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INNOVATIVE DESTRUCTION—STRUCTURED FINANCE AND CREDIT MARKET REFORM IN THE BUBBLE ERA

Aaron Unterman*

PART I: THE CREDIT CRISIS

Simply stated, the bright new financial system—for all its talented participants, for all its rich rewards—has failed the test of the market place.

Paul Volcker, April 8, 2008

I. INTRODUCTION

August 2007 marked a turning point in economic history; in this month, years of U.S. spending and credit excesses finally came back to haunt the nation and financial world. In the period that followed, this credit failure spread both geographically and amongst asset classes. Loss calculations, which began at $80-billion, rose to $250-billion, then $400-billion. In April of 2008, the International Monetary Fund ("IMF") reported prospective losses at the $1-trillion mark. The economic bubble

* Member of the Financial Services department of Osler, Hoskin & Harcourt LLP. The views expressed herein are those of the author and do not represent the views of the firm. The author would like to thank Purdy Crawford, Peter Milligan, Rick Fullerton, Richard Borins, Harry Glasbeek, Paul Vlaovic, Rael Levy, Ben Leith, Dana Hooker and Mahira Mohtashami for their insightful comments and suggestions. A special thank you to my editor and fiancé, Alisha Sevigny, for all her help and support. The author welcomes any comments, questions or criticisms, email: aunterman@osler.com.


precipitating this crisis was catalyzed by everything from consumer behavior to government inaction: A culture of greed and fear dominated the market.

Asset bubbles are not new phenomena, and in recent years they have become a hallmark of developed economies. Frederic Mishkin of the Federal Reserve describes their cyclical nature in the following passage:

Financial history reveals the following typical chain of events: Because of either exuberant expectations about economic prospects or structural changes in financial markets, a credit boom begins, increasing the demand for some assets and thereby raising their prices. The rise in asset values, in turn, encourages further lending against these assets, increasing demand, and hence their prices, even more. This feedback loop can generate a bubble, and the bubble can cause credit standards to ease as lenders become less concerned about the ability of the borrowers to repay loans and instead rely on further appreciation of the asset to shield themselves from losses.\(^3\)

In the current cycle, the credit boom centered on real estate, rapidly driving up U.S. housing prices. Although bubbles are not unique in financial history the magnitude of this one was with financial innovation drastically magnifying the impact of rising asset prices. And nowhere was this more evident than the now infamous U.S. subprime housing market. Ground zero once the bubble burst this market’s rise and fall was made possible through a combination of both consumer and lender greed. Home buyers borrowed money to purchase houses they couldn’t afford, in the naive hope that their investment would never stop appreciating. The risks already inherent in such purchases were amplified by new mortgage products requiring little or no down payment and permitting housing equity to be withdrawn. Poor underwriting standards allowed mortgage lenders to encourage these practices, and fraudulent and unethical behavior was common place. As a result, losses in the subprime and related markets have been severe and will continue. This crisis is not over. Until U.S. real estate prices stop falling, the rate of foreclosures will climb unabated, and the catastrophic unwinding of this credit and real estate cycle will continue to devastate the U.S. economy. Furthermore, and importantly, the aftershocks will be felt globally.

Much has been publicized regarding the failure of the U.S. mortgage

Although this failure is fundamental to the current financial crisis, the ensuing study will focus on the mechanisms which allowed this asset class to infect all levels of the global economy. This paper aims to dissect the financial infrastructure that managed to flourish on these shaky foundations, will explain how a lack of or misguided regulation perpetuated the crisis, and finally will explore what can be done to reform what is an untenable economy driven by greed.

The first part of this paper examines the mechanisms of a secondary market, which thrived on subprime mortgage lending, and deconstructs the complex instruments which altered the global economy. Utilizing the example of an apple farm, this section explores the journey from securitization to CDO-squared examining both the mechanisms on which this industry was built and those which led to its subsequent failure. Part I concludes by examining the risks to the structured finance industry, and the the broader economy, which threaten to intensify the current financial crisis. Part II of this paper explores market, regulatory and legal reforms, focusing on firm management, financial market reform and international regulation. This part draws on the work of international governments and regulators in formulating innovative plans for reform. This paper will introduce novel and concrete measures required to reform the regulatory structure of the international credit market, however, it will ultimately come to the conclusion that a rethinking of the priorities and mentality of our financial system is necessary to prevent continuous cycle of bubble and burst. Financial markets have for too long been driven by greed and fear, and sweeping changes to the global financial system are necessary to reduce the deleterious effects of these all too human emotions.

A. BURSTING OF THE BUBBLE

In the third week of July 2007, a development materialized which foreshadowed the impending financial crisis. Over a billion dollars and two collateralized debt obligation (“CDO”) hedge funds belonging to one of America’s most revered financial institutions, evaporated. The first cracks

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5. Since the writing of this paper, the financial crisis has intensified drastically, most notably, this intensification is evidenced by the nationalization of Fannie Mae and Freddie Mac, the bankruptcy of Lehman Brothers Holdings Inc., the subsequent collapse of the entire investment banking industry and severe drops in stock markets worldwide. The events which have occurred since the completion of this paper have only reinforced its conclusions and therefore it has been left in its original form. However, there have been relevant updates regarding the state of the financial crisis included where necessary.

6. Bear Stearns High-Grade Structured Credit Strategies Master Fund Ltd. and Bear Stearns High-Grade Structured Credit Strategies Enhanced Leverage Master Fund Ltd. For further information,
in the international financial market emerged on August 9, 2007, when BNP Paribas SA, France’s largest bank, was forced to stop withdrawals from three investments funds because of their exposure to the U.S. subprime market. The funds were subsequently closed due to the banks’ inability to properly value the underlying U.S. assets. The international governmental community responded by flooding the market with liquidity, and central banks injected over $136-billion into the banking system during that week. On September 13, Britain witnessed a bank run on mortgage lender, Northern Rock, which forced the Bank of England to intervene and nationalize the institution. This was not to be the last bank run, nor would it be the last government bailout. One month later in mid-October, the Dow Jones Industrial Average reached an all-time high. This was a clear sign of the investment world’s detachment to reality as well as the peaking of the asset bubble that drove economic growth during the preceding period of unprecedented expansion. This stage of the global crisis culminated in the failure of Bear Stearns. The investment bank was bought by J.P. Morgan for a fraction of its value, and only once the U.S. Federal Reserve agreed to guarantee $29-billion dollars of Bear Stearns’ liabilities.

As of August 2008, over $500-billion in losses have been reported, primarily by major international banks. In addition to commercial banks, the largest exposures to the U.S. subprime market are held by insurance companies and hedge funds, and greater losses and write downs can be expected. Over one year after the initial crisis, there are no signs of it abating and several indications the worst may be ahead.

B. THE CREDIT REVOLUTION

We have entered a new economic era where financial innovation is replacing production as the engine of growth. In 2005, global financial assets (including banking assets, stock market capitalization, and bond market value) were calculated at US $165-trillion, a sum nearly four times please see Bill Rochelle, Bear Stearns, Bombay, Delphi, Calpine: Bankruptcy, BLOOMBERG, Sept. 21, 2007, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aTzL3qSVLm8.
7. On October 9, 2007, the Dow peaked at 14,164.
11. The solvency questions surrounding the Government Sponsored Entities, Fannie Mae and Freddie Mac, monoline insurers, and broker-dealers all suggest that the Bear Stearns fiasco may be a small part of a greater unwinding of the U.S. and global economy.
the global GDP. More staggering is the notional value of derivatives\textsuperscript{12} which equal US $454.4-trillion, more than ten times the global GDP and three times the size of all financial assets. Throughout this reshaping of the international financial system, authorities remained on the sidelines, trusting market forces and sophisticated institutions to maintain growth and stability. This turned out to be a grave error, which has put the international economy at risk.

The global credit explosion and subsequent crunch were the products of a new era of credit risk transfer ("CRT"). Institutions mistakenly believed that financial innovation had created a means to earn higher returns and fees while incurring less risk. This fantasy was perpetuated by the creation of a vast array of credit products, allowing for the tailoring of credit exposure and appetite. CRT became a catalyst for the explosion of structured finance ("SF"), a term which encompasses a wide range of products from simple securitizations to much more complex financial instruments.\textsuperscript{13} SF offered a number of benefits to both originators of credit receivables and investors. For originators, SF provides access to lower cost financing than what was available based on their own credit rating, and has the added bonus of detaching the risk of non-payment from the originator. For investors, SF allowed access to highly rated securities (triple-A\textsuperscript{14} rated investments in particular) which offered relatively higher yields than similarly rated products. It also offered investors the opportunity to specifically tailor their desired risk exposures.

SF developed through the use of off-balance sheet instruments which insulate investors from the threat of bankruptcy by an asset provider by legally transferring assets to a bankruptcy remote entity, most commonly a trust. This transfer reduced risk exposures and capital requirements of institutions selling investments,\textsuperscript{15} and also decreased disclosure and other regulatory obligations. SF allowed risk to be dispersed to a diverse set of investors and was credited with reducing the risk of financial shocks. However, this dispersion of risk encouraged negligent lending practices

\textsuperscript{12} This includes interest rates, currency, commodity prices, credit defaults and equity price swaps.


\textsuperscript{14} Please note that reference made to "triple-A" means the highest available rating by each rating agency for Moody's Aaa (long-term debt) P-1 (Short-term debt), S&P AAA/A-1+, Fitch AAA/F1.

and was not effective in transferring risk.\footnote{Large accumulations of transferred credit risk found its way back to the balance sheets of the largest and most reputable North American and European banks, creating unexpected write-downs and losses. In addition to contractual obligations to provide liquidity support not being properly accounted for, in many cases credit risks transferred by banks were re-assumed even though there was no obligation to do so in order to preserve reputations.}

As we shall see the assumed benefits of financial innovation have failed the test of the marketplace and caused a major systemic shock to the international financial market. In the following section we will examine the market dynamics which led to the spectacular rise and fall of the SF market.

II. FROM SUBPRIME TO CDO-SQUARED

In order to comprehend events which have transpired in the credit market, and predict those which will, it is necessary to understand how a subprime loan can morph into a fundamental threat to the global economy. The essential question which underlies the credit crisis is how loans to individuals with poor credit histories (which often originated without credit checks or down-payments) were transformed into investments that the market trusted as being as reliable as government securities. Securitization of U.S. subprime mortgages was widespread with almost three quarters of recent originations finding their way into SF products.\footnote{Basel Committee on Banking Supervision, Credit Risk Transfer—Developments from 2005 to 2007—Consultative Document, (April 2008), available at http://www.bis.org/publ/jointl8.htm (“BIS”).} Particularly hard to fathom is that these loans that were driving record levels of foreclosures were mostly part of investments receiving the highest credit rating available.\footnote{Eighty percent of subprime mortgages were funded by triple-A rated MBS senior tranches. See IMF, supra note 2, at 59.}

To illustrate how the subprime market was transmitted into a global economic liability and shed light on this complex industry we will go back to a simpler time and consider the operation of an apple farm. As we make the journey from innovation to absurdity, it will become clear the evolution of the financial system into a fee-based bubble was designed in a way which could not have been sustainable.

A. THE APPLE FARM—SECURITIZATION

After five years of perfect summers, the residents of Appleville had reason to be optimistic about their crops. Apple production had increased dramatically year after year and showed no signs of abating. Farmers were
becoming increasingly wealthy and everyone in town wanted in on the boom. Although some of the wiser elders argued that the sunshine could not last forever, their warnings went unheeded. Even the revered mayor of the town believed the good times would never end, and stated publicly that Appleville had entered a new era where the sun would never stop shining.

Apple production was big business and this attracted a host of interested parties, including representatives of IB Farms from the big city, who started making regular visits. What changed everything in Appleville was a seemingly innocuous idea: IB Farms offered money up front for the right to the apples from future crops. This seemed like a great idea for everyone involved. Farmers like Joe were able to buy more land and machinery without borrowing money at high rates from the local bank, and IB was able to secure apples at a good price without the business risks associated with running a smaller farm. With huge global apple demand, IB Farms were easily able to resell these apples to supermarkets worldwide. Any doubts about reliability which may have been held by purchasers could be quickly allayed by the team of local weathermen who were only to happy to evaluate crops and make assurances as to their reliability (for a small fee of course).

The transaction described above is the basis of an asset securitization with the apple trees representing the wealth-producing assets, and future apples produced by trees representing a source of wealth which can be sold. Asset securitization is achieved through the establishment of what are known as special purpose vehicles ("SPVs"), conduits and structured investment vehicles. The crucial characteristics of these entities are bankruptcy remoteness and off-balance sheet treatment. The former characteristic ensures that creditors of a company whose receivables are securitized cannot have recourse to those receivables in the case of bankruptcy. For this reason the credit rating of a business whose receivables are securitized does not determine its borrowing costs, allowing institutions to raise capital at lower rates than what would be required based on their own lower ratings. By selling the right to receive the proceeds of future production, businesses can have access to cash immediately and not shoulder the risk if these receivables do not materialize. In the above example, the economic damage of a crop failure would largely be borne by IB Farms or any supermarkets which agreed to take on such risk, depending on the agreement between the parties. Because this risk is transferred, a higher rate of return is paid to the

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19. In a securitization, the hypothetical apple trees would also be part of a collateral pool.
20. For the remainder of this paper these various off-balance sheet instruments will be referred to as SPVs.
purchaser of the receivables. Furthermore in the event of a default, investors can have recourse to the collateral held in the asset pool. In the case of a home, this would allow the SPV to sell the property and realize the proceeds for investors. For loan borrowers, securitization lowers borrowing costs and makes funds more accessible. As a result securitization was credited with allowing a broader base of society to have access to credit.\(^2\)

The means by which most securitized assets were sold were as short term notes in the asset-backed commercial paper market.\(^3\) The transfer of repayment risk to off-balance sheet entities, such as SPVs created a burgeoning shadow economy\(^4\) which was opaque to regulators and investors. These entities were the source of fee-income and also allowed financial institutions to expand loan portfolios through reduced capital charges.

