



# Our Fixed Income Funds Added Value Versus Their Passive Peers

Our strategic investing approach benefited clients over the long term.

Our research shows that, over the past 20 years, T. Rowe Price's fixed income funds outperformed their comparable passive peer group over various time windows while exposing investors to less volatility. This relative strength was especially pronounced over longer rolling time frames.

Through the market's ups and downs, we have remained committed to our strategic investing approach, which focuses on our rigorous research and prudent risk management.

## 59% Active Success Rate

Our fixed income funds outperformed in 59% of the rolling 10-year periods analyzed.

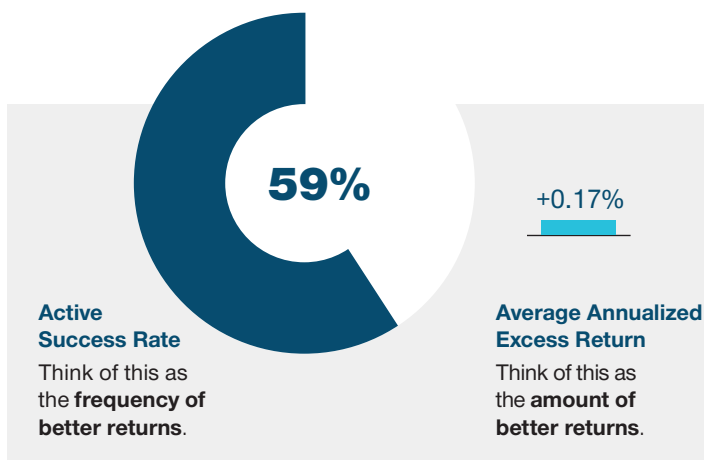
Our funds posted **lower volatility in 75% of the rolling 10-year periods analyzed.**

### Our Fixed Income Funds Outperformed Comparable Passive Funds and Exhibited Less Volatility<sup>1</sup>

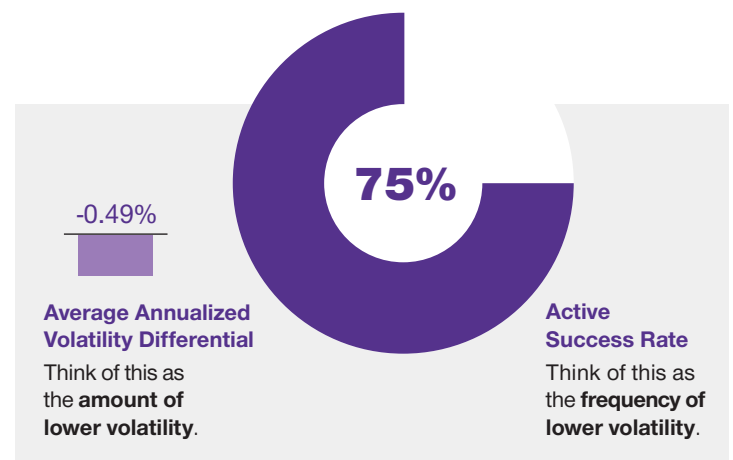
(Fig. 1) 10-year periods, rolled monthly, from October 1, 2002, to September 30, 2022

RESULTS SHOWN AFTER  
FEES AND EXPENSES

#### More Frequent | Higher Return



#### Lower Volatility | More Often



View standardized returns and other information about the funds in this analysis starting on page 4. For more information on the methodology of this analysis, please visit [troweprice.com/performancestudy](https://troweprice.com/performancestudy). Past performance is no guarantee of future results.

Sources: T. Rowe Price and Morningstar (see Additional Disclosure). Data analysis by T. Rowe Price.

<sup>1</sup> Analysis by T. Rowe Price. Comparable passive funds are (1) mutual funds and exchange-traded funds (ETFs) classified as "index fund" in the Morningstar Direct database and (2) in the same Morningstar category as the T. Rowe Price active funds being analyzed. The performance of the T. Rowe Price active funds was compared against the comparable passive funds using 10-year rolling monthly periods from October 1, 2002, to September 30, 2022. The analysis was conducted at the Morningstar category level and included all open-end funds and ETFs within U.S. Morningstar categories where passive funds are present. Oldest share class returns are used for analysis.

## RESULTS SHOWN AFTER FEES AND EXPENSES

To provide a clear picture of our performance, we take fund fees and expenses into account when we report returns and volatility.



### Active Success Rates

The active success rate records the percentage of times an actively managed T. Rowe Price fund's returns beat or exhibited less volatility than its passive peer group,<sup>1</sup> net of fees and expenses, over a specified period.



### Excess Returns

For each rolling period, the passive returns average was subtracted from each T. Rowe Price fund's return, yielding an excess return.



