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DODD-FRANK, SECURITIZATION, AND THE SUBPRIME MORTGAGE CRISIS

Stephen Hoffman*

INTRODUCTION

There are few things more constant in life than the rise and fall of financial markets.

Often, this volatility is the result of market inefficiencies or other natural forces. Other times, such as over the past fifteen years, market effects can wildly fluctuate between a dream and a nightmare for the people held captive by it. And when the markets crash, we are left to pick up

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the remaining pieces and try to put them back together again. In the wake of the recent financial collapse, Congress enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act\(^1\) to not only prevent such disasters in the future, but to help restore financial stability if and when they do occur.

In this Paper, I shall discuss the events and conditions leading up to the 2007 subprime mortgage crisis, as well as Congress’s legislative response. In Part I, I review the process of asset securitization—the pooling of rights to underlying assets and selling those rights in the form of securities—including some of its purposes and benefits. In Part II, I focus on particular securitization products such as financial derivatives, which have gained prominence over the last few decades and are widely regarded as a primary contributor to the recent market collapse. I also describe other synthetic financial products related to derivatives to illustrate how common and useful synthetic products are. In Part III, I provide an overview of the events contributing to the financial crisis, and then describe the crisis as it unfolded.

In Part IV, I discuss the recently-enacted Dodd-Frank Wall Street Reform and Consumer Protection Act, one of Congress’s most ambitious and wide-reaching financial and regulatory legislation. At over 800 pages, this Paper does not provide an exhaustive analysis of all of its provisions. However, I do discuss some key provisions, as well as recent proposals and rulemaking developments. In conclusion, I assert that, although Dodd-Frank’s effectiveness at deterring or diminishing financial crises is still unknown, financial practitioners and investors alike have reason to be cautiously optimistic.

I. SECURITIZATION: THE LIFEBOOD OF MODERN FINANCE

Structured finance, which describes virtually any type of financing other than conventional on-balance sheet securities such as common debt and equity instruments, has been around for centuries in one form or another.2 These transactions almost universally center on structuring a deal to modify or redistribute the collateral’s risk among different classes of investors.3 Because these products are designed for raising funding or reducing financial risk (“hedging”) for a business, as opposed to creating illiquid or other nonmonetary benefits, the term “structured finance” does not include swaps of physical assets or trades of bonds with identical coupon terms.4 Typically, structured finance is used to hedge risk or refinance obligations where more conventional securities are inadequate, unavailable, or more costly.5

Over the past few decades, these more complex financing structures have exploded in popularity among banks and investment firms.6 This dramatic increase is partly due to the versatility of these transactions and their ability to simultaneously achieve many corporate management goals, such as lowering funding costs, increasing leverage, and reducing capital adequacy requirements.7

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3 FRANK J. FABOZZI & VINOD KOTHARI, INTRODUCTION TO SECURITIZATION 7 (2008).

4 Jobst, Primer on Structured Finance, supra note 2, at 202. Swapping coupons with different terms, on the other hand, is regularly done using structured finance, such as where parties swap the interest rates on bonds they hold (interest-rate swap).

5 See id. at 200-01.


7 See TAVAKOLI, supra note 2, at 1; FABOZZI & KOTHARI, supra note 3, at 7 & 14-17.
One subcategory of structured finance is securitization. Securitization generally describes “the creation and issuance of securities backed by a pool of assets,” or asset-backed securities (ABS). The securitization process “efficiently allocates risk with capital” by allowing the originator or issuer of the securitization (the securitizer) to package these underlying assets and sell the package in financial markets. Moreover, securitization allows a company to raise substantial funding by issuing securities of higher quality than its secured debt, which again leads to lower deal costs. However, whether a particular package or issue of packaged assets will truly constitute a securitization depends on the regulatory scheme. For an illustration of how structured finance, securitization, and some common financial products relate, see Figure 1.

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9 TAVAKOLI, supra note 2, at 1. It must be understood that the term “securitization” itself has no all-encompassing definition, even today in the wake of the 2007 financial crisis. See id.; Lipson, supra note 6 (manuscript at 3); TAVAKOLI, supra note 2, at 1. Therefore, the Reader should understand that any definition provided in this Paper is only to simplify discussion.

10 Steven L. Schwarcz, The Future of Securitization, 41 CONN. L. REV. 1313, 1315 (2009). A securitizer is an ABS issuer or a person who organizes and initiates an ABS transaction by directly or indirectly transferring assets to the issuer, while an originator is a person who creates the collateral for an ABS and sells it directly or indirectly to a securitizer. See Dodd-Frank Act § 941(b) (adding 15 U.S.C. §§ 78o-11(a)(3)-(4)).

11 FABOZZI & KOTHARI, supra note 3, at 6.

The securitization process can—and often does—generate millions or even billions of dollars. Professors Frank J. Fabozzi and Vinod Kothari, foremost experts in securitization, assert that “[s]ecuritization is as necessary to any economy as organized financial markets.” So how does this amazingly important financial tool work?

Securitization, or asset securitization, can be an extremely complex process and varies widely depending on many different factors. In general, it occurs where a party owning rights

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13 Fabozzi & Kothari, supra note 8, at 13.

14 The term “asset,” as it is used in this context, can refer to any enforceable right in the underlying property. TAVAKOLI, supra note 2, at 1 (“Virtually any combination of financial assets or stream of cash flows can be
to assets converts those rights into a repayment stream by pooling them together into a package
and then issuing securities, where payments on these securities mainly depend on the
performance of the underlying assets.\textsuperscript{15} The originator can then raise financing by using the
package as collateral for a loan or by issuing debt securities to investors, often in the form of
bonds.\textsuperscript{16} A bond is a fixed income instrument that guarantees a particular return (coupon price)
over the life of the instrument, which can be as brief as a few months or as long as thirty years.\textsuperscript{17}
In general, the originator does not issue the securities itself, and instead sells the package of
assets to an entity created or operated specifically for that purpose—termed a “special purpose
vehicle,” or SPV—which returns the proceeds to the originator. Figure 2 illustrates a basic
securitization.

\textsuperscript{15} See Securitization of Assets: Problems and Solutions: Hearing Before the S. Comm. on Banking, Hou.


Although receipt of payment in standard, non-securitization transactions generally depends on the performance of
the underlying assets, securitization instead ties the associated risks to repayment rather than performance. \textit{FABOZZI \& KOTHARI, supra} note 3, at 7.

\textsuperscript{16} \textit{DEACON, supra} note 12, at 1.

\textsuperscript{17} \textit{PERRY H. BEAUMONT, FINANCIAL ENGINEERING PRINCIPLES: A UNIFIED THEORY FOR FINANCIAL PRODUCT

ANALYSIS AND VALUATION} 3 (2004). For purposes of this Paper, the term “bond” also includes notes and money
market instruments, which are fixed income instruments that reach maturity in no more than ten years and one year,
respectively. \textit{Id.} Furthermore, bonds must be distinguished from “participation certificates”: the latter instrument
may be used to purchase a share of (“participate in”) receivables, while the former might be a debt instrument
secured by those receivables. See Dale A. Whitman, \textit{How Negotiability Has Fouled Up the Secondary Mortgage

Market, and What to Do About It}, 37 \textit{PEPP. L. REV.} 737, 738 (2010). In essence, participation certificates act very
similarly to notes. Brent J. Horton, \textit{In Defense of Private-Label Mortgage-Backed Securities}, 61 \textit{FLA. L. REV.} 827,
840-42 (2009) (stating “they are a participation interest in the cash flows from a pool of such notes, the profitability
of which is made possible by the efforts of others”). Note, however, that in securitization filings and documents—
particularly the prospectus—the asset-backed securities issued by the SPV are actually referred to as certificates.
\textit{FABOZZI \& KOTHARI, supra} note 3, at 10.
Figure 2: Basic Securitization Structure

Securitizations commonly take two general forms. The first form, termed a “true sale” securitization, occurs where the underlying assets themselves are transferred by the originator to the SPV, removing the assets from the originator’s balance sheet.\textsuperscript{18} In contrast, synthetic securitizations (termed “synthetics”) effect a transfer of only the assets’ credit risk through the use of credit derivatives; accordingly, synthetics do not remove the underlying assets from the originator’s balance sheet.\textsuperscript{19}

The securitization process is immensely versatile, and has been used to package rights as diverse as pharmaceutical patents,\textsuperscript{20} music royalties,\textsuperscript{21} household utility payments,\textsuperscript{22} movie ticket revenues,\textsuperscript{23} life insurance payouts,\textsuperscript{24} and legal settlement proceeds.\textsuperscript{25} However, because of this

\textsuperscript{18} Criado & Rixtel, \textit{supra} note 8, at 2.

\textsuperscript{19} FABOZZI & KOTHARI, \textit{supra} note 3, at 10; Ramos Muñoz, \textit{supra} note 8, at 219. Because synthetics do not transfer the assets themselves, they do not constitute a “true sale” for accounting purposes. TAVAKOLI, \textit{supra} note 2, at 9.

\textsuperscript{20} See MALCOLM S. DORRIS, DECHERT LLP, \textsc{The Securitization of Drug Royalties: A New Elixir?} (2003).


versatility, many legal hurdles exist to protect the integrity of financial markets and deter reckless and perilous uses of such financing.

A. Special Purpose Vehicles and Risk Transfer

To eliminate or reduce credit and insolvency risks, an originator must transfer the package off of its balance sheet.26 As mentioned previously, originators generally use a special purpose vehicle, or SPV, as the package’s recipient.27 An SPV is an entity formed or used by the sponsoring firm for a very limited purpose, typically investment or the holding of assets.28 An SPV may be legally formed as “a limited partnership, a limited liability company, a trust, or a corporation,”29 but most often takes the form of a commercial trust.30 These entities come in a variety of forms and acronyms based on the type of assets held,31 and is typically structured in such a way that results in a particular investment rating from a rating agency.32 The originator does this for several reasons.

26 “The transfer of ownership is crucial because it allows the firm to establish the bankruptcy remoteness of the SPV and the transferred assets.” Kenneth Ayotte & Stav Gaon, Asset-Backed Securities: Costs and Benefits of “Bankruptcy Remoteness,” 24 REV. FIN. STUD. 1299, 1300 (2011) (emphasis omitted).

27 These entities are also known as “special purpose entities” (SPEs), “special purpose corporations” (SPCs), or by other names. See TAVAKOLI, supra note 2, at 117; BASEL COMM’N ON BANKING SUPERVISION, BANK FOR INT’L SETTLEMENTS, THE JOINT FORUM: REPORT ON SPECIAL PURPOSE ENTITIES 47 (2009), available at http://www.bis.org/publ/joint23.pdf [hereinafter BIS REPORT ON SPVS]. Regardless of their titles, they serve roughly identical purposes and “can be used interchangeably.” Id.; TAVAKOLI, supra note 2, at 16.


