

Project Dissertation

A STUDY OF REGULATIONS

ON

CREDIT DEFAULT SWAPS

Submitted By:

Pankaj Kumar

2K14/MBA/55

Under the Guidance of:

Dr. G C Maheshwari

Professor



DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road Delhi 110042

Jan -May 2015

Certificate from the Institute

This is to certify that the Project Dissertation titled “**A study of Regulations on Credit Default Swaps**”, is a bonafide work carried out by Mr. **Pankaj Kumar** of MBA 2014-16 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Degree of Masters of Business Administration.

Signature of Guide

Signature of Head (DSM)

Place:

Seal of Head

Date:

Declaration

I, **Pankaj Kumar**, student of MBA 2014-16 of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 declare that Project Dissertation on “**A Study of Regulations on Credit Default Swaps**” submitted in partial fulfillment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This Report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

Pankaj Kumar

Place:

Date:

Acknowledgement

On the very outset of this report, I would like to extend my sincere and heartfelt obligation toward all the persons who have helped me in this Endeavour. Without their active guidance, help, cooperation and encouragement, I would not have made headway in the project.

I express my sincere thanks to my project mentor Dr. G C Maheshwari, Delhi School of Management, DTU for being constant source of encouragement.

I am also thankful to Prof. P.K. Suri, Head of Department and all the faculty members of Delhi School of Management, DTU Delhi.

I extend my gratitude to Delhi School of Management (Delhi Technological University), for giving me this opportunity.

Lastly, I thank Almighty, my family and friends for their constant encouragement.

Pankaj Kumar

2K14/MBA/55

Abstract

Credit derivatives are one of the major financial innovations of the last decade. The market for credit derivatives has become the third-largest derivatives market —after interest rate and foreign exchange derivatives— in terms of gross market value. Among credit derivatives, the credit default swap (CDS) is the most popular instrument for trading credit risk. CDS are being perceived as a double-edged sword and are the subject of a lively discussion in the academic community as well as in the media.

With economies growing there has been an excessive demand for capital from all sorts of businesses to further fuel their growth. Banks seek to address this need for capital and in turn assume risk. But for any country to continue to grow it's an imperative that we have healthy financial institutions which are able to manage their risks well. Credit derivatives which emerged globally nearly a decade ago and created a rage as effective tools for credit risk management are set to help banks better manage their credit risks.

The introduction shall provide an overview of the significant features of the credit default swaps, Why CDS are seen as double edge sword and should be used with utmost care and is used by fully knowing the implications of it.

The main purpose of this research is, therefore, to understand *Credit Default Swaps*, investigate its implications on an economy as well as the impact of a new regulatory framework like Big Bang Protocol, Small Bang Protocol, Dodd-Frank act etc. on the market and its participants and also how these regulations can prevent its misuse and keep it under check and ensures that the financial crisis that we faced in 2008 is not repeated.

1. Introduction

1.1 Problem of the study

The year 2007-08 witnessed unprecedented crisis due to housing bubble in the US market which was termed as sub prime crisis. This crisis engulfed almost all the nations of world. To get rid of this crisis, the new instruments which were introduced to finance the housing and other sectors were regulated by the authorities so as to manage the crisis and help the users to redesign their usage strategy. It is in this context Credit default Swap was one such instrument introduced as a hedging instrument to hedge the investment in case of a default event. It is used as a default insurance and the buyer protects himself in case of a default and the seller is obligated to pay when a company defaults on its payment.

The goal is to understand these regulations and to know whether these regulations have the strength to prevent such crisis and what are the loopholes that still exists in these regulations.

1.2 Need for the study:

With the innovations and arrival of new complex financial instruments it is the need of the hour to understand the risks associated with these financial products and how these instruments affects the market and what are the problems associated with them. By understanding these products we can assign the responsibilities and frame rules and regulations for these products that can keep there use under check and prevent there misuse that can lead to some form of crisis.

This study aims to find out the rules and regulations framed after the recent financial crisis for the Credit Default Swaps and how these new regulations allow the watchdogs of the industry to keep this under check and allows there trade in a transparent manner.

This study will help the buyers and sellers of Credit default swaps to understand the new regulations introduced by the government and take appropriate measures so as to align themselves in accordance with the law. In credit default swaps the buyer is known as protection buyer as he is buying this instrument to protect himself from the default event and the seller is the protection seller which that takes the risk and agrees to pay the buyer in case of a default in turn gets the premium from the buyer, if default

occurs the seller has to pay the buyer otherwise the premium that he is getting is the profit from the deal.

This study will also help the developing countries like India where the credit default swaps market is still in nascent stage to understand the regulations that are framed after the financial crisis and what are the areas that still need more strict regulations in their countries. These regulations can serve as a benchmark for the regulatory bodies of the developing countries.

1.3 Literature Review

The literature on credit derivatives can be separated into three groups, namely academic research, publications by market participants, and studies carried out at central banks. Academic research is at a very nascent stage and concentrates on pricing issues as if they are traded in standardized market. Credit derivatives play an increasingly important and controversial role in financial markets. Commentators have lauded them for enabling banks to hedge credit risks while others have warned of hidden dangers and systemic risks. Institutions have both saved and lost fortunes using credit derivatives. The market for credit derivatives is now one of the largest markets in the world. David Mingle (2007) points out that a major source of credit derivatives growth since 2004 has been index CDS, in which the reference entity is an index of as many as 125 corporate entities. An index CDS offers protection on all entities in the index, and each entity has an equal share of the notional amount.

Martin Scheicher (2005) has found that banks, investment funds, hedge funds, insurance companies and corporations are the main players in the credit derivative market. The major incentives for trading credit derivatives are mainly economic and partially regulatory.

Credit derivatives swaps (CDS) are the main pillars in the credit derivatives market and represent about half of its volume (George Spentzos, 2005). If credit derivative trades are opaque, so that protection buyer cannot make an ex-ante commitment to a specific protection level, banks have a moral hazard incentive to hedge their exposure fully and therefore cease to monitor Morrison (2005).

Hull and White (2000) analyzed the effects of the assumed recovery rate on the CDS prices and found that, if the same recovery rate is used for estimating default probabilities and for pricing CDS using probabilities, the chosen recovery rate has little

impact on the implied CDS premium as long as the recovery rate is assumed to be lower than 50 percent of the bond's face value.

Hedging theories typically predict that firms with a greater probability of Costly distress are more likely to hedge Stulz (2003). (Bernadette A. Minton, René Stulz, and Rohan Williamson, 2006) found that higher profitability is associated with a lower probability of financial distress, then the likelihood of a bank using credit derivatives to hedge will be lower for more profitable firm. The dynamic nature of the credit derivative market makes definitive conclusions on the implications of credit derivatives difficult.

In their true sense, CDS should contribute to make the financial system efficient by separating the credit risk and cost of investing and thus shifting the credit risk to those willing to take it. This should not only reduce firms' cost of capital, but also facilitate investors at large to gauge a company's credit risk (rather than the market where firms' securities are traded) (Stulz 2010).

Yavorsky (2009) found that CDS contracts can also substantially change investor psyche by reversing the dynamics of investment for him. For example if an investor is approached to suggest a restructuring of debt of a company he has invested in, now if he has insured his debt by CDS and he can make a gain under bankruptcy of the company, his verdict may be affected than what he would decide otherwise.

The various data sources now provide a good overview of the aggregate market size, although there is currently a high degree of opacity both at the aggregate level and at the firm level as regards banks' exposures to bespoke CDSs and some other market segments. The differences in terms of data coverage emphasize the need to bridge the various data sources. Although aggregate data on market volumes have improved, regular firm-level data disclosed to regulators with regard to their OTC derivative exposures and counterparty concentration still need to be enhanced (ECB 2009).

While liquidity in the commercial paper, corporate bond and interbank lending markets disappeared during the recent financial crisis, the CDS market remained active and provided lenders and investors with a way to hedge risk and just as importantly a function for market based price determination (ICE 2010)

If finance is dynamic, then so too must be its regulation. The failure of regulators to use the powers they had during the crisis calls for greater accountability. But beyond

that, the dynamic nature of finance, by suggesting either that legislators must constantly reconsider financial legislation or they will remain the mute spectators while another crisis hits the market (Gerard Caprio 2014).

Gaps in Literature Review

- First the researchers are mainly focused on the pricing mechanism of credit default swaps and how these prices are determined and what role banks plays in determining the prices. They are not focusing on the risks associated with it.
- Second, most research papers have discussed the pros and cons of credit default swaps and how an investor should be aware of those risks associated while using the credit default swaps as a hedging instrument.
- Third, research papers after 2008 are focused on the role of credit default swaps in the financial crisis and how the system is unable to keep a check on it, rather than suggesting solutions to this problem.
- Some research papers are concentrated on the how the CDS can be used for risk management and focusses on the number of trades and market size of credit default swaps.

1.4 Objectives of the study

Credit derivatives are one of the major financial innovations of the last decade. The market for credit derivatives has become the third-largest derivatives market –after interest rate and foreign exchange derivatives– in terms of gross market value. Among credit derivatives, the credit default swap (CDS) is the most popular instrument for trading credit risk. Specifically, the study seeks to

- Expand the nature of Credit Default Swap as a credit derivative instrument.
- Examine the impact of new regulatory frameworks like Big Bang Protocol, Small Bang Protocol, Dodd –Frank Act etc. on the CDS market and its participants.
- Understand the effect on business due to changes introduced by the regulators.

