

PERSPECTIVES

Higher Expected Returns with Systematic Fixed Income

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KEY TAKEAWAYS

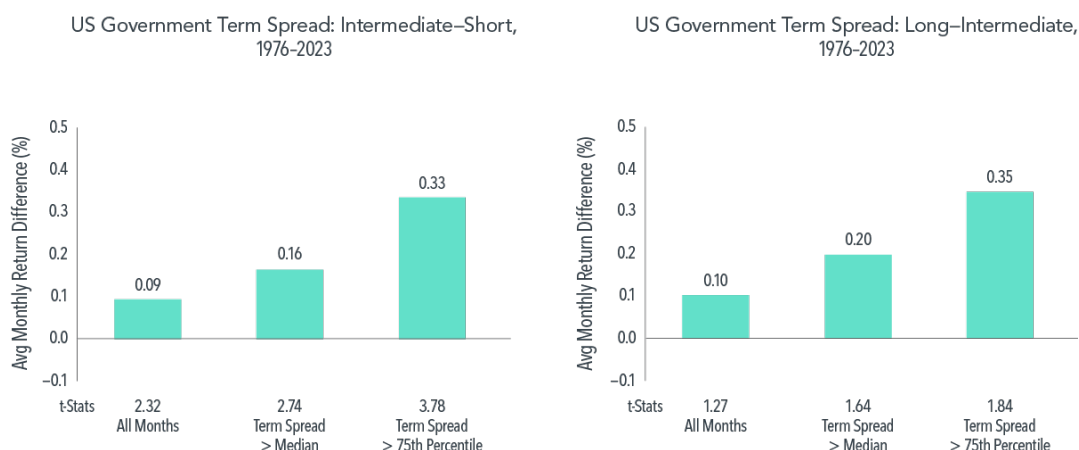
- Duration, credit quality, and currency of issuance contain reliable information about cross-sectional differences in bond returns.
- Systematic strategies can use information in market prices to target bonds with higher expected returns and improve investment outcomes.
- A systematic approach can also address specific investor needs, such as inflation protection, sustainability, and currency hedging.

Fixed income investors have traditionally used either an active or passive approach. The key drawback of an active approach is that it relies on unreliable forecasts of future changes in yield curves or bond prices. On the other hand, the traditional passive indexing approach generally ignores information embedded in current market prices about a bond's expected return. [In our paper on systematic fixed income investing](#), we show a better way: Investors can benefit in the long run from systematic strategies that account for differences in expected returns across bonds of different durations, credit qualities, and currencies of issuance.¹

The expected return of a government or corporate bond can be broken down into its yield and expected capital appreciation based on the shape of the yield curve. Both components are observable using current market prices and together form the bond's forward rate, the measure of its expected return. The expected returns of bonds vary across three dimensions: term, credit, and currency of issuance.

We first look at the relation between current term spread and future term premium. The term spread is the yield difference between a longer-term bond and a shorter-term bond with similar credit quality, while the term premium is the return difference between the two. Historically, there has been a positive relation between current term spread and future term premium. **Exhibit 1** shows the average monthly term premium is 9 basis points (bps) from 1976 to 2023 between US intermediate- and short-term government bonds. When the term spread between the two groups of bonds is greater than the median and 75th percentiles in the sample period, the average term premium in the following months increases to 16 bps and 33 bps, respectively. A similar pattern emerges when we look at long- vs. intermediate-term US government bonds.²

