

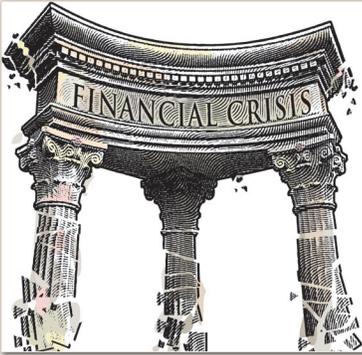
# The Role of Derivatives in the Financial Crisis

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*What role did derivatives play in triggering the 2008 financial crisis? Specifically, what part did credit default swaps (CDSs) play in spreading risk to the rest of the financial system and causing the failure of major institutions? And, what effect will the regulations implemented after the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act have on future derivatives markets?*



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**What Are Derivatives?** Derivatives are securities with a price tied to an underlying asset and can be classified into forwards, futures, options and swaps. These instruments are useful to businesses seeking to hedge their risks, whether they are a producer or consumer of agricultural products, metals or energy, or a pension fund needing to reduce its exposure to fluctuating interest rates.<sup>1</sup>

Standardized derivatives have detailed terms and specifications for each class and series of contract and are usually traded on an exchange.<sup>2</sup> Other types of derivatives are traded over-the-counter (OTC) and are unregulated. However, their implicit leverage and risk can be dangerous when used for investment or speculation without enough supporting capital.

Some financial institutions have experienced large losses from the use of derivatives and other forms of leverage. For example, Barings Bank lost \$1.4 billion in 1994 and *Société Générale* lost \$7 billion in 2008. Nonetheless, losses would likely be greater if businesses did not use derivatives for hedging.<sup>3</sup>

**Did Credit Default Swaps Cause the Crisis?** Some critics blame credit default swaps for the financial crisis. These derivatives represent bilateral insurance contracts between a protection buyer and a protection seller, covering a corporation's or sovereign's specific bond or loan. They typically last for five years, can be resold to another party, and are subject to counterparty risk — the risk that the protection seller will not be able to pay a claim.<sup>4</sup>

Unlike options and futures, swaps are not standardized instruments and have been generally traded in over-the-counter (OTC) markets — that is, directly between buyers and sellers rather than through a regulated exchange. An important aspect of CDSs is that an investor can purchase CDS protection without actually owning the insured security.<sup>5</sup>

In the period leading up to the financial crisis the advantageous leverage and convenience of CDSs fueled a speculative frenzy. Dealers on both the buy and sell sides rushed to issue and purchase CDSs written on debt they did not even own. While there are relatively safe CDSs based on interest rates or corporate bonds, some financial institutions wrote CDSs on low-quality subprime mortgage-backed securities (MBSs).<sup>6</sup> The latter are bonds

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### Credit Default Swaps Outstanding at Year End\* (notional amount in trillions of dollars)



\*Note: the 2010 figure utilizes mid-year data.

Source: International Swaps and Derivatives Association.

that combined into large pools the mortgages issued to borrowers with below-average credit history by loan originators such as Countrywide. The rise in the amount of CDSs outstanding was swift: in 2001 the amount was roughly \$920 billion; in 2007 it peaked at around \$62 trillion, a figure that is more than four times real U.S. gross domestic product for that year [see the figure].<sup>7 8</sup>

The surge in trading volume led to innovation and differentiation among CDSs. For instance, a single-name CDS protects the buyer against the default risk of a single company, while a multiple-name CDS hedges the risk of default of several firms or forms of debt, such as a pool of subprime residential MBSs.<sup>9</sup> The ABX index, which tracks the value of a basket of subprime MBSs, was introduced in 2006 and facilitated the process of taking positions in this market.<sup>10</sup> At the same time, dealers also hedged their exposure with equivalent protection purchased from another dealer or insurance company. American International Group (AIG), for example, sold an enormous amount of these contracts.

Bruce Tuckman of the Cato Institute argues that, aside from AIG's failure, derivatives actually played only a minor role in the crisis. In Tuckman's view the crisis was caused by a combination of high leverage and exposure to subprime mortgage loans in the form of MBSs and collateralized debt obligations (CDOs) whose massive default-rate became evident in 2007.<sup>11</sup>

It is necessary to clarify that MBSs and CDOs, which are often mentioned in discussions of the financial crisis, are not derivatives, they are securitizations. The process of securitization involves creating a new financial instrument by combining other financial assets and then marketing different tiers of the repackaged instruments to investors.<sup>12</sup> In fact, the Dodd-Frank Act has a separate set of rules (Title IX) to regulate these instruments.<sup>13</sup>

Many firms, such as Citigroup, Merrill Lynch and UBS, reported heavy

losses as a result of mortgage-related defaults, while others like Bear Stearns and Lehman Brothers failed. But according to Tuckman, even the liquidation of the failed firms' derivatives books did not cause further harm to financial markets because these institutions acted mostly as dealers. In many other cases, firms had both sold and purchased CDSs on the same entities, thusly offsetting their positions.<sup>14</sup>

Market volatility increased because counterparties could no longer rely on the failed institutions' promises to fulfill their commitments. Correspondingly, the market was overwhelmed with firms trying to replace their swaps at the same time.

