



A Multi-Asset Perspective on High Yield

There are potential opportunities when spreads are wide or tight.

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KEY INSIGHTS

- High yield spreads and equities have a strong relationship as both are closely tied to the business cycle and financial conditions.
- Historically, as spreads widened, forward returns for high yield became more attractive relative to a basket of equities and Treasuries with similar risk.
- Investors potentially could improve portfolio risk/return profiles by allocating to or from high yield when spreads are especially wide or tight.

High yield bonds provide many benefits to multi-asset investors, warranting a strategic allocation in a diversified portfolio. However, while many, if not most, multi-asset investors now have dedicated high yield allocations, what we've found to be less common is a process for allocating to or away from high yield bonds in environments that appear particularly favorable or unfavorable relative to a basket of U.S. Treasuries and equities with similar characteristics.

The analysis that follows suggests that investors who take a "set it and forget it" approach to their high yield allocations may be forgoing opportunities to generate additional returns and/or manage downside risk when spreads become historically wide or tight.

High Yield Bonds: A Total Portfolio Perspective

High yield bonds often are regarded as a hybrid of equities and

investment-grade (IG) bonds because they share common characteristics with those assets. Relative to IG bonds, they offer meaningfully higher yields. The additional yield spread over Treasuries compensates investors for the weaker balance sheets and higher default risks of high yield-issuing companies. In addition to having favorable characteristics as a standalone asset class, high yield bonds also provide other potential benefits to investors:

- Relative to equities, high yield bonds sit higher up in the capital structure and, like IG corporates, provide capital structure diversification.
- High yield benchmarks provide industry, factor, and company-specific diversification that changes over time based on issuance trends rather than the relative equity performance that drives changes to equity benchmarks that are weighted by market capitalization.



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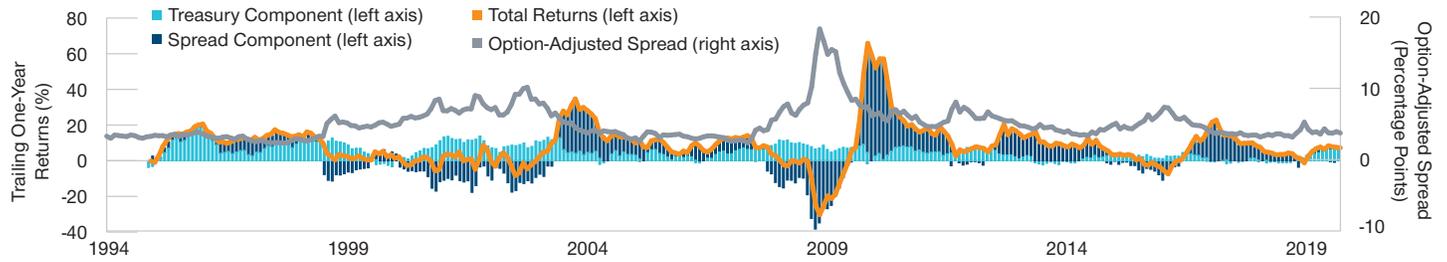


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Examining the Relationship Between Sources of High Yield Returns

(Fig. 1) Decomposition of Trailing One-Year Returns on High Yield Bonds



Past performance is not a reliable indicator of future performance.

January 1994 Through September 2019

Source: Bloomberg Index Services Limited (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

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- High yield bonds provide meaningfully higher income or carry relative to most asset classes. While this is particularly beneficial to income-focused investors, it is also beneficial to total return investors, particularly when other asset classes are range-bound and income makes up a larger portion of the total portfolio return.

We think it is critical for asset allocators to think about diversification not only by asset class, but also by common factors when they are constructing portfolios. A relatively simple approach to looking at asset class factors at the total portfolio level is to decompose each asset class into the two primary factors that explain most of the return:

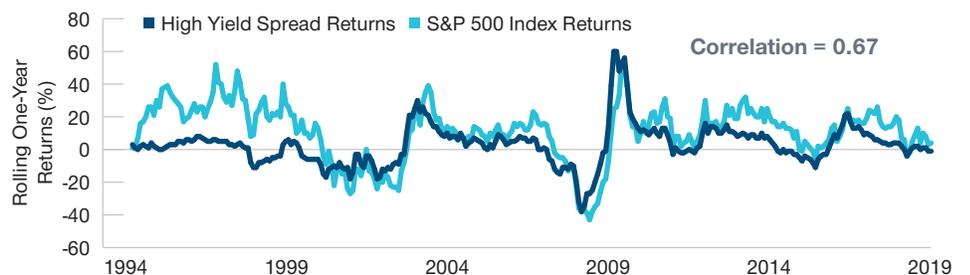
interest rates (i.e., Treasury yields) and equities. We believe this approach is particularly suitable for analyzing high yield bond returns for two reasons:

- High yield bonds are often quoted and analyzed based on interest rate spreads over Treasuries, such that the total yield and return can easily be decomposed between Treasuries and spreads.
- Like equities, high yield spreads serve as a barometer for future corporate profits, and, therefore, the returns each generate are highly correlated with one another.

