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Corporate Hybrids Arbitrage: Trading the Ebbs and Flows of Extension Risk

In previous articles, we have described the differences between “European-style” corporate hybrid securities (the structures with coupons that are “stepped up,” first issued in Europe, but long popular in markets such as Canada and Australia) and “U.S.-style” hybrids (those without coupon step-ups, chiefly issued in the U.S.). The structural incentives for an issuer to call a European-style hybrid at its first call date are very strong, and we believe they almost always override economic incentives not to call. The history of the asset class supports this belief.

Nonetheless, particularly during periods of risk aversion, market participants tend to price European-style hybrids more like U.S.-style hybrids, in line with economic rather than structural call incentives. We believe this offers arbitrage opportunities between hybrids from the same issuer with respectively higher and lower reset spreads. In the first half of this article, we describe this arbitrage opportunity and a framework for taking advantage of it.

In addition, we discuss how extension risk is sometimes priced inconsistently in U.S.-style structures. We introduce a new concept, “Yield to Loss of Equity Content,” to identify arbitrage opportunities in this market.

Executive Summary

- The respective structures of U.S.-style and European-style corporate hybrids lead to three observations regarding extension risk:
 - U.S.-style hybrids should see *instrument-specific, economics-based* pricing of their extension risk, in line with their reset spreads.
 - European-style hybrids should see *issuer-specific, fundamentals-based* pricing of their extension risk, in line with the deterioration of their creditworthiness.
 - All European-style hybrids from the same issuer with a similar effective maturity should be priced as if they carry the same extension risk at any point in time.
- Corporate hybrid portfolio managers can trade not only credit risk, but also structure risks; this paper identifies ways to arbitrage market mispricing of extension risk.
- For European-style Hybrids:
 - During periods of general risk aversion, many European-style hybrids are priced as though they are U.S.-style hybrids, with lower-reset hybrids trading at relatively wider market spreads than higher-reset-spread hybrids. This discrepancy creates a structural arbitrage opportunity.
 - We define the theoretical, fair value credit spread for a lower-reset spread instrument and, based on pricing patterns during risk aversion periods, we suggest going long on an instrument when its excess spread over its theoretical spread exceeds 10% for lower-beta hybrids or 20% for higher-beta hybrids.
- For U.S.-style Hybrids:
 - To find arbitrage opportunities, we introduce the concept of “Yield to Loss of Equity Content”: Pricing hybrids to the date at which they lose equity content—which is the main incentive to call and replace them—removes the pure extension risk economics between bonds with different call dates.
 - When applying this pricing concept, in some instances we find that the market demands higher compensation for 30NC5 structures (hybrids with a 30-year maturity and a first call date after five years) than for 30NC10s (hybrids with a 30-year maturity and a first call date after 10 years), sometimes even when the 30NC10s have higher reset spreads.
- In other words, we believe an arbitrage is available in European-style hybrids by buying extension risk that is overcompensated at the instrument level because the market tends to price them the same way it does U.S.-style securities; and for U.S.-style hybrids, we identify a different arbitrage by removing the “false” extension risk associated with the first call date alone and focus instead on the date of loss of equity content.

Corporate hybrid securities are either long-dated or perpetual and their coupon payments, like shareholders' dividends, can be deferred without triggering a default. In recognition of these subordinated, equity-like features, the main rating agencies assess hybrids as having 50% equity content. To ensure they remain bond-like, however, hybrids are callable and the equity content is removed should they be extended for a certain time. Under Standard & Poor's methodology, equity content is lost 20 years before “effective maturity.”

In previous papers, we have described how the more common European-style hybrids differ from U.S.-style hybrids.¹ For U.S.-style hybrids, which do not come with coupon “step-ups,” effective maturity is the same as the instrument’s legal maturity. A change to the way Moody’s assesses hybrids last year has incentivized a shift to issuance of 30-year instruments in the U.S. Under Standard & Poor’s methodology, this new “30NC” structure now loses its equity content after 10 years. But legacy U.S. hybrids were often issued with 60-year maturities, and will not lose their equity content until year 40. As such, while a U.S.-style hybrid is usually callable after five or 10 years, for many it may be decades before there is a structural incentive to call the instrument. Investors have therefore tended to price their extension risk in line with economic rather than structural incentives. That puts the focus on a hybrid’s “reset spread”—the spread it would exhibit were it to be extended rather than called. If the reset spread is tighter than that of a newly issued hybrid or senior bond would be, a U.S.-style hybrid will tend to trade more like a long-dated bond than a five- or 10-year bond, on the assumption that it will be extended.

