

# US High Grade Strategy Focus

## 10s30s sector relative value in US IG

- We introduce a two-stage quantitative approach to identifying high-grade credit sectors with unusually steep or flat 10s30s spread curves.
- We list the six IG sectors currently exhibiting the strongest steep/flat signals.
- Our model incorporates two empirical observations about sector 10s30s: curves are generally directional with the level of spread, and some sectors trade persistently steep or flat to what their spread levels imply.

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## A quantitative approach to 10s30s sector RV

In this brief note, we introduce an approach to identify high-grade credit sectors with unusually steep or flat spread curves between the 10-year and 30-year points. To do this, the model looks for deviations in sector maturity curves from their expected value given 1) the level of sector spread and 2) the typical shape of that sector's spread curve. By adjusting for these two factors, our 10s30s sector RV model explicitly accounts for two biases: first, **spread curves are directional with the level of spread**; and second, **some sector curves are persistently flat or steep**. Broadly speaking, the model aims to incorporate rich informational content from *all* sector 10s30s curves in determining the relative value of each individual sector. We illustrate the model using the communications and technology sectors, and then discuss the broader findings of the model as of Monday's levels.

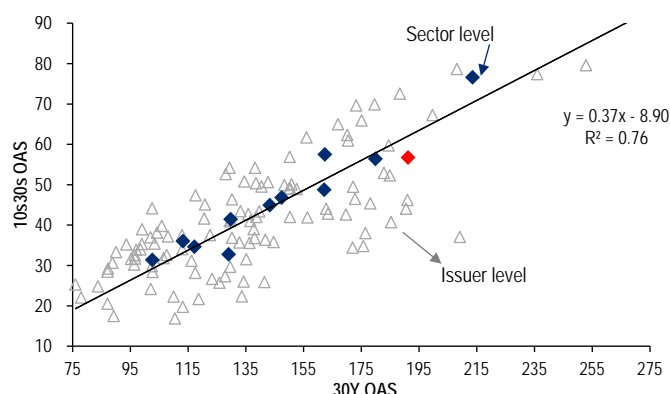
### Step 1: Relate sector spread curve shape to sector spread level

The initial step is to determine a linear<sup>1</sup> relationship between sector-level spreads and sector-level spread curves. We use issuer-matched bond pairs drawn from the major IG non-financial sectors, and compare 30-year sector OAS with 10s30s sector curve, with each issuer weighted equally. Because the model looks back 120 days, we choose on-the-run bond pairs with a four month lag. This permits a constant sample over the analysis period. In Figure 1, we plot the 30-year OAS of bonds (triangles) and major IG sectors (diamonds) against the 10s30s spread curve level as of Monday. The explanatory power ( $R^2$ ) is 0.76 at the bond level, and 0.89 at the sector level, and each of the sector spread curves currently falls within +/- 9 bps of the level implied by a simple linear regression.

### Step 2: Determine the typical flatness or steepness of each sector over 120d

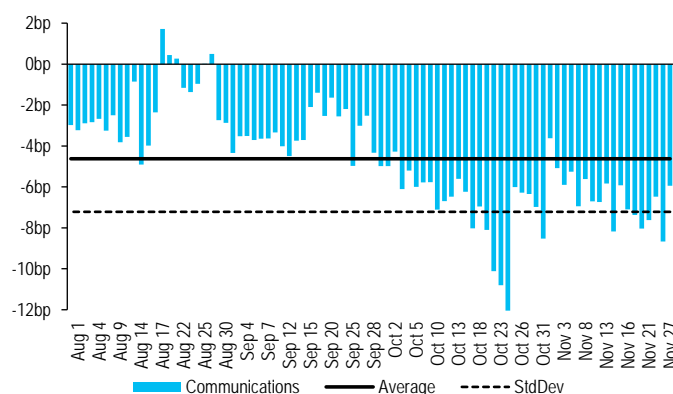
The 10s30s curve of the communications sector (red diamond in Figure 1) currently sits about 5.9 bps below what is implied by the sector's 30-year spread level. In Figure 2 we show that the communications sector's 10s30s spread curve has traded flatter than the implied level over most of the past 120d days. On average, the communications sector trades 4.6 bps flatter than the level of spread implies. The standard deviation line in Figure 2 highlights days in which the sector traded especially flat; the model would flag those as an opportunity to position for a steeper curve. The sector includes two large and three small issuers, equally weighted.

Figure 1. Snapshot of spread level vs spread curve, issuer-matched IG



Source: Citi Research

Figure 2. Historical spread level vs curve, IG Communications



Source: Citi Research

<sup>1</sup> A linear relationship provides an acceptable first-order approximation of the relationship between curve and spread level. At the wider reaches of IG, higher spreads are associated with flatter curves.

