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Factoring through Our New Spread Model

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High yield spreads have rallied thus far in September, with the current level just 23bp from the 2019 tights reached in April and 67bp from the post-recession tights hit in early October of last year. With the index spread level sitting near these tights, investors are understandably concerned about the compensation they are receiving in exchange for certain risks. To measure more precisely how different factors are driving spreads, we update our spread model, which provides a historical view of shifts in market risk premia and can be used as a screening tool at both a sector and a bond level.

From a historical standpoint, we find that the factors discussed below explain high yield spreads better than at any point in the past five years. This also implies that investors who think spreads will remain in the current range and are looking to generate alpha have several choices, such as buying lower-quality bonds, adding duration, moving into less-liquid securities, and adding commodity exposure. All have their merits, but probably in moderation and not to extremes, as it is hard to see long-duration small CCC energy issuers outperforming.

While our previous spread model was based on a three-factor regression (credit quality, term, and liquidity), we use this opportunity to evaluate other factors that could have predictive power for high yield bonds. Specifically, we evaluated six factors: credit quality, term, liquidity, commodity exposure, public versus private issuers, and 144a versus registered bonds.

Using current levels as our basis for analysis, we find that two of these six factors - public versus private and 144a versus registered bonds - were not statistically significant for our model and therefore exclude them from our historical analysis. The other four factors, though, have significant t-stats in our regression and form the basis of our new spread model:

1. **Credit Quality** is based on Moody's Weighted Average Rating Factor (WARF), which is a quantitative measure designed to capture the nonlinear relationship between ratings notches and default risk.

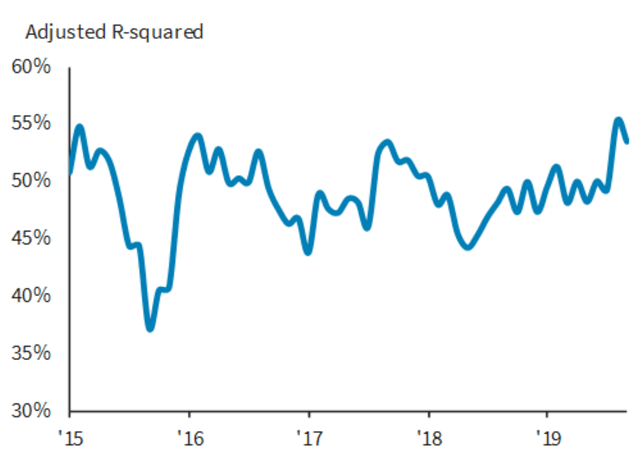
2. **Term Factor** is based on bond-level option-adjusted duration (OAD). We find that OAD has a slightly higher t-stat than option-adjusted spread duration (OASD).

FIGURE 1
Spread Model Regression Results

	9/25/19	Dec-18	Dec-17	Dec-16	Dec-15
US High Yield OAS (bp)	370	526	343	409	660
Rating Factor (WARF)	85	74	74	70	71
Duration Factor (OAD)	29	12	14	9	-2
Liquidity Flag (LCS)	115	76	62	80	118
Commodity Flag	129	71	20	-10	243
Constant	-30	185	34	114	211

Note: Rating factor scaled by factor of 1000. Source: Bloomberg Barclays Indices

FIGURE 2
Model-Adjusted R^2



Source: Bloomberg Barclays Indices

3. **Liquidity Flag** is a binary designation based on Liquidity Cost Score (LCS); each bond is determined to be either more liquid or less liquid than the average bond in the index. We find that LCS is more predicative for liquidity than issuance size. For more details about calculation methods and recent metrics for LCS, see *LCS® Report - August 2019*.

4. **Commodity Flag** is a binary designation that includes all bonds in either the energy or the metals & mining sector.

The output of our spread model based on levels at the end of last month is shown in Figure 1. We also provide regression outputs as of the ends of the past four years. The compensation for all four factors has increased since the end of last year, with rating and duration at their highest levels. While compensation for the liquidity and commodity flags has increased significantly since last year, both are below their all-time highs, reached in early 2016 and late 2015, respectively. The adjusted R^2 of our model has averaged 49% since the start of 2015 but has increased recently, currently at 53% (Figure 2). We provide a detailed analysis of the four factors below.

