

The Credit Derivative: Goldmine or Landmine?

Jamie Stewart

Jamie Stewart, a law graduate, has worked in investment banking since 1986, before which he held academic positions in the UK and abroad. Today, Jamie is Head of Institutional Marketing and Research at Eden Financial. His research interests focus on fundamental analysis within the broad field of global equities. He is a director of two companies and on the advisory boards of others. In the past, Jamie has held directorships at Baring Securities, Morgan Grenfell International and Inverlat International.

Abstract

The concept of credit derivatives is approached by way of analogous commercial conventions and reference to historic origins, thereby marginalising the mystique, opaqueness and complexity of the device. It is analysed as a stable-companion of warrants, futures and options in terms of the objectives and mechanism underlying the conventional and recognisable aspects of the instrument at the same time as highlighting and assessing the attendant risks. A leitmotiv reflected in the title of geology-meets-zoology is designed to impart spontaneity and a 'mind of its own' to the instrument, enlivening a phenomenon which is all too often portrayed and misunderstood as a result of its intricate mathematical properties as opposed to its tendencies to move unexpectedly, swiftly, precisely and cruelly when it is misunderstood, mishandled or mispositioned.

The author aims to rationalise – but markedly not to debunk – the arrival and swift development of this instrument to become a favourite of prudent bankers, realistic investors and cunning speculators alike, also likening it to the behaviour of parasites relative to their hosts in order to clarify the elusive relationship between derivatives and the asset-class to which they relate. The credit derivative is measured by reference to the global value theoretically outstanding, lending scale and mass to the risks it represents in adverse market conditions.

The perceived wisdom that often sets out drily to define these instruments and their features is rehearsed by way of lip-service, with regular reference to the crises of recent years triggered by ill-managed exposure to derivatives. At the same time, the practical as opposed to text-book profiles of threats to a risk manager or portfolio investor holding these derivative products are highlighted, and straightforward, attainable barriers and limitations to offset those dangers are presented to bring comfort after the alarm-bells.

It is fascinating to see every pair of eyes glaze over swiftly whenever derivatives of any sort are mentioned, but most of all in the case of credit derivatives banter. 'Banter' is the wrong term, really – rather like referring to Attila the Hun as 'Sweetheart'; but it's the concept of bringing about that glazed look by mentioning credit derivatives in any context between fleeting reference and three-day seminar that matters.

The idea of eyes 'glazing over' needs a second look. Traditionally the prerogative of expiring villains in thrillers or of dim, demure damsels in drawing-rooms when bountiful but boring bachelors get going, the reasoning is completely different here. Derivatives patter has that effect for one or more of four reasons: fear verging on panic, total ignorance, boredom (a.k.a. total lack of understanding), or transportation in trance-like visions of infinite wealth. Risk awareness doesn't feature as an option, but one could safely argue

PRESS CUTTING

Credit Control Vol 27 Number 2 2006 (Pg2 of 9)



that recognition of derivative-based risk falls neatly in to the 'fear/panic' category, so it comes to much the same thing.

Far be it from these learned pages to reflect assumptions that any aged – or youthful, for that matter – reader may want to be taught how to suck proverbial eggs, but it is as well to be guarded and believe that derivative products are only thoroughly understood by a very few finance professionals with a direct motive behind getting to grips with them.

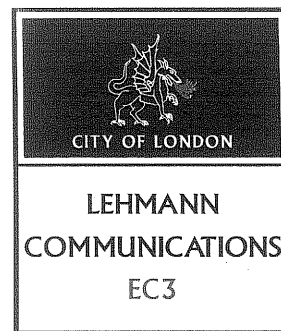
Even that degree of confidence may be downright dangerous. A respected source of derivatives wisdom recently pronounced: "One of the principal problems with derivatives is that they are, generally, highly complex technical instruments that boards of directors and senior management have had great difficulty understanding. It has been very difficult for managers to read the reports on derivatives from their own trading groups." A (recent article has) observed: "So technical have derivatives become that it may be quite hard for managers to know the right questions to ask to establish the type and degree of risk to which the firm's capital is being exposed."

Extrapolating from these worrying words of wisdom as well as from underlying market truths, two objectives lie ahead here: the first to ensure an understanding of this quirky and tortuous asset-class, and the second to analyse the risk profile which it represents, in each case in the form of the credit derivative, the darling (or should that be the *enfant terrible*?) of the day.

