Brigham Young University International Law & Management Review

Volume 6 | Issue 1 Article 2

1-15-2010

Toxic Assets: Untangling the Web

Margarita S. Brose

Bill Niclos

Toxic Assets: Untangling the Web

Margarita S. Brose & Bill Nichols◊*

I. INTRODUCTION

The world has not been moving quickly enough to untangle the web of toxic assets that lie at the root of the recent global financial crisis, and society may be missing its chance to learn from its mistakes. The most important question regarding the collapse of the financial market system does not address how much money one is going to lose in the current financial crisis but rather what happened to cause the global predicament in the first place. In other words, the current focus on valuation is misplaced; the focus should instead be on the relationships that contributed to the meltdown. Those relationships were based on the expectations of purchasers and the "guarantees" of sellers of the underlying securities, often with minimal supervision or forethought. Now is the time to identify who did what, when it happened, and where the relationships led. This shift in analytical focus can help build a detailed audit trail that shows what actually happened in the financial markets during the past five years.

Most commentators agree that the collapse of the subprime mortgage

* **Margarita S. Brose** is a former Senior Counsel in the Division of Enforcement of the U.S. Securities and Exchange Commission. After earning an MBA from The Wharton School of the University of Pennsylvania, she began consulting to financial services companies, with a focus on risk and compliance, with IBM Business Consulting Services (and its predecessor, PricewaterhouseCoopers Consulting). Ms. Brose was a Director at Fannie Mae from January 2006 to August 2008, leading central project management efforts for the restatement of the company's financial statements. After taking a year off in Nice, France, she moved to New York City, where she currently resides.

◊ **Bill Nichols** is Program Director for Securities Processing Automation for the Financial Information Services Division of the Software & Information Industry Association in Washington, DC. In this role, he concentrates on the intersections between technology and business practice. His special emphasis is in the areas of Standards, where he manages Shadow Groups to track Standards developments, represents FISD members on several ISO Committees, and chairs the ISO Working Group on Securities Instrument Identification. Mr. Nichols has spent over 20 years at the intersections of technology and financial services. He was Co-Founder/CEO of a corporate governance research firm acquired by Thomson Financial in 1995, after which he spent seven years at Thomson. He has provided expert testimony on online traffic and advertising models and for several years managed the consolidation of portfolio companies for venture-backed entities. More recently, he provided consulting services on compliance-related product development for Anti-Money Laundering offerings, before joining SIIA in 2007.

market was a major cause of the current crisis.[1] Some of the same technological developments in business practices that enabled the system to spin out of control so quickly are also key components in building a fact base to describe the cause of the collapse. For example, the assets collateralizing asset-backed securities (ABSs)[2] and other similar assets that originated in the now-collapsed housing market make up the bulk of so-called "toxic assets" found in portfolios of troubled banks.[3] These subprime mortgages, and the financial instruments created by them, leave a money trail that can help identify their owners and the practices that affect their markets.[4]

These trails are not easy to follow. Specialized experts are required to untangle the web of relationships between those who created, sold, and bought the securities, which are complex because many of the same parties are often involved at multiple levels of the same underlying securities.[5] However, through this process of untangling, one can uncover a definite set of facts to reveal what actually happened. Also, it becomes possible to initiate a discussion about the proper way to create a central repository of transactional history to help federal regulators manage risk in a way that is rooted in our financial system, rather than continuing merely to hypothesize about the crisis.

After providing relevant background, this Article theorizes why the global financial system collapsed and proposes courses of action to further understand and prevent future problems. Using the knowledge gained by investigating the paper trails, future problems can be prevented by (1) documenting and demonstrating the types of financial engineering and preventing market practices that produced securities with obscure risk profiles and maturity mismatches; (2) encouraging companies to strengthen their back offices to help assess risk and avoid transactions that add more toxic assets to companies' portfolios; and (3) creating a system between the back offices and regulatory authorities to track

1. *See generally* JAMES R. BARTH, ET AL., THE RISE AND FALL OF THE U.S. MORTGAGE AND CREDIT MARKETS, A COMPREHENSIVE ANALYSIS OF THE MARKET MELTDOWN (2009).

2. For a definition of *asset-backed securities*, see DWIGHT ASSET MGMT. CO., FIXED INCOME PRIMER: ASSET-BACKED SECURITIES 1 (2005), *available at* http://www.dwight.com/pubs/dwightABS2005.pdf [hereinafter DWIGHT] ("Asset-backed securities are bonds or notes collateralized by the cash flows from a specified pool of underlying assets. These asset pools are comprised of receivables from any number of consumer asset types, including credit cards, auto loans, and home equity loans, as well as other nonconsumer asset types such as equipment leases and loans, utilities, aircraft leases, and royalties.").

3. Bryan R. Routledge & Stanley E. Zin, *Model Uncertainty and Liquidity*, 12 REV. ECON. DYNAMICS 543, 543–44 (2009).

4. *See* BARTH, *supra* note 1, at 16.