By contrast, the coupons of European-style hybrids are stepped up periodically. For these hybrids, Standard & Poor’s defines effective maturity as the date when these coupon step-ups have accumulated to 100 basis points. Step-ups are typically set to reach 100 basis points after 25 or 30 years, so that equity content is lost after five or 10 years, to coincide with the first call date. Failing to call at the first opportunity would therefore incur loss of equity content, but also a wider reset spread due to the first coupon step-up. This is a double incentive not to extend a European-style hybrid.

FIGURE 1. EUROPEAN VERSUS U.S. HYBRID STRUCTURES

An Example of the European Model: Loss of Equity Content at First Call Date

PerpNC10 or 60NC10 Step-Up Structures: First 25bps Step-Up in Year 10, a further 75bps in Year 30

Year	5	10	15	20	25	30	35	40	45	50	55	60
Coupon	Fixed Cpn	Fix Cpn + 0bps Step-Up	Fix Cpn + 25bps Step-Up			Fix Cpn + 25bps +75bps Step-Up						
S&P Methodology	50% Equity Credit		0% Equity Content – Hybrid treated as pure debt									

An Example of the U.S. Model: Without Coupon Step-Ups, Loss of Equity Content May Come Many Years After the First Call Date

60NC5 No Step-Up Structures: A 5yr Bond or a 40yr Bond?

Year	5	10	15	20	25	30	35	40	45	50	55	60
Coupon	Fixed Cpn	Fix Cpn + 0bps Step-Up										
S&P Methodology	50% Equity Credit					0% Equity Content – Hybrid treated as pure debt						

Source: Neuberger Berman.

The Extension-Risk Arbitrage Opportunity in European-Style Hybrids

This double structural incentive to call a European-style hybrid should, in theory, overwhelm any other economic, spread-based incentive to extend it. The only exceptions should be when the issuer’s creditworthiness is in question, because an issuer whose credit rating has been downgraded gets to retain the equity content of its hybrids for longer.²

