

# **VIRTUS SYSTEMATIC FUNDS**

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Virtus Emerging Markets Opportunities Fund

Virtus International Small-Cap Fund

Virtus Small-Cap Fund

March 31, 2024

# IMPORTANT RISK CONSIDERATIONS



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## **Market Volatility**

The value of the securities in the portfolio may go up or down in response to the prospects of individual companies and/or general economic conditions. Local, regional, or global events such as war or military conflict, terrorism, pandemic, or recession could impact the portfolio, including hampering the ability of the portfolio's manager(s) to invest its assets as intended..

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## **Issuer Risk**

The portfolio will be affected by factors specific to the issuers of securities and other instruments in which the portfolio invests, including actual or perceived changes in the financial condition or business prospects of such issuers.

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## **Equity Securities**

The market price of equity securities may be adversely affected by financial market, industry, or issuer-specific events. Focus on a particular style or on small, medium, or large-sized companies may enhance that risk.

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## **Foreign & Emerging Markets**

Investing in foreign securities, especially in emerging markets, subjects the portfolio to additional risks such as increased volatility, currency fluctuations, less liquidity, and political, regulatory, economic, and market risk.

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## **Focused Investments**

To the extent the portfolio focuses its investments on a limited number of issuers, sectors, industries or geographic regions, it may be subject to increased risk and volatility.

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## **Foreign Investing**

Investing in foreign securities subjects the portfolio to additional risks such as increased volatility; currency fluctuations; less liquidity; less publicly available information about the foreign investment; and political, regulatory, economic, and market risk.

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## **Prospectus**

For additional information on risks, please see the fund's prospectus.

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# VIRTUS INVESTMENT PARTNERS

MULTI-ASSET MANAGER



## KEY FACTS

\$179.3

Billion in  
AUM

35

Funds Rated  
4 or 5 Stars<sup>1</sup>



Past performance is not indicative of future results.

As of 3/31/24. <sup>1</sup>Based on institutional-class or I shares. Please see page 31 for additional Morningstar disclosure. Strong ratings are not indicative of positive fund performance.

<sup>2</sup>Newfleet Asset Management, Seix Investment Advisors, and Stone Harbor Investment Partners are divisions of Virtus Fixed Income Advisers, LLC ("VFIA"), an SEC registered investment adviser. Virtus has a majority or minority interest in the managers shown, with exception of Voya Investment Management.

## At-a-Glance

The Virtus Systematic Team of Virtus Investment Advisers, Inc. specializes in differentiated investment solutions, strategies, and outcomes across asset classes, regions, and securities.

**Year Founded:** 2003

**Year Affiliated:** 2022

**Location:** San Diego, CA

**AUM:** \$0.5 B

## Key Points

- 1 The Virtus Systematic Team employs a time-tested scientific investment process to exploit inefficiencies**
  - Quantitative, data-driven process strives to identify mispricing across a wide breadth of stocks
  - Investment model exploits human behavioral biases which are less recognized by the market
- 2 AI-enhanced model identifies human behavioral biases in subjective content**
  - Model allows the integration of textual content into the quantitative investment process
  - Subjective content facilitates incorporation of forward-looking sentiment into the model
- 3 Team complements stock selection with a dynamic risk management approach and qualitative checks using a human overlay**
  - Qualitative checks ensure that the portfolio is not subject to value traps
  - Resulting strategy isn't reliant on any particular market condition or style
  - Diversified portfolio with a historically high active share aims to deliver consistent outperformance over its benchmark



**Kunal Ghosh**

Senior Managing Director, CIO  
Cornell University, MBA  
University of British Columbia, MSc  
Industry Start Date: 2002



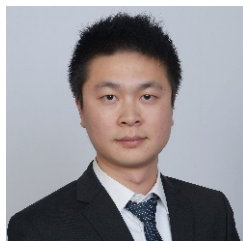
**Lu Yu, CFA, CIPM**

Managing Director, Senior Portfolio Manager  
University of Southern California, MSc  
National University of Singapore, MSc  
Industry Start Date: 2002



**Jie Wei, CFA**

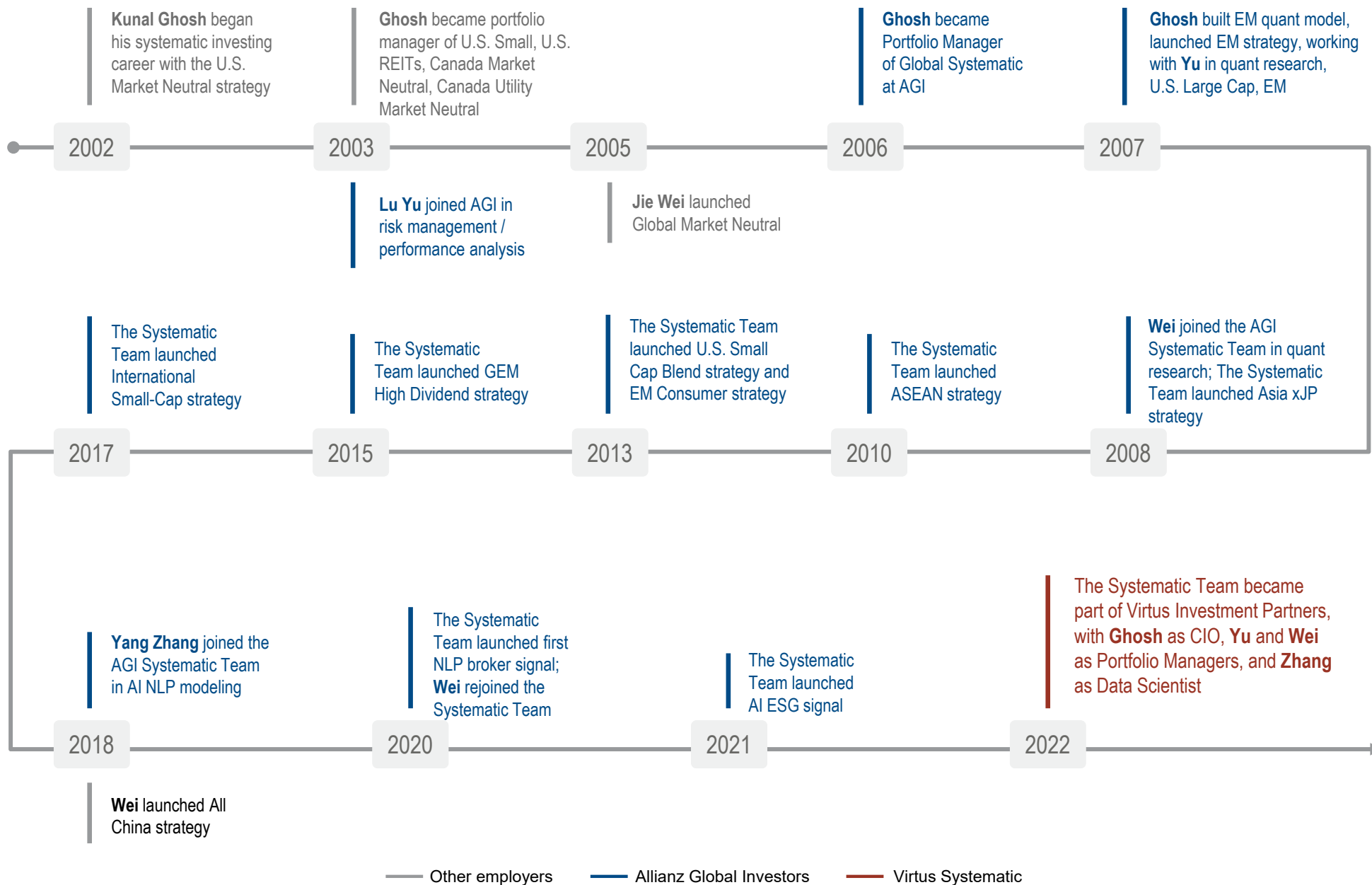
Director, Senior Portfolio Manager  
University of California, Berkeley, MSc  
Wuhan University, BSc  
Industry Start Date: 2005



**Yang Zhang**

Assistant Director, Data Scientist  
University of California, San Diego, MSc  
Tsinghua University, BSc  
Industry Start Date: 2018

# TEAM HISTORY



Source: Virtus Systematic. As of 3/31/24.