5. *See* LAURIE S. GOODMAN, ET AL., SUBPRIME MORTGAGE CREDIT DERIVATIVES 8 (2008).

transactional history that will help federal regulators foresee and manage possible risks rooted in our financial system and, thereby, help prevent future problems.

II. A STARTING POINT: A BACKGROUND ON FINANCIAL MARKETS

In order to understand and analyze the current market system, one must first make some preliminary observations about the contemporary financial markets, their recent evolution, and areas of activity. First, the increase in the number and complexity of tradable instruments, especially those related to structured securities, undoubtedly contributed to the market failure.[6] The following developments made this expansion of tradable instruments possible:

- Advances in financial techniques used to structure custom instruments;[7]
- Development of a legal framework to support the requisite underwriting arrangements;[8]
- Proliferation of hedge funds, many of which were set up primarily to invest in structured securities from the mortgage boom;[9] and
- A drive for market growth and increased profits from the largest global banking and financial institutions, leading to wider availability of securitized transactions and other relationships previously confined to a small inner circle of global banks.[10]

Over the past five years, these developments were at the core of the business activities that generated wild volume growth in various types of securities, particularly Credit Default Swaps (CDSs).[11] In addition to

6. *Id.*

7. *Id.*

8. BARTH, *supra* note 1.

9. *Id.*

10. *Id.*

11. *Id.* at 125–26. "A credit default swap is a contract that provides insurance against the risk of a default by particular company. The buyer of the insurance obtains the right to sell a particular bond issued by the company for its par value when a credit event occurs. The bond is known as the reference obligation and the total par value of the bond that can be sold is known as the swap's notional principal. The buyer of the CDS makes periodic payments to the seller until the end of the life of the CDS or until a credit event occurs. A credit event usually requires a final accrual payment by the buyer. The swap is then settled by either physical delivery or in cash. If the terms of the swap require physical delivery, the swap buyer delivers the bonds to the seller in exchange for their par value." JOHN C. HULL, OPTIONS, FUTURES, AND OTHER DERIVATIVE SECURITIES 637 (5th ed. 2002). The "standard" structure utilized in CDOs where the underlying assets consist of investment grade bonds (agency and prime) is referred to as the "Six Pack." This refers to six logical tranches grouped into three classes: Senior, Mezzanine, and Subordinate. In the case of the set of CDOs that

sheer volume growth, massive webs of relationships formed across asset classes and between participants who bought and sold securities based on subprime mortgages.[12] These webs made it increasingly difficult to follow the money, as the quantity and complexity of financial relationships increased.[13] Such complexities and increases in volume made it easier for a large number of high-risk transactions to go unmonitored or even completely unnoticed.[14]

Second, the combination of the advanced securitization products such as Collateralized Debt Obligations (CDOs),[15] the nascent secondary Over-The-Counter (OTC)[16] market for CDSs, and myriad new hedge funds created to take advantage of these and other facets of market evolution formed a classic "feedback loop."[17] The core of the process consists of a relatively small number of players, a finite amount of raw material to package, and a limit to the speed at which players can package that material for distribution.[18] The tightly coupled nature of relationships between market players in the feedback loop (and their corresponding obligations), exacerbated by problems in recordkeeping, led directly to widespread fear that the house of cards was crashing.[19] This fear cascaded from one set of securitized products (ABSs and CDOs) to the Asset-Backed Commercial Paper (ABCP) market in a matter of days in 2008.[20] The fear crushed the economy by freezing cash flows because the banks at the center of everyday commerce had turned

utilize subprime ABS as underlying collateral, the structure used is generally referred to as XS/OC (eXcess Spread/Over Capitalization), referring to the methods used to extract the premium associated with higher risk.

12. *See* JONATHAN CHENG ET AL., PRIVATE EQUITY COUNCIL, DEMYSTIFYING THE CREDIT CRUNCH: A PRIMER AND GLOSSARY 5 (2008).

13. *Id.* at 5–7.

14. *Id.*

15. "A collateralized debt obligation is a way of packaging credit risk in much the same way as a collateralized mortgage obligation is a way of packaging prepayment risk. This involves creating four classes of securities, known as *tranches*, from a portfolio of corporate bonds or bank loans. The creator of the CDO normally retains tranche 1 and sells the remaining tranches in the market.8 A CDO provides a way of creating high-quality debt from average-quality (or even low quality) debt." HULL, *supra* note 11, at 646–47.

16. "The over-the-counter market is a telephone- and computer-linked network of dealers, who do not physically meet. Trades are done over the phone and are usually between two financial institutions or between a financial institution and one of its corporate clients." *Id.* at 2.

17. *See* BARTH, *supra* note 1, at 13; Tyler Durden, *The Negative Convexity of CDS Trading and Why CDOs Chase Markets*, SEEKING ALPHA, Feb. 19, 2009, http://seekingalpha.com/article/121462-the-negative-convexity-of-cds-trading-and-why-cdos-chase-markets.

18. *See* BARTH, *supra* note 1, at 5.

19. *See* CHENG, *supra* note 11, at 3.

