THE ROLE OF CREDIT DERIVATIVES IN PRECIPITATING THE CURRENT FINANCIAL CRISIS

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INTRODUCTION

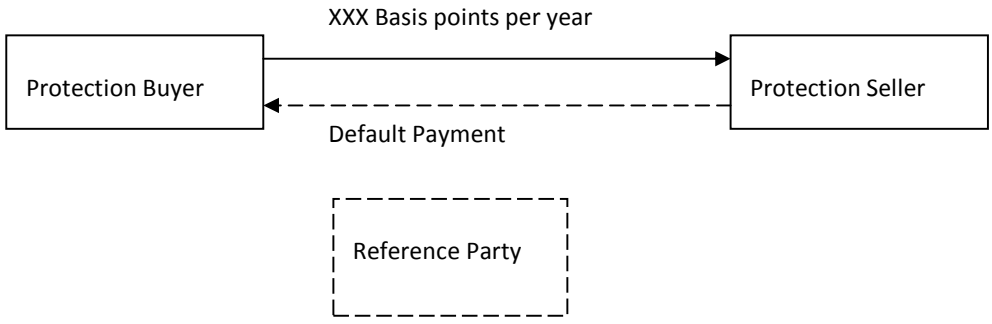
A credit derivative is an instrument designed explicitly to shift credit risk between parties; its value is derived from credit performance of one or more of reference parties, which could be corporations, sovereign entities or other debt obligations. The market for these products stood at close to 45 Trillion US dollars by mid-2007. It had been 120 Billion US Dollars in 1997. The market for derivates had posted an exponential growth of close to 80% compounded annually over one decade! This paper aims at exploring the instrumentality of these products in precipitating the current financial crisis.

TYPES OF CREDIT DERIVATIVES

One type of credit derivative, namely the credit default swap (CDS), in its various avatars, accounts for a vast majority – approximately 81% of the notional amount outstanding in the FY 2006 - of the credit derivative market. Asset swaps, although strictly not credit derivatives are sometimes classified amongst them. The other popular credit derivative is the total return swap.

In addition to the above, options on derivates are also somewhat popular and are called swaption. A call swaption is a right but not an obligation to buy a credit default swap at a preset price and a put swaption is a right but not an obligation to sell a credit default swap at a preset price.

CREDIT DEFAULT SWAPS



A credit default swap is a contractual agreement to transfer the default risk of a reference party between parties of the contract. Typically, the buyer of a CDS makes a periodic payment to the seller of the protection during the life of the CDS. In return, the seller is obligated to compensate the buyer for any loses over a notional face value agreed upon should a credit event transpire. Credit events could be default, bankruptcy, restructuring of the obligation etc.