	<b>Virtus Emerging Markets Opportunities Fund</b>	<b>Virtus International Small-Cap Fund</b>	<b>Virtus Small-Cap Fund</b>
<b>Tickers</b>	A: AOTAX C: AOTCX INST: AOTIX P: AEMPX R6: AEMOX	A: AOPAX C: AOPCX INST: ALOIX P: ALOPX R6: AIISX	A: AZBAX C: AZBCX INST: AZBIX P: AZBPX R6: ASCFX
<b>Fund Inception Date (Inst. Share)</b>	5/27/04	12/31/97	7/1/13
<b>Benchmark</b>	MSCI Emerging Markets Index (net)	MSCI AC World Ex USA Small Cap Index (net)	Russell 2000® Index
<b>Portfolio Managers</b>	Kunal Ghosh Lu Yu, CFA, CIPM	Kunal Ghosh Lu Yu, CFA, CIPM	Kunal Ghosh Lu Yu, CFA, CIPM Jie Wei, CFA

# SCIENTIFIC INVESTMENT PROCESS

WITH A REALITY CHECK



Focus on finding high-conviction investment ideas in a risk-managed framework



Source: Virtus Systematic.

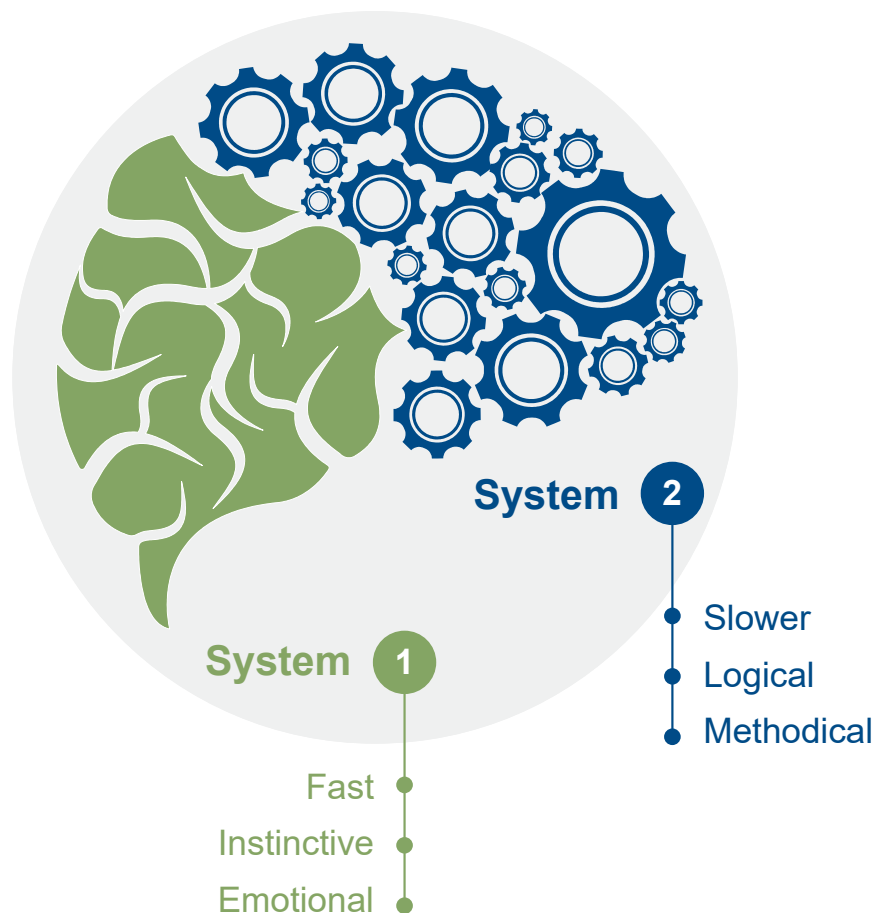
During any stage of the investment process, the selection criteria may vary from these shown above. The diagrams and statements above reflect the typical investment process applied to this strategy. AI = Artificial Intelligence.



# SYSTEMATIC PHILOSOPHY

INVESTOR BEHAVIOR CREATES OPPORTUNITIES

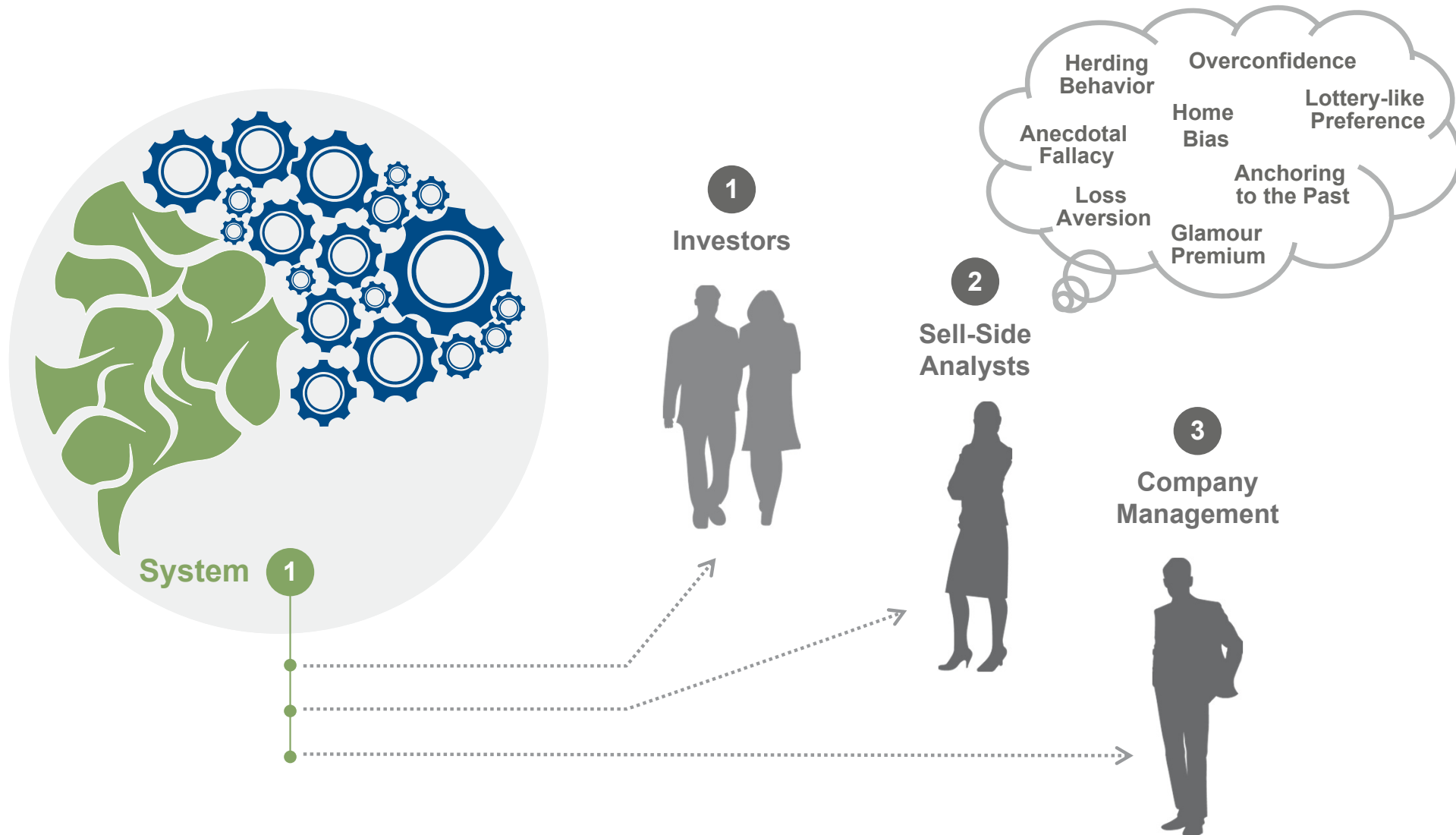
The Systematic Team believes human decision-making is driven by the following process:



- The Systematic Team's investment process seeks to capture inefficiencies through the combination of **behavioral**, **intrinsic**, and **valuation** insights.