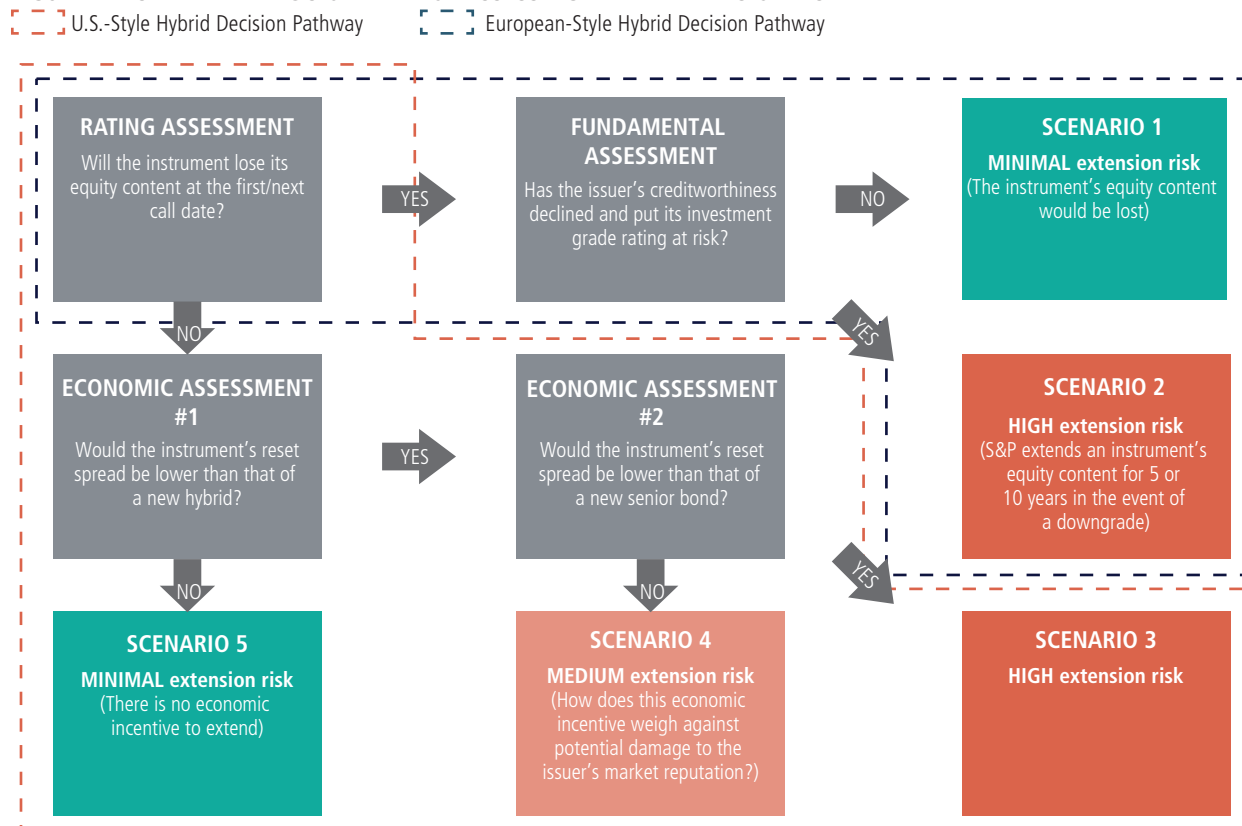
¹ Linus Claesson and Robin Usson, “Corporate Hybrids Take the World Stage” (May 2024) at <https://www.nb.com/en/link?type=article&name=whitepaper-corporate-hybrids-take-the-world-stage>; Linus Claesson and Robin Usson, “Corporate Hybrids Adopt a 30-Year Maturity Standard” (August 2024) at <https://www.nb.com/en/link?type=article&name=insights-corporate-hybrid-issuers-adopt-a-30-year-maturity-standard>.

² An extra five years for issuers downgraded to BB and an extra 10 years for those downgraded to B or lower. This is why, in another recent paper, we augmented the simplified decision tree shown in figure 1 with an overlay related to early signs of problems with European hybrid issuers’ creditworthiness: see Linus Claesson and Robin Usson, “Spotting Hidden Extension Risk in Corporate Hybrids” (June 2024) at <https://www.nb.com/en/link?type=article&name=whitepaper-spotting-hidden-extension-risk-in-corporate-hybrids>.

Don't take our word for it. From 2013 to 2023, 99% of European-standardized corporate hybrids from investment-grade issuers were called at the first call date. And we have seen issuers respond to the structural incentives to call despite strong economic incentives to extend; for example, to retain equity content, in 2022 a European Real Estate issuer paid 232 basis points of additional spread to refinance a callable hybrid with a new one.

A simplified decision tree for assessing hybrid extension risk is set out in figure 2. Given all the points above, investors should take the downward path from the top-left corner for almost all U.S.-style hybrids, and the sideways path for almost all European hybrids.

FIGURE 2. A SIMPLIFIED DECISION TREE FOR ASSESSING HYBRID EXTENSION RISK



Source: Neuberger Berman. For illustrative purposes only.

In our view, three observations should follow.

First, U.S.-style hybrids should see *instrument-specific, economics-based* pricing of their extension risk, in line with their reset spreads. Reset spreads on hybrids from the same issuer differ because they are determined not only by two common factors (the prevailing swap rate at the time of reset and any coupon step-up), but also by an idiosyncratic factor (the hybrid's initial spread, itself determined by the level of rates and the issuer's credit spread at the time of issue).

Second, European-style hybrids should see *issuer-specific, fundamentals-based* pricing of their extension risk, in line with the issuer's risk of credit-rating downgrade.

