

Credit Default Swap: Regulations, Changes and Systemic Risk

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Abstract

The CDS market grew significantly in 2007 and it has been claimed that it has been allowed to become too large without proper regulation and that, because all contracts are privately negotiated, the market has no transparency. But in 2009 substantial changes were made in this market with the implementation of CDS big bang & small bang protocols and introduction of new CDS trading conventions. This helped in achieving same day trade matching, the elimination of offsetting trades, and centralized clearing. This paper covers the key features of CDS, its documentation and regulation, recent changes in CDS market and its factors that lead to systemic crisis.

Key terms: reference entity, credit event, default payment, restructuring, systemic risk, central counter-parties (CCP)

1. Introduction:

Credit default swap (CDS) is an agreement between two parties where the seller of the CDS will compensate the buyer upon the occurrence of a predefined event, generally a default. In exchange of this protection, the buyer of the CDS makes a series of payments i.e. the CDS "fee" or "spread".

2. Origins & first trade

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 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.

3. Objective of Study

The paper endeavours to study the overall functioning of and changes in the CDS markets. The objectives of the paper are:

- To know documentation and regulation concerning CDS markets.
- To comprehend recent changes in CDS markets through Big Bang Protocol, Small Bang Protocol and trading conventions.

- To analyse whether CDS market increases the risk of collapse of an entire financial system as opposed to risk associated with any one individual entity or group.
- To suggest ways to overcome this systemic risk.

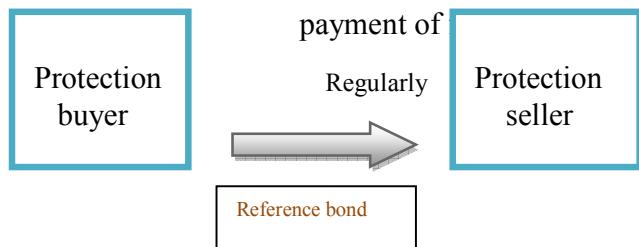
4. CDS: Key features

4.1. Terms of Contract

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.

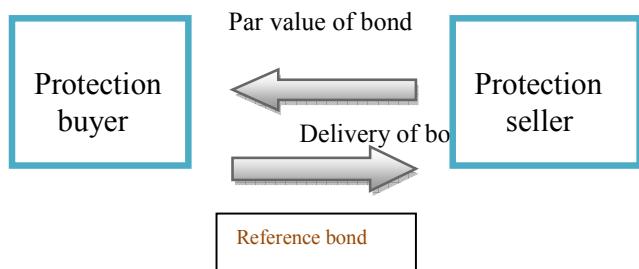
The seller of the contract assumes the credit risk that the buyer does not wish to shoulder in exchange for a periodic protection fee similar to an insurance premium, and is obligated to pay only if a stated credit event occurs. It is important to note that the CDS contract is not actually tied to a 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.

CDS (No Default)



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 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.

CDS (Default)



4.2. 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.

4.3. Uses of CDS

Credit default swaps can be used by investors for *hedging*, *speculation* and *arbitrage*:

- *Hedging*: A CDS contract can be used as a hedge or insurance policy against the default of a bond or loan. An individual or a company that is exposed to a credit risk can shift some of that risk by buying protection in a CDS contract. By buying a credit default swap, the bank can lay off default risk while still keeping the loan in its portfolio. A company's risk management team may advise that the company is overly concentrated with a particular borrower or industry. The company can lay off some of this risk by buying a CDS. Because the borrower—the reference entity—is not a party to a credit default swap, entering into a CDS allows the company to achieve its diversity objectives without impacting its loan portfolio or customer relations.
- *Speculation*: CDS are also used for the purpose of speculation i.e. to bet for/against a credit event. CDS provide a very efficient way to take a view on the credit of a reference entity. An investor with a positive view on the credit quality of a company can sell protection and collect the payments that go along with it rather than spend a lot of money to load up on the company's bonds. An investor with a negative view of the company's credit can buy protection for a relatively small periodic fee and receive a big payoff if the company defaults on its bonds or has some other credit event.
- *Arbitrage*: This technique relies on the fact that a company's stock price and its CDS spread should exhibit negative correlation; i.e., if the outlook for a company improves then its share price should go up and its CDS spread should tighten, since it is less likely to default on its debt. However if its outlook worsens then its CDS spread should widen and its stock price should fall. Techniques reliant on this are known as capital structure arbitrage because they exploit market inefficiencies between different parts of the same company's capital structure; i.e., mis-pricings between a company's debt and equity.