Exhibit 1 Term Spread and Term Premium

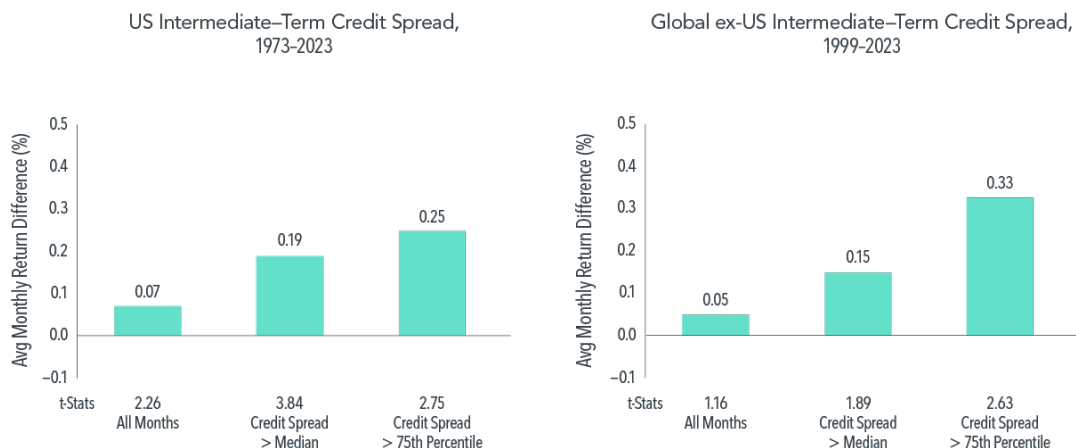


The bar charts in this exhibit show the average monthly difference in returns between longer-maturity and shorter-maturity bond indices. The first bar in each chart represents the average USD return difference unconditional on the term spread, while the second and third bars are average USD return differences conditional on the beginning-of-month term spread being greater than the median and 75th percentiles of all months. Short-term bond indices include bonds with 1–3 year maturities; intermediate-term indices include bonds with 3–10 year maturities; and long-term indices include bonds with maturities longer than 10 years. The monthly time series of yield and return data are provided by Bloomberg and FTSE. Past performance is not a guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio.

We apply a similar analysis to current credit spread and future credit premium. The credit spread is the yield difference between a corporate and government bond with similar duration, while the credit premium is the return difference between the two. Again, we observe a positive relation between current credit spread and future credit premium historically. **Exhibit 2** shows the monthly credit premium between bonds in the Bloomberg US Intermediate Credit and Bloomberg US Intermediate Government indices as 7 bps on average from 1973 to 2023. This premium increases to 19 bps and 25 bps for months when the beginning-of-month credit spread is greater than the median and 75th percentiles in the sample period, respectively. A similarly positive relation can be observed for global ex US intermediate bonds.³

Exhibit 2

Credit Spread and Credit Premium



The bar charts in this exhibit show the average monthly difference in USD returns between credit/corporate bond and government bond indices with similar maturities. The first bar in each chart represents the average return difference unconditional on the credit spread, while the second and third bars are average return differences conditional on the beginning-of-month credit spread being greater than the median and 75th percentile of all months. Intermediate-term indices include bonds with 1–10 year maturities. The monthly time series of yield and return data are provided by Bloomberg. Past performance is not a guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio.

The third major dimension along which the expected returns of global bonds meaningfully vary is currency of issuance. We observe a positive and reliable relation between current hedged forward rates and future hedged returns across government bonds issued in different currencies.

With the framework for a systematic fixed income approach in place, diversified portfolios can be constructed to pursue higher expected returns compared to market-value-weighted benchmark indices, both within the US and globally. **Exhibit 3** shows the performance of US and global core simulations compared to their respective benchmark indices. For the US core simulation, the portfolio's dynamic allocations along the duration and credit dimensions resulted in an annualized outperformance of 41 bps against the benchmark. For the global core simulation, the portfolio's dynamic allocations along duration, credit, and currency dimensions produced an annualized outperformance of 139 bps.

Exhibit 3
Performance Summary
of US and Global Core
Simulations

February 1999–December 2023, Returns Hedged to USD (%)	Bloomberg US Aggregate Bond Index	US Core Simulation	Bloomberg Global Aggregate Bond Index	Global Core Simulation
Annualized Compound Return	3.83	4.24	3.88	5.27
Annualized Standard Deviation	4.10	4.28	3.27	5.01
Annualized Premium vs. Benchmark	—	0.41	—	1.39
Annualized Tracking Error vs. Benchmark	—	1.10	—	2.95
Average Yield	3.72	3.60	3.44	4.68
Average Duration (Years)	5.16	2.46	5.95	6.43

This exhibit summarizes the return and volatility performance of the Bloomberg US Aggregate Bond Index, the US core simulation, the Bloomberg Global Aggregate Bond Index, and the global core simulation. For details related to the US and global core simulation methodology, please see Tables 7 and 8 in “The Case for Systematic Investing in Fixed Income.”

Past performance, including simulated performance, is no guarantee of future results.