Third, every European-style hybrid from the same issuer, with a similar effective maturity, should therefore be priced as if it carries the same extension risk at any point in time.

In reality, and especially during periods of general risk aversion, many European-style hybrids price as though they are U.S.-style instruments, with investors taking the *downward* path in the decision tree and directing their attention to reset spreads. Hybrids with lower reset spreads have tended to trade with relatively wider market spreads (reflecting higher *perceived* extension risk), while those with higher reset spreads have traded tighter.

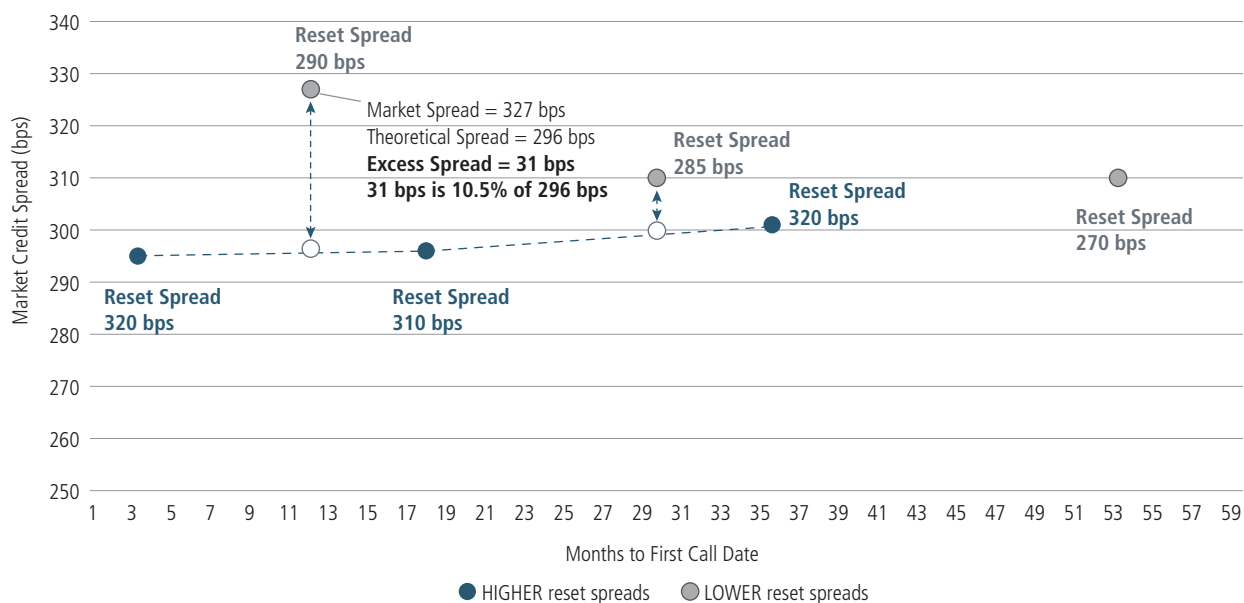
In our view, this is an arbitrage, and therefore potentially an alpha-generation opportunity.

Assessing the Arbitrage Opportunity

Figure 3 illustrates one way to identify these opportunities. It shows an illustrative hybrid securities curve for a single investment grade issuer. The illustration shows market credit spreads that would be typical during a period of risk aversion, with generally wider market spreads for lower reset-spread hybrids, especially if they are close to their first call date.

FIGURE 3. IDENTIFYING EXTENSION-RISK ARBITRAGE ON AN ISSUER’S HYBRIDS CURVE

An illustrative hybrid securities curve, showing a typical case of instruments with relatively low reset spreads trading at higher market spreads



Source: Neuberger Berman. For illustrative purposes only.

We see no extension risk difference between an investment grade issuer’s lower and higher reset-spread hybrids. We devised market signals in an attempt to identify the optimal entry for capitalizing on this arbitrage opportunity, taking account of transaction costs and the possibility of extended periods of risk aversion. How big does the excess market spread need to be to provide consistently positive total returns over reasonably short time periods?

