

# Comparing T. Rowe Price composites with their benchmarks

Q4 2023

This extensive study seeks to measure the value added by T. Rowe Price's investing approach by comparing the performance of the firm's actively managed composites with their primary benchmarks across standardized time period windows, rolled monthly, over the past 20 years.

The study compares the individual performance of 117 actively managed T. Rowe Price composites with their relevant benchmarks. The broad range of composites included in the study is intended to illustrate the performance of T. Rowe Price's investing approach at asset class and total firm levels.

Composite returns were calculated net of fees, based on the highest breakpoint fee applicable for T. Rowe Price institutional clients.

## Study universe

This broad study examines the performance of 117 actively managed T. Rowe Price composites (70 equity and 47 fixed income) over the 20 years ended December 31, 2023, or since inception for composites without a full 20-year performance history. The study included our actively managed, institutional equity, and fixed income composites. It excluded any dormant or previously terminated composites.

The study excluded money market and passive composites—those that sought to track the performance of a particular market or asset class benchmark. Also, in instances where a specific investment strategy included multiple composites, we used only the composite with the highest assets under management to avoid double counting. All told, the composites in the study represented almost 82% of composite assets managed by T. Rowe Price as of December 31, 2023.

For consistency, and to capture as much performance history as possible, composites with even a single period of comparability between the composite and its benchmark were included in the analysis.

**Past performance is not a reliable indicator of future performance.**

## T. Rowe Price's investing approach

At T. Rowe Price, we don't stop at surface-level analysis, drawing on the size and depth of our global research organization to pursue opportunities across asset classes, sectors, geographies, and styles.

We focus on pursuing greater returns over long time horizons and take a proven and repeatable approach to carefully manage risk and pursue investment opportunities.

The study examines whether T. Rowe Price's investing approach has added value by comparing the performance of the firm's actively managed composites with their primary benchmarks.

The dataset comprises 1-, 3-, 5-, and 10-year rolling returns for the T. Rowe Price composites and their benchmarks, rolled monthly. Because a number of composites had performance histories that were considerably shorter than the full 20-year period covered by the study, the results are inherently time weighted because the number of eligible rolling periods for each composite in a given time window equals a percentage of the total number of rolling periods for all the composites in its asset class—or, for equity composites, in its equity subclass.

In other words, a composite with a shorter history had a lower weight in the average than a composite with a full performance history.

Returns for the multiyear rolling periods were annualized. Where permitted by the underlying performance data, these rolling analysis periods began on January 1, 2004, and ended on December 31, 2023.

Figure 1 shows how many different rolling periods of returns were produced in each rolling time window (one, three, five, and 10 years) when a T. Rowe Price composite and its benchmark both exhibited a full performance history.

## Rolling periods in performance study\*

(Fig. 1) Example of a composite with a full 20-year performance history



Source: T. Rowe Price.

\* For illustrative purposes. The graph depicts the number of rolling periods and their start dates for an actively managed T. Rowe Price composite with a full performance history. This applied to 59 of the 117 composites included in the study. Fewer performance periods were available for other T. Rowe Price composites, depending on their inception dates.

If a T. Rowe Price composite included in the study incepted after January 1, 2004, its performance was tracked across standardized rolling periods from the first full month for which it had a track record.

The one-year time window contains the most rolling periods for analysis, potentially as many as 229 one-year periods, rolled monthly. These data points are also proportionally indicative of how many rolling periods were analyzed in the multiyear time windows for each composite. In total, 12,122 rolling periods were analyzed for equity composites and 6,833 for fixed income composites.

Figure 2 breaks out the number of T. Rowe Price composites in each asset class for the 1-, 3-, 5-, or 10-year rolling time windows. Depending on the T. Rowe Price composite's inception date, some composites may have lacked the track record to be included in the analysis for some rolling time windows.

## Performance metrics

All study results were based on total returns, which reflect the reinvestment of dividends and are net of all non-reclaimable

withholding taxes on dividends, interest income, and capital gains. Performance was calculated net of fees, based on the highest breakpoint fee for T. Rowe Price institutional clients. In other words, the returns used in the study were based on each composite's performance, net of fees.

## Excess returns

Excess return is the difference between a T. Rowe Price composite's return and the return on the relevant benchmark over a given analysis period.