Despite their great success in the past, CDSs went to rack and ruin in public and have been blamed by its critics for being a major driver of the current financial crisis. For instance, in 2008 a Reuter’s report about CDSs, headlined “Buffett’s time bomb goes off on Wall Street”, blames CDSs for the failures of Lehman Brothers, Bear Stearns and AIG. Since then, CDSs are being perceived as a double-edged sword and are the subject of a lively discussion in the academic community as well as in the media. In addition, as a result of the role played by over-the-counter (OTC) derivative markets during the financial crisis, which made the financial system prone to contagion and increased systemic risk, new regulatory frameworks are under way to be implemented at the European level. These regulations will have a significant impact on the CDS market and its participants. In particular, a major consequence of the new regulations will be an increase of the importance of central counterparties (CCPs) in the CDS market.

All these controversial debates and ongoing as well as far-reaching changes make the CDS market an interesting and active field of research for financial industry.

There is ample amount of research available for reference entities as they are already traded publicly. It permits an investor to have a position where the long term view of the investment can be taken into consideration.

2. About CDS

Evolution

Forms of credit default swaps had been in existence from at least the early 1990 with history of trades carried out by Bankers Trust in 1991. However, volumes picked up in the mid 90's as J.P. Morgan & Co. widely created the modern credit default swap (1994). In that instance, J.P. Morgan had extended a \$4.8 billion credit line to Exxon, which faced the threat of \$5 billion in punitive damages for the Exxon Valdez oil spill. Mindful of the concentration of default risk as one of the causes of the Savings & Loan crisis; regulators initially found CDS's ability to disperse default risk attractive. In 2000, credit default swaps became largely exempt from by both the U.S. Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC). The Commodity Futures Modernization Act of 2000 specifically stated that CDSs are neither futures nor securities and so are outside the remit of the SEC and CFTC. The market for credit default swaps (CDS), still major credit derivative to date, saw an unprecedented growth until 2007, surpassing the sizes of the U.S. stock market, the mortgage market and the U.S. treasury market together in terms of notional. Major end-users of CDS are banks, hedge funds and insurance companies, which use these instruments to insure their fixed-income portfolios, provide credit protection to others, or to bet on perceived market inefficiencies. The CDS market was originally formed to provide banks with the means to transfer credit exposure and free up regulatory capital. As the credit default swaps market became more standardized and gained credibility, particularly following smooth credit event settlements in high profile cases such as WorldCom and Enron, more investors entered the market. While banks-through broker-dealers and reinsurance companies-are still both the largest buyers and sellers of credit default swaps, investment management firms are following closely. Credit Default Swaps (CDS) were created in the mid-1990s as a means for the transfer of credit exposure of commercial loans and for freeing up regulatory capital in commercial banks. By entering into CDS, a commercial bank could shift the risk of default to a third-party and this indeed shifted risk did not count against any of their regulatory capital requirements.

In the late 1990s, CDS started to be sold for corporate bonds and municipal bonds. By 2000, the CDS market had grown to approximately \$900 billion in size and was viewed

as, and working in, a credible manner, including, for example, CDS payments which were related to some of the Enron and WorldCom bonds. There were some parties to the early CDS transactions, so the parties were well-acquainted with one another and also understood the terms of the CDS product being bought or sold. In most cases, the buyer of the protection or the one who gave premium also held the underlying credit asset which in this case could be bond or loan.

However, in the early 2000s, the CDS market gradually changed in 3 manners:

- Numerous new parties now became involved in CDS market with the development of a secondary market for both the sellers of protection (premium getters) and the buyers of protection (premium payers). Hence, it became quite difficult to determine what was the financial strength of the protection sellers.
- CDS were started to be issued for what was known as Structured Investment Vehicles, for instance, ABS, MBS, CDO and SIVs. These investments did not have a known entity to follow in order to determine the strength of a particular loan or bond; and
- Speculation became so rampant in the secondary market that sellers and buyer of CDS were no longer owners of the underlying asset, but were just "betting" or "gambling" on whether there will be a credit event or not.

The result of speculation was that by the end of year 2007, the CDS market had a gross notional outstanding of \$45 trillion, but the corporate bond, structured investment vehicles and municipal bond market totaled less than \$25 trillion, which was a cause of worry but no one. Therefore, a minimum of \$20 trillion (a significant amount) were speculative "bets" on the possibility that a credit event of a specific credit asset not owned by either party to the CDS contract would occur.

Another result was that the original two parties that entered into the CDS contract in the first place may very well not be the current holders of the rights of the protection buyer and protection seller (premium payer and premium getter). Some CDS contracts are believed to have been passed through 10-12 different parties. The financial strength of the multiple parties may not be known which created certain problems. Therefore, it has become very difficult to determine, or we can say "unwind," the parties of the CDS during a "credit event."

Lastly, a "credit event" that triggers the initial CDS payment may not trigger a downstream payment like in the case of Enron. For example, "AON entered into a CDS as the seller of protection. AON resold its interest to another company. The bond at issue defaulted and AON paid the \$10 million due to the default. AON then sought to recover the \$10 million from the downstream buyer, but was unsuccessful in litigation - so AON was stuck with the \$10 million loss even though they had sold the protection to another party". The legal problem however was that the downstream contract to resell the protection did not match correctly to the terms of the original CDS contract.

Today, CDS have become the engine that drives the credit derivatives market. According to the British Bankers' Association, the credit default swaps market currently represents over one-half of the global credit derivative market. The growth of the CDS market is due largely to CDS' flexibility as an active portfolio management tool with the ability to customize exposure to corporate credit. In addition to hedging event risk, the potential benefits of CDS include:

- A short positioning vehicle that does not require an initial cash outlay
- Access to maturity exposures not available in the cash market
- Access to credit risk not available in the cash market due to a limited supply of the underlying bonds
- Investments in foreign credits without currency risk
- The ability to effectively 'exit' credit positions in periods of low liquidity

The performance of credit default swaps, like that of corporate bonds, is closely related to changes in credit spreads. This sensitivity makes them an effective hedging tool that can assume exposure to changes in credit spreads as well as default risk. Credit default swaps also have given rise to new arbitrage opportunities, particularly in global markets that do not have the transparency or efficiency of the U.S. credit markets.

2.1 CDS & The late 2000s financial Crisis

Many causes for the financial crisis have been suggested, with varying weight assigned by experts, the United States Senate issuing the Levin–Coburn Report found "that the crisis was not a natural disaster, but the result of high risk, complex financial products;

undisclosed conflicts of interest; and the failure of regulators, the credit rating agencies, and the market itself to rein in the excesses of Wall Street."

The 2008 crisis revealed several shortcomings in CDS market practices and structure in United States. Lack of information on the whereabouts of open positions as well as on the extent of economic risk borne by the financial sector is partly to blame for the heavy reactions observed during the crisis. In addition, management of counterparty risk has proved insufficient, as has in some instances the settlement of contracts following a credit event.

The Credit Default Swap market was largely unregulated in United States. Huge amount of exposure was taken by various institutional players, without having corresponding exposure to reference asset. At the risk of stating the obvious, the primary motive of taking such huge positions in CDS compared to the exposure to the reference asset was speculation and not hedging. Since, the regulatory framework and reporting mechanisms were not stringent; there were almost no disclosures of the positions taken in the market by the players. According to Deutsche bank report published in December 2009, at the peak of use of CDS instruments (pre 2008 crisis), gross notional amounts outstanding had reached an impressive USD 58 trillion (June 2007, BIS data), which compares to a notional value of debt securities outstanding worldwide of USD 80 trillion at the time.

2.2 Credit Default Swaps as Credit Derivatives

Derivatives growth in the latter part of the 1990s continued along at least three dimensions. Firstly, new products are emerging as the traditional building blocks – forwards and options – have spawned second and third generation derivatives that span complex hybrid, contingent, and path-dependent risks. Secondly, new applications are expanding derivatives use beyond the specific management of price and event risk to the strategic management of portfolio risk, balance sheet growth, shareholder value, and overall business performance. Finally , derivatives are being extended beyond mainstream interest rate, currency , commodity , and equity markets to new under lying risks including catastrophe, pollution, electricity , inflation, and credit .

Credit derivatives fit neatly into this three-dimensional scheme. Until recently, credit remained one of the major components of business risk for which no tailored risk-management products existed. Credit risk management for the loan portfolio manager

mean a strategy of portfolio diversification backed by line limits, with an occasional sale of positions in the secondary market. Derivatives users relied on purchasing insurance, letters of credit, or guarantees, or negotiating collateralized mark- to-market credit enhancement provisions in Master Agreements. Corporates either carried open exposures to key customers' accounts receivable or purchased insurance, where available, from factors. Yet these strategies are inefficient, largely because they do not separate the management of credit risk from the asset with which that risk is associated.

For example, consider a corporate bond, which represents a bundle of risks, including perhaps duration, convexity, , and credit risk (constituting both the risk of default and the risk of volatility in credit spreads). If the only way to adjust credit risk is to buy or sell that bond, and consequently affect positioning across the entire bundle of risks, there is a clear inefficiency. Fixed income derivatives introduced the ability to manage duration, convexity, independently of bond positions; credit derivatives complete the process by allowing the independent management of default or credit spread risk.