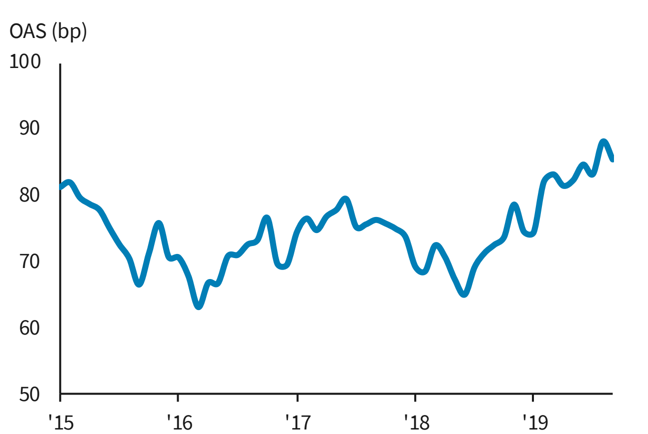
Factor 1: Credit Quality

We use WARF as our proxy for credit quality given the nonlinear relationship between credit rating and default. Put simply, a one-notch downgrade in rating implies an increasingly large increment of default risk as you move down the ratings spectrum; as a result, using a linear proxy for credit rating does not sufficiently capture increased credit risk.

We plot the historical spread compensation for the credit quality factor of our new model in Figure 3. The increased compensation for credit quality in the second half of 2018 and so far in 2019 is substantial, with the current level the highest since the start of 2015. This is unsurprising, though, as ratings have been a meaningful driver of 2019 performance. As we have noted, BBs have outperformed CCCs in total return not just on a relative basis but also on an absolute basis. In regard to spreads, BBs have tightened 140bp this year while CCCs have tightened just 121bp.

FIGURE 3

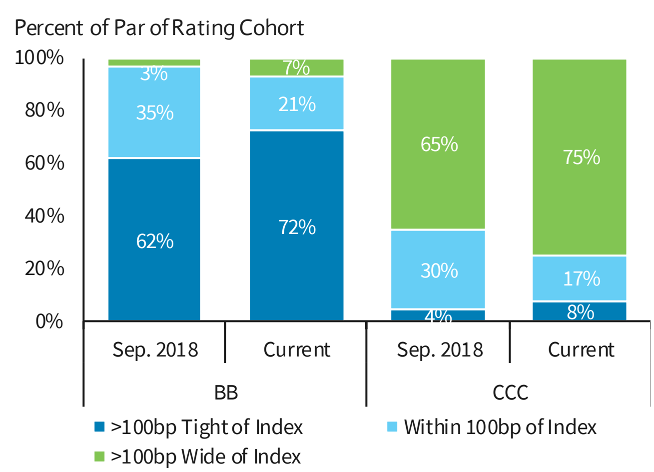
Spread Compensation Based on Rating Factor



Note: Rating factor scaled by factor of 1000.
Source: Bloomberg Barclays Indices

FIGURE 4

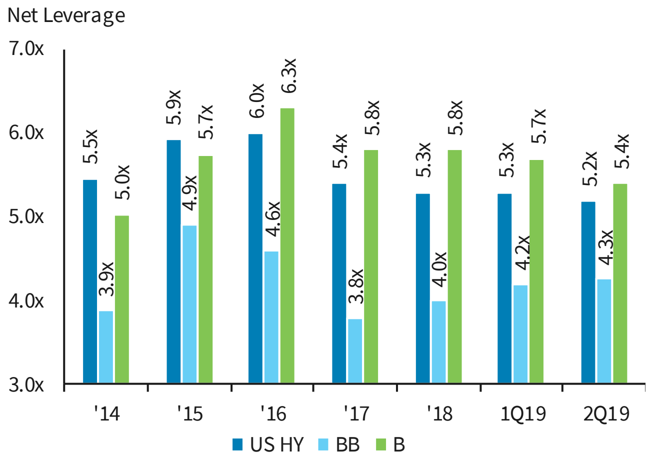
72% of BBs Are Significantly Tight of the Index while 75% of CCCs Are Significantly Wide