30 Id. at 555.

31 See id. at 550. For instance, the entity type commonly used to hold mortgages is known as a real estate mortgage investment conduit (REMIC). John Crawford, CDO Ratings and Systemic Instability: Causes and Cure, 7 N.Y.U. J.L. & BUS. 1, 7 (2010). Other entities, such as a real estate investment trust (REIT) here, may also be used for the same purpose, but may be inferior due to legal or financial considerations. TAVAKOLI, supra note 2, at 135-36.

Foremost, the transfer allows the originator to move those assets off its balance sheet. This often improves profit margins or other indicators of the originator’s health or performance, which also improves its ability to obtain traditional financing (e.g., secured loans) at competitive rates. Moreover, so long as the transfer qualifies as a “true sale” under bankruptcy law, it prevents the assets from being seized by the originator’s creditors if the originator later becomes insolvent. This protection from bankruptcy creditors is a key benefit of securitization, since assets remaining on a business’s balance sheet could otherwise be subject to claims. For this reason, an SPV used in securitization is generally referred to as a “bankruptcy-remote entity,” or BRE.

The SPV, after receiving the package of pooled assets, will then issue bonds or other securities backed by the underlying assets (i.e., ABS) and pay the proceeds to the originator.

33 While this is true as a general principle, not all jurisdictions allow the assets to be removed from the originator’s balance sheet after they have been transferred to an SPV, e.g., residential mortgage loans under German Pfandbrief legislation. See ERIK BANKS, SYNTHETIC AND STRUCTURED ASSETS: A PRACTICAL GUIDE TO INVESTMENT AND RISK 77 (2006).

34 Fabozzi & Kothari, supra note 8, at 10 (stating that off-balance sheet financing “can help enhance . . . key financial ratios”). These include return on assets, tangible capital, regulatory capital, and leverage ratios. BIS REPORT ON SPVS, supra note 27, at 13.

35 These securitizations are known as true sale securitizations. TAVAKOLI, supra note 2, at 117. However, the originator may still be liable for losses, regardless of whether the assets were transferred in a true sale, if it has breached a representation or warranty. Adam B. Ashcraft & Til Schuermann, Understanding the Securitization of Subprime Mortgage Credit 6-7 (Federal Reserve Bank of New York, Staff Rep. No. 318, 2008); DEACON, supra note 12, at 37. For instance, in the realm of residential mortgage-backed securities, these representations and warranties include: that a licensed appraiser valued the property; that the originator verified the borrower’s income, employment, and assets in accordance with its underwriting standards; that the mortgage loan complied with all applicable law; that the mortgage loan is covered by any applicable insurance policies as required; and many others. See AMERICAN SECURITIZATION FORUM, ASF MODEL RMBS REPRESENTATIONS AND WARRANTIES (2009), available at http://www.americansecuritization.com/uploadedFiles/ASF_Project_RESTART_Reps_and_Warranties_121509.pdf. Breaching a representation or warranty compels the originator to repurchase the offending assets or securities. Ashcraft & Schuermann, supra note 35, at 6.

36 BIS REPORT ON SPVS, supra note 27, at 47 (referring to bankruptcy-remoteness as “[a] critical and defining feature of an SPE”). In more technical terms, the transfer of a securitization to a BRE removes the underlying assets from the originator’s bankruptcy estate. Ayotte & Gaon, supra note 26, at 1307. Additionally, some commentators state that SPVs “cannot in practice go bankrupt, as a matter of design.” Gorton & Souleles, supra note 28, at 549.

37 Crawford, supra note 31, at 7.
The SPV then issues the securities in special groupings known as “tranches,” with more highly-rated tranches receiving payment priority and other perks.38 Because pricing is inversely correlated to default risk, highly-rated tranches almost universally receive lower average coupon prices (i.e., lower payments to investors), thus reducing the funding cost of the deal.39

1. Tranching, Security Interests, and Payment

Financial markets are almost universally predicated on a risk-versus-reward model. In other words, the more risk assumed by an investor, the higher the potential return. Since different investors seek different levels of risk or return,40 originators try to structure an issue into a series of bonds with a range of credit ratings and characteristics in order to appeal to more investors, thus maximizing the issue’s value.41 These securities are usually then grouped by seniority (i.e., payment priority) into tranches, which create senior and junior classes of debt.42

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38 Id.; see infra Part I.A.1 for a discussion of tranches and the tranching process.

39 Taylor D. Nadauld & Shane M. Sherlund, The Role of the Securitization Process in the Expansion of Subprime Credit 11 (Fed. Reserve Bd. Fin. & Econ. Discussion Series, Paper No. 2009-28, 2009); see BANKS, supra note 33, at 73 (tranching provides credit enhancement, which lowers deal costs); Fabozzi & Kothari, supra note 8, at 10-11.


41 LAURIE S. GOODMAN ET AL., SUBPRIME MORTGAGE CREDIT DERIVATIVES 89 (2008). This is often done using sophisticated computer models which create a probability distribution of default risk, generally based on the default risk associated with other similar securities (where possible). See Fabozzi & Kothari, supra note 8, at 8.

42 Gorton & Metrick, Securitization, supra note 28, at 4; Ayotte & Gaon, supra note 26, at 1300. An additional two terms are commonly used together with “senior” and “junior”: “mezzanine,” which describes the tranches between the highest- and lowest-rated tranches; and “equity,” which describes the lowest-rated tranche. Credit Derivatives: At the Risky End of Finance, supra note 40; Ayotte & Gaon, supra note 26, at 1308; Martin F. Hellwig, Systemic Risk in the Financial Sector: An Analysis of the Subprime-Mortgage Financial Crisis, 157 DE ECONOMIST 129, 139 (2009). While the lowest-rated tranche does not constitute an equity interest in the way corporate stock does, it typically provides “share-like returns of 15-20% or so.” Credit Derivatives: At the Risky End of Finance, supra note 40.
The senior-most tranches are first-lien secured interests. Lower tranches, in contrast, are either second-lien secured interests or unsecured interests, and are subordinate to all tranches with higher priority. As a result, for a tranche to default, all collateral junior to that tranche must be eliminated or eroded. Understandably, this protection often helps senior tranches obtain high-quality credit ratings even where the underlying assets are seen as risky or, if the assets are other securities, do not or could not receive such ratings themselves.

Payments to holders are made in a “waterfall” payout structure based on priority. This means all holders of the senior-most tranche receive full payment on their coupons first, then full payment is made to the next-senior tranche, and so on, until either the payment stream has been exhausted or all holders’ coupon payments have been satisfied. Oppositely, losses due to default or deficiency are first distributed completely among members of the lowest-rated tranche before applying to members of the next lowest-rated tranche, creating a “reverse waterfall” for liabilities.

Tranches are often structured by credit rating. For example, an originator might group all AAA-rated bonds—regardless of each individual bond’s coupon terms—into a single tranche

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44 Id. It should be emphasized that the securities issued in each tranche are still part of the same underlying asset pool. As a result, higher-rated tranches do not necessarily contain safer securities, but instead provide additional risk protection against default than that provided to investors of lower-rated tranches.


46 Crawford, supra note 31, at 7.

47 Id. Principal payments, on the other hand, are typically paid only to the senior tranche for a period of time. After that time, those payments can also be distributed based on the “waterfall” structure. Id. at 7-8.

48 Id. at 10-11.

49 See Deacon, supra note 12, at 13-14.
of securities.\textsuperscript{50} Also, an originator could group all non-investment-grade securities into a single tranche.\textsuperscript{51} Still, such groupings can instead or additionally account for many other characteristics including payment priority, repayment terms, and coupon terms.\textsuperscript{52} In contrast to the example above, an originator could thus group together all bonds with identical coupon terms, regardless of the credit rating of the individual bond or bond issue.\textsuperscript{53}

Nevertheless, the process outlined above is that of a basic securitization. This model has been tweaked—and even radically altered—many times over the past forty years to match the unique needs of particular financial market participants and industries.\textsuperscript{54} While the first securitizations arose in the context of long-term consumer financing contracts,\textsuperscript{55} these devices have since been adapted for use with shorter-term financing as well as commercial and corporate assets.\textsuperscript{56}

2. \textit{True Sales and Bankruptcy-Remoteness}

For purposes of securitization transactions, it is virtually necessary to transfer ownership in the underlying assets to a BRE.\textsuperscript{57} This transfer removes the assets from the originator’s bankruptcy estate by way of a “true sale” of the assets from the originator to an independent firm.

\textsuperscript{50} \textit{See id.} at 13.

\textsuperscript{51} \textit{Id.}

\textsuperscript{52} \textit{See, e.g., id.} at 30 (fast-pay and slow-pay tranches).

\textsuperscript{53} \textit{See id.}

\textsuperscript{54} \textit{Id.} at 1-3; Andreas Jobst, \textit{What Is Securitization?}, \textit{Fin. \\& Dev.}, Sept. 2008, at 48, 48 [hereinafter Jobst, \textit{What Is Securitization?}].

\textsuperscript{55} \textit{DEACON, supra} note 12, at 1.

\textsuperscript{56} \textit{Id.;} Jobst, \textit{What Is Securitization?}, \textit{supra} note 54, at 48.

\textsuperscript{57} In this Paper, the term “bankruptcy-remote entities” includes special purpose vehicles, trusts, and investment companies because each of these entities is structured largely to avoid problems if the originator becomes insolvent. \textit{See BANKS, supra} note 33, at 39-41; \textit{DEACON, supra} note 12, at 45-46.
(i.e., an SPV), thus putting them beyond the reach of the originator’s creditors in the event of its insolvency. This understandably conflicts with the desires of creditors, who invariably want to increase the value of the estate, thus increasing distributions.

A true sale is “a transaction which legally and equitably removes the assets and any interest in the assets from the estate of the transferor.” If an asset transfer is not deemed a true sale, the bankruptcy trustee or a bankruptcy court can avoid the transfer and draw the assets back into the debtor’s estate, subjecting it to creditor claims. To determine whether a transaction constitutes a true sale, bankruptcy courts focus on many factors, including: whether the originator retains any interest in the transferred assets; whether the transfer price is fair to the parties; the transferee’s recourse options against the transferor; and the parties’ actual intent in entering the transaction.

58 It should be emphasized that, as the terminology suggests, these entities are bankruptcy-remote, not bankruptcy-proof. Prohibiting an entity from voluntarily filing for bankruptcy, even if in the best interest of the entity and its creditors, is against public policy and thus no entity can ever be bankruptcy-proof. Peter J. Lahny IV, Asset Securitization: A Discussion of the Traditional Bankruptcy Attacks and an Analysis of the Next Potential Attack, Substantive Consolidation, 9 AM. BANKR. INST. L. REV. 815, 833-34 (2001); Gorton & Souleles, supra note 28, at 557 (“The most straightforward way to achieve [a bankruptcy-proof entity] would be for the SPV to waive its right to file a voluntary bankruptcy petition, but this is legally unenforceable[.]”); Kenneth N. Klee & Brendt C. Butler, Asset-Backed Securitization, Special Purpose Vehicles and Other Securitization Issues, 35 UCC L.J. 23, 30-31 (2002). Even so, there are several other valid methods to make an SPV’s voluntary filing extremely unlikely. Gorton & Metrick, Securitization, supra note 28, at 32-33.