Formally, credit derivatives are bilateral financial contracts that isolate specific aspects of credit risk from an underlying instrument and transfer that risk between two parties. In so doing, credit derivatives separate the ownership and management of credit risk from other qualitative and quantitative aspects of ownership of financial assets. Thus, credit derivatives share one of the key features of historically successful derivatives products, which is the potential to achieve efficiency gains through a process of market completion. Efficiency gains arising from disaggregating risk are best illustrated by imagining an auction process in which an auctioneer sells a number of risks, each to the highest bidder, as compared to selling a "job lot" of the same risks to the highest bidder for the entire package. In most cases, the separate auctions will yield a higher aggregate sale price than the job lot. By separating specific aspects of credit risk from other risks, credit derivatives allow even the most illiquid credit exposures to be transferred from portfolios that have but don't want the risk to those that want but don't have that risk, even when the underlying asset itself could not have been transferred in the same way.

3. Research Methodology

The report is divided into several parts. The idea was to understand the Credit Default Swaps, study the evolution and analyze the role of CDS in the financial crisis and how the new regulations can prevent another crisis in future. For this a detailed **descriptive analysis** was conducted, in which the guidelines by the international regulator of CDS, ISDA was analyzed. The research of various academicians, industry insiders, industry participants, governments, national regulators, etc. was studied and analyzed.

After analyzing the CDS and the regulatory framework which is purposed after the financial crisis, safeguards are implemented which incorporates the positives of CDS and includes additional features which would increase the safety and create more trades.

The various sections are:

- **Existing structure of Credit Default Swap**

It involves descriptive analysis, based on secondary data research. It reviews the existing state of CDS market.

- **Regulatory Frameworks and Standards**

It involves descriptive analysis, based on secondary data research. It studies the existing standards, guidelines, etc. of CDS. New changes implemented to prevent the financial crisis in the future were studied and how these new changes effect the business and whether the changes are sufficient or there is room for improvement.

4. Existing rules for CDS

A CDS contract involves the transfer of the credit risk of an underlying agreement like municipal bonds, emerging market bonds, mortgage-backed securities, or corporate debt between two parties. It provides the buyer of the contract, who may own the underlying credit, with protection against default, a credit rating downgrade, or another negative credit event. In the event of default the buyer of the CDS receives compensation, usually the face value of the loan, and the seller of the CDS takes possession of the defaulted loan. A default is often referred to as a "credit event" and includes such events as failure to pay, restructuring and bankruptcy, or even a drop in the borrower's credit rating. The exact nature of credit event varies from contract to contract and is decided in the specific agreement between two parties.

The seller of the contract assumes the credit risk that the buyer does not wish to shoulder in exchange for a periodic protection fee similar to an insurance premium, and is obligated to pay only if a stated credit event occurs. It is important to note that the CDS contract is not actually tied to a bond, but instead references it. For this reason, the bond involved in the transaction is called the "reference obligation." A contract can reference a single credit, or multiple credits. If there is no credit event or no default, the seller of protection receives the periodic fee from the buyer, and profits if the reference entity's debt remains good through the life of the contract and no payoff takes place.

If there is a credit event, the party that sold the credit protection, and who has assumed the credit risk, must deliver the value of principal and interest payments that the reference bond would have paid to the protection buyer with Settlement If a default or credit event occurs then CDS contracts can either be cash settled or physically settled:

- **Cash settled** - In a cash settlement, the protection buyer receives par minus the default price from the protection seller. The default price is normally determined by a dealer poll conducted 14-30 days after default (the delay allows the recovery value of the reference obligation to stabilize). If the reference obligation cannot be priced, then the swap documentation should allow the price of a reference obligation of similar maturity and credit quality to be used as a substitute. Premium payers who do not hold the underlying asset (and are thus using the CDS to gain synthetic exposure to the

reference obligation) may prefer cash settlement, as it avoids the need to buy the reference obligation and physically deliver it.

- **Physical settled** - In a physical settlement, the underlying asset (reference obligation) is delivered to the protection seller, who then pays the protection buyer the par value of the asset. If the protection seller feels that it can receive more than the default price in the workout process, then the seller will opt for physical settlement.

ISDA documentation

From legal standpoint, CDS are governed by international swaps and derivatives association (ISDA) master agreement framework.

ISDA credit derivatives definitions: The definition of credit events and other contractual details have been set down in the ISDA Credit Derivative Definitions (1999, updated 2003). The following credit events have been defined: the reference bonds still having some depressed residual value, the protection buyer must, in turn, deliver either the current cash value of the referenced bonds or the actual bonds to the protection seller, depending on the terms agreed upon at the onset of the contract. If there are more CDS contracts outstanding than bonds in existence, a protocol exists to hold a credit event auction; the payment received in such cases is usually substantially less than the face value of the loan.

4.1 Challenges for regulators

HARMONISING CCP SUPERVISION

The specific risks posed by clearing credit derivatives are not entirely addressed by existing international standards for managing clearinghouse risk. The G10 recommendations on CCPs, published jointly in 2004 by the Committee on Payment and Settlement Systems and the International Organization of Securities Commissions make no distinctions based on the type of product cleared. Consequently the risks specific to OTC derivatives in particular the special risks associated with credit derivatives, as described above are not taken into account.

The standards applicable to CCPs that clear CDS need to be adapted and harmonized to ensure that the solutions now being developed are robust and that competing CCPs

benefit from a level-playing field. Work in this area is currently under way at European level and in the G10, and is due to be completed by end of 2009.

CCPs that clear CDS are likely to become highly interdependent, not only because they all use common infrastructures such as the DTCC's Trade Information Warehouse but also because a given participant can potentially participate in several clearinghouses. In view of this interdependency, a cooperation framework needs to be put in place for the authorities responsible for overseeing CCPs, as well as for those that supervise clearinghouse members. Such cooperation is also necessary so that these authorities can access DTCC data.

5. New Regulatory Frameworks

In the years leading up to the global financial crisis, the global CDS market grew significantly reaching a peak (in terms of notional amounts outstanding) of over USD 62 trillion in 2007. However, the financial crisis revealed several shortcomings of the CDS market, in particular:

- The lack of transparency regarding open positions
- Insufficient management of counterparty credit risk, and
- Settlement backlogs.

To end this, substantial change in the credit derivative market was made in 2009 with the implementation of CDS big bang and small bang protocols, as well as the introduction of new trading conventions. The goal of these changes is to enhance the infrastructure of the CDS market in order to achieve same day trade matching, the elimination of offsetting trades, and centralized clearing.

The International Swaps and Derivatives Association Inc. (ISDA) published the 2014 Credit Derivatives Definitions (the 2014 Definitions). The 2014 Definitions introduce a new government bail-in Credit Event trigger for credit default swap (CDS) contracts on financial Reference Entities in non-U.S. jurisdictions and also modify the typical terms of sovereign CDS contracts in light of the Greek debt crisis, by allowing a buyer of protection to deliver upon settlement the assets into which the Reference Obligation has converted even if such assets are not otherwise deliverable. Further, they create a concept of a Standard Reference Obligation, which means that most CDS contracts on a given Reference Entity would have the same Reference Obligation, thereby increasing the fungibility of such CDS contracts.

Much like the predecessor 2003 ISDA Credit Derivative Definitions (the 2003 Definitions), which they are intended to supersede, the 2014 Definitions provide the basic legal framework for certain credit derivative transactions and, among other things, provide standard provisions that may not otherwise be specified by parties in a confirmation. As with other product-specific definitions, parties may elect to modify or supplement the standard terms set forth within the 2014 Definitions.

It is anticipated that market participants will begin to use the 2014 Definitions with the September 2014 credit default index swap roll date (i.e., September 22, 2014). The 2014 Definitions will apply to new trades only if so elected by the parties (e.g., by incorporating their terms into a trade confirm). Additionally, ISDA is working on a draft protocol (anticipated to be released in August and to be open until a date in September that is on or near the roll date) that parties can use to elect to have the 2014 Definitions apply to existing trades, although certain existing transactions such as sovereign CDS and CDS on European financial entities are expected to be excluded from the protocol given the substantial impact the changes could have on such trades' terms and value.

Market participants who trade in CDS contracts will want to understand and assess the 2014 Definitions in advance of the anticipated September 2014 implementation date and determine whether they are comfortable with the new terms or will want to amend any provisions for their CDS trades.

Key Changes Implemented With the 2014 Definitions

New CDS Credit Event Triggered by Government Bail-In of Financial Reference Entities. The 2014 Definitions add a new Credit Event (Governmental Intervention) for CDS transactions on financial Reference Entities (e.g., banks) in non-U.S. jurisdictions. Under the 2003 Definitions, there was some uncertainty whether certain actions taken by a government in a bail-in (for example, the expropriation and extinguishment of the assets of an entity) would trigger a Credit Event (such as Restructuring), and therefore trigger settlement of the CDS contract. Under the 2014 Definitions, a Governmental Intervention Credit Event is triggered if, as a result of action taken or an announcement made by a governmental authority pursuant to a restructuring and resolution law or regulation (such as the EU Bank Recovery and Resolution Directive), certain binding changes are made to the relevant Obligations of the Reference Entity, such as a reduction in the rate or amount of interest, principal or premium, postponement or deferral of payment dates, change in the ranking or priority of payments, expropriation, transfer or other event that mandatorily changes the beneficial owner of the Obligation, or a mandatory cancellation, conversion or

exchange. Upon the occurrence of such an event, the CDS contract would be settled based on the outstanding principal amount of the bailed-in debt prior to the bail-in.