### Historical Volatility

Historical volatility (based on standard deviation) measures the dispersion of a fund's returns. Funds that exhibited lower volatility experienced less fluctuation in their returns.

<sup>1</sup> The study spanned the 20 years up to the end of September 2022 for older funds, or since inception for newer ones, and measured performance and historical volatility net of fees and expenses. We used the oldest share class for each fund. Each T. Rowe Price fund's performance was measured against the equally weighted average of the returns (passive returns average) and historical volatility (passive volatility average) posted by the oldest share class of the index funds in its Morningstar category. These comparisons were made over 1-, 3-, 5-, and 10-year horizons, rolled monthly.

<sup>2</sup> As of September 30, 2022.

<sup>3</sup> As of December 31, 2021. Investment staff includes 137 portfolio managers, 24 associate portfolio managers, 204 investment analysts, 71 associate analysts, 29 specialty analysts, 34 traders, 12 strategists, and 22 senior managers.

## Stronger Historical Returns With Less Volatility

Fixed income funds play several important roles in client portfolios, including diversification from equities and income generation. Accordingly, the opportunity for active managers to add relative value often hinges on their success in mitigating the risk of downside volatility. Figure 1 shows that, compared with their comparable passive peer group, the T. Rowe Price fixed income funds in our study<sup>1</sup> delivered stronger average returns and less volatility (see Historical Volatility sidebar) over rolling 10-year periods. A lack of sufficient performance history for passive funds in some Morningstar categories meant that fewer T. Rowe Price funds could be evaluated over the 10-year rolling time window as compared with the shorter time frames in our analysis. However, our fixed income funds' relative strength and less volatile return stream also extended to the rolling one-, three-, and five-year windows.<sup>1</sup>

Over 10-year rolling periods, the frequency with which our fixed income funds outperformed or exhibited less volatility than their passive peers stood out. (See Figure 1 and Active Success Rates sidebar.) T. Rowe Price's fixed income funds also posted better average annualized returns or average historical volatility

than their comparable passive peer group in a majority of one-, three-, and five-year time windows.

## 0.17%

is the average annualized excess return (net of fees and expenses) posted by our fixed income funds across rolling 10-year periods.

### Our Strategic Investing Approach

We attribute this success to our strategic investing approach, which involves careful security selection and rigorous credit research conducted by our long-tenured investment team.

Our funds averaged **0.49% less volatility**, annualized, than comparable passive peers.

Across asset classes, our skilled portfolio managers have deep experience—an average of 22 years in the industry and 17 years with T. Rowe Price.<sup>2</sup> This depth and breadth of expertise helps

us know what questions to ask and where to find the answers we need. More than 525 of our professionals<sup>3</sup> meet regularly with management teams, issuers, experts, and policymakers to conduct due diligence on existing holdings and potential investments. Their unique insights are shared and debated across our extensive global team of investment professionals. We believe that this culture of collaboration across regions and asset classes—coupled with our expanded macroeconomic and quantitative capabilities—gives our investors a multifaceted view of potential risks and opportunities.

Our extensive study outlines how our strategic investing approach has added value for investors when compared with our passive peer group, especially over longer time horizons.

**Call 1-800-225-5132 to request a prospectus or summary prospectus; each includes investment objectives, risks, fees, expenses, and other information that you should read and consider carefully before investing.**

**Past performance is no guarantee of future results.** All investments are subject to risk, including the possible loss of principal. Results from other time periods may differ. Active investing may have higher costs than passive investing and may underperform the broad market or passive peers with similar objectives. Passive investing may lag the performance of actively managed peers as holdings are not reallocated based on changes in market conditions or outlooks on specific securities.



## Tracking Error

In simple terms, tracking error refers to the difference in a fund's performance relative to the returns posted by its benchmark.

Actively managed funds deliberately seek a positive tracking error in an effort to generate returns in excess of the benchmark.

Passive mutual funds are designed to track the performance of a benchmark, but for a variety of reasons, there can be discrepancies.

...compared with passive equity funds, tracking error can be more pronounced for passive fixed income funds.

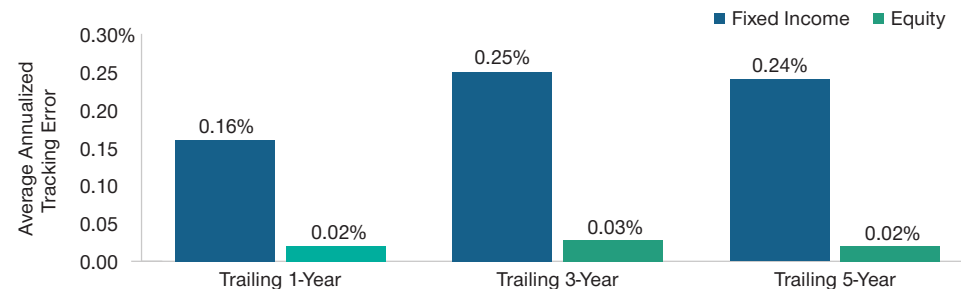
## The Potential for Active Risk in Passive Fixed Income Funds

Passive funds have become increasingly popular over the past two decades. A big part of their appeal typically lies in the prospect of generating a market-like return, often at a lower cost than actively managed strategies. Given the liquidity in the equity market, passive funds in this asset class usually exhibit little tracking error (volatility in a fund's returns relative to those generated by its benchmark).

