

Making an impact

Executive summary

- The current dislocation in the global credit markets has been characterised by the well-documented underperformance of both credit default swaps (CDS) indices and, to a lesser extent, single-name CDS.
- The article concentrates on credit default swaps, both single-name and indices, which make up the largest proportion of the market and are most relevant for corporate users.
- CDS are increasingly used by the capital market as a proxy for assessing a credit's relative value, and therefore by banks and bond investors as an input for bond and loan pricing.
- Single-name CDS and CDS indices also have direct applications for corporate users as a tool for credit hedging, risk mitigation and liquidity management.

A single-name credit default swap (CDS) is a bilateral contract that allows one party to transfer credit risk exposure to another party. The buyer pays a fixed premium, generally on a quarterly basis in arrears (known as the CDS spread, and usually quoted in basis points); the CDS seller agrees to take on the credit risk of the reference entity, and pay a notional amount to the protection buyer if the reference entity suffers a predefined credit event, and the default swap is triggered. Settlement will be either by physical delivery or by a cash settlement. Documentation is standardised under an International Swaps and Derivatives Association (ISDA) agreement, and the market is available for all tenors, although five and 10 years are the most liquid. The premiums cease to be payable should a swap payout be triggered but continue to be payable for the term of the swap even if the reference debt is repaid early. This latter feature has implications for corporates undertaking debt repayments and restructurings.

An investor in a corporate bond earns a return equal to the 'risk free' interest rate plus a credit margin. As an alternative, the investor can create a synthetic bond by buying a 'risk free' government bond combined with selling a CDS to earn the credit margin for that corporate name. Since liquidity in government bonds and CDS is far greater than in corporate bonds, this synthetic route has become very popular in recent times, further fuelling CDS market growth.



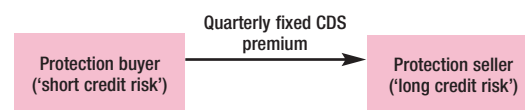
GROWTH OF THE CREDIT DERIVATIVE MARKET Credit derivatives have revolutionised the financial markets by allowing the transformation, isolation, repackaging and customisation of credit risk. Across the full spectrum of credit derivatives, spectacular growth has been witnessed over recent years. Volumes of outstanding contracts were estimated to be \$34.5 trillion at year-end 2006 according to ISDA – 101% higher than the 2005 volume.

Much of this growth can be attributed to the range of products available. Single-name CDS offer a liquid and flexible alternative to cash bonds for gaining exposure and hedging individual credits. CDS indices offer diversification, and have helped drive growth and liquidity. New product development, particularly in structured credit has also been a key driver, with instruments such as synthetic collateralised debt obligations (CDOs), default baskets and CDS options attracting a broader range of market participants.

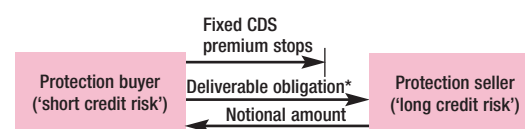
Credit derivatives are having a marked impact on trading patterns. Barclays Capital estimates that the proportion of cash bond trading