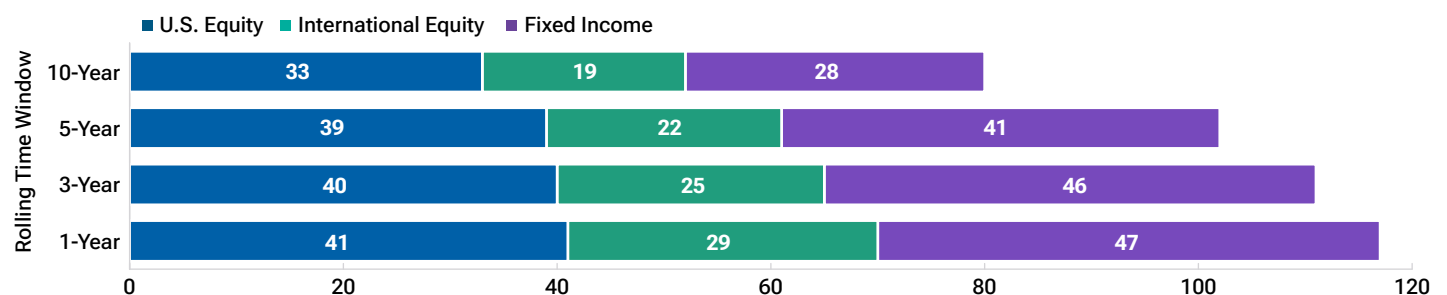
Figure 3 highlights the average excess returns for T. Rowe Price composites, aggregated by asset class (equity and fixed income) and by equity subclass (U.S. equity and international equity).

## Active success rate

The active success rate is the percentage of rolling periods that a T. Rowe Price composite generated excess returns that were greater than zero, indicating that it outperformed its benchmark.

## Number of T. Rowe Price composites analyzed in each rolling time window

(Fig. 2) By asset class



Rolling periods from January 1, 2004, through December 31, 2023.

Source: T. Rowe Price. Composite categories based on T. Rowe Price's internal classification. See Fig. 5 for details.

A composite that outperformed its benchmark in more than 50% of all rolling periods in a given time window was deemed to have achieved a positive active success rate for that window.

Figure 4 shows average returns-based active success rates for T. Rowe Price composites at the asset class and equity

sub-asset class level. The composites included in the study are shown in Figure 5 (U.S. and international equity) and Figure 6 (fixed income). Those figures also show the number of rolling one-year periods in which each T. Rowe Price composite had a performance record.

### Average annualized excess returns (net of fees) for T. Rowe Price composites

(Fig. 3) Time-weighted averages in percentage points\*

Asset and Sub-asset Class	Rolling Periods			
	1-Year	3-Year	5-Year	10-Year
Equity	1.24	1.21	1.34	1.39
U.S. Equity	1.14	1.28	1.48	1.45
International Equity	1.42	1.06	1.07	1.27
Fixed Income	0.27	0.17	0.16	0.33
All Composites	0.89	0.89	0.99	1.06

**Past performance is not a reliable indicator of future performance.**

Rolling periods from January 1, 2004, through December 31, 2023. Results are net of fees.

Source: T. Rowe Price. Composites categories based on T. Rowe Price's internal classifications. See Fig. 5 for details.

\*Averages are inherently time weighted to reflect the number of eligible rolling periods for each composite in a specific rolling time window (1, 3, 5, or 10 years) as a percentage of the aggregate number of rolling periods for all composites in its asset class and, for an equity composite, in its sub-asset class.

### Active success rates for T. Rowe Price composites

(Fig. 4) Rolling periods January 1, 2004, through December 31, 2023.

Asset and Sub-asset Class	Rolling Periods			
	1-Year	3-Year	5-Year	10-Year
Equity	59.3%	66.6%	73.7%	79.4%
U.S. Equity	59.3	67.4	75.2	79.3
International Equity	59.2	64.9	70.8	79.7
Fixed Income	56.7	65.6	70.2	80.9
All Composites	58.3	66.2	72.5	79.9

**Past performance is not a reliable indicator of future performance.**

Source: T. Rowe Price. Composites categories based on T. Rowe Price's classifications. See Fig. 5 for details.

