Tabula insights: measuring the dynamics of trading the CDS-bond basis

January 2020

The CDS-bond basis is a credit factor that allows investors to capture yield by targeting the difference between the trading levels of CDS and bonds of the same issuing entity without being outright long the underlying credit risk. Historically it has been difficult to capture this factor on indices due to the mismatch in exposure of the available instruments.

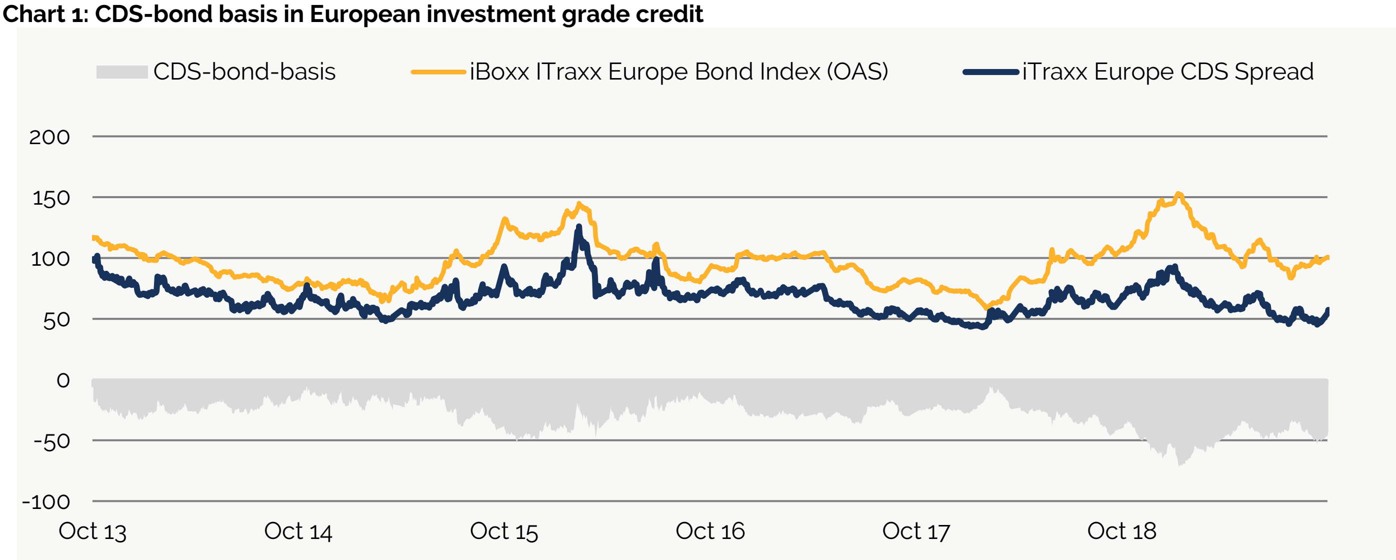
It is important to remember that anyone with a credit portfolio, whether holding cash bonds or CDS, is likely to be long or short CDS-bond basis.

In this note, we set out: i. an introduction to CDS-bond basis; ii. what drives the basis; iii. how investors can trade it and the instruments available; iv. introduction to the iBoxx iTraxx Europe Bond Index; and v. how to implement a basis trade. We focus particularly on the European investment grade market, where a new iBoxx bond index allows investors to accurately match CDS and bond index exposure and capture any available basis more efficiently.

I. Introduction to CDS-bond basis?

The CDS-bond basis is the difference in credit spreads between CDS and bonds with the same underlying issuer risk and similar maturity. It can be measured between a single name CDS and an individual bond from the same issuer, or between broad CDS and bond indices. The basis can be positive (CDS spread > bond spread) or negative (bond spread > CDS spread) and vary across issuers and over time. As a result, any portfolio with bond or CDS exposure is likely to be either long or short CDS-bond basis at any given time.

Chart 1: CDS-bond basis in European investment grade credit



Data: Tabula/IHS Markit, 30 September 2019. Past performance is not a reliable indicator of future returns. OAS is option-adjusted spread.

