

Research on the Influence of Credit Default Swap on the Stability of Financial Market

Yutong Dong^{1,*}

¹ University of Toronto, M5S 2E8, Toronto, Canada

*Corresponding author. Email: tinadong1029@outlook.com

ABSTRACT

The credit default swap market has been in existence since the 1990s. This paper mainly focuses on the investigation of the impact of credit default swap on the stability of the financial market as a whole through literature review and case study. A general overview and the hedging as well as speculation purpose of CDS (Credit Default Swap) are explained in detail. Upon closely analyzing the speculation and counterparty risk of CDS and case study of the fall of Bear Stearns, Lehman Brothers and American International Group (AIG) in 2008, it was concluded that CDS should not to be blamed as the primary reason for the cause of the financial turmoil. Furthermore, considering the introduction of central regulation by Critical Control Points (CCPs) and increased transparency of modern CDS trades, the influence of CDS on financial stability should be reasonably controlled.

Keywords: Credit default swap, CDS, Hedging, Speculation, Financial crisis, Central clearing.

1. INTRODUCTION

A multitrillion-dollar market, the CDS market has been in existence since the 1990s. Virtually every sector of the financial industry participates in it. CDSs reached their peak popularity in 2008, with the market trading over \$60 trillion [1]. The role of credit default swaps (CDS) in various financial crisis events has been questioned since the beginning of the 2008 financial crisis.

The credit default swap (CDS) is a derivative contract that makes it possible to move or redistribute credit risk. In normal conditions, CDS is also a useful source of information about credit prices because of its liquidity. Despite this, the CDS market's significant size and structural opacity, as well as its concentration and interconnection, could indicate that it can pose a systemic risk to market stability [2].

As evidenced by the severe problems faced by large dealers such as Bear Stearns, Lehman Brothers, and AIG, the 2008 financial market upheaval has highlighted the relevance of counterparty risk in over-the-counter (OTC) derivative markets. It is clear from these incidents that links between market players inside OTC

markets are often opaque, resulting in situations in which market players may be too large or interdependent to collapse [3].

The purpose of this paper is to investigate the role of credit default swaps on financial market stability. This article will start off with a brief introduction of CDS, particularly emphasizing its role on hedging and speculation. Based on the introduction, a closer analysis on the alleged issues of speculative CDS and counterparty risk associated with CDS is conducted. It is then followed by a series of case studies to investigate the actual causation of CDS on the demise of Bear Stearns, Lehman Brothers and AIG during the 2008 financial crisis. Afterwards, a review on the current regulation bodies and policies that has been put on CDS trades is laid out to point out that the previous issues associated with CDS including opacity and finding risk are now contained. Finally, a conclusion is drawn regarding the role of CDS on financial market stability.

2. OVERVIEW OF CDS

In a CDS agreement, one party is the protection buyer, and the other is the protection seller, who pays a charge or premium in order to protect

themselves from loss on the exposure to an individual loan or bond. A credit event is when a CDS is written on a company that is unable to pay its debts. Under a protection contract, the seller of the insurance will compensate the buyer in the event of a credit event. A CDS has a varying default payment parameter. It is possible to agree on predetermined payouts regardless of the recovery rate, such as the delivery of reference assets in exchange for repayment at par, notional value minus market value of the reference assets, and delivery of the reference assets [4].

CDS products were initially very simple transactions in which a protection buyer paid a protection seller in exchange for receiving a payment in the event a certain credit event happened with regards to a certain company, a type of credit risk insurance [5].

These credit derivatives shift the risk of default from the "protection buyer" to the "protection seller" in exchange for a premium. They are the most traded credit derivatives. CDS are typically issued between one and ten years, with most of the liquidity occurring over a five-year period [6].

There are three categories of CDS. CDSs protecting a single company or sovereign entity are known as single-name CDSs [7]. CDS indices, second, are contracts that are made up of a group of single-name CDSs, with each entity accounting for a certain portion of the index's value. In recent years, the CDS indexes have proven to be a valuable source of information about market pricing [8]. The third type of basket CDS, referred to as baskets, refers to portfolios of reference firms that can range anywhere from three to one hundred names. CDSs based on a market index, on the other hand, may be more individualized and opaque in terms of pricing and volume [3].

A CDS is fundamentally different from an insurance policy in the sense that people purchasing CDSs can trade out and in of contracts in a way that insurance companies cannot. As a general rule, government requires the sale of insurance products by regulated businesses; people who purchase insurance must also own the underlying assets. A CDS can be applied in a variety of ways, giving the investor a great deal of flexibility [9].