## The equity performance study universe

(Fig. 5) T. Rowe Price composites, benchmarks, and number of rolling periods studied

Composite Name	Benchmark*	No. of Rolling Periods†
<b>U.S. Equity</b>		
Communications & Technology Equity	Lipper Telecommunication Funds Index‡	229
Financial Services Equity	Lipper Financial Services Funds Index‡	229
Global Consumer Equity	MSCI All Country World Index Consumer Discretionary & Consumer Staples ex Automobile & Components	79
Global Industrials Equity	MSCI All Country World Index Industrials Plus Automobiles and Auto Components	111
Global Natural Resources Equity	Custom Benchmark	229
Global Technology Equity	MSCI All Country World Index Information Technology	229
Health Sciences Equity	Lipper Health/Biotechnology Funds Index‡	229
Integrated Global Equity	MSCI All Country World Index	81
Integrated US Equity Lower Volatility	MSCI USA Minimum Volatility Index Gross	48
Integrated US Large-Cap Growth Equity	Russell 1000 Growth Index	61
Integrated US Large-Cap Value Equity	Russell 1000 Value Index	83
Integrated US Small-Cap Growth Equity	Custom Benchmark	229
Integrated US Small-Mid Cap Core Equity	Russell 2500 Index	83
Science & Technology Equity	Custom Benchmark	229
US All-Cap Opportunities Equity	Custom Benchmark	229
US Capital Appreciation	S&P 500 Index	229
US Diversified Small-Cap Value Equity	Russell 2000 Value Index	229
US Dividend Growth Equity	S&P 500 Index	229
US Growth Stock	S&P 500 Index	229
US Impact Equity	S&P 500 Net 30% Withholding Tax	2
US Large-Cap Core Equity	S&P 500 Index	163
US Large-Cap Core Growth Equity	S&P 500 Index	229
US Large-Cap Equity Income	Custom Benchmark	229
US Large-Cap Growth Equity	Russell 1000 Growth Index	229
US Large-Cap Value Equity	Russell 1000 Value Index	229
US Mid-Cap Growth Equity	Custom Benchmark	229
US Mid-Cap Value Equity	Russell Midcap Value Index	229
US Real Estate Equity	Custom Benchmark	229
US Select Value Equity	Russell 1000 Value Index	70
US Small-Cap Core Equity	Russell 2000 Index	229
US Small-Cap Growth I Equity	Russell 2000 Growth Index	229
US Small-Cap Growth II Equity	Russell 2000 Growth Index	229

## The equity performance study universe (cont.)

(Fig. 5) T. Rowe Price composites, benchmarks, and number of rolling periods studied

Composite Name	Benchmark*	No. of Rolling Periods†
US Small-Cap Value Equity	Russell 2000 Value Index	229
US Smaller Companies Equity	Russell 2500 Net 30% Index	229
US Structured Active Mid-Cap Growth Equity	Russell Midcap Growth Index	229
US Structured Research Equity	S&P 500 Index	229
US Tax-Efficient Large-Cap Core Equity	S&P 500 Index	229
US Tax-Efficient Large-Cap Growth Equity	Russell 1000 Growth Index	229
US Tax-Efficient Large-Cap Value Equity	Russell 1000 Value Index	229
US Tax-Efficient Smaller Company Growth Equity	Russell Midcap Growth Index	229
US Value Equity	Custom Benchmark	229
<b>International Equity</b>		
Asia ex-Japan Equity	MSCI All Country Asia ex Japan Index Net	229
Asia Opportunities Equity	MSCI All Country Asia ex Japan Index Net	104
Australia Equity	S&P/ASX 200 Total Return Index	129
China Evolution Equity	MSCI China All Shares Index Net	37
China Growth Opportunities Equity	MSCI China 10-40 Index Net	24
Emerging Europe Equity	Custom Benchmark	229
Emerging Markets Discovery Equity	MSCI Emerging Markets Index Net	88
Emerging Markets Equity	MSCI Emerging Markets Index Net	229
Europe Equity	MSCI Europe Index Net	229
Europe Select Equity Responsible Approach	MSCI Europe Index Net	40
Europe Smaller Companies Equity Responsible Approach	Custom Benchmark	170
Frontier Markets Equity	Custom Benchmark	103
Global Focused Growth Equity	MSCI All Country World Index	229
Global Growth Equity	Custom Benchmark	171
Global Impact Equity	MSCI All Country World Index Net	22
Global Metals & Mining Equity	MSCI All Country World Index Metals & Mining	148
Global Real Estate Equity	FTSE EPRA Nareit Developed Index	171
Global Select Equity	MSCI World Index Net	25
Global Structured Research Equity Responsible Approach	MSCI ACWI ex Selected Securities Index Net	15
Global Value Equity	MSCI World Index Net	126
International Core Equity	MSCI EAFE Index Net	229
International Disciplined Equity	MSCI EAFE Index Net	150
International Growth Equity	Custom Benchmark	229
International Small-Cap Equity	Custom Benchmark	229
International Structured Research Equity	MSCI All Country World Index ex USA Net	16