**Behavioral biases and intrinsic/valuation metrics provide a foundation of opportunities**

The Systematic Team's approach incorporates behavioral biases from three specific areas



**Human behavior can be exploited through a systematic investment approach**

# ALPHA MODEL

15 PROPRIETARY FACTORS CLASSIFIED INTO THREE DISTINCT SEGMENTS



## Behavioral & AI



8 factors betting against irrational greed and fear

### EXAMPLE:

**Analyst Herding Adjusted Behavior** uncovers conviction estimate changes, moving away from the crowd, which are likely to outperform in the future

## Intrinsic



3 factors identifying higher-quality companies with persistent profits

### EXAMPLE:

**Enhanced Operating Leverage** seeks companies with optimal leverage and steady cash flows, leading to a greater repeatability of investment outcomes

## Valuation



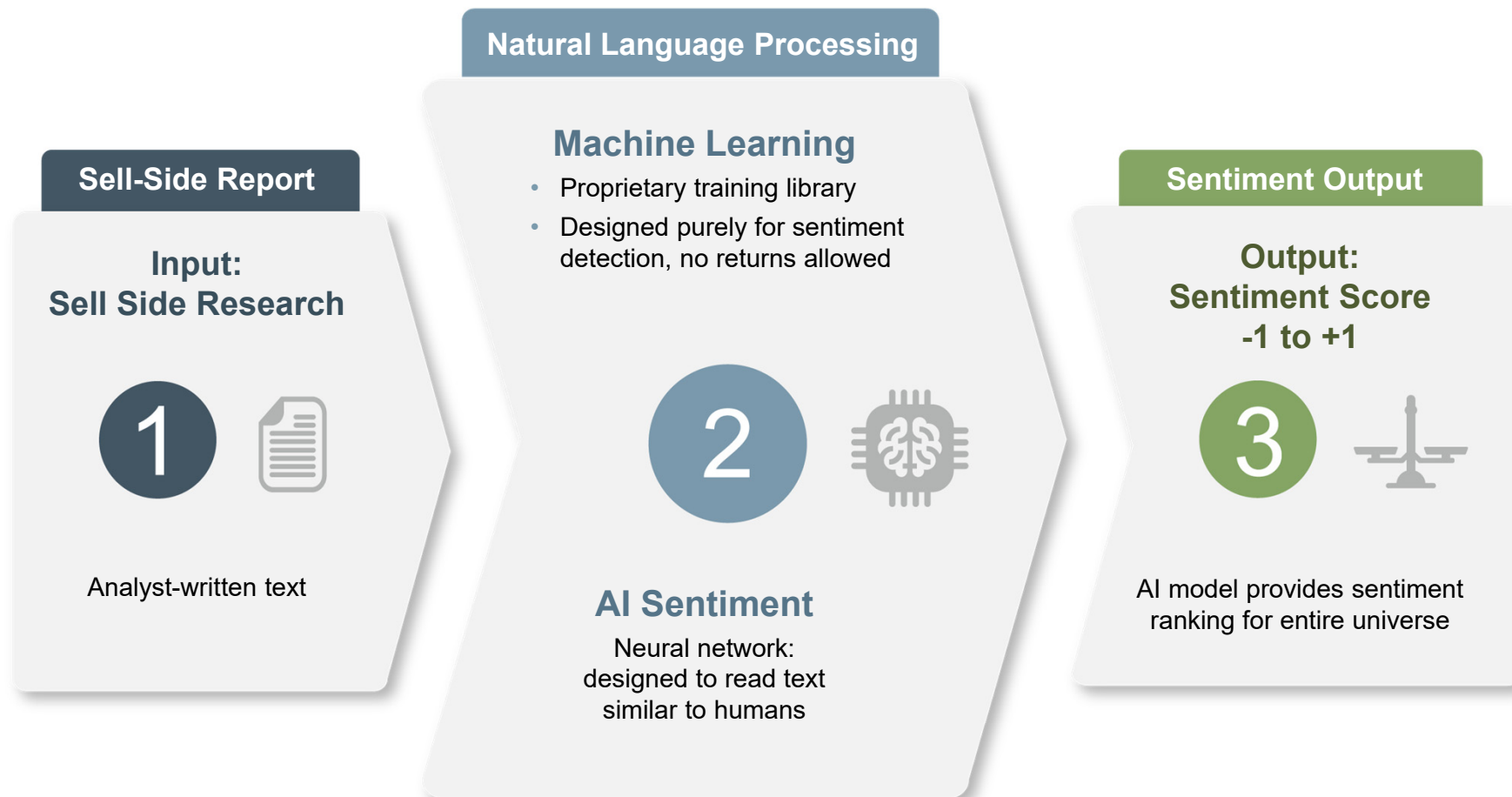
4 factors seeking companies whose true worth is underappreciated

### EXAMPLE:

**EBITDA-Based Valuation** measures a company's profitability relative to capital structure, discovering companies which appear undervalued relative to peers

Source: Virtus Systematic. During any stage of the investment process, the selection criteria may vary from these shown above. The statements above reflect the typical investment process applied to this strategy. AI = Artificial Intelligence and EBITDA = earnings before interest, taxes, depreciation, and amortization (used as an indicator of the overall profitability of a business).

AI broker sentiment factor: strives to add alpha by detecting sentiment from research reports



Source: Virtus Systematic. During any stage of the investment process, the selection criteria may vary from these shown above. The diagrams and statements above reflect the typical investment process applied to this strategy.

## Vinda

HK\$17.64 - BUY



### Quality tissue

#### Cost tailwind plus premiumisation secure margin expansion

We hosted Vinda's Hong Kong non-deal roadshow (NDR) over past two days. It remained positive on its 2020 growth and margin outlook, in spite of likely further price competition. Management expects better performance from the PC segment to be a second growth engine, with the differentiated marketing of Libresse a winning strategy. In addition to the tailwind from the pulp price having plunged, we expect Vinda to continue to benefit from its continued trading up in its product portfolio. We forecast 7%-8% sales growth and 9%-12% NP growth over 20-22CL, and raise our target price from HK\$20 to HK\$23, based on a 20x 21CL PE. We maintain our BUY rating. We like Vinda's strong business defensiveness amid macro uncertainty.

#### Plummeting pulp price will continue to benefit the GPM

The decline in the pulp price contributed to nearly half of Vinda's GP growth in 2019. As management expects the pulp price might have reached a trough, it increased its pulp inventory from four to six months, extending the cost benefit to 1H20. It does not expect a significant uptick in the pulp price in the near term, and expects YoY improvement in its 2020 GPM, from both the pulp price and its product mix.

#### Napkin targets double digit market share in 5-10 years

With the relaunch of Libresse in mid-2019, Vinda has switched on another growth engine and targets a double digit share in 5-10 years. A key difference of Libresse is the marketing message the brand carries. Instead of highlighting the 'inconvenience' and 'taboo' of menstruation, Libresse is focusing on liberation and being refreshed, which echoes with women in their 20-30s, who are very different from their previous generation, and chase independence and openness.

Stock Sentiment Score: +0.77

## Shangri-La Asia



### Key takeaways from investor meeting

Reiterate Rating: BUY | PO: 12.10 HKD | Price: 7.70 HKD

#### RevPAR trend: no signs of recovery in HK yet

We hosted an investor meeting with Shangri-la (SLA) yesterday. We summarize the key takeaways in this report. HK: There are no signs of recovery in HK RevPAR, which the company confirmed was down in line with the market generally due to protests. While 1H 2019 was hurt by weaker business demand due to trade war concerns, 2H was dragged by weaker leisure demand due to protests disruption. It is still working on the renovation plan for Island Shangri-la. China: The RevPAR decline in RMB terms narrowed in 2H 2019 vs. 1H 2019 with some months posting positive YoY growth. Regarding impact of Wuhan coronavirus, it is hard to estimate the impact now but it does not appear significant at the current stage as it has only one hotel with 442 rooms there.

#### Development strategy: Target mixed-use project

SLA aims to explore mixed-use project opportunities which have non-hotel components such as residential, office and retail. The rationale is that the hotel component could enhance the value of the whole mixed-use project but the standalone hotel profitability/return is low. Investing in mixed-use projects can help reap the full benefits the hotel property brings along. SLA will try to partner with Kerry or other developers for potential projects. As the projects are asset-heavy, SLA will be careful not to over-invest.