Source: Bloomberg Barclays Indices

FIGURE 5

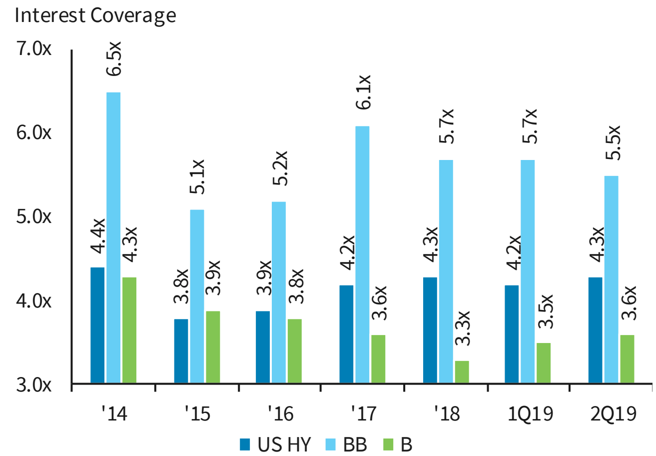
BB Leverage Has Increased Slightly while Single-B Leverage Has Improved…



Source: Bloomberg Barclays Indices, S&P CapIQ, Factset, Bloomberg

FIGURE 6

…With Interest Coverage Telling a Similar Story



Source: Bloomberg Barclays Indices, S&P CapIQ, Factset, Bloomberg

This performance imbalance has led the index to become more bifurcated between bonds that trade significantly wide or significantly tight relative to the index. Currently, just 24% of the index trades within a 100bp range (plus or minus 100bp) of the US High Yield Index OAS, well below the 42% level one from year ago. This bifurcation is even more evident across ratings cohorts, with BBs increasingly trading well tight of the index and CCCs trading well wide (Figure 4). This points to the increased influence that ratings have had on spread levels this year, as evident from our spread model regression results.

The increased significance of ratings has come despite a limited shift in the fundamentals between rating cohorts. The decline in index-wide leverage to 5.2x for 2Q19 from 5.3x for 1Q19 and 4Q18 was driven by a fundamental improvement in single-B leverage (Figure 5). Interest coverage tells the same story, increasing for the single-B cohort. While we hesitate to use CCC aggregate leverage because of the limits of publicly available financials for much of the CCC market, the slight weakening in BB fundamentals in 2019 has occurred despite the outperformance of the cohort and increased significance of ratings in our spread model.

Factor 2: Term Factor

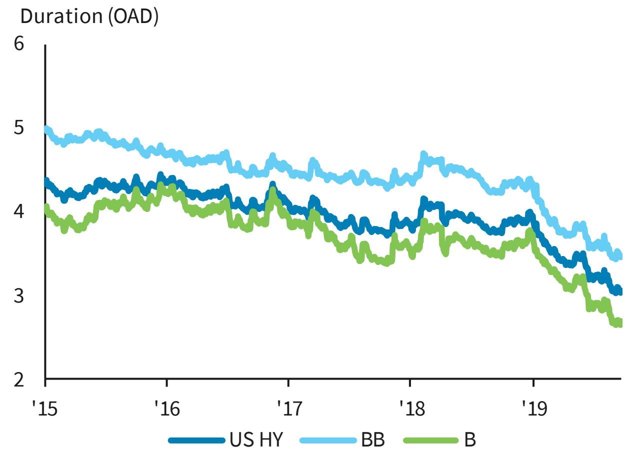
We use duration rather than maturity as our proxy for term risk given the prevalence of call structures in the high yield market (our investment grade counterparts use maturity). The spread compensation for duration has continued to increase, reaching the current high of 29bp for a one-year increase in duration.