## The equity performance study universe (cont.)

(Fig. 5) T. Rowe Price composites, benchmarks, and number of rolling periods studied

Composite Name	Benchmark*	No. of Rolling Periods†
International Value Equity	MSCI EAFE Index Net	229
Japan Equity	TOPIX Index Net	229
Latin America Equity	MSCI Emerging Markets Latin America Index Net	229
Middle East & Africa Equity	Custom Benchmark	184

As of December 31, 2023.

\* For descriptions of the custom benchmarks in this table, see Fig. 7.

† Number of rolling periods for the trailing 1-year time window in which a T. Rowe Price composite and its benchmark had a performance record. A composite with a full track record would have had performance data in 229 1-year periods, rolled monthly.

‡ The Lipper Indexes ("Indexes") shown for the Communications & Technology Equity, Financial Services Equity, and Health Sciences Equity composites reflect the performance of U.S. mutual funds and are shown for informational purposes only. The composite is not a fund and, therefore, is not included in the index performance calculations. There are differences between mutual funds and composites/separate accounts that may cause performance results to differ.

Source: T. Rowe Price. Composite categories based on T. Rowe Price's classifications.

## The fixed income performance study universe

(Fig. 6) T. Rowe Price composites, benchmarks, and number of rolling periods studied

Composite Name	Benchmark*	No. of Rolling Periods†
Asia Credit Bond	J.P. Morgan Asia Credit Index Diversified	57
Credit Opportunities	Custom Benchmark	104
Dynamic Credit (USD Hedged)	Custom Benchmark	48
Dynamic Emerging Markets Bond	Custom Benchmark	30
Dynamic Global Bond (USD Hedged)	Custom Benchmark	96
Emerging Markets Bond	Custom Benchmark	229
Emerging Markets Corporate Bond Full-Authority	J.P. Morgan Corporate Emerging Market Bond Index Broad Diversified	140
Emerging Markets Local Currency Bond	Custom Benchmark	184
Euro Corporate Bond	Bloomberg Euro-Aggregate: Corporate Bond Index	229
Floating Rate Bank Loan	Morningstar LSTA Performing Loan Index	179
Global Aggregate Strategy (USD) Bond	Bloomberg Global Aggregate Bond Index	200
Global Government and Government-Related Bond (USD Hedged)	Bloomberg Global Aggregate Treasury and Government-Related (USD Hedged) Index	56
Global High Income Bond (USD Hedged)	ICE BofA Global High Yield Index (Hedged to USD)	96
Global Impact Credit (USD Hedged)	Bloomberg Global Aggregate Credit (USD Hedged Index)	13
Global Investment Grade Corporate Bond	Bloomberg Global Aggregate Corporate Bond Index (USD Hedged)	91
Global Multi-Sector Bond (USD Hedged)	Custom Benchmark	169
High Yield Master Bond	Linked Benchmark for High Yield Composite (Primary)	229
International Aggregate Bond (USD Hedged)	Bloomberg Global Aggregate ex USD Bond Index (USD Hedged)	61

## The fixed income performance study universe (cont.)

(Fig. 6) T. Rowe Price composites, benchmarks, and number of rolling periods studied

