EUROPEAN POLICY FORUM

Counterparty Casino:

The need to address a systemic risk

By Jon Gregory

September 2010

Counterparty Casino- The need to address a systemic risk

Jon Gregory[1]

In this paper we discuss counterparty credit risk (CCR) and credit value adjustment (CVA) from a regulatory perspective. CVA activity is increasing considerably due to the need for banks to accurately quantify and manage the CCR they face through their sizeable and complex over-the-counter derivative trading activities. However, CVA management may create a false sense of security for market participants and regulators, for example with the associated increase in CVA trading activity and utilisation of central counterparties creating sizeable systemic risks. We consider to what extent active CVA management can stabilise financial markets and when it may lead to herd-like behaviour and exacerbate problems in turbulent markets, such as the recent problems surrounding the creditworthiness of Greece. We examine the regulatory steps that are being taken in order to attempt to stabilise the financial system with respect to CCR. We argue that regulatory aspects such as the accounting treatment of CVA, capital requirements and rules to use central counterparties may seem naïve and potentially counterproductive when properly assessed. The conclusions are that regulators should focus on "joining the dots" and creating a simple, intuitive high level regulatory environment rather than look for quick fixes and mirroring the complexity and detail that inevitably exists within banks and OTC derivative markets.

Introduction

Counterparty credit risk (CCR)[2] is defined as the risk that a counterparty will default prior to the expiration of a trade. In a typical OTC derivative contract, counterparty risk is a factor for both parties. Over-the-counter (OTC) derivatives markets have evolved to minimise CCR where practical, primarily making use of netting and collateral agreements and trade compression. However, CCR cannot be eradicated completely and many OTC derivatives are not even collateralised, typically those trades with corporates, sovereigns and supranationals.

Prior to 2007, CCR was not considered to be a particularly key area and the concept of credit value adjustment (CVA) was not especially well-known. The aftermath of the global financial crisis is catalysing wholesale changes in the way financial institutions look at risk. CCR has

[1] jon@oftraining.com. The author is grateful to Graham Mather and Meyrick Chapman for their ideas and enthusiasm during the preparation of this paper. He also thanks participants at the European Policy Forum event on the 20th July 2010 for their comments, in particular Jon Danielsson, Alistair Milne and David Murphy.

[2] For a review of counterparty credit risk see Gregory, J., 2009, "Counterparty Credit Risk: The new challenge for global financial markets", John Wiley and Sons.

emerged as being a key focus for banks due to the problems and losses associated with failures of key institutions, such as Lehman Brothers and monoline insurers. The recent explosion in CDS prices during the European sovereign debt crisis, dramatic shifts in the Euro swap curve and associated increases in volatility markets in May have been attributed to hedging of CCR by banks' so-called CVA desks. This has brought the CCR topic further to the fore and raises the question as to whether such effects are unavoidable or a non-desirable outcome of hedging in highly illiquid markets which is driven by inappropriate regulatory incentives for banks regarding CCR.

History of CVA

For over a decade, some banks have considered CCR to be important and have made attempts to quantify and manage it. CVA represents the cost or price of CCR and adjusts the value of a contract to account for potential future losses due to the counterparty defaulting. Since CVA represents a price, it provides a means to build the assessment of CCR into economic decisions. This has been particularly important in vanilla products where margins are tight and CCR may largely define the profitability of a deal. Banks have tackled this problem by forcing traders to pay a CVA charge for deals to insure the CCR. A trader unable to pay such a charge will refuse a transaction which ultimately is the right outcome for the firm itself. Originally, CVA was a rather inconsistent concept, with some banks charging across the board, some charging for only certain counterparties (for example, below a certain credit rating) and some not at all. CCR in OTC derivatives was treated rather like the credit risk in a loan book with CVA charges collectively forming a buffer (or reserve) to set off against future losses due to counterparty default events. In such an approach, like loan portfolios, CVA is not marked to market, and capital requirements focus on the possibility of counterparties defaulting and the resulting exposures of derivatives positions.