20. *Id.* at 5.

the lending business into a manufacturing and packaging game.[21]

Third, the products that prompted the credit freeze were the so-called "toxic assets" engendered by the subprime mortgage loan market. The facts regarding the way toxic assets came to destroy the market are undisputed:

- The ABS market for subprime mortgage-backed securities grew from under 10% of all mortgages in 2000 to roughly 25% in 2007;[22]
- The significant drop in the quality of subprime mortgages beginning in late 2005—the subprime mortgages written in 2006–07 are significantly more likely to default than earlier vintages of loans;[23]
- The realization that significant numbers of new mortgages (and the securitized assets built on them) would not perform nearly as well as the models used to structure and value them predicted caused a collective panic in the trading and banking communities;[24]
- Continual refinement of increasingly specialized asset classes from prior larger groupings, done in order to create specialized products, combined with a limited numbers of players in each sub-sector, led to a cascading seizure that started in long-term debt markets and moved rapidly into short-term money markets, thereby crippling the economy.[25]

In short, the relationships among market participants trading CDSs and other products based on subprime securities served as the transmission mechanism to spread toxins throughout the system.

Lastly, the widely held view that market participants would moderate their own behavior in order to protect their individual corporate viability obviated the need for an entity to oversee the overall system. With no central authority to report to, those who wanted to raise concerns regarding subprime securities market trading practices were unable to do so.[26] Adding to the complexity of the problem was the increasing globalization of the financial services industry, accompanying decreases in transparency,[27] and the corresponding tendency of firms to engage in

21. *See* BARTH, *supra* note 1, at 11–15.
22. *Id.* at 8.
23. *Id.* at 23.
24. *See generally* GOODMAN, *supra* note 5.
25. *Id.*
26. *Id.*
27. *Id.* at 316.

regulatory arbitrage.[28]

III. THE PRODUCTS

Products in the financial market contributed to the building complexity and lack of oversight preceding the market's deterioration, and therefore are integral to a discussion on the way to prevent similar financial problems in the future. Relevant trends include the evolution and use of collateralized debt obligations (CDOs) and credit default swaps (CDSs).

A. Derivative Securities: Structured Products (CDOs) and Pure Derivatives (CDSs)

Derivatives consist of two major categories: structured instruments that represent pieces of underlying assets and the classic "pure derivatives," including options,[29] forwards,[30] futures,[31] and swaps.[32] The evolution of the markets for structured debt products led to the emergence of a market for pure derivatives based on the credit risk that one of the parties in the deal may default on its payment terms, hence the name "Credit Default" market, often referred to as the "Credit Risk" market.[33]

Structured products were generally developed with one of two goals in mind—either to raise capital (especially for corporations) or to free up room on the balance sheets of lending firms.[34] The layers of relationships and corresponding obligations (debts or potential debts) created a house of cards tied together with an increasingly complex series of links between the instruments and participants. This uncertainty was compounded by a lack of investment in the back office, where the physical processing of transactions takes place.[35] With the attitude that "traders and deals make money, everyone else is just a parasite," companies often made short-sighted investments by outsourcing staff and

28. *See generally* GOODMAN, *supra* note 5.

29. Options allow one to pay for the ability, though not the requirement, to buy or sell something in the future at a price determined today. *Id.* at 6.

30. Forwards allow one to lock in a future price without having to pay for the privilege, but one is committed to the deal—there is no option not to transact at the given date. *Id.* at 2.

31. A future is a form of standardized forward that trades on an exchange. *Id.* at 5.

32. A swap is an agreement to exchange cash flows in the future. HULL, *supra* note 11, at 1. For more discussion of structured instruments and pure derivatives, see *id.* at 125.

33. *Id.* at 637.

34. *See generally* GOODMAN, *supra* note 5.

35. *Id.*

by implementing production mechanisms that put no value on experience.[36] The products and markets became more complex and specialized, and the costs calculated by companies regarding the resources required to manage and complete transactions focused only on a small subset of actual value. "If we don't know how to measure it, or we haven't taken it into account in the past, then it doesn't exist" seemed to be the mantra of companies at the time.[37] This attitude led to a general obliviousness to the high-risk nature of instruments based on subprime loans and a corresponding recklessness in trading such instruments. Furthermore, the lack of authority regulating the risk assessment capabilities of the back office has made it nearly impossible to track the irresponsibility of companies pursuing such high-risk transactions.

1. Collateralized debt obligations

Although there are a variety of ways to categorize CDOs, for purposes of creating an audit trail there are three important questions to focus on:

(1) Is the CDO "funded" or "unfunded"? The distinction here is a combination of the way the deal is constructed and whether securities need to be issued or cash needs to be invested for the CDO to be traded.[38]

(2) Is the CDO a "synthetic" or "hybrid" structure? A standard CDO[39] is where the tranches[40] represent actual underlying ABS instruments.[41] A synthetic CDO is where some or all of the tranches consist of packages of CDSs that are designed to emulate the cash flows that would result from the selected underlying instruments instead of acquiring the ABS instruments that actually do produce the cash flows (this usually creates basis risk).[42]

(3) Is the CDO actively or passively managed? If the fund manager is able to trade other products to maintain the asset base of the CDO, then there may be several areas where

36. *Id.*

37. *Id.*

38. HULL, *supra* note 11, at 646.

39. *See id.*

40. A *tranche* is one of a number of related securities offered as part of the same transaction. The word *tranche* is French for slice, section, series, or portion. In the financial sense of the word, each bond is a different slice of the deal's risk. Transaction documentation usually defines the tranches as different classes of notes. *See* DWIGHT, *supra* note 2, at 6.