The declining duration of the high yield market has placed a higher premium on duration, with the duration of the index shrinking by 0.9 years since the end of last year, to below 3.1, the shortest duration for the index in history.

As seen in Figure 8, the longer-duration portions of the market have outperformed shorter duration so far this year from an excess return perspective. The current elevated duration factor in the model points to a lack of spread compensation for the shorter-duration portions of the market, much of which is currently call constrained.

FIGURE 7

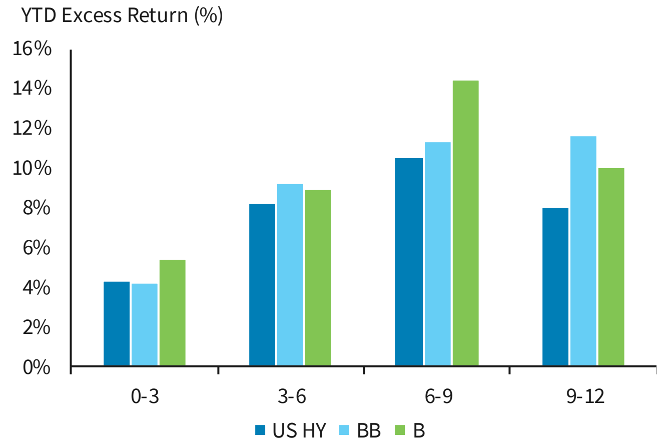
The Duration of the High Yield Market Has Declined Materially in 2019…



Source: Bloomberg Barclays Indices

FIGURE 8

…With Longer Duration Buckets Outperforming



Source: Bloomberg Barclays Indices

Factor 3: Liquidity Flag

The spread compensation for more liquid tranches has also increased significantly in 2019 and is at 129bp (Figure 9). The explanatory factor for liquidity has increased this year, averaging 94bp through 2019, compared with just 55bp in 2018. We use a binary flag to signify whether a bond is more or less liquid than the median bond in a given month based on Liquidity Cost Score (LCS).

As noted in *Sufficient Liquidity for Summer Heat Waves*, investor preference for liquidity has been evident thus far this year. Not only have trading volumes increased more for the most liquid tranches of bonds, those bonds have outperformed the less-liquid portions of the market. Much of the increased turnover and outperformance can be attributed to retail demand, as large inflows, specifically to ETFs, have created a supportive demand technical for liquid tranches.

Factor 4: Commodity Flag

We have added a commodity flag to our new spread model, signifying bonds in either the energy or metals & mining sector. The compensation for a commodity-related bond has increased significantly in 2019, to 118bp currently, meaning that investors are being compensated more for commodity bonds than non-commodity bonds all else equal (rating, duration, and liquidity). The last time the commodity flag had compensation this high was during the commodity-related stress of late 2015 and early 2016.

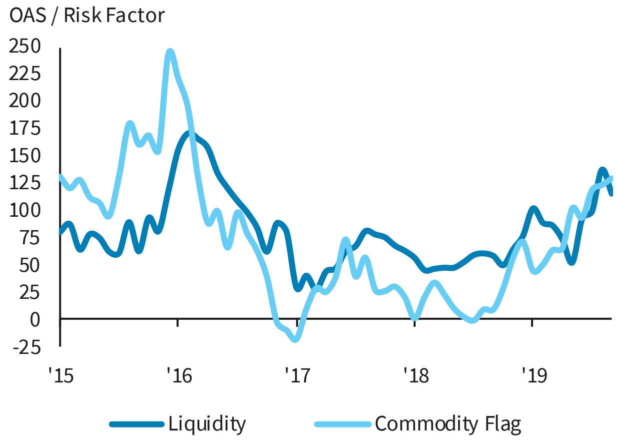
Energy has not participated in high yield's rally this year. Specifically, energy sectors have generated total returns of just over 5%, nearly 800bp below the returns of the non-energy sectors, supporting the increased premium for energy bonds in our regression.

