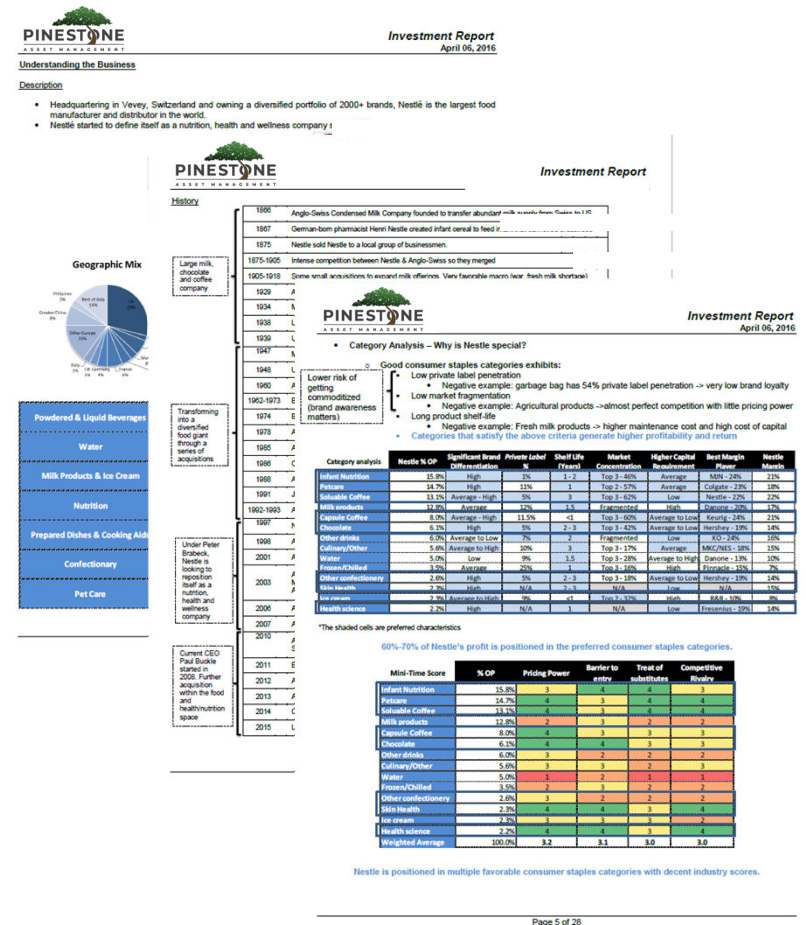
(approximately 15-25 companies per annum)

PineStone Research Report: 25-45 pages

- Fully developed in-house

Comprehensive modeling and rigorous fundamental analysis:

- Industry dynamics/attractiveness
- Porter's 5 Forces
- Management culture, business strategy, and governance
- Full proprietary long-term financial models and projections
- Assess fair value and expected target return range
- Grade companies based on assessment of quality using the proprietary T.I.M.E. Score

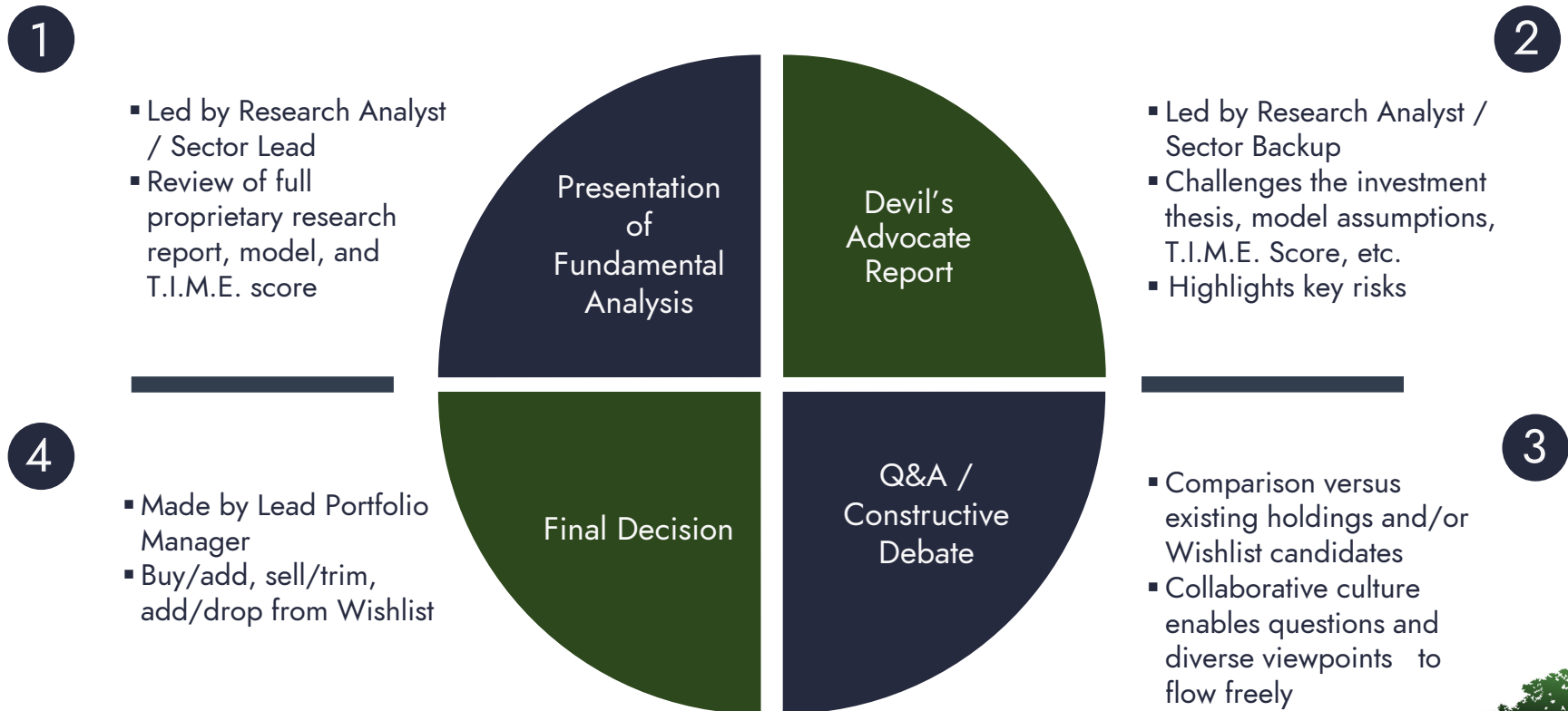




## Collective Intelligence Approach

- Diversified views and perspectives from across the team to reach intelligent decisions
- Ensure continuity of the investment approach
- Lead PM makes the final decision

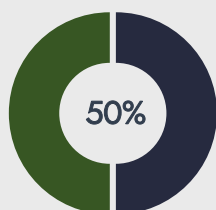
## WEEKLY EQUITY TEAM MEETING





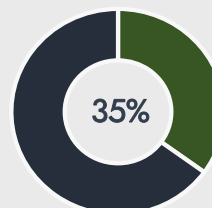
## Track Record Industry Attractiveness Management Quality Economic Moat

### ECONOMIC MOAT & INDUSTRY ATTRACTIVENESS



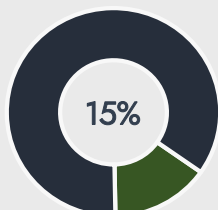
- Pricing Power
- Sustainable Competitive Advantage
- Porter's Five Forces

### BUSINESS ATTRIBUTES



- Organic Growth Profile
- Value Creation (Long-term ROIC)
- Capital Intensity

### MANAGEMENT / TRACK RECORD



- Strategy & Execution
- Capital Allocation Decisions
- Trend and Stability in Margins

### NEGATIVE FACTORS



- Litigation / Regulatory Risk
- Leverage
- Red Flags
- ESG Considerations

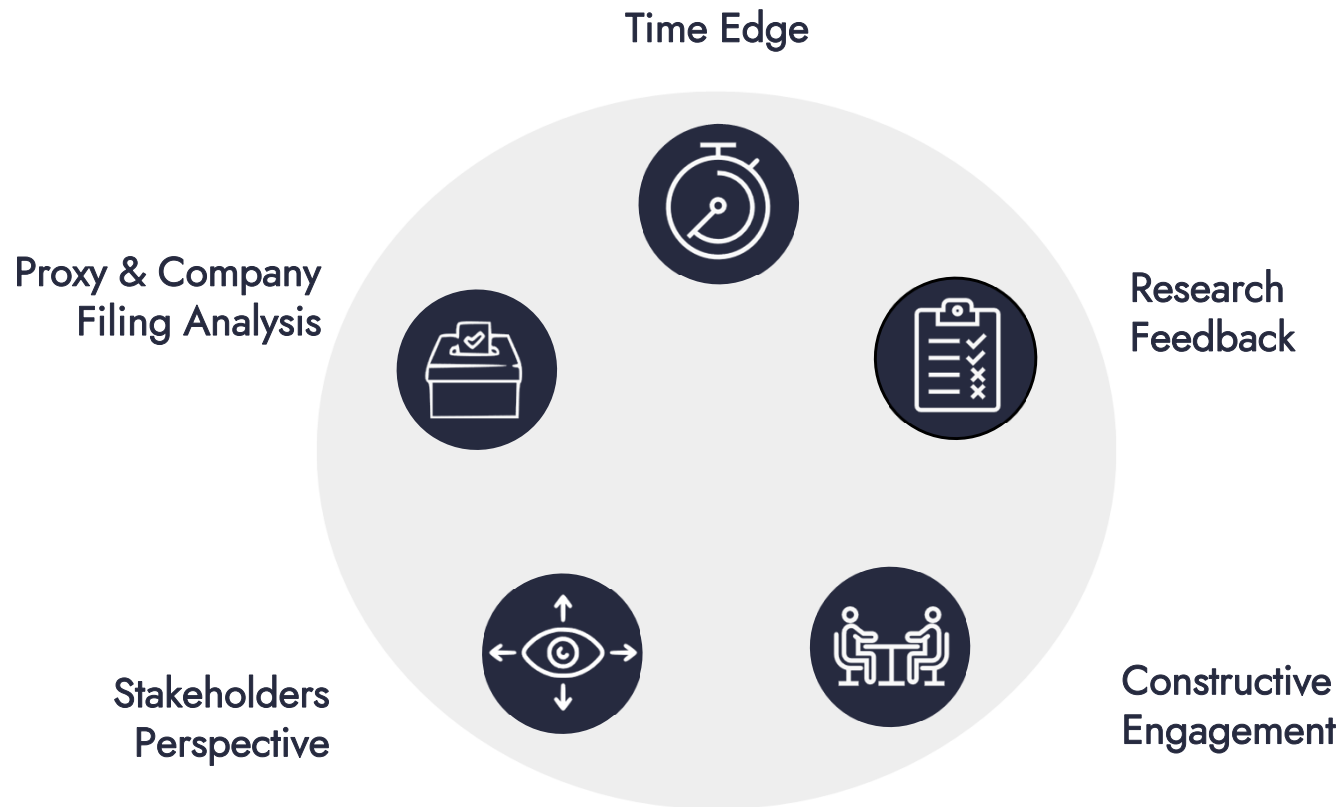
### GRADE INVESTMENT IDEAS

- Standardized across different industries and regions
- Repeatable
- Consistent with Investment Philosophy

The T.I.M.E. Score was developed in-house early in the Investment Team's time working together. It utilizes inputs that are primarily rated in quintiles 0-4 (unless specified otherwise) that rely on both qualitative/fundamental research as well as publicly available quantitative company/market data. The tool helps the Investment Team assess the quality of a business, standardize the fundamental research, and compare companies. It also helps summarize the research process, spark conversations on important topics, and evaluate potential trades / the opportunity set from a quality perspective. It is not relied on in isolation to make decisions. It does not consider valuation. The tool itself, its methodology, and the underlying weights of each line item are confidential, and we believe the tool cannot be replicated, which is why we have labelled it as proprietary.



We believe that **active ownership** – the use of our rights and position as shareholders in a company to influence its activities or behavior – is a value-add component of our approach to investing and a key driver of long-term sustainable value creation.







## PineStone's Longstanding Approach to Sustainability

Sustainability considerations embedded in the fundamental research process:

- Governance has always been a key area of focus
- Environmental and social risks / opportunities are evaluated in the context of the company's industry and competitive advantages
- Material topics trigger further analysis and discussion

Resources to appraise governance and sustainability risks:

- Internal assessment / corporate red flags
- Company meetings, research and publications, and internal idea sharing
- Leading industry research and data providers
- The IFRS Sustainability Accounting Standards Board ("SASB") industry-specific materiality map
- Independent consultants with topical or industry expertise via a network of specialists

**ESG Report August 2024**

**ESG Summary**  
Environmental & Social

**Key Concerns from SASB**

- Air Liquide has more than sufficient disclosures on every topic that SASB considers relevant and important.
  - Both we and SASB identified GHG Emissions, Air Quality and Energy Management as relevant topics within Environment.
    - SASB also identified certain water-related topics as well and product design, which we do not feel is especially relevant for Air Liquide.
  - Both PineStone and SASB also identified Employee Health & Safety as a key topic within Social.
    - SASB also identified Human Rights & Community Relations, which we do not find to be material.