**B. CROP RISKS—CREDIT PROTECTION**

As with all investments, the IB Farms investment in future apple production carried risks. The major concern was that of crop failure. A fact of life in the apple farming business was that there were always a few trees that did not make the production grade (not to mention the possibility of disease, pests and drought). However, Farmer Joe, stressed the fact that his trees had consistently grown bigger and healthier and rarely failed to deliver fruit. But IB Farms did not get where they were by taking unnecessary risks. In order to put up cash for future performance, they required protection against the risk of crop failure. So to insulate their investment Farmer Joe agreed to assume the loss of apples from the first trees that failed to produce fruit. For added comfort, he also agreed to reduce the expected crop haul to a lower rate than what he believed his trees would produce. With the buffer of the first trees and the probable inclusion of extra apples in the pool, IB Farms believed they had a win-win situation. They had increased their future apple supply without taking any material risks.

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22. From auspicious beginnings the SF industry grew to fund approximately 70 percent of U.S. consumer credit. Mason, supra note 13, at 123.

23. Asset-backed Commercial Paper (ABCP) is a security issued by a bank or other financial entity with a maturity that is typically between 1 and 180 days. The notes are backed by the physical assets that are used as collateral for loans to households or businesses. Because ABCP is backed by underlying assets, the owner may seize and sell the collateral in case of default. The asset-backed component of the commercial paper (CP) market has grown at a phenomenal clip in recent years, and at the start of August 2007, accounted for more than one-half of the $2.2 trillion of all CP outstanding. Greenlaw, supra note 10, at 6.

24. The “shadow banking system” is a popular name for SPVs and other off-balance sheet entities operated by banks.
The techniques described above are designed to reduce the risk of loss for IB Farms, they are known in the securitization industry as credit enhancements. Theoretically, any quality of receivables can be made into a reliable investment with the appropriate amount of credit enhancement. The most common means by which a pool of average receivables can earn the triple-A rating is through subordination and over collateralization.

1. Subordination

In our example Farmer Joe agreed to assume any loss from the first trees which failed to produce apples. In this way he has subordinated his interests to IB Farms and any other investors. In a typical securitization structure, investors agree to different degrees of risk exposure and commensurate return, by investing in various segments known as tranches. Those who purchase the most secure, senior positions, are said to be at the top of the waterfall structure and are first to receive principle and interest payments. Investors in the top tranches are insulated from loss by the tranches below them and therefore bear less risk than holding a pro-rata share of the underlying assets. In the above example Farmer Joe has agreed to assume the most risky first loss position, which is referred to as the equity tranche, and would be the first to loose apples if the crop did not perform up to expectations. This tranche offers the highest rate of return, but greatest risk of failure. Due to the lack of demand for these risky investments, the equity tranche is often held by the issuer. In addition to the equity and the most senior tranches, there are typically a number of other tranches offering different risk exposure and return. As mentioned, the equity tranche is the most junior tranche, subordinated by all others and typically constitutes approximately 2 percent of a securitization structure. The remaining tranches, which are subordinated by the senior notes and ahead of the equity tranche, are known as the mezzanine tranches, and formed the backbone of the CDO market. Because of market demand for highly rated investments, securitizations are usually designed such that a high percentage of the notes issued, approximately 80 percent are senior triple-A rated notes. Therefore in our example, investors in the most

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25. For example, an agreement could be made establishing an account sufficient to cover all of the expected receivables if they fail to materialize. If the collateral in such account is sound, then any losses incurred by the underlying assets would be compensated, and there would be no risk of loss to the investor.

26. In determining ratings, credit rating agencies ("CRAs") run stress tests to determine the level of credit enhancement necessary to achieve a given rating. This process takes the form of a negotiation between issuer and the CRA, in which the issuer can adjust the structure of the deal in order to achieve a desired rating. For a triple-A rating to be achieved, a deal must be structured so that the lower rated tranches incur all losses in a "worst case" scenario. For example, if a stress test determined that as a worst case scenario 40 percent of the assets in a collateral pool would default and only a 50 percent
highly rated segment of apple production would receive their apples unless over 20 percent of the crop production failed to materialize.

2. Over Collateralization

Over collateralization is the amount by which a loan pool exceeds the principle amount of securities issued. In the above example, Farmer Joe has agreed to include less apples in his production pool than he expects his trees to produce. Therefore, even if his expectations are not met, all the apples he has promised to deliver may still be accounted for.

C. LIQUIDITY GUARANTEES AND CREDIT INSURANCE

The success of Farmer Joe’s arrangement created a great deal of interest with other local farmers as well as the large farms from the city. Many similar deals were made, and before long almost every farmer in Appleville had exchanged the rights to future crop production for cash. IB Farms was unbelievably successful in selling future apples to supermarkets worldwide and as soon as a deal was struck with a local farmer these rights were sold almost immediately (with IB farms making a tidy profit, of course). In fact, with the development of this new apple industry, IB Farms rarely maintained an interest in the success of the underlying apple crops, save their commitments to buy any apples for which short term demand was not sufficient. Despite these supermarkets being the only parties who maintained an interest in successful crop production, they did nothing to monitor the state of the apple farms. Instead many relied on a new group of market participants who entered the fray, offering to insure against the risk of crop failure. In exchange for a regular fee these new insurers promised to compensate for any shortfalls in Apple production. Some townspeople queried where they would come up with these apples in the case of widespread crop failures, but the supermarkets did not seem to care and the business kept rolling as usual.

The forms of credit enhancement described above are liquidity

recovery rate on principal was achievable a 20 percent level of credit enhancement would be necessary to achieve a triple-A rating. If a rating agency determines that the triple-A rating is not available to the top tranche, an issuer can respond by adjusting the structure, shifting the required amount of principal from the senior tranche to a lower tranche. In the above example, if the structure included only 18 percent credit enhancement, then the issuer would have to shift 2 percent of the senior tranche to a lower tranche to receive a triple-A rating. For a more detailed analysis of securitization structures, please see Technical Committee of the International Organization of Securities Commissions, Report on the Subprime Crisis, 21 (May 2008), available at http://www.iosco.org/library/pubdocs/pdf/IOSCOPD273.pdf ("IOSCO").
support and bond insurance. The large farms agreement to buy apples in case of shortfall in short-term demand, represents the establishment of a liquidity agreement. The agreements provide a commitment on the part of intermediaries to advance funds if there are no buyers for the short term notes used to fund transactions. These agreements are common to securitizations and ensured that a structure would continue to operate even if notes could not be sold at the desired time. Committed liquidity facilities were designed as a temporary source of funding, however, during the credit crisis when the demand for commercial paper disappeared, banks were forced to reacquire exposure to these investments. Bank liquidity facilities are usually established with 364 day maturities to avoid capital charges and are renewed each year. Furthermore there is currently no capital charge for non-contractual liquidity support provided by banks to preserve reputation.

The new parties described above who entered the market, selling protection in the case of crop failure, represent bond insurers. Bond insurance is similar to typical insurance, although it is not regulated in the same way. These insurers, known as monolines, charged fees to guarantee they would make payments if an SPV failed. However, unlike insurance companies, which are required by law to keep capital reserves, monoline insurers did not maintain appropriate reserves for their SF exposures. Referring back to our example, when the time comes to make good on their commitment to make up for shortfalls in apple production, it is unlikely they would have sufficient fruit to do so. The monolines will be discussed in greater depth when we examine threats to the credit market.

1. Summary

We have now canvassed the basic mechanisms that securitization structures employ to increase the credit quality and rating of their underlying assets. The upside of these various forms of credit enhancements is that they transformed assets with lower ratings into highly rated investments. This allowed these vehicles access to a vast store of wealth; the institutional investor, allowing them to hold assets previously

27. Banks provide liquidity lines to ensure that note holders are repaid upon maturity if there are funding shortages due to lack of demand. These lines of funding were meant to be temporary sources of liquidity not means by which banks would replace investors.

28. An exception to this occurred in the Canadian ABCP paper market where unique general market disruption liquidity lines were not advanced, leading to a frozen market of $32 billion in commercial paper. Ongoing efforts are attempting to convert this short-term paper into medium or long-term notes.

29. IMF, supra note 2, at 71.

30. Brunnermeier, supra note 21, at 5.
prevented due to regulatory requirements. Institutional investors who were only permitted to invest in triple-A rated securities were able to invest in the senior tranches of securities backed by a collateral pool of lower rated securities and earn higher rates of return. This was in many ways the secret behind the SF boom.

D. DETERIORATION OF STANDARDS

Although supermarkets worldwide were buying up future apple production with reckless abandon their representatives never visited Appleville and showed no interest in the time honored techniques which had made the town so successful. With all this money flying around, farmers could pretty much guarantee they could sell the apples from any newly planted tree before it had even started to produce fruit. Because of perfect growing conditions and unconditional demand, some of the younger farmers started disregarding the age old methods that had made Appleville such a proud farming community. They started using less reliable seeds and some were cutting corners on irrigation and pesticides. However, this slip in quality did not bother apple purchasers, who either were not paying attention, or were content to rely on the new credit enhancement techniques which promised to secure their investments.

As with the apple farms, the high demand for assets used in SF led to a deterioration in lending standards and the explosion of the U.S. subprime mortgage market. A plethora of new exotic mortgages emerged which enabled borrowers to buy houses they could not afford. Incorporating the various forms of credit enhancements combined with the high rates of home price appreciation, gave investors confidence that individual underlying assets did not pose a significant danger to the structures. As it turned out, these individually risky assets actually formed the majority of a great deal of structures and they would not fare well in adverse conditions.

E. CREDIT RATING AGENCIES—THE WEATHERMEN

Although only briefly mentioned, the town’s weathermen, also the resident farmers almanac experts, played a key role in the apple boom. Because of their long history and strong reputation, it became standard practice to gain a weatherman’s stamp of approval before completing a sale. The detachment between the purchasers of apples and the farms led to a reliance on weathermen for assurances that the weather would remain good. With the advent of the new sales arrangements inspired by Farmer Joe, the weathermen entered new territory and began giving advice on
crop production. This function unexpectedly gave them a crucial role in the process and their unbridled optimism never failed to encourage the investments which had made the apple orchards so prosperous. Relying on methods which no one cared to investigate, weathermen would analyze a crop’s potential, as well as the various protections included in a sale and issue a report to the local market. Because of their reputations and the continuing success of the apple market, no one bothered to challenge their evaluations and buyers worldwide seemed happy to blindly rely on them.

In reality there are three main institutions, Moody’s, S&P, and Fitch, who are the weathermen in the SF market. Because of regulatory restrictions in the U.S., only select firms qualify as approved rating agencies. This designation allowed these firms to gain a de facto regulatory monopoly and capture a 95 percent market share of the global ratings business. Moody’s was one example of the success achieved by these favored CRAs. Over five years ending in 2007, it was the third most profitable company on the S&P 500 and due in large part to the growth of SF, Moody’s revenues tripled since 2000. As of 2006, SF accounted for 54 percent of their rating revenues, with the largest contributions coming from mortgage-backed securities and CDOs.

CRAs were integral to the rise and fall of the SF market. Traditionally banks play the role of credit monitor in the market because they have access to the debtor’s financial information. However, the transfer of risk through SF shifted this role to different market participants who were less acquainted with the underlying borrowers. CRAs provided a bridge between traditional lending, to the era of CRT, and because agencies had access to debtor information, they were relied upon (sometimes exclusively) to evaluate the risk of default. However, these ratings have turned out to be self-serving, allowing market participants (and the CRAs) to earn profit and fees, while offering very little informational value about risks. With the help of the CRAs, SF instruments were designed to attain triple-A ratings to meet institutional investor criteria and tranches were constructed to achieve this rating at the least expense. Ironically, it is the

31. These are designated as Nationally Recognized Statistical Rating Organizations ("NRSROs"). In addition to Moody’s Investors Services, S&P Standard & Poors and Fitch Ratings, they include AM Best, DBRS, Japan Credit Rating Agency, Ltd. and Rating and Investment Information Inc.
32. This market share is divided as follows: Moody’s 39 percent, S&P 40 percent, Fitch 16 percent. The Role of Credit Rating Agencies in the Structured Finance Market in Hearing Before the Subcommittee on Capital Markets, Insurance, and Government Sponsored Entities, House Committee on Financial Services, 110th Cong. 137 (Sept. 27, 2007), (statements of Julia Whitehead and Sean Mathis) ("Whitehead").
35. Id.
triple-A tranches which have the greatest exposure to subprime mortgages.\textsuperscript{36}

Two themes of the credit crisis which have emerged clearly are that CRAs were overwhelming failures when it came to evaluating SF risks and that the market relied far too much on these erroneous ratings. The role and failure of the CRAs in the SF market will be discussed in greater detail in the second part of this paper addressing market reform. However, their contribution to the credit crisis should not be underestimated and there is an urgent need to align incentives within the industry to ensure they are a positive force within the marketplace.

F. DERIVATIVES

What happened next in Appleville came as a shock to the town elders who could be forgiven for labeling the practice “nothing more than gambling on apples.” The same people offering money up front for future apple production began entering into agreements to protect against the risk of crop failures. It turned out that all types of businesses from the city were only too willing to agree to replace any shortfalls in apple production provided they were paid a regular fee. What began as an exercise in prudence quickly spiraled out of control as people from the city (many of whom had never seen an apple farm) started using these agreements to bet on crop production. As with gambling, one bet usually leads into another. This was no exception and before long more bets were being made than apples produced. What had started out as a way of protecting against risk quickly evolved into one big apple casino.