A key driver for the paradigm shift which we are currently seeing is accounting standards. The Statements of Financial Accounting Standard, No 157 issued in 2006, commonly referred to as FAS 157, concerns fair value measurements. This requires that, when valuing a derivative, the default risk of the counterparty is accounted for by adjusting the value of each derivative contract through the CVA. FAS 157 introduced a consistent definition of fair value that was linked more specifically to the exit price of an asset. The European equivalent of FAS 157 is the fair value provisions of IAS 39 published by the International Accountancy Standards Board in 2005, which gives similar guidance relating to the valuation of CCR. Basically, IAS 39 and FAS 157 require that CVA, in contrast to loans, is marked to market. A natural consequence of this is that banks are heavily incentivised to hedge their CVA to avoid large losses that would arise, for example, when market credit spreads increase significantly.

The pricing and hedging of CVA is progressing rapidly. Many investment banks are setting up, or have already, "CVA desks" dedicated to the internal allocation and management of a firm's entire CCR across all products. Whilst banks and other financial institutions are at very different stages in such developments and are pursuing differing approaches, the practice of having a cross asset CVA group is emerging as a standard. CVA is being actively hedged across all asset classes, in particular via credit derivatives and volatility positions.

CVA desks have to operate under a mind boggling set of circumstances. First, they manage a cross-asset credit contingent book containing vanilla, exotic and highly structured trades. Second, they trade positions on only one side of the market, due to the fact that they exclusively sell credit protection to their (internal) clients and are unable to reject transactions outright or price themselves out of a trade[3], nor will they be able to readily seek trades that offset the risks they take. Third, they must understand the impact of all risk mitigants, such as netting and collateral, and quantify their impact correctly. Fourth and finally, hedging of CVA is highly challenging with large transaction costs and many sensitivities which simply cannot be hedged at all. In summary, a CVA desk has a highly complex set of difficult to hedge risks, and operates mainly on one side of the market which creates the constant worry of the crowded trade effect.

As CVA desks are growing, their activities are coming under close scrutiny. In the Q2 bulletin from the Bank of England[4] we are told that:

"*… given the relative illiquidity of sovereign CDS markets a sharp increase in demand from active investors can bid up the cost of sovereign CDS protection. CVA desks have come to account for a large proportion of trading in the sovereign CDS market and so their hedging activity has reportedly been a factor pushing prices away from levels solely reflecting the underlying probability of sovereign default.*"

We should note that CDS prices will never reflect solely the probability of sovereign default because risk takers require compensation for other aspects also (a so-called risk premium). Furthermore, an increase in the cost of CDS protection cannot be straightforwardly linked to an imbalance of supply and demand in the market since it may simply be a natural reaction to a perceived increase in default risk. However, a sharp and technically driven change in a risk premium is quite plausibly indicative of a less than liquid market which should be of concern for regulators.

The recent events of May provide a reminder that supposedly risk-reducing hedging activity might eventually lead to an overall detrimental effect on the market due to herd-like behaviour that may create market dislocations and systemic events. Hence it may be a time to question the very decisions that have led to the development and activities of CVA desks. The analysis will be a complex chain of cause and effect where relatively benign and perhaps commonsense decisions by regulators may ultimately lead to events that are highly detrimental for the stability of financial markets acting to increase, rather than reduce, systemic risk.

Mark-to-market is good ….. and bad

Allowing banks and financial institutions to value assets and businesses at their own discretion, however credible the approaches they use to achieve this, is dangerous (think

[3] It is likely that a CVA desk will be forced to price all trades under a transparent pricing methodology to enable the smooth running of trading desks. Allowing a CVA desk to reject trades outright leaves the problems of the counterparty remaining with the originating trading book with little incentive to manage it, or the criticism that the CVA desk ruined a profitable trading opportunity.

[4] http://www.bankofengland.co.uk/publications/quarterlybulletin/index.htm

Enron). Better to require a mark-to-market of assets that reflects an exit price and avoids the possibility of asset price bubbles, the chance that losses might be brushed under the carpet or profits artificially created. The market knows best and will give shareholders and regulators the best quantification of the assets of a company. Fair value accounting standards have been evolving to this view, albeit with a distinction between level one instruments (quoted prices in active markets) and level two instruments (prices based on market observables). Level three classifies "unobservable" instruments where no direct or indirect observation of a price can be made.