#### Lower earnings estimates to reflect HK disruption impact

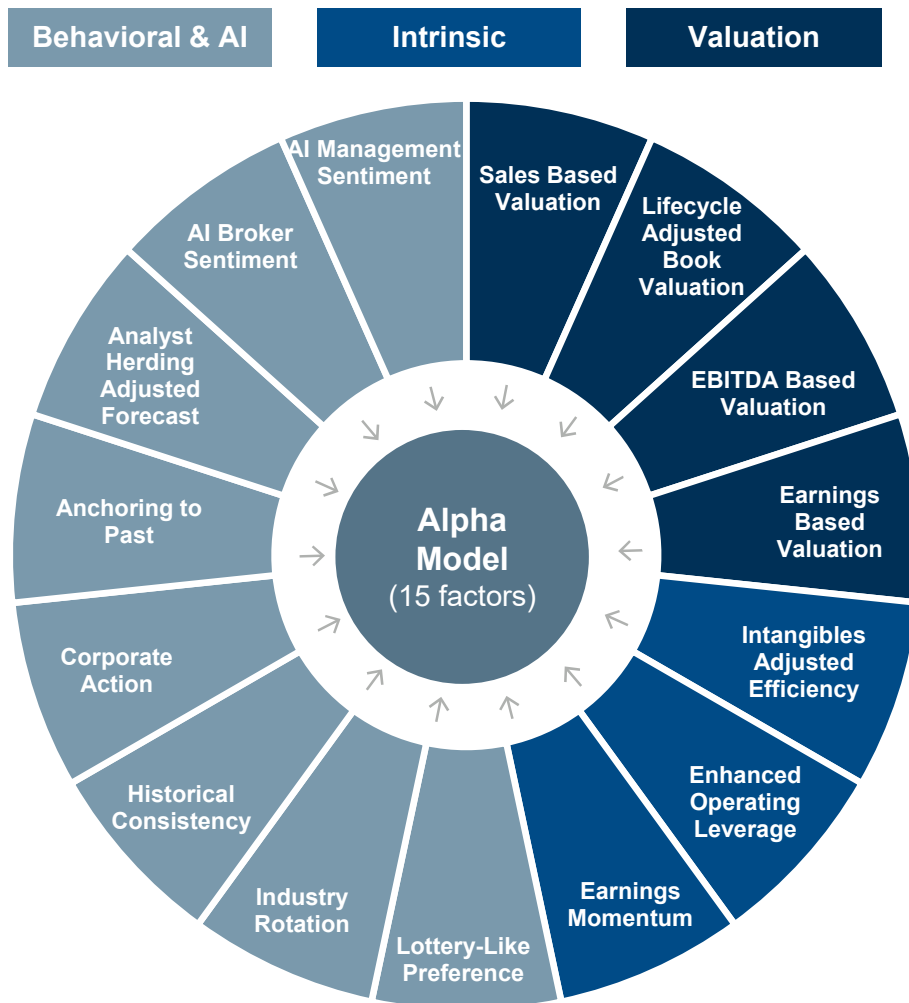
We lower our 2019/2020E EBITDA estimates by 5%/14% to reflect the disruption impact from HK protests and higher overhead costs from more staff hiring for its upcoming development. Accordingly, we lower our PO by 10% to H\$12.1 to reflect our latest earnings estimates, and roll over of our valuation to 2021E. We reiterate Buy on SLA as it is trading at attractive valuation of 11x which is at -1SD of historical average.

Stock Sentiment Score: -0.46

# DAILY ALPHA FACTOR

RANKS EACH STOCK IN THE UNIVERSE

## Opportunities identified by our scientifically focused alpha model



- Captures inefficiencies via the combination of behavioral & AI, intrinsic, and valuation-based factors
- Factor diversification provides a balance across market cycles
- Stocks ranked daily from best (100<sup>th</sup> percentile) to worst (1<sup>st</sup> percentile)

Source: Virtus Systematic. The statements above reflect the typical investment process applied to this Strategy. At any given time, other criteria may affect the investment process. AI = Artificial Intelligence and EBITDA = earnings before interest, taxes, depreciation, and amortization (used as an indicator of the overall profitability of a business). Diversification does not guarantee a profit or protect against losses.

# RISK MANAGEMENT

MEASURES CURRENT AND EVOLVING SOURCES OF RISK IN THE MARKET

- A proactive approach to risk, which is daily and dynamic
- Holistic viewpoint focused on both the stock level and total portfolio level—seeks to control volatility and avoid crowded trades
- Portfolio-level monitoring including portfolio beta, volatility, tracking error
- Also manage security, industry, country, market cap, and liquidity exposures
- “What if” scenarios quantifies marginal contribution to active and total portfolio risk



## Reality Check

- ✓ **Late-breaking News**
- ✓ **Abnormal Situations**



- Overlay a reality check before all final buy and sell decisions
- Overrides done where alpha model may not have assessed key information:
  - **Late-breaking news**—market-moving information intra-day from newsfeed, e.g., corporate results
  - **Abnormal situations**—e.g., potential company lawsuit or senior management resignation
- The investment process will be repeated to exclude companies which do not pass the qualitative check



# VIRTUS EMERGING MARKETS OPPORTUNITIES FUND

## PORTFOLIO CHARACTERISTICS



CHARACTERISTICS	Virtus Emerging Markets Opportunities Fund	MSCI Emerging Markets Index (net)
Average Weighted Market Cap (bn)	99.36	89.85
Median Market Cap (bn)	9.40	1.98
Trailing P/E Ex-Negative Earnings	8.82	14.21
Price-to-Cash Flow	10.74	14.67
Price-to-Book Value	2.47	3.12
3-Year Earnings Growth Rate	31.98	17.45
5-Year Earnings Growth Rate	18.75	13.47
Active Share	76.31	n/a
<b>RISK STATISTICS (3 YEAR)</b>		
Alpha	1.05	n/a
Beta	0.93	1.00
R-Squared	0.92	1.00
Sharpe Ratio	-0.37	-0.44
Standard Deviation	16.98	17.51

**Past performance is no guarantee of future results.**

As of 3/31/24. Source: Virtus Performance and Analytics. Portfolio characteristics are subject to change. Characteristics, statistics, and index are defined on page 30.