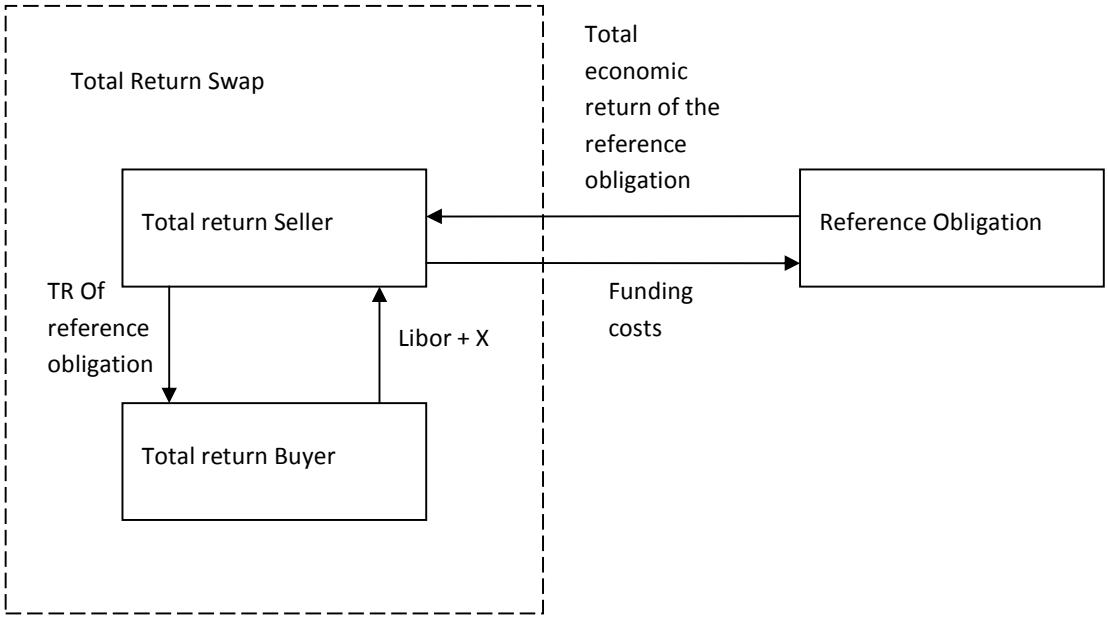
CDS could be funded or unfunded. In a funded CDS, the seller makes a provision either in the form of a loan to the buyer or in the form of a special purpose vehicle, to hedge the buyer against the event that the seller will default on the payment when a credit event occurs w.r.t. the reference party. An unfunded CDS will have no such provision and the buyer will be exposed to the default or counterparty risk w.r.t the seller.

CDS vary in the composition of reference parties as well. Where the reference entity is a single party, the CDS is called a single-name or vanilla CDS. CDS with two or more reference parties are possible and these are called basket CDS. A major source of growth has been index CDS where the reference party is an index of as many as 125 corporate entities.

The market for CDS also allows the participants to buy or sell protection on tranches of indices, i.e., on a specific level of losses on an agreed face value of any underlying index.

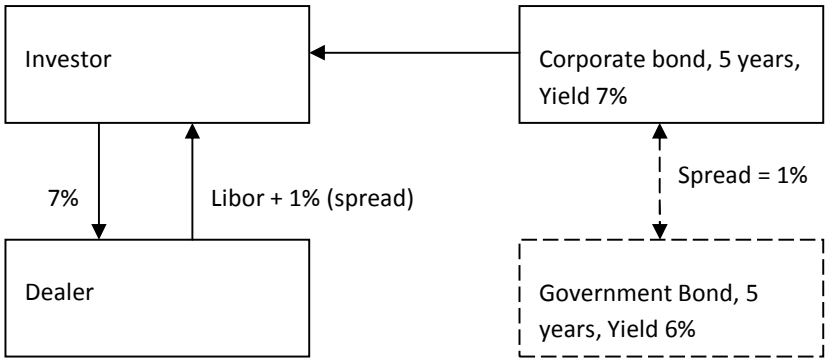
TOTAL RETURN SWAPS

A total return swap exchanges total economic return of a reference obligation with a fixed payment between two parties. The total economic return of the reference obligation will include interest income, fees and change in the market value of the obligation in addition to any losses due to default or any other credit event. Thus, a total return swap exchanges market risk along with credit risk between parties.



ASSET SWAPS

An asset swap combines a fixed rate corporate bond or note with an interest rate swap. In an asset swap, one party, which owns a bond or a note, pays a fixed income into an interest rate swap. Since the rate is generally higher than the prevailing interest rate, the floating leg is also increased by an asset swap spread. In this way, the bondholder essentially hedges away the interest rate risk and is mainly left with the default risk. The spreads in an asset swap, therefore, must be closely linked with the premiums paid for CDS of similar assets due to arbitrage.



EVOLUTION OF THE CREDIT DERIVATIVES MARKET

The market for credit derivatives seems to have evolved in three phases.