**Condensed Table**

SASB Materiality Map Modified	Financial Impact	Factor Management	Score (1/4)	Comments
<b>Environment</b>				
Greenhouse Gas Emissions	Average	Strong	3	Air Liquide has strong commitments when it comes to energy consumption and have made great strides to improve year over year.
Air Quality	Low	Strong	4	
Energy Management	Low	Strong	4	
Water & Wastewater Management				
Waste & Hazardous Materials Management				
Product Design & Lifecycle Management				
<b>Social</b>				
Human Rights & Community Relations				Nothing to mention other than strong disclosures and targets from Air Liquide on these topics.
Employee Health & Safety	Average	Strong	3	

**11 GHG Emissions**

- As of FY2023, the group has been able to decrease both their direct and indirect GHG emissions on an absolute basis.
  - This is especially impressive when considering the fact that they have grown significantly in size.
  - On a sales-weighted basis, they have made significant strides.
  - They have also begun to report their Scope 3 emissions for 2022 and 2023, a significant step.

**Table 1: Total direct greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e**

	2020	2021	2022	2023
Scope 1: Total direct greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e	15,108	15,108	15,108	15,107
Scope 2: Total indirect greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e	16,407	17,106	20,848	20,847
<b>Total: Total greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e</b>	<b>31,515</b>	<b>32,214</b>	<b>35,956</b>	<b>35,954</b>

**Table 2: Total indirect greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e**

	2020	2021	2022	2023
Scope 2: Total indirect greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e	16,407	17,106	20,848	20,847
<b>Total: Total greenhouse gas emissions (CO2e) in thousands of tonnes of CO2e</b>	<b>31,515</b>	<b>32,214</b>	<b>35,956</b>	<b>35,954</b>

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IFRS Sustainability  
**Alliance**

Signatory of:







## Target approximately 25-35 securities:

- Small initial position gradually increased as investment thesis is realized, and conviction solidifies
- Position size is based on confidence in quality, risk assessment, and return expectations
- Expected long-term average annual name turnover rate below 10%
- Sector Exposure: +/- 25 percentage points relative to the benchmark, with a minimum of 5 of 11 GICS sectors
- Maximum exposure to Emerging Markets: —————> 15% in the Global Equity Strategy

## Sell Discipline:

- Investment thesis no longer valid
- Better opportunity



We define true Portfolio Risk as the **potential of permanent loss of capital** and measure risk at 2 levels:



### 1. SECURITY LEVEL

- Focus on high quality and stable businesses which generally have a greater ability to preserve capital
- Rigorous fundamental research process
- Progressive position building; small initial position (~1%) until conviction solidified



### 2. PORTFOLIO LEVEL

- Companies with different growth drivers and investment theses
- Diversification and assessment of risk from both an industry and country perspective
- Long-term focus: No IPOs or companies with short track records
- Frequent and disciplined review of holdings

I. Company Snapshots & T.I.M.E. Score

II. Portfolio Characteristics

III. Performance & Universe Comparison



## INVESTMENT THESIS:

### Description

- TSMC is the world's largest semiconductor foundry

### Dominant Industry Position with Strong Growth Drivers

- Chips are the engine driving the digital transformation of the world and TSMC commands 50-60% of the world's total foundry market

### Competitive Advantages and High Barriers to Entry

- The company operates in an industry which requires technological leadership, customer trust, manufacturing excellence as well as significant capital commitments
- As a pure-play foundry, TSMC does not design or market semiconductor products, thereby ensuring that it does not directly compete with its customers

### Attractive Financials

- As a result of its dominant position, TSMC is able to achieve operating margins above 30% and strong ROIC

General Information	
Ticker	TSM-US
Stock Price (USD)	233.60
Market Cap (USD, M)	1,211,419
Sector	Information Technology
P/E NTM	22.8x
Owned Since	October 2009

	Financials		
	Dec 22	Dec 23	Dec 24
Revenue (USD, M)	75,936	69,350	90,116
EBIT Margin	49.5%	42.6%	45.7%
ROIC	49.4%	31.9%	40.1%
Net Debt/EBITDA (TTM)	0.0x	0.0x	0.0x

Source: FactSet, 07/02/2025



Past performance is not a guarantee of future results. Inherent in any investment is the potential for loss. This company example was selected because it is a significant active weight relative to the benchmark. It is intended solely as an illustration of the application of our T.I.M.E. process to an investment in a particular market segment or industry. It is not an endorsement or recommendation of any particular holding in our respective portfolios or a representation of the performance of the particular holding listed in our respective portfolios.

Image source: Shutterstock, Dreamstime

## PineStone - T.I.M.E. Score

## Taiwan Semiconductor Manufacturing Company

## TSM-US

Economic Moat &amp; Industry Attractiveness

82%

Business Attributes

82%

Management / Track Record

98%

Positive Score

84%

Negative Factors

**-6%**

T.I.M.E. Score

78%

Economic Moat & Industry Attractiveness (50%)		82%	Business Attributes (35%)		82%	Governance Red Flags (Y or N) Count		1
Pricing power	4		LT expected organic growth profile (Score = Max of 6)	4		Megalomaniac CEO	N	
Sustainable competitive advantage	4		Value creation (5-Year AVG ROIC)	4		Overly promotional executive team	N	
Rate of Change (fast/high probability = low score)	2		Business Rate of Change	3		Nepotism	N	
Cyclicalilty (DMC - using Adj. EBIT y/y)	2		Capital Intensity (IC Turnover)	0		Excessive indulgence by management and	N	
Bargaining power of suppliers	3		Product diversification	3		Weak investor relations and communications	N	
Bargaining power of customers	3		High margins (5-Year AVG)	4		Issues with executive compensation	N	
Threat of substitutes	4					Excessive stock-based compensation dilution	N	
Threat of new entrants / Barriers-to-Entry	4		<b>Negative Factors (0, -1, -3 or -5)</b>	<b>-6%</b>		Extensive GAAP to Non-GAAP reconciliation	N	
Competitive rivalry	2		Potential litigation/regulatory risk	0		Tax matters	N	
			Probability of value destroying acquisitions	0		Short public company track record	N	
<b>Management/Track Record (15%)</b>	<b>98%</b>		Leverage	0		Board independence	N	
Proper cash deployment (SBB / Div / VA Projects)	4		Complexity of financials/thesis/structure/FCF	0		Aud/Nom/Comp Chair - Non-Independent	N	
Strategy & execution	4		Management issues / Key Person Risk	0		High non-audit to audit fees ratio	N	
Trend of margins (3-Year AVG Rolling over 5-Year)	4		Customer concentration risk	<b>-3</b>		Accounting auditor issues	N	
Trend of ROIC (3-Year AVG Rolling over 5-Year)	3		Creative accounting	0		Non-independent chairman	<b>Y</b>	
			Environmental	0		Multi-voting stock structure	N	
<b>Deal-Breaker Clause (0 or -50)</b>	<b>0%</b>		Social	0		Potential conflicts of interests between	N	
Specify red flag(s) or negative factor(s):	0		Governance (2 flags = -1, 4 flags = -3, 6 flags = -5)	0		management or controlling/primary	N	
			Other: Geopolitical Risk	<b>-3</b>		Reverse takeover/SPAC IPO	N	
						Other red flags: (Specify)	N	

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## INVESTMENT THESIS:

### Description

- Leading credit rating agency and provider of financial analytics software and services

### High Barriers to Entry

- An industry dominated by two large players with strong pricing power

### Attractive Financials

- Excellent financial metrics with high margins, consistent return on invested capital and significant cash flow generation

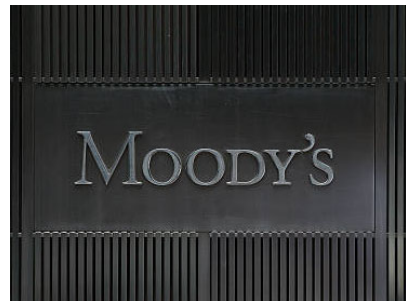
### Strong Management

- Operationally and financially very well managed business reflected through a robust capital allocation strategy

General Information	
<b>Ticker</b>	MCO-US
<b>Stock Price (USD)</b>	497.12
<b>Market Cap (USD, M)</b>	89,432
<b>Sector</b>	Financials
<b>P/E NTM</b>	34.2x
<b>Owned Since</b>	April 2009

	Financials		
	Dec 22	Dec 23	Dec 24
<b>Revenue (USD, M)</b>	5,468	5,916	7,088
<b>EBIT Margin</b>	36.5%	37.5%	41.9%
<b>ROIC</b>	18.3%	22.0%	27.3%
<b>Net Debt/EBITDA (TTM)</b>	2.5x	2.0x	1.4x

Source: FactSet, 07/02/2025



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Image source: Getty Images



### PineStone - T.I.M.E. Score

#### Moody's Corporation

#### MCO-US

Economic Moat &amp; Industry Attractiveness

98%

Business Attributes

87%

Management / Track Record

80%

Positive Score

91%

Negative Factors

-1%

T.I.M.E. Score

90%

Economic Moat & Industry Attractiveness (50%)		98%	Business Attributes (35%)		87%	Governance Red Flags (Y or N) Count		0
Pricing power	4		LT expected organic growth profile (Score = Max of 6)	3		Megalomaniac CEO		N
Sustainable competitive advantage	4		Value creation (5-Year AVG ROIC)	4		Overly promotional executive team		N
Rate of Change (fast/high probability = low score)	4		Business Rate of Change	3		Nepotism		N
Cyclicalit y (DMC - using Adj. EBIT y/y)	2		Capital Intensity (IC Turnover)	4		Excessive indulgence by management and		N
Bargaining power of suppliers	4		Product diversification	2		Weak investor relations and communications		N
Bargaining power of customers	4		High margins (5-Year AVG)	4		Issues with executive compensation		N
Threat of substitutes	4					Excessive stock-based compensation dilution		N
Threat of new entrants / Barriers-to-Entry	4		<b>Negative Factors (0, -1, -3 or -5)</b>	<b>-1%</b>		Extensive GAAP to Non-GAAP reconciliation		N
Competitive rivalry	4		Potential litigation/regulatory risk	-1		Tax matters		N
			Probability of value destroying acquisitions	0		Short public company track record		N
<b>Management/Track Record (15%)</b>	<b>80%</b>		Leverage	0		Board independence		N
Proper cash deployment (SBB / Div / VA Projects)	4		Complexity of financials/thesis/structure/FCF	0		Aud/Nom/Comp Chair - Non-Independent		N
Strategy & execution	4		Management issues / Key Person Risk	0		High non-audit to audit fees ratio		N
Trend of margins (3-Year AVG Rolling over 5-Year)	2		Customer concentration risk	0		Accounting auditor issues		N
Trend of ROIC (3-Year AVG Rolling over 5-Year)	0		Creative accounting	0		Non-independent chairman		N
			Environmental	0		Multi-voting stock structure		N
<b>Deal-Breaker Clause (0 or -50)</b>	<b>0%</b>		Social	0		Potential conflicts of interests between		N
Specify red flag(s) or negative factor(s):	0		Governance (2 flags = -1, 4 flags = -3, 6 flags = -5)	0		management or controlling/primary		N
			Other: (Specify)	0		shareholders		N
						Reverse takeover/SPAC IPO		N
						Other red flags: (Specify)		N

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## Top-10 Holdings

Securities	Sector	Portfolio Weight (%)	Active Weight (%)
Microsoft	Information Technology	8.4	3.7
Taiwan Semiconductor	Information Technology	8.0	8.0
Moody's	Financials	6.6	6.5
Alphabet	Communication Services	6.5	4.0
AutoZone	Consumer Discretionary	5.7	5.6
Mastercard	Financials	5.1	4.5
Oracle	Information Technology	4.6	4.1
CME Group Inc.	Financials	3.8	3.7
Keyence	Information Technology	3.3	3.2
TJX Companies	Consumer Discretionary	3.3	3.1
<b>Top 10 Total</b>		<b>55.3</b>	<b>46.4</b>

## Sector Allocation

Sector	Portfolio Weight (%)	MSCI World Weight (%)
Energy	0.0	3.5
Materials	3.0	3.2
Industrials	12.0	11.2
Consumer Discretionary	17.6	10.2
Consumer Staples	6.5	5.9
Health Care	6.9	9.5
Financials	20.2	16.6
Information Technology	27.3	26.9
Communication Services	6.5	8.4
Utilities	0.0	2.6
Real Estate	0.0	2.0
<b>Total</b>	<b>100.00</b>	<b>100.00</b>

## Regional Allocation

Region	Portfolio Weight (%)	MSCI World Weight (%)
United States	66.0	71.4
United Kingdom	5.4	3.9
Europe ex-UK	15.6	13.5
Japan	3.3	5.4
Asia-Pacific ex-Japan	0.0	2.7
Emerging Markets	9.7	0.0
Canada	0.0	3.1
<b>Total</b>	<b>100.00</b>	<b>100.00</b>

Source: MSCI. As of June 30, 2025.