Figure 1 shows trailing one-year returns for high yield bond returns decomposed into their Treasury yield and spread

High Yield Spread Returns Have Been Correlated With Equities

(Fig. 2) Rolling One-Year U.S. High Yield Spread Returns vs. S&P 500 Index Returns



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components. Looking at high yield returns in this manner allows us to see the relationship between the two sources of high yield bond returns over time. In combination with Figure 2, we also can see how closely returns from equity and credit spreads, carry and gains/losses, have tended to move with one another over multiple cycles.

Historically, both spreads and equities often have generated positive returns in calm or improving markets. However, spread and equity returns historically have been even more highly correlated during periods of stress (when spreads widened and equities fell) and during the recoveries that followed (when spreads tightened and equities rallied). For example, during the bursting of the technology bubble (2000–2003) and again during the global financial crisis of 2008–2009, spreads widened and generated significant losses (as did equities) but produced significant gains in the recovery that followed.

Because the relationship between spreads and equities has historically been strong, and because we expect this relationship to continue, we can create a proxy for high yield bonds by replacing the return from spreads with the return on equities, with a beta adjustment (β) to reflect the difference in risk between spread returns and equity returns as follows: $R_{\text{High Yield}} = R_{\text{Treasuries}} + \beta(R_{\text{Equity}}) + e$.

A Closer Look at Spread Behavior

One way to think about the behavior of high yield spreads is to compare them with a metal spring. As you pull a spring from its natural state, it becomes increasingly more difficult to pull it further and further apart as mechanical force tries to return the spring to its resting state. On the other hand, when you compress a spring, it becomes increasingly difficult to further compress as mechanical force pushes back, aiming to widen it back to its natural state.

Historically, spreads have acted in a similar manner. Like a spring pulled or pushed to extremes, there has been a tendency for spreads to revert to more natural equilibrium levels. Like equities, the catalyst for spread movement typically has been the level of market liquidity, which is often driven by the outlook for the economy and future corporate profits. Extremes of excess (or scarce) liquidity have tended to result in spreads narrowing (or widening) toward historically tight (or wide) levels. Ultimately, as the outlook moderates, we would expect spreads to revert toward their more natural state.

The potential impact of this behavior on high yield spread returns is that as spreads widen, they generate a loss, but going forward, investors not only benefit from higher spreads (i.e., carry), but also have increased potential to generate additional returns as spreads narrow again. This results in a favorable return distribution with relatively large potential upside relative to potential downside (i.e., positive skew). This potential return profile improves the wider spreads get and the likelihood of future spread narrowing increases. Even if spreads don't narrow, investors gain a larger return buffer in the form of greater carry.

At the other extreme, when spreads were historically tight, they became increasingly less likely to tighten further. This led to less favorable distributions of future potential returns as the downside grew larger than the upside (i.e., negative skew), reflecting the risk that spreads could widen while the buffer from carry was small.

The characteristics of spreads described above are evident in Figure 3, which shows how historically tight (lowest 20%) and historically wide (highest 20%) spreads have translated into one-year forward spread returns. Over the period shown, spreads were below 3.2% in the lowest 20% of observations and above 6.6% in the

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highest 20% of observations. We chose to only show returns from high yield spreads (as opposed to total high yield returns) in Figure 3 for two reasons:

- Treasury yields have been in a secular decline for more than 30 years and are now meaningfully lower relative to history, making the returns from the Treasury component less relevant given today’s low rates.
- We ultimately want to compare high yield spread returns with equity returns to see if and when one offers a meaningfully better distribution than the other, such that an allocation change could be warranted.

It is clear from Figure 3 that historically, when spreads have been wide, the distribution of returns has been skewed toward the upside relative to the downside. This is because, as discussed earlier, when spreads have been wide, investors not only have received more carry, but also have had a higher probability of obtaining additional gains when spreads subsequently narrowed from their historically wide levels.

Note that there still was meaningful downside risk when spreads crossed the 6.6% level, as they could have widened further (and indeed did so during both

the bursting of the tech bubble and the global financial crisis). However, in our view, investors were more than compensated for this risk in the form of greater upside potential relative to downside potential.