41. HULL, *supra* note 11, at 646.

42. *Id.*

> certain risks are introduced that are hard to measure or even to detect.[43]

Such complexities require extensive documentation in order to detect possible risks and assess them properly. Without this documentation it would be impossible for the financial institution to know if it were making a deal likely to leave nothing but toxic assets in the portfolio.[44] Once the deal has proven financially detrimental to the parties involved, it is increasingly difficult for federal regulators to determine where things went wrong, or to allocate responsibility for the situation, unless documentation is available to identify the original agreement.

2. Credit default swaps

Credit default swaps are bilateral contracts entered into to insure against the default of a particular company.[45] Originally created as a method for banks to mitigate their risks on loans and bonds,[46] CDSs have become the primary instrument used in the Credit Risk Markets.[47] They comprise roughly 95% of the currently estimated credit derivatives transactions and have served as the primary disease vector to spread interlocking risks globally.[48] Other products in these markets include total return swaps and total asset swaps.

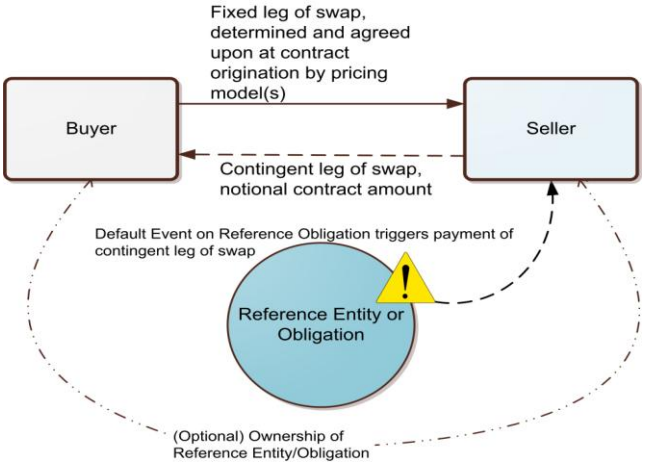

Diagram 1

43. *Id.*
44. *See generally* GOODMAN, *supra* note 5.
45. CHENG, *supra* note 12, at 5.
46. *Id.*
47. *Id.*
48. *See* Antoine Bouveret, *The Credit Default Swap (CDS) Market*, 52 TRÉSOR-ECONOMICS 1, 2 (Feb. 2009).

In a traditional CDS arrangement, it is entirely optional for either party to have an ownership interest in the underlying reference entity. (See Diagram 1, illustrating the relationships in a CDS.)[49] This option is a critical factor in the growth of the market and in some of the more negative aspects of CDSs combined with other instruments, particluarly CDOs. In options markets, writing (i.e., selling) a put option on a security one does not own is referred to as a "naked put."[50] A firm selling a CDS that does not own the reference obligation is essentially writing a naked put. Also, it is important to note that the reference entity has no voice in the transaction—neither the buyer nor the seller is obligated to report to anyone else that they have entered into the swap agreement. A useful analogy is car insurance—not only can one buy insurance for his own car, but so can hundreds of other people. The insurance company will collect premiums from everyone who buys a policy, but if the original owner drives his car into a ditch, the insurance company will have to pay everyone who has purchased insurance on that individual's car.[51]

Reference entities and obligations are typically sovereign or corporate debt or, starting in roughly 2002, tranches of structured securities.[52] Default events are either "hard" or "soft," depending on whether the terms of the deal allow, for example, a missed payment to be made up in future installments.[53] The soft defaults and the customization with which they were created are a significant factor in the recordkeeping nightmare into which the CDS transactions have evolved.[54]

A key attribute of a CDS is the difficulty of getting out of it—there is no standard way to "tear up" a contract. The lack of a standardized termination method led many parties to write another CDS with a third party that would offset the risk of the original contract, thereby adding another instance of counterparty risk. Additionally, the process of "novation" (i.e., a somewhat controlled re-assignment of deals) created a significant mess in the recordkeeping and lifecycle management processes related to CDS deals.

49. Diagram created by Bill Nichols based on discussions with industry participants.

50. *See generally* HULL, *supra* note 11.

51. Interview with Jim Northey, FIX/LaSalle Technology Group.

52. *See generally* David Mengle, *Credit Derivative: An Overview*, 92 ECON. REV. 4 (2007).

53. *See generally* International Swaps and Derivatives Association, Inc. (ISDA) Home Page, http://www.isda.org. The ISDA documentation covers six types of Default Events.