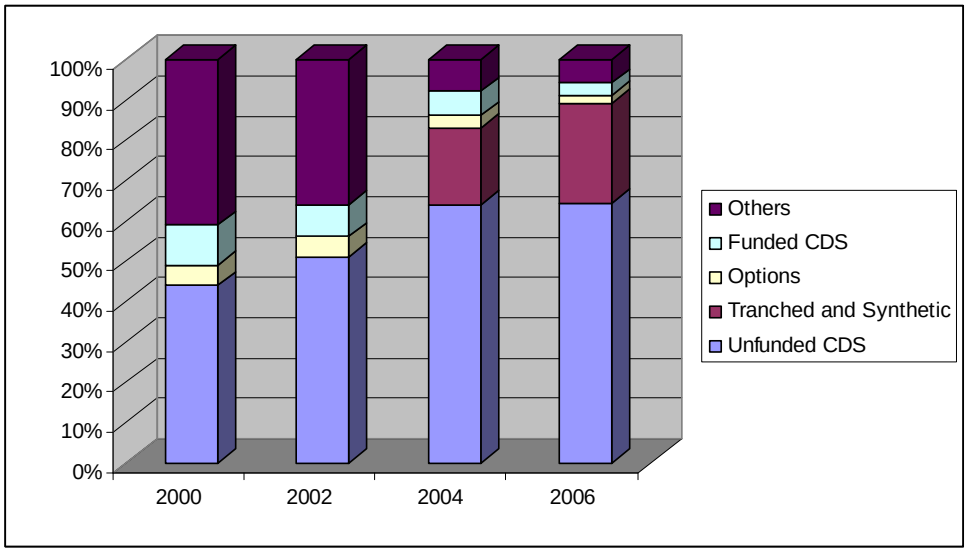
The first phase was "defensive" phase during late 1980s and early 1990s. Here derivatives were used by banks to shed some of the credit risk on their books and to diversify their risks onto larger baskets. The second phase was characterized by the emergence of intermediated markets and dealers. It also saw the emergence of synthetic securitization structure. This also involved creating synthetic CDO where the collaterals provided were CDS products. The third stage saw maturing of the derivatives market and emergence of diversified baskets of derivatives. It is during this stage market encountered series of challenges. Disagreements were brought to fore regarding the definition of "credit event". Questions such as "should restructuring of an obligation trigger a credit event?" raised and new solutions were offered by ISDA. In addition, the problem of what happens to CDS and other credit derivative contract when the reference entity merges with another entity or de-merges or spins off part thereof was raised during this stage.

The aftermath of stage three saw ISDA prescribe new definitions and standardized practices. Dealers began to accord standard settlement dates and took deliberate steps to make the markets liquid. This stage also saw the entry of hedge funds into the market. This stage also saw high amounts of speculation in the market – for instance, when Delphi, an auto parts company, defaulted , it was discovered that it had 28 Billion US dollars of CDS exposure with only 5.2 billion US dollars par value underlying assets. Although it can be argued that high volumes of trading will provide depth in the market and aid price discovery, it was also argued that this could potentially lead to an asset bubble. [3]

