



Comparing T. Rowe Price Composites With Their Benchmarks

September 2023

This extensive study seeks to measure the value added by T. Rowe Price's strategic 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 118 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 strategic 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 118 actively managed T. Rowe Price composites (71 equity and 47 fixed income) over the 20 years ended December 31, 2022, 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, 2022.

For consistency, and to capture as much performance history as possible, composites with even a single period of

T. Rowe Price Strategic Investing

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.

comparability between the composite and its benchmark were included in the analysis.

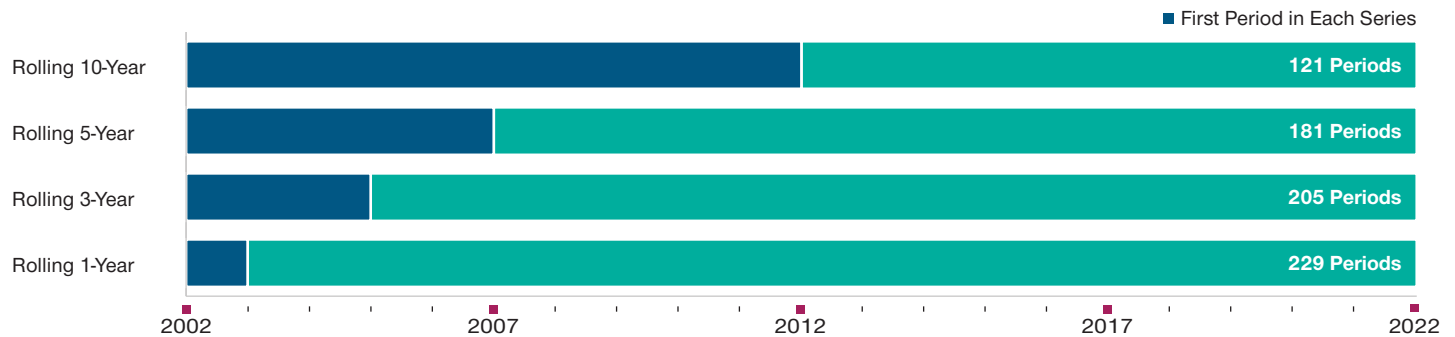
The study examines whether T. Rowe Price's strategic investing approach has added value by comparing the performance of the firm's actively managed composites to their primary benchmarks.

The data set 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.

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 applies to 58 of the 118 composites included in the study. Fewer performance periods were available for other T. Rowe Price composites, depending on their inception dates.

Returns for the multiyear rolling periods were annualized. Where permitted by the underlying performance data, these rolling analysis periods began on January 1, 2003, and ended on December 31, 2022.

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.

If a T. Rowe Price composite included in the study incepted after January 1, 2003, 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, 11,853

rolling periods were analyzed for equity composites and 6,449 for fixed income composites.

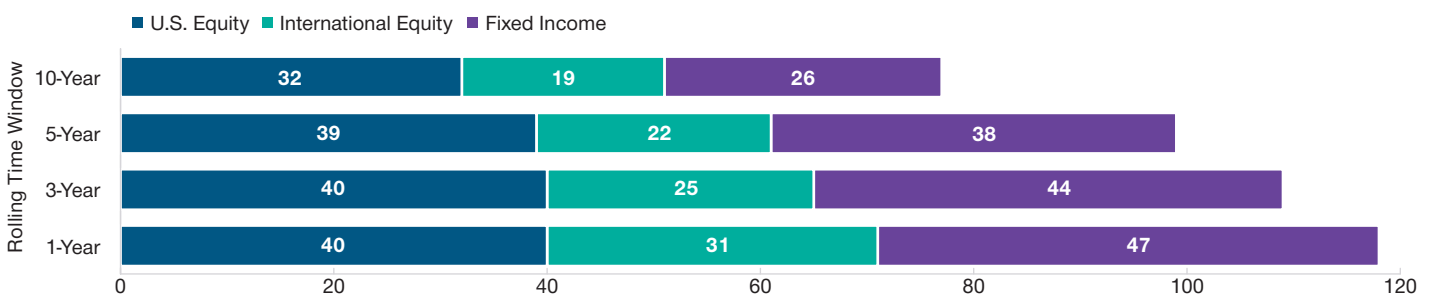
Figure 2 breaks out the number of T. Rowe Price composites in each asset class for the 1-, 3-, 5-, or 10-year rolling time windows. Depending on the T. Rowe Price composite's inception date, some composites may have lacked the track record to be included in the analysis for some rolling time windows.