We first define the theoretical, fair value credit spread for a lower reset-spread hybrid simply as a linear interpolation between the credit spreads of the two higher reset-spread hybrids closest in duration. In the example above, the instrument with a 290-basis-point reset spread should, in our view, trade at the market spread on the blue dotted line for its point of duration, which is 296 basis points. Instead, it trades at a market credit spread of 327 basis points, or 31 basis points cheap. Similarly, the instrument that is 30 months away from its first call date with a reset spread of 285 basis points should, in our view, trade with a market credit spread just under 300 basis points rather than 310 basis points.

To determine how wide this excess spread needs to be attractive, we then looked at hybrid pricing patterns during three periods of risk aversion: the “taper tantrum” of H2 2018 into H1 2019; the pandemic sell-off of 2020; and the rate-hiking cycle of 2022 and 2023. Our findings indicate that for lower-beta hybrids—issued by investment-grade companies or high-yield-rated defensive utilities—a 10% margin reliably signals when to go long on lower reset-spread instruments. For higher-beta instruments, a broader margin of 20% is necessary.³

In our illustrative issuer’s hybrids curve, the instrument with a 290-basis-point reset spread is trading with an excess market spread of 31 basis points, which is 10.5% of its interpolated spread of 296 basis points. Within our framework, this exceeds the threshold for a meaningful arbitrage opportunity, signaling an optimal time to go long on this particular hybrid.⁴

A Caveat Concerning Longer Tenors in the European Hybrids Market

Past performance is not a guide to the future. There may be reason for caution when extrapolating the margins of safety we identified from the 2018 – 2023 periods to the current trading environment.

When interest rates were low, before 2022, seasoned hybrid issuers that had built trust in the market were able to issue securities structured to lose their equity content and reach their first call date at relatively longer tenors—closer to 10 years than five. That means the current hybrid market has an unusually long time to average first call date.

The further out the first call date is, the longer it could take for any excess spread associated with perceived extension risk to close. A buy-and-hold investor would capture the excess spread over that time, but the capital appreciation, and therefore much of the excess total return, may not be realized until closer to the first call date. In these circumstances, the attractiveness of the arbitrage opportunity is no longer just a matter of the excess spread: the relative size of the hybrid’s coupon, which is likely to be the major part of the total return in the first few years of the investment, becomes a critical determinant.

For this reason, we prefer to seek out extension-risk arbitrage opportunities in the belly of an issuer’s hybrids curve, between three and five years to the first call date. At longer tenors, even when a hybrid with a low reset spread exhibits an excess market spread wider than our 10% or 20% margins, we would generally prefer higher-coupon instruments with tighter market spreads that are nearby on the curve, simply because the time value of money makes higher income today worth more than potentially higher total returns many years later.

In short, we believe that, in many cases, the excess market spread sometimes observed in European-style hybrid securities with relatively low reset spreads is not a rational compensation for extension risk, but an arbitrage opportunity. In today’s hybrid market, we believe extra consideration should be given to the time it might take for these arbitrages to close. Weighing the relevant variables—excess spread, coupon size relative to other hybrids of similar effective maturity—is more of an art than a science, but overall we think the belly of the curve is the more attractive place to seek out these arbitrage opportunities. At these tenors, we believe an excess spread of 10% or 20% of the theoretical spread remains a reasonable margin of safety at which to go long.

Assessing Extension Risk in U.S.-Style Hybrids

Let’s turn our attention back to the decision tree in figure 2. As we mentioned, U.S.-style hybrids do not have coupon step-ups and often maintain their equity content beyond their first call dates. In the decision tree to assess extension risk, that sends us downward, onto the “economic assessment” path.

The first economic assessment compares the cost of issuing a replacement hybrid instrument with the reset spread of the current hybrid. If a new hybrid would be cheaper, extension risk based on pure economics is minimal. If a new hybrid would be more expensive than the existing one, we judge the extension risk as medium; there would still be a good chance that the issuer would prioritize its market reputation over the cost saving. In the rarer circumstances where a new hybrid would be more expensive even than a new senior bond, the economic incentive to extend becomes overwhelming and we judge the risk as high.