Diagram 1: Cashflows before and after credit events

Cashflows before credit event

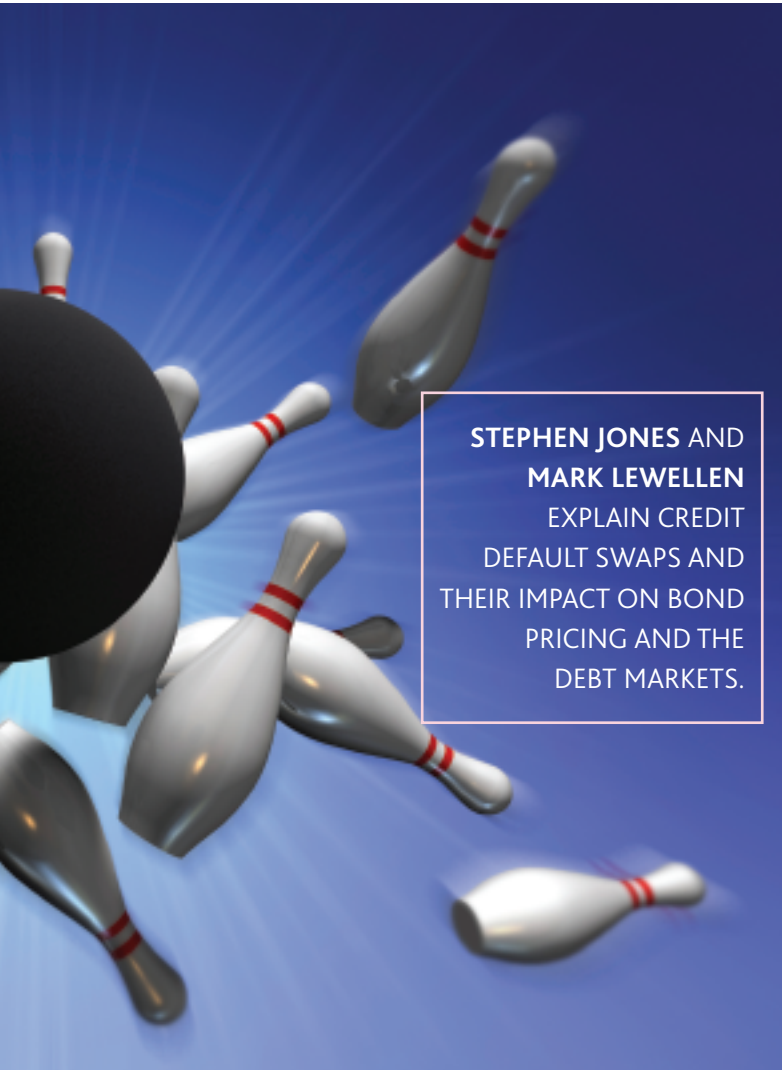


Cashflows after credit event



* Shows market standard physical settlement. If cash settled, 100-recovery rate

Source: Barclays Capital



**STEPHEN JONES AND
MARK LEWELLEN**
EXPLAIN CREDIT
DEFAULT SWAPS AND
THEIR IMPACT ON BOND
PRICING AND THE
DEBT MARKETS.

on credit desks has fallen from around 80% in 2003 to 30% in 2007, with the difference being made up primarily by CDS index and single-name CDS trading. Expect the trend to continue as credit derivative volumes accelerate, in particular with index products.

As risk transfer tools, credit derivatives attract a broad variety of users, particularly as liquidity and standardisation has improved. Banks are the most active, both for trading and portfolio management. Hedge fund activity continues to rise, buoyed by the growth in liquidity and product innovation. Other institutions are becoming more active, utilising CDS for income generation and portfolio diversification. Corporate users still remain a small proportion, utilising CDS for hedging credit exposure and liquidity management.

CREDIT DEFAULT SWAP INDICES CDS indices are a highly liquid credit tool, with more than 35 market makers operating. They are suitable for a variety of uses including portfolio diversification, liquidity management, directional and relative value trading and portfolio rebalancing and hedging.

The iTraxx indices in Europe and Asia, and CDX in the US are increasingly recognised as providing benchmarks for credit investors. The iTraxx benchmark indices are divided as follows:

- iTraxx Europe – the top 125 names in terms of CDS volume;
- iTraxx Europe Hi Vol – the top 30 highest spread names from iTraxx Europe; and
- iTraxx Europe Crossover – exposure to 50 European sub-investment grade entities.

The iTraxx Europe Crossover index in particular is increasingly cited as a barometer for overall credit market sentiment. The index attracted much publicity in July, when it breached the 450 level following the fall-out from the rating downgrades of sub-prime mortgage-backed securities. A selection of CDS indices are quoted daily in the *Financial Times*.