The Governmental Intervention Credit Event will not be triggered if the bail-in is of debt that is subordinated to the Reference Obligation (in other words, the bail-in of subordinated debt will not trigger a Credit Event with respect to CDS contracts on the senior debt).

Asset Package Delivery: With respect to transactions on sovereign Reference Entities and transactions on financial entities in non-U.S. jurisdictions, the 2014 Definitions add the ability to settle a trade by delivering assets into which an Obligation that was previously a deliverable obligation has been converted in the event of a Government Intervention (with respect to financial entities) or a Restructuring (with respect to financial entities or sovereigns). These changes are intended to address concerns raised in situations like the Greek debt crisis, where some of the assets issued by the government in exchange for the old bonds were not deliverable obligations. With respect to sovereigns, only the assets into which a Package Observable Bond of the applicable sovereign has been converted may be delivered. The Package Observable Bonds are intended to be benchmark obligations of the relevant sovereign and will be published on ISDA's website. The rationale for limiting this provision to Package Observable Bonds is to ensure that only widely held bonds of a particular sovereign can be delivered, to reduce the risk of holders of a small issuance of a sovereign bond agreeing to unfavorable terms in a restructuring because they have purchased CDS protection.

Standard Reference Obligation: The 2014 Definitions introduce the concept of a Standard Reference Obligation for more frequently traded Reference Entities. As a result, there will generally no longer be any need to specify a Reference Obligation for these CDS contracts. The rationale for this change is to increase the fungibility and liquidity of CDS contracts. ISDA will publish a list of the Standard Reference Obligations for each relevant Reference Entity and Seniority Level. Note that parties can generally opt out of a Standard Reference Obligation by specifying a different Non-Standard Reference Obligation in the confirmation for a particular transaction.

Successor Provisions. The 2014 Definitions made a number of changes to the provisions dealing with transfers of debt to successor Reference Entities. For example,

in determining the Successor for CDS related to a financial Reference Entity, the Successor for CDS on the senior debt and the Successor for the CDS on the subordinated debt will be analyzed separately, so if the senior debt is transferred to one entity and the subordinated debt is transferred to a different entity, there could be different Successors for the senior debt and the subordinated debt.

Also, the 2014 Definitions introduce the concept of a Universal Successor. Under the 2003 Definitions, a Successor can only be determined if a notification is made to the ISDA Credit Derivatives Determinations Committee or the counterparty to the CDS contract within 90 days of the Succession Event. This provision can lead to the risk of CDS buyers losing protection when Succession Events are not noticed. Under the new Universal Successor provision, there is no 90-day “look back” period if one entity assumes all of the obligations (including at least one Relevant Obligation) of the Reference Entity, and the Reference Entity has either ceased to exist or is in the process of being dissolved.

For non-sovereign Reference Entities: the 2014 Definitions remove the need for a Succession Event (such as a merger or transfer of assets or liabilities) distinct from the transfer of a sufficient threshold of debt obligations to determine a Successor, and instead introduce a concept of a Steps Plan, which aggregates debt transfers pursuant to a pre-determined transfer plan over a period of time to determine whether a sufficient proportion of a Reference Entity’s debt has been transferred so that a Successor should be determined.

Qualifying Guarantees. The 2014 Definitions expand the scope of guarantees that will be Obligations and Deliverable Obligations of a given Reference Entity, in particular by providing that the inclusion of a release provision in connection with the transfer of a guarantee and all (or substantially all) of the assets and liabilities of a guarantor on the same (or substantially the same) terms or including a cap on the guarantor’s liability will not cause the guarantee to fail to be a Qualifying Guarantee. Additionally, the 2014 Definitions clarify that guarantees provided by a statute or regulation may be Qualifying Guarantees.

Other Changes. In addition to the changes noted above, the 2014 Definitions make a number of other changes, including, in particular, provisions for determining the Successor to a sovereign entity and some changes to the Restructuring provisions. The

provisions added to the 2003 ISDA Credit Derivatives Definitions by the 2009 “big bang” and “small bang” supplements, which provided for auction settlement for many CDS contracts, are also incorporated into the 2014 Definitions.

5.1 Big Bang protocol

The Protocol was adhered to by over 2,000 market participants and took effect on April 8, 2009 for new trades and June 20, 2009 for legacy trades for investors that participate in the Big Bang Protocol. The establishment of Credit Derivatives Determinations Committees (“DCs”) for each of the five ISDA regions: the Americas, Asia excluding Japan, Japan, Australia-New Zealand and EMEA. The voting section of each DC will be comprised of eight global and two regional dealers and of non-dealer ISDA members.

First, they introduce the concept of the ISDA Determination Committee which will make market wide binding decisions with respect to, inter alia, credit events succession events and whether to hold one or more auctions. Previously, such decisions were made by one of the two bilateral counterparties acting as the calculation agent.

The Determination Committee consists of eight global dealers, two regional dealers, five non-dealer ISDA members, one non-voting dealer (for the first year, there will be two non-voting dealers), one non-voting regional dealer per region and one non-voting non-dealer member. Dealers are appointed based on trading volumes. Buy-side participants are chosen from the buy-side committee, which includes assets under management as one of its criteria. If the Determination Committee is unable to reach a conclusion under its terms of reference which, in some cases, requires an 80% majority, the matter goes for an external review. External reviewers are selected at random from a pool of candidates nominated by any ISDA member and confirmed by a majority of the Determination Committee. The decision and votes are published by the Determination Committee once a conclusion is reached.

Second, they bind participants to using the auction settlement methodology (rather than physical settlement, which was the previous standard) for bankruptcy and failure to pay credit events.

Third, they create a rolling “look-back period” for both credit events and succession events. This means that all contracts will be fungible ongoing rather than for a period that is a function of the trade date, as was previously the case.

The Big Bang Protocol applies these changes to existing contracts, although there are some differences regarding when the rolling look-back periods come into effect in order to avoid inadvertently increasing the on-risk period for an existing transaction. The Auction Supplement applies these changes to any new trade where they are incorporated by reference.

The adherence rate across the market has been extremely high for the Big Bang Protocol, with 2,092 entities signing up as at 8 April 2009. Dealers have reported that, on average, 86.31% of their global clients and 98.44% of all of their transactions have adhered

DCs will resolve:

- Whether and when a Credit Event has occurred.
- Whether or not to hold an auction to settle credit derivatives transactions for which it was resolved that a Credit Event had occurred.
- The list of Deliverable Obligations of the relevant Reference Entity
- Whether and when a Succession Event has occurred, and the identity of the Successor(s) or Substitute Reference Obligations.
- Matters of contractual interpretation relevant to the credit derivatives markets in general.

Resolutions of the UCs generally require a supermajority of 80% of a quorum of DC members

If a supermajority cannot be obtained as required, the relevant question before the DC will be referred to an external review panel for a final decision.

The incorporation of auction settlement provisions as the standard settlement method for credit derivatives transactions: The DOs will decide whether to hold auctions in respect of each Credit Event and if so, will determine the necessary auction-specific terms applicable to the standard auction settlement terms. No auctions will be held for Restructuring Credit Events, and DCs may decide not to hold an auction for illiquid Reference Entities. If no auction is held, or parties have not selected ‘Auction Settlement’ in their confirmations or have not adhered to the Big Bang Protocol,

relevant transactions will be settled in accordance with the applicable fallback settlement method specified in the confirmations.

The introduction of Credit Event and Succession Event Backstop Dates: a credit derivative transaction can only be triggered by a Credit Event and/or affected by a Succession Event that occurs during the 60-day or 90-day period, respectively, before the earlier of (1) the date on which a request to the DC regarding such event is submitted (assuming the DC decides to resolve the question) and (2) the date on which a Credit Event Notice and Notice of Publicly Available Information (if required) or Succession Event Notice, as applicable, are effectively delivered to the other party. To be clear, the rolling look-back period also extends to the 60/90-day period prior to the Trade Date.

5.2 Small Bang Protocol

The protocol created a new system for settling payment under CDS contracts when a distressed company is forced to restructure its debt.

- Restructuring event: A determination committee will rule whether a restructuring credit event has occurred.
- Maturity Buckets: CDS contracts may be grouped into eight possible buckets depending on maturity (2.5, 5, 7.5, 10, 12.5, 15, 20 and 30 years). An additional bucket may also be created to settle contracts that terminate before 2.5 years.
- Deliverable obligations: The relevant DC will decide which bonds or loans are deliverable into which maturity buckets.
- Triggering of CDS contracts: Protection buyers and sellers have 5 business days to decide whether to trigger their CDS contracts.
- If CDS is triggered by protection buyer, it will go to one of the buckets in accordance with its specified maturity.
- If a CDS is triggered by the protection seller, it will go into the 30-year bucket.
- If CDS contracts are not triggered for a given auction then it will continue as before until another credit event occurs or the contract terminate.
- Compulsory cash auction: for each maturity bucket, if 500 CDS contracts are triggered and five or more dealers are parties to these contracts, a cash auction will be compulsory.

- Mod Rand Old R: The small bang auction procedure applies to CDS contracts that include the modified restructuring credit event, while big bang auction procedure applies to CDS contracts that include the old restructuring credit event.