3. ROLE OF CDS

3.1 Hedging Risks

The risk of default when holding debt is frequently managed using credit default swaps. CDS contracts can be entered into by a bank, for example, as the purchaser of protection against lending defaults. Upon default, the CDS revenue offsets the losses on the underlying debt [10]. The sale may be interpreted as the bank showing a lack of faith in the borrower if both the lender and borrower are well-known, which could seriously harm the bank-client relationship. When a bank purchases a credit default swap while keeping the loan in its portfolio, it reduces its default risk. As a result, there is little incentive for a bank to closely monitor the loan in the absence of default risk. In addition, the counterparty has no access to the borrower [10].

Concentration risk can also be protected by hedges. Having too much focus on a certain borrower or industry may indicate that a bank's risk management team is too bad. In order to mitigate some of this risk, the bank can purchase a CDS. In the absence of a credit default swap, the borrower is not a participant in the bank's loan portfolio, so it can meet its diversification objectives without compromising client relations. CDS sellers can diversify their portfolio, too, by getting exposure to a sector in which they do not have client relationships [11].

Banks can also use CDSs to free up regulatory capital by purchasing insurance protection. Unloading a specific credit risk allows banks to retain less capital in reserve against default. Banks can use this freed up cash to make additional loans to the same client or to other borrowers. A bank is not the only one that hedges risks as a lender. Pension funds and insurance companies may purchase CDSs to hedge their corporate bonds as well [11].

3.2 Speculative Credit Default Swap

CDS spreads can be modified to reflect changes in the value of individual stocks or market indexes by using the CDX index for North America and the iTraxx index for Europe. Investing in basis trades, in which a CDS is combined with a cash bond and an interest rate swap, can enable an investor to profit from their belief that a company's CDS spreads are too high or low compared to its bond yields [12].

Last but not least, an investor can speculate on an entity's credit quality, since CDS spreads usually increase with decreased creditworthiness and decrease with increased creditworthiness. This provides the investor with the opportunity to buy CDS insurance on a close to default firm. A shareholder may also sell protection if he or she believes the company will improve its creditworthiness. In the same way that an investor holding a bond would be considered "long" on the bond, the investor selling a CDS would be considered the same. A short position, on the other hand, is held by the investor who purchased protection on both the CDS and the underlying credit [13].

New opportunities for speculation were provided by credit default swaps. There were no upfront costs associated with buying a bond; all the investor had to do was agree to pay if the bond defaulted. CDS made credit shorting viable and popular because shorting a bond was difficult and often impossible. The speculator's position, in either case, is called a synthetic long or short position because he or she does not own the bond [14].

3.3 Problems with CDS

Financial insecurity and systemic risks have been blamed consistently on credit default swaps. "Naked" CDS trading is deemed a threat to the stability of the entire financial system by the German financial regulator, BaFin [15].

There are numerous claims that credit default swaps increase the spreads of distressed firms, thus preventing them from accessing debt markets. This is largely because speculative CDS are allegedly involved in increasing CDS spreads. CDS markets have been blamed by state officials for worsening national debt, most recently by Greece [16]. These claims have not been backed up with actual data. According to DTCC data, CDS positions on Greek government bonds increased from USD 7.4 billion in 2009 to USD 9.2 billion (net) in March 2010, representing less than 2.5 percent of the Greek government bond market, which exceeds USD 400 billion. The CDS markets may have caused a panic in the debt market due to informational contagion. It is hard to discern whether CDS spreads or bond spreads performed significantly better in 2010 in the case of Greece. BaFin's May 2010 regulation on "naked CDS" appears to have had little to no impact on stabilizing the sovereign debt market [17].

However, another concern is the counterparty risk caused by the failure of big protection vendors, as exemplified by AIG's bankruptcy. It is possible for the default of one dealer in a market where there are many dealers, such as the CDS market, to lead to domino effects and default contagion. It may be possible to investigate such contagion effects using network models in CDS markets [18]. The default of a company in the presence of a CDS market results in losses for counterparties of the entity as well as for sellers of credit default swaps covering that entity. CDS protection sellers that do not have enough reserves to satisfy CDS liabilities are at risk of default, which opens them up to contagion. In another study, using a network-based measure of systemic risk, it has been shown that default contagion increases in a CDS market where protection sellers do not have adequate liquidity for CDS default payments [19].

Whether a CDS is speculative or not does not matter. Since there is a relationship between exposure to the underlying bond and this calculation, the protection buyer must have exposure to that bond. If there are not enough reserves to pay the default leg, a counterparty default occurs. The management of counterparty risks in the CDS market is more important than distinguishing between speculative and non-speculative CDS, it seems [17].

4. A CLOSER LOOK AT THE FALLEN GIANTS DURING 2008

While the Great Recession was happening, the credit default swap market performed admirably. Credit default swaps have remained quite liquid for lengthy periods throughout the two years following the crisis, despite massive and unanticipated losses in underlying mortgage securities and near-chaos in the financial sector at times. A huge number of defaults were also handled with ease on the market. As an example, Lehman's default was handled successfully [21].