5. Documentation and regulation:

5.1. ISDA documentation

From legal standpoint, CDS are governed by international swaps and derivatives association (ISDA) master agreement framework. The following are the two ISDA documents:

- *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:

1. Bankruptcy
 2. Failure to pay
 3. Restructuring
 4. Obligation default
 5. Obligation acceleration
 6. Repudiation
- ***Short form confirmation:*** Most CDS transactions are now documented using the short Form Confirmation. The key terms are:
 1. The reference entity on which the CDS is based
 2. The types of obligation (of the reference entity) that are covered by CDS
 3. The key dates of CDS(trade date, effective date, termination date)
 4. The credit events that will require the protection seller to make a payoff
 5. Settlement of swap in the event of default

5.2. Basel II treatment of credit default swaps: The Basel II framework uses a substitution approach in recognising the risk- mitigating effect of credit default swaps on regulatory capital. In this approach, the risk of the protection seller substitutes the risk weight of the reference obligation. The Following are some of the conditions that must be met for regulatory recognition of a CDS under Basel II:

- ***The CDS must a direct claim on the seller:*** This claim must be unconditional and irrevocable. There must be no clause in the CDS contract outside the control of the protection buyer that could prevent the protection seller from being obliged to pay out promptly when a credit event occurs.
- ***The seller must meet certain eligibility criteria:*** Eligible protection sellers include public sector entities, sovereigns, banks, and securities firms that have a lower risk weight than the buyer. Other entities that are rated A- or better are also eligible protection sellers.
- ***Certain credit events have to be specified in the CDS:*** Credit events specified in the CDS must include failure to pay, bankruptcy, insolvency, and restructuring. If restructuring is not included as a credit event, the amount of hedge is limited to 60%. The rest of the underlying exposure (40%) will be treated as un-hedged for regulatory capital purposes.
- ***Only assets from the same obligor can be mismatched:*** An asset mismatch is valuation permitted only if the asset is from the same obligor. The asset must also rank pari passu (or better) with the reference obligation.
- ***There must be robust for cash settlement:*** If the CDS is cash settled, a robust valuation process must be in place in order to estimate the loss reliably.
- ***Determination of credit event must be objective:*** Determination that a credit event has taken place must be definitive and objective. The protection seller should not have the right to notify a credit event.

6. Recent Changes in CDS Markets

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 CDS 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 CDS 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.

6.1. 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 five non-dealer ISDA members. 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 DCs generally require a supermajority of 80% of a quorum of DC members (resolutions regarding determinations of the sort described in clause (2) above require a majority of 50%). 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 DCs 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.

6.2. 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 R and 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.

6.3. Transactions Excluded from the Big Bang Protocol and Small Bang Protocol

The following CDS transactions are excluded from the scope of the Big Bang Protocol and the Small Bang Protocol and will not be amended to incorporate in it unless the parties bilaterally agree:

- Loan-only transactions
- US municipal type transactions
- Credit derivative transactions on asset-backed securities
- Certain derivative index transactions

The following table shows the changes in the contract of CDS through the introduction of Big Bang Protocol and Small Bang Protocol:

Instruments	CDS Big Bang and Small Bang					
	Contract changes					
	Auction Hardwiring	Determination Committees	Lookback Periods	Auction for restructuring event	D.C. power to determine R.E. Auction	Use it or lose it
North American Corporates	●	●	●	○	○	○
North American Sovereigns	●	●	●	○	○	○

European Corporates	●	●	●	○	○	○
Western European Sovereigns	●	●	●	○	○	○
Emerging Markets	●	●	●	○	○	○
Asian corporates	●	●	●	○	○	○
Asian sovereigns	●	●	●	○	○	○

Instruments	CDS Big Bang and Small Bang		
	Convention Changes		
	Full Coupon	Fixed Coupon	Restructuring Status
North American Corporates	●	●	●
North American Sovereigns	●	●	●
European Corporates	○	○	○
Western European Sovereigns	○	○	○
Emerging Markets			
Asian corporates			
Asian sovereigns			

- Big Bang
- Small Bang

The CDS Big Bang brought global contract and North American convention changes to market. The global contract changes included the establishment of Determinations Committees, 60 and 90 day “look back” periods for credit and succession events and hardwiring of the auction mechanism. The convention changes around fixed coupons, No Restructuring, full coupon payments and quoting conventions applied only to North American CDS. The CDS Small Bang brings additional changes for European Corporate and Western European Sovereign CDS. Overall, the focus on changes has occurred in the corporate and sovereign markets as a simple matter of priority due to the volume of transactions. The need to maintain restructuring as a credit event in Europe required additional issues, many of them complex, to be resolved in order to bring greater standardization to these contracts. Thus, these changes followed the CDS Big Bang.