However, compared with passive equity funds, tracking error can be more pronounced for passive fixed income funds. (See Figure 2.) What is the source of this tracking error? The nuances of the bond and credit markets can mean that passive fixed income funds may struggle to mirror the composition of the conventional bond index they track. These differences can lead to variations in performance, possibly contributing to a passive fixed income fund's overall volatility.

## Passive Fixed Income Funds Exhibited Higher Tracking Error Than Equity Peers<sup>1</sup>

(Fig. 2) Average annualized tracking error for five largest passive funds in fixed income and equity categories with the most passive assets<sup>2</sup>



As of September 30, 2022.

We define a passive fund as one identified as an "index fund" in the Morningstar Direct database.

Sources: T. Rowe Price and Morningstar. All data analysis by T. Rowe Price.

<sup>1</sup> Tracking error calculations are relative to the prospectus benchmark for each passive fund.

<sup>2</sup> As of September 30, 2022, Morningstar's large blend category had the highest level of passive assets, amounting to about 44% of all passive equity assets. The 5 biggest large blend index funds by market capitalization made up 70% of passive assets in the category. Morningstar's intermediate core bond category had the highest level of passive assets, amounting to about 38% of all passive fixed income assets. The 5 largest intermediate core bond index funds made up 90% of passive assets in the category.

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Specific bond issues may be unavailable in the desired size, and each substitution involves some difference in quality, duration,<sup>4</sup> and other risk factors. Conventional bond benchmarks also tend to experience significantly higher turnover than equity indexes, driven by issuance levels, maturities, early redemptions, credit rating changes, and other factors.

The potential differences in composition between a passive fixed income fund and its target index, along with transaction costs and cash flow disparities, might lead to volatility in the fund's returns relative to those generated by its benchmark.

We believe that potential tracking error is an important factor for investors considering a passive fixed income fund, especially investors expecting a market-like return.

<sup>4</sup> Duration measures a bond's sensitivity to changes in interest rates.

## Standardized Performance: T. Rowe Price Fixed Income Mutual Funds

Annualized total returns for periods ended September 30, 2022

Fund	Inception Date	Gross Expense Ratio <sup>1</sup>	1 Year	3 Years	5 Years	10 Years	20 Years or Since Inception
California Tax-Free Bond Fund	9/15/1986	0.53%	-12.07%	-2.08%	0.37%	1.95%	3.31%
Corporate Income Fund	10/31/1995	0.56	-19.97	-4.45	-0.72	1.40	4.20
Credit Opportunities Fund	4/29/2014	1.10	-11.80	-0.09	1.96	—	2.05
Dynamic Credit Fund	1/10/2019	1.25	-4.45	2.61	—	—	3.34
Dynamic Global Bond Fund	1/22/2015	0.70	5.03	5.86	3.08	—	2.96
Emerging Markets Bond Fund	12/30/1994	0.88	-26.81	-7.82	-4.75	-0.17	6.06
Emerging Markets Corporate Bond Fund	5/24/2012	0.93	-18.98	-3.93	-0.51	2.01	2.75
Emerging Markets Local Currency Bond Fund	5/26/2011	0.84	-20.49	-6.85	-4.19	-2.59	-2.01
Floating Rate Fund	7/29/2011	0.75	-2.68	1.43	2.37	3.01	3.16
Global High Income Bond Fund	1/22/2015	0.87	-17.03	-2.14	0.69	—	3.22
Global Multi-Sector Bond Fund	12/15/2008	0.65	-15.88	-2.45	0.46	2.13	4.63
GNMA Fund	11/26/1985	0.56	-13.41	-3.71	-1.26	0.04	2.41
High Yield Fund	12/31/1984	0.73	-14.44	-1.42	0.91	3.55	6.44
Inflation Protected Bond Fund	10/31/2002	0.54	-12.86	0.23	1.68	0.65	3.47
Institutional Emerging Markets Bond Fund	11/30/2006	0.70	-26.49	-7.61	-3.95	0.62	3.45
Institutional Floating Rate Fund	1/31/2008	0.57	-2.72	1.71	2.68	3.39	4.40
Institutional High Yield Fund	5/31/2002	0.50	-14.26	-1.30	1.05	3.69	6.52
Institutional Long Duration Credit Fund	6/3/2013	0.45	-28.10	-5.91	-0.30	—	2.41
Intermediate Tax-Free High Yield Fund	7/24/2014	0.89	-10.47	-1.37	0.82	—	1.99
International Bond Fund	9/10/1986	0.71	-26.55	-7.92	-4.11	-2.33	2.14
International Bond Fund (USD Hedged)	9/12/2017	0.61	-12.31	-3.14	0.50	—	0.44
Limited Duration Inflation Focused Bond Fund	9/29/2006	0.49	-5.37	1.98	2.07	0.99	1.98
New Income Fund	8/31/1973	0.44	-15.61	-3.74	-0.64	0.68	3.18
New York Tax-Free Bond Fund	8/28/1986	0.53	-12.70	-2.38	0.02	1.49	3.06
QM U.S. Bond Index Fund	11/30/2000	0.23	-14.98	-3.17	-0.21	0.91	3.05
Short Duration Income Fund	12/8/2020	0.97	-6.60	—	—	—	-2.88
Short-Term Bond Fund	3/2/1984	0.43	-5.86	-0.23	0.82	0.90	2.20