³ We found that labelled Green, Social and Sustainable hybrid securities tended to exhibit lower beta than equivalent non-labelled instruments during periods of risk aversion, suggesting that some discretion could be applied when deciding where to locate the margin of safety in their excess market credit spreads.

⁴ In common with other callable bonds, hybrids exhibit negative convexity; their duration lengthens as their yields rise. It is worth noting here that hybrids with wider market spreads exhibit less negative convexity than those with tighter spreads, but similar maturity dates (and a position that is long the wider-spread hybrid and short the tighter-spread hybrid would exhibit positive convexity).

In figure 4, we plot the U.S. corporate hybrid universe on two axes, one being the ratio of the hybrids' reset spreads over the issuers' senior credit spreads and the other being the ratio of the current hybrids' market spread over the issuers' senior spread. This creates a map that shows which securities present high economic risk of extension, and which issuers are facing potentially expensive costs for issuing a new hybrid (figure 3). It is akin to showing whether the call option is "in the money" for the issuer. Maintained over time, such a map can show how the extension risk of individual hybrids or groups of hybrids has evolved.

FIGURE 4. MAPPING THE ECONOMICS OF U.S.-STYLE HYBRID EXTENSION RISK

Current and reset spreads, relative to issuers' senior debt spread in the credit default swap (CDS) market, for the U.S.-style hybrid universe



Source: Bloomberg, Neuberger Berman. Data as of January 5, 2025. For illustrative purposes only.

“Yield to Loss of Equity Content”: Identifying Arbitrage Opportunities in U.S.-Style Hybrids

If the arbitrage opportunity in European-style hybrids arises because the market tends to price their extension risk as if it were the same as for U.S.-style instruments, the opportunity in U.S.-style hybrids arises because the market tends to price extension risk with reference to their first call dates rather than to the date at which they lose their equity content.

Recall that loss of equity content is always the ultimate and overwhelming incentive to call a hybrid. Recall also that European-style hybrids are structured so that their coupon step-up schedules always trigger a loss of equity content coinciding with the first call dates, whereas loss of equity content in U.S.-style hybrids is entirely dependent on maturity dates and may have no relation at all with their first call dates.

It is not uncommon for a single U.S. issuer to have both 30NC5 and 30NC10 hybrids outstanding, for example. Both have 30-year maturities, which means they both lose their equity content in year 10, under Standard & Poor’s method. For the 30NC10, loss of equity content coincides with the first call date. But for the 30NC5, there are five years during which the hybrid *could* be called, but there is no incentive to do so from loss of equity content (figure 5).

FIGURE 5. DIFFERENT FIRST CALL DATES, SAME DATE FOR LOSS OF EQUITY CONTENT

U.S.-Style Hybrid, 30NC5 with no coupon step-ups, loses equity content from S&P 10, five years later than first call date

Year	5	10	15	20	25	30
Coupon	Fixed Coupon		Fixed Coupon + Obps Step-Up			
S&P Methodology	50% Equity Credit		0% Equity Content - Hybrids treated as pure debt			

U.S.-Style hybrid, 30NC10 with no coupon step-ups, loses equity content from S&P in year 10, in line with first call date

Year	5	10	15	20	25	30
Coupon	Fixed Coupon		Fixed Coupon + Obps Step-Up			
S&P Methodology	50% Equity Credit		0% Equity Content - Hybrids treated as pure debt			