54. *Id.*

B. Subprime Synthetic/Hybrid CDOs—The Toxic Disease Vector

The intersection of the CDO and CDS markets was central in the market meltdown. Synthetic and hybrid CDOs created using CDSs to emulate subprime ABS tranches and cash flow in turn created multi-layered relationships. Because multiple players in the CDS market had offsetting positions, the chain of relationships was tightly coupled and cascaded out to other parts of the market faster than participants could track or measure.[55] Poor documentation of the increasingly complex web resulted in trades based on incorrectly calculated valuations of instruments. When these instruments mature or a default is triggered, there is a great difference between the money available and how much was expected or even guaranteed due to the improper valuations used.[56] Without the documentation and a regulating authority to review it, there is no recourse for those injured by the recklessness of financial institutions that misrepresent what they trade and ultimately sell what they do not own.

IV. THE SUPPLY CHAIN: FOLLOW THE MONEY

With a foundational understanding of the factors leading to the current crisis, one can examine a specific set of CDOs—securities built from subprime ABSs with underlying vintages of 2005, 2006, and 2007. Analyzing the supply chain in both directions (from origination to purchase), greatly helps one to understand exactly where the assets and obligations lie in the marketplace.

A modern market economy is organized around moving money either in the present (making payments and borrowing money for a very short period of time) or in the future (borrowing money for longer periods or investing in some form of asset). The payment mechanisms and short-term lending functions form the essential basis for the operations of all members of the larger economy and are here referred to simply as "banking." The investments and insurance sub-sectors of the financial services industry are more complex and differentiated. The focus here is primarily on the sub-sector of the investment groups that engage in capital market activities—the creation and trading of securities. All gateways to the investments group go through some type of banking layer. In the United States, this path consists of a finite

55. Ingo Fender & Janet Mitchell, *Structured Finance: Complexity, Risk and the Use of Ratings*, BIS Q. REV. 67, 69–70 (June 2005).

56. *Id.*

number of firms, an extremely simple group to identify.[57] As discussed below, many participants play multiple roles. And that is only the beginning.

A. The Processes and Players

The overall process of creating and selling new financial instruments consists of two relatively discrete steps. The first step is loan origination and underwriting. Loan origination is the process by which loans originate. Underwriting is the process of bringing securities to market; an initial public offering in the stock market is typically underwritten by consortium of investment banks, known as a syndicate.[58] Specific mechanisms vary across asset classes and by original source of funds. In the case of subprime mortgages, the original securities were not designed to be traded in the secondary markets and required further modification into structured ABS pools (with their associated CDOs) to make them tradable assets.[59] The second step is structuring and packaging. Structuring refers to the legal, financial, and operational business processes required to acquire and create pooled securities.[60] Packaging refers to the marketing, sales, distribution, and lifecycle management pieces required to solicit buyers for new securities.[61]

Once securities have been sold to the initial investors, they become available in secondary markets. In these secondary markets, ownership of the actual securities can change and other market participants—not necessarily owners of the new securities—can use derivative instruments to make trades reflecting their view of the securities' value.[62] The creation of these new financial instruments relative to subprime mortgages for the secondary markets brings its own complexities into the equation.

B. Special Purpose Vehicles

Special purpose vehicles (SPVs) are the means by which subprime asset-backed securities in their new securitized form are sold into the

57. Philip Arestis & Elias Karakitsos, *Subprime Mortgage Market and Current Financial Crisis*, CAMBRIDGE CENTER FOR ECON. & PUB. POL'Y 1, 7–9 (2009).

58. *See* Securities Act of 1933 § 2(A)(11) (2009); *see, e.g.*, United States Securities and Exchange Commission, Form S-1, Registration Statement, Visa Inc. (Nov. 9, 2007).

59. Asset-Backed Securities, Exchange Act Release Nos. 33-8518; 34-509405 (Mar. 8, 2005), *available at* http://www.sec.gov/rules/final/33-8518.htm [hereinafter SEC].

60. *See generally* Heavenrich & Company, Inc., http://www.heavenrich.com/structuring.html (last visited Nov. 16, 2009).

61. *Id.*

62. *See generally* SEC, *supra* note 59.

market.[63] SPVs are a core piece of the structured finance ecosystem. The specific parties involved in SPVs are important links in the chain to "Follow the Money."[64] (See Diagram 2 for a generic view of relationships and players involved in a typical deal.)[65]