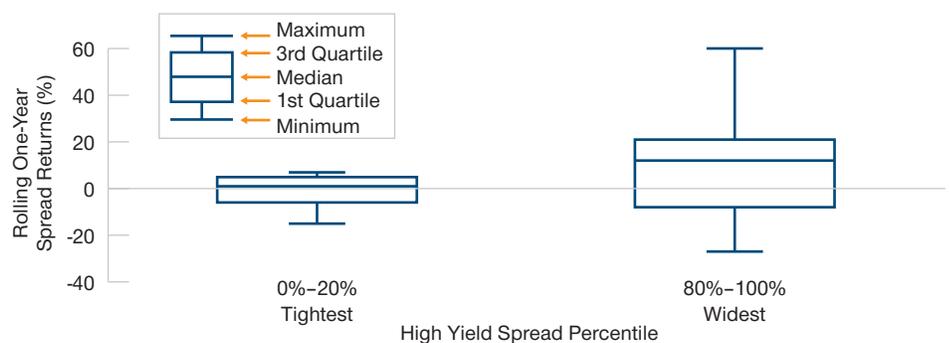
At the opposite extreme, when spreads historically have been narrow, the distribution of future returns from high yield spreads has shown more downside than upside potential. This is because, as with our example of a metal spring, there were barriers to further tightening that limited spread returns to the then current level of carry and, at most, only modest additional gains from further tightening. Additionally, in these environments, there typically has been little resistance to spread widening in situations where conditions worsened. Unlike when spreads have been historically wide, tight spreads have provided a smaller level of carry to protect investors from losses.

Distribution of Spread Returns Relative to Equities

Since high yield spread returns and equity returns are highly correlated to the business cycle, has one offered a better distribution of potential returns when spreads have been relatively tight or wide? Historically, the answer has generally been yes.

When Spreads Have Been Wide, High Yield Returns Have Skewed to the Upside

(Fig. 3) Distributions of Rolling One-Year High Yield Spread Returns



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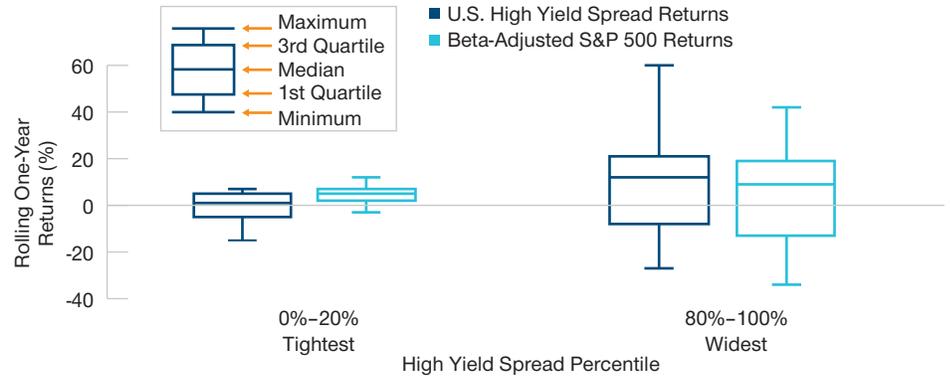
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High Yield = The Bloomberg Barclays U.S. High Yield Index

Historically, Spread Returns Outperformed When Spreads Were Wide, While Equities Outperformed When Spreads Were Tight

(Fig. 4) Distributions of High Yield Spread Returns and Beta-Adjusted Total Returns on the S&P 500 Index



Performance Statistics (One-Year Rolling Returns)	High Yield Spread Environment			
	0%–20%		80%–100%	
	High Yield Spread Return	Beta-Adjusted SP500 Return	High Yield Spread Return	Beta-Adjusted SP500 Return
Average Return	-0.7%	4.3%	10.0%	4.4%
Median Return	1.1%	4.5%	12.1%	8.8%
Standard Deviation	6.2%	3.2%	20.9%	18.3%
Beta to S&P 500	0.23	0.23	0.78	0.78
Minimum	-15.2%	-3.0%	-27.0%	-33.7%
Maximum	7.4%	11.8%	60.2%	41.8%
12-month C-VAR (5%)	-14.0%	-1.9%	-26.3%	-31.2%

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Figure 4 compares beta-adjusted forward returns on the S&P 500 Index with the high yield spread returns shown in Figure 3 in the narrowest 20% and widest 20% of observed cases. The equity returns are beta adjusted in order to roughly equalize the amount of equity risk in spreads and equities. Historically, high yield spread returns have had an equity beta of approximately 0.5, but betas have been lower when spreads were tight (0.2 in the lowest 20% of historical observations)

than when spreads were wide (0.8 in the highest 20% of observations).

In our view, a beta-adjusted comparison is appropriate because it isolates the difference in return distributions without increasing the overall equity beta at the total portfolio level. We believe that asset allocators should separate the decision to take on more equity risk from the decision on how best to gain equity factor exposure.