The apple casino represents the derivatives industry which allows market participants to speculate on the probability of default of corporations, securitization transactions, or any other entity which could default on obligations.\textsuperscript{37} Credit default swaps (“CDS”) are a derivative instrument which allows a party known as the “protection seller” to acquire the credit risk stemming from a debt, or class of debts, in exchange for an annual fee from the counter-party known as the “protection buyer.”\textsuperscript{38} The debtor on the referenced obligation is usually not party to the swap, and in

\begin{itemize}
\item[36.] It is estimated that approximately 80 percent of $1.4 trillion in subprime debt issued between 2005-2007 was transformed into triple-A rated securities. Greenlaw, supra note 10, at 17.
\item[37.] The 2003 International Swaps and Derivatives Association (“ISDA”) definitions for credit events include bankruptcy, restructuring, failure to pay, obligation acceleration, obligation default, and Repudiation or Moratorium (for sovereign) (2003), available at http://www.isda.org.
\item[38.] According to the U.S. Second Circuit Court, a CDS can be defined as follows: “Simply put, a credit default swap is a bilateral financial contract in which a protection buyer makes periodic payments to the protection seller, in return for a contingent payment if a predefined credit event occurs in the reference credit.” Eternity Global Master Fund Ltd. v. Morgan Guaranty Trust Co. of N.Y., 375 F.3d 168, 172 (2d Cir. 2004).
\end{itemize}
most cases may be entirely unaware of the transaction. The CDS industry has played a large role in SF offering a means of hedging or gaining risk exposure. They have also been incorporated into more complex SF instruments like CDOs.

The once legendary former Chairman of the Federal Reserve, Alan Greenspan, espoused the virtues of credit derivatives, believing them essential to the stability of the U.S. and global economy. Greenspan went on to assert that the systemic benefits of the market were so important that any regulation which might hinder market growth should be avoided. This unregulated climate validated by Greenspan created perhaps the single most prolific financial market growth in history. The end of 2007 saw the notional amount of outstanding derivatives contracts reach $454.4-trillion, with CDSs accounting for $62.2-trillion. With regards to CDSs, the outstanding contracts represent many multiples of the underlying corporate bond market.

CDSs are bilateral contracts traded over the counter and therefore not subject to securities regulation. As a result the growth of the industry has suffered from a serious lack of transparency and presents a number of distinct risks to the international economy. According to the Bank for International Settlements ("BIS"):

The effects of a severe market disruption, or the failure of a major participant in the CDS or CDO markets, could now be greater, and that there is a greater likelihood of transmission to the credit market in general, or even more broadly to the real economy.

There is also concern that regulatory arbitrages encourage risk transfer to market participants subject to lower standards and regulation. The recent explosion of hedge fund growth is connected to the CRT market with many


40. An example of the use of CDS to insulate lenders from risk can be taken from the Enron saga. It is estimated that the banks financing Enron entered into over 800 swaps worth $8 billion to offset their losses on the company's collapse. See Frank Partnoy & David A. Skeel Jr., Nineteenth Annual Corporate Law Symposium: Debt as a Lever of Control: The Promise and Perils of Credit Derivatives, 75 U. CHI. L. REV. 1019, 7 ("Partnoy").


42. These statistics were published by the International Swaps and Derivatives Association and are available at http://www.isda.org/press/press04l608market.html.

43. In 2007 CDS contracts totalled $45 trillion while the value of the corporate bond market on which these contracts were based only constituted $5 trillion. Brunnermeier, supra note 21, at 29.

44. BIS, supra note 17, at 26.

45. Id.
specialist funds focusing on these activities. It is estimated that they represent approximately half of US trading volume in structured credit markets. Hedge funds can sell protection without including the liability on their balance sheets and the role of leverage has further magnified risks, with funds carrying leverage ratios approximately triple that of commercial banks. This has raised the specter of triggering events, causing serious liquidity problems.

The derivatives market, specifically CDSs, limit downside risk and encourage banks to increase lending but reduces incentives to do so responsibly. Creditors who have default protection may also lose incentive to monitor debtors. Furthermore, there are cases where CRT shifts the monitoring function to parties much less suited to the task. In the conclusion of Part I potential risks posed by the derivatives market will be more fully explored; in Part II industry reforms will be discussed.

G. CDOs

Just when the townspeople thought things could not get any more bizarre, they did. With so much demand for future apple production, more new products began to emerge. As discussed, investors were able to choose the level of risk they were willing to accept and invest in loss positions accordingly. In this way structures composed of tranches were designed for the future receipt of apples. Because supermarkets were unwilling to risk having empty shelves, there was less demand for apple tranches more likely to fail, leaving a glut of these positions on the market. Well, the finance gurus from the city had an answer to this too. Their plan was to buy the lower rated apple tranches which were not selling, re-wrap them in a new package, add some protections against failure and go to market. Although the weatherman failed to appreciate what these new products were, a hefty fee convinced them to give it their stamp of approval and, accordingly, supermarkets actually bought these mutated investments!


48. Lubben, supra note 39, at 405.

49. According to calculations of David Greenlaw, hedge funds and brokers carry average leverage ratios of 31.6:1. Commercial bank ratios are calculated to be 9.8:1. These calculation are based on Flow of Funds, FDIC Statistics on Banking, and balance sheet data for Fannie Mae, Freddie Mac, and broker-dealers under Goldman Sachs equity analysts' coverage. Greenlaw, supra note 10, at 35.
At this point our analogy becomes less than realistic as we enter the realm of the CDO. In their simplest form, CDOs are re-securitizations typically focused on the mezzanine tranches of established structures. Investor preference for highly rated, higher yielding investments led to a situation of abundant demand for triple-A rated tranches but a lack of demand for lower rated tranches of securitizations. Mezzanine tranches are risky and less desirable for institutional investors and in 2003, U.S. institutional investors stopped buying them. To keep the securitization industry running it was necessary to transform these tranches into something which could be sold. This led to the creation of CDOs comprised of the riskier tranches of securitized assets. Through the alchemy of SF this re-bundling still allowed the top 80 percent of the capital structure to be rated triple-A. This magical transformation was achieved in spite of the fact that the underlying securities belonged largely to the lowest rated tranches of the original subprime securitizations. By the end of 2003, asset-backed security "ABS" CDOs were comprised almost entirely of subprime debt. Nonetheless, these lower rated tranches, constructed with highly risky assets were re-securitized into triple-A rated CDOs. This process was repeated with the lower rated tranches of CDOs being recycled into what are known as CDOs-squared, which were created to resecuritize MBS and CDO mezzanine tranches that were lacking in investor demand. Even these highly risky instruments managed to achieve

50. As discussed, these are the tranches which lie between the senior and equity tranches and usually constitute approximately 18 percent of a securitization structure. They are typically rated AA+ to BBB.  
52. Testifying before the U.S. House of Representatives, Julia Whitehead explained this phenomenon as follows:  
A variant on this tranching proved to be a major catalyst of the growth of the structured finance market, and that was the use of CDOs specifically used to hold lower rated or unrated tranches. Once the NRSROs attached investment grade ratings to the bulk of a structured finance vehicle’s securities, those issues were relatively easy to place, particularly as they tended to have a higher yield than comparable corporate bonds. The lower grade or mezzanine debt were more problematic. In a stroke of financial engineering genius, structurers devised the concept of creating CDOs to hold all those issues that couldn’t be sold otherwise. Through model magic, a bunch of low-rated securities could be bound together with a little credit enhancement and, again, mostly funded with triple-A debt. A problem with placing the equity of that CDO? No problem. That’s what CDOs-squared are for.  
Whitehead, supra note 32, at 139.  
54. ABS CDOs are collateralised debt obligations backed by pools of asset-backed securities including residential and commercial mortgage-backed securities (RMBS and CMBS) and other CDOs. Most ABS CDOs are classified as cash flow or hybrid structures. Hybrid CDOs have exposure to fixed income securities through both cash investments and, synthetically, through credit default swaps. BIS, supra note 17, at 46.  
55. Id. at 69.
triple-A ratings for approximately 85 percent of their CDO tranches. With this additional repackaging came a great deal of complexity, however, lack of understanding by investors did not cause them to shy away from these investments. The CDO market grew from approximately $150-billion in 2000 to $1.2-trillion in 2007. Investor demand for high yielding CDOs was so strong that dealers managed to transfer more subprime risk than was originated in 2005-06. In January 2006 the ABX index was launched, this references a portfolio of CDS on twenty large subprime RMBS transactions. The index was an immediate success, attracting investors looking for exposure to the subprime market and short-sellers betting on its demise. These investments became known as synthetic CDOs, and found their way into complex financial instruments worldwide.

What is now common knowledge is that the ratings assigned to CDOs failed to take into account all the risks involved. The methodologies relied on by the CRAs to rate CDOs resulted in these tranches being valued more than the cost of the underlying assets. The price discrepancy was the source of billions in fees earned for packaging, structuring and rating these instruments. Although these incorrect ratings allowed institutional investors to diversify investments and gain higher yields, it was not the assets which provided the value. In a sense, the CRAs earned fees by issuing licenses, allowing regulated investors to purchase investments which violated their legal obligations. This gaming of credit rating requirements demonstrates a malfunctioning of the financial system where the true value of an investment was secondary to the triple-A rating. In fact, all three major rating agencies have downgraded a significant number of triple-A CDOs to CCC or lower. This downgrading phenomenon is evidence of a staggering error considering that since 1970, Moody’s had never downgraded a triple-A corporate bond to lower than a single-A.

The rise of the CDO resulted in high risk concentrations and an eventual collapse of the market. There is still a great deal of systemic risk associated with CDOs, including the fear that a default on one or more highly referenced bonds could generate a chain reaction.

56. IMF, supra note 2, at 59.
57. Id. at 56.
58. BIS, supra note 17, at 7.
59. A more realistic valuation of triple-A rated RMBS can be gleaned from credit spreads which have priced them at similar levels to BBB-rated corporate bonds. Triple-A CDOs have suffered a far worse fate and their market has almost entirely disappeared.
60. In October and early November 2007, Moody’s downgraded 198 triple-A-rated ABS CDOs, 30 of which were downgrade 10 or more notches to below investment grade. Deutsche Bank Global Securitization Research, Securitization Monthly, (December 2007), at 3.
61. BIS, supra note 17, at 14.
H. AND THEN THE RAINS CAME

Just as it appeared nothing could go wrong in Appleville, things did. The farmers of Appleville who had for so long prided themselves on integrity had let down their guard, allowing their standards to slip. They had managed to get away with this because the weather had been, unusually good. However, by the time the apple trade had become well established things took a severe turn for the worse. There was no rain in the spring, no sun in the summer and this, combined with poor growing and maintenance standards, decimated the apple farms. Needless to say, with all the money riding on the success of the crop, the damage spread far and wide. The casino, which had once been a hub of excitement, closed its doors. Trees died, people lost their farms and the shelves of supermarkets were empty of the prized fruit on which this whole scheme was based.

This is what happened in the U.S., on a much larger scale, although it was not rain but rather housing prices which fell, unraveling the entire financial system. By April 2008, the innovative new financial system was on the verge of collapse. Bear Stearns, one of the twelve largest global CRT counterparties, faced a crisis of confidence and imminent failure. It was only through extraordinary government intervention that a systemic financial crisis was averted (or postponed). A great deal of damage was done to all levels of the economy and things will deteriorate further. The CDO market, symbol of the height of the SF madness has been decimated. As of October 2007, 186 CDOs with $202-billion in assets had failed, forty times more than all failures in the past four years combined. Throughout 2007, Moody’s downgraded 31 percent of all ABS CDO it had rated. According to reports, 94 percent of mezzanine ABS CDOs issued in 2006-7 will see their BBB tranche default, as will 45 percent of their junior triple-A tranche. Gross losses on ABS CDOs were larger than actual losses on the subprime securities they held because these instruments used derivatives to take on more lower grade subprime risk than was actually issued.

The unwinding of the SF market caused massive economic losses and created systemic threats to the global economy. In the final section of Part I, we explore some of these threats. The second part of this paper focuses

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63. By November 25, 2007, about 9 percent of 2006-vintage and 14 percent of 2007-vintage, S&P-rated, investment-grade CDO tranches had been downgraded, including about 5 percent of 2006-vintage and 6 percent of 2007-vintage tranches initially rated triple-A. Similar rating actions have been taken by Moody’s and Fitch. BIS, supra note 17, at 47.
66. BIS, supra note 16, at 11.
on reforms for the global financial system. Without meaningful and pervasive change, the decimation of the SF industry may be just another in a long series of booms and busts.

I. WHERE THINGS WENT WRONG

The failures of the U.S. subprime market and the originate-to-distribute model have been well-publicized. However, how this failure was transmitted to a far broader market is more difficult to explain. In the previous section, the mechanics of risk dispersion and the financial instruments which incurred the bulk of the losses were examined through the rise and fall of an innovative new apple farm. A number of more general themes also contributed to the credit crisis.

First and foremost, the increased complexity introduced to the market, combined with a decided lack of transparency, caused a high proportion of skilled investors to make poor decisions. Financial institutions overestimated their ability to disseminate values and comprehend risk. This same lack of transparency and true understanding of the market led to the knee-jerk reaction whereby investors fled and refused to invest when the credit crisis struck. There was also a pervasive industry breakdown in lending practices. By aggressively pursuing fees, market participants from investment banks to rating agencies, were able to convert future income into fees without maintaining risk exposure, leading to a failure in underwriting standards.

III. FUTURE RISKS

After the bailout of Bear Stearns, seven successive U.S. interest rate cuts, the opening of the discount window to non-banks and acceptance of non-conventional assets as collateral, and raising the lending limits of the government sponsored mortgage industry giants, Fannie Mae and Freddie Mac (the “GSEs”), a sense of cautious optimism returned to the market in spring 2008. Although Bear Stearns’ rescue, along with these other preemptive moves come at a steep cost to the taxpayer, there was a collective sense that the risk of a major crisis had been averted. However, there is a tremendous moral hazard associated with bailing out institutions who have profited from excessive risk taking and as will be discussed in the second part of this paper, without meaningful legal reforms the current cycle of financial crises will continue and become more devastating. Reforms must be forward looking as the nature of the next crisis will almost certainly be different than what we are facing now.
Unfortunately, we are not out of the woods yet. New cracks have emerged in the U.S. economy indicating that the GSEs, as well as many local and regional banks, will require government intervention. The U.S. housing market, which served as the catalyst to the new era of finance, remains in a dire state. As defaults in the housing markets continue, so too will defaults in the markets which they derive from. Banks that are reeling from huge losses, with billions more expected, will have to downsize their operations and rethink their CRT business models. Along with the massive losses incurred by financial institutions they have also lost one of their largest sources of revenue. The securitization economy which included everything from subprime to CDOs, financial guarantors to ratings income, will continue to suffer. Furthermore, there remain a number of legal and economic risks to the financial system which could indicate that the credit crisis was the beginning of a greater collapse.