7. Trading Conventions

Apart from the standard features, various market specific conventions are also followed across the world. This section outlines few of the major ones currently in practise.

7.1. Standard North American Corporate (SNAC) CDS trades

- Future CDS contracts will be quoted with fixed coupons and upfront payments, and will trade No-R. CDS on investment grade Reference Entities will stipulate a fixed coupon of 100 basis points and be quoted with a flat curve spread. High-yield Reference Entities will trade on a fixed 500 basis points spread and be quoted in up-front points.
- Scheduled termination dates will always match one of the March 20, June 20, September 20 or December 20 quarterly roll dates applicable to index trades.
- Coupon accruals will commence no longer on the effective date but rather on the quarterly roll date on or before the trade date.
- The trading standard for SNAC transactions will be No Restructuring.
- The market participants still have the choice of new or old transaction types for their North American Corporate trades.

7.2. European Convention Changes

Since June 20th, standard European corporate trade with fixed coupons of 25, 100, 500 and 1000, similar to North American corporate albeit with additional coupons. Most trades should gravitate to the 100 or 500 coupons with corporate investment grade credits likely to trade with a 100 strike and high yield credits with a 500 strike. Western European sovereigns are quoted with a 25 or 100 strike. The additional coupons allow for greater minimization of the upfront fees that will be exchanged. Two additional coupons, 300 and 750, have been implemented to allow more flexibility in re-couponing legacy trades.

- *Restructuring:* For clarity, the European corporate contract will continue to trade with Modified Restructuring (Mod-Mod-R) as the standard convention.
- *Full First Coupon:* Similar to the SNAC contract, there will be no more short stub or long stub dependent on the trade date. The protection buyer will pay the seller the full period accrual even if the trade is entered mid-period. The cash settlement amount due at settlement date includes a rebate payment from the seller for the accumulated accrued coupon.

7.3. Asia

From December 21, 2009 the coupons for corporate and sovereign Japanese CDS have been fixed at 25, 100, and 500 basis points. For corporate and sovereign Asian CDS, the standard coupons are 100 and 500 basis points. The first coupon paid by the buyer is a full coupon and coupon payments are made Quarterly.

8. CDS and the risk of collapse of an entire financial system or entire market (Systemic Risk)

Systemic risk refers to the risks imposed by interlinkages and interdependencies in a system or market, where the failure of a single entity or cluster of entities can cause a cascading failure, which could potentially bankrupt or bring down the entire system or market. CDS can cause such risk because of the following reasons:

8.1 Existence of Operational risk irrespective of Significant Infrastructure Improvements

Trade processing remains a source of operational risk. Although about 90 percent of credit derivatives transactions are now being confirmed electronically, compared to about 75 percent in 2004, the other 10 percent, comprised mostly of customized ("bespoke") contracts, is associated with significant volumes of unconfirmed and failed trades. These are often processed with long delays, and in some cases are incomplete and inconsistent, making accurate

counterparty risk management difficult. In addition, audit trail data are not readily available and must be reconstructed manually. However the “*Big and Small*” Bangs” has Reduced Operational Risk.

8.2 Counterparty Risk Exposures

Counterparty risks arise in the CDS market because each contract is subject to the potential risk that the protection seller will fail and be unable to uphold the original contract. This is because of large overhang of offsetting bilateral contracts. Such offsetting contracts proliferate because, rather than closing out existing contracts, counterparties often write another contract.

Existing counterparty risk mitigation practices like the netting of bilateral positions, bilateral portfolio reconciliations, and the collateralization of residual net exposures, including ratings-based triggers are effective. However, these practices can lead to unintended systemic consequences .For example, good collateralization practices have been sucking liquidity and high-quality collateral, such as government bonds, out of the market.

8.3 Poor Disclosure and Transparency Standards Leave Authorities in the Dark

If policymakers and market participants had access to more detailed counterparty and reference asset specific transaction information systemic risk can be avoided but Accounting statements generally reveal very little CDS risk exposure information beyond notional amounts and market values and very little detail has been provided to buyers of CDS contracts.

8.4 Lack of Transparency and Market Surveillance Compromises Market Integrity

Because the CDS market has been entirely over-the-counter and because regulatory responsibility for surveillance of the market has not been established, information on positions and prices is not centralized, much of this information is not known, and this creates an opportunity for market abuse. The lack of a clear mandate to regulate trading in the CDS market has meant no market surveillance and little enforcement in the markets.