The very expression 'derivative' suggests that the device, like a sucker-fish or parasitic blood-sucking tick, is linked to a host financial instrument to which it owes its being – i.e. from which it derives existence and strength – and which, perversely but realistically, it can ultimately weaken and destroy if the risks it represents, rather as ticks can introduce infections, multiply or affect the host's sensory system. Like the dependent parasite, a derivative has a parallel life of its own, and, although dependent on its host, can detach itself for certain purposes, switch host, extract nourishment, steal identity features and share DNA. As sucker-fish can cast off and swim in shoals, so derivatives can thrive in a group and be owned, traded and exercised under market conditions dedicated to them separately rather than to their hosts – although they can make like sucker-fish stuck fast and wriggle – trade – as limpets on their hosts in the markets which govern transactions in the whalemeat (or bonds, of course) which those hosts allegorically, respectively represent.

As ticks have their features, such as colour, size (rapidly fluctuating!), food preferences, numbers of legs and antennae, so derivatives are endowed with characteristics, some fixed and others fluctuating, which is where the trouble begins. The volatile characteristics appear to the inexpert calculator to take on nine lives of their own, and it is these – gearing, leverage, premium, spreads,

Credit Control
Vol 27 Number 2 2006 (Pg3 of 9)



time-value – which lead to polymorphous and transient forms that can defeat the comprehension and understanding all but the dedicated finance professional. Needless to say, this is the main link to downfall and disaster – to apocryphal crises such as Barings, Sumitomo, Orange County and Hammersmith & Fulham, all of which came crashing amidst mushroom-clouds of many millions of pounds in derivatives losses. Frightening stuff – the fabric of financial nightmares.

In Ladybird-speak analogy, a derivative owes its invention and existence to the deep-rooted human instinct to identify the risks inherent in potential reward and to want simultaneous to minimise exposure and offset (or hedge, lay-off or hive-off, in household jargon) those risks, albeit at additional but marginal extra cost. Don't think of derivatives as new-fangled: Flemish traders used forward contracts in the twelfth century; Dutch traders in the seventeenth century used the equivalent of today's futures and options.

The Chicago Board of Trade has been trading futures contracts for over 150 years. Over the years the concept has spawned endless such offspring – warrants, futures, options, Contracts for Difference (CfDs), Credit Default Swaps (CDSs), Collateralised Debt Obligations (CDOs), synthetics ... myriad groups, but they all share the same risk-reward, fear-precaution stem-cells.

To keep the domestic analogy in view, all of us unwittingly use at least basic forms of derivatives in everyday life. Vouchers to obtain a cheap massage between 2pm and 4pm on weekends, reduced cinema tickets to mid-afternoon screenings on Mondays, agreements to return a shirt within 24 hours as long as it is unworn and the packaging unopened, coupons which convert in to packets of washing-powder in a given ratio, a supermarket discount card which entitles you to 5% off pastry goods during April, a warranty to deal with the break-downs of your dishwasher and a reduction on the new one to replace it, a friends and family phone-call traffic charge discount which steps up as volume expands, or a roadside assistance membership given 'free' with your new car which allows you to enrol your offspring before age 21 at staggered discounts, and to be towed home whenever the going gets tough ... all and every one a derivative device which is born of the same commercial instincts as gave rise to the index futures with which Leeson sunk Barings, and to the CDSs on Delphi bonds which rattled the market when the US car-parts maker defaulted on its covenants. If there were the time and space we could draw appropriate parallels between issuers and primary market activity, secondary market parallels, gearing, the similarities between supermarkets and banks (watch the supermarkets starting to optimise working capital applications by belabouring suppliers, as though they were financial institutions and their suppliers a source of cheap funding), strike-prices and price-labels, exercise-periods and weekday restrictions, gearing and the numbers of those fiddly little coupons or packet-

PRESS CUTTING

Credit Control Vol 27 Number 2 2006 (Pg4 of 9)



flaps needed to swap ... and so it goes on. Analysis and definitions of derivative products are testing at best; examples and analogies help to by-pass the bulging instructions, rules, exceptions and directions.