The basis is typically negative but tends to revert towards zero after a major widening – a pattern that could be exploited via basis trades.

Factbox

Term	Definition
CDS	Credit default swap, a seller of CDS agrees to compensate the buyer in the event of a debt default or other credit event.
CDS bond basis	CDS spread minus bond spread
z-spread	The zero-volatility spread; the spread an investor will receive over the entire risk-free curve.
OAS	Similar to the z-spread, but accounts for embedded optionality
Negative basis	When the bond spread is higher than the CDS spread
Positive basis	When the CDS spread is higher than the bond spread

Measuring the CDS-bond basis

CDS-bond basis is measured as **CDS spread minus bond spread**, quoted as a running annual spread. So, if the CDS spread widens relative to the bond spread, the basis becomes more positive, and vice versa.

It is worth noting that the bond spread can be measured one of two ways. The **z-spread** is a standard measure, reflecting the spread needed to be applied to the curve of risk-free rates to achieve the present value (PV) of a bond's cash flows. Another is the **option-adjusted spread** or **OAS**, as used in Chart 1. This is similar to a z-spread, but accounts for embedded optionality in bonds, like issuer calls.

II. What drives the basis?

Since both CDS and bonds reflect credit risk, the CDS-bond basis should, in theory, be close to zero. However, they are different instruments and, in practice, one may be more or less attractive than the other. The table overleaf shows some of the factors that can cause the basis to become more positive or negative. These can be broad market drivers like supply and demand, liquidity and funding costs or differences in underlying risk, for example where bonds have features that aren't captured in standardised CDS contracts.

Market sentiment: in a negative market shock or "credit crunch", spreads may widen, bond liquidity can fall and investors may turn to the CDS market to trade credit risk. This can cause a strong negative basis. As Chart 1 shows, the basis then tends to slowly gravitate back towards zero.

Bond issuance and liquidity: when bond issuance volumes are high relative to demand, and/or liquidity is low, investors require more compensation for holding bonds so bond spreads tend to rise, reducing the basis. When bond issuance volumes are lower than investor demands, bond spreads compress and the basis gets larger.

Funding costs: in general, when issuer funding costs are high, holding a physical asset like a bond is more expensive than taking exposure via a derivative. As a result, higher funding costs tend to reduce the basis as investors require a higher spread on bonds relative to CDS, and vice versa.

Features of bond covenants: a bond can include extra conditions which change the effective maturity such as issuer calls or investor puts. Often, these features provide extra protection for the investor, making the bond more attractive relative to a standard CDS contract and widening the basis. However, the value of these features can vary over time and with market conditions. For example, changes in interest rates could make an issuer call more or less likely.

Features of CDS contracts: CDS contracts are standardised, which improves liquidity but means they may not always exactly match the risk in relevant bonds. In particular, CDS contracts specify that, following a credit event, the protection buyer can deliver the "cheapest to deliver" bond. This drives positive basis as taking long credit exposure via CDS (selling protection) is slightly less attractive. There may also be differences in soft credit events/restructuring, when the payout on a CDS may not exactly mirror the economic impact on a bond holder. ISDA's 2019 proposals for CDS contracts may help to align CDS and bonds more closely in this respect.

Structured credit: structured credit exposure is usually long and leveraged. When there are high issuance volumes, CDS spreads are depressed, pushing the basis lower or negative. When these trades are unwound, the situation is reversed.

Drivers towards negative basis	Drivers towards positive basis
High bond issuance	Low bond issuance volumes
Low bond liquidity, especially in a “credit crunch” scenario	Debt buybacks expected
Higher funding or bond repo costs	Bond covenant providing more investor protection
Bond covenant providing less investor protection	“Cheapest-to-deliver” option for CDS
High structured credit volumes	Soft credit events/restructuring
	Unwind of structured credit products

III. Trading the basis

There are well-established trading strategies to take advantage of both positive and negative basis.