9. Suggestions to overcome the Systemic risk

9.1 Improving Disclosure of Credit Derivatives Transactions: There are gaps in the information reported to regulators and other authorities. If these gaps will be filled it can help the regulators and investors to gain insight into the underlying structure of these new instruments and understand where exactly the risks lay.

9.2 Need for Regulatory Coordination: A single global CCP might be the most cost effective means of mitigating counterparty risk. However, jurisdictional considerations and competing economic interests are likely to make it difficult or impossible to establish such an entity.

However, even multiple separate internationally active CCPs will require intensive cross-border coordination of regulatory and supervisory frameworks, both to avoid regulatory arbitrage and to mitigate systemic risk. These frameworks are needed to ensure that sound and efficient linkages and clearing mechanisms are established across CCPs, without unduly constraining multiple-currency or cross-border transactions. At present, there are various legislative, regulatory, and market proposals to deal with CCP organizations.

While the establishment of a CCP for CDS has advantages in terms of transparency and financial stability, the following policy considerations will need to be borne in mind. First, in order to preserve the soundness of the financial sector and the integrity of the market place, a CCP should be established as an independent entity. This is important to ensure that financial risks cannot be imported from other unrelated clearance activities. Second, due to its systemic importance, a CCP should be subject to the oversight of a systemic risk regulator, in addition to oversight by securities and futures regulators, who also have an oversight role in ensuring the orderly functioning of the market. Third, relevant authorities in other countries should be involved in the oversight of CCPs that clear substantial trades executed outside their local jurisdictions.

9.3 Improving Disclosure in Financial Reporting of Credit Derivatives: Both IFRS and GAAP have strengthened guidance on and greater disclosure of the details involved in pricing complex, narrowly traded products. This includes accounting procedures for the consolidation of off-balance sheet credit exposures that would increase the need to bring these vehicles onto banks' balance sheets and under greater scrutiny.

In March 2008, FAS 161 on "Disclosures about Derivative Instruments and Hedging Activities," was introduced. It includes requirements pertaining to counterparty risk and key issues underlying the proposed CCPs for credit derivatives. The new standard not only increased transparency in the amounts and the location of derivative instruments in financial statements, but also how they affect the financial position, financial performance, and cash flows of the institution. Greater disclosure about an institution's liquidity position is required, and to improve clarity, derivative instruments and their gains and losses are to be in a tabular presentation. In March 2009, IASB published amendments regarding accounting for "Embedded Derivatives," clarifying the accounting treatment for embedded derivatives and would require all embedded derivatives to be assessed and, if necessary, separately accounted for in financial statements.

9.4 Improving Market Integrity: Establishing a level of market integrity ensures that market participants are not able to manipulate prices and that price discovery is efficient. There are two aspects to market integrity: regulation that discourages market abuse and enforcement of those rules.

10. Conclusion:

Within the complex world of derivatives instruments, credit derivatives are those which have recently experienced a dramatic growth reaching levels which were unforeseeable just until few years ago. Particularly, credit default swaps represents an industry which have attracted the attention of many credit derivatives users.

The contract and convention changes contained in CDS Big Bang and Small Bang are important in furthering the standardization of CDS contracts. These changes also solve the challenges posed by trying to resolve restructuring events through the auction process. None of these changes are explicitly required for CDS contracts to centrally clear per se, but regulators and industry participants are aware that the standardization of contracts greatly enhances the effectiveness of central clearinghouses to manage the impact of any significant clearing members should they default on their commitments. These changes promotes contract standardization which greatly reduces operational risks particularly around processing of payments and trades related to CDS.

Thus by improving the credit risk management, CDS represent a valid tool to hedge financial crisis. Expression of the most sophisticated financial engineering, they have permitted in some way to continue transactions with risky counterparties which were close to the default, impeding in this way the termination of many businesses. It is not completely wrong to argue that, at macroeconomic level, CDSs have contributed to avoid or to worsen situation of systemic crises.

Systemic risk can be avoided by launching CCP's in different countries. However, a single global CCP would accomplish the largest reduction in systemic counterparty risk, benefit from the largest network and scale economies and a larger pool of counterparties and resource base, and limit opportunities for regulatory arbitrage and competitive distortions. International cooperation is needed to increase the performance of these CCP. Better and more detailed transaction and position information would also enable policymakers and market participants to detect market abuse. The imposition of comprehensive reporting requirements, even on trades that do not clear through CCPs will provide aggregate data reporting to the public and individual trade details to federal regulators.

Finally, regulators and other standard setters in the major jurisdictions need to work closely with their counterparts to share transaction and position information relevant to assessing systemically important linkages through these markets.

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