5.3 Dodd-Frank Act

The Act marks the greatest legislative change to US financial regulation since the explosion of financial legislation in the 1930s, which resulted in the Federal Deposit Insurance Act, the Securities Act of 1933, the Glass-Steagall Act, the Securities Exchange Act of 1934 and the Investment Company Act of 1940, to name only the most important. While the full weight of the Act falls more heavily on large, complex financial institutions, smaller institutions will also face heavier regulation.

Summary of Key Provisions of the Dodd-Frank Act

Swaps Pushout Rule:

The Swaps Pushout Rule will require US insured depository institutions and the US branches and agencies of non-US banks to push dealing in certain swaps out of these banking units and into separately capitalized affiliates. The range of covered swaps is unclear, but the rule will not apply to insured depository institutions with respect to hedging or dealing in swaps based on reference assets that a national bank is permitted to own.

The Swaps Pushout Rule was originally proposed by Senator Blanche Lincoln, who faced a serious challenge from the left in her Democratic primary election. Like the Volcker Rule, the Swaps Pushout Rule was promoted as an anti-Wall Street measure. But unlike the Volcker Rule, on which US bank regulators remained largely silent, most of the US bank regulators issued public statements opposing the Swaps Pushout Rule as likely to undermine the safety and soundness of the US banking system. Even Paul Volcker publicly suggested that the Swaps Pushout Rule was probably unwise, while expressly stating that to the extent proprietary trading in swaps should be prohibited, the Volcker Rule would do the job. In its original form, the Swaps Pushout Rule would have required all swaps activities to be pushed out of insured depository institutions and possibly bank holding company groups altogether. It did not contain

any exceptions for using swaps for hedging purposes or to deal in swaps based on bank-eligible reference assets.

Derivatives:

The Act comprehensively regulates most derivatives transactions formerly deregulated by the Commodity Futures Modernization Act of 2000. Largely following the historical jurisdictional divisions between the CFTC and the SEC, the Act categorizes the derivatives transactions within its scope as either ‘swaps’, which are subject to primary regulation by the CFTC, ‘security-based swaps’, which are subject to primary regulation by the SEC, or ‘mixed swaps’, which are subject to joint regulation by the CFTC and SEC.

The most significant aspects of the derivatives section are:

- (i) Mandatory clearing through regulated central clearing organizations and mandatory trading through either regulated exchanges or swap execution facilities, in each case, subject to certain key exceptions;
- (ii) New categories of regulated market participants, including swap dealers and major swap participants; and
- (iii) The push-out from banks into bank affiliates of many swap activities. 50 IBA Task Force on the Financial Crisis Report: October 2010

As with other parts of the Act, many of the details of the new regulatory regime relating to swaps are left to the regulators to determine through rule-making, which in most cases will occur during the first 360 days following enactment.

Payment, Clearing and Settlement:

The payment, clearing and settlement provisions of the legislation are meant to reduce the risks of contagion among financial firms and markets. Recognizing that financial market utilities that conduct or support multilateral payment, clearing or settlement functions, and related financial activities, have the potential to create and concentrate risks to the financial system, the Act aims to reduce these risks through greater prudential regulation and oversight of these entities and activities.

The impact of this provision will largely be limited to financial market utilities and those organizations that engage in payment, clearing, and settlement activities. Utilities and these organizations will face the prospect of being designated, or having a portion of their activities designated, as systemically important, thereby subjecting the utility or organization to the payment, clearing and settlement provisions in the Act, including risk management standards and examinations by regulators.

Extending central counterparty clearing to credit derivatives

The debate over extending central counterparty clearing to OTC derivatives is not new. But the problems encountered in CDS markets during the financial crisis have prompted US and European regulators, notably within the G20, to speed up the extension process. Clearing infrastructures have responded positively to these requests. In the course of 2008 the managers of five clearing infrastructures (two in the United States and three in Europe, including two in the euro area) unveiled plans to provide services for these products.

EXPECTED BENEFITS

Central counterparty clearing is a mechanism for absorbing the credit risk and market risk generated by trades in capital markets. The clearinghouse, acting as a central counterparty (CCP), guarantees the fulfilment of its members' transactions. Its action can be critical if a member defaults, because it will stand in for the defaulter and ensure that the firm's obligations to other counterparties are honored. In this case the CCP continues to pay premiums to the protection seller and to protect the protection buyer against the underlying credit risk of the contract until it can liquidate the position. The surviving counterparties are not therefore required to bear the cost of replacing their position – which would expose them to market risk – since that risk is absorbed by the CCP. The CCP reduces the aggregate level of risk associated with all the positions in the market by systematically netting positions in fungible contracts. Compared with maintaining the bilateral relationships between the initial counterparties, the CCP facilitates novation by providing a single, predictable legal framework that is accepted in advance by all users.

Setting up a CCP involves extending collateralization practices to all the positions it covers. A core condition for the efficiency of a CCP is to receive adequate guarantees,

whose amount is adjusted frequently to reflect changes in its exposure to members. In practice, CCPs accomplish this by performing margin calls at least once a day, possibly supplemented by intraday variation margin calls if their exposure to a member deteriorates. This takes the form of a clearing fund, which is activated if the individual collateral posted by the defaulting member proves insufficient.

CENTRAL COUNTERPARTY CLEARING FOR CREDIT DERIVATIVES: CONDITIONS AND LIMITATIONS

The capacity of a CCP to absorb the shock generated by a member's failure hinges on the quality of its risk management systems. The current lack of standardization among credit derivatives is hampering the extension of central counterparty clearing to all categories of CDS. Moreover CCPs will have to adapt their risk management frameworks in order to accommodate the particular risk profile of these contracts.

The varying level of standardization in credit derivatives limits the range of CCP-eligible products. The only credit derivatives covered by ongoing CCP projects are those that are sufficiently standardized. They include CDS index products, and potentially the most liquid single-name CDS, basically contracts on the reference entities making up the index. Standardization is key to coping effectively with legal risk. The CCP must be able to measure the nature and scope of the obligations it guarantees. The degree to which products are standardized will determine their fungibility and hence the CCP's capacity to reduce its exposure to members by netting their positions. Standardization also increases the liquidity of the products cleared, making it simpler for a CCP to manage a default because positions can be hedged or unwound more easily.

Accommodating the special risk profile of CDS

The special risk profile of CDS calls for significant adaptations in the usual methods used by CCPs to manage risk. The methods for calculating margin calls, as well as the stress tests used to calculate the size of the clearing funds set up by clearinghouse members, need to factor in jump to default risk (see above), which is not present in the other types of derivatives usually cleared by CCPs.

Another difficult challenge is to incorporate wrong way risk. For this the clearinghouse has to determine the amount of collateral needed to cover not only its own

counterparty risk on members but also the underlying credit risk in the contracts on which a failed member has sold protection. If a member's credit risk is closely correlated with that of the reference entities on which it has sold protection, the CCP may have to deal simultaneously with the failure of the member and a credit event triggered by contracts on the same member as well as on a reference entity with risk correlated to that of the defaulting member. Given the special nature of the risks involved in clearing credit derivatives, it would seem that the risk management systems used for these products should be kept separate from the systems that handle other market segments cleared by the same CCP. In this respect, a separate clearing fund for credit derivatives is essential for limiting the risk of contagion between the failure of a member active in credit derivatives markets and other members of the CCP that do not necessarily deal in these markets.

SUPPORTING INITIATIVES FOR MORE EFFECTIVE REGULATION OF CREDIT DERIVATIVES MARKETS

Since the CDS market is not regulated it is important for regulators to foster private initiatives aimed at improving transparency. It is also necessary to support such initiatives and make sure they contribute to the ultimate objective of financial stability.

European regulators currently face two major challenges:

Establishing adequate incentives to promote the use of CCPs

Competent authorities should adopt policies that encourage market participants to clear CDS via a CCP. The alternative – imposing prudential penalties on CDS that do not pass through a CCP – does not seem feasible given that a large number of contracts are not currently eligible for central clearing due to a lack of standardization and liquidity. The only products eligible for clearing in the projects launched so far are indices, because they trade on the basis of fixed coupons. Discussions under way at the European Commission should generate proposals for incentives by the end of 2009.

Assessing counterparty risk in the CDS market: the need for greater transparency

The AIG and Lehman Brothers affairs have highlighted the need for greater transparency to help market participants assess counterparty risk in the CDS market.

The type of information needed depends on the end user. The needs of regulators are dictated by the imperative of preventing systemic risk, while the needs of market participants reflect a trade off between gaining a finer-grained assessment of counterparty risk and protecting the confidentiality of their strategies and thus their transactions.

Since counterparty risk cannot be assessed at aggregate level, regulators need to know the individual bilateral commitments of the various dealers so that they can detect and prevent systemic exposures. It is less easy to determine the extent to which this type of information should be disclosed to market participants.

6. Analysis:

After reading different reports from various sources following things such as Moody's definition of a credit event, ISDA credit events, existing rules of CDS, new regulatory framework and change in existing norms the analysis of those reports are described below:

6.1 Understanding Risk in Credit Default Swaps

Credit derivatives offer unique opportunities and risks to investors. They allow investors to have exposure to a firm without actually buying a security or loan issued by that firm. Because the exposure is synthetic, the transaction can be tailored to meet investors' needs with respect to currency, cash flow, and tenor, among other things. However, if the transaction is not structured carefully, it may pass along unintended risks to investors. Significantly, it may expose investors to higher frequency and severity of losses than if they held an equivalent cash position. Moody's has rated numerous structured transactions mostly synthetic collateralized debt obligations (CDOs) and credit-linked notes (CLNs) whose key feature is a cash-settled credit default swap. Under the swap, losses to investors are determined synthetically, based on "credit events" occurring in a reference portfolio.