# VIRTUS EMERGING MARKETS OPPORTUNITIES FUND

## TOP TEN COUNTRIES



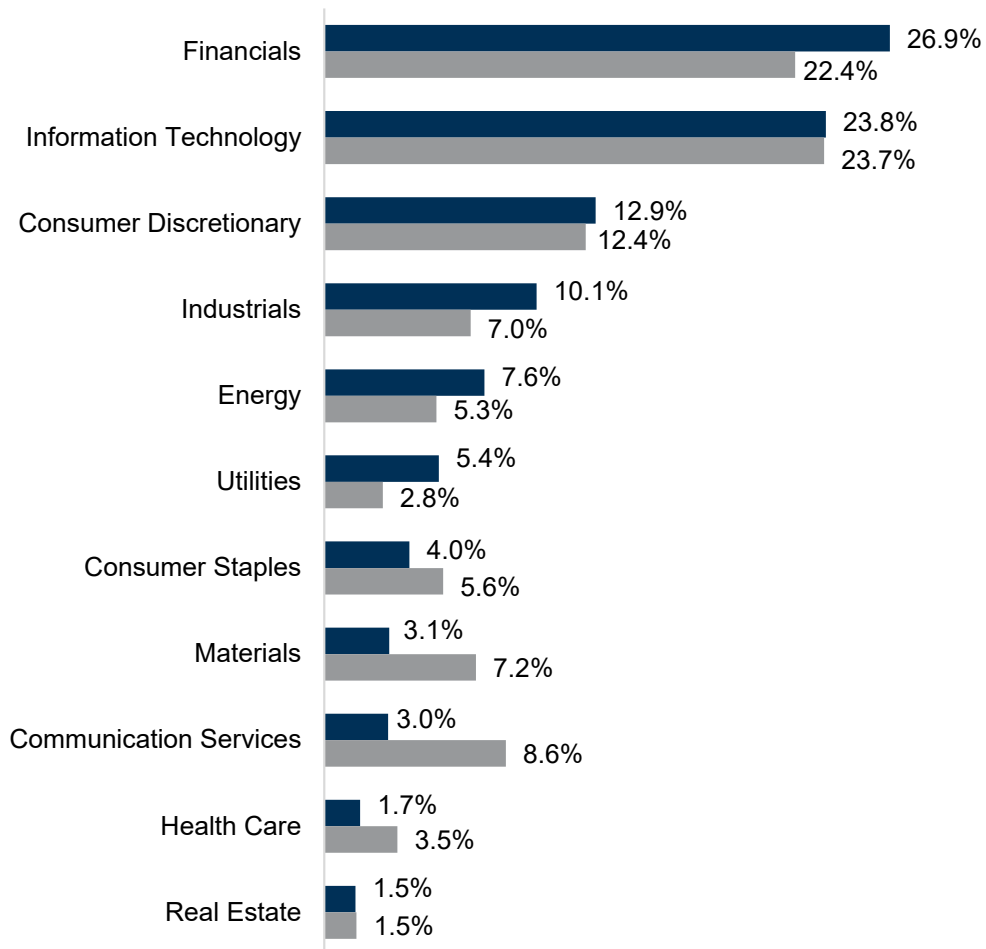
<b>Top Ten Country Weights</b>	<b>% Invested Assets</b>	<b>% Index</b>
China	28.24	25.13
India	17.29	17.70
Taiwan	14.88	17.63
Korea (South)	10.28	12.82
Brazil	8.81	5.23
Mexico	5.73	2.70
United Arab Emirates	3.92	1.20
Indonesia	2.59	1.86
Hungary	2.12	0.24
Turkey	1.60	0.69

# VIRTUS EMERGING MARKETS OPPORTUNITIES FUND

## SECTOR ALLOCATION AND TOP HOLDINGS



### SECTOR WEIGHTS



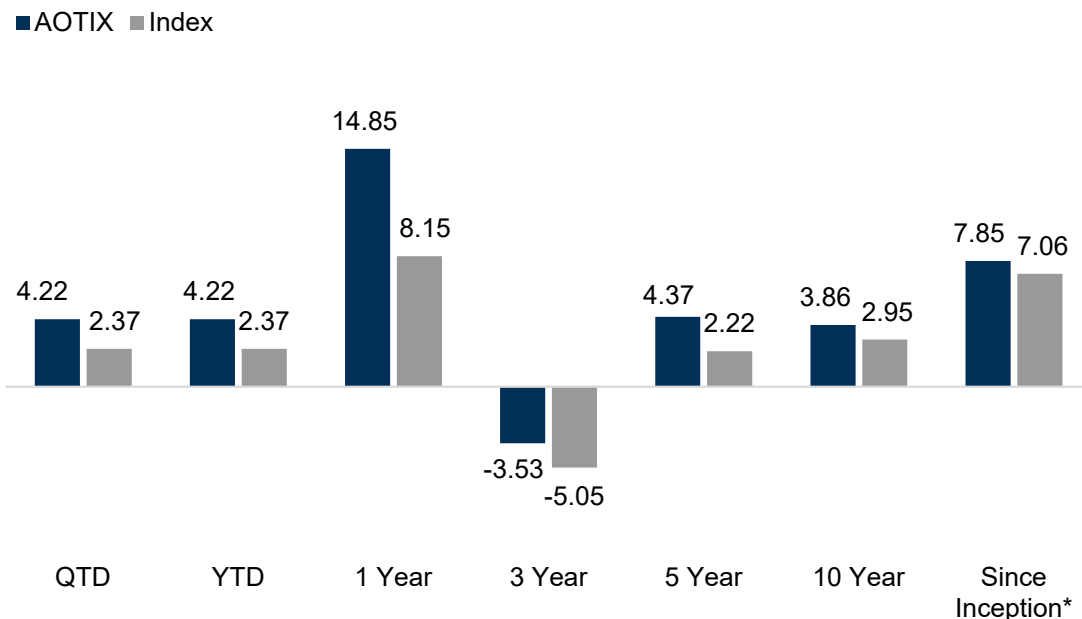
■ Virtus Emerging Markets Opportunities Fund  
■ MSCI Emerging Markets Index (net)

### TOP TEN HOLDINGS

	% of Fund
Taiwan Semiconductor Manufacturing Co Ltd	7.28
Samsung Electronics Co Ltd	3.50
PetroChina Co Ltd	3.49
Kia Corp	3.20
CPFL Energia SA	2.99
Grupo Financiero Banorte SAB de CV	2.82
New Oriental Education & Technology Group Inc	2.68
State Bank of India	2.61
Tata Consultancy Services Ltd	2.53
Emirates NBD Bank PJSC	2.41
<b>Total</b>	<b>33.51</b>

# PERFORMANCE REVIEW AS OF MARCH 31, 2024(%)

## VIRTUS EMERGING MARKETS OPPORTUNITIES FUND



### MORNINGSTAR RATINGS™

#### Institutional Share

#### Diversified Emerging Markets

Time Period	# of Stars	# of Funds
Overall	★★★★	721
3 Year	★★★	721
5 Year	★★★★	657
10 Year	★★★★	425

Morningstar ratings are based on risk-adjusted returns. Strong ratings are not indicative of positive fund performance.

Please see page 31 for Morningstar disclosures.

\*Inception: Class INST: 5/27/04.

**Performance data quoted represents past performance. Past performance does not guarantee future results. Investment return and principal value will fluctuate so that shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. Please visit [virtus.com](http://virtus.com) for performance data current to the most recent month end. This share class has no sales charges and is not available to all investors. Other share classes have sales charges. See [virtus.com](http://virtus.com) for details.**

The fund class gross expense ratio is 1.26%. The net expense ratio is 0.94%, which reflects a contractual expense reimbursement in effect through 10/31/2024.

Average annual total return is the annual compound return for the indicated period and reflects the change in share price and the reinvestment of all dividends and capital gains. Returns for periods of one year or less are cumulative returns.

The **MSCI Emerging Markets Index (net)** is a free float-adjusted market capitalization index that measures equity market performance in the global emerging markets. The index is calculated on a total return basis with net dividends reinvested. The index is unmanaged, its returns do not reflect any fees, expenses, or sales charges, and is not available for direct investment.

# VIRTUS INTERNATIONAL SMALL-CAP FUND

## PORTFOLIO CHARACTERISTICS



CHARACTERISTICS	Virtus International Small-Cap Fund	MSCI AC World Ex USA Small Cap Index (net)
Average Weighted Market Cap (bn)	3.07	1.98
Median Market Cap (bn)	1.98	0.61
Trailing P/E Ex-Negative Earnings	9.55	14.45
Price-to-Cash Flow	8.45	13.82
Price-to-Book Value	2.14	2.49
3-Year Earnings Growth Rate	24.41	12.31
5-Year Earnings Growth Rate	18.24	10.09
Active Share	95.89	n/a
<b>RISK STATISTICS (3 YEAR)</b>		
Alpha	-2.57	n/a
Beta	0.97	1.00
R-Squared	0.90	1.00
Sharpe Ratio	-0.28	-0.14
Standard Deviation	17.33	16.94

**Past performance is no guarantee of future results.**

As of 3/31/24. Source: Virtus Performance and Analytics. Portfolio characteristics are subject to change. Characteristics, statistics, and index are defined on page 30.