However, fair value accounting standards can lead to problems. Markets may be developed with the primary aim of showing that parameters can be "observed". Such fake markets will dry up very quickly in times of distress, and associated hedging will fail completely. A good example of this was provided by the CDO markets. The index tranche market was developed in 2004 as a standardised way to trade correlation in corporate (and later other) portfolios. This occurred because banks would otherwise be unable to realise accounting profits due to the unobservable correlations. Via highly spurious "base correlation" and "mapping methods", CDO pricing models were able to value a huge variety of tranches and underlying portfolios. This, in turn, led to the ability to hedge the correlation risk in any portfolio via the standard index tranches, even if the index characteristics differed substantially from those of the portfolio itself. CDO trading desks were not really hedging their correlation exposure directly but the spurious mark-to-market approaches told them they were, other market participants were doing the same thing and everything worked magically. Banks even bought super senior protection from monolines knowing it had no economic value (due to CCR) but because it allowed them to take profits on full capital structure CDO trades.

Suppose in order to buy a house I need a mortgage and in order to get a mortgage I need to buy home (buildings) insurance; but by some strange regulatory quirk, I can instead insure myself against the risk of my house falling down by buying more pairs of underpants. The point is that I will be forced to recognise the problem with my hedging strategy only when my house does indeed fall down (or at least when such an event is clearly much more likely than before). In the CDO world, the hedging of correlation risk that was straightforward during normal markets failed dramatically in abnormal ones. Some re-hedging was simply impossible as the market became illiquid and, in some cases, (the so-called super senior tranches) dried up completely. Hedging was failing across the board with the monoline hedges being shown to be practically worthless. The hedges were indeed pants after all.

Since mark-to-market implicitly forces more active hedging then we must consider very carefully whether such hedging is really the best mechanism for risk reduction. In the days when banks could more readily mark-to-model and take reserves, there was a strong focus on dynamic hedging and residual risks. Fair value accounting standards led to the development of a fake CDO market that in turn led to laziness and a lack of appreciation of the real risks of the products. This was ultimately bad for banks, regulators, investors and taxpayers.

The hedging of CVA is highly problematic at the best of times. For example, for the majority of counterparties, there is no single name CDS market and hence the primary risk of CCR (default of one's counterparty) cannot even be traded. Banks will then have to mark and hedge their CVA books using proxy CDS prices and indices. The economic benefit of such

hedges may be highly limited, especially in turbulent markets. Mark-to-market of CVA may fuel market instability.

Accounting rules, hedging requirements and death spirals

In an ideal world, derivatives are marked-to-market and the overall market is a zero sum game. Most OTC derivatives fall into level one or two product categorisation. Allowing banks to value such products based on their own proprietary economic models would be highly dangerous. Since derivatives must be marked-to-market then surely their associated CVA values must be also? However, derivatives can be generally hedged via highly standardised and liquid instruments that may trade on exchanges. CVA, on the other hand, is far more complex to hedge and requires non-standard illiquid OTC instruments (and many more instruments that don't even exist). CVA appears to have become a trading book risk purely by association with the valuation of the underlying derivatives themselves. This is highly misplaced as any CVA represents a level three instrument from the point of view of valuation. Indeed, we could make a more relevant association: derivatives are exotic loans. Since loans are not (yet) marked-to-market then neither should their CVA be. The concept that CVA can be treated on the trading book is misplaced. Even when CVA can be hedged, the market has already given us some clues as to the potential problems this causes.

Since the credit crisis, banks have been subject to strong widening in their credit spreads and, more recently, sovereigns have come under similar pressure as the perceived risk of default has risen. At the same time, the interest rate swap market has faced sharp falls in rates. Together, these two factors have significantly increased the CVA that banks face. A typical dealer's natural position from corporate and sovereign counterparties results in a long dated receiver swap and swaption exposure. Other exotic interest rate products such as CMS floors and accrual swaps also tend to contribute to this position. The majority of such risks are long dated, with the 10/30 (10-year to 30-year) part of the swap curve being highly significant.

One problem of CVA hedging is the linkage between different parameters. For example, a falling interest rate environment will increase a dealer's exposure, requiring more credit hedging, and increases in CDS spreads will lead to a need to re-hedge interest rate exposure. Such re-hedging is required even if interest rates and CDS spreads are independent but if they are correlated then the impact is made worse (often referred to as negative gamma). Finally, the linkage both of interest rates and of CDS spreads to long dated volatility adds a third dimension to the problem. The position then held by all dealers has the potential to cause a huge issue in a volatile market through hedging inducing feedback effects. Panic driven re-hedging tends to be accompanied by deteriorating liquidity which exacerbates the problem still further. In normal markets, rates, credit and volatility may operate more or less independently of one another but, in volatile markets, this structural connection has the potential to make them interlocked for non-economic reasons.