Past performance is not a guarantee of future results. Inherent in any investment is the potential for loss. This is intended solely as an illustration purposes only. It is not an endorsement or recommendation of any particular holding in our respective portfolios or a representation of the performance of the particular holding listed in our respective portfolios.



	PineStone Global Equity Strategy	MSCI World	Difference
<b>Liquidity<sup>1</sup></b>			
Market Capitalization (in US dollars, Ml.)	688,328	819,792	-16%
<b>Risk<sup>1</sup></b>			
Debt / Equity (LTM)	1.0x	1.4x	-30%
Net Debt / EBITDA (LTM)	1.2x	1.4x	-11%
<b>Valuation</b>			
Enterprise Value / EBIT (LTM) <sup>2</sup>	22.7x	22.7x	-0%
Price / Earnings per share (NTM) <sup>2</sup>	23.8x	19.8x	+20%
Dividend Yield (LTM) (%) <sup>1</sup>	1.3	1.7	-22%
<b>Profitability and Growth<sup>3</sup></b>			
Estimated Earnings Per Share Growth next year (%)	11.9	11.2	+7%
Estimated Revenue Growth current year (%)	5.0	4.1	+20%
Operating Margin (LTM)(%)	28.7	16.4	+75%
Return on Equity (ANN) (%)	30.4	12.9	+135%
Return on Invested Capital (using NOPAT) (ANN) (%)	31.3	11.1	
<b>Number of securities</b>	30	1,325	

<sup>1</sup>Weighted Average

<sup>2</sup>Harmonic Weighted Average

<sup>3</sup>Median

Sources: FactSet & MSCI. As of June 30, 2025.

Estimated figures reflect FactSet consensus estimates.

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Annual Returns as of June 30, 2025 (%)	Q2-2025	YTD	2024	2023	2022	2021	2020	2019	2018	2017	2016
PineStone Global Equity Composite (Gross) <sup>2</sup>	7.69	5.17	12.01	20.24	-17.86	27.00	20.79	34.58	-3.00	31.96	5.86
<b>PineStone Global Equity Composite (Net)<sup>2</sup></b>	<b>7.49</b>	<b>4.78</b>	<b>11.18</b>	<b>19.35</b>	<b>-18.48</b>	<b>26.07</b>	<b>19.90</b>	<b>33.59</b>	<b>-3.73</b>	<b>31.00</b>	<b>5.08</b>
Benchmark: MSCI World Index Net (\$US)	11.47	9.47	18.67	23.78	-18.14	21.82	15.90	27.67	-8.71	22.40	7.51
Added Value (Gross)	-3.78	-4.30	-6.67	-3.55	0.29	5.18	4.88	6.91	5.71	9.56	-1.65
<b>Added Value (Net)</b>	<b>-3.98</b>	<b>-4.69</b>	<b>-7.49</b>	<b>-4.43</b>	<b>-0.34</b>	<b>4.25</b>	<b>3.99</b>	<b>5.93</b>	<b>4.98</b>	<b>8.60</b>	<b>-2.43</b>

Annualized Returns as of June 30, 2025 (%)	1 yr	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs	9 yrs	10 yrs	Since Inception <sup>1</sup>
PineStone Global Equity Composite (Gross) <sup>2</sup>	7.61	11.24	14.31	6.83	13.13	11.84	12.59	12.74	13.52	12.35	13.51
<b>PineStone Global Equity Composite (Net)<sup>2</sup></b>	<b>6.81</b>	<b>10.42</b>	<b>13.46</b>	<b>6.03</b>	<b>12.29</b>	<b>11.09</b>	<b>11.76</b>	<b>11.91</b>	<b>12.68</b>	<b>11.51</b>	<b>12.67</b>
Benchmark: MSCI World Index Net (\$US)	16.26	18.21	18.31	9.13	14.55	12.51	11.61	11.54	12.26	10.66	10.44
Added Value (Gross)	-8.65	-6.97	-4.00	-2.31	-1.43	-0.67	0.99	1.20	1.26	1.69	3.06
<b>Added Value (Net)</b>	<b>-9.45</b>	<b>-7.79</b>	<b>-4.84</b>	<b>-3.10</b>	<b>-2.26</b>	<b>-1.42</b>	<b>0.15</b>	<b>0.37</b>	<b>0.42</b>	<b>0.86</b>	<b>2.22</b>

<sup>1</sup>Inception date: October 1, 2009

<sup>2</sup>Performance returns are displayed in United States Dollars. Net returns are calculated using the highest applicable fee for the composite (75 bps) accrued on a monthly basis. Portability Disclosure: Performance prior to February 2022 occurred while the Investment Team was affiliated with another firm. The Investment Team has managed the composite since its inception, and has not changed the investment process. The historical performance has been linked to performance earned at PineStone Asset Management. The composite return for the last month is preliminary.

Source: MSCI. As of June 30, 2025.

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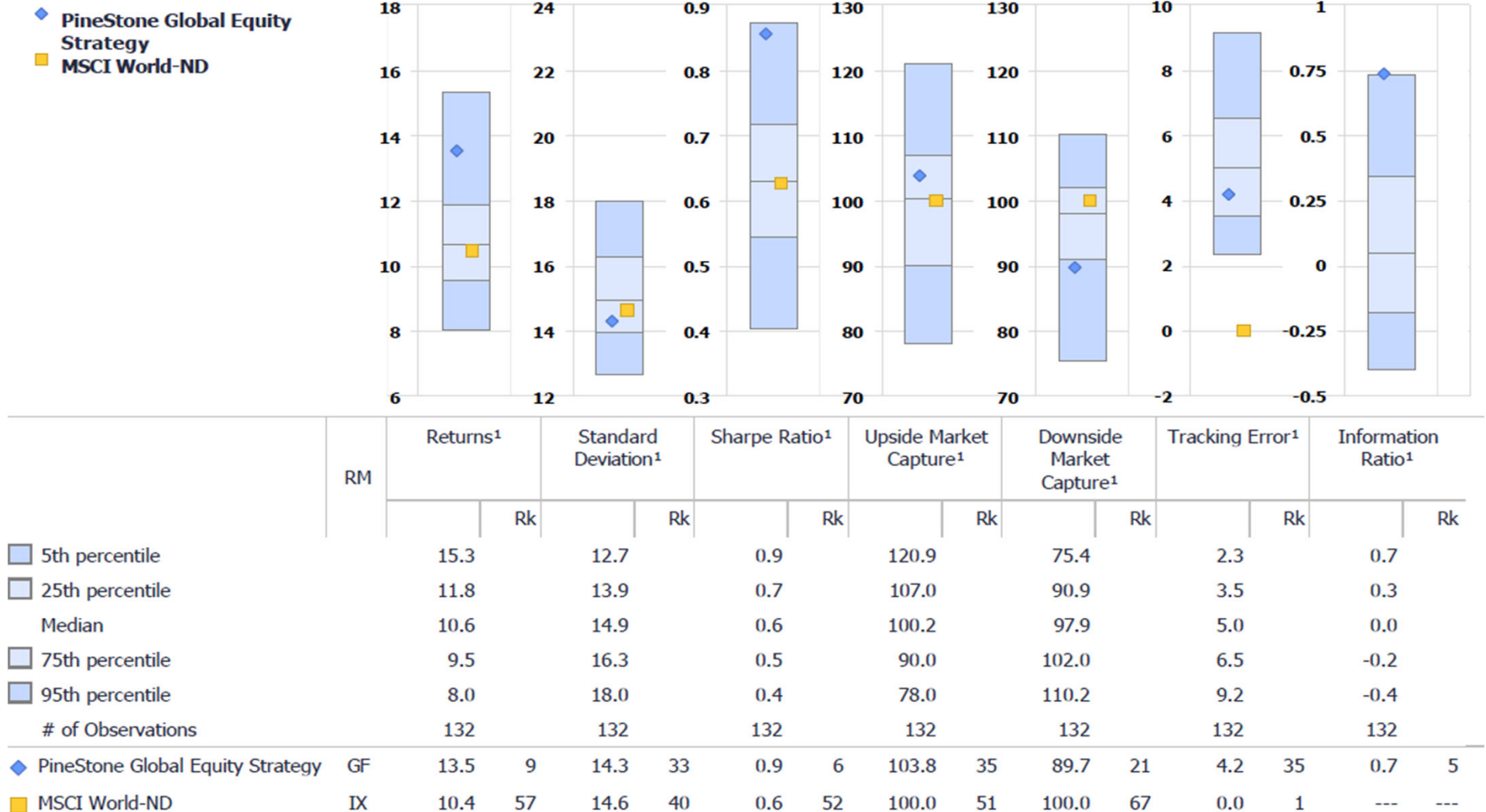
Since inception returns include preliminary composite returns for the most recent month.

Gross & Net Returns reflect the reinvestment of dividends and other income.

For additional information, please refer to the GIPS report attached at the end of the presentation.



Since Inception 15 Years 9 Months 10/2009 - 6/2025



Source: eVestment. As of June 30, 2025.

Inception Date: October 1, 2009.

Past performance is not a guarantee of future results. Inherent in any investment is the potential for loss. This is intended solely as an illustration purposes only. It is not an endorsement or recommendation of any particular holding in our respective portfolios or a representation of the performance of the particular holding listed in our respective portfolios.

Since inception returns include preliminary composite returns for the most recent month.

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For additional information, please refer to the GIPS report attached at the end of the presentation.

I. Biographies

II. PineStone Global Equity GIPS Report

III. Disclosures





## NADIM RIZK, MBA, CFA

Chief Executive Officer & Chief Investment Officer

Nadim Rizk founded PineStone Asset Management in 2021 and serves as the firm's CEO, CIO and Lead Portfolio Manager. Previously, Mr. Rizk was the head of the Global Equity team and the Lead Portfolio Manager of the U.S., International, and Global equity strategies at Fiera Capital. Prior to joining Fiera Capital, Mr. Rizk was a partner and lead portfolio manager for Global and US Equity Strategies at a privately held investment firm in Montreal. Mr. Rizk began his career as an equity research analyst for CN Investments.

### Educational Background

- Chartered Financial Analyst (CFA) – 2001
- Master of Business Administration (MBA), McGill University – 1998
- Bachelor of Commerce (BCom), Finance, American University of Beirut – 1995

### Professional Experience

- 2009 – 2022: Senior Vice President, Head of Global Equity Team & Lead Portfolio Manager at Fiera Capital
- 2000 – 2009: Senior Vice President & Portfolio Manager, Global Equities at Montrusco Bolton
- 1998 – 2000: Research Analyst at CN Investments



## THOMAS M. CLANCY, MBA

### Head of Client Relations

Thomas Clancy participated in the founding of PineStone and leads the firm's relationship management, business development, and marketing functions. Prior to joining PineStone, Mr. Clancy was a Senior Vice President and the Head of US Distribution for Fiera Capital. Mr. Clancy has spent his entire career in the institutional asset management business working in client servicing, business development, and consultant relations roles. He is a passionate advocate for his clients and works to ensure their interests are kept at the top of his firm's priorities.

### Educational Background

- Master of Business Administration (MBA), Northeastern University – 2012
- Bachelor of Science (BSc), Business Administration, Framingham State University – 2002

### Professional Experience

- 2015 – 2022: Senior Vice President, Head of US Distribution at Fiera Capital
- 2014 – 2015: Senior Vice President US Institutional at Mackenzie Investments
- 2009 – 2014: Head of US Institutional at AGF Investments
- 2001 – 2009: Principal, Public Funds Team at State Street Global Advisors





## Global Equity (expressed in USD)

Year	Composite (Gross Return) (%)	Composite (Net Return) (%)	Benchmark (%)	3-Year Annualized Standard Deviation Composite (%)	3-Year Annualized Standard Deviation Index (%)	Number of Portfolios	Dispersion (%)	Composite Assets (\$ millions)	Firm Assets Under Management (\$ millions)	Firm Assets Under Advisory (\$ millions)
2023	20.24	19.35	23.78	17.17	16.75	27	0.09	15,485	40,475	7,284
2022	-17.86	-18.48	-18.14	19.47	20.43	26	0.08	14,753	34,546	5,732
2021	27.00	26.07	21.82	15.46	17.06	27	0.12	20,234	N/A	N/A
2020	20.79	19.90	15.90	16.45	18.27	30	0.25	18,952	N/A	N/A
2019	34.58	33.59	27.67	11.25	11.14	26	0.16	12,841	N/A	N/A
2018	-3.00	-3.73	-8.71	11.12	10.38	26	0.14	9,502	N/A	N/A
2017	31.96	31.00	22.40	10.09	10.23	22	0.29	8,680	N/A	N/A
2016	5.86	5.08	7.51	11.07	10.92	15	0.11	4,679	N/A	N/A
2015	2.29	1.53	-0.87	10.94	10.80	15	0.22	3,815	N/A	N/A
2014	6.88	6.09	4.94	10.82	10.23	13	0.10	3,283	N/A	N/A

Inception date is October 1, 2009

**Firm Definition:** PineStone Asset Management Inc. (PineStone) is an independent investment manager based in Canada. PineStone was established in 2021 and offers equity management solutions to clients.