# VIRTUS INTERNATIONAL SMALL-CAP FUND

## TOP TEN COUNTRIES



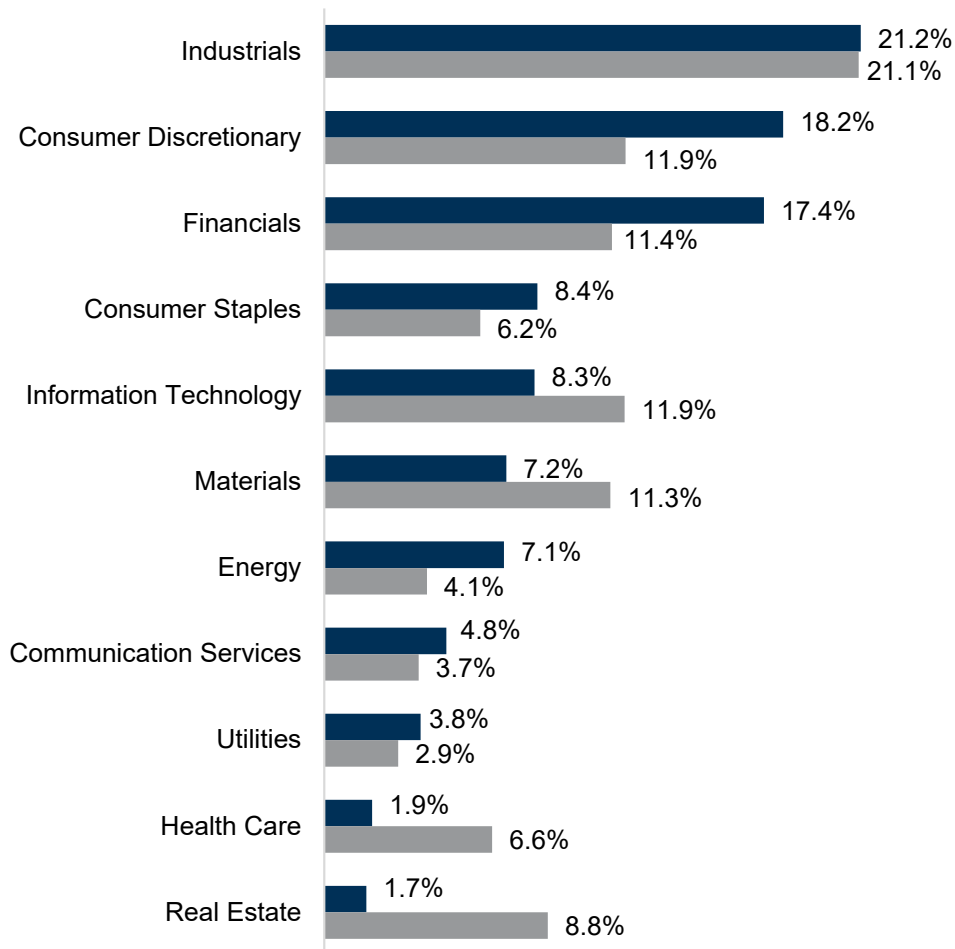
<b>Top Ten Country Weights</b>	<b>% Invested Assets</b>	<b>% Index</b>
Japan	26.08	22.23
United Kingdom	8.69	9.36
Taiwan	6.19	6.70
United States	5.95	0.00
Italy	5.34	2.22
Korea (South)	4.40	3.99
Australia	4.11	6.02
Canada	4.08	6.75
China	3.53	2.40
Austria	3.14	0.61

# VIRTUS INTERNATIONAL SMALL-CAP FUND

## SECTOR ALLOCATION AND TOP HOLDINGS



### SECTOR WEIGHTS



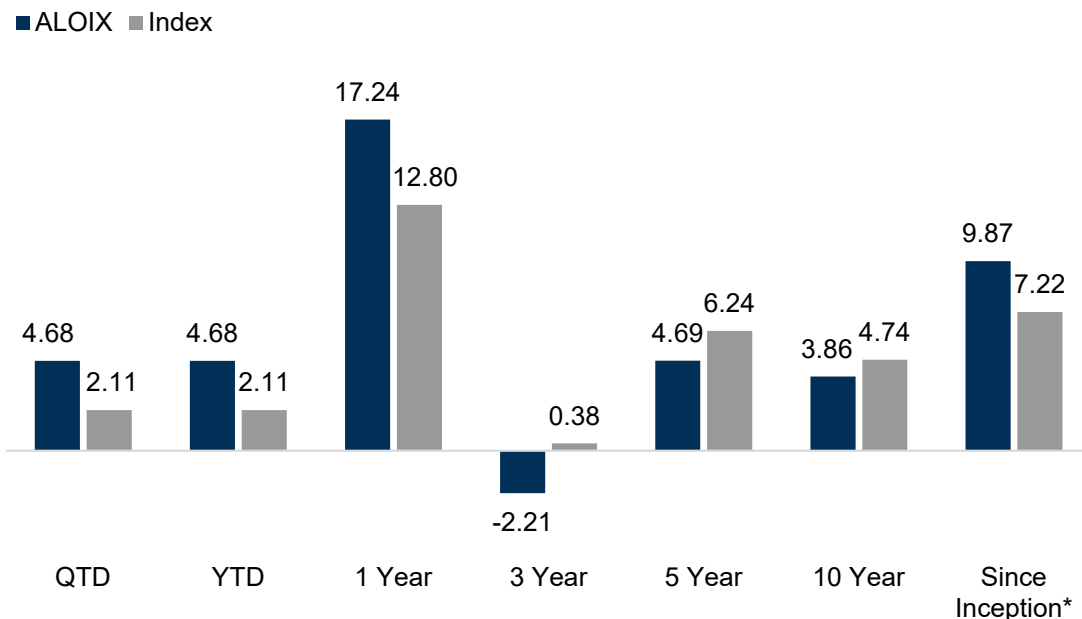
■ Virtus International Small-Cap Fund  
■ MSCI AC World Ex USA Small Cap Index (net)

### TOP TEN HOLDINGS

	% of Fund
iShares MSCI India Small-Cap ETF	<b>3.87</b>
4imprint Group PLC	<b>2.39</b>
Sojitz Corp	<b>2.33</b>
Hanwa Co Ltd	<b>2.28</b>
Wienerberger AG	<b>2.18</b>
Yangzijiang Shipbuilding Holdings Ltd	<b>2.15</b>
Cia de Distribucion Integral Logista Holdings SA	<b>2.09</b>
Super Retail Group Ltd	<b>2.06</b>
Saras SpA	<b>2.01</b>
Hankook Tire & Technology Co Ltd	<b>1.97</b>
<b>Total</b>	<b>23.33</b>

# PERFORMANCE REVIEW AS OF MARCH 31, 2024(%)

## VIRTUS INTERNATIONAL SMALL-CAP FUND



### MORNINGSTAR RATINGS™

#### Institutional Share

#### Foreign Small/Mid Growth

Time Period	# of Stars	# of Funds
Overall	★★★★	119
3 Year	★★★★★	119
5 Year	★★★★	114
10 Year	★★★★	80

Morningstar ratings are based on risk-adjusted returns. Strong ratings are not indicative of positive fund performance.

Please see page 31 for Morningstar disclosures.

\*Inception: Class INST: 12/31/97.

**Performance data quoted represents past performance. Past performance does not guarantee future results. Investment return and principal value will fluctuate so that shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. Please visit [virtus.com](http://virtus.com) for performance data current to the most recent month end. This share class has no sales charges and is not available to all investors. Other share classes have sales charges. See [virtus.com](http://virtus.com) for details.**

The fund class gross expense ratio is 1.56%. The net expense ratio is 1.07%, which reflects a contractual expense reimbursement in effect through 2/1/2025. This ratio reflects the direct and indirect expenses paid by the Fund.

The net expense ratio minus the indirect expenses incurred by the underlying funds in which the Fund invests is 1.04%.

Average annual total return is the annual compound return for the indicated period and reflects the change in share price and the reinvestment of all dividends and capital gains. Returns for periods of one year or less are cumulative returns.

The **MSCI ACWI ex USA Small Cap Index (net)** is a free float-adjusted market capitalization-weighted index that measures small cap equity performance of developed and emerging markets, excluding the U.S. The index is calculated on a total return basis with net dividends reinvested. The index is unmanaged, its returns do not reflect any fees, expenses, or sales charges, and is not available for direct investment.