In May 2010, sovereign CDS spreads rose, causing significant hedging requirements for CVA desks. The resulting hedging (and front running of hedging) caused a feedback loop where such spreads, the 10/30 Euro swap curve and long dated volatility all became inextricably linked. Sovereign CDS spreads widened substantially, the 10/30 swap curve flattened to

below 12 bps and there was an associated increase in long dated volatility. The very act of CVA hedging served to increase CDS spreads, drive rates down further and increase volatility, reinforcing the need to hedge further. A widening of CDS spreads automatically drove 30y rates down, made the 10/30 curve flatter and long dated volatility higher. The fact that the hedging needs of CVA desks are one way makes the problem worse. CVA desks are then forced to re-hedge at the worst levels, crossing bid and offer prices during times of rapid moves and market illiquidity. A way to avoid such problems is not to re-hedge (assuming this is within the limits structure of the CVA desk) but this makes an implicit bet on mean reversion of market parameters which, if incorrect, is embarrassing.

Strong market moves are difficult to disentangle from the natural reaction of markets to bad news. For example, CDS spreads widening dramatically, as in the case of Bear Sterns, may be simply a natural reaction to a perception of increased default probability. However, the magnitude of the Sovereign problem can be illustrated by the realised correlations between the main iTraxx indices of credit spreads and the 10/30 Euro swap curve which jumped to 80% from a historical range of -30% to +30%[5]. A similar result was found when measuring the correlation between CDS spreads and long-dated EUR interest rate volatility[6].

Hedging CVA is a new area and traders may be prone to overreaction. Markets prone to blow ups due to their structural nature and associated re-hedging effects cannot be avoided altogether. Many markets experience granular flows due to re-hedging caused when specific thresholds are breached. Sudden thinning of liquidity, volatility increases and gaps cannot be avoided completely. The market may have to bear CVA hedging problems or improve the liquidity or variety of credit derivative products for effective risk transfer. However, the sheer complexity of CVA hedging and its cross-asset nature suggest that the question as to whether or not hedging of CVA is beneficial at all is one that must be considered carefully.

The Volcker knee-jerk

In June 2010, major financial reforms were passed by the US congress, including the so-called Volcker rule (named after former Federal Reserve chairman Paul Volcker who seems unhappy with the final, watered-down version). The Volcker rule limits banks to invest a maximum of 3% of their capital in proprietary trading or hedge funds, attempting to limit "gambling". However, does limiting "prop trading" solve the problem of banks' heavy gambling? Banks don't actually tend to indulge in a lot of formal prop trading anyway. Are banks gambling even more heavily on activities not classed as proprietary trading? Worse still, might regulators actually be forcing banks to gamble even more?

As noted above, fair value accounting pushed banks into buying insurance from monolines on structured finance securities in order to realise profits. Such positions turned out to be a huge punt on the credit worthiness of the monolines and one which failed badly. Had a "prop trader" attempted to take a similar position (for example by selling protection on

[5] Sasura, M., "CVA Hedging in Rates, Gaining in Significance", Global Rates Strategy, Barclays Capital. 20th May 2010.

[6] Crowded trades can cause extreme movements in both directions. The EU/IMF bailout package announced on 10th May 2010 resulted in CDS spreads tightening, a re-steepening of the 10/30 Euro swap curve and lower implied volatility.

monolines or buying their bonds) then limits and management control would have surely prevented the position becoming even a tiny fraction of the bank's actual monoline exposure. Furthermore, as described above, the hedging of CVA is highly complex with CVA desks struggling with the problems of cross-asset credit contingent risk, one-way positions and the inability to reject trades. The lack of good economic hedges and crowded trades may ultimately lead to larger problems. In banks, prop trading desks are under heavy scrutiny due to the very clear understanding that they make money by gambling in the financial markets. However, it is the proprietary positions of other trading desks (for example those stemming from the inability to hedge CVA very well) that should be of greater concern. Banning proprietary trading in order to reduce excessive risk-taking is like banning beer mats to reduce alcoholism.