A. THE REAL ESTATE MARKET

The U.S. housing market enjoyed an explosive and sustained period of price appreciation which did not reflect market fundamentals. The housing correction underway is severe, nationwide, and not restricted to the subprime market. House prices are predicted to decline 18-20 percent from their peak levels. At the end of 2006, during the peak of the housing boom, approximately 7 percent of U.S. mortgage holders had negative equity. As U.S. house prices continue to collapse this statistic could easily reach 20 percent or higher. Subprime and Alt-A mortgages constituted over 30 percent of all mortgages originated in 2005 and 2006.


69. As of May 2008, estimates of current declines are in the range of 10 percent. This means there is a long way to go and that mortgage defaults will increase resulting in further damage to the structured finance market. Map of Misery, THE ECONOMIST, at 81-82, (May 11, 2008), available at http://www.economist.com/finance/displaystory.cfm?story_id=11333030.

70. Greenlaw, supra note 10, at 14 (citing statistics from First American CoreLogic).

71. Id. It is estimated that a 15 percent drop in national house prices would result in 21 percent of U.S. home owners being underwater on their mortgage. This would have a tremendous economic impact, resulting in approximately 10.5 million households and $2.6 trillion in mortgage put into a situation where housing debt is greater than property value. Id.
and by the end of 2006 represented approximately 15 percent of all residential mortgages.\textsuperscript{72} The vast majority of these are adjustable rate mortgages and this raises the specter of increasing rates of default as mortgage rates reset higher and house prices fall further.\textsuperscript{73} Financial predictions from the U.S. Monetary Policy Forum suggest foreclosure rates of 13.5 percent on current outstanding mortgages in the coming years, which represents $1.5-trillion in foreclosure starts.\textsuperscript{74} Finally, the dire financial state of the two GSEs, Fannie Mae and Freddie Mac, responsible for the mortgage market, will require government intervention, at a tremendous cost to tax payers. The U.S. subprime crisis precipitated the global economic crisis and this market will continue to drag down the economy and the SF instruments which they were created from.

B. COUNTERPARTY RISK AND DERIVATIVES

Perhaps the greatest systemic threat facing the global economy is counterparty risk. As discussed, the derivatives market has grown to astonishing heights without regulation or any true understanding of the implications of this new economic phenomena. The interconnectedness and massive scale of the risk transfer market has created a situation where the failure of a major counterparty could have a domino effect.\textsuperscript{75} Counterparty risk is most acute in the CDS market and with the deeply troubled monoline insurers. However, because of the vast scale of the derivatives market, it also poses a grave risk to the global economy as a whole.

Underwriters of SF credit risk, known as monoline insurers, continue

\textsuperscript{72} Id. at 15. Alt-A mortgages are loans that can be underwritten with lower or alternative documentation than a full documentation mortgage loan but may also include other alternative product features.

\textsuperscript{73} "By the end of 2006, subprime mortgages accounted for roughly 15 percent or $1.5 trillion of the US residential mortgages, of which US $600 billion were originated in 2006. About 90 percent of these were ARMs and borrowers were therefore hurt badly when interest rates began to rise in 2006." Andrew Sheng, Chief Advisor, China Banking Regulatory Commission, \textit{Where to Go from Here: Policy Panel}, Tenth Annual International Banking Conference, Federal Reserve Bank of Chicago Sep. 27-28, 2007, at 5, RGENMONITOR, http://www.rgemonitor.com/redir.php?sid=1&tgid=0&cid=218272.

\textsuperscript{74} Greenlaw, supra note 10, at 22.

\textsuperscript{75} On September 16, 2008, in a striking turn of events, American International Group Inc. ("AIG"), the world's largest insurer, received a USD $85 billion bailout package from the U.S. Federal Reserve. This bailout was undertaken to prevent a systemic collapse of the global financial system as AIG is one of the largest global CRT counterparties. The Fed was forced to extend an additional USD $37.8 billion on October 8, 2008, when it became clear that the original package, though huge, was not adequate to satisfy AIG's counterparty obligations. Craig Torres, \textit{Fed Commercial Paper Holdings Rose to $244.6 Billion}, BLOOMBERG, Nov. 6, 2008, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aZqyz20_PZETE. This unprecedented government bailout demonstrates the U.S. government's recognition of the devastating systemic implications of a major counterparty failure.
to fight for their lives. These by-products of the credit revolution insure $2.5-trillion of risk including approximately $800-billion in SF Obligations.

The counterparty to these trades are large banks, securities firms and their off-balance sheet vehicles. Triple-A ratings are essential to the business model of financial guarantors and although it was widely recognized that these companies bore no hallmarks of this Rating, the CRAs maintained them until late June 2008. The downgrades that ensued may destroy monolines function in the SF market as their primary role was to provide that extra nudge, and without this status they cannot insure triple-A bonds. The monoline insurers are an excellent example of the irrational exuberance that accompanied the credit boom. These companies excelled in the business of insuring municipal bonds until they got mixed up in guaranteeing CDOs through writing protection swaps. They also signify the willful blindness of the industry. CRAs and regulators alike continued to indulge their triple-A rating well after it became apparent they were undeserved. The failure of these firms poses a significant threat to the financial counterparties who relied on them for insurance and the CRT market in general.

A second major source of counterparty risk is derived from the CDS market. This market is believed to be a zero sum game with losses incurred by protection sellers matching gains by protection buyers. However, there is a tremendous concentration of risk within the CDS market, with the ten largest participants accounting for nearly 90 percent of $45-trillion outstanding notional CDS value in 2007. This concentration could lead to a meltdown of the entire market if a major protection seller was unable to meet its obligations. In the following section the effects of increasing corporate defaults on the CDS market will be discussed.

An idiosyncratic concern arising from the CDS market has been the assignment of swap positions, without notification to the counterparty. It is well known that many CDSs were assigned to new counterparties without consent. As one commentator describes; “It was a bit like lending money to a friend who is really rich who in turn lends it to her deadbeat brother and fails to mention it.” Recent examples, such as the legal battle

76. These include AMBAC, MBIA, FGIC and AIG.
77. IMF, supra note 2, at 78. “CRT makes up 20-30 percent of the average monoline’s portfolio.” BIS, supra note 17, at 9. This figure is up from approximately 10 percent in 2005. Id.
79. Although CDSs are treated as insurance in the restructuring of the Delphi Corporation, protection buyers received 36.62 percent per contract not 100 percent. RGE, supra note 46.
80. IMF, supra note 2, at 17.
82. Id.
between a major bank and a hedge fund group, highlight the dangers of trading in the unregulated world of derivatives. The lawsuit centers on a CDS which referenced one of the bank’s subprime CDOs. The hedge fund was contracted to act as a protection seller for the swap which insured $1.31-billion even though the firm had only $200-million in capital. After a series of margin calls the Bank claimed that the notes had defaulted and commenced litigation to recover their value.\(^3\) A series of similar cases have emerged with the common theme of vastly undercapitalized sellers of credit protection. Although the master International Swaps and Derivatives Association (“ISDA”) agreement requires counterparty consent, dealers frequently accepted novations without evidence of such consent.\(^4\) The ISDA Novation Protocol released in November 2005 has alleviated some of these concerns by requiring that swap parties be informed on a timely basis when a party wishes to transfer an existing trade to a new counterparty.\(^5\) Under the protocol the party initiating novation must provide written confirmation from the original counterparty or it will be deemed to have entered into a new contract and the original contract will also stand.\(^6\) However, there remain trillions in outstanding contracts whose reliability are far from certain. The ability of smaller firms to make good on their protection obligations reduces the value of hedges and will likely result in a large number of failed hedge funds.

In the same way that the booming U.S. housing market allowed the SF market to grow untested, the strong economic growth prior to the credit crisis allowed the derivatives industry to grow exponentially without any major stresses. However, as the global economy begins its decent into recession we will have a chance to witness the durability of this new era of CRT.

\(^3\) The dispute is between the Swiss investment bank UBS, and Paramax Capital, a group of hedge funds. Gretchen Morgenson, First Comes the Swap. Then It’s the Knives., N.Y. TIMES, at C1, C7 (June 1, 2008), available at http://www.nytimes.com/2008/06/01/business/01gret.html. A similar example is the Structured Credit Company, a Dublin based venture, which sold CDS protection on $5 billion of credit risk to major financial institutions although the company had only $200-million in capital. When the smoke cleared Structured Credit Companies trading partners received only five cents on the dollar. Robert Cookson et al., Painful Lessons to Be Learnt for CDSs, FINANCIAL TIMES (London Edition), at 39, (Jan. 11, 2008), available at http://www.ft.com/cms/s/0/1c74756e-bfb6-11dc-8052-0000779fd2ac.html.

\(^4\) Patrick M. Parkinson, Deputy Director, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Over-the-Counter Derivatives, Testimony Before the Subcommittee on Securities, Insurance and Investment, Committee on Banking, Housing and Urban Affairs, United States Senate (July 9, 2008), available at http://www.federalreserve.gov/newsevents/testimony/parkinson20080709a.htm. (“Parkinson”).

\(^5\) BIS, supra note 17, at 22.

\(^6\) Parkinson, supra note 84.
C. CORPORATE DEFAULTS

Going forward, a major source of concern will be the ability of the financial system to absorb corporate defaults. Default rates maintained historically low levels throughout the real estate bubble due to strong economic growth and rising asset prices. However, this benign economic climate is gone and U.S. corporate defaults on high yield debt in January 2008 alone, roughly equaled defaults for all of 2007, with leveraged loan defaults doubling the 2007 rate.87 Just as lending standards slipped in the U.S. housing market, there is evidence of less stringent lending requirements (known as covenant lite loans) in the corporate realm. These loans which were especially prevalent in the leveraged buyout market, often did not require borrowers to meet quarterly maintenance criteria.88 The increase in covenant lite loans has likely allowed some companies to prolong their existence, however, it is feared that this will significantly impact recovery levels on insolvent companies. It has also been argued that covenant lite loans may increase the risk of eventual default because they allow companies to operate with less discipline.89

The increase in corporate defaults will be an important test of the burgeoning CDS market. Historical rates of default on investment grade and junk bonds is 1.25 percent and at this level $500-billion of CDS will be triggered leading to possible losses of up to $250-billion after recovery for sellers of credit protection.90 According to IMF analysis, high yield corporate default rates could climb to the 9-12 percent range in 2008.91 At these rates any cracks in the global derivatives market will become crevasses and it is highly unlikely that all of the major counterparties would remain standing. The risk of a concurrent default of a reference entity corporation, and the seller of protection, could cause major upheavals in the market. Corporations can have multiples of their outstanding debt wagered in the CDS market and a large corporate default could threaten derivative counterparties. If a corporation and seller of protection against that corporation were to default simultaneously the underlying premise of risk transfer through CDS is destroyed and instead becomes an exercise in risk magnification.92

87. IMF, supra note 2, at 9.
88. Id., at 15.
89. IMF, supra note 2, at 10.
90. RGE, supra note 46, citing Bill Gross of PIMCO.
91. IMF, supra note 2, at 16.
92. According to bankruptcy expert Stephen Lubben:

In a credit default swap transaction, the protection buyer gives up the risk of default by the debtor and takes on the risk of a concurrent default by both the protection seller and the underlying debtor. While risk of mutual default is likely remote, especially given the strong credit quality of many swap dealers, it is not unconceivable that a
D. Restructuring Risks

As we enter a recessionary period, the ability of the market to preserve the value of troubled firms through restructurings is essential to the economy. However, the explosion of CDS has changed the dynamics of such arrangements. A recent report on derivatives, describes the situation as follows:

One of the great strengths of the financial system has been its capacity to organize and execute restructurings for troubled but viable countries and companies. Such restructurings typically occurred through groups of primary creditors having a major financial interest in the outcome. To the extent such primary creditors now use the credit default swap market to dispose of their credit exposure, restructuring in the future may be much more difficult.93

A creditor of a company teetering on bankruptcy may behave differently if they have purchased credit protection through a CDS. In fact, such a party may have an incentive to push the company into bankruptcy to trigger the swap. If a company defaults the swap holder may be entitled to a full payment even if it recovers one hundred cents on the dollar. Therefore, CDS may increase the risk of involuntary bankruptcy filings as maturity dates approach on outstanding swaps.94 This disincentive to keep a troubled company operating could undermine one of the fundamental motivations for successful restructurings. A number of CRT investors, particularly synthetic CDO managers, interviewed by the Bank For International Settlements ("BIS") have stated that they have "no expertise and no intention of participating in any restructurings."95 The growth of CRT makes it very difficult for creditor committees to determine the true economic exposure of various stakeholders. It will be much more difficult to predict the behaviour of competing creditors without requiring that petitioners disclose their swap positions.96 The performance and effects of CDS in a recessionary period are yet to be truly tested and restructurings are another area which may be adversely affected.97

94. Lubben, supra note 39, at 11.
95. BIS, supra note 17, at 20.
96. Lubben, supra note 39, at 11.
97. SF restructurings are further complicated by the fact that principal and interest may be separately allocated with different tranches having different priorities regarding to losses and

major corporate default could cause one or two financial institutions severe financial distress.
Lubben, supra note 39, at 5.
E. LITIGATION

Misaligned incentives and a lack of deterrence in the finance industry led to the excessive risk-taking and the failure of the SF market. A wave of litigation promises to swell from the financial crisis which likely will not subside for many years. The key players in the proliferation of SF have been traditionally well insulated from legal sanctions. However, the rulings which emerge may change the landscape and significantly raise deterrence levels. There is a growing political tide against the wrongdoings of the financial crisis. As the U.S. housing market continues to worsen, leaving people without homes, and recession sets in leaving people without jobs, there will be a backlash against the industry which created the crisis and particularly the people who profited from it. Some U.S. and foreign politicians have gone so far as to equate the investment industry to organized criminals for their role in the crisis. On June 19, 2008, the FBI arrested two former Bear Stearns hedge fund managers for their roles in the CDO market. These arrests came on the same day as FBI Director Robert Mueller announced a national crackdown known as Operation Malicious Mortgage which targeted mortgage fraud and has already led to over 400 arrests.98

Civil law suits have been initiated against a wide range of players in the SF industry. Not surprisingly subprime mortgage lenders were the first targets of litigation, however, most of these lenders have shut down or filed for bankruptcy and are effectively judgment proof.100 As of July 2008, at least 132 subprime and SF related class action lawsuits have been initiated in the U.S. Most of the major securities issuers are the subject of legal claims which include basic securitization deals but are largely focused on CDOs and derivative related products. The most interesting and potentially significant issue raised by litigation is whether members of the finance industry should be held liable for their risk-taking and subsequent massive losses. On the one hand, it is all but certain that some members of the industry were aware of the dangers posed by the subprime market, and the proliferation of SF, and should have done more to protect investors. The explosion of the subprime market and the highly risky mortgages that
fuelled this growth was widely publicized. Similarly, the dangers of SF and derivatives have also been thoroughly disseminated. For example, Warren Buffet, perhaps the most well known and respected investor in the world, stated in his 2002 Berkshire Shareholder’s letter: “The derivatives genie is now well out of the bottle, and these instruments will almost certainly multiply in variety and number until some event makes their toxicity clear” Speaking on behalf of the company he goes on to state: “In our view, however, derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal.”