59 Klee & Butler, supra note 58, at 28. This is also incredibly important to investors, who do not want their payment streams modified or halted. Katherine D. Kale, Securitizing the Enterprise: Enterprise Liability and Transferred Receivables in Bankruptcy, 20 BANKR. DEV. J. 311, 313 (2003).

60 Kale, supra note 59, at 313.


62 Klee & Butler, supra note 58, at 42. Because of this, most originators or other parties to the deal will request a true sale opinion letter from a law firm stating that the proposed transaction will qualify as a true sale in any ensuing bankruptcy proceedings. FABOZZI & KOTHARI, supra note 3, at 9.

63 See Stephen J. Lubben, Beyond True Sales: Securitization and Chapter 11, 1 N.Y.U. J.L. & BUS. 89, 96 (2004). However, this list is not exhaustive and some of the listed factors might not even be considered by a particular bankruptcy court, since it has wide discretion in exercising its equitable powers. Id. at 96-97.
In structured finance, a true sale allows the originator to retain control over the assets (indirectly, through the BRE), and also allows the securitization to receive or maintain a particular credit rating. This bankruptcy-remote structure also eliminates the need for investors to conduct additional credit risk analysis, including the issuer’s bankruptcy risk. Other considerations, such as favorable tax treatment, limited recourse by creditors, and ensuring the entity cannot undertake additional risks and obligations than that necessary for issuing the securities.

Because this “true sale” quality is of utmost importance, originators often structure the transfer among multiple SPVs to ensure a bankruptcy court will not negate the sale later. One common structure used is the “multi-tier structure,” in which the originator transfers the assets to the first-tier SPV which then transfers the assets to another, second-tier, SPV, and can be repeated as many times as the originator wishes. This structure also benefits the originator since, for example, some non-U.S. jurisdictions require that a seller of receivables—commonly-pooled assets in securitization transactions—notify each debtor of the receivables (i.e., the

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64 Some commentators specifically deride true sales in securitization transactions, saying “the bankruptcy remoteness of these [securitization] sales cannot be sustained on either the black letter or on the spirit of the Bankruptcy Code[.]” David Gray Carlson, The Rotten Foundations of Securitization, 39 WM. & MARY L. REV. 1055, 1119 (1998).

65 DEACON, supra note 12, at 43.

66 See infra Part IV.A.

67 Kenneth C. Kettering, True Sales of Receivables: A Purposive Analysis, 16 AM. BANKR. INST. L. REV. 511, 516 (2008) [hereinafter Kettering, True Sales]. A security offers limited recourse if the payments are only owed on the obligation “to the extent that equivalent amounts are received on the underlying assets.” TAVAKOLI, supra note 2, at 22. Claims on amounts beyond those received are extinguished. Id.

68 Klee & Butler, supra note 58, at 40-41.

69 DEACON, supra note 12, at 43-44.

70 Klee & Butler, supra note 58, at 26.

71 Id.; Lahny IV, supra note 58, at 831.
payees) that the receivable has been transferred. In the securitization context, where hundreds or thousands of accounts are pooled and sold or where debtors frequently change, this notice requirement can be particularly burdensome and can negatively affect the originator’s relationships with debtors. As a result, originators often structure the transaction so that the first transfer (for which notice is required) is to a wholly-owned subsidiary SPV—likely creating less friction with debtors compared to a transfer to an unrelated entity—followed by a subsequent transfer (for which notice is not required) from the wholly-owned SPV to an independent SPV, thus creating the needed “true sale” of the assets.

Although both transfers can be designed as true sales, other considerations usually make it more appropriate to structure only the first transfer as a true sale and the second transfer as a sale for accounting, but not bankruptcy, purposes. A two-tier structure, illustrated in Figure 3, is commonly used in the U.S. and internationally.

![Figure 3: Common Two-Tier Securitization Structure](image)

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72 DEACON, supra note 12, at 37-38. However, using offshore SPVs or a combination of onshore and offshore SPVs can get around these types of problems. For example, Law 130 companies in Italy can avoid this notice requirement by establishing and utilizing onshore and offshore SPVs in a transaction. See id. at 38. For interests in land transferred via mortgage-backed securities, however, regulatory concerns as well as legal complexities may necessitate using onshore SPVs even where offshore treatment could alleviate these problems. Id. at 45.

73 Id. at 38.

74 Id. This second SPV often takes the form of a trust. Kettering, True Sales, supra note 67, at 1565.

75 Lahny IV, supra note 58, at 831-32; Gorton & Souleles, supra note 28, at 555.

76 DEACON, supra note 12, at 38 (referring to this approach as a "refinement" of the two-tier structure previously described).
The second structure, the “multiseller securitization conduit” or MSC model, allows many originators to transfer assets to a single, pre-existing SPV. The assets of all the originators are then pooled together, after which the SPV issues securities on these undivided assets, shown in Figure 4. While this makes it more likely a court will find a true sale of assets, it tends to exacerbate the problems caused by originator insolvency since there would be even more potential creditors.

![Figure 4: Multiseller Securitization Conduit (MSC)](image)

B. Benefits of Securitization

In addition to those advantages previously described, the securitization process offers other benefits for both originators and investors, including:

1. **Added Liquidity**

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77 Lahny IV, supra note 58, at 832-33; Klee & Butler, supra note 58, at 26.

78 TAVAKOLI, supra note 2, at 37.

79 Lahny IV, supra note 58, at 833.
A market or asset is considered liquid if a large number of contracts can be entered into easily without unduly affecting market, asset, or price stability.\footnote{U.S. Gov’t Accountability Office, GAO/GGD-94-133, Financial Derivatives: Actions Needed to Protect the Financial System 5-6 (1994) [hereinafter GAO, Derivatives]; Liquidity: Deal or No Deal, The Economist, Apr. 26, 2007, \url{http://www.economist.com/node/9091342}. However, some writers argue that no such universal definition of “liquidity” exists. See, e.g., Bull Session: Why Investors Are Optimistic, and What They Ought to Worry About, The Economist, Jan. 4, 2007, \url{http://www.economist.com/node/8492540}.} A key benefit of securitization is its ability to convert assets with relatively little marketability—in other words, illiquid and less liquid assets—into more liquid financial products such as ABS, which can be easily traded on exchanges or through private negotiation.

2. *Raising Financing*

Because the securitized assets are no longer subject to the originator’s insolvency risk, the financing raised from the assets are not dependent on the originator’s credit risk.\footnote{See supra note 65 and accompanying text.} As a result, an originator that would otherwise be a poor credit risk can obtain financing by securitizing.\footnote{Deacon, supra note 12, at 4.} Where the originator could qualify for financing already, securitization often leads to lower financing costs for similar reasons.

3. *Risk Management*

By transferring the assets, the originator also transfers the risk of loss on those assets due to default or delinquency which, especially for securitizations of consumer financing, may be substantial.\footnote{The subprime crisis caused losses of over $100 billion in 2007 alone. Fin. Crisis Inquiry Comm’n, The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States 256 (2011) [hereinafter Financial Crisis Inquiry Report].} As a result, the originator is only exposed to its retained risk of loss, such as through credit enhancement.\footnote{Deacon, supra note 12, at 5; see infra Part I.C.2 for a discussion of credit enhancement.}
4. Balance Sheet Management

Financing generated by securitization is not included on, and the securitized assets are removed from, the firm’s balance sheet.\(^85\) This form of off-balance-sheet financing has become an especially popular method of generating funding in the last thirty years, substantially increasing the size of this “shadow banking” system.\(^86\) The resulting increase in available cash, along with the concurrent decrease in risk exposure on the underlying assets, often provides a strong incentive to securitize.\(^87\)

5. Hedging

Hedging is central to any successful investor portfolio. As noted previously,\(^88\) financial markets obey a risk-reward dichotomy: the riskier the investment, the greater the potential yield. This maxim applies equally to individuals and financial institutions. Investors can hedge their risk exposure by additionally investing in less risky positions or products, particularly derivatives.\(^89\) These investors can then actively manage the level of returns they desire while diversifying their portfolio.

C. Credit Ratings and NRSROs

\(^{85}\) *Id.* at 1. Traditionally, financial intermediaries would keep the securities on their balance sheets until the loan reached maturity, but securitization eliminates this requirement. Gorton & Metrick, *Securitization, supra* note 28, at 4. Whether moving debt off-balance sheet actually reduces financing costs, however, is unclear. Gorton & Souleles, *supra* note 28, at 551.


\(^{87}\) Gorton & Metrick, *Securitization, supra* note 28, at 15-19. However, other factors must also be taken into account, e.g., tax advantages, effective yields, and competition. *Id.; see* Gorton & Metrick, *Shadow Banking, supra* note 86, at 269.

\(^{88}\) See *supra* Part I.A.1.

\(^{89}\) *BANKS, supra* note 33, at 11.
In theory, a credit rating is an objective determination, taking many factors into account, of the quality of an investment and its expected performance. In structured finance issues, these factors include: the quality of the originator, underwriter, and the manager of the underlying assets; the quality of the loan servicer; the quality of the package and its underlying assets; the presence and quality of other collateral, including collateral offered for credit enhancement; the likelihood of default or deficiency; and other relevant concerns. Because CRAs consider estimated risks of default and deficiency, whether a true sale of the securitization occurred can also impact the rating.

The three major international credit rating agencies (CRAs) are Standard & Poor’s, Moody’s Investors Service, and Fitch Ratings. While these agencies, dubbed “the Big Three,” have different rating methodologies and use different labels, the agencies’ ratings are generally consistent with each other and often treated as such by investors and regulators alike. These three CRAs belong to a larger category of firms known as “nationally recognized statistical rating organizations” (NRSROs), which currently consists of ten member companies.

1. The Rating Process

Additionally, a rating can be thought of a way to classify and group investments based on their potential or expected risk. See Understanding Ratings, Standard & Poor's Guide to Credit Rating Essentials 3 (2011) [hereinafter S&P CREDIT RATING ESSENTIALS].


Ayotte & Gaon, supra note 26, at 1301.


Id. However, because each agency uses slightly different analyses in determining credit risk, ratings for the same issue can differ among the agencies and issuers often “shop around” for the highest-possible credit rating. See Kurt Eggert, The Great Collapse: How Securitization Caused the Subprime Meltdown, 41 Conn. L. Rev. 1257, 1298-99 (2009); Markus Krebsz, Securitization and Structured Finance Post Credit Crunch: A Best Practice Deal Lifecycle Guide 13-14 (2011).