However, by way of compromise and in recognition of the pride of place accorded in financial markets to technical definitions, it is worth visualising derivatives as an insurance product. The feature common to almost all is that they are originated or issued as a way in which the owner of an asset can 'insure' against (bear in mind those instincts to hedge, lay-off or hive-off liabilities, touched on above) perceived undesirable or unwanted aspects of his beneficial interests. This is where the official rule-book starts to swell and run out of control: suffice it to say that those aspects include inflation, downside, illiquidity, capital exposure, currency and interest rate fluctuation, default ... you name it; it's there.

Those who think of insurance as representing basic protection provided in consideration of a premium and no more are only part of the way to appreciating the similarities. Consider the roots of insurance, embedded in mutual agreements amongst London ship-owners and traders investing in cargos of merchandise in order to reduce the risks of shipwreck, piracy, water-damage, weevil infestation, financial liquidity crises, delay and human error. They each chipped in, like pensioners paying towards a Co-op funeral plan or a participants in a Tontine, to pool the premia and create a fund upon which draw if any of those dreaded risks materialised. Catch-words of the insurance business today – premium, excess, reinsurance, overinsure, underinsurance, self-insure – act as DNA-links to validate the identity shared between the instruments of Lloyd's of London and the Stock Exchange next door.

Taking the analogy one step further, consider the similarities between tradeable portfolios of securitised insurance risk on the one part and lines of warrants, options or swaps on the other: their blueprints are close to each other, and help to assimilate the conceptual and rarefied angles of buying and selling risk in order to fine-tune the qualities of one's assets. The parallels extend to fall even under one's own roof: the lowly (or even massive) mortgage is, in itself a form of derivative product, which was developed to allow two interested parties – householder and owner of capital – to diversify risk, limit liability, match objectives, reduce capital exposure, ensure future benefit, harness continuity, broaden asset-base and tailor financial yield. Mortgages, of course, are also securitised assets and trade in portfolio form, not unlike insurance risk and all the financial derivatives which we aim to pin down.

The quantum leap in applying such analogies to gain insight in to the behaviour of traded derivatives comes at the point where one appreciates – in embarrassed silence, perhaps – that this logical, practical, controllable device whereby interests are sensibly insured will just as often, especially in the hands of those with

Credit Control
Vol 27 Number 2 2006 (Pg5 of 9)



interests which are completely at odds with the intentions of the originators, be traded for purely speculative purposes as opposed to the objectives of diversifying risk and meeting natural shifts in the financial landscape. Silver, oil, heroin and rocket-launchers all have their place in an orderly market-place where they are traded to supply jewellery, petrol, morphine refinement and defence purposes respectively.

But woe betide the market-place when market participants become marketeers, Bunker Hunt & Co. show up to corner the silver market, oil is talked up and down in turns by cartels until it jeopardises seventeen huge economies all at once, terrorists hijack legitimate heroin consignments to fund extremist causes, and those rocket-launchers are shipped by rogue arms-dealers to insurgents against payment made from drugs money spun by that self-same heroin which never reached the medical processing plants.

There are respective cases also for considering (i) the variations between OTC and Exchange-traded derivatives, and (ii) the role, impact and implications of increasing hedge fund activity in this field – but the mission is to explore the nature of the derivative rather than the nature of its markets and marketability, so these are prospects to keep at arm's length.

And what about a rudimentary understanding of crisis-theory: of what can go wrong? The house of straw in which the three little pigs lived until the wolf came and blew it down; the House that Jack Built; the vision of what those senior managers in age-old merchant banks never understood but refused to admit to, and which led to compounded disasters in financial structures, comparable to a house with a weak roof-ridge which fractures one day, pushing apart the timbers which fall, breaking down through the floors, impacting the foundations which crack, letting in the water which floods, causing a mudslide which carries the whole pile of debris to the doorstep of the offices of the Trustees in Bankruptcy down the hill. Terrifying.

Essentially – and especially for those who have no wish to drill down to professorial depth and detail in terms of risk definition – the risk profile of derivatives can be distilled to a few core 'character-flaws'. First, there is usually a latent compounding effect, frequently open-ended, whereby liability can expand on more than one front at the same time, combining to generate obligations which were never evident to the casual eye when it 'seemed such a good idea at the time'. Second, derivatives often have similar but critically distinct features of open-endedness, wresting control, discretion and manageability from the hands of the unwary.