KEY TRENDS IN THE MARKET

PROFILE OF DERIVATIVE PRODUCTS

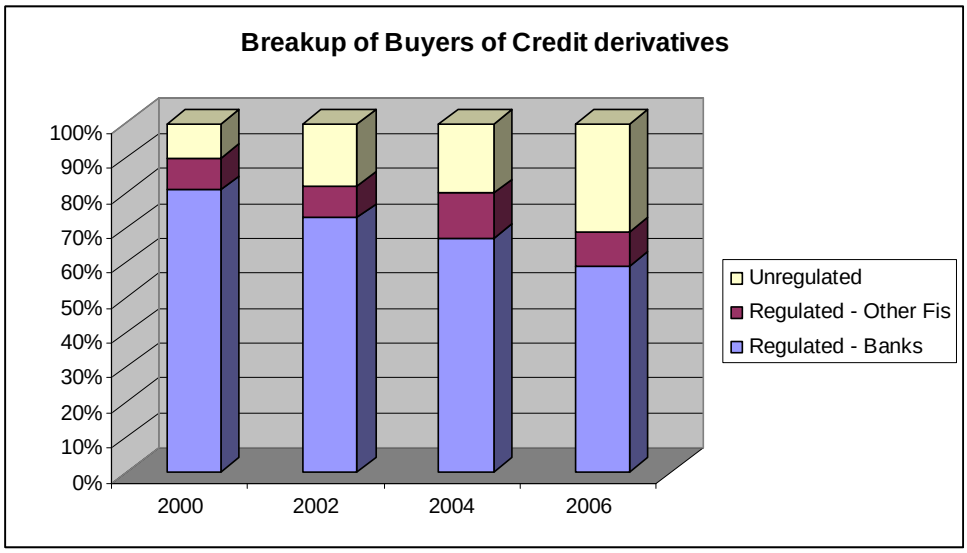
Through the evolution of the derivative market, we see that the profile of the derivative markets got "riskier" over the years. Funded CDS and even unfunded CDS were in decline in percentage terms while exotics (options, synthetics, tranched and equity-like instruments) were on the rise. This coupled with the exponential growth of the derivative markets implies the creation of an extraordinarily large amount of counterparty risk in the system. Would all the sellers of the protection be able to absorb losses and execute the contracts were a major credit event were to happen?



BREAKUP OF BUYERS OF CREDIT DERIVATIVES

For the purpose of analysis, all the buyers in the derivatives market were pooled into three buckets. 1. Banks, 2. other regulated FIs like mutual funds, pension funds, insurance companies etc and finally 3. unregulated entities such as hedge funds and corporate entities.

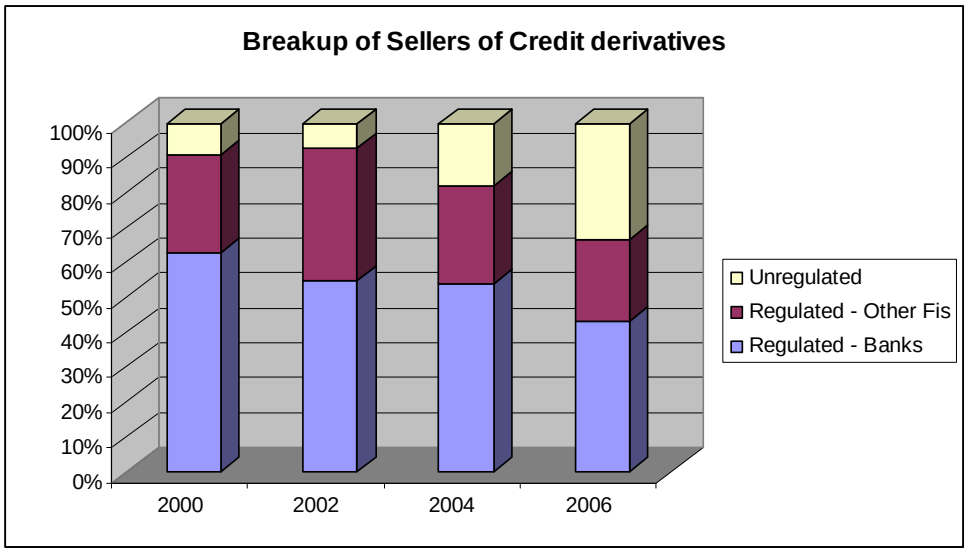
The percentage of unregulated buyers was steadily on the rise. It is fair to assume a large proportion of these would be speculators since it is unlikely that they will have loan books large enough to justify hedging on these scales. Although, it can be argued that a large block of speculators would help provide liquidity and better price discovery, the other side might be that they also help fuel speculative asset bubbles.