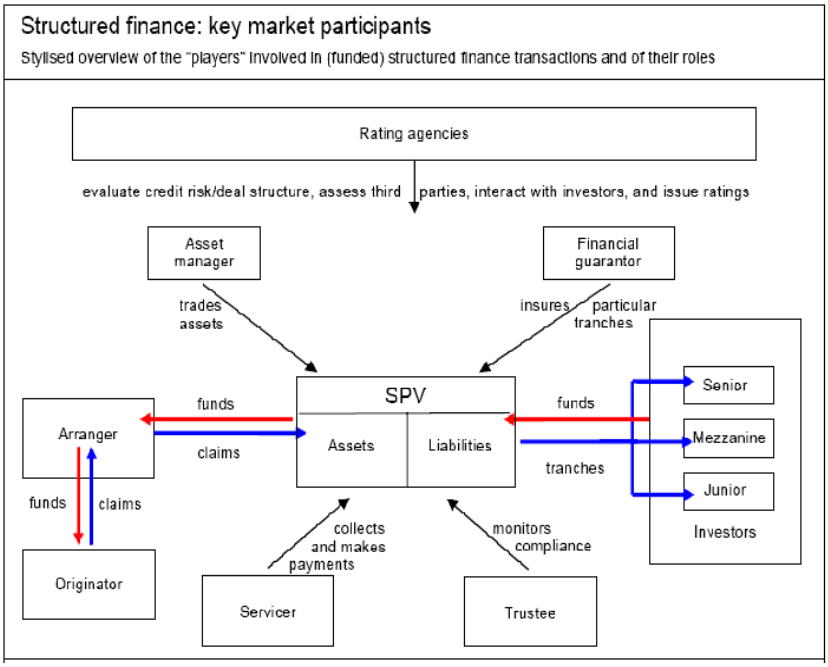

Diagram 2

One can follow the money trail with the originators of the loans used

63. The SPV has specific legal, accounting, governance, and operational processes, and there are several different versions of these structures, due mainly to different rules for manufacturers depending on their position in the supply chain and relationship to the core underlying instruments. Here we'll use the term SPV generically to include all these variations.

64. Fender & Mitchell, *supra* note 55, at 67, 70.

65. Committee on the Global Financial System, *The Role of Ratings in Structured Finance: Issues and Implications*, BIS Q. REV. 6 (Jan. 2005).

to create asset-backed securities. For subprime mortgages, independent loan brokers originated the loans and sold the mortgages, at closing, to mortgage loan companies, such as Countrywide Financial.[66] Countrywide (or similar loan companies) would then sell the loan to banks, investment banks, or brokerage firms, like Citigroup, Inc. or Merrill Lynch.[67] The banks or firms then packaged pools of these loans (typically with common characteristics such as interest rate or maturity) into asset-backed securities. These asset-backed securities would in turn be sold to institutional investors such as hedge funds, insurance companies, pension funds and mutual funds.[68]

C. Unraveling the Documentation

The Securities and Exchange Commission (SEC) requires registration of each pool of asset-backed securities. Typically banks or firms use their own in-house counsel or hire outside attorneys to prepare and file paperwork with the SEC. In addition, they often hire independent accountants to review their books in accordance with SEC requirements.[69] It appears, however, a significant amount of data was unrecorded with respect to the asset-backed transactions, especially because certain filings were optional.[70] Actual completeness and accuracy of filings related to securitized structures varied widely.[71] Thus, a systematic assessment of these records is essential in unraveling what went wrong and developing a way to prevent such problems in the future.

Simply stated, lack of supervision in the securities trading market made an economic crisis both possible and probable. Society has been warned previously that financial supervision should keep up with financial innovation.[72] In keeping with that spirit, before the crisis, a

66. Countrywide Financial was a former independent mortgage lender which has since been incorporated into Bank of America. *See* Zac Bissonnette, Bank of America Ditches Countrywide Name, BloggingStocks, 19 Feb. 2009, http://www.bloggingstocks.com/2009/02/19/bank-of-america-ditches-countrywide-name/.

67. By 2006, nearly every major investment bank or bank had purchased a non-bank specializing in subprime mortgage loans and set up a "warehouse" program to accumulate loans for repackaging, making their ties to the industry even closerand, of course, increasing the demand for new loans.

68. Paul Muolo & Mathew Padilla, Chain of Blame: How Wall Street Caused the Mortgage and Credit Crisis 221-222 (Wiley & Sons 2008).

69. *See generally* SEC, *supra* note 59.

70. *Id.*

71. *Id.*

72. Aaron Unterman, *Innovative Destruction-Structured Finance and Credit Market Reform in the Bubble Era*, 5 Hastings Bus. L.J. 53, 57–59 (2009).

multiple-authority supervision regime was in place that involved both state and federal regulation and multiple departments, including the Federal Reserve Bank, the Office of the Comptroller of the Currency, the Office of Thrift Supervision, the Federal Deposit Insurance Corporation, and the SEC. This regime may have reflected the spirit of checks and balances, as then Chairman of the U.S. Federal Reserve Alan Greenspan successfully argued "the absence of the dual system could actually hurt consumers and the economy."[73] However, with economic globalization and rapid advancement of financial institutions, this multiple-authority supervision regime created regulatory gaps resulting in unsupervised high-risk derivatives.[74]

The most obvious of these gaps is the non-conforming regulatory criteria. For example, while regular reporting of distributions from structured investment vehicles can be found in documents filed with the SEC, it is difficult to find internal company documentation of settled transactions in CDSs.[75] Trades in CDSs were done by teams on the CDS desks of the investment banks; however, trades which were transacted over the phone or via text messages were rarely cleared or settled in a timely fashion by the banks' back office operations.[76] In 2005, the Federal Reserve uncovered a three-month delay in over 70% of the CDS transactions on the Street.[77] Little investment in back office technology and a lack of communication with the front offices hindered efficient operations with regard to these securities.[78] As there are no specific guidelines regarding responsibility for the regulation of CDSs or CDOs, no one regulatory body claims responsibility for overseeing trading of these high-risk derivatives.