Third, they have a devious and destructive habit of triggering rise to extremes of market liquidity – dry-as-desert-dust dearth can arise as easily as unstoppable torrents in the exchanges or Over-the-Counters, both eventualities driving prices to extremes and ruining



participants who had reckoned with a nice, smooth and moderate ride through the market-place. Fourth, derivatives may also lend themselves to 'short-selling' – a minefield in its own right, but the nightmare vision of having to buy derivatives to settle a short trade in a rising and illiquid market can multiply in holographic form where their compounding effect and open-endedness kick in vividly to colour that 3-D vision of hell.

From a high observation platform, the most frightening aspect of derivatives is that it is impossible for an individual – and virtually impossible for any entity in the global market-place – accurately to measure total exposure to derivatives in existence, not least on account of key characteristics set out above. It follows that it is far from easy to calculate the exposure even to a single derivative product in issue. As a stark example of this, consider again the Barings collapse. Quite simply (can such things ever be simple?), Barings' treasury recorded precisely how much cash had been 'spent' on what turned out to be Leeson's rogue cause, but no-one had any idea as to exposure at any stage leading up to the day of reckoning, let alone the theoretical worst-case exposure. That frightening fact is compounded by the even more alarming evidence that any competence, any vestige of ability to carry out that calculation reduced exponentially at each step upwards in the levels of seniority and experience of management directly and indirectly involved. To put it bluntly, floor-trader Nick had far more knowledge – although even his was approximate, at best – of the sum total of financial liability than the Head of Treasury, the Managing Director or the Chairman.

The Derivatives Study Center (*sic*) of the Financial Policy Forum in Washington concluded – in part on the basis of BIS reports respectively on the amount outstanding (the value of the notional principal of all outstanding contracts) of global OTC and exchange-traded derivatives – in its Special Policy Brief 25 in mid-2005 that the total value of the global derivatives market stood close to USD300 trillion: about 275 times total assets under management at Fidelity, and some 25 times US GDP at end-2004.

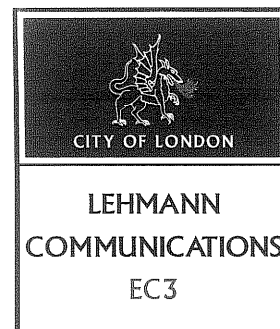
Fear paralyses the cerebellum when one notes that even this measure is imperfect, since it cannot reflect the extent to which contracts may offset each other, and therefore cannot begin to measure the effect of speculative, hedging or 'compounding' factors latent and in play.

The devotee of *pointillisme* rather than these necessarily broad brush-strokes will reach for more scientific risk analysis. His lecture notes will set out risk origins in an orderly series:

1. Blind faith in success maintaining a winning streak;
2. Technical complexity;

PRESS CUTTING

Credit Control Vol 27 Number 2 2006 (Pg7 of 9)



3. Insufficient transparency;
4. Speculative activity – a milder term for the spectres of roguish marketeering conjured up earlier on;
5. Flawed modelling assumptions;
6. Leverage (not far off our rough-and-ready account elsewhere of the 'compounding effect'); and
7. Counterparty quality and integrity.

Whilst we are considering such orderly definitions, it makes sense to look at what the financial doctor orders by way of prophylactic medicine. Again, the sky's the limit as far as detail and definition go, but the following prescription items set the preventive scenery:

- Governance
- Risk analysis
- Risk management
- Preventive/Incentive structures
- External regulating constraints

Admittedly none of these will make the imagination quiver, nor yet trigger any Eureka moments: there is simply a degree of satisfaction in shepherding in to two paragraphs the headers which encapsulate the finance theoreticians' perceived wisdom as to antidotes.

The cellular building-block of the credit derivative universe is the CDS – credit default swap – which allows the buyer of protection (or insurance) to effect a financial rampart against default on the part of any company to which his portfolio of securitised debt may be exposed. That protection is, of course, issued, provided, written, sold – call it what you will – by a third party/counterparty with an appetite and, presumably, a motive to engage that very quality of risk. In secondary trading, that same balance of interests remains true. Perfect match: willing buyer; willing seller.

The consideration is generally a fixed fee paid over up to five (occasionally ten) years. It is, as is true relative to certain sovereign debt instruments, expressed not as a finite or even a fixed formulaic figure, but rather as an annual percentage – the 'spread' – of the theoretical value of the protection provided. This rate reflects the premium inherent in the interest rate at which a given company's bonds trade relative to prevailing risk-free interest rates.