First, an issuer seeks out one or more CRAs to obtain a rating for an issue of securities.\footnote{See, e.g., About Moody's Ratings: How to Get Rated, MOODY'S INVESTORS SERVICE, http://www.moodys.com/ratings-process/How-to-Get-Rated/002001 (last visited Aug. 14, 2012).} In doing this, the issuer of the securities pays the CRA for the rating under the so-called “issuer pays” model.\footnote{“Some critics claim that the rating agencies are unable to objectively rate structured products due to conflicts of interest created by issuer-paid fees.” Ashcraft & Schuermann, supra note 35, at 10; see Frank Partnoy, Overdependence on Credit Ratings was a Primary Cause of the Crisis, in THE FIRST CREDIT MARKET TURMOIL OF THE 21ST CENTURY: IMPLICATIONS FOR PUBLIC POLICY 175, 177 (Douglas D. Evanoff et al. eds., 2009). While this “issuer pays” model—in effect since the 1970s—has been generally derided for this potential conflict, the International Organization of Securities Commissions (IOSCO) has drafted a proposed “code of conduct” for CRAs which attempts to deal with this issue (among others). See INT’L ORG. OF SEC. COMM’NS, CODE OF CONDUCT FUNDAMENTALS FOR CREDIT RATING AGENCIES tbl.rev. (2004), available at http://www.iosco.org/library/pubdocs/pdf/IOSCOPD180.pdf.} Thereafter, the agency issues an opinion in the form of a “grade” or other rating on the credit quality of the issue, taking into account public information along with private information, often provided by the issuer itself.\footnote{Ashcraft & Schuermann, supra note 35, at 7; see, e.g., S&P CREDIT RATING ESSENTIALS, supra note 90, at 10.} These opinions are determined based on publicly-available rating criteria, as well as proprietary mathematical models, which use the issue’s characteristics and map them onto an estimated loss distribution.\footnote{Ashcraft & Schuermann, supra note 35, at 7.} The CRAs then use this loss distribution to calculate the amount of credit enhancement required to attain a specific credit rating.\footnote{Id.} Based on this distribution, offset by any provided credit enhancements, the agencies assign the resulting rating to the issue.

2. Credit Enhancement

As mentioned previously, an originator can make a successful issue more likely by obtaining a high credit rating for it.\footnote{See supra note 41 and accompanying text.} If the assets themselves do not warrant a high rating, the...
An originator can obtain credit enhancement in many ways, but they typically include providing additional collateral, structuring the securitization to reduce credit risk, or both.103

A credit enhancement may take the form of extra collateral, pledged by the originator to ensure investors are protected in the event the issue underperforms or the originator, underwriter, or other investors default on their obligations or are otherwise impaired.104 In this sense, a credit enhancement is collateral available to compensate losses where the underlying collateral or assets would be insufficient.105 This can be provided by the originator itself106 or by third parties, such as by “wrapping” or insuring tranches through an external bond insurer.107 Credit wraps can be very beneficial, since “[i]nsured tranches are generally assigned the credit rating of the insurer.”108 Likewise, originators can obtain credit enhancement by structuring the product in particular ways.109 For instance, an originator can use an equity or residual tranche—which assumes substantial default risk and is generally used only for diversifying or hedging other investments—to over-collateralize the deal, thus reducing risk to senior tranches.110

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103 Id. at 6-7. Credit enhancements can also include loan guarantees, such as from an insurance company. Eggert, supra note 94, at 1299.

104 PSR: SECURITIZATION, supra note 102, at 7. This additional collateral can take many forms. GOODMAN ET AL., supra note 41, at 91-92. As used here, “impairment” includes bankruptcy or insolvency.

105 See GOODMAN ET AL., supra note 41, at 92.

106 DEACON, supra note 12, at 1 (e.g., by holding subordinated notes).


108 ASHCRAFT ET AL., MBS RATINGS, supra note 107, at 6.

109 See PSR: SECURITIZATION, supra note 102, at 5-6.

110 Nadauld & Sherlund, supra note 39, at 11.
Securitization parties generally set thresholds for losses or delinquencies called triggers. These mechanisms recognize when additional credit enhancement is needed and diverts amounts to a reserve fund in order to maintain its rating or risk exposure. If sufficient enhancement is unavailable, the issue’s rating may be downgraded. While additional credit enhancement may provide some benefits, it is not always necessary. Once the issue or tranche obtains a desired credit rating—often with the least enhancement necessary to achieve that rating—originators can allocate remaining financial resources to other issues or tranches. Further, extra enhancement may not even be desired, such as where it would diminish returns to investors.

D. Summary

True sale securitizations like the ones described above have been immensely important as financing tools. However, if a firm wished to package assets and sell securities on them, it would have to own those assets or, if it did not already own them, purchase them. This could be a substantial investment of money, collateral, or other resources, and the firm assumes the risk of loss if the issue does not perform well or the underlying assets are troublesome. As a result, true sale securitizations not only limited who could securitize but also create additional risk. In response, industry professionals created new types of securitizations to deal with these shortcomings.

111 GOODMAN ET AL., supra note 41, at 95.
112 Id.
113 See KREBSZ, supra note 94, at 13; GOODMAN ET AL., supra note 41, at 95.
114 For instance, using excess interest (“excess spread”) as credit enhancement reduces the residual cash flows. If the reduction provides no real benefit for the issue’s credit rating or exposure, using the excess interest as credit enhancement would not be sensible. GOODMAN ET AL., supra note 41, at 95. However, because of the inherent risk in subprime mortgages and banks’ desire to attract risk-averse investors, subprime securitizations typically used both excess spread and overcollateralization (XS/OC). Id. at 89-90; PSR: SECURITIZATION, supra note 102, at 7.
II. DERIVATIVES AND OTHER SYNTHETIC FINANCIAL PRODUCTS

While this discussion so far has explored securitizations in general, a particular type of securitization—known as synthetic securitization—is particularly relevant to the 2007 financial crisis. Synthetic securitizations, or synthetics, are closely related to standard securitizations except in one key aspect: there is no “true sale” transfer of the originator’s assets.115 Remember, such a transfer removes the assets from the originator’s balance sheet and thus puts those assets beyond its creditors’ reach in the event of its insolvency.116 Instead, originators using this type of securitization create a “synthetic” or artificial transfer of risk, generally by combining these risk transfers with the use of high-grade collateral to avoid exposing the underlying assets to its insolvency risk.117

Synthetic financial products come in many different flavors and, in the past several years, have often been uniquely designed by transaction counterparties to match their specific interests.118 One of these recent innovations, and central to the 2007 financial crisis, is the derivative.

A. Derivatives

A derivative or derivatives contract is a contract between counterparties where its value is derived “from a reference rate, index, or the value of an underlying asset.”119 In simple terms, it

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115 There are other distinctions between synthetic and standard securitizations, such as the introduction of the super-senior tranche, which can also make a synthetic securitization more useful. See TAVAKOLI, supra note 2, at 117. An originator would also consider legal, tax, accounting, and regulatory implications when deciding whether to use a true sale or synthetic structure. Id. at 118.

116 See supra Part I.A.2.

117 DEACON, supra note 12, at 3.

118 BANKS, supra note 33, at 5-6.

119 GAO, DERIVATIVES, supra note 80, at 3.
is a bet between parties that some financial result will occur in the future.\textsuperscript{120} If the result happens, the selling party pays the derivative buyer; if it does not, the seller pays nothing and instead keeps the buyer’s payment.\textsuperscript{121} Unlike secured debt, the seller does not need to have an interest in the things from which the contract derives its value.\textsuperscript{122} Thus, derivatives are very effective mechanisms for speculation and hedging.

Derivatives markets have existed in the United States since 1851, when the Chicago Board of Trade began trading futures contracts for crops.\textsuperscript{123} Following the deregulation of financial markets in the United States and globally over the past 30 years, the use of derivatives exploded.\textsuperscript{124} Markets for options and swaps, two common forms of derivatives, have typically appeared shortly after the more liquid cash and bond markets developed, in large part to trade on these instruments.\textsuperscript{125}

\textit{1. Classifications of Derivatives}

Derivatives are classified in many different ways, such as how they are traded, the underlying assets, or the structure of the issue. For the purposes of this Paper, however, the key distinction is whether the derivatives transaction was performed on open, regulated exchanges or through private negotiation between counterparties.

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{120} Lynn A. Stout, \textit{Derivatives and the Legal Origin of the 2008 Credit Crisis}, 1 HARV. BUS. L. REV. 1, 6 (2011).
\item \textsuperscript{121} \textit{Id.} In the context of credit derivatives, which became popular prior to the crisis and caused much of the resulting damage, a derivatives contract does not terminate until the occurrence of a specified credit event, at which time the protection seller must pay the protection buyer the amount stated in the contract. \textit{Moorad Choudhry, An Introduction to Credit Derivatives} 13 (2004).
\item \textsuperscript{122} See Stout, \textit{supra} note 120, at 7-8.
\item \textsuperscript{123} \textit{Fin. Crisis Inquiry Comm’n, Preliminary Staff Report: Overview on Derivatives} 3 (2010) (June 29, 2010 draft) [hereinafter PSR: Derivatives].
\item \textsuperscript{124} \textit{Richard Flavell, Swaps and Other Derivatives} 7 (2002); \textit{Dimitris N. Chorafas, Introduction to Derivative Financial Instruments: Options, Futures, Forwards, Swaps, and Hedging} 30 (2008).
\item \textsuperscript{125} Flavell, \textit{supra} note 124, at 7.
\end{enumerate}
\end{footnotesize}
a. Exchange-Traded Derivatives

Exchange-traded derivatives are traded “through regulated central clearinghouses and exchanges that establish rules for trading contracts among many different counterparties.”\textsuperscript{126} This provides substantial protection for traders by dispersing credit risk among several counterparties, resulting in a substantial decrease in the trader’s risk of default or loss. Additionally, the exchange orchestrating the transaction acts as an intermediary for the traders. The exchange uses clearinghouses, through novation, to settle traders’ accounts by collecting and distributing payments among the appropriate parties.\textsuperscript{127} Consequently, the derivatives clearinghouse is the entity responsible for making payments on time.\textsuperscript{128} In exchange-traded derivatives markets, participants take the form of either a dealer or an end-user.\textsuperscript{129} Dealers, otherwise known as “market-makers,” are typically large commercial banks or other financial institutions.\textsuperscript{130}

b. Over-the-Counter Derivatives

Exchange-traded derivatives contracts allow counterparties to enter into fair and efficiently-priced derivatives transactions. In contrast, over-the-counter (OTC) derivatives markets use informal, non-centralized trading, generally through private negotiations between counterparties.\textsuperscript{131} Rather than having publicly-available and uniform prices like those for exchange-traded derivatives,\textsuperscript{132} dealers commonly quote different prices to different customers.

