

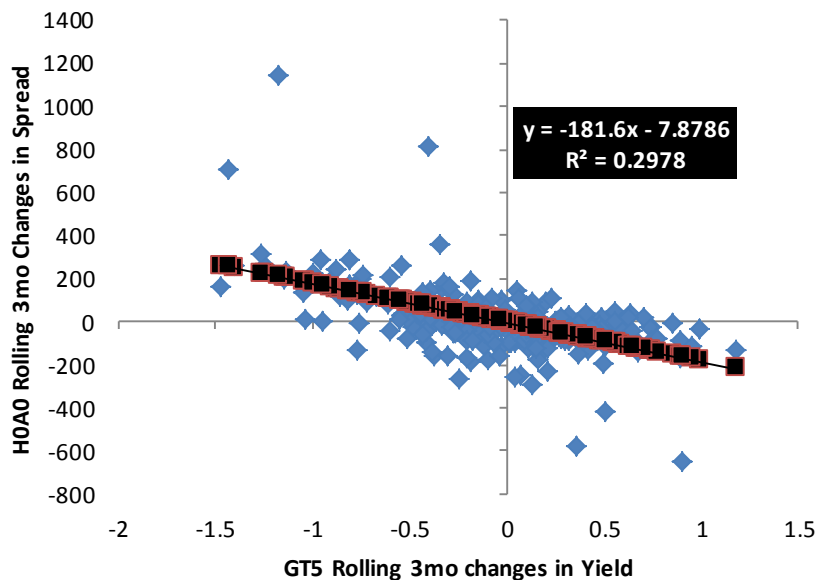
## High Yield in a Rising Rate Environment

### Historical Relationship between Rates and Spreads

As we begin 2017, one of the primary concerns for high yield investors is the threat of rising interest rates, and the subsequent impact on high yield spreads. Looking at historical data, there has typically been an inverse relationship between interest rates and spreads on the high yield index – that is, spreads on the high yield index tend to tighten when yields on government bonds rise. While the strength of this relationship varies over time, the correlation likely reflects the idea that stronger economic conditions typically lead to higher Treasury yields and tighter spreads on risk assets, all else being equal.

### Compiling the Data Set

In our analysis, we examined the moves in spreads of the BofA Merrill Lynch US High Yield Index (H0A0) relative to changes in yield on the 5yr Treasury, all on a rolling-3-month basis. While the R<sup>2</sup> is admittedly low at ~ .30, there is certainly a negative relationship between the factors. We would also note that upon further analysis, the coefficient on the change in government yields decreases when high yield spreads are tighter, or when spreads make up a smaller portion of total yield. This would suggest that, on an historical basis, higher Treasury yields typically reflect stronger economic conditions, and that the inverse relationship to spreads flattens (but does not fully reverse) in lower-cushion environments.