# VIRTUS SMALL-CAP FUND

## PORTFOLIO CHARACTERISTICS



CHARACTERISTICS	Virtus Small-Cap Fund	Russell 2000® Index
Average Weighted Market Cap (bn)	6.17	4.70
Median Market Cap (bn)	3.08	0.94
Trailing P/E Ex-Negative Earnings	14.53	16.51
Price-to-Cash Flow	13.41	13.56
Price-to-Book Value	2.98	2.87
3-Year Earnings Growth Rate	12.89	14.65
5-Year Earnings Growth Rate	16.69	14.59
Active Share	87.61	n/a
<b>RISK STATISTICS (3 YEAR)</b>		
Alpha	1.99	n/a
Beta	0.82	1.00
R-Squared	0.92	1.00
Sharpe Ratio	-0.01	-0.13
Standard Deviation	18.00	21.09

**Past performance is no guarantee of future results.**

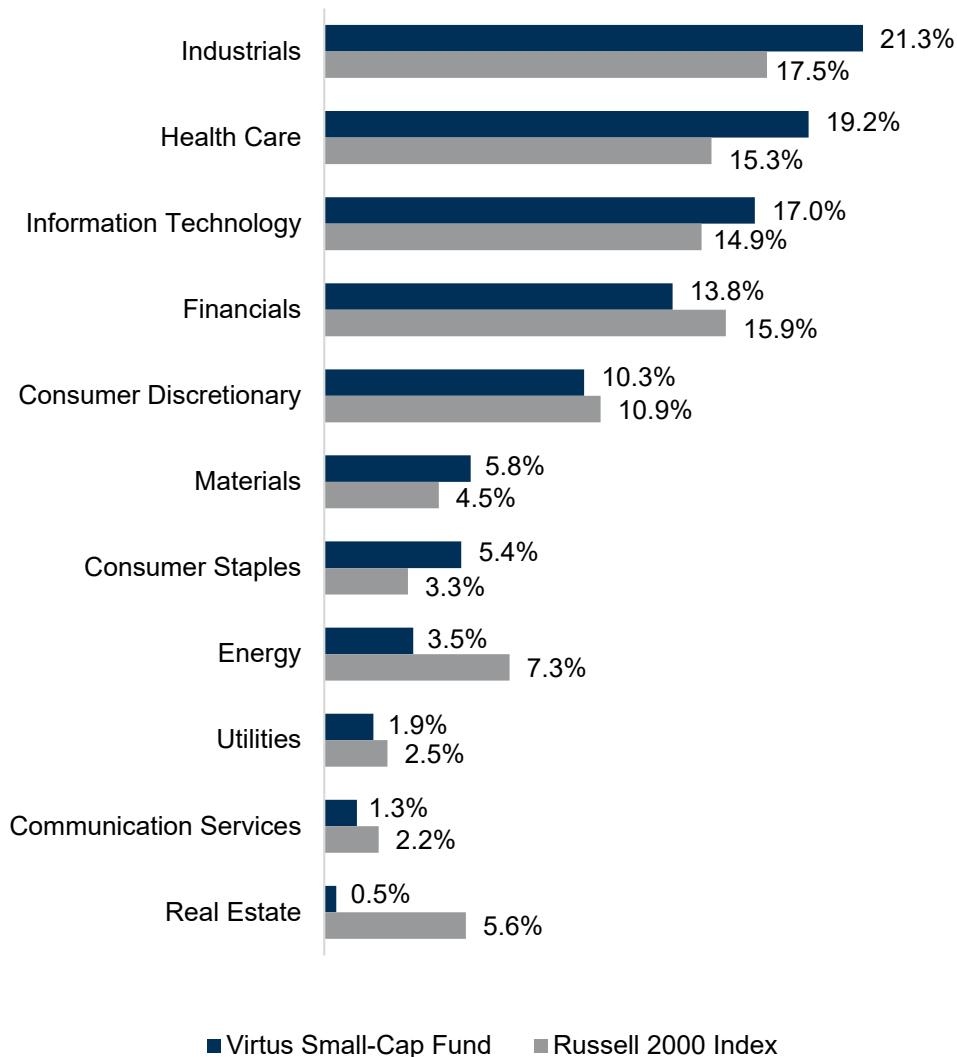
As of 3/31/24. Source: Virtus Performance and Analytics. Portfolio characteristics are subject to change. Characteristics, statistics, and index are defined on page 30.

# VIRTUS SMALL-CAP FUND

## SECTOR ALLOCATION AND TOP HOLDINGS



### SECTOR WEIGHTS



### TOP TEN HOLDINGS

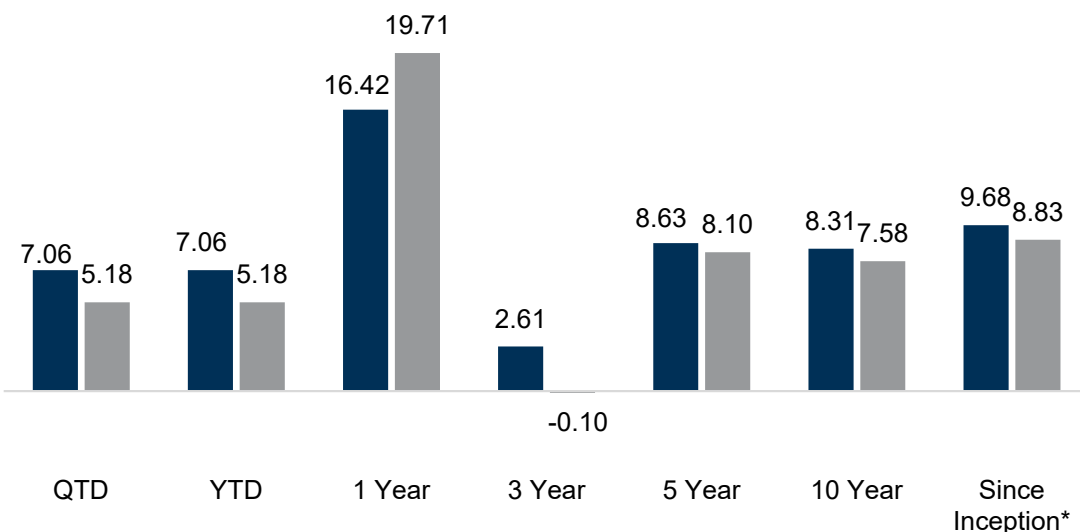
	% of Fund
Taylor Morrison Home Corp	2.00
Barrett Business Services Inc	1.86
Super Micro Computer Inc	1.79
Janus International Group Inc	1.79
Prestige Consumer Healthcare Inc	1.71
Rush Enterprises Inc	1.71
BlackLine Inc	1.62
Atkore Inc	1.58
Knife River Corp	1.55
Alkermes PLC	1.53
<b>Total</b>	<b>17.14</b>

# PERFORMANCE REVIEW AS OF MARCH 31, 2024 (%)

## VIRTUS SMALL-CAP FUND



■ AZBIX ■ Index



### MORNINGSTAR RATINGS™

Time Period	MORNINGSTAR RATINGS™	
	Institutional Share	Small Blend
	# of Stars	# of Funds
Overall	★★★★	584
3 Year	★★★	584
5 Year	★★★	552
10 Year	★★★★	384

Morningstar ratings are based on risk-adjusted returns. Strong ratings are not indicative of positive fund performance.

Please see page 31 for Morningstar disclosures.

\*Inception: Class INST: 7/1/13.

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The fund class gross expense ratio is 1.02%. The net expense ratio is 0.89%, which reflects a contractual expense reimbursement in effect through 10/31/2024. This ratio reflects the direct and indirect expenses paid by the Fund.