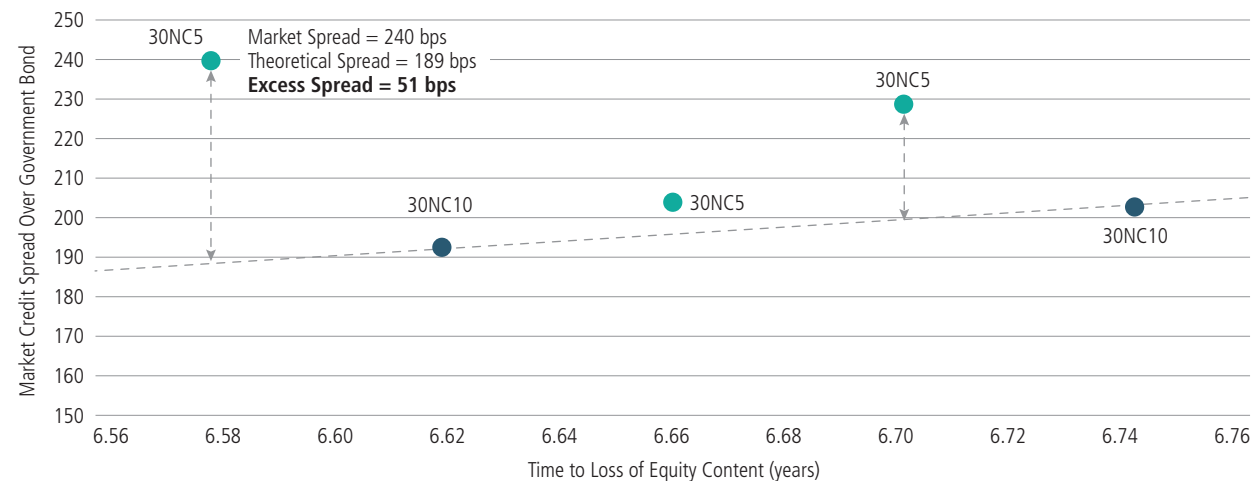
Source: Neuberger Berman.

Those additional five years of extension risk often appear to encourage the market to demand higher compensation for the 30NC5 than for the 30NC10, even when they are from the same issuer. That does not appear rational. If the 30NC5 is extended beyond its first call date for reasons of cost, because its reset spread is lower than that of a new hybrid or senior bond would be, the next (and most powerful) incentive to call would come in year 10, when it loses its equity content. In other words, its extension risk is now exactly the same as that for the 30NC10.

How do we reveal that demand for higher compensation from the 30NC5? By moving from the bond market’s standard yield-to-call (YTC) or yield-to-worst (YTW) valuation measures to a new measure that we introduce here: Yield to Loss of Equity Content (YTLOEC). Exclusively in the market for U.S.-style hybrid securities, pricing to the date at which equity content is lost removes the pure economics-based extension risk differential between bonds with diverse call dates, and reveals the resulting mispricing. Similar to our approach to identifying arbitrage opportunities in European-style hybrids, we interpolate a theoretical spread; in this case, for an issuer’s 30NC5s from the actual spreads of the issuer’s 30NC10s (figure 6).

FIGURE 6. IDENTIFYING EXTENSION-RISK ARBITRAGE ON A U.S. ISSUER’S HYBRID CURVE

A U.S. Utility issuer’s hybrid securities curve, showing 30NC5s trading at higher market spreads than those implied by 30NC10 pricing, based on the assumption that loss of equity content is the main incentive to call



Source: Neuberger Berman. For illustrative purposes only.

Occasionally, we have seen a 30NC5 trading with a wider spread than the same issuer's 30NC10 even though the 30NC10 has the lower reset spread. While our ability to backtest market signals for trading based on YTLOEC is limited given the small dataset, we regard this as irrational under-pricing of securities based purely on the irrelevant fact that they have been extended beyond their first call dates—and therefore an arbitrage opportunity for investors.

A Complex Asset Class With Sometimes Irrational Pricing

Corporate hybrid securities are complex. They come with embedded optionality, the incentives for which depend largely on terms set by three different credit rating agencies. For historical reasons, hybrid structures in Europe and the U.S. have diverged, further complicating the option incentives. And even as the incentives in these different markets have begun to converge, the structures themselves retain their divergent characteristics. All this instrument-level complexity precedes any consideration of idiosyncratic country, sector and issuer risks.

While hybrids are a relatively small market in the fixed income universe, it should therefore come as no surprise to find instances of irrational or inefficient pricing among them. We believe we have identified two sources of systematic mispricing: the tendency to price the call incentives of European-style hybrids as if they were U.S.-style hybrids; and the tendency to price the call incentives of U.S.-style hybrids with reference to their first call dates rather than the date at which they lose equity content. We regard both as arbitrage opportunities, waiting for investors to take advantage of them.

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