The relationship between bond and CDS spreads

Understanding the drivers of basis between Credit Default Swaps (CDS) and bond spreads is important in correctly interpreting prices from each market. Daniel Berman from JPMorgan explains.

Growth in the credit derivative market means that the CDS has become crucial to corporates as they seek to understand the bond markets and monitor investor appetite for funding opportunities or buybacks. This review discusses the pricing methodology of the basic credit default swap, the equivalent spread measure for corporate bonds, considers how CDS and bond spreads relate to one another, and how CDS may on occasion drive bond spreads.

Comparing CDS and Bond Spreads

Credit spreads reflect the market’s perception of credit risk. In any efficient market the return for taking a risk must equal the expected return as a result of that risk. If not, the case for, instance, were the expected loss under a CDS contract to be lower than the bond equivalent spread, there would be a pure arbitrage opportunity. Given this efficiency axiom, we can calculate the expected loss covered directly from the bond market price.

A practical example, if Sainsbury’s 5 year CDS spread against Gilts was 150ppb, the 5 year bond equivalent spread would be 150ppb. However, the market, the loss expected under a 5 year CDS contract equals approximately the sum of the premiums received over the contract’s life, i.e., 500ppb. Adjusting for positive interest rates and the time value of money, a more accurate present value calculation of the CDS provides us with a 4.8% expected loss by going long on Sainsbury credit risk through a 5 year CDS instrument.

Executive summary

A credit default swap (CDS) is analogous to an insurance contract, with the buyer of credit protection paying a periodic fee in return for receiving compensation should the specified reference entity experience a credit event during the contract’s life.

Although CDS and bond measures equivalent credit risk, there are many factors which can cause their prices to diverge. This difference between them is called ‘basis’, and is calculated by subtracting the CDS spread from the matched maturity CDS spread.

Credit specific factors such as documentation, convertible issuance and the market’s expectation of debt buybacks, as well as macro factors such as liquidity differences and segmentation between markets, low bond market supply and structured credit flows can all exert different pressures on bond and CDS spreads.

Basis can be either positive or negative. Depending on the causes, it may present a short-term relative value opportunity for investors, or alternatively be long lasting.

Understanding these factors will improve the ability of corporates to synthesize information from CDS and bond markets as they interpret investor appetite.

While the asset swap spread is the most common measure of a bond’s credit risk, it suffers distortion when the bond price is significantly above or below par. In the current low interest rate environment many corporate bonds currently trade significantly in excess of par. As a result, we use z-spread as it takes the bond’s cash price into account.

Although there are further technical differences between z- and CDS spreads, the market is comfortable using these measures as a basis for comparison.

The basis between bonds and CDS

While z- and CDS spreads measure very similar credit risk, we frequently see them trade at different levels in the market for the same issuer and maturity.

This difference is called ‘basis’, and is calculated by subtracting the z-spread from the CDS spread. To the extent the credit risk reflected in each spread are very similar, they should represent a relative value trading opportunity. As we discuss below, we don’t consider these as being pure arbitrage opportunities as there are real differences between bond and CDS instruments as means for taking or hedging credit risk.

The market convention is that we describe the basis as negative when CDS trades inside (tighter) than the bond spread for the same maturity. When there is a positive basis an investor who is able to trade both CDS and bonds can earn a near-risk free return by buying a bond and credit protection of the same maturity in equal notional amounts. This is a ‘negative basis strategy’.

Conversely if the CDS spread is higher than the bondspread for the same maturity, an investor should prefer to sell credit protection rather than own the bond. We don’t really consider the latter a tradable package as the inefficiencies of the repo market for corporate bonds can make it difficult and expensive to borrow bonds in order to be able to sell them.

Significant negative basis opportunities are generally short-term (as they are an attractive package trade for many investors), and positive basis does not generally represent a arbitrage opportunity in the same way.

Basis in general is an important indicator of relative value between bond and CDS markets, and a key trade and profitability driver for investors. Implicitly, any investor whose remit allows investment in either bonds or CDS, is always either short or long basis, depending on the composition of the protection they require bonds and CDS. From a corporate perspective understanding investors’ actions and credit appetite requires analysis of the relevant investment alternatives. As CDS moves centre stage, the drivers of the differential between it and more traditional corporate credit products becomes a key component in this equation.

Issuers, as much as investors, will understand the need to consider the drivers of basis starting with those which are credit, bond or maturity specific, and moving onto others which influence the trading relationships seen across the market.

Bond Covenants

CDS and bond documentation are very similar. A CDS is a commoditised instrument with little customisation dependent on the referenced credit, whereas bond terms and conditions are a function of issuance strategy, credit strength, investor demand and market timing. An obvious example of a benefit of the bond the same issuer, despite each being labelled senior unsecured.