### Composite Description:

Global Equity is a growth at reasonable price (GARP) equity strategy managed by PineStone for long-term appreciation through investment in a concentrated (yet diversified) portfolio of high-quality global companies which as a result of competitive advantages, are able to generate stable and strong return on invested capital (ROIC) with little dependence on financial leverage, as well as grow shareholder wealth through superior and consistent long-term rates of return. The strategy seeks to provide consistent outperformance versus the benchmark by buying the best companies at attractive valuations, knowing them well, monitoring them closely, and holding them over the long term. The account minimum for GIPS composite purposes is \$5 million. The composite was created in February 2022.

### Benchmark Description:

The composite benchmark is the MSCI World Index Net Total Return

**Portability Disclosure:** Performance prior to February 2022 occurred while the Investment Team was affiliated with another firm. The Investment Team has managed the composite since its inception, and the investment process has not changed. The historical performance has been linked to performance earned at PineStone Asset Management.

**Investment Management Fees:** The standard annual investment management fee schedule is as follows:

Tranche	Assets	Rate applied
First	75,000,000	0.75%
Next	150,000,000	0.65%
Next	250,000,000	0.55%
Thereafter		0.50%

**Pooled Funds included in the composite:** The highest fee and highest expense ratio applicable to each pooled fund are as follows:

Vehicle	Highest Fee Applicable	Highest Expense Ratio Applicable
Segregated Managed Account	0.75%	N/A
Canadian Pooled Fund Trust	0.75%	0.93%
US Limited Liability Company	0.75%	0.85%

**Performance Calculation:** All returns presented are time-weighted returns. Returns include the re-investment of dividends and other earnings. Valuations are computed and performance is reported in Canadian dollars. Gross-of-fees returns are presented before management, custodial and administration fees but after trading expenses and dividend withholding taxes. Net-of-fees returns are calculated using a model annual management fee corresponding to the highest fee indicated in the investment management fee schedule, deducted on a monthly basis from the Gross composite returns. Investment management fees include both asset-based fees and performance-based fees (where applicable). Policies for valuing investments, calculating performance, and preparing GIPS reports are available upon request.

**Standard Deviation Measure:** The three-year annualized standard deviation measures the variability of the composite gross returns and the benchmark returns calculated by applying the Excel formula STDEV.P to the preceding 36 monthly returns and then multiplying that number by the square root of 12, i.e., SQRT(12).

**Dispersion Measure:** The dispersion measure presented is the asset-weighted standard deviation of annual gross returns of those portfolios that were included in the composite. For years where there were five or fewer accounts throughout the performance period, the calculation of dispersion is not a meaningful statistic calculation (N/A).

**Composite Listing:** A complete list of limited distribution pooled fund and composite descriptions are available to all prospective clients upon request by contacting the Client Servicing Department at [clientrelations@pinestoneam.com](mailto:clientrelations@pinestoneam.com)

**Significant Cash Flow:** Portfolios are removed from the composite if they have a significant cash flow. A significant cash flow is defined as a contribution or withdrawal great than 10% of the beginning market value of a portfolio. The portfolio is removed from the composite for the month in which the significant cash flow occurred.

### GIPS Compliance Statement:

PineStone Asset Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. PineStone Asset Management has been independently verified for the periods February 1 2022 to December 31 2023. 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. The Global Equity composite has had a performance examination for the periods January 1 2010 to December 31 2023. The verification and performance examination reports are available upon request.



# Risks of our Investment Strategies

- **Risks of our Investment Strategies**

- While PineStone makes every effort to preserve and grow our client's capital, material risks associated with our investment strategies can occur. These risks include several risks that generally are associated with investments in equity securities.

- **Risk of Equity Securities**

- All PineStone clients should be prepared to bear the risks associated with investing in equity securities. The market value of equity securities fluctuates and investing in equity securities involves the risk of loss of principal. Security values may decline for several reasons, including those that relate to the issuer of the security, as well as those that relate to the broader equity markets, general market conditions, governmental policy and/or other matters.

- **PineStone's Approach to Risk**

- PineStone undertakes rigorous analysis to understand and avoid these risks; however, there is no guarantee the Investment Team will succeed in all cases. It would be best if you considered these risks before opening an account with PineStone.

- **More Information**

- For more information Risks of Our Investment Strategies – see the firm's disclosure document on the Investment Adviser Public Disclosure – ADV: <https://adviserinfo.sec.gov/firm/summary/317431>



# Disclaimer

The information and opinion herein are provided for informational purposes only and in no way constitutes an offer of services or a solicitation and are subject to change. The information provided herein does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. There is no representation or warranty as to the current accuracy of, nor liability for, decisions based on such information.

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## About PineStone Asset Management Inc.:

PineStone Asset Management Inc. (PineStone) is a specialist global equity manager founded in 2021 that is 100% employee owned and is a registered Investment Adviser with the Securities Exchange Commission. PineStone is focused exclusively on helping clients achieve their financial goals by investing in what PineStone believes to be high quality companies worldwide. PineStone is led by Nadim Rizk, a seasoned portfolio manager with over 20 years of experience. PineStone is a trademark of PineStone Asset Management Inc.



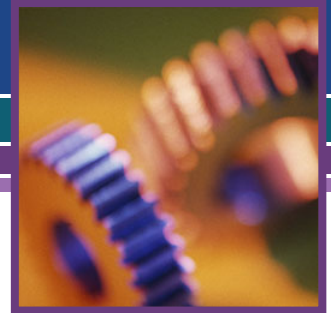


**Thank you for your time and  
consideration!**

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[www.pinestoneam.com](http://www.pinestoneam.com)

# LOWER CARBON EQUITY INDICES

September 2, 2025





# OVERVIEW



Guiding Principles



Background

MSCI Methodologies for Lower Carbon Indices

Key Results from Historical Simulations

Fees, Costs, and Expenses

Concluding Observations



## GUIDING PRINCIPLES



**We invest the funds entrusted to us with integrity, care, and skill to maximize return over the long term at a prudent level of risk for the exclusive benefit of beneficiaries**

# GUIDED BY THE BOARD'S COMMINGLED TRUST FUND (CTF) INVESTMENT BELIEFS

Our research on lower carbon indices was conducted through the lens of three key CTF Investment Beliefs

- The CTF should be compensated for the investment risks it takes
- Investment or asset class constraints and/or mandate will likely reduce investment returns
- Expenses of the Fund are expenditures of assets of the trust and, therefore, should be carefully measured and managed



# ROLE OF PUBLIC EQUITY IN THE CTF



Income-Oriented			Growth-Oriented	
Fixed Income	Tangible Assets	Real Estate	Public Equity	Private Equity
Objectives				
<ul style="list-style-type: none"> <li>■ Liquidity</li> <li>■ Current income</li> <li>■ Deflation protection</li> </ul>	<ul style="list-style-type: none"> <li>■ Current income</li> <li>■ Inflation protection</li> </ul>	<ul style="list-style-type: none"> <li>■ Current income</li> <li>■ Capital appreciation</li> <li>■ Inflation protection</li> </ul>	<ul style="list-style-type: none"> <li>■ Capital appreciation</li> <li>■ Liquidity</li> </ul>	<ul style="list-style-type: none"> <li>■ Highest expected return</li> </ul>
Characteristics				
<ul style="list-style-type: none"> <li>■ Active internal management</li> <li>■ Credit oriented</li> <li>■ Emerging market exposure</li> </ul>	<ul style="list-style-type: none"> <li>■ External and direct investments</li> <li>■ Illiquid, long-lived assets</li> <li>■ Upstream and midstream focus</li> </ul>	<ul style="list-style-type: none"> <li>■ Actively managed via external real estate operating companies</li> <li>■ Diversification by geography and property type</li> </ul>	<ul style="list-style-type: none"> <li>■ Globally oriented</li> <li>■ Externally managed</li> <li>■ Mostly passive</li> <li>■ Low cost</li> </ul>	<ul style="list-style-type: none"> <li>■ Externally managed</li> <li>■ Long-term commitments</li> </ul>
Key Risks				
<ul style="list-style-type: none"> <li>■ Interest rates</li> <li>■ Credit</li> <li>■ Inflation</li> <li>■ Currency</li> </ul>	<ul style="list-style-type: none"> <li>■ Supply/demand shocks</li> <li>■ Illiquidity</li> <li>■ Leverage</li> <li>■ Deflation</li> </ul>	<ul style="list-style-type: none"> <li>■ Operating</li> <li>■ Key person</li> <li>■ Low growth</li> <li>■ Currency</li> <li>■ Illiquidity</li> <li>■ Leverage</li> </ul>	<ul style="list-style-type: none"> <li>■ Low growth</li> <li>■ Currency</li> </ul>	<ul style="list-style-type: none"> <li>■ Low growth</li> <li>■ Illiquidity</li> <li>■ Leverage</li> <li>■ Currency</li> </ul>



# BEWARE OF BEHAVIORAL BIASES

Behavioral biases can lead to poor investment decisions; staff kept the following three biases top of mind

## Extrapolation

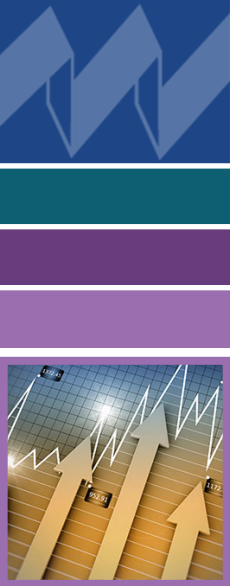
- Past performance does not predict future performance

## Recency bias

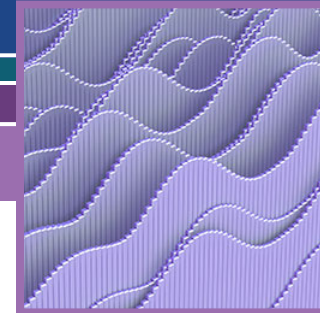
- The tendency to overweight the importance of recent events or time periods

## Confirmation bias

- The tendency to notice and overweight facts that confirm existing beliefs



## BACKGROUND



The majority of the WSIB's public equity portfolio is invested in passive strategies:

- The WSIB utilizes passive strategies in asset class segments that are highly efficient, where investment managers have demonstrated a limited ability to outperform a passive benchmark, e.g., U.S. equity
- The WSIB employs active managers in asset class segments that are reasonably inefficient, partnering with skilled investment managers that have track records of strong performance, sufficient capacity, and appropriate fees and costs





## PUBLIC EQUITY BENCHMARK

Since 2011, the WSIB's public equity program has measured its performance against the MSCI All Country World Investable Market Index (MSCI ACWI IMI with U.S. gross)

- The WSIB also adopted other MSCI indices as benchmarks for most of its underlying public equity investment strategies

MSCI indices are widely considered to be the industry standard for non-U.S. and global strategies:


- Balance completeness with investability
- Have a modular structure





## HIGHLY DIVERSIFIED PASSIVE STRATEGIES HAVE GENERATED STRONG RESULTS OVER TIME

Passive equity management invests in broad, all-inclusive, capitalization-weighted benchmarks

- 
- Inclusion is based on whether a stock is “investable” based on a set of criteria (including minimum size, minimum free float, minimum liquidity, minimum length of trading, and minimum standards of financial reporting)

As a result, passive equity strategies will include stocks that seem objectionable for a variety of reasons, including but not limited to:

- Growth stocks that may be at unreasonable valuations
- Speculative stocks (e.g., meme stocks)
- Stocks with business models that may be objectionable to some but are legal in the jurisdiction(s) in which they operate
- Stocks that may be affected by long-term trends (positively or negatively)

Passive management is hard to beat

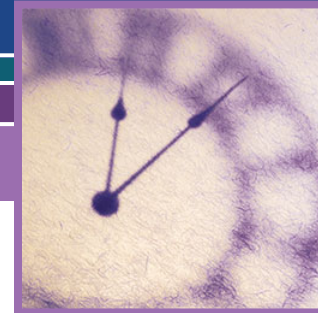
- Passive equity management is inexpensive and for decades has outperformed most active equity strategies (particularly in highly developed efficient markets)

## ACTIVE RISK

Equity strategies that deviate from the program benchmark (MSCI ACWI IMI w/U.S. gross) may provide higher rates or returns, but those come with “active risk” versus the program benchmark

- The active risk of a strategy can be estimated using an annualized standard deviation calculation
  - The WSIB’s public equity team uses this calculation, commonly referred to as “tracking error” or “active risk,” to measure the potential difference (both up and down) between the expected return of a given investment strategy and the expected return of the WSIB’s public equity benchmark (MSCI ACWI IMI with U.S. gross)
  - For example, a portfolio with a predicted active risk of 50 basis points (bps) is expected to generate returns that fall within 50 bps of the program benchmark two-thirds of the time

# MSCI METHODOLOGIES FOR LOWER CARBON INDICES







## MSCI LOW CARBON INDEXING: A TWO-TIERED APPROACH

While MSCI offers several methodologies to build lower carbon indices, interested investors have generally adopted one of two methods