When the basis is negative, some investors look to secure a “risk-free” spread by buying bonds (long credit risk) and buying CDS protection (short credit risk) on the same entity, matching the maturities. To capture the basis accurately, investors typically hedge the bond interest rate exposure too. If bond spreads remain higher than CDS spreads, this generates an excess return reflecting the running basis, after any transaction costs.

Other trades are driven by **speculation that a large negative basis will revert to the mean**, particularly after negative market news when basis tends to go strongly negative.

Capturing positive basis is more complex. To create a short bond position, bonds have to be borrowed, which involves sourcing of respective bonds, a borrowing fee and posting of collateral. Depending on the specific underlying exposures and their liquidity, these extra costs can impact profitability. However, the ability to short bond ETFs has made index-level trades more accessible.

Negative basis trade

Buy bonds
Long credit and interest rate risk

\+

Hedge interest rate risk
Sell futures

\+

Buy CDS protection
Short credit risk

Positive basis trade

Borrow and short bonds
Short credit and interest rate risk

\+

Hedge interest rate risk
Buy futures

\+

Sell CDS protection
Long credit risk

Single name or index?

Basis trades are growing in popularity and volume, However, the choice of instrument – for both the bond and CDS legs – and the associated execution costs, are important factors in the profitability of these trades. Single name basis trades, particularly negative basis trades combining long bond positions and CDS protection, can be attractive opportunities. However, they require detailed analysis of individual bond features. In addition, single name CDS typically have higher transaction costs and lower liquidity than CDS indices.

As a result, most investors prefer index-level basis trades. CDS indices have become the default instruments for credit trading, often with significantly higher liquidity than their component entities. Unlike single name CDS, they are also centrally cleared, reducing counterparty risk. For the bond exposure, index ETFs have many advantages. They are liquid, cheaper to trade and can typically be shorted much more easily than individual bonds.

However, despite the growing popularity of these trades, there is a concern: CDS indices and bond indices have evolved separately, with very different selection and weighting methodologies, and can have surprisingly different underlying exposures.

Bond indices are large portfolios of bonds designed to reflect a particular market segment, often defined by issuance currency rather than issuer domicile. They are weighted by market capitalisation and their sector and maturity profiles depend on issuance situation.

CDS indices are baskets of issuers/entities from a particular region with selection driven by CDS market liquidity. Constituents are equally weighted and sector exposure set within fixed bands. Indices are issued in ongoing series for specific maturities e.g. 5y or 10y.

For example, for European investment grade credit, the most established CDS index is iTraxx Europe, a basket of 125 European issuers typically traded in 5y contracts. In contrast, the most liquid ETFs track indices of EUR-denominated bonds, with significant exposure to US issuers, much higher exposure to financial services and bond maturities ranging from 1y to over 15y. These mismatches may be tolerable in a stable and highly correlated market. However, they could potentially cause divergence between CDS and bond indices that is not driven by basis and could add noise and inefficiency to basis trades.