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Looking at the distribution of returns when spreads have been historically wide, we can see that the distribution of spread returns (shown in blue) was superior to the distribution of the beta-adjusted equity returns (shown in orange). Specifically, high yield spreads provided a greater median return with greater upside and less downside.

In historical environments where spreads were tight, we found that the distribution of beta-adjusted one-year equity returns was more uniform and that the negative skew (larger downside relative to upside) of spread returns could have been improved by using equities as a proxy for spreads.

Figure 5 provides another look at how high yield bonds have performed relative to a high yield proxy composed of Treasuries and beta-adjusted equities. The screened area on the left side of the chart highlights the return relationship in the tightest 20% of spread observations, while the screened area on the right shows the return relationship in the widest 20% of spread observations. Again, we can see that during the period shown, high yield bonds generally

outperformed the proxy when spreads were wide, while the reverse generally held when spreads were tight.

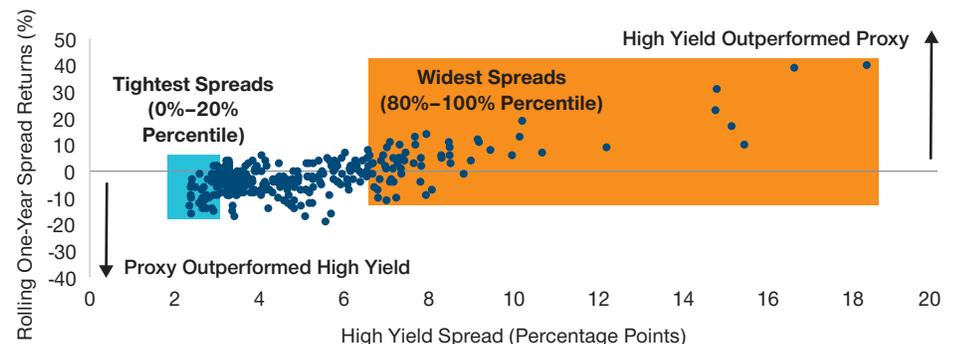
Note that there are important caveats that make a change from high yield to equities and Treasuries less compelling when spreads are narrow than when spreads are wide:

- Historically, even when spreads have been tight, the level of carry has been meaningfully greater for high yield relative to beta-adjusted equities. As mentioned earlier, carry can be extremely beneficial to investors in range-bound markets.
- As evident in Figure 1, when spreads have been tight, they historically have often remained tight for long periods of time.

For these reasons, we generally believe the case for an allocation change is stronger when spreads are wide compared with when spreads are tight relative to historical ranges.

Another Look at Relative Performance

(Fig. 5) Rolling One-Year Returns of High Yield Versus High Yield Proxy¹



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¹ High Yield proxy = duration-matched Treasuries + beta-adjusted equities. High Yield = the Bloomberg Barclays U.S. High Yield Index. Duration-matched Treasuries = the Bloomberg Barclays High Yield Index total return series minus the spreads, 0.78 in the widest 20%, and 0.5 in all other spread environments. Sources: Bloomberg Index Services Limited and Standard & Poor's (see Additional Disclosures); data analysis by T. Rowe Price.

High Yield = The Bloomberg Barclays U.S. High Yield Index

Implementation and Other Considerations

Based on this analysis, we would argue that when spreads are wide relative to typical historical ranges, investors can improve their risk/return profile by increasing their exposure to high yield bonds and reducing their exposure to equities and Treasuries. For example, for every unit of high yield exposure added to a portfolio, an investor could sell 0.8 units of equity and 0.2 units of Treasuries. Depending on how this move was implemented, using derivatives or physical securities, an investor could adjust the duration of the Treasury portfolio sold so that it matched the duration of the Treasury component of high yield bonds.

We purposely chose the S&P 500 as the index for our analysis because large-cap equities are a practical source of capital to fund an overweight to high yield bonds when spreads widen. While this simplification makes implementation more practical, investors also might consider using a basket of equities that more closely resembles the

characteristics of the high yield indexes, which typically would have smaller average market cap, lower quality relative to the S&P 500, and an industry allocation that more closely resembles the major high yield indexes.

Finally, it's important to note that the high yield benchmarks themselves continue to evolve. One important trend to highlight has been the overall improvement in the quality of the high yield universe over the last few years. One reason for this has been that lesser-quality high yield issuers increasingly are turning to the loan market to raise capital rather than issuing high yield debt.

These types of changes make it critical to compare the characteristics of today's high yield market with that of the past in order to determine whether spreads once considered historically wide or tight are still the appropriate triggers for portfolio changes. For this reason, we do not recommend using a purely quantitative approach, but rather one that relies on a mix of quantitative analysis and sound forward-looking judgments.

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