Sector-Level Dislocation

The variance in returns between commodity and non-commodity bonds has driven increased sector dislocation. Using our updated spread model, we construct a premium or discount for each sector. The sum of the absolute values of dislocations across all sectors is an estimate of the "opportunity set" available for sector relative value. Not all of this will be realized – many sectors trade wide or tight to implied levels based on secular trends, macro risks, or forward-looking fundamentals, and as we highlighted earlier, the significant divergence of energy from the rest of the market is a key factor. Nonetheless, this measure

FIGURE 9

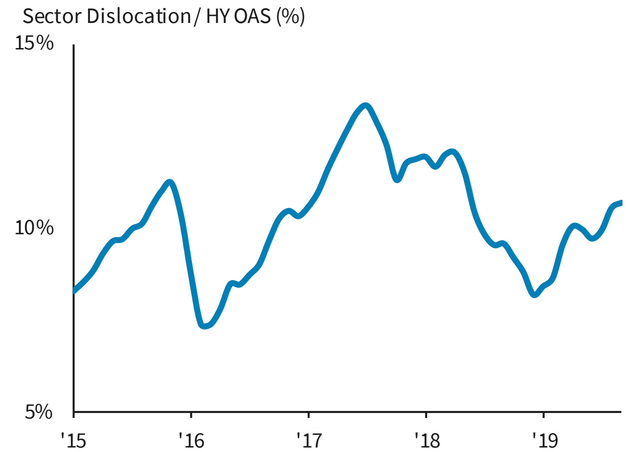
Spread Compensation Based on Liquidity and Commodity Flags



Source: Bloomberg Barclays Indices

FIGURE 10

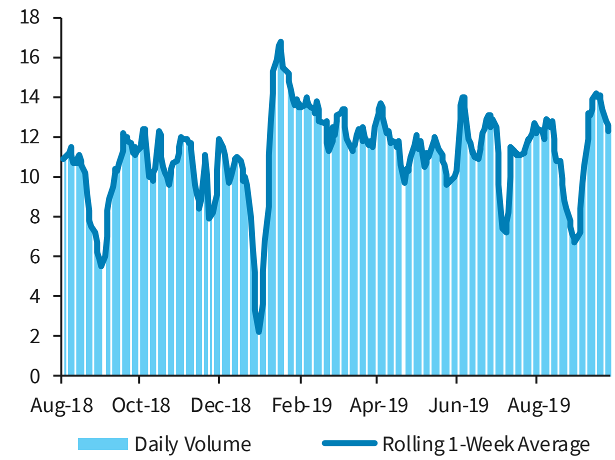
Dislocation of Sectors Relative to Index Spread Has Increased in 2019



Source: Bloomberg Barclays Indices

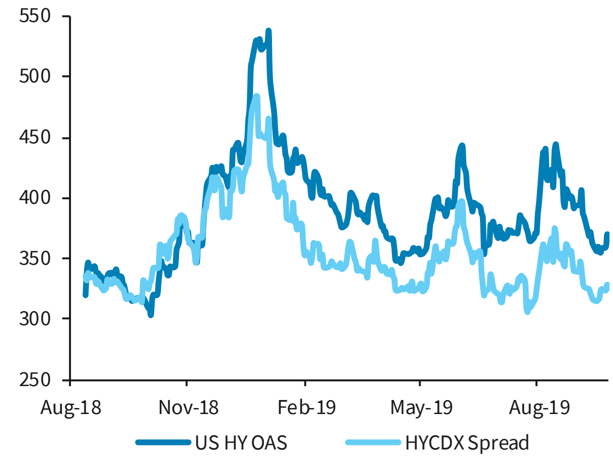
has increased significantly in 2019. This is consistent with our observations in *Sector Selection for the Second Half*, where we found a historic lack of alpha from sector selection in the first half aside from energy. As a result, it makes sense that our model suggests more alpha from sector selection in the future.