1

### Exclusion

- Exclusion of stocks based on chosen criteria, e.g., fossil fuel companies

2

### Optimization

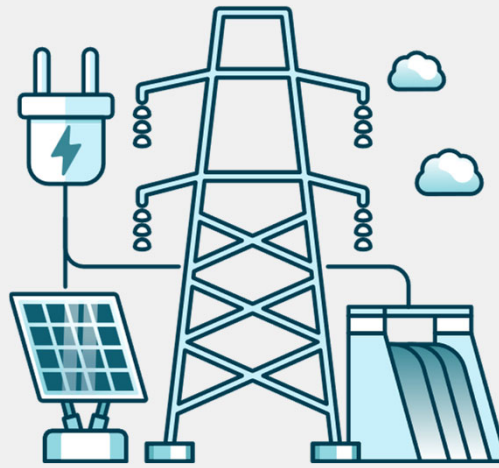
- Reduce investments in specific sectors while closely managing risk
  - This approach sets clearly defined limits on a fund's predicted active risk (relative to its benchmark)
  - MSCI's optimized portfolios are reliant on data or estimates of emissions from companies included in these indices

## Scope 1



Direct – Owned Sources

## Scope 2



Indirect – Purchased Energy

## Scope 3

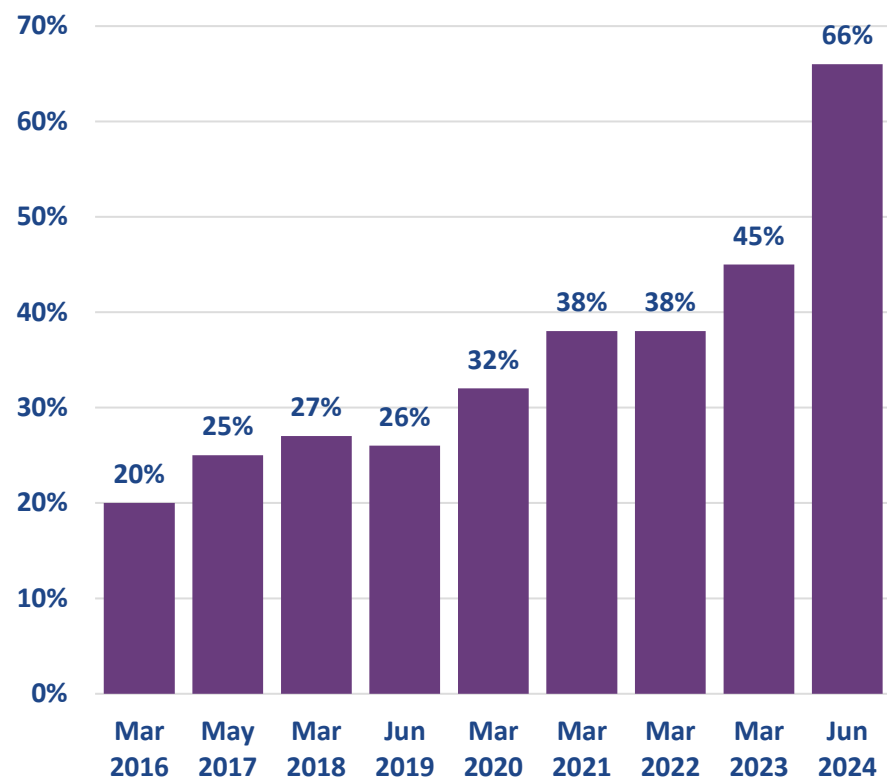


Indirect – Value Chain

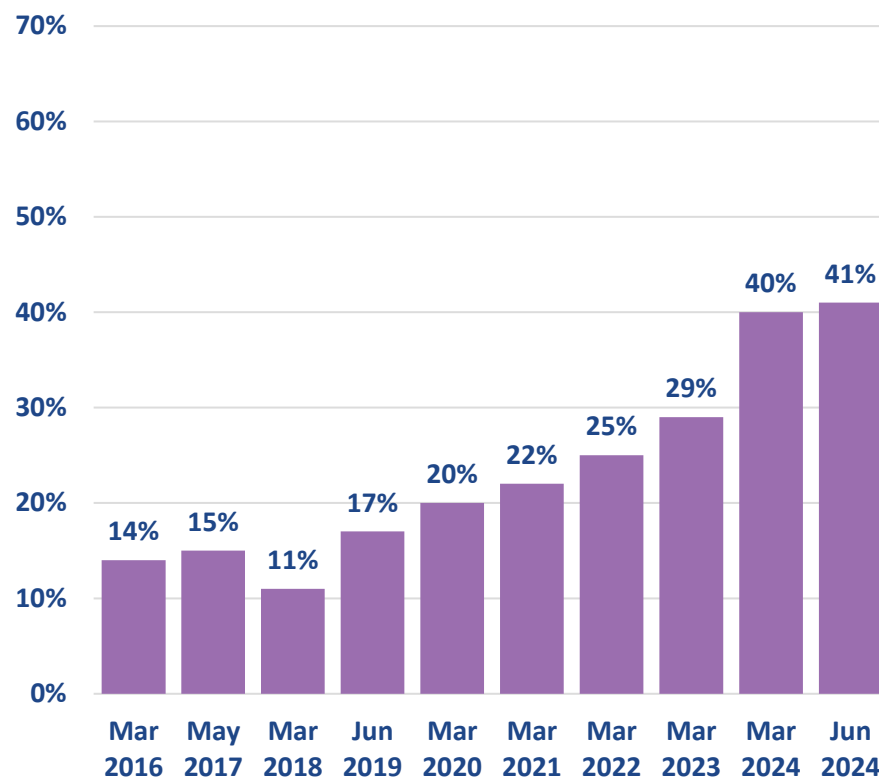
# EMISSIONS DATA: MORE ROOM FOR IMPROVEMENT

- While more companies are reporting emissions, there are still significant gaps
  - The charts below show the percent of companies in the ACWI IMI disclosing emissions data
- There is no long-term history for most emissions disclosures

## Percent of Companies Disclosing Scope 1+2 Data



## Percent of Companies Disclosing Scope 3 Data



## KEY RESULTS FROM HISTORICAL SIMULATIONS



# MSCI HISTORICAL SIMULATIONS

The WSIB's CTF Investment Beliefs and Capital Market Assumptions are long term in nature—approximately 15 years

For the purposes of our research, MSCI simulated the following indices for a period somewhat aligned with our 15-year horizon (Nov 30, 2010—March 31, 2025)\*

- ACWI IMI ex-Fossil Fuel (ex-FF)
- ACWI IMI Low Carbon Target Core (LCT Core)
- ACWI IMI Low Carbon Target (LCT)
  - For this exercise, all three indices were compared to the CTF's public equity benchmark, the MSCI ACWI IMI

\* Sufficient data and disclosures do not exist for MSCI to create longer histories; all returns are with U.S. gross.

**Exclusionary**  
**Based on Reserves**

**Optimized**  
**Based on Emissions**

## Ex-Fossil Fuel

ex-FF

## Low Carbon Target Core

LCT  
CORE

## Low Carbon Target

LCT

- Exclude companies with energy applications of fossil fuel use
- Market-cap weighted
- Reconstituted quarterly

- Minimize carbon intensity\*  

$$\left( \frac{\text{Scope 1+2 emissions}}{\text{Sales}} \right)$$
- Targeted active risk of 30 bps
- Stocks without data are excluded from the initial universe
- Reconstituted semi-annually

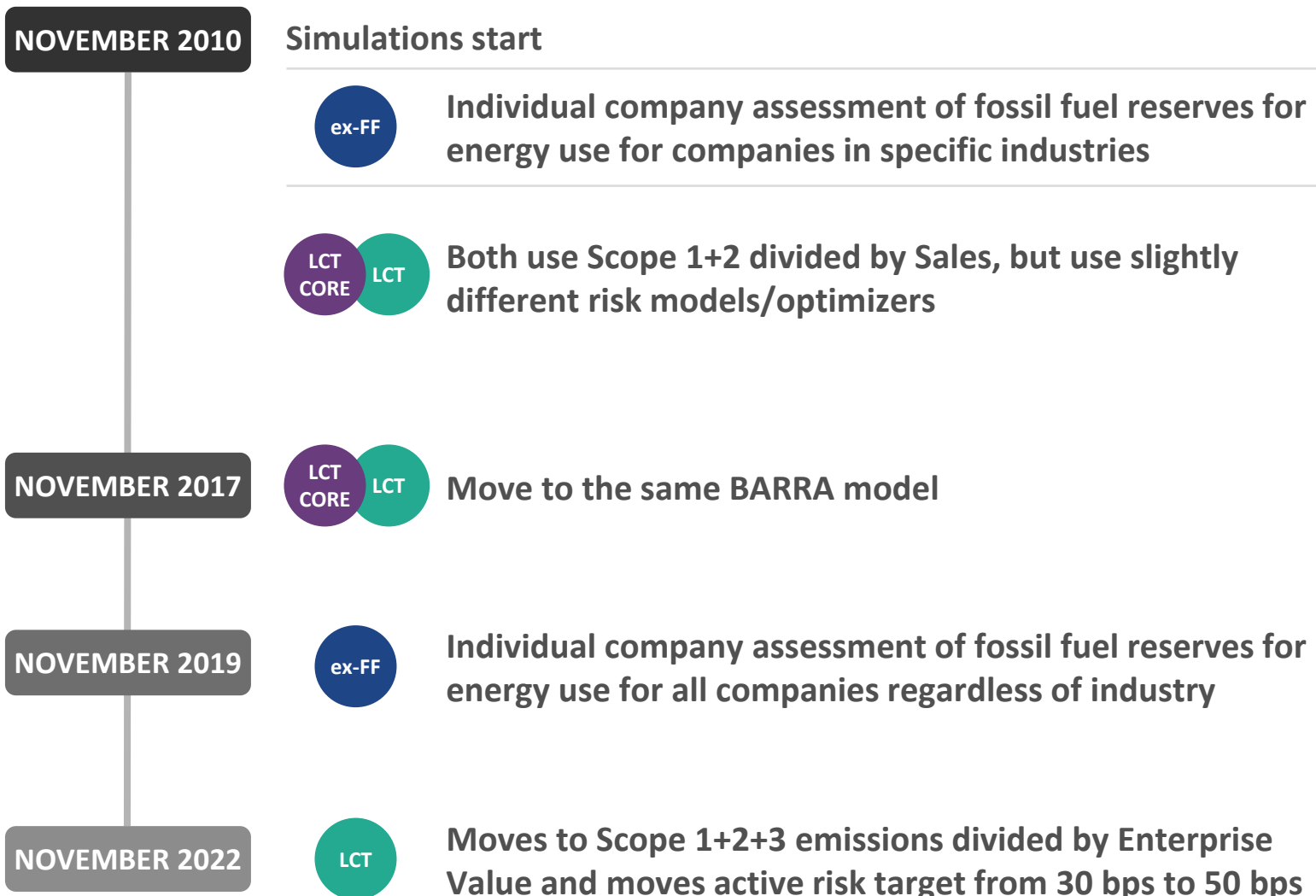
- Minimize carbon intensity\*\*  

$$\left( \frac{\text{Scope 1+2+3 emissions}}{\text{Enterprise Value}} \right)$$
- Targeted active risk of 50 bps
- Stocks without data and stocks that MSCI classifies as involved with weapons or ESG controversies are excluded
- Reconstituted semi-annually

\* Weighted average tons CO<sub>2</sub> equivalent/\$M sales – Scope 1 + 2.

\*\* Weighted average tons CO<sub>2</sub> equivalent /\$M enterprise value including cash (EVIC) – Scope 1 + 2 + 3.

# SIMULATIONS: METHODOLOGIES CHANGE OVER TIME







## SIMULATIONS: AN IMPERFECT SOLUTION

To address significant gaps in emissions data, many low carbon indices rely on longer simulated histories based on simple methodologies, including:

- Excluding companies in certain sectors (e.g., energy)
- Excluding companies that don't report emissions



### Issues

- Excluding a particular industry or sector may not have the desired effect; for example, excluding energy could exclude renewable energy companies while leaving in utilities
- As simulated portfolios may utilize multiple methodologies over time, parts of that history may not reflect an investor would receive on a go-forward basis

## LOWER FOSSIL FUEL RESERVES

- All three indices reduce all or most combined exposure to fossil fuel and thermal coal reserves
- The ex-FF and LCT remove coal; the optimized LCT Core retains some exposure

	ACWI IMI	ACWI IMI ex-Fossil Fuel	ACWI IMI LCT Core	ACWI IMI LCT
Fossil Fuel Exposure				
Fossil Fuel Reserves (%)	5.5	0	1.9	0.8
Thermal Coal Mining (%)	0.7	0	0.5	0

## LOWER CARBON FOOTPRINTS

- Many companies beyond the fossil fuel industry release greenhouse gases into the atmosphere, so it is useful to look at carbon footprint instead of reserves
  - All three indices display lower carbon intensity
  - The LCT Core and LCT reduce carbon intensity more than the ex-FF

	ACWI IMI	ACWI IMI ex-Fossil Fuel	ACWI IMI LCT Core	ACWI IMI LCT
Carbon Footprint				
Carbon Intensity - LCT Core Methodology*	157	118	21	32
Carbon Intensity - LCT Methodology**	357	251	211	57

As of March 31, 2025.\* Weighted average tons CO<sub>2</sub> equivalent/\$M sales – Scope 1 + 2.