Investors' risk, thus, is driven largely by the definition of "credit events" in the swap. The definitions published by the International Swaps and Derivatives Association (ISDA) are, in many respects, broader than the common understanding of "default," and thus impose risk of loss from events that are not defaults. For example, Moody's and much of the market considers certain types of "restructuring" events to be "defaults." However, the current ISDA definition of "restructuring" is broader than Moody's definition of "default," and includes events that would not be captured by a Moody's rating.

Likewise, the ISDA definitions for other credit events — e.g., bankruptcy, obligation acceleration, and obligation default — are broader than Moody's definition of "default."

Many of the risks in these transactions are driven by moral hazard the inherent conflict interest that exists because the sponsoring financial institution (which is buying protection from investors) determines when a loss event has occurred as well as how

much loss is imposed on investors. The sponsor's incentive, of course, is to construe “credit events” as expansively as possible and to calculate losses as generously as possible. Moody's considers these risks carefully when issuing its ratings. In addition to tightening the credit event and loss calculation provisions, these risks can be addressed by increasing transparency and providing mechanisms for objectively verifying loss determinations and calculations.

Setting aside moral hazard, risks also arise based on the inherent difficulty in valuing a defaulted credit to determine the extent of loss to investors. Calculated losses may vary based on liquidity, market conditions, and the identity of the parties supplying bids. In analyzing a credit default swap, Moody's looks carefully at the methods and procedures for calculating loss given default, to ensure that all calculations are meaningful, realistic, and fair.

The ISDA Credit Derivatives definitions, as currently drafted, do not effectively unbundle “credit risk” from other risks. If not structured carefully, a credit default swap using the ISDA definitions can pass along risks other than “credit risk.” For example, the swap may pass along the risk of loss following *credit deterioration short of default*. Such a risk is not necessarily captured by a Moody's rating of the reference portfolio, and, with some exceptions (e.g., when the loss event is a rating downgrade) is not readily capable of being measured.

The capital markets have an enormous capacity for absorbing credit risk, and this capacity has only been partially tapped by the credit derivatives market. In Moody's opinion, for capital markets investors to participate fully in the credit derivatives market, the risks inherent in credit default swaps must be more precisely defined, more transparently managed, and more readily quantifiable.

A swap can be structured to provide for either physical settlement or cash settlement following a credit event. In a physically settled swap, the buyer of protection delivers to the seller an obligation of the reference entity that has experienced a credit event. The seller pays par for that asset, thus reimbursing the buyer for any default-related loss that it would otherwise suffer. In a cash-settled swap, the buyer of protection is not required to deliver the defaulted credit, but values the credit — for example, by marking it to market or by using a final workout value — and is reimbursed for the loss (measured by the difference between par and the value following default).

Through synthetic CDOs or CLNs, financial institutions utilize credit default swaps to “buy” credit protection — usually from the capital markets in the form of issued

securities, but also directly from counterparties in the form of over-the-counter swap transactions. The structure allows financial institutions to remove credit exposure from their balance sheets while retaining ownership of the assets, and thus manage risk more efficiently, and obtain economic and/or regulatory capital relief.

In the typical structure, the sponsoring financial institution (the entity seeking protection against credit losses) sets up a special purpose vehicle (SPV) to serve as counterparty to the credit default swap (making the SPV the provider of protection). The SPV is funded with the proceeds of notes issued to investors; it will use those proceeds to make credit event payments to the financial institution, and to return any remaining principal to investors at the deal's maturity. The proceeds of the securities are typically invested in highly rated securities in such a way that the ratings of the notes can be "de-linked" from the rating of the sponsoring institution. Under the swap, the SPV is the "seller" of protection, and the financial institution is the "buyer". The swap references a credit exposure, or portfolio of credit exposures, for which protection is being provided. The arrangement is similar to an insurance policy, in which the financial institution is buying insurance against losses due to default in its portfolio. The credit exposures can be assets physically owned by the sponsor (e.g., loans, bonds, other securities), exposures to counterparties (e.g., by way of currency or interest rate swaps), or synthetic exposures (e.g., if the sponsor has sold protection on particular assets by way of credit default swaps). Typically, in a synthetic CDO, the financial institution retains the first loss piece, and the mezzanine tranches are securitized and sold to investors. There is often a "super senior" piece that is either retained by the sponsor or passed off to a counterparty by way of a swap.

There are a number of key variations on the structure that can have a significant impact on the analysis of the transaction:

- The reference pool can be static — remaining the same throughout the life of the transaction or it can be dynamic, permitting removal and substitution of the individual reference credits pursuant to portfolio guidelines.
- The swap can provide for ongoing cash settlement as defaults happen and losses are incurred or it can provide for cash settlement only at the maturity of the deal.
- The procedure and timing for determining severity of loss on a defaulted credit reference can vary from a bidding procedure that takes place shortly after a default, to

reliance on a final “work-out“ value established after the formal workout process has been completed.

- The swap can reference specific credits, or it can reference the general, unsecured debt of a reference entity. If the swap references the general, unsecured debt of an entity, credit events under the swap can be triggered by defaults only on “bonds or loans”, on a broader class of “borrowed money,“ or on an even broader class of “payment obligations. Perhaps most significantly, the definition of “credit event” can be tailored to meet the needs of the various parties to the transaction. While each of these variations is important, the most heavily negotiated component is most often the designation and characteristics of the “credit events” that will trigger a cash settlement under the swap.

6.2 ISDA Credit Events

The 1999 ISDA Credit Derivatives Definitions currently list six “credit events” that can be incorporated into credit swaps:

- Bankruptcy;
- Failure to pay;
- Restructuring,
- Repudiation/moratorium;
- Obligation default; and
- Obligation acceleration.

While these are the so-called “standard” credit events, their inclusion and scope are always heavily negotiated in the context of Moody’s-rated synthetic CDOs and CLNs. The choice and characterization of these events is crucial, because they determine the probability of a loss occurring under the swap, as well as the extent of any such loss. Some of the ISDA credit events are consistent with Moody’s definition of “default,” and some are not.

Bankruptcy

The definition of “Bankruptcy” in the ISDA Credit Derivatives Definitions was copied wholesale from the ISDA Master Agreement. Thus, while most of the definition is consistent with a “default,“ there are some components that are not.

The last clause of the definition, a catchall provision, is problematic because it makes a “credit event” any action by the reference entity “*in furtherance of, or indicating its consent to, approval of, or acquiescence in*” one of the listed bankruptcy events. This clause exposes investors to potentially greater risks; because it includes events that are vague, difficult to identify, and do not clearly indicate default.

Another potentially troublesome item in the ISDA bankruptcy definition is “insolvency.” The ISDA definition does not specify what is intended by “insolvency.” However, there are different definitions — for example, by reference to balance sheet or income statement tests — and, depending on the definition used, the timing of an insolvency “credit event” could vary. Under a very broad definition, it is conceivable that an “insolvency” could occur without being followed by an actual bankruptcy or failure to pay. Thus, a broad interpretation could lead to a “credit event” “being called under the swap when no “default” has actually occurred.

Failure to Pay:

The ISDA “failure to pay” definition is consistent with Moody’s definition of “default.” The key issue under this definition is materiality — i.e., the missed payment should be in an amount that is material, such that it would be captured by a Moody’s rating.

To ensure that a credit event is not triggered by the failure to pay a trivial amount, a minimum amount — referred to as the “Payment Amount” in the ISDA definitions — should be specified under the swap. While there is a standard minimum amount, that amount may not be appropriate in all transactions, and it should be considered carefully for each swap. In some cases, the choice of a Payment Amount will depend on whether the swap is referencing (1) a specific obligation, (2) bonds or loans, (3) borrowed money, or (4) the more general “payment obligations” — all of which are options under the current ISDA documentation. A Moody’s rating will capture the risk of a “failure to pay” on the obligations rated by Moody’s — usually bonds and loans. However, it may not capture the risk of non-payment on all of an entity’s payment obligations — e.g., disputed trade obligations, certain fees, etc. An entity may choose not to make a payment on one of its “payment obligations” for reasons other than credit problems. To ensure that a Moody’s rating will capture the risk of payment default, the category of obligations being referenced should be carefully considered. In some circumstances, a higher minimum payment amount may be appropriate.

Restructuring

Moody's considers certain types of "restructuring" events — known as "distressed exchanges" — to be defaults, and captures those events in its ratings. Thus, Moody's does not believe that "restructuring," as a concept, needs to be excluded from the credit derivatives definitions. In many respects, however, the current ISDA definition of "restructuring" is broader than Moody's definition of "distressed exchange," and includes events that are not captured by a Moody's rating.⁹ Thus, for a Moody's rating of the reference portfolio to capture the risk to investors, the definition of "restructuring" should be tightened to make it consistent with "distressed exchange." Under the current ISDA "restructuring" definition, five events can qualify as a "restructuring." Each event must meet the following requirements to qualify as a "credit event:" the restructuring

- (1) Must not have been provided for in the original terms of the obligation, and
- (2) Must be the result of a deterioration in the obligor's creditworthiness or financial condition. While these requirements are helpful in restricting the events that could constitute "credit events," they are not sufficient to prevent overbroad applications of the definition.