The evil twin of CVA

Different institutions valuing derivatives (or other assets) inconsistently in liquid, two-way markets should cause concern, and mark-to-market largely solves this problem. However, the nature of CVA is that it is a one-way risk[7]. We have argued that CVA components should not be treated, from an accounting perspective, in the same manner as the underlying derivatives themselves. Moreover, worse problems exist in the accounting treatment of CVA.

Another aspect that might cause concern is if a firm's balance sheet does not add up, that is to say that value can be created or destroyed by adjusting the balance of assets to liabilities (a bit like violating the law of conservation of energy in physics). The value of assets on an institution's balance sheet incorporates credit risk, which is appropriate since it accounts for the possibility that the institution may not receive future payments linked to those assets. The value of the credit risk attached to one's own liabilities is slightly more subtle. On the one hand, it is the only way to make a balance sheet actually balance[8], but on the other hand it attaches value to an institution's future default, which might seem counterintuitive. Indeed, this has led to much debate during the global financial crisis when banks made large profits due to their credit quality deterioration leading to gains as they effectively wrote down their liabilities. These gains are reversed when credit quality improves and hence this could be regarded at best as an accounting trick that stabilises the earnings of a firm.

Along the same lines, DVA (debt value adjustment) is the component of CCR that stems from one's own default. Again, accountancy regulations allow the use of DVA adjustments (indeed, FAS 157 specifically requires it). Hence, an institution may offset CVA "losses" against DVA "gains". Indeed, a riskier than average institution may have an overall DVA that is greater than the total CVA, reflecting a net gain due to CCR (and you thought risk was always a bad thing). The use of DVA has many attractive features, the main one being that parties are more likely to agree on pricing. In a purely CVA world, market participants aim to charge for CCR, and the risky value of a derivative with respect to the two parties involved is

[7] The market for instruments that could make the CVA market two-way, so-called contingent credit default swaps (CCDS) has never developed beyond a few bespoke trades.

[8] In other words if a risky firm issues a bond that is priced below par due to their credit risk, they record the price of the bond as a liability on their balance sheet rather than the face value. The latter approach would create a loss associated with raising debt.

not equal and opposite whereas, in a world including DVA, symmetry exists where more risky parties pay less risky parties in order to trade with them. DVA avoids a seemingly unpleasant accounting problem - at the expense of causing far worse problems.

Many practitioners agree that the use of DVA may be partly antithetic to the spirit of financial risk quantification and may simply not "feel right". We have already argued that requiring CVA to be marked-to-market forces dynamic hedging that is so difficult and complex that it may ultimately prove counterproductive for the financial markets. DVA takes the problem to a new level since in order to hedge its DVA, an institution must somehow attempt to monetise its own future default. There are many ways in which an institution can attempt to achieve this. One of the worst is to long the credit of a highly correlated counterparty. This is not good for the party providing the other side of a CDS trade who takes significant "wrong-way risk", nor was it a fantastic hedging strategy for the bank attempting to execute this strategy by buying Lehman Brothers bonds. Slightly better strategies for hedging DVA range from unwinding or innovating trades (as long as the herd mentality over DVA holds) or buying back one's own debt (assuming one has the cash to do so).

Whilst it may be partially monetised, DVA cannot be dynamically hedged like other derivative risks. Furthermore, there are clear moral hazards involved in creating incentives for banks to attempt to monetise their own future default. A bank with a declining credit quality will need to attempt to sell more and more CDS protection and achieve increasingly short volatility in all asset classes it trades. The market will tolerate this only up to a point. DVA is a concept that will at best work in normal markets and fail dramatically in abnormal ones.

This then leads to the question as to whether the use of DVA to improve the aesthetic qualities of accounting of derivatives really makes sense. Without thinking through all the implications of an aspect like DVA, such as the complex hedging activities of banks, how can one decide that it is the "right" accounting standard? Some banks are valuing DVA for accounting purposes but (at least partially) ignoring it otherwise. Banks are known as fairly profit hungry organisations and so any concern they have over accounting profits surely signifies serious problems with accounting rules.