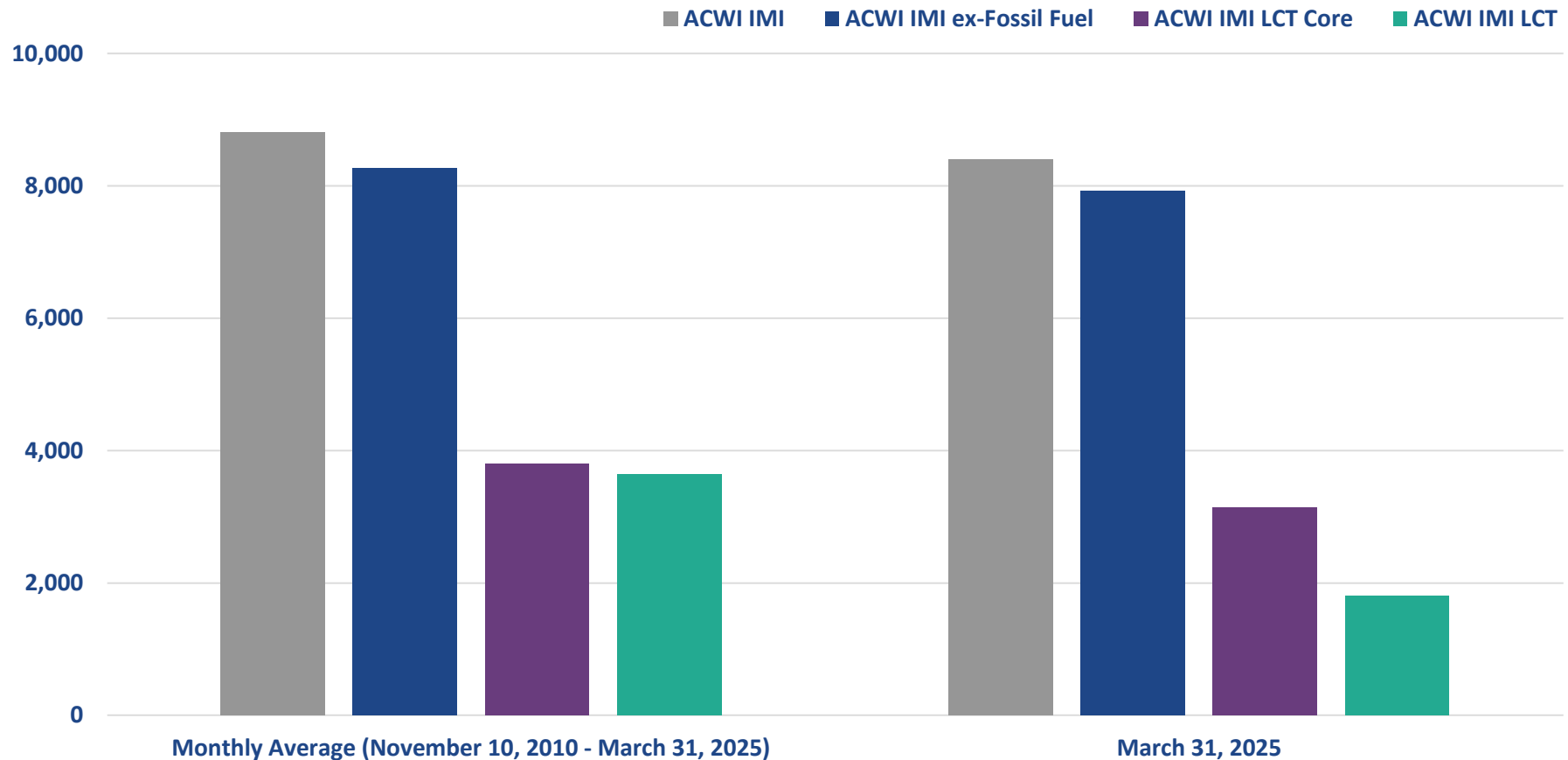
\*\* Weighted average tons CO<sub>2</sub> equivalent /\$M enterprise value including cash (EVIC) – Scope 1 + 2 + 3.

- All three MSCI lower fossil fuel indices eliminate or underweight companies that produce renewable energy, or use some fossil fuels but have transition plans in place

	ACWI IMI	ACWI IMI ex-Fossil Fuel	ACWI IMI LCT Core	ACWI IMI LCT
Companies Transition Plans				
Companies with GHG Emissions Reduction Targets (%)	87.5	86.9	85.8	83.1
Power Generation Revenue by Energy Source				
Renewables (%)	4.8	2.7	2.6	1.7
Power Generation Output by Energy Source				
Renewables (GWh)	767.4	347.5	339.6	148.9

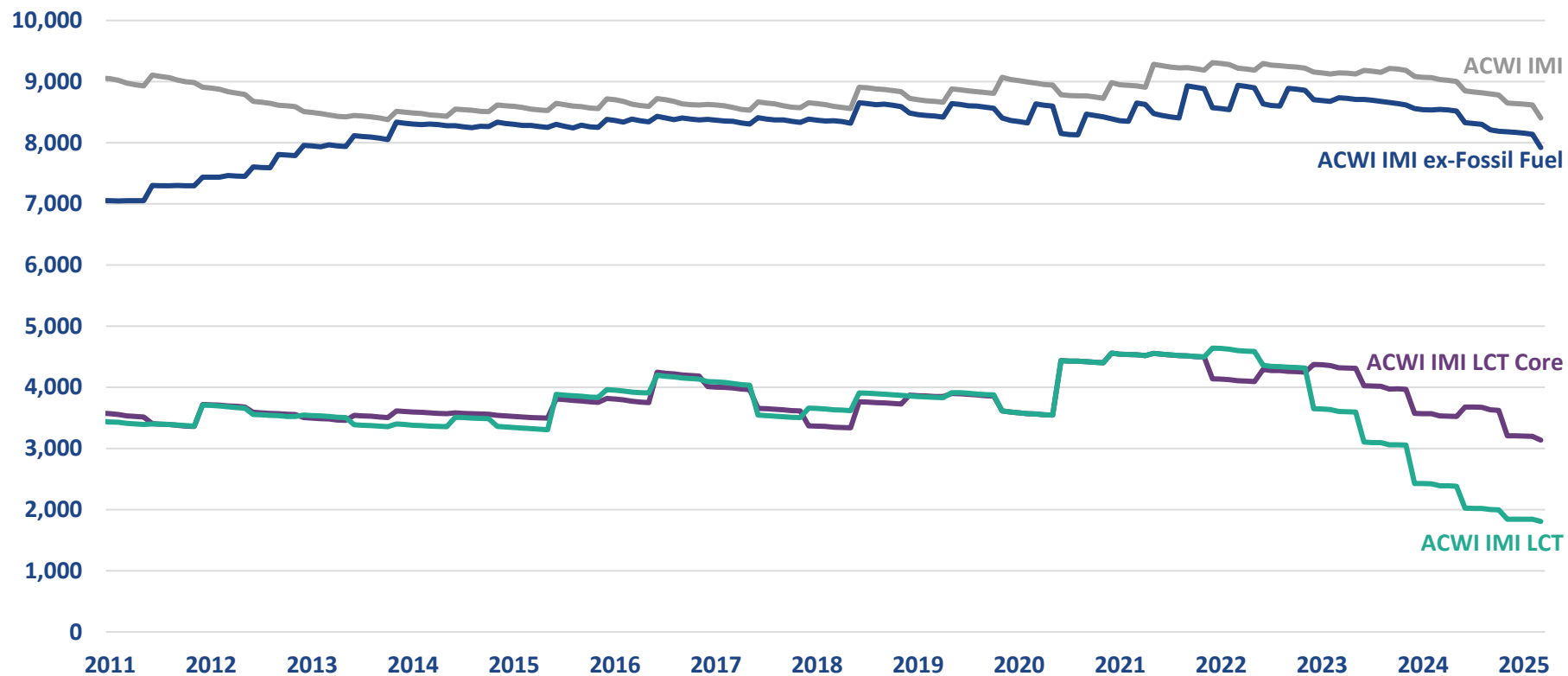
## LESS DIVERSIFICATION INCREASES CONCENTRATION RISKS

- The lower carbon indices have significantly fewer stocks than the ACWI IMI; e.g., as of 3/31/2025:
  - Both optimized low carbon indices exclude a significant number of companies



# OPTIMIZED INDICES HAVE FEWER HOLDINGS

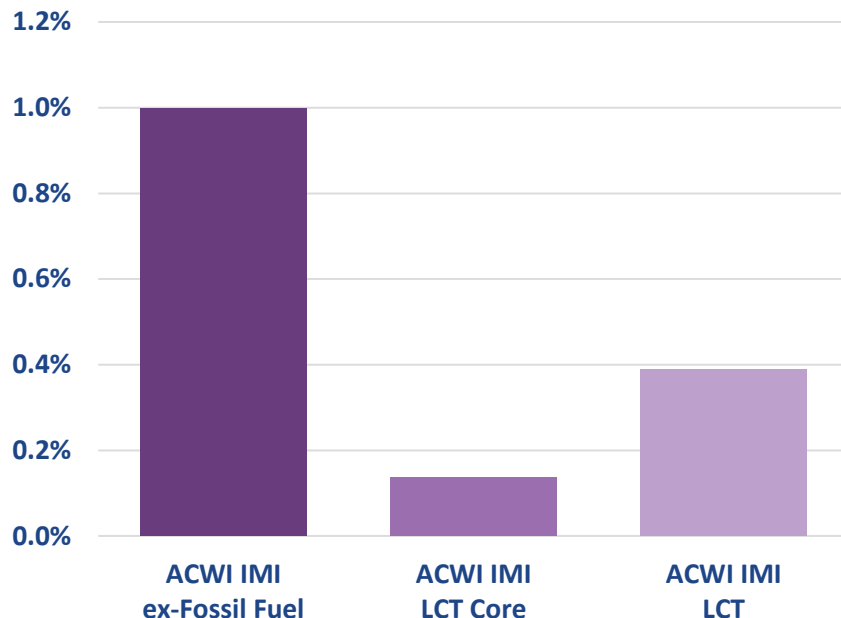
- Number of companies held by the indices has changed over time, partly reflecting evolutions in data and methodology
  - Academic research suggests that most equity market returns derive from relatively few stocks
  - The greater number of companies excluded, the greater chance that a future driver of performance may be excluded



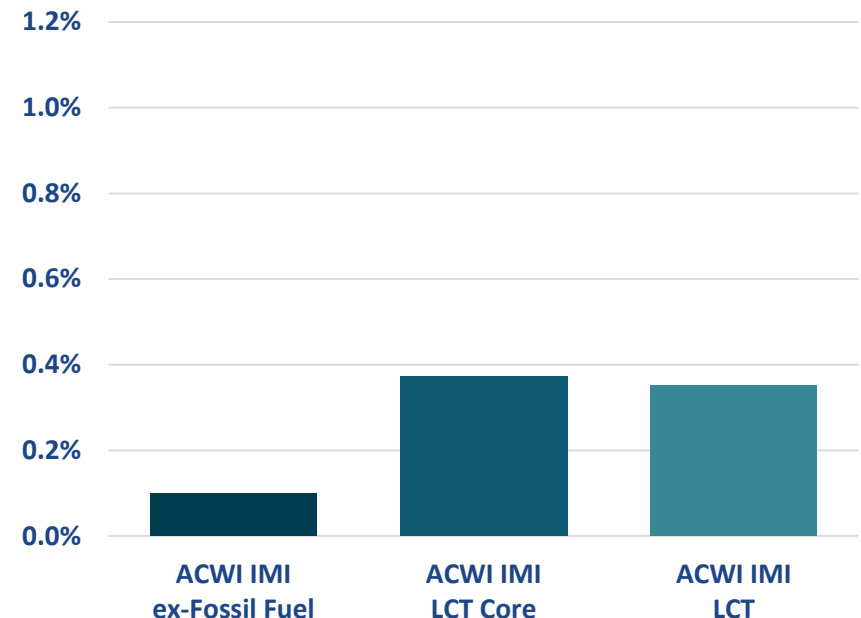
## KEY METRICS CONCENTRATION: MAGNIFICENT SEVEN AND CHINA ALLOCATIONS

- All of the lower carbon indices examined increase the concentration in the Magnificent Seven\* (Mag7) stocks, with the ex-FF index increasing the concentration the most (increases in each name shown in the Appendix)
- All three indices increase the allocation to China (most significant country and sector changes are in the Appendix)