\textsuperscript{126} S. REP. NO. 111-176, at 29 (2010).
\textsuperscript{127} PSR: DERIVATIVES, \textit{supra} note 123, at 8.
\textsuperscript{128} \textit{Id.}
\textsuperscript{129} \textit{Id.} at 9.
\textsuperscript{130} \textit{Id.}
\textsuperscript{131} \textit{Id.} at 8.
\textsuperscript{132} \textit{Id.} at 7.
and who have no way to know of the different quotes.\textsuperscript{133} While this would seem to discourage these private transactions, the OTC derivatives market has skyrocketed in size over the last 20 years, rising from a still-substantial $12.1 trillion in 1994 to $88 trillion at the end of 1999, to $592 trillion by December 2008, and then to $615 trillion a year later—nearly a fifty-fold increase.\textsuperscript{134}

OTC derivatives transactions can involve third parties such as inter-broker dealers or private trade settlement firms that assume the role played by clearinghouses in the exchange-traded markets.\textsuperscript{135} Moreover, OTC derivative contracts allow substantial versatility; if no exchange-traded derivatives fulfill a party’s needs, it can negotiate terms privately with a counterparty. Thus, a party can exercise ample control over its exposure.

While OTC derivatives give parties the ability to create highly-customizable agreements, some provisions remain constant much like those in contracts generally. As a result, the majority of OTC derivatives transactions use the Master Trading Agreement (MTA), and its subsequent revisions, promulgated by the International Swaps and Derivatives Association (ISDA).\textsuperscript{136} The MTA provides some consistency to OTC deals, especially for key definitions such as what constitutes a “credit event” triggering payment.\textsuperscript{137} ISDA also provides a detailed schedule for its

\textsuperscript{133} Id. at 8.
\textsuperscript{134} S. REP. NO. 111-176, at 29 (1994 and 2008 notionals); PSR: DERIVATIVES, supra note 123, at 3 (1999 and 2009 notionals).
\textsuperscript{135} PSR: DERIVATIVES, supra note 123, at 9.
\textsuperscript{136} Id. at 11.
\textsuperscript{137} Id. The latest revision is currently the 2002 MTA. ISDA Master Agreement, ISDA BOOKSTORE, http://www.isda.org/publications/isdamasteragrmnt.aspx (last visited Aug. 14, 2012) [hereinafter ISDA MTA]. Ironically, while the agreement itself only costs $60, the user’s guide costs $350. Id.
MTA so parties can easily specify which provisions or terms of the Agreement apply to the particular transaction.\textsuperscript{138}

Although OTC derivatives provide more flexibility than standardized, exchange-traded derivatives, as well as provide a market for virtually any type of derivative, “they suffer from greater counterparty and operational risks and less transparency.”\textsuperscript{139} Therefore, counterparties must exercise due diligence and use great care when entering into these private transactions. However, as the subprime mortgage crisis amply demonstrated, they do not always do so.

2. Common Types of Derivatives

Derivative financial instruments can take numerous forms, virtually unlimited in their creativity. There are four “plain vanilla” derivatives on which most other derivatives are based: options; forwards; futures; and swaps.\textsuperscript{140} While these are the basic types, they can be—and often are—combined to create more complex derivatives.\textsuperscript{141} These basic derivatives generally trade both on exchanges and in OTC markets.

B. Options

Options are some of the most widely-used financial devices today.\textsuperscript{142} In its simplest form, an option (or option contract, formally) “is an agreement between a buyer and a seller that, when exercised, gives the former the right, but not the obligation, to require the option writer

\textsuperscript{138} ISDA MTA, supra note 137.

\textsuperscript{139} S. REP. NO. 111-176, at 30.

\textsuperscript{140} GAO, DERIVATIVES, supra note 80, at 4.

\textsuperscript{141} Id.

\textsuperscript{142} Options outside of the financial world have been around for thousands of years, dating back to at least 580 B.C. and possibly even to Biblical times. Kamal K. Jabbar, \textit{A Note on Derivatives}, THE COUNSEL, Summer 2010, available at http://www.counselpakistan.com/vol-1/banking&finance/notes-derivatives.php.
(seller) to perform certain specified obligations.” In practical terms, it gives one party the option to do something or require another party to do something. The parties agree in advance on the option’s terms, which includes its expiration date, the amount the buyer pays for the option (the “option premium”), and the amount the buyer will pay if and when he exercises the option (the “strike price”). Once the option expires, the parties’ obligations under the option contract terminate.

Options come in two general forms: puts and calls. A put option compels a party to purchase an asset, while the call option gives a party the choice of whether to sell the asset. For example, assume Adam and Brad enter into an option contract for the price of corn three months from now. If Adam has a put option on his corn, he can compel Brad to purchase his corn at the strike price before the expiration date. (To put it another way, Adam “puts” his corn upon Brad.) On the other hand, if Brad has a call option on Adam’s corn, he can compel Adam to sell him the corn at the strike price before the option expires. This gives the parties much more flexibility in their financial decisions, while contemporaneously providing added control over expectation and risk.

C. Forwards and Futures

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143 CHORAFAS, supra note 124, at 39 (emphasis omitted).
144 See id. at 40.
145 Id.
146 CHISHOLM, supra note 2, at 69.
147 Id.
148 American-style options may be exercised at any time before the expiration date, but European-style options can only be exercised at expiration. Id.
Forwards and futures differ significantly from options in that “they may require the holder to buy or sell an underlying asset at some time in the future.”149 Thus, unlike options, no right needs to be exercised to obligate the parties’ performance.150

Forwards are private, over-the-counter agreements between parties and are highly customizable.151 Futures, on the other hand, are traded on active exchanges, based on standardized agreements, and may be subject to additional regulatory oversight.152 However, this is a very important distinction for traders since the futures exchange guarantees the futures, thus eliminating virtually any credit risk to the parties.153

D. Swaps

Swaps, also known as forward conditional commitments,154 operate how their name suggests: parties agree to swap, or exchange, the cash flows to which they are entitled.155 These exchanges may seem like independent forwards, but the terms of the transactions describe each sale as being contingent on the counter-sale.156 Hence, two or more related forward contracts are instead viewed as a single “swap.”157

149 CHORAFAS, supra note 124, at 40 (emphasis added).
150 Id.
151 Id. at 40-41; see also P. J. HUNT & J. E. KENNEDY, FINANCIAL DERIVATIVES IN THEORY AND PRACTICE 227 (rev. ed. 2004).
152 FLAVELL, supra note 124, at 17. Commodity futures, for instance, are (unsurprisingly) regulated by the Commodity Futures Trading Commission (CFTC).
153 Id. at 17-18; see also supra Part II.A.1.a.
154 Id. at 2.
155 CHORAFAS, supra note 124, at 41.
156 CHISHOLM, supra note 2, at 2.
157 FLAVELL, supra note 124, at 2.
Swaps began as “back-to-back” loans of foreign currency. In these transactions, X would extend a loan in one currency to Y, who would then make a comparable loan back to X in another currency. This was done to ensure sufficient liquidity in the foreign market, as well as hedge against riskier investments and speculative positions. For example, U.S. Treasuries have historically been seen as a riskless investment and, as a result, are extremely popular in currency markets.

1. Common Types of Swaps
   a. Interest Rate Swaps

An interest rate swap (IRS) is a swap agreement to exchange interest payment streams between counterparties. Short-term IRS transactions are the “overwhelming workhorse” of the OTC IRS markets. The most common form of an interest rate swap is a floating-fixed swap, where a floating rate, determined at regular intervals, is exchanged for a fixed reference rate for the lifetime of the swap. This allows the investor that originally had the floating rate to eliminate any uncertainty in his receivables. Similarly, the investor originally holding the fixed-rate obligation may feel that a floating-rate instrument would outperform one anchored to

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158 Id.; see also A Note on Derivatives, supra note 142 (first currency swap was between the World Bank and IBM in 1981).
159 FLAVELL, supra note 124, at 2.
160 Id. at 2-3.
161 See CHORAFAS, supra note 124, at 262 (describing them as "credit-risk-free instruments").
162 HUNT & KENNEDY, supra note 151, at 230-31.
163 FLAVELL, supra note 124, at 7.
164 Id. at 3. This type of swap is also commonly referred to as an FRA. Id. at 16; CHISHOLM, supra note 2, at 23 (defining an FRA as a bilateral contract fixing an interest rate for a period of time).
165 FLAVELL, supra note 124, at 3.
the fixed rate.\textsuperscript{166} To effectively manage risk and expectations, the parties to a swap usually structure it so that obligations under the swap agreement mirror those imposed by the debt.\textsuperscript{167}

b. Credit Default Swaps

Credit default swaps (CDS) are one of the commonest credit derivative instruments, particularly among commercial banks.\textsuperscript{168} These swaps are payable only on the occurrence of a specified credit event and, until recently, were available solely in the OTC markets.\textsuperscript{169} CDS originally acted like an insurance policy, where the purchaser of the swap pays a premium to a third party who will make good on any losses incurred if the issuer experiences an adverse credit event.\textsuperscript{170} Since purchasing a CDS helps to protect the investor from the risk of default, the swap purchaser is known as a protection buyer, whereas the swap seller is the protection seller.\textsuperscript{171}

While CDS may be used as an insurance policy of sorts, they may also be used for speculative purposes. “[CDS] became a highly efficient way to short an institution by entering into a swap where one party paid a relatively small premium but would receive a large payout on failure.”\textsuperscript{172} In other words, an investor could purchase a CDS on a company that he believes will

\textsuperscript{166}\textit{Id.}

\textsuperscript{167}\textit{Id.}

\textsuperscript{168} CHOWDHRY, supra note 121, at 1.

\textsuperscript{169} EUR. CENT. BANK, CREDIT DEFAULT SWAPS AND COUNTERPARTY RISK 9 (2009) [hereinafter ECB, CREDIT DEFAULT SWAPS].


\textsuperscript{171} Common protection buyers include commercial banks and lenders, while dealers, insurance companies, financial guarantors, and companies trading in credit derivatives typically acted as protection sellers. ECB, CREDIT DEFAULT SWAPS, supra note 169, at 10.

\textsuperscript{172} DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT: LAW, EXPLANATION AND ANALYSIS ¶ 55, at 30 (2010) [hereinafter DODD-FRANK: LAW, EXPLANATION AND ANALYSIS].
likely default on its obligations. If the company indeed defaults, the investor could reap large profits, to be paid by the protection seller.\textsuperscript{173}

However, CDS, along with other types of derivatives, also contributed significantly to the subprime mortgage meltdown from which markets and economies around the world are still recovering.

III. THE 2007 FINANCIAL CRISIS\textsuperscript{174}

With the explosion in use of complex financial products such as those created through securitization, and the exacerbation of the housing market boom by these products, many problems emerged. Some of these concomitant failures include: declining lending and underwriting standards by mortgage originators; lax oversight of subprime mortgages; investor overreliance on credit ratings and the credit rating agencies’ inability to provide accurate and reliable determinations of credit risk; and financial institutions’ overexposure to risk caused by trading in credit default swaps. These events and conditions created a “perfect storm” that placed the global financial markets in a precarious position, leading to the worst financial crisis in the United States since the Great Depression.