Credit default swaps were not the bank's downfall despite the fact that Lehman was a major trader. Neither were they directly responsible for Bear Stearns' fall. Bear Stearns and Lehman Brothers were both dealers, and if a default occurred, their books were generally balanced and collateral was in place. Lehman Brothers and Bear Stearns collapsed because, correctly or erroneously, market participants concluded that their assets were worth less than their liabilities. Even though their assets and liabilities would have been quite

different if derivatives had not been used, these instruments didn't directly cause their collapse [21].

AIG's situation was unique and intricate. Although AIG was exposed to credit default swaps, it's crucial to note that AIG did not conduct itself like a dealer. Neither did it maintain a matched book of business. Hedging appeared to be minimal. The credit default swaps that AIG issued were placed on AAA tranches of massive securitizations. In June 2008, it issued credit derivatives on super senior tranches of securitizations for a net amount of \$411 billion notional. Using subprime collateral, the notional value of super-senior tranches was \$55.1 billion. When AIG wrote the credit protection for all tranches, they were all AAA rated. AAA-rated obligations are extremely unlikely to default, with a default rate of less than 0.1% per year. However, AIG's credit default swap liabilities grew dramatically with the collapse of the US housing market [21].

AIG was forced to post progressively more collateral as losses escalated and its credit rating declined, until it ran out of funds to meet the requirements of its financing agreements. Importantly, however, AIG's inability to meet its obligations was not due to realized losses on its credit-default swaps (i.e., not due to defaults under contractual obligations), but rather because of collateral arrangements requiring posted collateral due to AIG's downgraded credit rating. Nevertheless, credit default swaps were not the sole or even the predominant reason for AIG's problems-and they were not the primary reason for the bailout. In addition to buying these assets on its own, AIG also wrote protection on subprime securitizations. The losses AIG incurred on mortgage-related securities were considerably worse than those incurred on credit default swaps. AIG's credit default swaps had been a concern to many financial institutions, which, as previously stated, were urged to obtain this type of insurance by authorities. AIG protection contracts and collateral arrangements would have shielded many financial institutions. The failure of AIG would have created another risk of a run on money markets in September 2008, when there was already a run on money markets [21].

5. CENTRAL CLEARING AND INCREASED TRANSPARENCY

CDS markets have offered CCPs as a way to prevent default contagion and manage counterparty

risk. Clearinghouses act as buyers of protection for sellers and sellers of protection for buyers, protecting individual participants from defaults of others. Margin calls are issued daily and collateral must be posted. By reducing counterparty risk, this reduces default losses. In addition, the CCP can reduce operational risk by managing collateral and margin calls. Nevertheless, clearinghouses are compelled to publish quotations for all instruments being cleared, so that margins can be computed and positions recorded [17].

Central Counterparty Clearing in the US and Europe now clear for the CDX and ITRAXX indices, as well as their subindices (High Yield, High Volatility) and single name components. Since 2009, ICE Trust has been operating as the largest clearinghouse for indexes and single name CDS in the United States. Credit default swap clearinghouses CMDX, Eurex, and LCH Clearnet are also available [17].

The central clearing of CDS markets cannot eliminate counterparty risk universally. There are a large number of custom CDS contracts on the CDS market, for which there are no standardizations or liquidity given the lack of central clearing. The failure of AIG was not merely anecdotal, but was due in large part to such customized CDS contracts. Even quoting to market can pose a challenge in such transactions since no reference market quote may be available at the moment, resulting in differing perspectives among counterparties on margin calls. Several proposals for more market transparency have been made for the CDS market, which has been described as one of the most opaque sections of the financial industry. Market transparency is a distinct challenge for regulators as well as market players [22].

6. CONCLUSION

Dealers, investors and regulators have all become interested in the CDS market because of its growth. Understanding CDS trading risks is crucial before starting. CDS markets, however, are becoming increasingly important as a source of information and opportunities for financial organizations. By closely analysing the comprehensive situation of CDS during and post 2008 financial crisis, as well as conducting a focused investigation on the alleged caused of demise of Bear Stearns, Lehman Brothers and AIG by CDS through literature review, it was found that how credit default swap markets affect financial market stability is critically dependent on

market mechanisms and capital liquidity needs. Moreover, with the introduction of central clearing and more transparent data about CDS, the influence of CDS on financial stability of the whole market should be considerably contained. In fact, a retrospective study by Ivanov et al. (2021) found that the CDS spread during the COVID pandemic is significantly lower than the CDS spread during 2008 to 2009, implicating the crucial role of CCPs and transparency provided by DTCC.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Yutong Dong.

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