The risks associated with SF and subprime were apparent well before the credit crises and it is difficult to understand why the industry failed to take action to mitigate these risks. While it is tempting to accuse the sophisticated financial institutions who spawned these industries of robbing the public, it is these same institutions which have suffered the greatest share of losses. It is difficult to reconcile the failures of these institutions with a sinister scheme to defraud investors. However, it is also clear that far too many members of the industry behaved extremely recklessly and greater mechanisms of deterrence could have prevented at least some of the pain being felt now.

The CRAs role in the credit crisis will be discussed in greater detail in Part II, but a rethinking of their role in the market is also necessary. These institutions are paid to detect and publicize credit risk. Although they are highly compensated and benefit from a number of regulatory protections they have been, to this point, protected by legal immunity even when their failures are negligent. In the U.S., ratings are equated to opinions, and are protected as free speech under the constitution, and although, they were relied upon as proxy regulators they were not subject to professional liability for their ratings. To this day CRAs have continued to apply unrealistic and negligent ratings; it is only a matter of time before they are forced to take responsibility for their actions.

The underlying issue which must be dealt with by the courts is whether the various players in the SF market were truly ignorant of the imminent demise of the industry. Even if it is found that they were, greater deterrence to negligent behavior is clearly required and may be found in more harsh treatment by the legal system. The cost of litigation and successful legal actions will further deplete the capital reserves of many companies hit hard by the crises.

F. CONCLUSION

In Part I we have examined the mechanisms and failures of the SF industry and the risks that remain to the economy. Just as our hypothetical apple industry collapsed under its own complexity, lack of regulation combined with rapid financial innovation in the SF industry created a fundamentally untenable market which was destined to fail. The second part of this paper will explore what can be done to reform the finance industry and prevent the irresponsible behavior which led to the current global financial crisis.

PART II: REFORM

I. INTRODUCTION

The combination of unregulated financial innovation and human greed has and will continue to have devastating effects on the international economy. With tremendous economic expansion due to a historic asset bubble and a limitless appetite for consumer goods on the part of the U.S. population—regulators allowed the financial market to operate unfettered, earning financial institutions immense profit. When the financial crisis struck, the same governments that sat idly while firms profited from financial manipulation, came to the rescue of these irresponsible actors. Government bailouts stand in stark opposition to the ideals of the market system. The market rewards successful firms and punishes failed ones. This is the survival of the fittest capitalist mentality which apparently drives our competitive spirit to productive heights. Allowing major institutions to profit from irresponsible financial dealings and then intervening when they get in over their heads makes it too easy for these firms to avoid the consequences of their actions. Morally, this action is reprehensible because it bails out the same people responsible for this crisis, inevitably with tax payer money, and has the effect of privatizing profit and socializing loss. It is clear that our financial system has gone astray and that significant market and regulatory responses are necessary to remedy the situation to ensure it does not happen again. Reform must be meaningful and pervasive. If regulators fail in their attempts to keep pace with the rapidly evolving financial market, the benefits of financial innovation will not justify the costs.

The attention of the international community has been focused upon the causes and progression of the subprime crisis. A number of reports
have recently been published at the international supervisory level by the Financial Stability Forum ("FSF"), International Organization of Securities Commissions ("IOSCO") and Basel Committee; at the private industry level by the International Institute of Finance ("IIF") and various financial institutions; and at the governmental level by the U.S. and UK, among others. The second part of this paper will draw on these reports and a range of other commentary in an attempt to target those areas in most dire need of reform, and propose remedies which could shift the global financial system to a more sustainable track.

Meaningful co-ordination at the international level remains at an embryonic stage; however, the current crisis has demonstrated its necessity and may serve as the catalyst for greater development. In addition to developing a stronger regulatory framework, a paradigm shift within the financial industry must also occur. The capitalist mantra of "greed is good" has proven to be economically unsustainable, and it is only through a rethinking of the operation of financial markets that a viable global economy can be created.

The culmination of rapid financial innovation and weak regulation has been a crisis which threatens not only Wall Street but small towns throughout the U.S. and the world. Furthermore, the bailouts that have occurred and likely will continue to occur in order to prevent a financial meltdown will have deep societal costs. Meaningful reform is necessary on a wide range of fronts and proposals abound. This section will examine three interrelated areas in need of reform; the management of financial institutions; the regulation of financial markets; and rating agency reform. The international and borderless nature of financial markets has been clearly demonstrated by the credit crisis and it is essential that the subsequent internationalization of its regulation be achieved. The concluding section will examine international initiatives including Basel II, the feasibility of an international lender of last resort, and the development

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102. The Financial Stability Forum includes: The Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO), the Committee on the Global Financial System (CGFS), the Committee on Payment and Settlement Systems (CPSS), the Joint Forum, the International Accounting Standards Board (IASB), the BIS, the ECB and the IMF are the international organisations that are members of the Working Group in addition to national authorities. Financial Stability Forum, Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience, (April 7, 2008), available at http://www.fsforum.org/publications/r_0804.pdf ("FSF").

103. IOSCO, supra note 26.


of an intergovernmental rating agency.

II. AREAS OF REFORM

A. THE MANAGEMENT OF FINANCIAL INSTITUTIONS

The risk management failures which took place at the world's most sophisticated and wealthy financial institutions is perhaps the most shocking aspect of the credit crisis. Many people were guilty of selling products they did not understand. Institutional investors and banks lacked the sophistication to determine the risks they were exposing themselves to, through the creation and purchase of SF products. These firms often relied heavily or exclusively on credit ratings for their risk analysis, a practice which led to massive losses. The most extreme example of poor risk management was the accumulation of a $7.2-billion loss by a mid-level trader at Societe Generale. In what has become symbolic of the risk-taking culture and utter lack of oversight within the financial industry, Jerome Kerviel, managed to single-handedly accumulate this record loss through bets involving complex financial products. While this is the most stark example of failed risk management, heavy losses have been registered by most institutions involved in SF.

The risks associated with the rapid innovation of the SF industry were thoroughly misjudged, highlighting the need for greater analysis and a more cautious approach to the development of new financial products. Examples of risks which were not properly accounted for include reputational and counterparty risks. Financial firms chose to support off-balance sheet vehicles even when they were not contractually obliged to do so, in order to preserve their reputations. Firms also neglected to properly appraise counterparty risk, entering into hedges without conducting due diligence and relying on inadequately capitalized firms. These are only two of many examples highlighting the need for sophisticated and thorough risk analysis. In addition to these two relatively conventional risks the complexity of new products, CDOs in particular, reached levels which left firms incapable of evaluating their quality. However, as we have discussed, prudence did not carry the day in this regard and according to a number of reports, firms were more concerned with capturing a share of this market than understanding what they were

107. IOSCO, supra note 26, at 15.
exposing themselves to. 109

A report published by one of the financial institutions suffering the largest SF losses highlights the failure of the company’s risk management and governance functions with regards to CDOs. 110 While traditional operations of the company were subject to comprehensive risk management oversight, the CDO trading desk operated under a different control mechanism, favoring expansion and capturing market share over common sense. As with many other firms the importance of gaining profit outweighed the very real risks of loss, indicating severe imbalances within corporate culture.

A recent report issued by the Senior Supervisors Group ("SSG") highlights the risk management practices which helped some firms avoid the full brunt of the credit crisis and the failures which contributed to some of history's largest losses. 111 The study found that firms which effectively shared information and adopted a comprehensive firm-wide approach to risk management fared better during the crisis. Firms skeptical of SF ratings developed in-house analysis expertise, and similarly were less affected by the turmoil. 112 However, many firms failed to appreciate the risk concentrations which developed across business lines highlighting their lack of cohesive communication and general oversight.

The insufficiency of firm wide risk management in the finance industry reflects the slanted priorities which drive many market participants. During periods of economic expansion, financial firm culture aggressively promotes the pursuit of profit. The role of evaluating risk is secondary and does not fit with the mantra of competitive spirit and rapid financial innovation. In short, risk management was neglected, particularly in the events leading up to the current crisis. While profits were pursued at all costs, losses were not avoided although the net effect is the same. Rethinking the role of risk management in corporate governance structures is essential. All too regularly risk management is seen as an impediment to

109. It is argued that there was not sufficient incentive to encourage sellers of complex financial instruments to fully understand these products. Sellers likely viewed the risk of loss as remote and felt comfortable following the "herd of other bankers." Furthermore, employee turn over rates may have reduced incentives with participants envisioning being in a new job when losses materialize. Schwarz, supra note 97, at 14.

110. $38 billion as of April 2008, according to the UBS Shareholder Report. UBS, supra note 105.


112. Id. at 3.
lucrative strategies and large bonuses. Rather than being perceived as a hindrance, this function should be a central tenant of institutional strategy and development. For risk management to assume a fundamental and independent role in the operation of financial institutions, a Chief Risk Officer ("CRO") position independent of the lines of business should be a mandatory part of corporate governance structures. Such an officer should have lines of contact and report directly to the CEO, as well as the risk committee of the board of directors. In addition, the role of the risk committee should be enhanced. The committee should have outside independent advisors available for consulting and meetings should be held on a regular basis. The failure of the SF market illustrates the importance of all new or evolving financial products being thoroughly reviewed by the CRO and the risk committee. Furthermore, risks associated with firm employees' trading activities should be monitored and investing mandates should be clarified and disseminated to the entire firm. Generally, firms must adopt a more comprehensive and firm-wide approach to risk management, evaluating all exposures with a particular emphasis on interconnected risk variables.

There is also a question regarding whether sufficient deterrents are in place to prevent the reckless behaviors witnessed in the SF market. Perhaps more stringent standards of civil liability would serve to improve the prudence of the financial industry. As we shall see in the following section, risk management failures are intimately connected with employee compensation, which is deeply misaligned with shareholder and long-term firm interests.

III. COMPENSATION

A. FINANCE INDUSTRY COMPENSATION

The current incentive system in place in much of the financial industry does not promote long-term growth and stability. It encourages high risk behavior in search of short term gains; caution is not rewarded. Although a skilled advisor should have foreseen the consequences of excesses associated with the real estate bubble, there is no financial reward for advising clients to keep their money on the sidelines. The traditional conception of the financial industry as fiduciaries helping investors make sound and sustainable investment decisions has been undermined. The

reality is the marketplace is composed of salespeople compensated based on short-term goals. According to Martin Wolfe, Chief Economist of the Financial Times:

In the name of properly aligning incentives, there are enormous rewards for successful trades and for loan originators. The mantra of aligning incentives seems to be lost in the failure to impose symmetrical loses—or frequently any loss at all—when failures ensue.\textsuperscript{114}

The distorted system of compensation at many financial institutions is based on large bonuses to encourage high rates of business. This lets members of the investment industry profit in good times but not share the losses in bad times and encourages unchecked risk taking. The short-term nature of the industry is such that the individuals and institutions who marketed toxic CDOs received huge bonuses for doing so. At the end of 2007, when the financial crisis had become clear, people selling the vehicles of this crisis still received record-setting bonuses. The Financial Stability Forum ("FSF"), an organization of international regulators, describes the situation as follows:

One of the striking features of recent events has been firms' sizeable payouts to staff in areas in which the firms have subsequently incurred very large losses as risks materialized. Compensation arrangements have often encouraged disproportionate risk-taking with insufficient regard to longer term risk.\textsuperscript{115}

Even the IIF, the international voice for the finance industry, has conceded that this system of compensation encourages extreme risk taking.\textsuperscript{116} The current incentive compensation model is clearly not in alignment with shareholder interest and as the credit crisis exposed, it is not geared toward long-term performance. The IIF has recommended that the compensation should be closely related to protecting shareholders' interests and long-term, firm-wide profitability.\textsuperscript{117} One obvious solution to these perverse incentives is to compensate on the performance of investments, not the amount of business done. A trader should not be rewarded for selling or investing in toxic CDOs if they will be worthless a year later. This could be accomplished by deferring incentive compensation and awarding bonuses in the form of restricted stock required to be held for a designated period.\textsuperscript{118} Alternatively, bonuses could be paid into cumulative

\textsuperscript{114} Wolfe, supra note 1.
\textsuperscript{115} FSF, supra note 102, at 20.
\textsuperscript{116} IIF, supra note 104, at 11.
\textsuperscript{117} Id. at 12.
pools to be held for a medium term and fluctuate based on the success of investments.\textsuperscript{119} Funds within such a bonus pool could also be used to pay any damages which arise due to negligent investment advice or shareholder losses. As a whole, incentives in the investment industry should be geared towards long-term success and stability. Bonus heavy compensation encourages risk taking and consideration should be given to increasing base salaries, while reducing bonuses. Without a significant change in mentality, the financial industry’s blind pursuit of profit will continue, as will the cycle of economic bubbles and subsequent failures.