Credit Control
Vol 27 Number 2 2006 (Pg8 of 9)



The simplest variant of a CDS is a single-name instrument which refers to one bond-issuer group alone. Bank X lending £10 million to Company Y might thereby engage single-name CDS protection to hedge half of its exposure to Y. A jargon-enthusiast would say that X is hedging its long risk exposure to Y. X's counterparty – the seller of the protective device – is 'buying' (or 'going long') that same risk. Of course, there are variables – consider one variant alone, whereby X has reason to suspect Y of being in financial difficulty. X may – whilst lending money in the first place or not, as the case may be – buy protection in the form of the single-name CDS come what may, ensuring that there is no net long exposure to Y risk. If he is right, and Y folds, then X will, whether it has lent money to Y or not, gain by Y's default.

Folding – the 'credit event' – triggers a settlement process which is itself complex since it may well vary from the straightforward procedure for various reasons. Essentially, following settlement, X would receive the value of the protection it bought, whilst its counterparty would end up with the dud bonds. These can still be traded (usually) or held in anticipation of a decent recovery rate, dictated by any one of a number of possible future scenarios for Y – ranging from simple emergence from bankruptcy through successful emergency re-financing to acquisition by Z.

Quite apart from the credit event, the CDS instruments can be traded in the secondary market through an exchange or OTC, making the 'ownership' of risk transferable at will. The spread will fluctuate as does a share price, with levels dictated by perception – or rating – of the credit profile of the bond-issuing company, Y or any other. On this is based the recognition of representative baskets of companies, recently enshrined in the formation of the US CDS index and the iTraxx equivalent in Europe, which also respectively act as efficient proxies for the credit of the related corporate debt markets. True to the telescopic-cum-incestuous nature of derivatives instruments, such indices can spawn secondary instruments, 'tranches', which trade separately but in such a way as to replicate the behaviour of the baskets and indices ... more involved still, customised (or 'synthetic') tranches can be structured to meet one-off, specific demands.

Liquidity – the ability to trade the instrument freely – is therefore limited, sometimes to the perilous level of zero, but the facility is nevertheless valuable as it is likely to permit financial circumstances legitimately to prevail in the case of one counterparty or both, such as would entail breaches, trigger forfeits or result in limitations were it not for the existence of such customised arrangements. Thereby are born – yes; you've guessed it – 'synthetic CDOs'.

The Delphi crisis – the recent bond default on the part of the US car-parts manufacturer – has highlighted the latent compounded risk profile, and is acting only now as a sharp warning that incessant asset-class growth coupled with unexpected eventualities can

PRESS CUTTING

Credit Control Vol 27 Number 2 2006 (Pg9 of 9)



trigger blow-backs which markets simply wouldn't be able to digest. The Ford and GM downgrades following closely on sent out additional shock-waves, underlining the quirky qualities of risk inherent in the instruments as well as the additional dangers presented by an immature market in a derivative segment barely ten years old – the unfortunate combo-from-hell reminiscent of a malco-ordinated youngster with compulsive deviant habits playing on a stretch of waste ground tainted by tendencies to earthquakes.

Back to the present, to reality, to risk managers with credit derivatives proposals to deal with. Is there a vaccination, a remedy, a surgical procedure, even, that can ward off the evils? The straight answer is no – no quick fix, nothing proprietary exists, although something may come in the years ahead. For the moment, the solution is to reach for four precautions which have the sturdy and familiar attractions of common-sense and inbuilt safety, albeit at the expense of the glitzy, innovative and dead-cert coats of varnish on complex portfolios which promise the earth and then go to hell in a hand-cart.

Those three – and the order of priority is luxuriously open to you to choose – are:

1. **Understanding:** never, ever commission or sanction a CDS commitment which isn't thoroughly understood by all parties potentially responsible;
2. **Limitation:** Err on the mean, lean side in every respect as regards terms, size, complexity, pricing, liquidity implications and scope;
3. **Attack the cause, not the symptom:** in other words, make every effort first to avoid, reverse or otherwise dispose of the underlying commitment rather than pre-empt and fight off its risks with devices which, not unlike the Trojan horse, can carry myriad unseen sources of danger within its structure.

One can only hope that all will be well that ends well. Hard to see why the rigours of addressing derivative products takes one instinctively along paths through the zoological gardens, but then Aesop and Jean de la Fontaine both tackled their respective fables assignments that way, and they both lived happily ever after ...