Figure 1: Historical iTraxx spread performance update

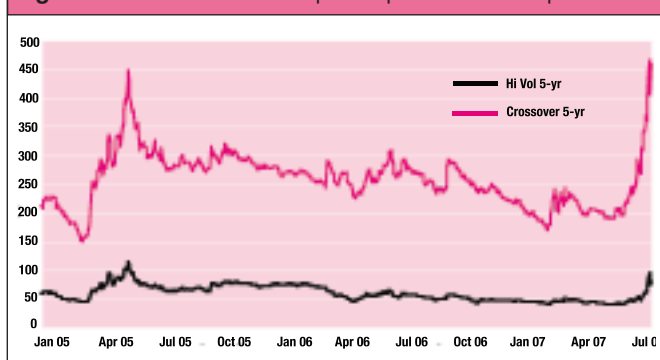
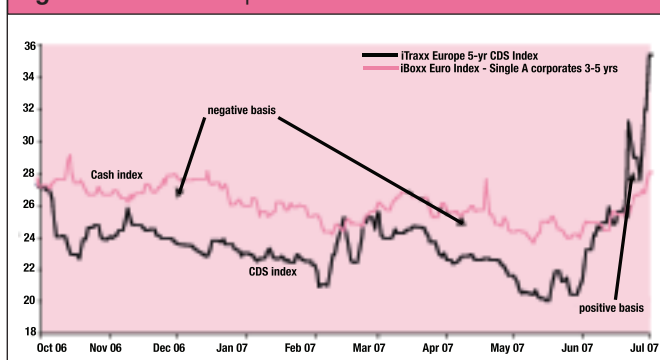


Figure 2: Relationship between cash bonds and CDS



RELATIONSHIP BETWEEN THE CDS AND CASH BOND MARKET A

CDS contract can be theoretically replicated by combining a fixed-rate bond, interest rate swap and repo agreement (given that a CDS contract is an unfunded instrument). As a result of this credit linkage, the CDS spread is closely correlated to the credit spread of the underlying cash bond.

The relationship between the CDS and bond spread is known as the CDS basis, and can be defined as the CDS spread minus the bond asset swap spread. If the CDS spread is trading tighter than the bond spread, this is negative basis, and vice versa is positive basis.

The value of the basis can fluctuate due to a combination of factors, both technical and market-related. For example, deteriorating credit quality can have a marked impact on basis value, as CDS generally reacts faster to market news than cash bonds.

The technical issues that affect basis value are primarily a function of the differences between CDS contracts and bonds. Specific considerations such as swap counterparty risk, physical delivery of obligations, CDS documentation and the unfunded nature of CDS contracts are all factors that impact basis value.

Unlike bonds, the CDS spread cannot be negative, meaning that better-quality AA and AAA rated bonds (including, recently, from BP and Shell) often trade with a flat to positive basis. In contrast, A and BBB rated bonds generally have negative basis, with bonds pricing at a spread premium to the matched maturity CDS.

Market factors such as supply and demand will impact basis. Strong demand from protection buyers (such as banks hedging loan portfolios) will drive the basis wider. Excessive selling of protection – for example, dealers hedging synthetic CDO issuance – has the opposite effect.

Change of control and coupon step-up language in underlying bond documentation can also impact basis value. Recent bond issues by KPN, Rentokil and ITV all included change of control language,

and priced at credit spreads tighter than CDS. In these cases, bond documentation helped to mitigate event risk concerns that investors felt were reflected in the CDS trading levels.

Liquidity and pockets of market volatility can also have a significant effect on the basis. During the recent market volatility, CDS indices underperformed cash indices, generating a visible shift in the basis. Rather than the negative basis that has been prominent in the last year, a positive basis is now in effect.

Relative liquidity plays a key role here with traded volumes of CDS far outweighing the activity in cash bonds or even cash indices. CDS liquidity remains high with increased hedging and speculation on single credits, while cash bond liquidity reduces as holders are reluctant to sell at a discount over the short term. The disparity in liquidity results in marked widening of CDS in relation to cash bonds over a short-term horizon.

CDS HOLDERS The holders of CDS contracts are increasingly active participants in corporate restructuring and liability management, and have the ability to impact the economic cost and shareholder value of the underlying corporate credit. A key difference between the cash and synthetic market from the investor perspective is that a corporate event (such as merger or takeover) can have major consequences for the holders of CDS, even when credit fundamentals remain unchanged. CDS holders are increasingly viewed as important stakeholders in a company, alongside debt and equity investors.