A. How It Began

Prior to the crisis, problems began brewing in the subprime mortgage market which would eventually force millions of homeowners out of their homes. In 1998 and 1999, several then-leading subprime lenders became insolvent or went out of business in the wake of the S&L

\textsuperscript{173} Credit Derivatives: At the Risky End of Finance, supra note 40.

\textsuperscript{174} While it is clear that a financial crisis recently occurred both in the U.S. and around the world, there must be a workable definition in order to avoid such events in the future. Similarly, there should be definitions for concepts such as economic crises and banking crises. For one suggested definition for “banking crisis,” see Carmen M. Reinhart & Kenneth S. Rogoff, From Financial Crash to Debt Crisis, 101 Am. Econ. Rev. 1676, 1680 (2011). Since this Paper focuses on financial markets and instruments, the emphasis here is on the financial crisis although, in some instances, they are inextricably linked.
Due to the reluctance of major banks to lend to these riskier borrowers, oftentimes the only lenders willing to lend to subprime borrowers were private financial firms. These companies generally lent to subprime borrowers using the gain-on-sale accounting method, which let the companies write the loan off as a gain in the month it was originated rather than amortizing it over the life of the loan. This allowed the stock prices of these companies to become highly inflated, reaping substantial profits for their executives and officers. When creditors and investors realized this, financing and credit for these companies dried up and forced many of them out of the market through bankruptcies or forced mergers.

From about 2002 through 2006, financial markets witnessed “the greatest period of home price appreciation in U.S. history.” As residential property values climbed higher and higher, many Americans were unable to afford homes. Additionally, other borrowers—including risky subprime borrowers—took out or renegotiated mortgages in an effort to take advantage of this market boom and tap the equity in their homes. In response, mortgage lenders began offering loans that addressed this affordability issue, such as interest-only mortgages (IOs), adjustable-rate mortgages (ARMs), piggyback seconds, and other products. They also

175 GOODMAN ET AL., supra note 41, at 296; see also Donna Tanoue, Chairman, Fed. Deposit Ins. Corp., Remarks Before the Annual Convention of the American Bankers Association (Oct. 10, 1999) (“Five of the nine banks that failed in 1998 or 1999 had significant subprime portfolios.”)

176 GOODMAN ET AL., supra note 41, at 296.

177 Id.

178 Id.

179 Id.

180 Id. at 299.

181 Id.

182 Id. at 296.

183 Id. at 299-300.
approved borrowers based on lowered lending and underwriting standards.\textsuperscript{184} This allowed home prices to appreciate further, which created additional equity and presented the same affordability issues for home purchasers, repeating the process all over again.\textsuperscript{185} Moreover, as home prices appreciated at unheard-of rates, “it was almost impossible to create a loan type that would produce losses.”\textsuperscript{186} To lenders, this belief applied equally to high-risk loans, such as the subprime mortgages that would eventually bring financial markets around the world to their knees.

Searching for more and cheaper profit sources, lenders then used asset securitization to combine these subprime mortgages, perform some financial “alchemy,” and then sell these securities to other investors.\textsuperscript{187} Securitization allowed lenders to fully capitalize on the housing market boom. Not only were these lenders able to originate loans on homes, the value of which seeming to increase practically every day, but they could also raise additional financing and profits by issuing pools of these loans to investors while simultaneously reducing their credit risk on the underlying loans. This presented a win-win scenario for lenders: if the loans default, the lender can foreclose on highly-valued real property; if not, the lender profits handsomely from both the loan origination fees and fees arising from issuing securities.

\textsuperscript{184} Some lenders apparently felt that, since their competitors were giving loans based on these lowered standards, then they should too, “choos[ing] to meet the lowest common denominator in the marketplace.” \textit{Id.} at 310 (one of the authors recalling an exchange heard at an industry conference in 2006).

\textsuperscript{185} \textit{Id.} at 300.

\textsuperscript{186} \textit{Id.} at 301.

\textsuperscript{187} \textit{Id.; see generally} Steven L. Schwarcz, \textit{The Alchemy of Asset Securitization}, 1 STAN. J.L. BUS. & FIN. 133 (1994).
The housing boom, a strong economy, along with low unemployment and interest rates, had created an “ideal confluence of benign conditions” in the mortgage lending industry.\textsuperscript{188} During this time, lenders felt they could maintain record profits simply by writing as many loans as possible, whether for sale or securitization.\textsuperscript{189} Furthermore, risk projections of subprime mortgages were based only on short-term data focusing on the economic boom, which misrepresented the actual risks in these MBS.\textsuperscript{190}

While certain factors contributing to the 2007 financial crisis received more public attention (e.g., subprime mortgages, credit derivatives, and CDS), the crisis was actually the result of several interrelating factors that, combined, caused it to reach such catastrophic levels. This Paper focuses on some of the more prominent and factors.

1. An Overview of the Mortgage Markets
   a. Agency and Non-agency Mortgages

   One factor contributing to the ensuing financial crisis was the decline of agency-backed mortgages in securitizations.\textsuperscript{191} An agency-backed mortgage (commonly referred to as an “agency mortgage”) is one guaranteed by:
   
   1) a government-sponsored enterprise (GSE), i.e. Fannie Mae or Freddie Mac;\textsuperscript{192}
   
   2) a government agency; or


\textsuperscript{189} Id. at 1.

\textsuperscript{190} Id. at 3.

\textsuperscript{191} GOODMAN ET AL., supra note 41, at 5.

\textsuperscript{192} Id. at 3. Officially, Fannie Mae is the Federal National Mortgage Association (FNMA) and Freddie Mac is the Federal Home Loan Mortgage Corporation (FHLMC). FIN. CRISIS INQUIRY COMM’N, PRELIMINARY STAFF REPORT: GOVERNMENT SPONSORED ENTERPRISES AND THE FINANCIAL CRISIS 3 (2010) (Apr. 7, 2010 draft) [hereinafter PSR: GSEs].
3) the Government National Mortgage Association (GNMA or “Ginnie Mae”).

Agency mortgages must comply with strict underwriting criteria and are overseen by federal regulators. Non-agency mortgages, on the other hand, “do not meet underwriting criteria required by the agencies” and are known as “private-label” mortgages. The federal government created the two GSEs to develop a secondary mortgage market by, in part, securitizing federally-guaranteed mortgages. This federal guarantee is funded by a guarantee fee (“g-fee”) imposed on investors by a reduction in the pooled mortgages’ annual interest rate.

The share of GSE-owned subprime mortgages, in a slow decline after the dot-com bubble burst, dropped rapidly from 48% to 24% between 2004 and 2006 alone. Indeed, over 80% of subprime mortgages were issued by private lenders in 2006. Experts attribute this change to “the drop in housing affordability during this period,” but, regardless of the cause, it still

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193 Ginnie Mae operates much like the GSEs in providing a secondary market for mortgages, except Ginnie Mae only securitizes mortgages underwritten by the Federal Housing Administration (FHA) or the Department of Veterans Affairs (VA). PSR: SECURITIZATION, supra note 102, at 4.

194 GOODMAN ET AL, supra note 41, at 3.


197 PSR: SECURITIZATION, supra note 102, at 4; PSR: GSEs, supra note 192, at 11.


199 Id.

200 GOODMAN ET AL., supra note 41, at 5. The decrease in market share may also have been partly due to consent agreements between the GSEs and the Office of Federal Housing Enterprise Oversight in the wake of some “accounting irregularities.” PSR: GSEs, supra note 192, at 13.
resulted in less regulatory oversight of mortgage creation and securitization as well as lowered standards for lending to riskier borrowers.

b. Prime, Subprime, and Everything in Between

Many critics assert that the increase in subprime lending was a primary cause of the economic crisis. However, it must be understood that there is no universal definition of “prime” or “subprime,” or even when use of such terms are appropriate. As a result, such assertions are based on more commonly used definitions.

While terms like “subprime mortgage” or “subprime lender” are common, the term “subprime” generally refers to the creditworthiness of the borrower. A borrower with a very low risk of default—typically determined by reviewing his credit history, FICO score, and income—is a prime borrower. A borrower at significant risk of defaulting, on the other hand, is a subprime borrower. Borrowers who are technically subprime but have strong indicators of creditworthiness are known as near-prime. Consequently, a subprime mortgage is simply a mortgage issued to a subprime borrower. Finding the actual creditworthiness of a particular borrower is complex, and generally relies on comparisons and interactions of many different

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201 Diana Hancock et al., The Competitive Effects of Risk-Based Bank Capital Regulation: An Example from U.S. Mortgage Markets 15 (Fed. Reserve Bd. Fin. & Econ. Discussion Series, Paper No. 2006-46, 2006); see PSR: THE MORTGAGE CRISIS, supra note 196, at 6 (“the mortgage industry lacks a consistent definition of the subprime mortgage market”).

202 See, e.g., PSR: THE MORTGAGE CRISIS, supra note 196, at 20-23.


204 See id.

205 Id.

variables. Two other terms often used when discussing subprime mortgages, “conforming” or “nonconforming,” refer to whether the particular mortgage loan, based on its terms and borrower creditworthiness, satisfy the requirements for GSE-backing.

Loans can also be distinguished by the amount or types of documentation required by the lender. Before the housing boom, lenders would normally request a wide assortment of information from the borrower to determine his ability to repay the mortgage. This determination generally relied on the verification of the borrower’s income and assets, which is known as full documentation or “full doc.” As the housing boom progressed, however, and lending standards lowered, many mortgage companies allowed or increased the number of limited documentation loans, which had traditionally been reserved for particular types of borrowers. These “limited doc,” “low doc,” or “no doc” loans require less information than full doc loans, including information regarding the borrower’s ability to repay. Understandably, the less documentation required, the riskier the loan generally is. In the past, low doc loans were typically accompanied by compensating factors to offset the higher risk of

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207 See, e.g., FABOZZI ET AL., supra note 203, at 5-7.
208 Id. at 10; see Securitizations, in MANAGING THE CRISIS: THE FDIC AND RTC EXPERIENCE 405, 406 (1998).
209 FABOZZI ET AL., supra note 203, at 6-7.
210 The amount and types of documentation required fall within four general categories: Full Income Verified Asset (FIVA), Stated Income Verified Asset (SIVA), No Ratio, and No Doc. GOODMAN ET AL., supra note 41, at 305 n.4.
211 Id. at 12-13. These include FIVA and SIVA loan documentation. See id. at 305-06.
212 Eggert, supra note 94, at 1285-86. For example, self-employed borrowers may not be able to produce the documentation required for a full doc loan. GOODMAN ET AL., supra note 41, at 13.
213 Loans requiring minimal documentation are termed “no-doc” loans. See GOODMAN ET AL., supra note 41, at 305 n.4.
default; however, during the build-up to the financial crisis, lenders relaxed their documentation standards without requiring such compensation.214