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.

Number of T. Rowe Price Composites Analyzed in Each Rolling Time Window

(Fig. 2) By asset class



Rolling periods from January 1, 2003, through December 31, 2022.

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

Average Annualized Excess Returns (Net of Fees) for T. Rowe Price Composites

(Fig. 3) Time-weighted averages*

Asset and Sub-asset Class	Rolling Periods			
	1-Year	3-Year	5-Year	10-Year
Equity	1.26%	1.37%	1.41%	1.47%
U.S. Equity	1.16	1.40	1.52	1.51
International Equity	1.46	1.31	1.19	1.37
Fixed Income	0.34	0.33	0.33	0.34
All Composites	0.94	1.01	1.05	1.12

Past performance is not a reliable indicator of future performance.

Rolling periods from January 1, 2003, through December 31, 2022. 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.

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. 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.

Active Success Rates for T. Rowe Price Composites

(Fig. 4) Rolling periods January 1, 2003, through December 31, 2022.

Asset and Sub-asset Class	Average Active Success Rates			
	1-Year	3-Year	5-Year	10-Year
Equity	59.7%	68.5%	75.2%	80.9%
U.S. Equity	59.5	68.3	76.2	80.7
International Equity	60.0	68.8	73.0	81.2
Fixed Income	58.5	67.1	70.9	80.6
All Composites	59.3	68.0	73.7	80.8

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 [†]
U.S. Equity		
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	67
Global Industrials Equity	MSCI All Country World Index Industrials Plus Automobiles and Auto Components	99
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	69
Integrated US Equity Lower Volatility	MSCI USA Minimum Volatility Index Gross	36
Integrated US Large-Cap Growth Equity	Russell 1000 Growth Index	49
Integrated US Large-Cap Value Equity	Russell 1000 Value Index	71
Integrated US Small-Cap Growth Equity	Custom Benchmark	229
Integrated US Small-Mid Cap Core Equity	Russell 2500 Index	71
Science and Technology Equity	Lipper Science & Technology Funds Index [‡]	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 Large-Cap Core Equity	S&P 500 Index	151
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	58
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
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

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 Tax-Efficient Smaller Company Growth Equity	Russell Midcap Growth Index	229
US Value Equity	Custom Benchmark	229
International Equity		
Asia ex-Japan Equity	MSCI All Country Asia ex Japan Index Net	229
Asia Opportunities Equity	MSCI All Country Asia ex Japan Index Net	92
Australia Equity	S&P/ASX 200 Total Return Index	117
China Evolution Equity	MSCI China All Shares Index Net	25
China Growth Opportunities Equity	MSCI China 10–40 Index Net	12
Emerging Europe Equity	Custom Benchmark	229
Emerging Markets Discovery Equity	MSCI Emerging Markets Index Net	76
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	28
Europe Smaller Companies Equity Responsible Approach	Custom Benchmark	158
Frontier Markets Equity	Custom Benchmark	91
Global Equity Dividend Responsible Approach	Custom Benchmark	45
Global Focused Growth Equity	MSCI All Country World Index	229
Global Growth Equity	Custom Benchmark	159
Global Impact Equity	MSCI All Country World Index Net	10
Global Metals & Mining Equity	MSCI All Country World Index Metals & Mining	136
Global Real Estate Equity	FTSE EPRA Nareit Developed Index	159
Global Select Equity	MSCI World Index Net	13
Global Structured Research Equity Responsible Approach	MSCI ACWI ex Selected Securities Index Net	3
Global Value Equity	MSCI World Index Net	114
International Core Equity	MSCI EAFE Index Net	229
International Disciplined Equity	MSCI EAFE Index Net	138
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	4
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	172
Responsible UK Equity	FTSE All Share Index	12

As of December 31, 2022.