IV. FINANCIAL MARKET REGULATION

A. MARKET TRANSPARENCY AND DISCLOSURE

A properly functioning market requires a free flow of information for participants to properly evaluate investments. Arthur Levitt, former Chairman of the SEC explains; “\textsuperscript{120}Informed investors, armed with accurate information, ensure that market prices represent fair values. And fair market prices, in turn, ensure that the markets perform their economic function of efficiently allocating capital resources.” However, financial innovation has severely reduced transparency in the market while greatly increasing the complexity of market instruments. Many SF instruments reached such a level of complexity and opaqueness they created huge information asymmetries and failures. The creators of these products either failed to appreciate their risks or, as some commentators have speculated, may have intentionally designed their financial products to be obscure as a way of making profits.” The fact that many of the instruments trade over the counter\textsuperscript{122} means that there is precious little information pertaining to the instruments and who is holding them. Likewise, many financial institutions such as hedge funds have emerged in regulatory voids as major market players adding to the opaqueness and uncertainty in the market. Operating in the shadows offered great benefits to many firms but this same lack of transparency has devastated market confidence, destroying the value of institutions and their financial holdings.

\textsuperscript{119} Id.
\textsuperscript{122} Trading “over the counter” means that securities are not traded exchange but rather through direct negotiation between buyers and sellers.
The majority of complex financial instruments were issued via private placements and it is these securities (without public disclosure) which account for an overwhelming portion of market losses. The events of the past year have raised questions regarding the competency of prospectus exempt investors, known as sophisticated or accredited investors. Those SF deals which were publicly traded and subject to disclosure requirements were not as affected by the liquidity crisis. However, even in public offerings where the risks associated with the collapse of the subprime market were largely disclosed, the complexity of the documents describing these instruments made this disclosure ineffective. Investors armed with prospectuses clearly did not acquaint themselves sufficiently with the details of the risks involved and some commentators believe that even with full disclosure market participants were not able to comprehend the risks of SF investment strategies.

Complexity must be reduced and information must become much more accessible for the SF market to recover and operate in a sustainable way. To begin, issuers of SF products should make all relevant information publicly available so that investors and all CRAs are able to better evaluate risks. Data on underlying pools of assets and instruments should be comprehensible and widely available in a timely fashion to the market. In this regard there is growing support for the standardization of structured product offering documentation. Creating uniformity would allow investors to appraise products more easily and highlight any unusual terms. The IIF has suggested creating a one-page prospectus summary of risk factors for various structured products. The expected benefits would be to help investors to “identify key risk drivers, enabling them to evaluate the risks of structured products; and second, it should provide investment committees with reference points in addition to ratings that could be used in investment mandates.” In the failed CDO market, legal documentation such as offering circulars, trustee reports, and liquidity agreements are usually only available to dealers and a limited selection of institutional investors. There is a growing consensus that all information provided to rating agencies should be publicly disclosed at origination.

123. IOSCO, supra note 26, at 5,10.
124. According to Schwarcz, supra note 97, at 6, it is generally agreed that disclosure documents for MBS, CDO, and ABS CDO complied with U.S. federal securities laws.
126. Id. at 11.
127. The argument against standardization is that one of the virtues of structured finance products is they can be precisely tailored to investor's risk objectives.
128. See, e.g., IIF, supra note 104, at 22.
129. Id.
Furthermore, throughout the life of a deal reports should provide timely and standardized information regarding CDO performance.\textsuperscript{130}

The Senior Supervisors Group ("SSG") has issued a report based on interviews with twenty leading international financial institutions outlining recommended disclosures for off-balance sheet and SF instruments.\textsuperscript{131} As a general requirement, the report recommends that all SPVs and funded liquidity lines should be disclosed and the performance of off-balance sheet instruments should be noted in the sponsor's financial statements. In addition, an explanation should be provided as to when it may be necessary for a sponsor to consolidate the SPVs' assets and liabilities back on to its balance sheet.\textsuperscript{132} As the current crisis revealed, off-balance sheet instruments can become liabilities in times of stress. It follows then that contingent liabilities owed to off-balance sheet vehicles must be understood in order to appreciate the true obligations of financial institutions. With regards to SPVs, the SSG recommends that underlying assets should be identified and divided by collateral type; firms should identify total exposures to CDOs and specify the risk profile of the tranches held. Furthermore, where a CDOs underlying collateral is subprime mortgages, this should be disclosed. Firm-wide exposures to subprime should also be elucidated, including any interconnectedness which concentrates risk, and sensitivities to changes in underlying assumptions should be demonstrated. Finally, exposures which have been hedged should be identified and the counterparty disclosed. This is particularly relevant to hedges with financial guarantors and the notional amount of protection bought should be identified.

At the international level the implementation of Basel II\textsuperscript{133} should increase transparency through supervisory review giving regulators greater means of inspection and access to information. This is known as the "second pillar," and requires higher standards of disclosure by financial institutions to ensure market participants have an accurate picture of risk levels. However, until disclosure becomes more uniform and comprehensible, the Basel requirements will not be truly effective.

B. ORIGinate-TO-DISTRIBUTE Model

Securitization and the resulting risk transfer resulted in extremely

\textsuperscript{130} BIS, \textit{supra} note 17, at 19.
\textsuperscript{131} SSG, \textit{supra} note 111, at 16.
\textsuperscript{132} IOSCO, \textit{supra} note 26, at 9.
inadequate monitoring of borrowers, as originators became detached from risk of default. In the subprime market mortgage originators were able to transfer all risk of loss, creating a misalignment of interests with investors. Investors along the securitization chain made the mistake of accepting financial innovation in lieu of assurance on an underlying borrower’s ability to pay. The future viability of the pure originate-to-distribute model is unclear, as is the broker-dealer model of earning fees through the transfer of credit risk. To cure the monitoring disincentives and irresponsible lending practice which have emerged, comprehensive reform is necessary. The IOSCO is developing “best practices” to ensure that originators and sponsors apply the same diligence and risk management practices to assets originated to transfer, as they would to those held on balance sheets. These best practices have not yet been disclosed but a number of alternatives do exist to correct this dysfunctional model.

First, in order to improve market incentives, loan originators and financial intermediaries should be required to hold some of the most risky segments of the securities they create. The requirement that originators and/or intermediaries retain a portion of the lower tranches and incur first losses provides greater incentives to ensure and monitor the quality of assets. Although this practice does exist in the marketplace, it should become uniform. Failure to assume first loss position would then signal to investors the lower incentive to maintain underwriting and monitoring standards. Another option is to ensure originators and intermediaries maintain “skin in the game,” legally requiring them to hold loans for a period before packaging them into SF. This would ensure loans are seasoned as defaults often occur in the early stages of the borrowing cycle. Although this may be costly to the industry, it would provide far greater incentive to ensure sound underwriting practices.

A third proposal is to have originators or sponsors acquire a certification of quality. Although mortgage originators frequently provide assurances through representations and warranties, they are expensive to enforce and are of little comfort due to the demise of the subprime lending industry. Such certification could be provided through the development of private sector organizations specializing in the analysis of asset quality.

The originate-to-distribute model contributed to the deterioration of mortgage underwriting standards and subsequent subprime crisis in the U.S. While it led to a weakening in lending standards, it did not succeed in

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134. IOSCO, supra note 26, at 10.
135. Approximately two or three years.
137. Id.
138. As discussed, rating agencies currently provide de facto certification of securities; however, their role in the market contributed to the disintegration of underwriting standards.
distributing risk. In many cases, banks that transferred assets to off-balance sheet instruments were forced to provide funding through legal commitments or for reputational reasons. Increasing the capital requirements to account for the true liabilities attached to off-balance sheet entities would also reduce incentives for financial institutions to accumulate debt obligations without undertaking proper due diligence. The market has lost faith in the originate-to-distribute model and to restore confidence originators must take meaningful steps to ensure the quality of assets underlying SF products.

C. REGULATORY ARBITRAGE

A central feature of SF's development was the creation of off-balance sheet instruments such as SPVs, which reduced the capital charges of banks. However, sponsoring banks provided large credit enhancements and guaranteed liquidity lines, continuing their economic exposure to these instruments. This regulatory arbitrage allowed these banks to maintain balance sheet risks without the capital requirements. The credit crisis proclaimed that banks were not sheltered from these instruments. Much greater emphasis must be placed on liquidity risks, with greater capital buffers established. However, any regulatory responses that target banks with increased capital and lending constraints may have the effect of diverting finance to lesser regulated sectors. The lack of regulation of non-bank financial institutions has encouraged the growth of alternative financial intermediaries, such as broker-dealers and hedge funds. Without rigorous oversight these institutions will continue to engage in risky lending and highly leveraged investing. Furthermore, it has been noted that hedge funds contribute directly to bank risk, as banks are forced to reduce or eliminate covenants to compete with risky loans made by unregulated funds.139

Society witnessed the importance of non-bank financial institutions to the economy when the Federal Reserve intervened to pull broker-dealer Bear Stearns out of the mud. While central banks provide deposit insurance and act as lenders of last resort to banks, traditionally these backstops were not available to non-bank institutions. As a result they were susceptible to bank runs and crises of liquidity. However, due to the growing interconnectedness of financial markets and the prospect of a financial meltdown, the Federal Reserve was forced to open public coffers to prevent a run on non-bank financial institutions. This funding line remains open and in late July 2008, the Federal Reserve announced it had extended its emergency primary dealer credit facilities until January 2009

139. Schwarcz, Systemic Risk, supra note 125, at 13.
in response to market turmoil.\textsuperscript{140} Clearly, non-bank institutions must be regulated if they are going to be provided with public funds. Nouriel Roubini, a leading economic commentator on the credit crisis, has explained that:

\[\ldots\] a comprehensive supervisory and regulatory regime that covers both banks and non-banks would also allow better monitoring and assessment of systemic financial risks that, at the moment, are not properly supervised. Providing both regulators/supervisors as well as investors with the reporting and disclosure of information that allows an assessment of systemic financial risks will be essential to have a sounder financial system.\textsuperscript{141}

The evolution of the financial system has witnessed operations, normally reserved for banks, undertaken by lightly regulated entities such as broker-dealers and hedge funds. This has called into question the wisdom of regulating institutions, as opposed to practices. The explosion of these institutions has created potential for a systemic failure in this sector. Lack of regulation has allowed these institutions to operate with insufficient capital and liquidity cushions, making them susceptible to bank runs. Both off-balance sheet instruments and non-bank financial institutions should be governed by a regulatory scheme which reflects their roles in the market.

D. OTC DERIVATIVES

The espoused virtue of the derivatives market was its ability to disperse risk to a diverse set of investors well suited to handle it, thereby reducing the likelihood of financial shocks. However, the explosion of derivatives may have heightened systemic threats due to the concentration of risk in a few main counterparties and the transfer of said risks to parties like hedge funds, who didn’t have the capacity, or capital, to contain them. Since its inception, the derivatives market has had its critics and demonstrated its dangers. The 1998 near failure of Long Term Capital Management\textsuperscript{142} sent shockwaves around the world and gave a preview of the dangers associated with the proliferation of the derivatives trade. The striking collapse of Bear Stearns is the most recent reminder of the risk


\textsuperscript{141} Roubini, \textit{supra} note 118, at 4.

\textsuperscript{142} LTCM was a large U.S. hedge fund, run by Nobel Prize winning economists that was bailed out from imminent collapse due to fears over thousands of derivatives contracts the fund had entered into. \textit{See generally} ROGER LOWENSTEIN, \textit{WHEN GENIUS FAILED: THE RISE AND FALL OF LONG-TERM CAPITAL MANAGEMENT} (Random House, 2000).
magnification potential of derivatives.

The major danger facing the derivatives world today is that of failed CDS counterparties. The failure of a major protection seller would have a devastating effect on the value of hedges, requiring potentially huge balance sheet write-downs. Even more frightening is the prospect of a reference entity (such as corporate debt referenced by a CDS) and a protection seller failing simultaneously. As global economic conditions deteriorate, defaults will rise, putting tremendous pressure on protection sellers and the derivatives industry in general. The interconnectedness of the CDS and larger derivatives industry is also a cause for concern. The astounding $62-trillion dollar notional amount of CDSs outstanding is modest in comparison to the $454.4-trillion of overall outstanding derivatives and it is unclear what effect a failure in the CDS market would have on the market as a whole.

In the booming SF market, players entered the CDS market, selling protection they did not have the means to provide. One example, which has become a major source of economic concern, are monoline insurers who exposed themselves to huge CDS credit risk, without maintaining a reasonable capital cushion to make good on their obligations. While the future viability of these companies remains uncertain, if they are to survive, bond insurers should be required to hold more capital and subject to closer supervision of underwriting standards for new products.\(^{143}\) The FSF has called upon supervisors to strengthen capital and regulation of monolines; however, these actions should be extended to all sellers of credit protection. To reduce the risk of counterparty failure, swap providers must maintain insurance industry style reserves. Furthermore, disclosure of swap positions should be mandatory so market participants have some idea of the exposures and risk counterparties face. For disclosure to be meaningful there is also a need in the market for the development of private non-bank firms to specialize in monitoring and assessing credit derivatives.\(^ {144}\) Finally, imposing limits on counterparty risk exposures would encourage diversification and limit the potential domino effect of the failure of a major counterparty.\(^ {145}\)

The derivatives market has grown to astonishing heights as a self-regulating industry under the purview of the International Swaps and Derivatives Association ("ISDA"). Representatives of the ISDA board of directors\(^ {146}\) have collectively incurred billions in losses linked to the

\(^{143}\) Baily, supra note 121, at 9.
\(^{144}\) Partnoy, supra note 40, at 1051.
\(^{145}\) Schwarcz, Systemic Risk, supra note 125, at 40.
\(^{146}\) Bear Stearns, UBS, Citigroup, BNP Paribas, and Royal Bank of Scotland have representatives on the 16 member Board and have suffered heavy losses due to the derivatives trading. For a list of ISDA directors and officers please see http://www.isda.org.
derivatives trade, a sign this self-regulating institution may not possess the discipline to independently oversee the market. In fact, ISDA did not preach restraint but rather encouraged the market to achieve unencumbered growth. Regulation of this industry is essential to future economic stability: there is no reason why derivative transactions should not be governed by the same legislation as bonds and loans. This should include the registration of transaction documentation published through a public disclosure service.\textsuperscript{147} There is no economic or policy reason for allowing these transactions to be unregulated. The size, volatility and complexity of the market demands immediate supervision.