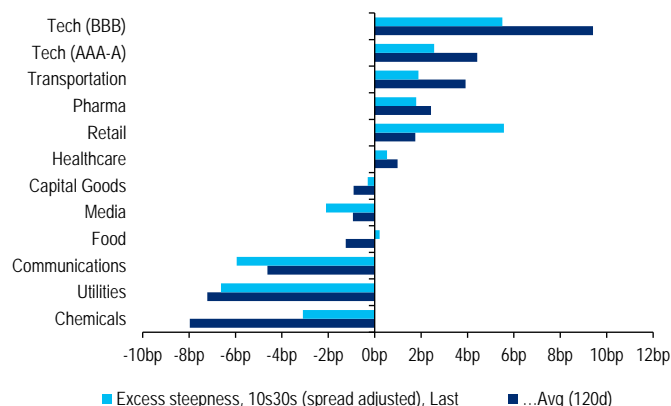
### Step 3: Repeat for major IG sector groups

We can then repeat this analysis across IG sectors to show those that trade flattest or steepest to the level we would expect given both their spread level and their typical habitat on the level/curve relationship. In Figure 3, we show both the current level of "excess" steepness/flatness – defined as the difference between the actual and expected 10s30s curve shape – and the average deviation over 120d. As of Friday, three sectors (retail, chemicals, and food) were excessively steep at the 1.5 sigma threshold, while another three sectors (AAA-A technology; BBB technology, communications and transportation) were excessively flat.

### Another illustration: BBB tech

Consider the BBB technology issuers in our sample. These bonds have an average 30-year spread of 214 bps as of Friday. This spread level implies a 10s30s curve of 71 bps for BBB tech using the regression exhibited in Figure 1. However, the current 10s30s curve for BBB tech is 77 bps. That puts BBB tech at 6 bps of "excess" steepness as of Friday. On average, however, BBB technology companies have traded with an "excess" steepness of 9.4 bps. (The last and average excess steepness figures are shown in Figure 3 for each sector in our analysis). Tech BBB bonds, in other words, are trading about 3.9 bps flat to their typical habitat on the regression line. This 3.9 bps deviation is more than 2 standard deviations below the average deviation. The z-scores of each sector are highlighted in Figure 4.

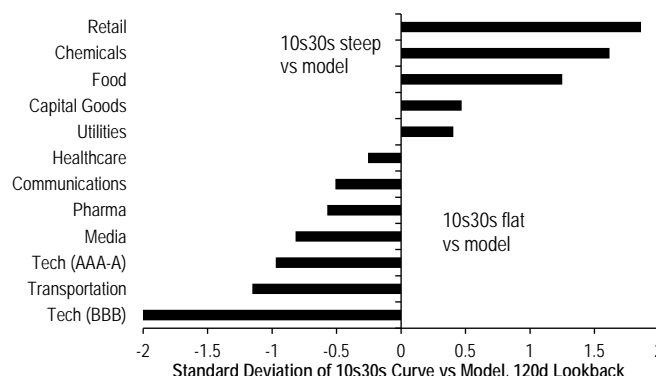
Figure 3. 'Excess' steepness/flatness vs 120d average, bps



Source: Citi Research

Note: Excess steepness is defined as the difference between actual 10s30s OAS and what is implied by the level of 30Y spread.

Figure 4. Excess steepness/flatness to 120d average, Z-score



Source: Citi Research

### Model selection and trade-offs

Our analysis draws from the residuals of 86 separate regressions for each of the past 120d calendar days that relate aggregate sector spread levels to curve shape. Our sector aggregates are built using 111 distinct 10-year and 30-year issuer bond pairs across a dozen IG sectors. Because high- and low-rated technology companies exhibit such distinct curve relationships, we treat them as separate sectors in this instance. We exclude the commodity sectors from the analysis and also issuers with negative 10s30s curves. To achieve a constant sample, we exclude bonds issued within the last 120 days, and focus instead on what our algorithm implies as the on-the-run 10s30s pair with a four-month lag. As a result, some bonds in our sample suffer from spread volatility associated with illiquidity in pricing, though the effect is mitigated to some degree by being averaged across multiple issuers. Spreads at the sector level are calculated as a simple average of OAS in our analysis, simulating a strategy of buying equal amounts of each issuer.

This differs from the typical approach of calculating spreads using market-value weights. We chose a 120d lookback as long enough to provide multiple points of comparison across various spread levels, and short enough to avoid distortions caused by 10-year bonds rolling down a steep 5s10s curve.

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