Regulatory capital plays catch up

Basel 2 requires that banks hold capital against CCR depending on the "loan equivalent" of the exposure of the derivatives in question. The loan equivalent is quite hard to define because derivatives are not like standard loans, but basically it involves multiplying something called the EEPE (what you think your future exposure will be) by a fudge factor called alpha (which tells you how far your portfolio is from being infinitely large). This is actually quite a theoretically appealing way to shoehorn OTC derivatives under regulatory capital rules designed for fixed exposures such as loans with the minimum of additional complexity. Regulatory capital is calculated by reference to possible losses due to counterparties defaulting and (by another maturity fudge factor) having their credit ratings downgraded.

The problem with regulation is that it operates on timescales that are long in comparison to the fast moving derivatives market. No sooner had the ink dried on Basel 2, than there was a perceived strong need for Basel 3. In December 2009, the Basel Committee proposed[9] new regulations based on their analysis of the financial crisis between 2007 and 2009:

"*During the most severe episode of the crisis, the market lost confidence in the solvency and liquidity of many banking institutions.*"

This could be viewed as a simple way of expressing the point that banks were badly capitalised and that the new (yet to be implemented) regulation wouldn't have helped anyway.

A large proportion of the Basel Committee proposals related to CCR were motivated largely by the recently discovered fact that the major component of CCR related losses came not from actual defaults but from mark-to-market losses (according to the BIS, two thirds of CCR losses in the crisis although the origin of this fraction does not seem to be widely known). This leads to the proposal to charge a "CVA VAR" against the activities of the CVA desk to capitalise their potential mark-to-market losses. So, to summarise, by December 2009 it had become clear that the most severe CCR related to mark-to-market losses, and Basel 2 had been attempting to capitalise for only one third of CCR in the market. But the origins of this were put in place in 2005 when accountancy standards changed to require mark-to-market of CVA. Basel rules are playing catch-up with accounting rules but for some reason that process takes several years to reach even the proposal stage.

Whilst light regulation is clearly a bad thing, over-regulation may be bad too. Trading book VAR is notoriously hard to quantify despite the underlying derivatives being relatively easy to price. No standards yet exist for computing CVA and it remains notoriously difficult to quantify without a large amount of subjectivity. The idea to quantify CVA VAR for Basel 3 then seems optimistic at best. Indeed, the CVA VAR capital charges remain highly controversial. The multiplier of five that converted from a 10-day to a 1-year time horizon has been dropped (seemingly an admission that the proposed requirements were at least five times to large). Nevertheless, criticisms remain over the simplified "bond equivalent" approach that captures only CVA risk from credit spread changes (and does not do this especially well). Sadly, time does not permit the development of a better methodology.

The CVA VAR capital proposals are an example of regulation becoming needlessly complex. The concept that two thirds of CCR has been ignored under Basel 2 is not obvious. The large CCR related losses made by banks via trades with monoline insurers may be technically viewed as mark-to-market losses but, given the financial situation of monolines, it is not a world away from the default losses covered under Basel 2. Would it not be better to focus on an undercapitalisation being a result of the underestimation of default probability and correlation parameters in the Basel 2 treatment rather than adding additional and complex capital charges as represented by CVA VAR? In a crisis, CVA will be highly volatile and hugely challenging to risk manage, and the mark-to-market of CVA will be largely irrelevant as an "exit price". Surely at such a point the key aspect is to know if a bank has enough capital to absorb losses due to counterparty defaults.

[9] http://www.bis.org/press/p091217.htm

Another feature of the December 2009 BIS document is promotion of the use of single name CDS in order to hedge CVA. The encouragement to use single name CDS is readily achieved via giving no capital relief for CVA hedges with the more liquid and less jumpy CDS indices. This would put CVA desks in a position where hedging may increase their required capital (and of course not hedging may reduce it). It seems that, following "feedback" from market participants, capital relief may indeed be given for index hedges because[10]:

"*It's very important the right incentives be given to banks. We certainly would not want a rule that doesn't incentivise hedging of the risk, because you would have to put capital up against the index hedge but wouldn't get capital relief for the risk it's hedging*".