Alt-A loans are loans made to borrowers with “strong credit scores but which have other characteristics that make the loans riskier than prime loans.”215 This includes, for example, where the loan is low doc or no doc.216 Originators typically market Alt-A loans by this designation rather than describing them as subprime loans, since they are considered safer than subprime loans.217 Jumbo loans, another type, are mortgage loans for amounts above the GSEs’ allowed maximum.218

c. Origination Models

In the early days of mortgage securitization in the United States, banks originated loans to mortgagors and held these mortgages on their balance sheets until they were paid off.219 This is known as the originate-to-hold model. Over the past several years, however, another model—the originate-to-distribute model—has developed as securitization has become more complex and opaque. Under this model, banks originate (or purchase loans already originated) in order to securitize them and sell them in the mortgage markets.220 Since banks do not have to live with the “credit consequences” of these loans, this model incentivizes banks to increase profits by

214 Id. at 13.


216 Id.

217 Id.


219 PSR: SECURITIZATION, supra note 102, at 3.

220 Id. at 5.
securitizing as many loans as possible rather than carefully screening borrowers, resulting in moral hazard.\textsuperscript{221}

2. Lax Standards and Oversight of Subprime Mortgages

As the housing markets skyrocketed, banks began relaxing their lending and underwriting standards significantly.\textsuperscript{222} This became glaringly obvious in their drastically increased lending to subprime borrowers, particularly in the residential mortgage market. While the housing boom concealed these lax standards, “[o]nce housing slowed, the effect of the poor underwriting surfaced quickly.”\textsuperscript{223}

Subprime originations grew substantially during the decade prior to the financial crisis.\textsuperscript{224} This increase in originations and lenders’ relaxed standards would not present a problem if the housing markets continued to flourish, since a borrower facing default could simply sell her home for a profit and pay off her mortgage.\textsuperscript{225} When the housing market began to weaken in


\textsuperscript{222} U.S. DEP’T OF TREASURY, FINANCIAL REGULATORY REFORM, A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 2 [hereinafter TREASURY, A NEW FOUNDATION]. While many people equate these relaxed standards to only the increased lending to subprime borrowers, “a number of collateral characteristics were loosened over the years.” GOODMAN ET AL., supra note 41, at 81.

\textsuperscript{223} GOODMAN ET AL., supra note 41, at 80.

\textsuperscript{224} Although the actual number of subprime originations depends on the statistical measure used, there was an estimated increase of at least 200%, and possibly as much as 700%, based on three key sources of data on subprime mortgages. \textit{See} Mayer & Pence, supra note 206, at 2.

\textsuperscript{225} GOODMAN ET AL., supra note 41, at 8.
2006, however, many homeowners soon found themselves breaking even or underwater on their mortgages.226

Securitization became a key mechanism for subprime lenders, particularly due to the originate-to-distribute model that gained prominence over the previous decade. These lenders would take these subprime loans and sell them, unloading much of the risk associated with the underlying mortgages in the process, and then use the funds generated to lend to new subprime borrowers.227 Additionally, since much of lenders’ profits from securitization arise from fees and commissions, it gave them and related parties an incentive to focus on the quantity, not quality, of loans.228 Since the originators never planned to hold these mortgages on their balance sheets, they applied very relaxed standards to the quality of loans they were willing to purchase.229 Some subprime lenders may even have used securitization with the expectation that the underlying loans would default, thus “profitably failing” as they go out of business.230

Mortgage loan underwriting standards also declined significantly during the years leading up to the crisis. Between 2003 and 2006, median CLTV climbed from 90% to 100% for subprime mortgages and from 90% to 95% for Alt-A mortgages.231 To put this in context, a borrower with a CLTV of 100% has no equity in his home.232 Additionally, while the quality of subprime loans continued to deteriorate as the housing boom wore on—culminating in the 2006

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226 Ben S. Bernanke, Chairman, Fed. Reserve Bd., Housing, Mortgage Markets, and Foreclosures (Dec. 4, 2008) (estimating that, by December 2008, as many as fifteen to twenty percent of borrowers were underwater on their mortgages).
227 Eggert, supra note 94, at 1259.
228 Id. at 1263.
229 TREASURY, A NEW FOUNDATION, supra note 222, at 44 (describing moral hazard).
230 Eggert, supra note 94, at 1262-63.
232 Id.
and 2007 vintages of loans, derided as “the worst ever created by man”—financial experts are still uncertain why these loans were so bad.  

3. Inaccurate and Inflated Credit Ratings

While MBS securitizations became more and more prevalent in the markets, the credit ratings they received were highly inflated. In the years prior to the crisis, 80-95% of a typical subprime or Alt-A securitization received a triple-A rating even though the underlying loans had high risk of default. This was exacerbated by investors’ overreliance on credit ratings in determining credit risk. While it may seem that credit enhancements could provide sufficient collateral to protect investors, the subprime mortgage meltdown showed this was just not true.

Credit rating agencies also failed to account for much of the vulnerability in the mortgages underlying many of the complex financial products being sold. This included taking steps to address the “deteriorating lending standards” that resulted from the housing market boom.

B. The Crash Felt ‘Round the World

The global economy and financial markets were spiraling out of control, creating conditions that had not been seen since the Great Depression. Many financial companies went bankrupt or experienced forced buy-outs or mergers. In an effort to prevent further turmoil, the

233 GOODMAN ET AL., supra note 41, at 303.
234 ASHCRAFT ET AL., MBS RATINGS, supra note 107, at 1.
235 TREASURY, A NEW FOUNDATION, supra note 222, at 2; Frank Partnoy, Overdependence on Credit Ratings Was a Primary Cause of the Crisis 9 (Univ. of San Diego Legal Studies Research Paper Series, Paper No. 09-015, 2009).
U.S. government bailed out several institutions it deemed “too big to fail” using taxpayer funds and allowed other companies to access the Federal Reserve discount window to increase market liquidity. Credit rating downgrades and banks’ failure to satisfy their financial obligations triggered payouts under virtually all credit defaults swaps, compelling insurance companies and other financial institutions—including those able to avoid the brunt of the crisis—to pay out vast sums of money which they did not have, resulting in more failed institutions and bailouts. Also, the government-sponsored enterprises Fannie Mae and Freddie Mac purchased many failing mortgages so that companies with large subprime mortgage portfolios could avoid bankruptcy or needing bailouts themselves.

1. Defaults and Foreclosure

Although many of the toxic mortgage-backed securities were based on U.S. real property, foreign banks invested and heavily traded these MBS. As a result, while the property was in the U.S., the ensuing crisis quickly took on “global dimensions,” causing financial crises around the world.238

As the crisis continued, subprime loan defaults increased dramatically. Although securitizations typically require the originator to substitute any problem assets with sound assets for credit rating purposes, “subprime lenders began going out of business rather than buying back problem loans.”239 Many banks, however, repurchased these loans in order to retain or improve their reputations, which may have actually exacerbated the crisis and caused additional bank failures and bailouts.240

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238 Id. at 1.
239 Eggert, supra note 94, at 1259.
240 Keys et al., supra note 221, at 701.
Problems in the asset-backed commercial paper (ABCP) market also contributed to the plummeting subprime mortgage market.\textsuperscript{241} Commercial paper is a short-term debt instrument used by banks to ensure liquidity and provide day-to-day financing of business activities.\textsuperscript{242} ABCP has typically been considered liquid since “investors can liquidate their positions, as often as every day, with no price impact.”\textsuperscript{243} Oftentimes, an ABCP borrower—especially where the borrower is a large financial institution or investment firm—will renegotiate the loan (“roll it over”) before or when it reaches maturity.\textsuperscript{244} During the crisis, the dramatic increase in subprime mortgage defaults and delinquencies lowered investor confidence in those securities.\textsuperscript{245} This confidence was shaken even more when the securities based on those mortgages, as well as other structured products, were downgraded.\textsuperscript{246} Thereafter, many lenders became reluctant to roll over their ABCP contracts, causing substantial amounts of liquidity to dry up in a very short period of time and producing a severe credit crunch in the financial markets.\textsuperscript{247}

2. Securitizations, Derivatives, and Credit Default Swaps

Prior to the crisis, securitizations (especially in the private-label MBS markets) were often used to take risk-laden mortgages without agency backing, securitize and tranche them, and


\textsuperscript{242} \textit{Id.} at 3; Criado & Rixtel, \textit{supra} note 8, at 20.

\textsuperscript{243} Covitz et al., \textit{supra} note 241, at 7.

\textsuperscript{244} These loans typically reach maturity within one to four days after issuance. \textit{Id.}; Criado & Rixtel, \textit{supra} note 8, at 20.

\textsuperscript{245} Covitz et al., \textit{supra} note 241, at 2.

\textsuperscript{246} \textit{Id.}

\textsuperscript{247} \textit{Id.} Additionally, some ABCP programs also defaulted, which created further unease among lenders. \textit{See, e.g.}, \textit{id.} at 16.
then issue high-quality securities that would be federally guaranteed by the GSEs.\textsuperscript{248} As this description should make clear, this proved to be unwise.

Credit default swaps, widely-used in the financial markets, exploded in both use and notional amounts in the early 2000s.\textsuperscript{249} After Congress exempted them from state gaming laws in 2000, CDS contracts grew from about $900 billion to over $50 trillion in the decade ending 2008.\textsuperscript{250} The notional value of CDS grew from $631.5 billion in June 2001 to $62.2 trillion in December 2006,\textsuperscript{251} an increase of almost 10,000%!\textsuperscript{252} After December 2006, CDS notional values plummeted to under $30 trillion before finally rebounding to $32.4 trillion in June 2011.\textsuperscript{253} Furthermore, as of December 2006, CDS represented 97.6\% of the total amount of U.S. credit derivatives.\textsuperscript{254} Moreover, “[f]ive large banks represent 97\% of the total notional amount

\textsuperscript{248} Hancock & Passmore, supra note 195, at 19.


\textsuperscript{250} Murphy, supra note 170, at 3.


\textsuperscript{252} While this is undoubtedly a substantial increase, keep in mind that it (and the dollar figures used) refer to notional value. For many OTC derivatives, notional amount is an amount that “is never actually exchanged and exists simply to calculate payments due to one party or another.” CHISHOLM, supra note 2, at 6.

\textsuperscript{253} BIS MARKET STATISTICS, supra note 251.

of U.S. derivatives], 79% of total revenues and 88% of net current credit exposure.” These figures are largely identical to the derivatives market figures for December 2011. Though CDS act like insurance for debt instruments, they avoid the extensive regulation normally imposed on insurance contracts. Similar to an insurance policy, its cost depends on the perceived risk. Where there is little perceived risk, such as in the U.S. housing market pre-2007, protection can be purchased inexpensively. Many banks, believing the housing market would continue to rise, sold credit default swaps on mortgage providers to generate additional income. However, when the housing bubble burst and banks and homeowners alike defaulted on their obligations, protection sellers were immediately exposed to billions of dollars in CDS losses. As the crisis progressed, CDS insured many multiples of the value represented by the mortgages.