The need to standardize derivative products and develop a central clearing house for trades has been recognized by regulators and market participants. Greater uniformity would allow the market to compare instruments of similar nature and improve liquidity. The development of a central clearing house will reduce counterparty risk by requiring appropriate margin requirements and marked-to-market evaluation on a daily basis.\textsuperscript{148} The Federal Reserve Bank of New York, major derivative market participants, and international supervisors, have all begun efforts to improve the infrastructure of the OTC derivatives market, by developing a clearing house for derivatives trades.\textsuperscript{149} Chicago based Clearing Corporation has been selected to act as the central counterparty for the OTC derivatives market, and along with London based NYSE Euronext Liffe, has announced plans to start guaranteeing credit default swaps trades.\textsuperscript{150} Provided these firms maintain adequate capital reserves, this should reduce uncertainty and the systemic risk of a major counterparty failing. The plan is also intended to increase standardization and automation of credit derivative trade processing, and improve risk management oversight. Another crucial proposal is to incorporate provisions for cash settlement into standard CDS documentation. Physical settlement creates backlogs and market distortions when counterparties are required to produce the defaulted securities they may not possess.\textsuperscript{151} Finally, extending infrastructure improvements to other OTC

\textsuperscript{147} Partnoy, supra note 40, at 1047. 
\textsuperscript{148} Roubini, supra note 118, at 8. 
\textsuperscript{151} The bankruptcy filing of Delphi Automotive is an example of the perverse and unpredictable effect derivatives can have on debt markets. The company had approximately $2 billion worth of bonds on the market but a notional amount of outstanding derivatives of over $20 billion. The bankruptcy filing actually increased the price of Delphi bonds as protection buyers rushed to buy bonds in order to make physical settlement. Partnoy, supra note 40, at 7.
derivatives will reduce the risk of a wider market breakdown.

It is, however, unclear who will regulate Clearing Corporation, a currently defunct clearing house, in their capacity as central counterparty of the global derivatives trade. If improperly managed such an institution could concentrate risk, and it is essential that appropriate regulation and risk management be implemented to ensure that a reliable infrastructure is created. The nature of the parties involved also raise serious questions as to the impartiality which can be expected from a clearing house owned by the same financial institutions dominating derivatives trading. Without significant oversight and transparency there is potential for market manipulation and anti-competitive behavior.

The derivatives industry has proliferated even as the global credit markets have entered a serious downturn. Allowing this growth to continue unchecked poses an unacceptable risk to the world market and urgent action is needed to reign in this massive industry.

V. RATING AGENCIES

A. INTRODUCTION

At the epicenter of the credit crisis lie the CRAs. Through a regulatory monopoly and de facto regulator status, these firms were relied upon for their stamp of approval in the evaluation of the SF markets. It was their triple-A ratings that facilitated the finance industry’s willful blindness to the threats posed by subprime and multitude of related financial instruments. Credit ratings had tremendous influence on the valuation and liquidity of SF instruments, particularly those linked to the subprime market, but did not succeed in providing accurate information. The failure of rating agencies to provide appropriate ratings is overwhelming, exemplified by the wave of downgrades described in Part I, the inappropriate assumptions of permanent exponential housing market growth, and until recently, the continued triple-A rating of monoline insurers. A recent investigation undertaken by the SEC uncovered, not surprisingly, a wide range of conflicts. There was evidence uncovered that rating agencies were aware of the impending devastation of the CDO market but failed to disclose this or adjust their ratings in a timely fashion. However, just as significant is the investment industry’s lack of

153. For example, an internal CRA e-mail uncovered by the SEC stated that the rating agencies “continue to create an even bigger monster—the CDO market. Let’s hope we are all wealthy and
due diligence and their willingness to rely on the triple-A rating in the face of clear evidence to the contrary.

Perhaps the most troubling aspect is the industry, state and international sanctions they have been afforded. Institutional and government regulations have long used CRA ratings to create investment restrictions. Under Basel II, CRA can be considered External Credit Assessment Institutions, allowing regulated entities such as banks, to rely on their ratings instead of assessing the risks themselves. By granting triple-A status to an investment, CRAs determine who invests in a security and at what rate of return. The growth of SF is intrinsically linked to CRAs being granted the power to choose what investors could invest in. However, the ratings industry, in its current form, does not merit the semi-official role they are granted in Basel II, by governments worldwide, and the investment decisions of asset managers. This unchecked power combined with the overwhelming failure of the ratings industry demonstrates a clear need for significant reform, if not a total industry overhaul. Such reform must be implemented to restore credibility and prevent regulatory arbitrages from re-emerging. In this section the deficiencies of the rating industry are examined and a range of reform proposals will be explored. International CRA reform may hold the key to effective international market-based evolution of the finance industry.

B. FAILURES

At the heart of the CRAs failure to properly evaluate the subprime and SF market were unrealistic assumptions regarding housing market price growth. CRAs did not adequately disclose their assumptions and were slow to adjust their methodologies, holding on to unrealistic home price appreciation estimates even once the housing market had begun its decline. Furthermore, CRAs failed to acknowledge the negligent lending occurring in the subprime market. The rise of highly risky alternative

154.IOSCO, The Role of Credit Rating Agencies, supra note 152, at 9.
155. There is information suggesting that at least one of the major CRAs was using Home Price Appreciation assumptions of +6-8 percent for 2006, 2007, and 2008 in their ratings models for securitizations which went to market in 2006 and the first quarter of 2007. Bass, supra note 51, at 74.
156. For example, a Fitch representative admitted to using assumption of mid-single digit home price appreciation in a conference call on Apr. 22, 2007. This assumption was used even though Fitch’s own published home price data “... confirms a national home price correction has been under way, with the US median home prices down 2.7 percent.” Mason, supra note 13, at 120.
157. Prior to April 2007, at least one major CRA did not gather data regarding whether a loan was an option ARM. Mason, supra note 13, at 119.
mortgage products was well known and should have been incorporated into risk analysis.

CRAs also did not recognize the far higher rates of default associated with SF products, as compared to corporate bonds. Moody’s own analysis of CDOs, rated at their lowest investment grade versus corporate bonds with the same rating, reveals that from 1993-2005, five-year default rates were over ten times higher for CDOs. Shockingly, these statistics do not include the current credit crisis which has seen and will continue to see massive CDO defaults. It is clear that the risk of default associated with SF products was far higher than their ratings reflected. Unfortunately, these inflated ratings were relied upon by the SF industry to operate, and the result of this undeserved confidence was a global credit crisis.

C. RATINGS ARBITRAGE

A major source of CRA failure is that their role in the industry is to rate bonds for issuer purposes, not investors. Bond issuers have every incentive to receive the highest rating possible as this reduces the risk premium they pay to investors. Once sold, they cease to have risk exposure to the bonds, so the higher initial rating they receive, the more profitable their business. Bond investors conversely, have every incentive to see the most conservative rating assigned to bonds to maximize returns. However, these competing incentives did not reach equilibrium, and SF instrument were consistently overrated. A number of factors contributed to this disjunction. First, investors failed to undertake their own due diligence and analysis, often relying almost entirely on ratings. A second factor, which suggests a thoroughly dysfunctional market, is evidence that regulated investors encouraged CRAs to understate risk to allow them to invest in a wider range of higher yielding securities. An indication of the implicit agreement between CRAs and regulated institutional investors is that CRAs sell tools to investors to evaluate credit risk in rated deals after

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158. Id. at 114.
159. According to the study, in the period between 1983-2005, corporate bonds rated Baa averaged a 2.2 percent default rate over five year periods. CDOs with the same rating averaged 24 percent default rates over the same period. Id.
160. It has been argued that corporate bonds and structured finance bonds should not be on the same rating scale as corporate debt. An option which has been considered by the SEC and IOSCO is to add an identifier to distinguish structured finance ratings from corporate bonds. Please see SEC, supra note 153, at 5; and IOSCO, The Role of Credit Rating Agencies, supra note 152, at 16.
161. Mason, supra note 12, at 118.
162. Id. at 114.
Furthermore, although CRAs sold tools to measure the risks of new products, they did not adjust their ratings methodologies to account for the same risks. This evidence exposes the arbitrage between ratings and the true value of investment, which was one of the major catalysts behind the proliferation in SF.

In addition to the heavy market and regulatory reliance on ratings, CRAs are granted extraordinary exceptions and protections in the U.S. market and abroad. First, they are exempted by the SEC from disclosure rules, and do not have to disclose confidential information they receive from issuers. This adds value to ratings because they are presumed to have important non-public information which informs their decisions. Second, they are immune from liability of the Securities Act, in connection with securities offerings. This means their ratings are not even held to a negligence standard. Before the credit crisis the SEC recognized this problem and issued the following statement regarding CRAs:

[... because the credit rating agencies are subject to little formal regulation or oversight, and their liability traditionally has been limited by regulatory exemptions and First Amendment protections, there is little to hold them accountable for future poor performance. [...] It is difficult not to wonder whether lack of accountability—the agencies' practical immunity to lawsuits and non-existent regulatory oversight—is a major problem.]

A final factor absolving CRAs from any accountability is that they take no responsibility for the accuracy of the information on which their ratings are based. CRAs play the role of professionals and are

163. According to Mason this allows CRAs to "... effectively profit from selling one product to arbitrage regulatory requirements and another product to sort out the difference." Mason, supra note 13, at 115.

164. Id. at 118.

165. The SEC has exempted NRSROs from Regulation F-D. Regulation FD, 17 C.F.R. § 243.100(b)(2)(iii) (2008).


167. Whitehead, supra note 32, at 135.


169. For example, Moody's Investor Service, Code of Professional Conduct states: "MIS has no obligation to perform, and does not perform, due diligence with respect to the accuracy of information it receives or obtains in connection with the rating process. MIS does not independently verify any such information. Nor does MIS audit or otherwise undertake to determine that such information is complete. Thus, in assigning a Credit Rating, MIS is in no way providing a guarantee or any kind of assurance with regard to the accuracy, timeliness, or completeness of factual information reflected or contained, in the Credit Rating or any related MIS publication." Moody's Investors Service, Code of Professional Conduct 8 (October 2007), available at http://www.moodys.com (follow "Code of Professional Conduct" hyperlink; then follow "Moody's Investors Service Code of Professional Conduct" hyperlink).
compensated as such. It follows that their “opinions” should be accorded
the same responsibilities and should be held liable for professional
negligence. The illusory treatment of ratings as mere opinions and
“freedom of speech” defenses which accompanies such classification do
not reflect the true role of ratings in the market. Clearly, the fact that
ratings are required and relied upon elevates their work from that of a
editorialist. It is difficult to fathom how so much reliance was placed on
organizations who have a disclaimer with regards to their responsibility,
and are not held accountable for their ratings.

D. RATINGS SHOPPING

The nature of the rating industry allows issuers to choose whether or
not to have a rating published. This gives them a great deal of power and
leverage in the rating process. Once a CRA has reviewed all relevant
information and come to a final rating decision, they notify the issuer. The
issuer then decides whether to accept the rating and make it public. CRAs
are usually only paid if a rating is issued. Although there may be a break-
up fee applicable, once a final decision is made, the agency has great
incentive to ensure a rating is issued and they are paid. SF issuers often
request that CRAs provide prospective assessments on CDOs before
deciding which CRA to hire and as a result issuers are able to “ratings
shop,” or only accept the most favorable ratings. This is an obvious
conflict of interest; encouraging CRAs to provide the high ratings in order
to gain business. According to an IOSCO report, some CRAs rapidly lost
market shares (for rating commercial mortgage backed securities) when
they employed more conservative assumptions in reaction to the turmoil of
the market. The market thus punishes CRAs for adopting realistic
assumptions. A traditional deterrent to rating shopping is the issuance of
unsolicited ratings. However, because of lack of public information
regarding SF products, unsolicited ratings of CDOs are rare.

In response to this phenomena, Andrew Cuomo, New York’s Attorney
General has proposed that rating agencies charge for their work, even if
they are not chosen to rate the deal. The IOSCO has also recommended
measures to combat ratings shopping, including encouraging SF issuers to

170. IOSCO, supra note 28, at 22.
171. Id.
172. Id. at 28.
173. Id. at 28-29.
174. IOSCO, The Role of Credit Rating Agencies, supra note 152, at 8.
175. Aline van Duyn & Joanna Chung, Rating Agencies Agree to Change Charges, FINANCIAL
publicly disclose all relevant information, so investors and other CRAs can conduct their own independent analysis.\textsuperscript{176} A related measure is requiring rating agencies to publicly disclose whether an issuer of a SF product has made public all relevant information about the product being issued.\textsuperscript{177} As a minimum, clear disclosure of the how the CRA which provided a given rating is compensated, should be mandatory.

These proposals aimed at the lack of transparency afflicting the ratings industry likely do not go far enough. Although rating agency models are available to investors, they are of little use without detailed information regarding the underlying assets and rating agency’s assumptions. Disclose of all information CRAs have been provided with, in a detailed and reasonable format must be demanded. Furthermore, details of their methodologies and assumptions should be disclosed to the public, as well as their ratings track record. CRAs are resistant to publish verifiable historical performance data regarding their ratings claiming that a common metric is undesirable because they employ different methods, and this would push them toward common methodologies.\textsuperscript{178} This is testament to the lack of competitive forces in the ratings industry. Typically a company’s achievement is its primary source of marketing, and they strive to differentiate their performance from the competition. The IOSCO has recommended CRAs:

\begin{quote}
[... ] publish verifiable, quantifiable historical information about the performance of its rating opinions, organized and structured, and, where possible, standardized in such a way to assist investors in drawing performance comparisons between different CRAs.\textsuperscript{179}
\end{quote}

The SEC has also proposed CRAs publish performance statistics for one, three, and ten years for each rating category, to facilitate comparisons with competitors.\textsuperscript{180} In order to have a functioning market, participants should be given information allowing them to determine the informational value of ratings. The resistance to provide such information on the part of the CRAs speaks volumes as to their worth.