Simulated returns are based on model/backtested performance for research purposes. Hypothetical performance was achieved with the retroactive application of a model designed with the benefit of hindsight. Backtested results are hypothetical and for informational purposes only. The results are not representative of indices, actual investments, or actual strategies managed by Dimensional. Assumes reinvestment of dividends and capital gains. Results do not reflect any costs or fees associated with actual investing. Actual investment returns may be lower or may differ significantly. Data is subject to numerous limitations. Results for different time periods could differ, perhaps significantly, from the results shown.

The simulated performance is “gross performance,” which includes the reinvestment of dividends and other earnings but does not reflect the deduction of investment advisory fees and other expenses.

In addition to pursuing higher expected returns, a systematic fixed income approach can address specific needs. We showcase three examples here: inflation protection, sustainability, and selective currency hedging. **Exhibit 4** shows how customized simulations can address these needs while still meaningfully outperforming their respective benchmark indices. For inflation protection, the US short-duration real return simulation adds a duration-matched inflation swap to the portfolio, in addition to dynamically varying its duration and credit positioning, achieving an annualized 23 bps outperformance against the short-term TIPS benchmark. For sustainability, the global corporate sustainability simulation applies sector exclusions to the global corporate bond universe while still pursuing higher expected returns along duration, credit, and currency dimensions, resulting in an annualized 22 bps outperformance. For selective currency hedging, the global 1–5 year selectively hedged simulation allows for some currency risk exposure via a systematic approach to currency hedging, producing an annualized 120 bps outperformance vs. a fully hedged benchmark index.

Exhibit 4
Performance Summary
of Customized
Simulations

Sample Periods in Exhibit Description, Returns Hedged to USD (%)	Bloomberg US TIPS 1–5 Year Bond Index	US Short-Duration Real Return Simulation	Bloomberg Global Aggregate Corporate Bond Index	Global Corporate Sustainability Simulation	Bloomberg Global Aggregate 1–5 Year Hedged Bond Index	Global 1–5 Year Selectively Hedged Simulation
Annualized Compound Return	2.74	2.97	4.44	4.66	3.09	4.29
Annualized Standard Deviation	3.28	3.47	5.06	5.20	1.55	4.28
Annualized Premium vs. Benchmark	—	0.23	—	0.22	—	1.20
Annualized Tracking Error vs. Benchmark	—	1.49	—	0.59	—	3.53
Average Duration (Years)	1.88	2.51	5.99	5.92	2.66	3.02

This exhibit summarizes the return and volatility performance of the Bloomberg US TIPS 1–5 Year Bond Index, the US short-duration real return simulation, the Bloomberg Global Aggregate Corporate Bond Index, the global corporate sustainability simulation, the Bloomberg Global Aggregate 1–5 Year Hedged Bond Index, and the global 1–5 year selectively hedged simulation. The sample period for the US short-duration real return simulation is December 2006–December 2023. The sample period for the global corporate sustainability simulation is January 2001–December 2023. The sample period for the global 1–5 year selectively hedged simulation is October 2002–December 2023. For details related to the simulation methodology, please see Tables 9, 10, and 11 in "The Case for Systematic Investing in Fixed Income."

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The simulated performance is "gross performance," which includes the reinvestment of dividends and other earnings but does not reflect the deduction of investment advisory fees and other expenses.

Current bond prices (as reflected through yields and forward rates) contain reliable information about differences in expected bond returns across different durations, credit qualities, and currency denominations. Based on this, broadly diversified systematic fixed income portfolios can be built to pursue higher expected returns across all three dimensions while incorporating different constraints and preferences. Unlike the traditional passive approach, a systematic approach accounts for the cross-sectional differences in bonds' expected returns. And unlike the traditional active approach, the success of a systematic approach does not depend on picking bonds or forecasting the movement of future interest rates.

1. Aabbhas Garg and Samuel Wang, "The Case for Systematic Investing in Fixed Income," (research paper, Dimensional Fund Advisors, May 2024).

2. Furthermore, in Exhibits 2 and 3 of "The Case for Systematic Investing in Fixed Income," the positive relation between current term spread and future term premium can be observed in US corporate bonds, global ex US government bonds, global ex US corporate bonds, and intermediate- vs. short-term government bonds in several major non-US developed countries.

3. Furthermore, in Exhibit 5 of "The Case for Systematic Investing in Fixed Income," the positive relation between current credit spread and future credit premium can be observed in US short-term, US long-term, global ex US short-term, and global ex US long-term corporate bonds vs. government bonds.

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