IV. iBoxx iTraxx Europe Bond Index

A new bond index designed specifically to match iTraxx Europe

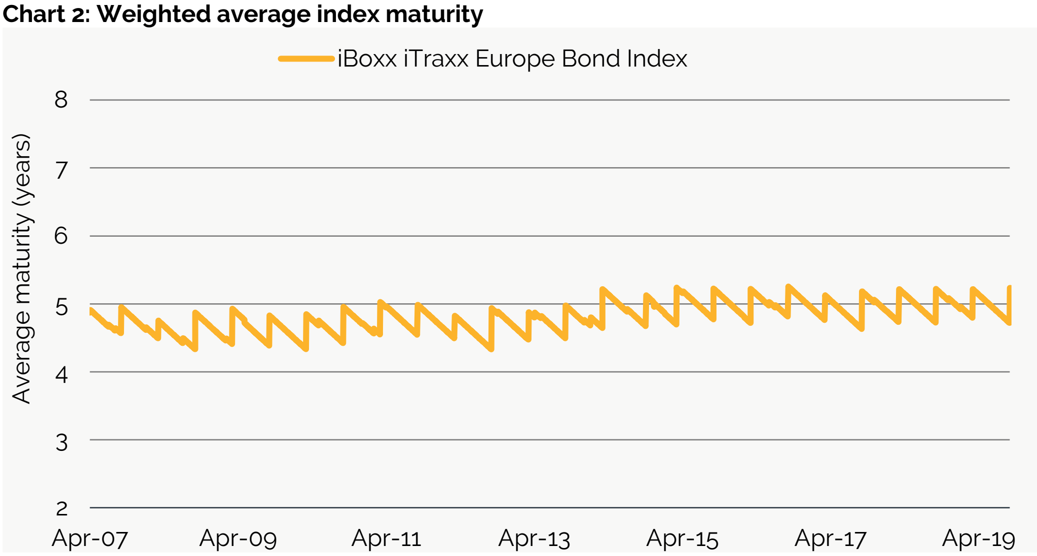
Tabula and IHS Markit have jointly developed a new index designed to match the exposure of iTraxx Europe as closely as possible using corresponding cash bonds. It includes bonds issued by the same 125 issuers represented in iTraxx Europe, with equal notional weighting per issuer and maturities in a narrow band around 5y. As the table shows, the resulting index is significantly closer to iTraxx Europe than all other existing bond benchmarks.

	iTraxx Europe CDS index	**iBoxx iTraxx Europe Bond Index**	**Traditional bond benchmarks**
Objective	A liquid benchmark for European IG credit	A physical bond version of iTraxx Europe	Reflect EUR-denominated investment grade bonds
Market coverage	**European issuers**	EUR-denominated bonds from **European issuers** in iTraxx Europe	EUR-denominated bonds from **all issuers** (typically ~20% exposure to US)
Constituents	125 issuers	~260 bonds (up to 3 per issuer, up to 125 issuers)	~2800 bonds
Weighting	**Equal notional per issuer**	**Equal notional per issuer**	Market capitalisation
Sector weights	**Fixed bands**	**Fixed bands** as per iTraxx Europe	Depends on issuance patterns – may be biases to more indebted sectors
Maturity constraints	5y CDS is most widely traded	**5y target** maturity, with bonds from **3-7y** maturity	Around 5y but with maturities from **1 to >15y**
Rebalancing	March and September	March and September	Typically monthly

Average index maturity consistently close to 5y – the most widely traded in index CDS

The index focuses exposure on bonds with 3-7 years to maturity, only including bonds outside this band when there are no others available for a particular issuer. Bonds are also weighted so as to target an average maturity of 5.25 years at rebalance, falling to 4.75 by the next rebalance. These features of the methodology have delivered a very consistent maturity profile over time. In contrast, the maturity profile of traditional benchmarks is driven by issuance patterns and can vary significantly. With 5y the most widely traded maturity in CDS indices, the iBoxx iTraxx Europe Bond Index should provide well-matched exposure for basis trades with efficient hedging of interest rate risk.

Chart 2: Weighted average index maturity



Data: IHS Markit, 30 September 2019. Past performance is not a reliable indicator of future returns.

V. Implementation via Tabula ETF

Tabula has launched a UCITS ETF on the iBoxx iTraxx Europe Bond Index. Our capital markets team is happy to provide detailed pre-trade analysis for basis trades using the ETF in combination with CDS trades on iTraxx Europe, and to connect you with counterparties for execution.

ETF	Tabula iTraxx IG Bond UCITS ETF (EUR)
Index	iBoxx iTraxx Europe Bond Index
Replication	Physical – optimised sampling
Base currency	EUR
Distributions	Semi-annual
Ongoing charge	0.29%
Exchanges/Tickers	London Stock Exchange - TTRX LN Xetra - TABX GR
ISIN:	IE00BL6XZW69
Domicile:	Ireland