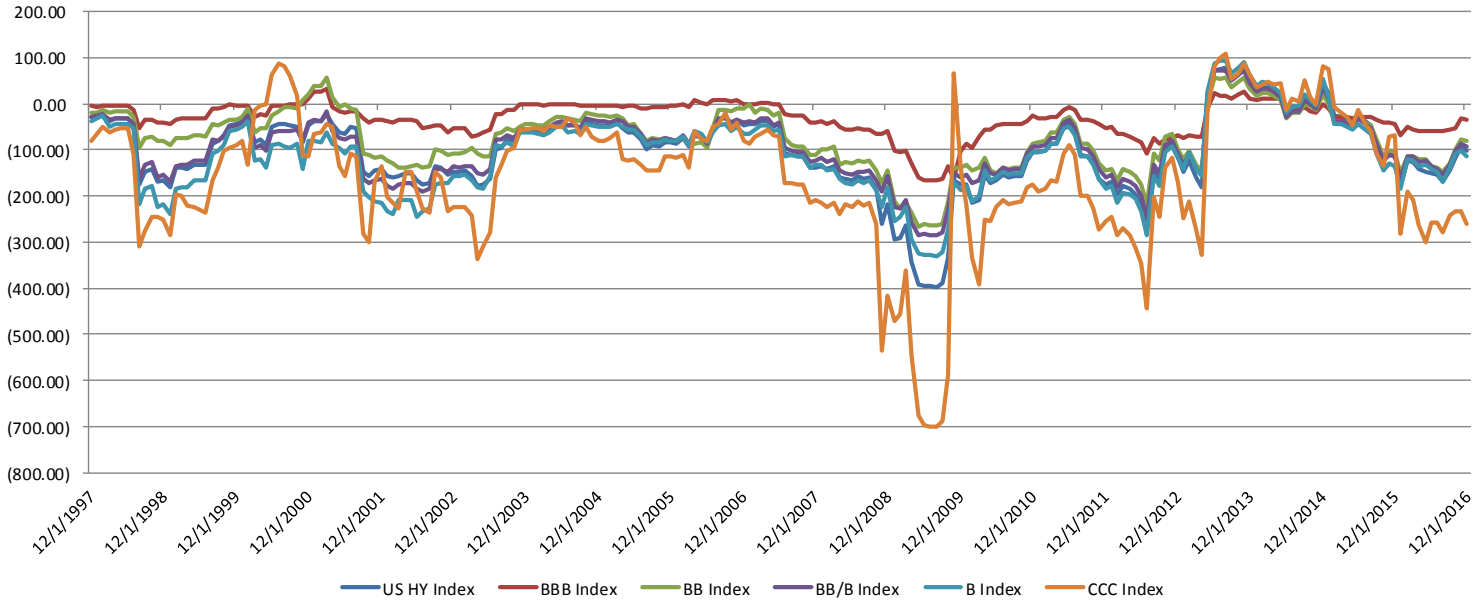


Source: SKY Harbor, BofA Merrill Lynch, Bloomberg, Deutsche Bank

### Relationship through the Cycle

To better demonstrate how this relationship can vary over time, we calculated the rolling-12-month beta of changes in spread (in this case, on the US High Yield Index) and changes in yield (in this case, on the 5yr Treasury) over time, and plotted the results. We then added rating-specific indices to demonstrate differences by credit quality. In this case, beta represents the response of index spreads to a 100 bps move in 5yr Treasury yields. As such, periods in which beta is at or below the -100 bps level on the y-axis represent at least a full absorption of moves in rates.

## Beta of Changes in Spread (Various Indices) to Changes in Yield (5yr Treasury)



Source: SKY Harbor, BofA Merrill Lynch, Bloomberg, Goldman Sachs

### Finding a Breakeven

Looking at data going back to January 1998, we find that the key factor in determining whether or not a rise in rates can be fully absorbed by the high yield universe is most dependent upon the spread cushion present at the start of the period, as defined by the percentage of yield that is made up of spread. Using a regression for each index break, we were able to determine the minimum cushion required, on an historical basis, to fully absorb a change in rates (beta of -100). Our results, shown below, imply that the HY Index is still in a position to offset a rise in interest rates despite material tightening over the last several months. Assuming risk premiums remain constant, the Index is likely able to absorb another 28 bps in higher rates (based on historical relationships). Results, however, differ by rating. The US Corporate BBB Index, at present, provides investors with a spread cushion of ~ 43%, less than half of the cushion typically required to offset 100% of rate increases. Conversely, the CCC index appears most favorably positioned to absorb rate hikes, as the current cushion exceeds the historical breakeven level.

Index	Ticker	@ 1/31/17		Spread Cushion	Regression Implied Cushion Needed to Offset Rates 100%	Implied Minimum Attractive Spread Level	Spread Gap	Signal
		OAS	YTW					
BofA Merrill Lynch US High Yield Index	H0A0	400	5.92%	67.6%	62.8%	372	28	Modestly Well Positioned
BofA Merrill Lynch US Corporate BBB Index	C0A4	161	3.76%	42.8%	88.3%	332	(171)	Very Poorly Positioned
BofA Merrill Lynch BB High Yield Index	H0A1	264	4.61%	57.3%	67.9%	313	(49)	Modestly Poorly Positioned
BofA Merrill Lynch BB-B High Yield Index	H0A4	318	5.14%	61.9%	63.6%	327	(9)	Modestly Poorly Positioned
BofA Merrill Lynch B High Yield Index	H0A2	389	5.84%	66.6%	56.0%	327	62	Modestly Well Positioned
BofA Merrill Lynch CCC & Lower High Yield Index	H0A3	882	10.49%	84.1%	66.2%	694	188	Very Well Positioned

Source: SKY Harbor, BofA Merrill Lynch, Bloomberg, Barclays

### Key Takeaways

- Over the last 20 years, there has been an inverse relationship between Treasury yields and high yield spreads.
- The magnitude of interest rate hikes that can be absorbed by high yield spreads is a function of the spread cushion.
- In our view, at present the BofA ML US Corporate BBB index is less favorably positioned to absorb the impact of rising rates than the BofA ML B and CCC high yield indices.

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