The first three events under the definition — restructuring of an obligation that leads to

- (1) A reduction in interest payment amounts
- (2) A reduction in principal repayment amounts, or
- (3) A postponement or deferral of interest or principal payments — can constitute "distressed exchange" defaults under Moody's definition. Any one of these events, by itself, would arguably lead to a "diminished financial obligation." However, if combined with other changes to the obligation, they may not. For example, an obligation that has been restructured to defer principal payments *may not* be considered a "diminished financial obligation" — and thus not a "distressed exchange" — if the lender has been compensated for the deferral.

Thus, any "restructuring" definition should look at the totality of the circumstances — e.g., whether the lenders/investors have been compensated for the reduction or deferral — to determine whether the restructured obligation is truly a "diminished financial obligation."

The fourth ISDA "restructuring" event — a restructuring that leads to a change in an obligation's priority, causing it to be subordinated — can be overbroad. The

subordination of a debt obligation to equity or preferred stock would clearly be a “default.” (It would probably lead to a failure to pay as well — thus, rendering this “restructuring” event unnecessary). However, a restructuring that merely lowers an obligation from a senior to a subordinated position in the capital structure (but not to equity) could also trigger a “credit event” under the current ISDA definition.

Repudiation/Moratorium

Repudiation/moratorium was included in the ISDA definitions mainly to address actions by sovereign lenders, and thus, is not included in many synthetic CDO’s, where the exposure is primarily to corporate credit. When applied to corporate credits, repudiation/moratorium is generally consistent with Moody’s views of default — although it is unclear how it would be different from “failure to pay.” However, there is concern with respect to the provision that includes as a credit event when a borrower “challenges the validity of one or more Obligations.” This provision could be construed over broadly to include situations where there is a legal dispute over a borrowing, for example, the borrower unsuccessfully challenges some terms of the borrowing that does not ultimately lead to a failure to pay interest or principal. Moody’s would not necessarily consider such an event to be a default.

In addition, if this event is to be included, the “Default Amount,” or minimum amount that can be subject to a repudiation in order to trigger a credit event, should be material, so that the repudiation of a trivial amount will not trigger a credit event.

Obligation Default

ISDA defines “Obligation Default” as a *non-payment* default — i.e., a default other than a failure to pay — that renders an obligation *capable* of being accelerated. Moody’s has not been asked to rate a transaction that includes this credit event, and the market has moved away from including it. This is because the event is much broader than Moody’s — and most of the market’s — definition of “default.”

Most bonds and loans contain representations, warranties, financial covenants, and non-financial covenants, the violation of which can give lenders the *right* to accelerate. While such violations can indicate credit deterioration (e.g., failure to maintain a minimum financial ratio, taking on additional debt, etc.) Many such violations can be technical (e.g., failure to send a report).

Of course, Moody's ratings do not capture the probability of a technical violation occurring. Moreover, even a covenant violation that represents serious credit deterioration would not be captured if the obligation is still current on interest and principal, and has not carried out a "distressed exchange" or become bankrupt. Moody's simply does not have data concerning such events that would allow it to assign a rating to them.

Because inclusion of this event forces counterparties to mark-to-market an obligation before a payment default occurs, it will cause investors (i.e., "sellers" of credit protection) to take losses that they would not incur if they actually bought and held the obligation.

For example, even though an obligation has suffered credit deterioration giving rise to a financial covenant violation, there is still a good chance that the obligation will pay both interest and principal in full. However, at the time of the violation, market bids will likely come in below par, because of concerns about the credit, or because of market sentiment, interest rate movements, or other systematic factors. Thus, while an investor that actually holds the obligation to maturity will get out whole, the investor "selling" protection will not.

Obligation Acceleration:

"Obligation acceleration" is similar to "obligation default." However, to trigger a credit event, the *non-payment* default — i.e., default other than a failure to pay — must lead to a reference loan, bond, or other obligation *actually* being accelerated. Like obligation default, an acceleration, *by itself*, would not be captured by a Moody's rating. A failure to pay, bankruptcy, or distressed exchange following acceleration *would* be captured, but the acceleration itself would not.

Acceleration is simply a lender's exercise of its contractual right, under certain circumstances, to declare a debt immediately due and payable.¹⁴ As with "obligation default," the events giving rise to a right to accelerate under "obligation acceleration" — defaults other than a failure to pay — are not considered by Moody's to be "defaults" and would not be captured by a

Moody's rating. Consequently, a lender's decision to exercise its acceleration right following such events is not captured either. There are three possible outcomes following an acceleration: (1) the borrower repays less than it owes (or becomes bankrupt), (2) the debt is renegotiated, or (3) the borrower repays everything that it

owes. The first outcome is already captured by other credit events — failure to pay and bankruptcy.

The second outcome, depending on the circumstances, may be a “distressed exchange” restructuring. The third outcome — the lender receives everything it is owed — is not a default. Because the first and second outcomes are already captured by other credit events, and the third outcome is not a default, it is unclear what additional scenarios this “credit event” is intended to capture.¹⁶ It has been suggested that the purpose of this credit event is “timing” — i.e., because many accelerations are followed closely by either a payment default, bankruptcy, or restructuring, including this event allows credit protection payments to be made earlier than they otherwise would. However, *if* the acceleration precipitates a true default, the default is likely to occur, at most, two or three months later, and it is difficult to justify why a counterparty cannot wait until it has suffered a true credit event to be compensated.

6.3 Clearinghouses, Counterparty Risk & Systematic Risk

Although credit default swaps can be valuable tools for managing risk, they can also contribute to systemic risk. One concern is that systemically important institutions may suffer devastating losses on large unhedged CDS positions. Counterparty risk, which arises when one party to a contract may not be able to full fill its commitment to the other, is also a systemic concern. The failure of one important participant in the CDS market could destabilize the financial system by inflicting significant losses on many trading partners simultaneously. Derivatives dealers, for example, are on one side or the other of most CDS trades and, according to data from DTCC, dealers hold large credit default swap positions. If a large dealer fails, whether because of CDS losses or not, counterparties with claims against the dealer that are not fully collateralized may also be exposed to substantial losses.

The immense losses AIG suffered on credit default swaps during the current crisis (and the resulting increase in the collateral it was obligated to post) are a more vivid example of systemic risk. Apparently, regulators decided to subsidize AIG after its losses because they feared that some of AIG’s CDS counterparties would be irreparably harmed if AIG were unable to fulfill its commitments. Of course, financial institutions try to control their exposure to such losses, but risk management can fail.

After two counterparties agree on the terms of a credit default swap, they can “clear” the CDS by having the clearinghouse stand between them, acting as the buyer of protection for one counterparty and the seller of protection to the other. Once the swap is cleared, the original counterparties are insulated from direct exposure to each other’s default, and rely instead on the performance of the clearinghouse. Thus, with adequate capitalization, the clearinghouse can reduce systemic risk by insulating the financial system from the failure of large participants in the CDS market.

A clearinghouse not only insulates one counterparty from the default of another, it can lower the loss if counterparty does default. Suppose, to pick an ideal example, that Dealer A has an exposure on credit derivatives to Dealer B of \$1 billion, before considering collateral. That is, if Dealer B fails, then A would lose \$1 billion. Likewise, B has an exposure to Dealer C of \$1 billion, and C has an exposure to A of \$1 billion. Without a clearinghouse, default by A, B, or C leads to a loss of \$1 billion. With clearing, however, the positive and negative exposures of each counterparty cancel, and each poses no risk to anyone, including the clearinghouse. In practice, counterparty exposures are to some degree collateralized. This lowers the potential losses from a default, but collateral is expensive and Economists have generally believed that financial derivatives increase economic welfare by facilitating risk-sharing among investors, by improving price discovery, and by making the allocation of capital more efficient. These arguments certainly apply to credit default swaps. This simple example illustrates two important advantages of clearinghouses. First, by allowing an institution with offsetting position values to net their exposures, clearinghouses reduce levels of risk and the demand for collateral, a precious resource, especially during a financial crisis. Second, by standing between counterparties and requiring each of them to post appropriate collateral, a well capitalized clearinghouse prevents counterparty defaults from propagating into the financial system. Because of these advantages, the U.S. Treasury Department has announced that in the future all credit default swaps that are sufficiently standard must be cleared.

Clearinghouses, however, are not panaceas. In the fight for market share, they may compete by lowering their operating standards, demanding less collateral from their customers, and requiring less capital from their members. To ensure that clearinghouses reduce rather than magnify systemic risk, regulatory approval requires strong operational controls, appropriate collateral requirements, and sufficient capital.

Clearinghouses should be subject to ongoing regulatory oversight that is appropriate for highly systemic institutions.

Most of the systemic advantages of a clearinghouse require standardized contracts. The CDS losses AIG suffered in the current crisis again illustrate the point. Most of their credit default swaps were customized to specific packages of mortgages and would not have met any reasonable test of standardization. As a result, they would not have satisfied the requirements for clearing under any of the current clearinghouse proposals. AIG's failure was driven by its concentrated position in credit default swaps and by the fact that its huge bets were not recognized or acted upon by either its regulators or its counterparties. Only better risk management by AIG, better supervisory oversight by its regulators, or clearer disclosure of its positions to counterparties would have prevented the AIG catastrophe, even if clearinghouses for credit derivatives had been in place years ago.