E. REGULATORY REFORM

Given the tremendous influence afforded to CRAs, the feeble IOSCO

\textsuperscript{176} IOSCO, The Role of Credit Rating Agencies, supra note 152, at app. A, 8 (Provision 2.8(c)).
\textsuperscript{177} Id. at 15.
\textsuperscript{178} Id. at 9.
\textsuperscript{179} SEC, supra note 153, at 5.
\textsuperscript{180} Id.
voluntary code of conduct which governs them seems totally inadequate.\(^{181}\) Both the SEC and EU are taking steps to invoke stricter regulation given the failures of the self-regulatory approach.\(^{182}\) In the U.S. the Credit Rating Reform Act\(^{183}\) has brought CRAs under supervision of the SEC, requiring their registration; it is likely Europe will follow suit. The SEC has contemplated requiring rating agencies to produce a report outlining how each rating is assigned and any possible adverse consequences.

A number of other fundamental changes to the industry have also been proposed. The IOSCO's Code of Conduct for Rating Agencies has included a provision prohibiting rating agencies from providing structuring or advisory services for transactions they subsequently rate.\(^{184}\) This would be a major blow to the revenue streams of CRAs, which rely increasingly on this function. However, allowing CRAs to be the judge of their own creations has had devastating effects on the market. It is highly likely that a more conservative rating would have been assigned to SF if CRAs were not involved in their design.

Another option is to stop basing investment restrictions and capital measurements on ratings. Investment grade regulations for institutional investors have continually led to market manipulation, with growth of CDOs largely attributable to these investment restrictions. The SEC has proposed allowing money market funds to invest in short-term debt without regard for ratings.\(^{185}\) Generally, the removal of ratings-based rules could prevent the regulatory arbitragers achieved through ratings.\(^{186}\) One method mentioned would be for regulators to stop using letter grades when setting standards for permissible investments by regulated institutions. This would force banks and their regulators to examine underlying investments and not defer to CRA evaluations. With regards to capital changes, there is growing international sentiment that there be less reliance on ratings, and it would not be surprising to see Basel II move away from their use. For the CRA industry to continue in its current form, changes in their regulation will be necessary. However, as discussed below, more pervasive reform may offer an opportunity to improve the mechanisms of the SF industry as a whole.

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181. CRAs are guided by the IOSCO’s Code of Conduct for rating agencies.
186. In the short term, eliminating forced selling rules would have the practical advantage of preventing a downward price spiral where a ratings downgrade leads to a glut of unwanted securities in the market place.
F. COMPETITION

The credit rating industry is a state-sanctioned global monopoly. The U.S. government's granting of Nationally Recognized Statistical Rating Organization ("NRSRO") status to S&P, Moody's and Fitch allowed these firms to become de facto regulators of SF. Impediments to entering the market have allowed these leading CRAs to dominate the global rating industry. To break this monopoly, the requirement that rating agencies be NRSROs should be removed and the marketplace allowed to determine which rating agencies are credible. CRAs collective ratings records are testament to the fact their success was not due to the accuracy of their ratings, but rather their implications. In a true market system reputation is determined based on track record, not a statutory designation. An example of the absence of market forces in the ratings industry is that the typical penalty for failure is loss of business. However, issuers must have at least one rating from a recognized CRA to sell their products, and therefore cannot take their business elsewhere. To improve competition, regulatory entry barriers should be removed and resources focused on regulating the industry's operation. At this point any fears of incompetent CRAs emerging and providing poor information to the market is displaced by the lack of confidence in the ratings industry. The days of blind reliance on CRAs are behind us. If a competitor to the big three can demonstrate a better track record based on a common measurement, they will be rewarded with a larger market share.

G. COLLECTIVE MODELS

A solution to ratings shopping and the undue influence exerted by issuers on CRAs is to revert in part or in whole to the subscriber model, where investors pay for information. The major benefit of the issuer pay model is that ratings assigned by CRAs are freely available to investors. Without question this system leads to a greater dissemination of information to the market. However, if as in the case of SF, these ratings have no informational value because of misaligned incentives or incompetence, they are of little use. A compromise to the heavy incentives favoring issuers in the rating system is to require agencies to derive a given percentage of revenues from investors, ensuring that the CRA and investor interests are more closely aligned. This could be achieved by requiring CRAs to split their business, or the state sponsored bi-furcation of

the industry, through the creation of a "buy side" ratings industry funded by transaction fees on deals. An interesting suggestion raised by Sean Egan, co-founder of Egan-Jones Ratings Co., is to require a minimum of two ratings for SF and of those two, require that one be from a company not compensated by the issuer of bonds.188

In the SF world, ratings are essentially mandatory and this raises the specter of creating a system where issuers pay into an independently managed pool, as opposed to directly to a rating agency. Pool managers could assign one or more CRAs to rate a given deal, and this would remove any commercial incentive to overrate securities. Although this would be the greatest departure from the status quo, it has the most potential to cure the industry and ensure objectivity. The issue with implementing this system would be deciding which CRAs are eligible to participate, and how to achieve a high standard of ratings. If a static group of CRAs were selected, there is a concern that lack of competition could lead to a decline in rating quality. This could be mitigated by setting strict standards and allowing new CRAs to enter the pool only if they have a strong track record. By adhering to a pooled system, with regulatory oversight, many of the lucrative incentives, (whereby CRAs profited from industry disincentives and ratings arbitrages) would be removed. This may lead to a resurgence in investor side CRAs, which could play an important role in improving industry discipline.

VI. INTERNATIONAL REGULATION

The credit crisis has demonstrated just how interconnected the international market is. We have witnessed assets originating in the U.S. infect the global market, proving that country specific financial regulation is becoming obsolete. There is an obvious need for an international approach given the global nature of credit markets; regulatory reforms enacted in response to the credit crisis cannot be done unilaterally. Without coordinated international action, heightening regulatory standards will likely result in capital being channeled to jurisdictions with lower requirements. In addition to encouraging a race to the bottom, country specific regulation creates rife opportunity for future regulatory arbitrages. The current international framework is characterized by organizations such as IOSCO, which lack the power to compel action, limiting their role to a largely advisory capacity. The final section of this paper will discuss the one international initiative with sanction and the development of two new international institutions.

188. Id.
A. BASEL II

The most widely implemented international regulation is the Basel Committee on Banking Supervision’s international capital adequacy standards, known as the Basel accord. As explained previously, these standards in their original form, Basel I, encouraged regulatory arbitrage through the creation of off-balance sheet instruments and the use of derivatives, which were unaccounted for under that accord. Basel II, was brought into force in June 2006, and has been or will be implemented by most developed nations worldwide. It is widely believed that, had Basel II been implemented, it would have improved the resilience and lessened the credit crises’ impact on the financial system, as it restricts the regulatory arbitrage opportunities associated with Basel I. Pillar 1 of Basel II adopts a more sophisticated treatment of off-balance sheet instruments, subjecting them to capital charges more reflective of their risks. It imposes charges when, “significant credit risk has not been transferred to a third party, the transferor maintains effective or indirect control over the transferred exposures, or the securities issued are obligations of the transferor,” and this includes capital requirements for liquidity facilities and credit enhancements. However, Basel II in its current form still contains a number of weaknesses which contributed to the current crisis. Further reforms are necessary to ensure that all risks associated with liquidity facilities, including implicit support and reputation risks be properly accounted for. Although the Basel Committee on Banking Supervision is planning to raise capital requirements on CDOs to more accurately reflect their susceptibility to systemic market weakness, a more sophisticated approach to creating capital changes for derivatives and clearer guidelines to their implementation is also necessary.

Another weakness of Basel II is the fact that it does not apply to all important financial institutions. Reforms must apply to investment banks, and this is essential to ensure the financial system is adequately capitalized. There is also an over-reliance on CRA ratings and internal risk management models, both of which failed to predict the current financial crisis. Finally, and perhaps most importantly, there is concern that Basel II will have a pro-cyclical effect on the market, worsening economic downturns by forcing firms to restrict lending practices, while encouraging credit booms in positive economic cycles. These shortcomings are

189. Basel II, supra note 133, at ¶ 554.
190. FSF, supra note 102, at 14.
191. According to Roubini, even before being fully implemented, the Basel II agreement has shown its serious flaws:
potential hazards which must be analyzed and responded to at the international level.

B. LIQUIDITY PROVIDER OF LAST RESORT

The threat of a global economic meltdown became apparent with the international liquidity crunch and bank runs requiring government intervention. The credit crisis demonstrated that liquidity can be every bit as crucial as solvency. In order to mitigate widespread economic threats formal international co-ordination, with respect to the provision of liquidity, is necessary. An international burden sharing scheme involving commitments to provide liquidity could be an effective tool to combat major economic crisis of confidence. The development of a liquidity lender of last resort has been proposed by Professor Schwarcz, a legal scholar and expert in systemic risk, as a backstop against market instability. Such an entity would provide liquidity by acquiring securities in collapsing markets at deep discounts, preventing downward price spirals and marketplace panic. In order to mitigate moral hazards and maintain market discipline, these purchases would be made in view of a profit and at levels of discount which severely impair investors. Such an institution could also adopt a policy of "constructive ambiguity" allowing the liquidity provider discretion as to when to intervene in order to prevent market reliance. The costs of funding would not necessarily have to be borne by the public if premiums were charged or funds derived from the private sector. Liquidity pools could be funded by charging insurance style "premiums" to market participants eligible to receive support. A liquidity lender of last resort could be a governmental agency, but also private capital market participants if they were granted priority in a similar manner to debtor-in-possession financing. An international joint governmental agency could be charged with deciding appropriate cases to advance funding. Although this institution would not improve the issues of market discipline this paper has focused on, it could play a crucial role in

capital adequacy ratios that are pro-cyclical and thus inducing credit booms in good times and credit busts in bad times; low emphasis on the importance of liquidity risk management; excessively low capital requirements given the serious financial risks faced by banks; excessive reliance on internal risk management models; excessive role given to rating agencies and their ratings.

Roubini, supra note 118, at 5.
193. Schwarcz, Systemic Risk, supra note 125, at 15.
194. Id. at 45.
195. Id. at 46.
196. For example, the IMF or one or more national central banks. Id. at 75.
197. Id. at 47.
preventing market panic and avoiding the systemic meltdowns which threaten the new global economy.

C. INTER-GOVERNMENTAL RATING AGENCY

In addition to a liquidity provider of last resort, there is a need for the formation of an organization to provide oversight of international credit issues. The structure and source of sanction for such an organization will be difficult to establish but in the wake of the global credit crisis, international support has an opportunity to be garnered. The creation of a multilateral treaty to develop a regulatory framework, could provide the power which has thus far been lacking in the international financial market. The development of an international credit rating agency may be the answer. The failures of CRAs are well publicized and central to the current financial crisis. They were granted a huge degree of regulatory power in the international market, and in the wake of their failures it is clear this power was undeserved. What is also clear is that in the current financial system, credit ratings have a great deal more influence on the international market than any regulatory regime. The power of ratings could provide a market-based source of inter-governmental control that regulatory initiatives hereto have lacked. The nature of such an organization would represent a *sui generis* and clearly no international agency could ever have the capacity to replace the thousands of people employed by rating agencies. However, it could play an influential role, monitoring information received by rating agencies for systemic threats, and offering ratings guidance and instruction to CRAs. It is not difficult to conceive of such an organization pre-empting the subprime crisis by monitoring the market. It could have instructed CRAs to adopt more reasonable home price appreciation assumptions and take into account the rash of new and risky lending products, as well as issued cautionary guidance on complex financial instruments. Working in the capacity of an international rating agency, such an organization would be in a position to oversee the industry, the companies they rate and economic trends. This organization would be charged with issuing public recommendations as well as instructing rating agencies regarding their methodologies. Having the power to influence ratings would give such an organization far more sanction than current international organizations, which act mostly as commentators. This is a true market solution to a system which is currently not based on market forces, but rather regulatory advantage.

In terms of the technical feasibility of such an organization, the CRA reforms discussed in this paper could play a role. The international adoption of a pool based fee system for CRAs could be used in part to fund such an organization. Under this system issuers would not pay rating
agencies directly. Rather, the cost of ratings would be contributed to a pool. From this pool the international organization could also be funded by way of a percentage contribution on each rated deal. While the prospect of developing an international securities regulator has been shunned as unrealistic, this would be a market based system which would not require the sacrifice of state regulatory power.

The events of the past year demonstrate the need for an international financial monitor with sanction. It is highly unlikely that an objective international agency overseeing the ratings industry would have allowed the unrealistic ratings which plagued the market, and contributed to the current crisis.

VII. CONCLUSION

The mantra of capitalism has always been that of minimal state intervention with proponents preaching deregulation. However, state inaction in the face of a historic real estate bubble and dysfunction financial system contributed to a major global crisis. Now as we witness wide-scale government bailouts, it is clear more regulation is necessary across the globe. Private firms demonstrated a total lack of discipline in boom times and when the consequences of their actions were manifest, governments intervened with public money to bail them out. This is unacceptable on a number of levels, but what is most reprehensible is that it allows the wealthy to prosper at the expense of the everyday tax payer. The role of the state has been a patsy for private industry, providing only advantageous legislation and protections, coming to the aid of opportunistic undisciplined firms when the going gets tough. Without reform it will not be long before another crisis strikes. At the moment we are in the midst of a steep increase in commodity prices, due in part to the lowering of interest rates, in response to the credit crisis and speculation through derivative markets. There is a strong case to be made for the adoption of more contra-cyclical policies to prevent asset bubbles and the misfeasance which often accompanies them. In the future this could take the form of requiring additional capital and liquidity in periods of bubble growth and relaxing these requirements in periods of contraction.198

Whether the financial crisis is nearing an end or has just begun, its lessons must not be lost. The blind pursuit of profits at all cost may provide temporary periods of economic expansion but these do not last, and their benefits can disappear in the blink of an eye. A global collective rethinking of our economic goals must be undertaken and hopefully more

198. Goodhart, supra note 192, at 10.
sustainable policies which do not facilitate greed, will be the result. We have entered a new and complex economic era which offers benefits, but these can only be harvested through a more disciplined and responsible approach to finance.