In the chaotic and unregulated ABS/CDO/CDS market of 2005–2007, it is now apparent that little effort was made to carefully evaluate the risk of the investments made by those buying and selling these products. This combination of gaps and irregularities contributed in a myriad of ways to the meltdown of the credit markets.[79] However, another important issue is the lack of timely documentation and

73. *BNA Banking Report*, Mar. 7, 1994 (arguing that having no alternatives in financial regulation can hurt financial consumers and the economy).

74. David Schmudde, *Responding to the Subprime Mess: The New Regulatory Landscape*, 14 Fordham J. Corp. & Fin. L. 709, 732 (2009).

75. *See generally* SEC, supra note 59.

76. Timothy F. Geithner, Remarks at the Bond Market Association's Annual Meeting in New York City (Apr. 20, 2005), *available at* http://www.newyorkfed.org/newsevents/speeches_archive/2005/gei050420.html.

77. *Id.*

78. *Id.*

79. *See generally* SEC, *supra* note 59.

recordkeeping in this unregulated market, especially with respect to CDSs.[80] Trading new, evolving, and highly complex instruments with undocumented (or unknown) lifecycle requirements coupled with a chronic lack of investment in operations is hardly a novel recipe for trouble.[81] However, the historical tendency of the front office and senior management to regard operations as a "necessary evil" to be funded at minimal levels does not, by itself, explain what happened.[82]

D. The Toxic Assets Web

Unwinding the threads from subprime mortgages to the ABSs containing these mortgages, the packaging of CDOs from the same underlying subprime assets, and CDS transactions based on the subprime securities (but not requiring the underlying asset) essentially reveals the same players creating, selling, and buying securities. (See Diagram 3.)[83] In this process, the initial one dollar loan was magnified to five dollars or even fifty dollars worth of financial derivatives. Each step lengthened the financial chain, until finally, no one cared about the basic value of the financial products, leading the market to solve the problem with the fruits of short-term speculation. The creation of a CDO required the bundling of existing ABSs and other assets into a single securitized loan with differing tranches.[84] Bankers and lawyers created the security, traders and sales people in investment banks sold pieces of the loan, and the same parties who had purchased the original ABSs were often the same hedge funds, insurance companies, and pension funds who purchased these derivative securities.[85] In the same way, CDS sales and trading were typically done among the same cast of characters, with the traders once again making money for their investment bank, hedge fund, or bank with each trade.[86] The investment banks made money with every trade, from the bottom of the structure to the top.[87]

80. Id.

81. Geithner, *supra* note 77.

82. *Id.*

83. Diagram conceived and created by Bill Nichols. See Muolo & Padilla, *supra* note 68, at 220.

84. *Id.* at 221.

85. *Id.* at 115, 221.

86. *Id.* at 115.

87. *Id.* at 220; Gretchen Morgenson, *How the Thundering Herd Faltered and Fell,* N.Y.TIMES,Nov.08,2008, http://www.nytimes.com/2008/11/09/business/09magic.html?_r=1&8dpc=&_r.

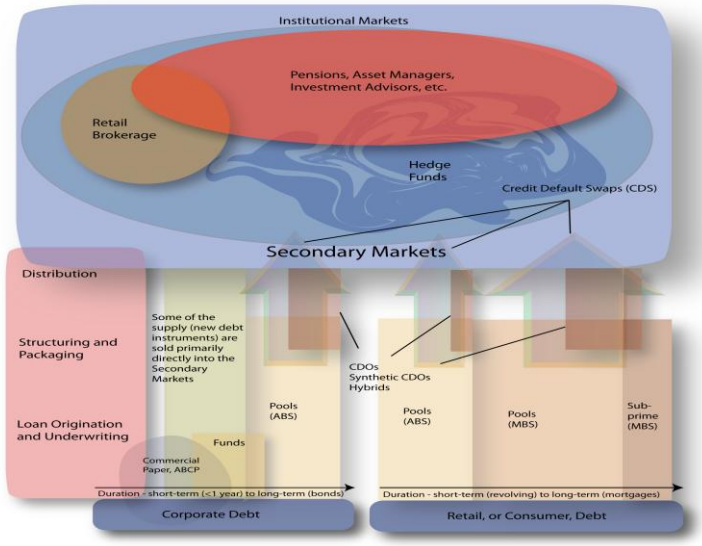

Diagram 3

E. The "Magic Happens Here": The Way to Make Something Toxic Smell Clean

When U.S. housing price appreciation began to slow in 2007, the investment banks traded CDOs based on subprime ABSs that went from reasonably risky but high yielding instruments (that one theoretically could pass off to other investors) to toxic assets almost overnight.[88] This change was due in significant part to a combination of poor modeling assumptions (e.g., "house prices never go down") and related inflated credit ratings applied to structured ABS tranches when they were wrapped inside the CDO envelope and augmented with various forms of credit enhancement.[89] In a process that now looks to be a tragic combination of magic and wishful thinking, some of these tranches somehow ended up with AAA investment ratings and were marketed as high quality investments, which dramatically broadened the base of potential investors to include pension funds and asset managers. (See Diagram 4.)[90]

88. GOODMAN, *supra* note 5, at 298.

89. *Id*. at 128–29.