Composite Name	Benchmark*	No. of Rolling Periods†
International Bond	Custom Benchmark	229
QM US Aggregate Bond Index	Bloomberg U.S. Aggregate Bond Index	229
QM US Enhanced Aggregate Bond Index	Bloomberg U.S. Aggregate Bond Index	82
QM US Intermediate Aggregate Bond Index	Bloomberg U.S. Aggregate Intermediate Bond Index	175
Stable Value Master (USD)	FTSE 3-Month Treasury Bill Index	145
US Core Bond	Bloomberg U.S. Aggregate Bond Index	229
US Core Plus Bond	Bloomberg U.S. Aggregate Bond Index	229
US GNMA Bond	Bloomberg U.S. GNMA Index	229
US High Yield Bond	ICE BofA US High Yield Constrained Index	117
US Inflation Protected Bond	Bloomberg U.S. TIPS Index	229
US Investment Grade Core Bond	Bloomberg U.S. Aggregate Bond Index	229
US Investment Grade Corporate Bond	Custom Benchmark	229
US Investment Grade Intermediate Credit	Bloomberg U.S. Intermediate Credit Bond Index	47
US Long Duration	Custom Benchmark	229
US Long Duration Credit Bond	Bloomberg U.S. Long Credit Bond Index	115
US Long Duration Government/Credit Bond	Bloomberg U.S. Long Government/Credit Bond Index	100
US Municipal High Yield Bond	Bloomberg 65% High-Grade/35% High-Yield Index	229
US Municipal Intermediate High Yield Bond	Bloomberg 65% High-Grade/35% High Yield Intermediate Competitive (1-17 Year) Index	100
US Municipal Intermediate-Term Bond (Bloomberg 1-15 Years)	Custom Benchmark	229
US Municipal Long-Term Bond	Bloomberg Municipal Bond Index	229
US Municipal Short/Intermediate-Term Bond	Bloomberg 1-5 Year Blend (1-6 Year Maturity) Index	229
US Securitized Credit Bond	Bloomberg 60% U.S. Non-Agency CMBS: Agg Eligible 40% U.S. ABS	57
US Securitized Credit CLO Debt	JP Morgan CLO Post-Crisis Index: 90% AAA-Rated/10% AA-Rated	43
US Short Duration Income	Bloomberg 1-3 Year U.S. Corporate Bond Index	25
US Short-Term Bond	Bloomberg 1-3 Year U.S. Government/Credit Bond Index	229
US Short-Term Inflation Focused Bond	Bloomberg U.S. 1-5 Year Treasury TIPS Index	141
US Taxable Municipal Bond	Bloomberg Municipal Taxable Bond Index	74
US Total Return Bond	Bloomberg U.S. Aggregate Bond Index	74
US Ultra Short-Term Bond	Bloomberg Short-Term Government/Corporate Index	121

As of December 31, 2023.

\* For descriptions of the custom benchmarks in this table, see Fig. 7.

† Number of rolling periods for the trailing 1-year time window in which a T. Rowe Price composite and its benchmark had a performance record. A composite with a full track record would have had performance data for 229 1-year periods, rolled monthly.

Source: T. Rowe Price. Composite categories based on T. Rowe Price's classifications.

## Custom benchmarks for T. Rowe Price composites

(Fig. 7) Descriptions of linked or blended benchmarks

Composites	Benchmark Description
<b>U.S. Equity</b>	
Global Natural Resources Equity (Net)	Lipper Natural Resources Index to Lipper Global Natural Resources Index on 6/1/08; to MSCI World Select Natural Resources Index on 3/31/17.
Integrated US Small-Cap Growth Equity (Net)	Russell 2000 Growth Index to MSCI US Small Cap Growth Index on 9/30/06.
Science & Technology Equity	Lipper Science & Technology Funds Index to S&P North American Technology Sector Index on 10/1/23.
US All-Cap Opportunities Equity (Net)	Russell 1000 Growth Index to Russell 3000 Index on 2/28/21.
US Large-Cap Equity Income (Net)	S&P 500 Index to Russell 1000 Value Index on 2/28/18.
US Mid-Cap Growth Equity (Net)	S&P MidCap 400 Index to Russell Midcap Growth Index on 9/30/13.
US Real Estate Equity (Net)	Dow Jones Wilshire Real Estate Security Index (Full Cap) to Wilshire Real Estate Securities Index on 6/30/07; to FTSE Nareit All Equity REITs Index on 4/30/22.
US Value Equity (Net)	S&P 500 Index to Russell 1000 Value Index on 2/28/18.
<b>International Equity</b>	
Emerging Europe Equity (Net)	MSCI Emerging Markets Europe & Middle East Index (Net) to MSCI Emerging Markets Europe Index (Net) on 5/31/10.
Europe Smaller Companies Equity Responsible Approach (Net)	S&P Pan Europe SmallCap Index (Net) to MSCI Europe Small Cap Index (Net) on 12/31/15.
Frontier Markets Equity (Net)	MSCI Frontier Market Index (Net) to MSCI Frontier Market 10-40 Index (Net) on 12/31/19.
Global Growth Equity (Net)	MSCI All Country World Index Large Cap to MSCI All Country World Index on 6/27/2013.
International Growth Equity (Net)	MSCI EAFE Index to MSCI All Country World Ex-US Index 9/30/07.
International Small-Cap Equity (Net)	S&P Developed Ex-US Small-Cap Index (Net) to S&P Global ex-US Small Cap Index (Net) on 6/30/09.
Middle East & Africa Equity (Net)	S&P/IFCG ME & ZA ex IL SA Index (Net) to MSCI Arabian Markets & Africa Index (Net) on 6/30/09; to S&P Emerging/Frontier ME & Africa BMI ex IL (Net) on 9/29/10; to MSCI Arabian Markets & Africa 10/40 Investable Market Index (Net) on 12/31/17.
<b>Fixed Income</b>	
Credit Opportunities (Net)	Bloomberg U.S. High-Yield Ba/B 2% Issuer Capped Bond Index to Bloomberg U.S. High-Yield 2% Issuer Capped Bond Index on 8/31/15.
Dynamic Credit (USD Hedged) (Net)	3-Month LIBOR in USD to ICE BofA US 3-Month Treasury Bill Index on 4/30/21.
Dynamic Emerging Markets Bond (Net)	3-Month LIBOR in USD to ICE BofA US 3-Month Treasury Bill Index on 11/1/21.
Dynamic Global Bond (USD Hedged) (Net)	3-Month LIBOR in USD to ICE BofA US 3-Month Treasury Bill Index on 4/30/21.
Emerging Markets Bond (Net)	J.P. Morgan Emerging Markets Bond Index Plus to J.P. Morgan Emerging Markets Bond Global Index on 12/31/02; to J.P. Morgan EMBI Global Diversified Index on 12/31/20.
Emerging Markets Local Currency Bond (Net)	J.P. Morgan GBI-EM Broad Diversified Index to J.P. Morgan GBI-EM Global Diversified Index on 12/31/10.
Global Multi-Sector Bond (USD Hedged) (Net)	Bloomberg Global Aggregate ex Treasury Bond USD Hedged Index to Bloomberg Multiverse USD Hedged Index on 1/31/17; to Bloomberg Global Aggregate Bond USD Hedged Index on 9/30/18.