### Change in Mag7 Exposure



### Change in China Exposure



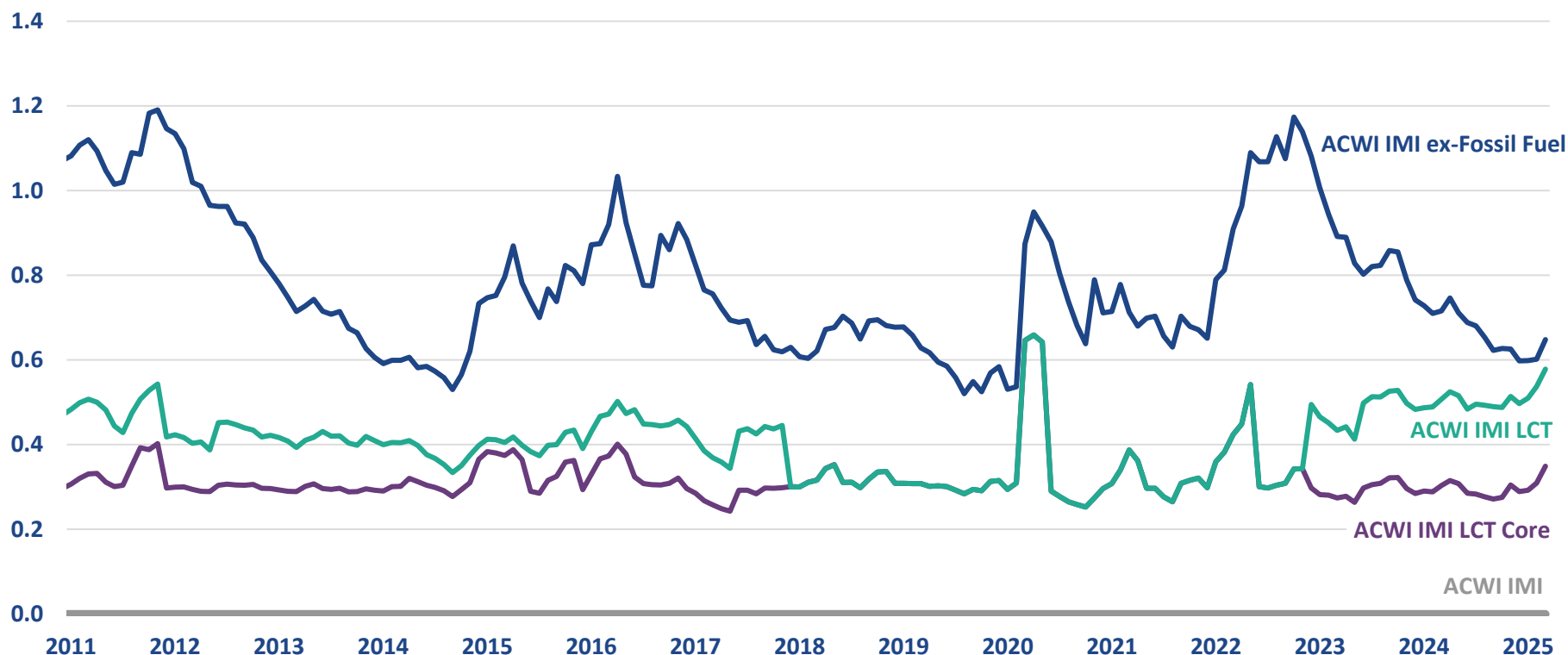
\* Magnificent 7 stocks: Apple Inc., NVIDIA Corp., Microsoft Corp., Amazon.com Inc., Alphabet Inc., Meta Platforms Inc., Tesla Inc.



# LOW CARBON INDICES CARRY HIGHER ACTIVE RISK

- Active risk has demonstrated considerable variability
- Active risk could dominate the performance of the program

## Active Risk Forecast (Percent)



## HIGH TURNOVER COMES WITH HIGHER COSTS

- The LCT Core and LCT in particular have significantly higher turnover than the ACWI IMI, which translates to higher transaction costs and lower net returns

	ACWI IMI	ACWI IMI ex-Fossil Fuel	ACWI IMI LCT Core	ACWI IMI LCT
Turnover* (%)	5.4%	6.5%	34.5%	35.1%

Source: MSCI; simulated data for non-market cap weighted indices.

Turnover is average annualized from November 30, 2010, to March 31, 2025, and is shown as roundtrip costs.

## FUNDAMENTAL SIGNALS

### Do reserves or emissions data predict future stock prices?

- Academic literature is mixed; some studies indicate a potential “green premium”, and others show a “brown premium” (i.e., higher emitters have better returns)
- Results seem to vary by study, by time period, by metric, and potentially, by geography and sector
- Active management can assess these differences, but constructing rules-based “passive” benchmarks that offer superior risk/return profiles may be challenging if effects vary by geography, sector, time periods, metrics, etc.



## FEES, COSTS, AND EXPENSES





## FEES, COSTS, AND EXPENSES

Published index results are gross returns, which means they do not reflect any fees or costs, and they assume all trading and rebalancing happens instantaneously

These indices would require conversion from commingled accounts to customized separate accounts

- All three finalists in the recent passive equity management search confirmed there are no existing commingled funds using lower carbon methodology that could meet the WSIB's needs
- Initial transition costs could be significant

Staff worked with the WSIB's passive equity managers and with one of the WSIB's transition managers to develop realistic estimates, based on the simulations MSCI provided, of:

- Investment management fees
- Trading and rebalancing costs
- Additional licensing fees
- Additional administrative costs

## CONCLUDING OBSERVATIONS



# KEY TAKEAWAYS FOR EACH MSCI ACWI IMI INDEX

## Ex-Fossil Fuel

ex-FF

## Low Carbon Target Core

LCT  
CORE

## Low Carbon Target

LCT

- May have some modest long-term outperformance, but has underperformed in the past 5 years, which is the period that utilizes the current methodology
  - Lower reduction of total carbon intensity than LCT Core and LCT
  - Higher tracking error with more variation
- Tightest predicted tracking error versus the program benchmark
  - Retains some coal exposure
  - Significantly higher turnover and transactions costs
  - Net underperformance compared to the program benchmark
- Largest reduction in emissions intensity
  - Largest methodology change with concurrent changes in profile of the index (tracking error, number of stocks, etc.)
  - Significantly higher turnover and transactions costs
  - Net underperformance compared to the program benchmark





## CONCLUDING OBSERVATIONS



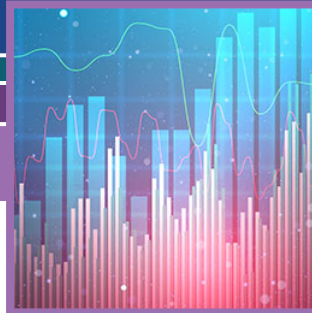
There is no compelling evidence that the net returns of these low carbon indices offer adequate compensation for the additional active risk, valuation, and concentration risks



These strategies have higher costs than the current benchmark, which reduce net returns

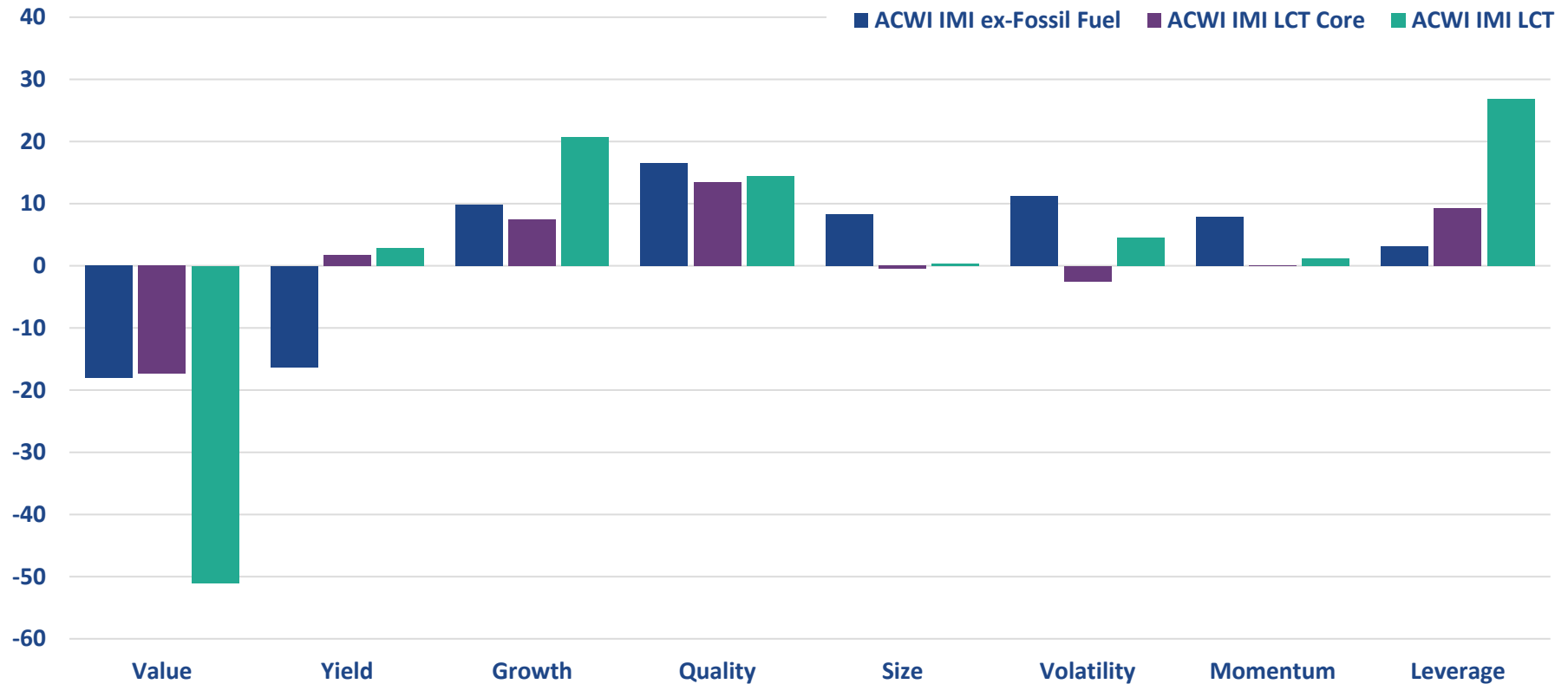
Index construction based on any single backward-looking metric may not sufficiently capture the complexity of risks and opportunities

# APPENDIX



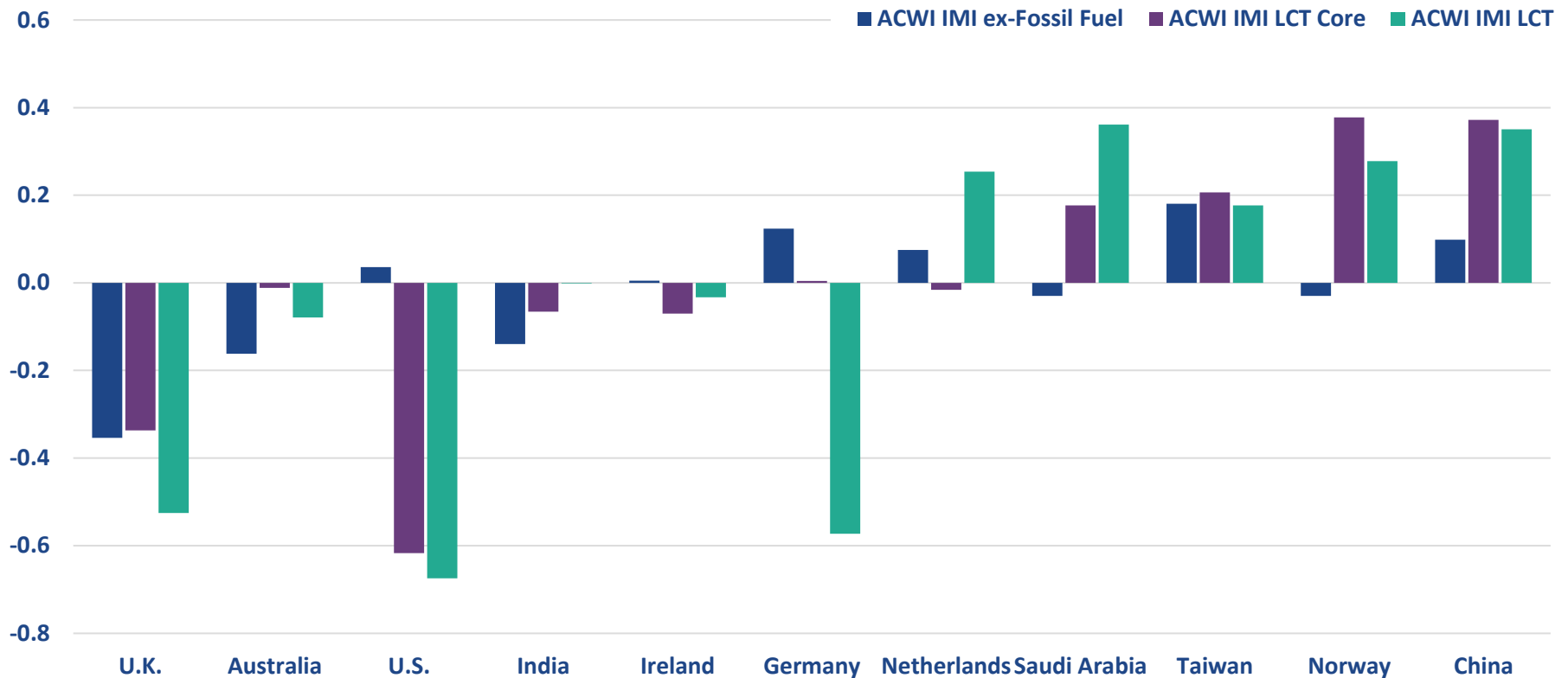
# STYLE EXPOSURES

- All three indices show a negative tilt to value, particularly the ex-FF
- All three indices show modest positive tilts to growth and quality, and the LCT Core and LCT have significant tilts to leverage