Incentivising the hedging of risk is certainly something regulators should be encouraging. But giving too much benefit for hedges that have only limited economic effectiveness (especially in turbulent markets) is possibly more dangerous than giving no benefit at all. Regulators are stuck between a rock and a hard place here. Not allowing index hedges to generate capital relief seems unfair and counterintuitive. On the other hand, to give capital relief promotes the use of hedges that have only limited benefit and may actually fuel blow-ups (as in the earlier CDO example). For example, consider that all banks chose to hedge the CVA of a given counterparty via an index rather than using single name CDS (which is available but appears more expensive and less liquid). However, if the counterparty became financially distressed, CVA desks may decide to re-hedge with single name CDS contracts at a certain critical point (probably linked to the CDS spread and/or rating of the name in question). This would clearly cause a massive problem due to the likely lack of liquidity. Maybe it is preferable to strongly encourage hedging with single name protection during normal markets rather than have this regime change effect in turbulent times.

Single name CDS are rather complex financial instruments that have so-called wrong way risk and, through associated sudden price moves, have the ability to cause hedging problems as noted above. Whether single name or index, a CDS is rather ubiquitous since it allows hedging of CVA but has itself potentially more toxic CVA, creating a rather difficult problem. A bit like the old lady who swallowed a spider to catch a fly (and so on) one might buy protection on a single-A from a double-A then buy protection on the double-A from a triple-A, then buy protection on the triple-A from … oh dear. CDS products potentially create a never ending sequence of wrong way risk but, luckily, regulators have thought of a solution to this problem too.

Central (too big to fail?) counterparties

An intended side effect of the increased CCR capital requirements (the so-called CVA VAR described above) is to increase incentives to move OTC derivatives to central counterparties (CCPs). The financial crisis has also led policymakers to propose laws that would require most standard OTC derivatives to be centrally cleared. This was largely driven by fears surrounding the CDS market. Central clearing is fine for vanilla products which exist in very well-matured markets, are totally standard and easy to hedge. Indeed such products

[10] http://www.risk.net/risk-magazine/news/1721588/index-hedges-allowed-basel-cva-charge

through their natural evolution may end up being exchange traded and by association be cleared through a CCP.

However, just because exchanges generally work for very well-matured and standardised products, it is not obvious that forcing CDS to be centrally cleared is a good idea. A product such as an interest rate swap is unlikely to move by 1% of its notional in a single day. A CDS can move by ten times this amount in a few minutes and may gain or lose huge value in a small space of time (Lehman CDS traded at 300 bps just days before the Chapter 11 filing – the change in exposure from here to default was well over half the notional value of a contract). It is well known that it is hard to get rid of financial risk and much easier to convert it into different forms. Hence, why would a CCP be the magic cure for CCR? Would it not be rather in danger of converting it into some other, possibly more dangerous, form? Why would channelling OTC derivatives contracts through one entity reduce systemic risk? Surely it might simply concentrate it in one place.

CCPs carry default risk and are not deemed too big to fail. We know this now since CCP trades will still attract a capital charge of 1-3%. It is rather strange that it may be mandatory to trade through a CCP and yet there is no guarantee that this CCP, just like any other counterparty, will not fail[11]. Worse still, this means that banks may want to buy CDS protection on CCPs, which gives rise to the question of who they can buy such protection from (ideally, a counterparty that can survive a systemic crisis when one or more CCPs are failing). This being the case, then why not give a choice over whether or not to trade through a CCP? If CCPs offer a valid way to reduce CCR then, like netting, collateral and trade compression, they will be widely adopted.

Let us consider the capital impact of moving OTC derivatives to CCPs. It is hard to argue with the view that banks need to be better capitalised, but how should regulators seek to achieve that capitalisation? Bilaterally cleared OTC derivatives will attract regulatory capital charges according to Basel X (where X is an integer). Such charges will aim to provide a capitalisation of worst case losses. Those setting the capital need not be incentivised to give lower numbers and such requirements might even be countercyclical (if X is greater than 2). Now, when a derivative is moved to a CCP then the regulatory capital charge becomes a reasonably small 1-3%. But, in addition to this, initial and variation margin will be charged by the CCP. Regulators lose control over the capital that must be held against a derivative since it becomes the 1-3% capital charge plus the initial margin controlled by the CCP. Furthermore, CCPs have every incentive to keep initial margins low (think shareholders, profitability, competition with other CCPs). With the competitive environment under which CCPs operate, surely initial margins will be procyclical. Unlike the collateral terms in bilateral ISDA agreements, CCPs may request increased margin during volatile times, simply worsening liquidity problems.