## Custom benchmarks for T. Rowe Price composites (cont.)

(Fig. 7) Descriptions of linked or blended benchmarks

Composites	Benchmark Description
High Yield Master Bond (Net)	FTSE All BB&B Rated Index to J.P. Morgan Global High Yield Index on 7/1/10.
International Bond (Net)	J.P. Morgan Non-US Government Bond Index Broad to Bloomberg Global Aggregate ex-U.S. Dollar Bond Index on 6/30/05.
US Investment Grade Corporate Bond (Net)	FTSE US Credit Index to FTSE US Credit/Asset-Backed Bond Index on 6/30/06; to Bloomberg US Corporate Investment Grade Index on 8/31/09.
US Long Duration (Net)	Blended benchmark adjusted monthly to reflect changes in sector composition of the composite. As of 12/31/23, the breakdown was 1.5% Bloomberg US Long Credit Bond Index, 7.6% Bloomberg US Long Government/Credit Bond Index, 88.9% Bloomberg US Long Treasury Bond Index, 0.1% Bloomberg Municipal Taxable Bond Index, and 1.9% U.S. Intermediate Treasury Bond Index.
US Municipal Intermediate-Term Bond (Bloomberg 1-15 Years) (Net)	Bloomberg 3-15 Year Blend Index to Bloomberg Municipal 1-15 Year Blend (1-17) Bond Index on 10/31/03.

Source: T. Rowe Price.

## General Risks

**Capital risk**—The value of your investment will vary and is not guaranteed. It will be affected by changes in the exchange rate between the base currency of the portfolio and the currency in which you subscribed, if different.

**Counterparty risk**—May materialise if an entity with which the composite does business becomes unwilling or unable to meet its obligations to the composite.

**Environmental, social, and governance and sustainability risk**—May result in a material negative impact on the value of an investment and performance of the portfolio.

**Equity risk**—Equities can lose value rapidly for a variety of reasons and can remain at low prices indefinitely.

**Geographic concentration risk**—May result in performance being more strongly affected by any social, political, economic, environmental, or market conditions affecting those countries or regions in which the composite's assets are concentrated.

**Hedging risk**—Hedging measures involve costs and may work imperfectly, may not be feasible at times, or may fail completely.

**Investment portfolio risk**—Investing in portfolios involves certain risks an investor would not face if investing in markets directly.

**Management risk**—Management risk may result in potential conflicts of interest relating to the obligations of the investment manager.

**Operational risk**—May cause losses as a result of incidents caused by people, systems, and/or processes.

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