A key risk for a CDS holder is that underlying company debt is restructured to leave CDS contracts with a lack of deliverables. An example can be a corporate takeover where the target company bonds and loans are repaid, and refinanced with new acquisition debt which may not be deliverable under existing CDS contracts. This scenario will dramatically impact CDS value. Recent examples of this have been the private equity buyout of Dutch media company VNU, Tata Steel's acquisition of Corus and the GUS demerger.

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Examples of basis value in new issue bond pricing								
	Rating	Size (m)	Issue date	Maturity	Bond pricing (vs. mid swaps)	CDS spread (offer)	Basis (vs. offer CDS)	Change of control
Rentokil	BBB	€500	May 07	7yr	+82	105	+23	Yes
KPN	Baa2/BBB	€650	May 07	7yr	+45	57	+12	Yes
ITV	Baa3/BBB	€500	Sep 06	5yr	+110	115	+5	Yes
BP	Aa1/AA+	£250	Feb 07	3yr	-5	5	+10	No
Shell	Aa1/AA	€1,500	May 07	10yr	+12	12	-	No
BHP Billiton	A1/A+	€600	Feb 07	7yr	+23	18	-5	No
BAT	Baa1/BBB	€1,000	Jun 07	10yr	+57	42	-15	No

CDS application for corporate treasurers

Credit derivatives can be utilised directly by companies in risk management and liquidity management, alongside other derivative tools.

Example 1: Pre-hedging the credit spread of future bond issuance
The emergence of a liquid corporate CDS market has brought closer the possibility of corporate borrowers being able to effectively pre-hedge the credit spread component of any new bond issue. A CDS contract is by definition a close approximation of that corporate's credit spread, so a company buying protection on its own credit achieves an excellent hedge against any movements in the underlying credit spread. However, this creates very real compliance considerations around potential insider trading as well as concerns around available liquidity in any one corporate contract.

To overcome the liquidity issue, corporates could use public or bespoke indices to manage the credit spread risk. The use of indices will, however, never deliver the 'perfect' hedge and corporates must carefully investigate the correlation between the chosen index and their own credit spread.

Example 2: Using CDS to manage counterparty exposure
Long-term contracts to provide goods or services expose corporates to counterparty risk against the client in the event of default or non-delivery. A bespoke contract-linked CDS in this situation could be used to hedge against the counterparty risk as payment would be received in the event of client default. A number of utility companies have used CDS to hedge exposure on power generation contracts.

For example, a utility company has a contract to sell electricity at a pre-agreed price for 20 years, but as the unit price of electricity changes, the mark-to-market of the contract also changes. As the mark-to-market positions fluctuate, a fixed notional of CDS would leave the utility underhedged or overhedged. A contract-linked CDS removes the need for dynamic hedging as it will pay the positive mark-to-market if the counterparty defaults.

Example 3: CDS as a tool for corporate liquidity management
Credit-linked investments allow corporates to gain credit exposure and construct investments with desired maturity, duration, cashflows and credit risk profile. The large growth of this market has allowed corporates to utilise the versatility of the product range.

Investments to gain credit exposure can take the form of notes, deposits or standalone derivatives. For example, a corporate could invest in a portfolio of credit-linked notes, where each note pays an above-market coupon linked to a specific reference entity. The corporate maintains control over the entities and maturities chosen to optimise the credit risk profile. Such an investment can be compared to investing in a credit fund, where the credit risk profile is selected by the fund manager.

Example 4: Self-referencing credit-linked notes
Specific credit-linked securities that reference a corporate's own credit can be another very useful tool for liquidity management. For example, a corporate may have a 10-year bond outstanding, but no strategic investment to make for two years. Instead of investing the original cash from the bond (or general excess liquidity) in a risk-free asset over this period and losing the spread between the risk-free rate and the rate paid on their own coupon, the corporate can create a synthetic two-year bond buyback, which matches its maturity requirements and increases its return, without significantly impacting risk.

These types of self-referencing credit-linked notes avoid the restrictions of formal bond buybacks, although there are some very real compliance issues related to these investments as a corporate is essentially investing in its own credit, raising such issues as insider trading and market abuse.