Have regulators and policymakers really considered the subtle movement of regulatory capital to initial margin when deciding that CCPs will be the solution to CCR in OTC derivatives? Is it not more appropriate to focus on regulating banks with ideas and ammunition gained from the massive problems experienced as a result of the demise of Lehman Brothers? How many CCPs should there be globally? Should they be linked via

[11] We note that a CCP failure may involve losses being spread amongst the (surviving) CCPs members.

practices such as cross-margining? Will we not just end up with a highly connected network of CCPs that is just as unstable as the current interconnected dealer network?

We could look at CCPs in a simpler way. If it is true that moving large volumes of OTC derivatives to CCPs does not reduce systemic risk, then we may have to wait many years to find out (for example, after the end of the Obama administration). The risks of bilateral markets continue in the short-term and problems, for good reasons, cannot be brushed under the carpet.

Conclusions

We have described the problems and challenges in the regulation of counterparty credit risk (CCR). The current regulation of CCR seems to involve a set of arbitrary and sometimes over-complex rules such as capital requirements and accounting standards that seem not to complement one another. Furthermore, the secondary impact of a regulation may be counterproductive due to a series of knock-on effects such as seen with CVA hedging. Finally, the need for grand regulation to solve high profile problems may encourage the naïve use of "silver bullet" solutions, which give short-term confidence but create more significant long-term risks.

We have argued that the mark-to-market of CVA is misplaced due to the fact that CVA is highly complex to price and hedge. Putting CVA in the trading book under such circumstances causes more harm than good. It would be better to give the choice for a bank to manage most of their "illiquid" CVA[12] together with their loan portfolios. Regulators can still (through capital requirements) encourage banks to manage CVA with large counterparties on the trading book, with such transitions ultimately linked to the development of the single name CDS market. However, perhaps CVA should never be put in the trading book. Idiosyncratic CCR characterised by largely independent defaults of relatively small and/or unconnected counterparties can be readily absorbed. Hedging may be possible and may be consistent with periodic remuneration of staff but will be more costly in the long run and therefore not of benefit to shareholders. Systemic CCR, characterised by Lehman type events, when prices become volatile, highly interconnected and illiquid, is more important but is impossible to hedge.

DVA arises from the need to make balance sheets add up and to achieve agreement between parties over derivatives valuation. However, a thorough examination of the implications of a bank attaching value to their own future default leads to some worrying conclusions. DVA valuation can then be identified as boosting profits in normal markets and creating destabilisation in abnormal and volatile markets. Surely then it is exactly the sort of practice that regulators should prevent?

It seems as if CCPs were identified as being the clear panacea to CCR related problems very quickly. The U.S. House Committee on Financial Services and the European Commission have fast-tracked regulation in order to mandate the clearing of standardised derivatives. The role of banks is to take risk and it may not be optimal to pass this risk to another financial institution whose impact on financial markets is less well appreciated due to a lack

[12] Mostly likely defined as the CVA with the counterparties for which there is not a liquid CDS market.

of historical experience. Is there a danger in being blinkered into implementation of central clearing without considering all the positives and negatives of moving standardised OTC derivatives en masse to CCPs? There seems to be enough genuine scepticism about the use of CCPs to warrant at least a slightly more cautious approach to their use, and possibly to realise that they may actually make a difficult problem yet worse (in the long run). It would be interesting to see a candid study of the benefits of central clearing that attempts to at least ask (if not answer) the key questions on the development and regulation of the CCP landscape.

Financial regulation is far from easy with choices perhaps representing the lesser of two evils rather than right and wrong. The appropriate use of CVA by banks together with clear regulation can control CCR in both stable and volatile markets. Rather than being caught up in short-term fixes, regulators should be looking at comprehensive high level reviews of all aspects of CCR and their impact on financial markets. This may lead to regulation that is not excessively complex but is transparent and captures the key aspects. Failure to do this will encourage sizeable systemic risks that will lead to further future losses to be absorbed by taxpayers.

European Policy Forum
49 Whitehall
London, SW1A 2BX
Tel: +44 (0)203 174 3196
Fax: +44 (0)203 137 2040
www.epfltd.org

ISBN 978-1-903850-35-0
£20
Registered in England no. 2683041