High Yield Average Institutional Trade Volume ($bn)



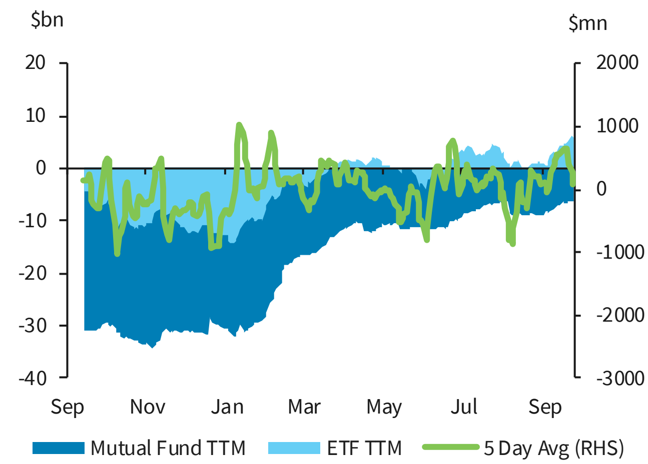
Note: Includes both registered and 144A volumes. Source: FINRA TRACE

On-the-Run HYCDX versus US High Yield Index (bp)



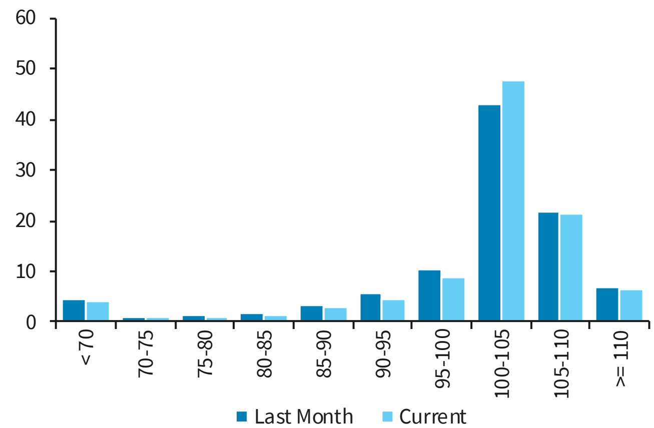
Source: Barclays Research

Flows to High Yield Mutual Funds and ETFs



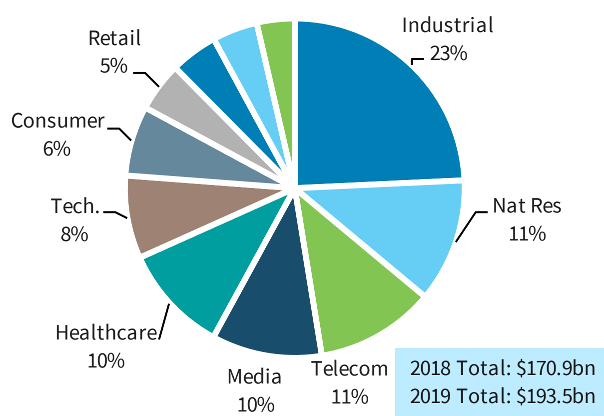
Note: Daily reporters only. Source: EPFR

High Yield Index Price Distribution by Par (%)



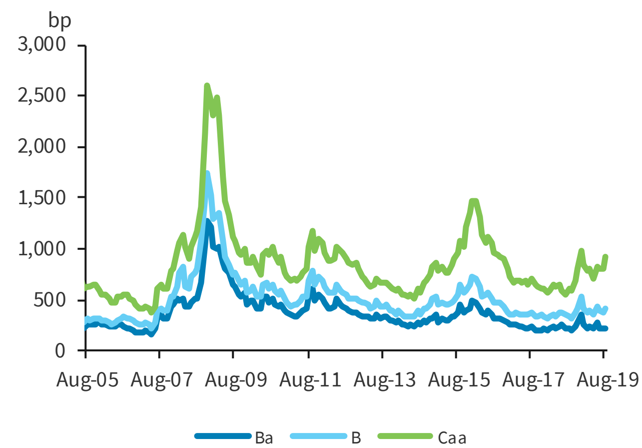
Source: Barclays Research

High Yield Supply by Sector



Note: 2019 new issue data as of September 25.
Source: Bloomberg Barclays Indices

High Yield Spreads by Credit Quality



Source: Bloomberg Barclays Indices

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