One should not conclude that a ban on non-standardized contracts is appropriate. An important function of financial institutions and insurance companies is precisely to meet the needs of individual businesses and owners of specific idiosyncratic securities for non-standardized contracts. However, those institutions and their regulators must regularly evaluate and hedge the systematic risks of their retail businesses, and not doing so was the central failure that led to the AIG fiasco. Standardized and especially indexed contracts are useful for institutions to hedge the exposures they generate from writing specific contracts for their customers, not a substitute for that activity. Because well-functioning clearinghouses can reduce systemic risk, financial institutions should be encouraged to use them to clear credit default swaps and other derivatives contracts. Banks and other regulated financial institutions should have higher capital requirements for contracts that are not cleared through a recognized clearinghouse. Financial institutions should not be required to clear all their CDS trades. Such a requirement would stifle innovation and possibly destroy the market for all but the most popular CDS contracts. Appropriate differences between capital requirements for contracts that are cleared and contracts that are not cleared will create the right incentives for firms to internalize the CDS created by nonstandard contracts.

7. Conclusion & Research Implications:

CDS have always elicited opposing opinions from market commentators. While some extol its virtues as the best way to guard against risk, the financial crisis showed that the interconnectedness of big financial institutions, enhanced by CDS, is a source of systemic risk. It is, therefore, odd that the Dodd-Frank Act and EMIR chose centralized clearing through CCPs, which are nothing but a formalized interconnection among big financial institutions, as a means to avoid systemic risk. Centralized clearing only wins the battle against counterparty risk, while losing the war against systemic risk. Moreover, concentration of risk in CCPs means that CCPs are unlikely to be allowed to fail, and the possibility of a bail-out means that CCPs might get lax in managing risks, consequently creating a moral hazard. Thus, relevance of CCPs as a mechanism to deal with systemic risk is questionable.

Credit derivative market will help to improve financial stability by facilitating the dispersion of credit risks. It allows dispersion of risk to a larger set of investors. As such it insulates the financial institutions and banks from credit shocks or at least help, to reduce the impact of the shock. Concerns have been raised that credit derivatives spreads the risk so wide that it may not always be possible to track them in the financial system. This might affect the ultimate stability, although most evidence as of now points against it. It is argued that the ownership reduces the quantum of risk for each participant and makes it easier to absorb unless otherwise the participants are over exposed to high-risk instruments. One major area of concern among regulators is the backlog of unconfirmed trades, resulting in part from under investments in the back office capacity by major dealers. In light of these ISDA has proposed streamlining of innovations (reassigning trades) protocol and the industry has agreed to cooperate. The question of effectiveness of credit risk transfer still exists. ISDA has been tracking outstanding notional amounts of credit derivatives for several years. However notional amounts are not sufficient to measure the economic risk transferred. Regulators have to ensure that recipient of credit risk have the risk management system and skill needed to manage such exposures.

Economists have generally believed that financial derivatives increase economic welfare by facilitating risk-sharing among investors, by improving price discovery, and by making the allocation of capital more efficient. These arguments certainly

apply to credit default swaps. There are legitimate reasons to be concerned about potential problems that can be created because of exposures to derivatives and because of the trading of derivatives. In the aftermath of the financial crisis, credit default swaps and other financial derivatives have clearly lost any presumption of innocence that they once enjoyed among economists—and they probably never had such a presumption with the general public.

As these events unfolded, financial derivatives like credit default swaps were associated with losses and uncertainty at some institutions, but also enabled other institutions to hedge and hence to reduce the impact of the fall in subprime mortgage and other securities. Rather than blaming derivatives markets such as the credit default swap market for being too large, it might make as much sense to regret that derivatives markets were not larger. For instance, it may well be that more robust derivatives markets in housing would have produced useful information for investors that would have changed the evolution of housing markets and averted or minimized the effects of a crash by enabling investors to hedge against drops in house prices.

In closing, to move forward to reduce systemic risks requires attention to three basic lessons.

- While much progress has been made since the crisis, policy makers (and market participants) need to think even more system-wide in their risk monitoring efforts and reforms. This system view should include not only many (new) forms of analysis, but also become a process in which supervision is primarily geared to oversee the financial system in its entirety. And a system view has to include the adoption of macro prudential and other policies that explicitly address market failures and externalities.
- Incentives matter, yet they are not nearly well enough incorporated into current regulations. Many problems will not be solved until one better understands the incentives of all those involved and regulations better align incentives with goals. Here, the ability to fine-tune regulations is likely to be low – given information constraints, the lack of appropriate data and information (including “soft,” qualitative information). Hence regulators would do well to take a “do

not harm” oath in setting policies – using basic principles and simple measures when information on effectiveness is lacking.

- Risks and uncertainty will remain, in part as a conscious risk-return tradeoff and in part as there will always be unknown unknowns – be they tipping points, fault lines, or spillovers – and more data and information are clearly needed. It will thus pay (probably literally) to have a “plan B” – good crisis management plans for when preventive measures fail and risks occur. These plans need to be integral part of the design of the financial system as a whole, not improvisations after the fact.

8. References

- Ashcraft A. and Santos J. (2009), Has the CDS Market Lowered the CDS of Corporate Debt, Journal of Monetary Economics.
- Che Y. and Rajiv S. (2010), Economic Consequences of Speculative Side Bets: The Case of Naked Credit Default Swaps, Columbia University Working Paper.
- Cont R. and A. Minca (2010), Credit Default Swaps and Systemic Risk, working paper.
- Das, S., M. Kalimipalli and S. Nayak (2011), Did CDS Trading Improve the Market for Corporate Bonds, unpublished manuscript.
- Duffie . and H. Zhu (2011), Does a Central Clearing Counterparty Reduce Counterparty Risk, Review of Asset Pricing Studies.
- European Central Bank (2009), Credit Default Swaps and Counterparty Risk.
- Pirrong C. (2011), The Economics of Central Clearing: Theory and Practice, ISDA discussion Papers.
- Shim, I. and Zhu, H. (2010), The Impact of CDS Trading on the Bond Market: Evidence from Asia, BIS Working Paper.
- SLWGFR (Squam Lake Working Group on Financial Regulation) (2009), Credit Default
- European Central bank (2010), Credit default Swaps and Counterparty risk
- T. K. Philips (2006) An Approximate Valuation Formula for a Credit Default Swap, SSRN Working Paper.
- http://www.dtcc.com/products/derivserv/suite/trade_reporting_repository.php
- http://www.isda.org/smallbang/sbprot_faq.html#sf1
- Financial Services Authority (2009), Reforming OTC derivative markets
- Zizun Liu(2010), Credit Default Swaps- default risk, counter party risk and systemic risk
- Adsatis Ltd. An analysis of the global market for derivatives - The impact of new regulation. Survey, Adsatis Ltd., September 2010.

- Duffie, Darrell, Ada Li, and Theo Lubke. "Policy perspectives on OTC derivatives market infrastructure". Working Paper, Federal Reserve Bank of New York, March 2010.
- Freeman, Mark C., Paul R. Cox, and Brian Wright. "Credit risk management: The use of credit derivatives by non-financial corporations." Managerial Finance, 2006
- Triana, Pablo. "A fresh look at credit default swaps." Risk magazine, October 2005
- The role of central counterparties. Global Financial Stability Report, April 2010

10. Annexure

Risk Management

Risks in CDS

Proper assessment and management of various risks such as sudden increase in credit spreads resulting in mark-to-market losses, high incidence of credit events, Jump-to-Default Risk, basis risk, counterparty risk, etc., is essential, it needs to be ensured that CDS are not used to build up excessive leveraged exposures. The market participants need to take various risks associated with CDS into account and build robust risk management architecture to manage the same.

Prudential norms for risk management in CDS

Counterparty Credit Exposures

Protection seller in the CDS market shall have in place internal limits on the gross amount of protection sold by them on a single entity as well as the aggregate of such individual gross positions. These limits shall be set in relation to their capital funds. Protection sellers shall also periodically assess the likely stress that these gross positions of protection sold, may pose on their liquidity position and their ability to raise funds, at short notice

Computation of Credit Exposure

Ceilings for all fund-based and non4und based exposures including off-balance sheet exposures should be computed in relation to total capital as defined under the extant capital adequacy standards. This will be applicable to determine the exposure arising out of CDS transactions as well. The protection seller shall treat his exposure to the reference entity (on the protection sold) as his credit exposure and aggregate the same with other exposures to the reference entity for the purpose of determining various prudential limits like single / group exposure, capital market exposure, real estate exposure, exposure to NBFCs etc. The protection buyer shall replace his original exposure to the reference entity, with that of the protection seller.

Other issues related to exposure norms

The benefits available under special category of assets such as priority sector lending/export finance will not be available to the protection seller (bank) when protection is sold on such assets as they do not incur any fund-based exposure.

Collateralization and Margining

For CDS transactions, the margins would be maintained by the individual market participants. In this regard, market participants shall adhere to the following requirements:

- a) All market participants should lay down a separate margin policy for managing the counterparty credit risk on account of CDS transactions. Margin policy should prescribe the minimum level of margin to be called for.
- b) Margins may be maintained on net exposure to each counterparty on account of CDS transactions.
- c) Till the requisite infrastructure is put in place, the positions should be marked-to-market daily and re-margined at least on a weekly basis or more frequent basis as decided between the counterparties.