Contact us

Tabula Investment Management

6th Floor, Denham Building, 27 St. James's Street
London SW1A 1HA

Phone +44 20 3909 4700
Email IR@tabulaim.com

tabulaim.com

Important Information

This document is issued by Tabula Investment Management Limited (“Tabula”), authorised and regulated by the Financial Conduct Authority (“FCA”). Tabula is a private limited company registered in England and Wales (Registered no. 11286661). Registered address: 10 Norwich Street, London, EC4A 1BD. Business address: Sixth Floor, Denham Building, 27 St. James’s Street, London SW1A 1HA.The Tabula iTraxx IG Bond UCITS ETF (EUR) (the “Fund”) is an open-ended sub-fund of Tabula ICAV (the “ICAV”) which has variable capital having segregated liability between their funds organised under the laws of Ireland and authorised by the Central Bank of Ireland. This material is for distribution to Professional Clients (as defined by the FCA or MiFID Rules) and Qualified Investors only and should not be relied upon by any other persons. Tabula has not considered the suitability of this investment against your individual needs and risk tolerance. The data displayed provides summary information, any decision to invest must be based solely on the information contained in the Fund’s Prospectus, Key Investor Information Document and the latest half-yearly report and unaudited accounts and/or annual report and audited accounts, when available, free from your broker, financial adviser or Tabula Investment Management Limited. It is the responsibility of every person reading this document to satisfy themself as to the full observance of the laws of any relevant country, including obtaining any government or other consent which may be required or observing any other formality which needs to be observed in that country and which might be relevant to the subscription, purchase, holding, exchange, redemption or disposal of any investments. No provider of information presented here, including index and ratings information is liable for damages or losses of any type arising from use of their information nor breach of such legislation or for any losses relating to the accuracy, completeness or use of information in this communication, including consequential loss. No warranty of accuracy is given and no liability in respect of any error or omission is accepted. No sale will be made in any jurisdiction in which the offer, solicitation, or sale is not authorised or to any person to whom it is unlawful to make the offer, solicitation or sale. This document does not constitute an offer to sell or solicitation of an offer to buy interests in any product and may not be used to make such an offer. The information contained in this document, especially as regards portfolio construction/parameter-type information, reflects the current thinking of Tabula and may be changed or modified in response to its perception of changing market conditions, or otherwise, without further notice to you.
Accordingly, the information herein, in respect of investment products and services, should be considered indicative of Tabula’s current opinion and should not be relied on in making any investment decisions. This document is not, and under no circumstances is to be construed as an advertisement or any other step in furtherance of a public offering of shares in the United States or Canada. This document is not aimed at persons who are resident in the United States, Canada or any province or territory thereof, where the Fund/securities are not authorised or registered for distribution and where no prospectus has been filed with any securities commission or regulatory authority. The Fund/securities may not be acquired or owned by, or acquired with the assets of, an ERISA Plan. Investment in the products mentioned
in this document may not be suitable for all investors. Past performance is not a guide to future performance and should not be the sole factor of consideration when selecting a product. The price of the investments may go up or down and the investor may not get back the amount invested. Your income is not fixed and may fluctuate. The value of investments involving exposure to foreign currencies can be affected by exchange rate movements. We remind you that the levels and bases of, and reliefs from, taxation can change. In respect of the products mentioned this document is intended for information purposes only and does not constitute investment advice or an offer to sell or a solicitation of an offer to buy the securities described within. The Fund has appointed as Swiss representative Oligo Swiss Fund Services SA, Av. Villamont 17, 1005 Lausanne, Switzerland, Tel: +41 21 311 17 77, email: info@oligofunds.ch. The Fund’s Swiss paying agent is Banque Cantonale de Gen ève. The Prospectus, the Key Investor Information Documents, the Instrument of Incorporation as well as the annual and semi-annual reports may be obtained free of charge from the Swiss Representative in Lausanne. In respect of the Shares distributed in or from Switzerland, the place of performance and jurisdiction is at the registered office of the Swiss Representative. The issue and redemption prices are published at each issue and redemption on www.swissfunddata.ch.

The iBoxx iTraxx Europe Bond Index referenced herein is the property of Markit Indices Limited and is used under licence.