**Performance data quoted represent past performance and do not guarantee future results. Investment return and principal value will fluctuate so that an investor's 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. To obtain the most recent month-end performance, visit [troweprice.com](http://troweprice.com).**

## Standardized Performance: T. Rowe Price Fixed Income Mutual Funds (Cont.)

Annualized total returns for periods ended September 30, 2022

Fund	Inception Date	Gross Expense Ratio <sup>1</sup>	1 Year	3 Years	5 Years	10 Years	20 Years or Since Inception
Spectrum Income Fund	6/29/1990	0.62%	-13.83%	-1.66%	0.47%	2.23%	4.83%
Summit Municipal Income Fund	10/29/1993	0.52	-12.82	-2.20	0.38	1.86	3.58
Summit Municipal Intermediate Fund	10/29/1993	0.50	-10.01	-1.58	0.39	1.48	2.96
Tax-Free High Yield Fund	3/1/1985	0.72	-14.82	-2.36	0.60	2.52	3.99
Tax-Free Income Fund	10/26/1976	0.53	-12.26	-2.02	0.39	1.70	3.29
Tax-Free Short-Intermediate Fund	12/23/1983	0.47	-5.79	-0.64	0.33	0.70	1.96
Total Return Fund	11/15/2016	0.53	-16.82	-2.97	0.13	—	0.76
U.S. High Yield Fund—I Class	4/30/2013*	0.65	-16.96	-1.44	0.92	—	3.84*
Ultra Short-Term Bond Fund	12/3/2012	0.31	-1.82	0.74	1.49	—	1.20

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<sup>1</sup> As of the most recent prospectus.

\*The fund commenced operations on May 19, 2017. Performance prior to that date reflects the performance of the Class A of the predecessor fund. Predecessor fund performance reflects its actual operating expense at the time and was not adjusted to reflect the impact of the fund's current fees. Since-inception returns are shown from the inception date of the predecessor fund, April 30, 2013.

The standardized performance table omits the Institutional Credit Opportunities Fund, the Institutional Global Multi-Sector Bond Fund, the Institutional International Bond Fund, the Summit GNMA Fund, and the Tax-Free Intermediate Bond Fund, each of which either liquidated or merged into another fund prior to September 30, 2022.

## Standardized Performance: T. Rowe Price Fixed Income ETFs

Annualized total returns for periods ended September 30, 2022

Fund		Inception Date	Gross Expense Ratio <sup>1</sup>	1 Year	3 Years	5 Years	10 Years	20 Years or Since Inception
QM US Bond ETF	(NAV Returns)	9/28/2021	0.08%	-14.90%	—	—	—	-14.79%
	Market Returns			-14.99	—	—	—	-14.83
Total Return ETF	(NAV Returns)	9/28/2021	0.31	-16.71	—	—	—	-16.58
	Market Returns			-16.65	—	—	—	-16.42
Ultra Short-Term Bond ETF	(NAV Returns)	9/28/2021	0.17	-1.53	—	—	—	-1.56
	Market Returns			-1.51	—	—	—	-1.48

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ETFs are bought and sold at market prices, not net asset value (NAV). Investors generally incur the cost of the spread between the prices at which shares are bought and sold. Buying and selling shares may result in brokerage commissions, which will reduce returns.

<sup>1</sup> As of the most recent prospectus.

## INVEST WITH CONFIDENCE®

T. Rowe Price focuses on delivering investment management excellence that investors can rely on—now and over the long term.

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### Additional Disclosure

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