90. Diagram created by Bill Nichols based on discussions with industry participants. *See* SEC, *supra* note 59; GOODMAN, *supra* note 5, at 316; Mengle, *supra* note 52, at 8–9.

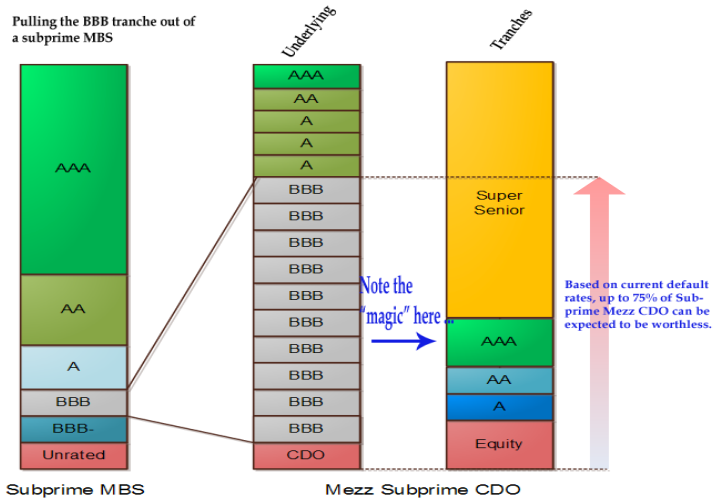

Diagram 4

Looking back, in the wake of the creative ratings of the CDOs, a more active public sector involvement should now be emphasized. Not only should the short-term issues be fixed, but also a sounder financial system must be established to serve our long-term goal of a stable financial market.

V. WHAT SHOULD BE DONE?

In order to create a more sound financial system, a conceptual audit trail of the toxic assets borne from the subprime mortgage market should be established. Such an audit trail can be created by simply identifying the inputs and their corresponding instruments in the assets. Although difficult, it is a task that can be done. Given the evolution of technological tools, much of the standard software used to manage global data flows for business in financial recordkeeping could be used to achieve this goal.

As discussed above, the core arena for the market meltdown was the intersection of the markets for CDOs and related CDSs. Fewer than fifty firms globally were at the nexus where SPVs were spun out of banks and

used to create subprime ABS CDOs,[91] which makes a central repository of these transactions very manageable. Starting with known loans with poor vintages (post-June 2005) and working out the (at times theoretical) money and contract flows structurally through the securities markets would be the starting point to reconstruct and find the errors in the system. Once the data is collected from the various parties, regulators, financial institutions, and investors should be better able to understand the combination of factors that permitted the toxic asset "house of cards" to be assembled. This will hopefully encourage financial institutions to invest more heavily in their back office to avoid the prevalence of toxic assets in their portfolio. A stronger back office would mean more accurate valuation of securitized assets and a clearer paper trail. This should make institutions more accountable to regulating authorities, more responsible to their customers, and better overall shepherds to their shareholders' investments.

Ideally, a policy would be implemented to augment the motivation to continue the data collection in these products and to fill in the gaps through which certain instruments have squeezed. In tandem with institutional measures, the government's policy of providing transparency in our financial markets[92] should make such a data warehouse for financial instruments and market participants a critical piece in rebuilding our financial infrastructure. While the costs of this effort are not trivial, many times the amount of money required for this task has been handed to market participants responsible for creating much of the crisis, with little discernible result.

VI. CONCLUSION

Unlike with past systemic market breakdowns, the technology and ability needed to analyze precisely what happened in the current market meltdown exists today. In the process, one can gain the knowledge needed to craft future regulatory and governance approaches that consider the collective set of facts that led to the current credit crisis. On October 23, 2008, former Chairman of the U.S. Federal Reserve Alan Greenspan testified before the Committee of Government Oversight and Reform, stating that he had made a "mistake" in believing that banks, operating in their own self-interest, would do what was necessary to protect their shareholders and institutions.[93] He called it "a 'flaw' in the

91. BARTH, *supra* note 1, at 29.

92. BARTH, *supra* note 1, at 37–38.

93. See Brian Knowlton & Michael M. Grynbaum, Greenspan "Shocked" that Free Markets

free market theory."[94] Creating a central repository of transactional history and a government authority to both regulate it and guide financial institutions to be more responsible (while allowing them to retain self-interest as the motive) is necessary to fix that flaw. The "what" and "how" of the contents to be regulated will be uncovered as one learns from the past market collapse and works through the flawed structures and processes that created that collapse. However, time is of the essence. Each day new transactions further obscure the record, lessening our chances of stopping this market crisis from reoccurring.

are Flawed, N.Y. Times, Oct. 23, 2008, http://www.nytimes.com/2008/10/23/business/worldbusiness/23iht-gspan.4.17206624.html.

94. *Id.*