BREAKUP OF SELLERS OF CREDIT DERIVATIVES

The rise of unregulated entities as sellers of derivatives is more alarming. A CDS or any other form of derivative is essentially a zero sum game – the gain of one party is to the loss of other. However, exception to this arises out of counterparty risk. It is possible that thinly capitalized and highly leveraged entities such as hedge funds to sell protection when things are rosy. Their ability to absorb losses were the market to move significantly in direction opposite of their bet, however, was in question. Here, again, the advantages of higher liquidity and better price discovery may end up being dubious.

One more trend that is clear from the charts is that FIs such as insurance companies are big sellers in this market. Their ability to withstand losses if a systemic problem were to surface is suspect. Given these, it appears that the hedged risk based on derivatives may not be much better than direct exposure to credit risk from the perspective of a buyer under conditions of systemic duress.



DERIVATIVES AS CATALYST IN THE CURRENT CRISIS

MOVEMENT OF CREDIT RISK AWAY FROM REGULATED ENTITIES

The boom in credit derivatives market has lead to movement of credit risk away from regulated entities – mostly banks. One of the factors encouraging banks to use credit derivatives is the clause in Basel 1 that lets them reduce the capital adequacy for loans by 80% once they are hedged for said loans with credit derivatives. This lets banks use the freed up capital more profitably. The concern here is that the derivatives thus created will make way to highly geared institutions in the system, thereby causing capital inadequacy in the whole system.

CONCENTRATION OF RISK

Derivatives also created avenues for entities to concentrate risk in pursuit of higher yields. While this would be all right if the said entities had enough capital to absorb losses in a market downtrend, it can be

disastrous for highly levered institutions. Derivatives also make it very easy to hide credit risk from the market. This is because derivative positions do not have to be accounted for in balance sheets since they are contingent liabilities. The American insurance giant AIG's problems were partly due to its high exposure to CDS. Though AIG could have taken on similar risk in cash market, such a position would have been obvious in the market. CDS simply made it beguilingly easy for AIG to take on huge risk and not show it on its books.

PRINCIPLE AGENT PROBLEM

Originators of the underlying assets of credit derivatives are usually banks, and the assets are loans. Banks are a net buyer of protection in the credit derivatives market. This creates a principle agency problem since banks may not do due diligence before lending as long as they can minimize their risks. Indeed, if the credit risk can be eliminated from their books, banks may be more interested in quantity than quality. A particularly nefarious manifestation of this could be insider trading where a bank intentionally buys protection on loans that it knows are bad of which the seller is clueless.

In addition, this may result in "seatbelt problem" where banks feel safer due to hedging and take on more risk.

CREATION OF EXOTICS

A variety of exotic derivatives was created in phase four. This possibly lead to confusion and hindrance of due diligence by parties. For example, CDOs were created with various tranches. A senior tranche has first claim on cash flows and a junior tranche has first exposure to any default. This could lead to a trache of a CDO to be rated much higer than underlying assets. Of course this also means the junior tranches will have almost an equity like structure. It is possible, for instance, for a highly leveraged organization to own a junior tranche in a subprime CDO, hence creating a very highly geared asset. A CDO^2 is a structure where a fund invests in other CDOs at various tranches and offers tranches of its own. A constant proportion debt obligation is a leveraged instrument that insures an index of bonds.

All this creates a system where monitoring the value of underlying assets is hard. An investor who is most affected (someone in junior tranche, for instance) may be two or three steps removed from the underlying asset.

CONCLUSION

Although the jury is still out on whether credit derivatives catalyzed the financial meltdown, evidence so far seems to suggest that they could indeed have played a crucial role. However, they may not deserve all the vilification that was heaped on them - from “financial WMDs” as Mr. Warren Buffet called them, to disowning of them by their former cheerleader Mr. Alan Greenspan. The genuine benefits of derivatives such as ability to hedge and price discovery of credit risk may in fact be fine-tuned in the future. However, it looks imperative that derivates be brought under the ambit of a regulator and probably a standardized and exchange traded form introduced to eliminate counterparty risk.

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