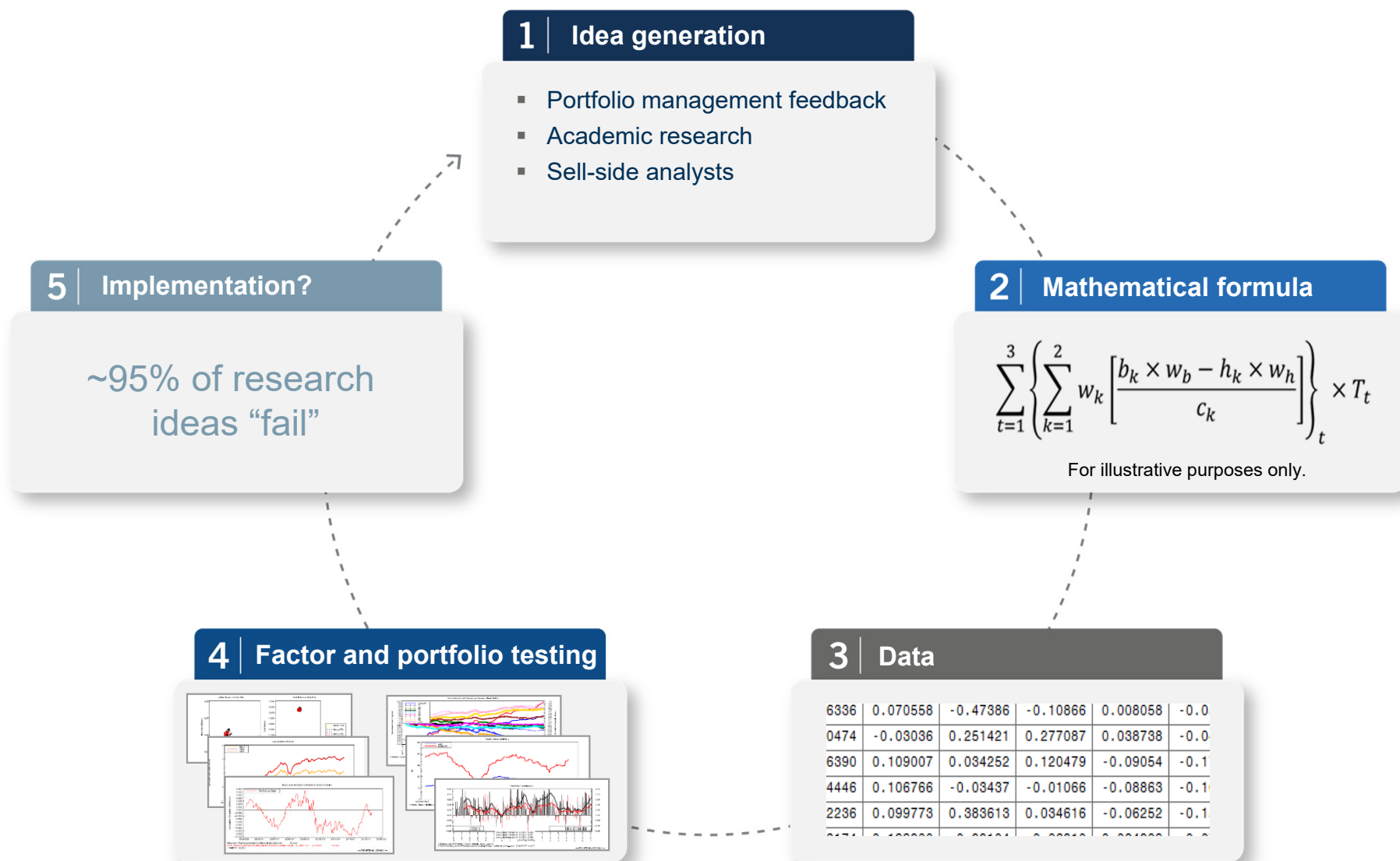
The net expense ratio minus the indirect expenses incurred by the underlying funds in which the Fund invests is 0.82%.

Average annual total return is the annual compound return for the indicated period and reflects the change in share price and the reinvestment of all dividends and capital gains. Returns for periods of one year or less are cumulative returns.

The **Russell 2000® Index** is a market capitalization-weighted index of the 2,000 smallest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. The index is calculated on a total return basis with dividends reinvested. The index is unmanaged, its returns do not reflect any fees, expenses, or sales charges, and is not available for direct investment.

# ONGOING RESEARCH HELPS DRIVE FUTURE INVESTMENT RESULTS

Majority of Team's time dedicated to ongoing factor research efforts



# RESEARCH MILESTONES



## Alpha, Risk, and Portfolio Construction Improvements

Alpha	Risk	Portfolio Construction
-------	------	------------------------

-/ /- = Portions of timeline not shown due to space limitations

Apr-10	Apr-10	Oct-10	Mar-11	Apr-11	Aug-11	Sep-11	Feb-12	Mar-12	May-12	Aug-12	Oct-12	Nov-12
Added Lifecycle Adjusted	Added Anchoring to Past		Removed Seasonality	Added Intangibles Based Efficiency	Added Equal Signal Exposure	Added Lottery-Like Preference	Removed Recommendation Level		Added Analyst Herding Behavior	Improved Lifecycle Adjusted Valuation	Improved Historical Consistency	Added Corporate Actions
		Upgraded to Axioma Risk Model (Daily Forecast) -/ /-										
			Lowered Portfolio Turnover					Added Country Rotation Methodology			Added Total Volatility Less than Benchmark	
												-/ /-

Feb-14	May-15	Aug-15	Oct-15	Aug-16	Sep-16	Jul-17	Nov-17	Dec-19	Mar-20	Dec-21	Sep-22	Apr-23
	Improved Equal Signal Exposure by Iterative Weighting	Improved Sales-Based Valuation	Improved Lottery-Like Preference	Removed Analyst Sentiment Change & Breadth	Improved Intangibles Adjusted Efficiency	Improved Earnings Based Valuation	Improved Stock Selection Cognizant of Passive Flows	Added Enhanced Operating Leverage	Added AI Broker Sentiment	Improved AI Broker Sentiment	Added AI Management Sentiment	Improved Industry Rotation
Improved Market Cap Constraints								-/ /-				

**Avg. Weighted Market Cap (bn):** The sum of each security's weight within the fund (or index) multiplied by the security's market capitalization.

**Trailing P/E Ex-Negative Earnings:** Per-share stock price divided by the latest 12-months earnings per share.

**Price-to-Cash Flow:** Per-share stock price divided by the per-share operating cash flow.

**Price-to-Book Value:** A ratio used to compare a stock's market value to its book value.

**3-Year Earnings Growth Rate:** Average of earnings per share growth for latest 3-year period.

**5-Year Earnings Growth Rate:** Average of earnings per share growth for latest 5-year period.

**Active Share:** A measure of the percentage of stock holdings in a manager's portfolio that differ from the benchmark index.

**Alpha:** A risk-adjusted measure of an investment's excess return relative to a benchmark.

**Beta:** A quantitative measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole.

**R<sup>2</sup>:** A measure that represents the percentage of a fund or security's movements that can be explained by movements in a benchmark index.

**Sharpe Ratio:** A risk-adjusted measure calculated using standard deviation and excess return to determine reward per unit of risk.

**Standard Deviation:** Measures variability of returns around the average return for an investment portfolio. Higher standard deviation suggests greater risk.

The **MSCI Emerging Markets Index (net)** is a free float-adjusted market capitalization-weighted index designed to measure equity market performance in the global emerging markets. The index is calculated on a total return basis with net dividends reinvested.

The **MSCI ACWI ex USA Small Cap Index (net)** is a free float-adjusted market capitalization-weighted index that measures small cap equity performance of developed and emerging markets, excluding the U.S. The index is calculated on a total return basis with net dividends reinvested.

The **Russell 2000® Index** is a market capitalization-weighted index of the 2,000 smallest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies.

The indexes are calculated on a total return basis with dividends reinvested. The indexes are unmanaged, their returns do not reflect any fees, expenses, or sales charges, and they are not available for direct investment.

The Morningstar Rating™ for funds, or “star rating,” is calculated for managed products (including mutual funds, variable annuity and variable life subaccounts, exchange-traded funds, closed-end funds, and separate accounts) with at least a three-year history. Exchange-traded funds and open-ended mutual funds are considered a single population for comparative purposes. It is calculated based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a managed product’s monthly excess performance, placing more emphasis on downward variations and rewarding consistent performance. The top 10% of products in each product category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars, and the bottom 10% receive 1 star. The Overall Morningstar Rating for a managed product is derived from a weighted average of the performance figures associated with its three-, five-, and 10-year (if applicable) Morningstar Rating metrics. The weights are: 100% three-year rating for 36-59 months of total returns, 60% five-year rating/40% three-year rating for 60-119 months of total returns, and 50% 10-year rating/30% five-year rating/20% three-year rating for 120 or more months of total returns. While the 10-year overall star rating formula seems to give the most weight to the 10-year period, the most recent three-year period actually has the greatest impact because it is included in all three rating periods. Ratings do not take into account the effects of sales charges and loads.

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