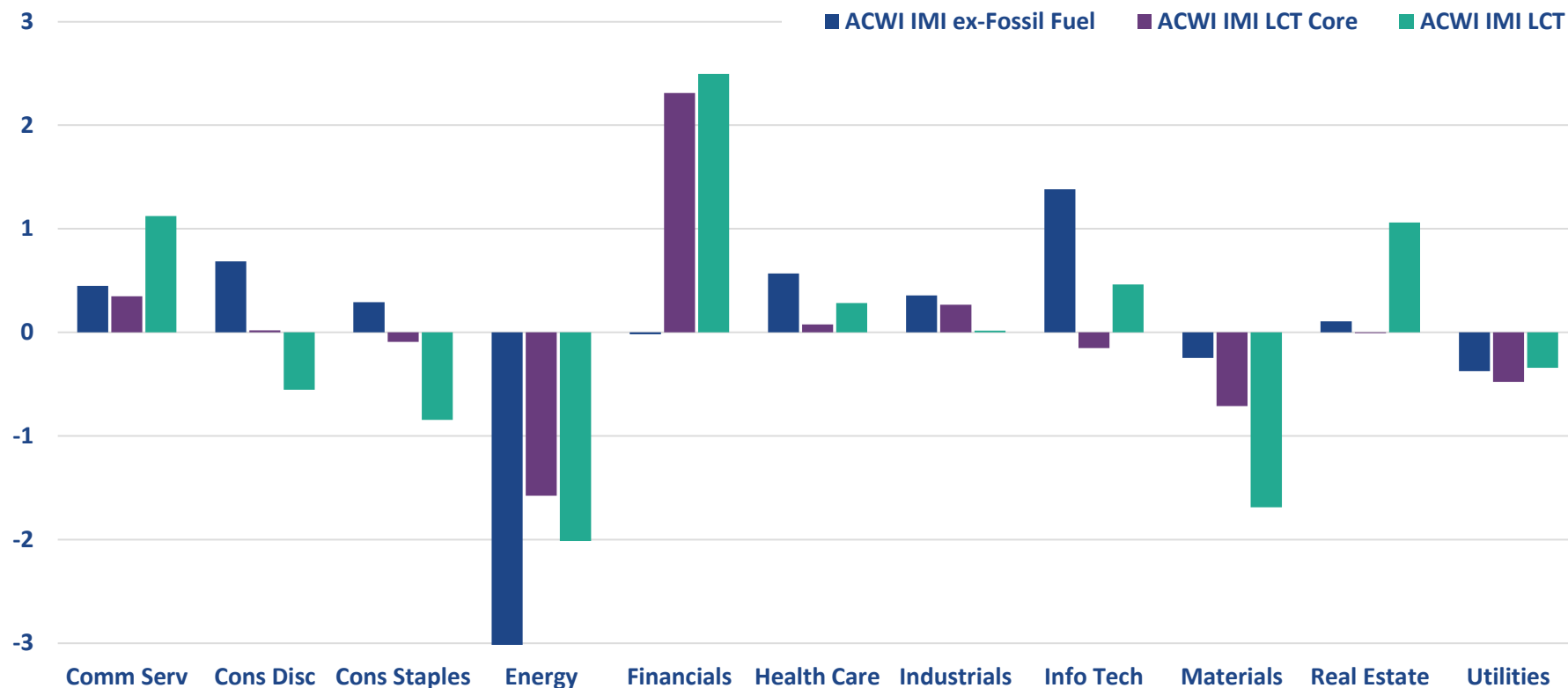
# ACTIVE COUNTRY WEIGHTS

- The ex-FF index slightly increases the benchmark concentration in the U.S., but the LCT Core and LCT decrease it
- All three decrease exposure to the U.K.
- All three increase exposure to Taiwan and China



# ACTIVE SECTOR WEIGHTS

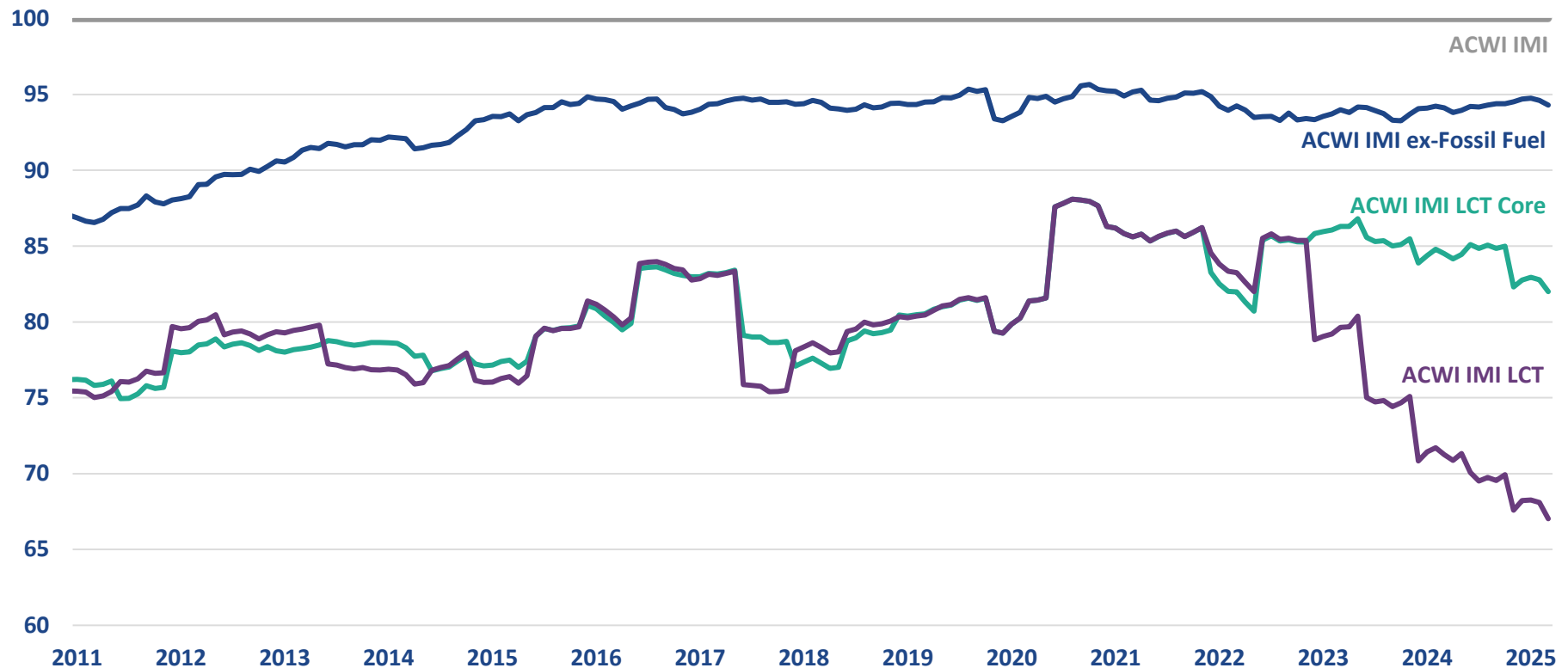
- The lower carbon indices tend to decrease the weights in Energy, Materials, and Utilities
- The ex-FF shows the most significant increases in allocations to Tech and Health Care
- The LCT Core and LCT show the most significant increase in the allocations to Financials



## KEY INVESTMENT METRICS: COVERAGE

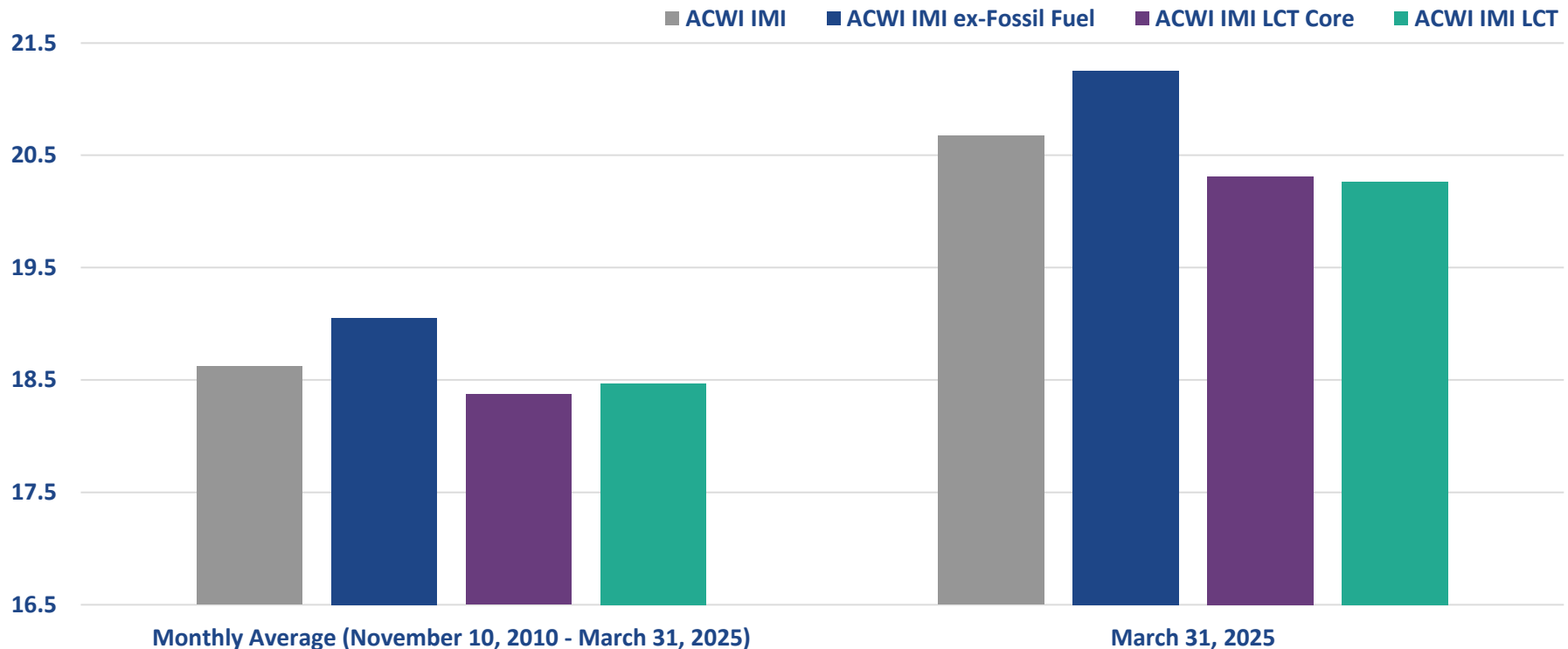
- By weight, the ex-FF index covers about 95 percent of the parent index, the LCT Core covers about 80-85 percent, and the LCT covers less with marked declines recently

### Benchmark Coverage (Percent)



## FUNDAMENTAL METRICS: PRICE-TO-EARNINGS RATIO

- Global equity markets are currently at high price-to-earnings valuation multiples
- The ex-FF index has had and currently has even higher price-to-earnings valuation multiples than the ACWI IMI
- Because they are optimized to maintain a risk profile close to the ACWI IMI benchmark, the LCT Core and LCT indices have tended to have price-to-earnings valuation multiples broadly in line with or somewhat lower than the ACWI IMI



## KEY METRICS CONCENTRATION: MAGNIFICENT SEVEN ALLOCATIONS

	ACWI IMI	ACWI IMI ex-Fossil Fuel	ACWI IMI LCT Core	ACWI IMI LCT
Apple Inc.	3.84%	4.07%	3.91%	3.98%
NVIDIA Corp.	3.15%	3.34%	3.16%	3.20%
Microsoft Corp.	3.14%	3.32%	3.14%	3.18%
Amazon.com Inc.	2.14%	2.27%	2.15%	2.17%
Alphabet Inc.	1.97%	2.09%	1.99%	2.00%
Meta Platforms Inc.	1.47%	1.56%	1.48%	1.51%
Tesla Inc.	0.89%	0.95%	0.90%	0.95%
Total Exposure	16.59%	17.59%	16.73%	16.98%