* 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, Health Sciences Equity, and Science & Technology 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	JP Morgan Asia Credit Index Diversified	45
Credit Opportunities	Custom Benchmark	92
Dynamic Credit	Custom Benchmark	36
Dynamic Emerging Markets Bond	Custom Benchmark	18
Dynamic Global Bond (USD Hedged)	Custom Benchmark	84
Emerging Markets Bond	Custom Benchmark	229
Emerging Markets Corporate Bond Full-Authority	JP Morgan Corporate Emerging Market Bond Index Broad Diversified	128
Emerging Markets Local Currency Bond	Custom Benchmark	172
Euro Corporate Bond	Bloomberg Euro-Aggregate: Corporate Bond Index	229
Floating Rate Bank Loan	Morningstar LSTA Performing Loan Index	167
Global Aggregate Strategy (USD) Bond	Bloomberg Global Aggregate Bond Index	188
Global Government and Government-Related Bond (USD Hedged)	Bloomberg Global Aggregate Treasury and Government-Related (USD Hedged) Index	44
Global High Income Bond Hedged to USD	ICE BofA Global High Yield Index (Hedged to USD)	84
Global Impact Credit	Bloomberg Global Aggregate Credit (USD Hedged Index)	1
Global Investment Grade Corporate Bond	Bloomberg Global Aggregate Corporate Bond Index (USD Hedged)	79
Global Multi-Sector Bond (USD Hedged)	Custom Benchmark	157
High Yield Master Bond	Custom Benchmark	229
International Aggregate Bond (USD Hedged)	Bloomberg Global Aggregate ex USD Bond Index (USD Hedged)	49
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	70
QM US Intermediate Aggregate Bond Index	Bloomberg U.S. Aggregate Intermediate Bond Index	163
Stable Value Master (USD)	FTSE 3-Month Treasury Bill Index	133
US Core Bond	Bloomberg U.S. Aggregate Bond Index	229
US Core Plus Bond	Bloomberg U.S. Aggregate Bond Index	205
US GNMA Bond	Bloomberg U.S. GNMA Index	229
US High Yield Bond	ICE BofA US High Yield Constrained Index	105
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	35
US Long Duration	Custom Benchmark	229
US Long Duration Credit Bond	Bloomberg U.S. Long Credit Bond Index	103
US Long Duration Government/Credit Bond	Bloomberg U.S. Long Government/Credit Bond Index	88
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	88
US Municipal Intermediate-Term Bond (Bloomberg 1-15 Years)	Custom Benchmark	229
US Municipal Long-Term Bond	Bloomberg Municipal Bond Index	229

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 [†]
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	45
US Securitized Credit CLO Debt	JP Morgan CLO Post-Crisis Index: 90% AAA-Rated/10% AA-Rated	31
US Short Duration Income	Bloomberg 1–3 Year U.S. Corporate Bond Index	13
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	129
US Taxable Municipal Bond	Bloomberg Municipal Taxable Bond Index	62
US Total Return Bond	Bloomberg U.S. Aggregate Bond Index	62
US Ultra Short-Term Bond	Bloomberg Short-Term Government/Corporate Index	109

As of December 31, 2022.

* 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 Descriptions
U.S. Equity	
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.
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.
International Equity	
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 Equity Dividend Responsible Approach (Net)	MSCI ACWI High Dividend Yield Index (Net) to MSCI All Country World Index (Net) on 9/30/22.
Global Growth Equity (Net)	MSCI All Country World Index Large Cap to MSCI All Country World Index on 6/27/2013.

Custom Benchmarks for T. Rowe Price Composites (Cont.)

(Fig. 7) Descriptions of Linked or Blended Benchmarks

Composites	Benchmark Descriptions
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.
Fixed Income	
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 (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 JP 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.
High Yield Master Bond (Net)	J.P. Morgan Global High Yield Index to FTSE All BB&B Rated Index on 7/1/10.
International Bond (Net)	J.P. Morgan Non-US Government Bond Index Broad to Barclays 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 12/31/22, the breakdown was 0.6% Bloomberg US Long Credit Bond Index, 8.3% Bloomberg US Long Government/Credit Bond Index, 88.8% Bloomberg US Long Treasury Bond Index, 0.3% Bloomberg Municipal Taxable Bond Index, and 2.1% 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.

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

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.

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.

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