In the end, however, no counterparty failed because of having lost or having to replace its derivatives contracts.<sup>15</sup> For AIG one of the causes for its downfall was the \$78 billion of CDS protection sold on the mortgage-based CDOs (out of a total of \$441 billion on all CDSs).<sup>16</sup> As the crisis progressed, counterparties required additional margin to ensure AIG's performance on its obligations and AIG had to increase collateral from \$13.2 billion to \$22.4 billion. All in all, in 2008 AIG lost \$29 billion from its CDS positions or about 30 percent of total losses for that year.<sup>17</sup>

This explanation reveals that derivatives were only one of the sources of AIG's problems; its securities lending

program with massive exposure to residential MBSs proved just as critical to its collapse.<sup>18</sup>

**New Regulatory Environment.** In the aftermath of the financial crisis, the public became concerned with regulating OTC derivatives. Some analysts suggested that investors should not be allowed to purchase CDS protection unless they were hedging exposure to the named borrower. Nevertheless, eliminating this form of speculation would make CDS markets less liquid, increasing the cost of trading and making CDS rate quotes a less reliable source of information about the prospects of such borrowers.<sup>19</sup>

The Dodd-Frank Act tasked the Commodity Futures Trading Commission (CFTC) with reforming the swaps market. The guidelines prompted the CFTC to make OTC derivatives more like exchange-traded derivatives, including new clearing requirements, margin rules for uncleared derivatives and trade reporting stipulations.<sup>20</sup>

While requiring the use of clearinghouses can reduce systemic risk, experts say others factors must be considered:<sup>21</sup>

- First, clearinghouses that manage only credit default swaps but no other kinds of derivatives may actually increase counterparty and systemic risk.
- Second, they must be required to have strong operational controls, appropriate collateral requirements and sufficient capital to effectively reduce systemic risk.
- Third, a single clearinghouse would be too risky but the market cannot be too fragmented either.

On the other hand, customized, nonstandard contracts cannot be traded using clearinghouses or exchanges. Regulators have yet to determine margin rules for customized OTC derivatives. Moreover, they must remember that these derivatives fulfill an important role in the global economy; if they set margins too high, derivatives risk will be reduced but other business risks will increase.

**The Implementation of New Derivatives Regulations.** According to Dodd-Frank, index CDS contracts must now be traded on swap execution facilities provided by companies such as Bloomberg and Tradeweb.<sup>22</sup> One benefit of Dodd-Frank is that it brought the CDS market closer to an exchange-like format, allowing easier access to participants and letting them view bids and offers on an open, centralized screen.<sup>23</sup>

To facilitate electronic trading of single-name CDSs in a more transparent manner, MarketAxess and the InterContinental Exchange introduced trading platforms in 2013 and 2014, respectively.<sup>24</sup> However, trading volume has been lower than expected and only the most liquid single-name CDSs, namely interest rate swaps and CDSs on government and corporate bonds, are currently being cleared.<sup>25</sup> Indeed, single-name CDS trading has been shrinking and many investment banks have withdrawn from this business.<sup>26</sup>

The Squam Lake Working Group, an academic group formed in 2009 to offer guidance on financial regulation reform, concluded that only better risk management, better regulatory oversight and, especially, clearer disclosure of positions to counterparties, will prevent major shocks due to nonstandardized OTC derivatives.<sup>27</sup>

**Conclusion.** Although credit default swaps might have amplified the 2008 financial crisis to a certain extent, most of the evidence suggests that the crisis was driven largely by a boom and bust in property markets, especially housing. The key factor was the strong dependence of capital markets upon the performance of the housing and mortgage market, which resulted in a significant disruption when the value of the latter declined.<sup>28</sup>

In the case of AIG, the derivatives it sold were not the type that could be standardized, traded on exchanges and cleared through clearinghouses. Thus, Dodd-Frank's derivatives regulatory framework would not have solved problems. Further, AIG's crisis was about company-wide risk management failures that only market discipline can solve.<sup>29</sup>

Dodd-Frank's requirements are expected to increase the portion of OTC derivatives that are cleared to about 70 percent of global activity.<sup>30</sup> The benefits of trading them in regulated exchanges are liquidity and simplicity of clearing. Still, there are times when the basis risks of trading standardized contracts are too large and clients require more customization. That is when nonstandard OTC derivatives come into play. Regulators worry about the systemic risk caused by these instruments and focus solely on markets and positions, but instead they should ensure financial institutions properly manage and disclose their holistic risks.

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### Notes

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