An investor who is long credit risk through CDS will gain comfort from outstanding bonds of the issuer which have strong negative pledge language. However, should these bonds be redeemed early, the CDS, along with other bonds containing less restrictive covenant language, will be exposed to greater credit risk. This uncertainty – the risk of change to both corporate and funding structures – increases with maturity. Similarly, bonds can contain conditional investor puts or issuer calls. The risks for holders of credit risk through bonds and CDS in these circumstances can diverge. A topical example is Sainsbury’s bonds and CDS. When Sainsbury issues new bonds, investors are offered a $100 notional payment per $100 par value following a ratings downgrade in certain circumstances, including a change of control. As there is no equivalent language in Sainsbury’s CDS (as it is a standard contract, we would expect, and do, observe that Sainsbury bonds would trade expensively i.e. a lower spread) compared to CDS, investors considering Sainsbury’s bonds and CDS as investment alternatives are giving value to the probability that this put is exercisable. This characteristic of the bonds is an important driver of the basis. To make it more complicated, the value of the documentation differences between Sainsbury’s bonds and CDS will likely vary over time, as it depends on a number of factors, including:

- Interest rates: as interest rates vary, fixed rate Sainsbury bonds will appreciate in value. This decreases the potential value of the put which is fixed at a cash price of par, rather than calculated as a spread over GILTS or swaps.
- Sainsbury’s fixed rate quality: as Sainsbury’s credit improves, the likelihood of investors gaining the opportunity to exercise the par put decreases, thus reducing the value of the put option.

Similarly, the relationship of step up/down bonds, whose coupon levels are dependent on ratings, to CDS will depend on the market’s expectation of future coupon settings. For example, if investors expect a telecoms credit to be upgraded, its step up/down bonds will trade relatively cheap to CDS, reflecting the expected reduction in coupon.

Restructuring

While Bankruptcy and Failure to Pay are likely to have equal economic impact on bonds and CDS, the First Credit Event in European CDS contracts, Modified Restructuring does not have an equivalent in standard bond documentation. This gives CDS protection higher value as it can trigger a payoff in circumstances where any one of the issuer’s bonds and loans have been restructured.

Debt Buybacks

A company repurchases outstanding bonds before maturity, for example through a formal tender process, holders normally receive a premium to the current market level as an incentive for selling their holdings. While all of the company’s bonds and CDS levels will benefit from this action reducing total debt, holders of the bond being repurchased stand to gain most. As the CDS does not reference specific bonds, but rather a category of credit obligation, CDS prices are unlikely to benefit to the same extent as the buyback target, assuming that other debt of the company remains outstanding. This implies that if the market has a high expectation of specific bond buybacks, CDS should trade at a greater positive basis to these bonds, as bond holders position themselves for early redemption and a resulting windfall payment.

Liquidity and Market Segmentation

Although a credit investor can equally obtain long positions in CDS and CDS, the CDS-Credit Default Event in European CDS contracts, Modified Restructuring does not have an equivalent in standard bond documentation. This gives CDS protection higher value as it can trigger a payoff in circumstances where any one of the issuer’s bonds and loans have been restructured.

ISSUERS, AS MUCH AS INVESTORS, WILL NEED TO UNDERSTAND THE DRIVERS OF BASIS STARTING WITH THOSE WHICH ARE CREDIT, BOND OR MATURITY SPECIFIC, AND MOVING ONTO OTHERS WHICH INFLUENCE THE TRADING RELATIONSHIPS SEEN ACROSS THE MARKET.
their investment mandates do not allow them to transact derivative products. Were every investor indifferent between gaining credit exposure through bonds or CDS, the market would eliminate any arbitrage by selling corporate bonds and selling credit protection until the prices converged and the arbitrage eliminated, or vice versa. However, today this is not the case. Given that a significant percentage of the market is not yet using CDS, we can expect arbitrage opportunities to exist between the two for some time (although these should decrease as the market integration continues). Funds that cannot access CDS drag cash bond tighter, but do not directly impact CDS spreads. When the positive basis becomes sufficiently large, we would expect trading desks and relative value long-short players to sell credit protection until the prices converge and the arbitrage eliminated, or vice versa.

In increasingly integrated credit markets, CDS prices are a key indicator of risk appetite. Used by loan, bond and convertible market investors, they provide a single measure which is less prone to the technical distortions of each market. Understanding the factors driving basis is key to interpret investors’ appetite and consequent funding or buyback opportunities.

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Fig 2. Basis for European Corporate Bonds (bps)