255 Ironically, the OCC then proceeded to explain some reasons why bank supervisors should not be concerned about the market or product concentrations of derivatives. Id. One mitigating factor, according to the OCC, is that “derivatives activity is appropriately concentrated in those few institutions that have made the resource commitment to be able to operate the business in a safe and sound manner.” Id. Although hindsight is always 20/20, the 2007 crisis shows this presumption of safety was misplaced.

256 CDS represented 96.7% of all U.S. credit derivatives. Office of the Comptroller of the Currency, Quarterly Report on Bank Trading and Derivatives Activities: Fourth Quarter 2011 10 (2011), available at http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/derivatives-quarterly-report.html [hereinafter OCC Report 2011Q4]. The five largest banks represent 96% of the total notional amount and 86% of net current credit exposure. Id. Comparing Table 5 from both reports, it should be noted that one of the five largest banks from the 2006 report (Wachovia) was subsequently forcibly merged with Wells Fargo, and Goldman Sachs is instead listed in the 2011 report. Additionally, while swaps constituted 62% of total notional in derivatives contracts in 2006Q4, they constituted 63% in 2011Q4. Compare ISDA Market Surveys, supra note 249, at 7, with BIS Market Statistics, supra note 251, at 10.

257 Murphy, supra note 170, at 3.

258 Financial Crisis Inquiry Report, supra note 83, at 128-29 & 141.

259 For example, the FCIC report notes that American Insurance Group (AIG), a key player in the CDS markets, owed over $50 billion to various CDS counterparties in late 2008. Id. at 376.

260 Murphy, supra note 170, at 2-3.
In fairness, many applications of derivatives—including CDS—serve very valid purposes and are responsibly used every day. However, the financial crisis showcased the “perverse incentives” created for originators in the years leading up to the crisis, and further illustrated that a few bad apples can indeed spoil the whole bunch.

3. Subprime Mortgage Markets Collapse

According to one scholar, “subprime securitization may represent one of the greatest structurally-caused financial implosions of the modern world.” As the housing market reached unsustainable levels, the bubble popped and caused home prices—and mortgage lending—to decrease precipitously. As they decreased, many homeowners who had refinanced their homes or tapped its equity quickly owed more on their homes than they were worth. Unable to make their mortgage payments as massive lay-offs and unemployment occurred, a large percentage of borrowers defaulted on their loans, which caused further drops in home prices. As these bad loans piled up, securities backed by these mortgages were rapidly and repeatedly downgraded, some to junk status. The companies who pooled these

261 CHISHOLM, DERIVATIVES DEMYSTIFIED, supra note 2, at 6.
263 Eggert, supra note 94, at 1260. Additionally, Professor Eggert likens subprime securitization to a virus, and states that “[s]ecuritization received a significant stress test, and not only failed miserably, but also helped drag down much of the world’s economy with its failure.” Id.
265 PSR: THE MORTGAGE CRISIS, supra note 196, at 25.
266 See Mayer et al., supra note 264, at 20-21.
267 PSR: THE MORTGAGE CRISIS, supra note 196, at 18. While the rates of serious delinquency for prime loans also increased (primarily for prime ARMs), the most startling increases involved subprime loans. Id. at 19-20 (showing that serious delinquencies for subprime ARMs rose nearly 40% between mid-2005 and mid-2009).
268 Eggert, supra note 94, at 1261.
mortgages could not—or would not—replace the failed loans fast enough, causing more downgrades and severe liquidity crunches.  

4.  **Bank Runs**

Investors attempted to pull their money out of the markets before they lost all their money, causing an unprecedented amount of bank runs on institutions which did not have adequate capital to return the money. The 2007 financial crisis clearly illustrated, however, that “bank runs” are not only restricted to banks (i.e., depository institutions). While standard banks were affected and were prone to runs, some of the most devastating events during the crisis included runs on other financial institutions such as money market funds (MMFs) and in the ABCP markets.

Lehman Brothers provide a key example of when bank runs, even in the shadow banking system, can create significant instability in the markets. By the end of 2007, Lehman’s accounts payable doubled its accounts receivable (6% and 12%, respectively) and its collateralized lending represented almost 50% of its liabilities. These levels reflect Lehman’s major role as

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269 Id. at 1261-62.

270 Bank runs, like many economic and financial concepts, may be caused by or correlated with many different events or conditions. As a result, experts ascribe specific names to different types of bank runs. However, the two forms most commonly analyzed are fundamentals-driven runs and indiscriminate runs. See Covitz et al., supra note 241, at 2 n.1.

271 The most deleterious result for an MMF (other than complete failure) is known as “breaking the buck,” and occurs “when the net asset value falls below $1.” Id. at 7. This has only occurred twice in recent history; however, the second took place in 2008 and led up to the bankruptcy of Lehman Brothers, discussed infra.

272 Id. at 6 (concluding that, based on the authors’ definition of “bank run,” approximately 40% of ABCP programs suffered bank runs by the end of 2007); Gary Gorton, *The Subprime Panic*, 15 EUR. FIN. MGMT. 10, 34 (2009). “Like banks, ABCP programs issue liquid short-term debt to finance illiquid and long-term assets.” Covitz et al., supra note 241, at 3.

a broker to hedge funds. Because hedge fund customers’ deposits may be withdrawn on demand, a run on Lehman created significant instability in the markets.

5. Failures, Bankruptcies, and Bailouts

a. Fannie Mae and Freddie Mac Enter Conservatorship

Fannie Mae and Freddie Mac, the two primary GSEs in the secondary mortgage market, provide federally-guaranteed insurance on conforming MBS. This government backing has always been seen as implicit, which led to undisciplined behavior by both MBS investors (purchasing otherwise-risky debt based on the perceived guarantee) and the GSEs themselves, who took excessive risk without compensating for that risk. As uncertainty brewed regarding the quality of these MBS, security holders demanded reassurance that the underlying mortgages, and hence the GSEs, were federally-backed. These concerns led to an intensive review of the GSEs by the newly-created Federal Housing Finance Agency (FHFA). After the FHFA uncovered significant deficiencies in the GSEs and their portfolios, Fannie Mae and Freddie Mac were placed into conservatorship on September 7, 2008.

b. Lehman Brothers Files for Bankruptcy

\[^{274}\text{Id.}\]
\[^{275}\text{Id. at 6-7.}\]
\[^{276}\text{PSR: GSES, supra note 192, at 11; Hancock & Passmore, supra note 195, at 5.}\]
\[^{277}\text{Hancock & Passmore, supra note 195, at 5-6. For example, although the GSEs require (by corporate charter) that any mortgage with an LTV value above 80% must be privately insured before it will be purchased, Fannie Mae purchased some mortgages with an LTV value of over 95%. PSR: GSES, supra note 192, at 15.}\]
\[^{278}\text{Hancock & Passmore, supra note 195, at 6.}\]
\[^{279}\text{Id.}\]
\[^{280}\text{Id.}\]
Lehman Brothers, an investment powerhouse before the crisis, had substantial exposure in the derivatives market.\textsuperscript{281} Shortly after major investment bank Bear Stearns went bankrupt in early 2008, regulators and analysts viewed Lehman’s failure as a near-certainty.\textsuperscript{282} The Fed and the SEC jointly developed liquidity stress tests “to determine the investment banks’ ability to withstand a potential run or systemwide disruption in the repo market.”\textsuperscript{283} Unsurprisingly, Lehman failed these liquidity tests, largely due to its substantial exposure to commercial paper and other relatively illiquid assets, including mortgage-backed securities devalued by the subprime crisis.\textsuperscript{284}

After experiencing significant financial losses during the year, and failing to obtain a government bailout or other substantial cash infusion, Lehman ran out of time.\textsuperscript{285} On the day this once-mighty firm’s holding company, Lehman Brothers Holdings Inc., filed for bankruptcy in September 2008, its affiliates were parties to over 930,000 outstanding derivatives contracts.\textsuperscript{286} Many of these contracts stemmed from CDS, CDO (collateralized debt obligations), and mortgage-related instruments, most privately negotiated in the OTC market.\textsuperscript{287}


\textsuperscript{282} FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 325-26.

\textsuperscript{283} Id. at 297.

\textsuperscript{284} Id. at 297-98. Amusingly, Lehman ran its own “stress tests,” which it supposedly “passed with billions in ‘excess cash.'” Id. at 298.

\textsuperscript{285} Id. at 330-37. Initially, London-based Barclays offered to purchase Lehman along with a consortium of investors. Id. at 335. However, the deal fell apart after the U.K.’s Financial Services Authority declined to approve the deal unless the Federal Reserve guaranteed all Lehman’s liabilities between the sale and the closing date. Id. at 335-36. Due to the substantial risk that Lehman would still become insolvent, then-Secretary of the Treasury Hank Paulson felt providing such a guarantee—which would expose the Fed to tens of billions of dollars on those interim liabilities—was “unequivocally out of the question.” Id. at 336.

\textsuperscript{286} Henry A. Barkhausen, Derivatives in Bankruptcy: Some Lessons from Lehman Brothers, 15 J. STRUCTURED FIN. 7, 7 (2010); FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at xxi.

\textsuperscript{287} See Barkhausen, supra note 286, at 7; FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 298-301.
A few weeks later, its primary swap affiliate also filed for bankruptcy.\textsuperscript{288} Less than four months later, Lehman’s counterparties terminated 900,000 of the outstanding contracts.\textsuperscript{289} The magnitude of Lehman’s bankruptcy is unprecedented: the day Lehman filed, the Dow Jones Industrial Average plunged more than 500 points and over $700 billion in investments disappeared.\textsuperscript{290} Furthermore, claims filed by debtors in the main proceeding exceeded $873 billion within two years,\textsuperscript{291} while the bankruptcy’s administration costs alone have reached nearly $1.6 billion according to a recent SEC filing.\textsuperscript{292}

c. AIG Receives a Government Bailout

American International Group, the largest U.S. insurance company, demonstrated the catastrophic potential of derivatives.\textsuperscript{293} AIG was major player in the CDS market during the housing boom, guaranteeing protection on billions of dollars of CDO.\textsuperscript{294} The firm eschewed more human indicators in its risk measurement, using purely mathematical models to determine

\textsuperscript{288} Barkhausen, supra note 286, at 7.

\textsuperscript{289} Id. Filing for bankruptcy, an adverse credit event under the 1992 ISDA Master Agreement governing the contracts, allowed Lehman’s counterparties to elect to terminate the contracts. Id.

\textsuperscript{290} FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 339-40.

\textsuperscript{291} Id. at 340.


\textsuperscript{293} American International Group: Examining What Went Wrong, Government Intervention, and Implications for Future Regulation: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs, 111th Sess. 6-7 (2009).

\textsuperscript{294} Id. at 7; see FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 23.
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its exposure.295 While this was initially successful, it ultimately resulted in massive losses and AIG’s eventual rescue by the federal government.296

To understand the full magnitude of the bank failures that have occurred since the beginning of the crisis, approximately 150 mortgage lenders employing at least 50 people failed or went out of business in 2007.297 Furthermore, of the 463 banks that have failed since October 1, 2000, only 20 did so prior to 2007.298 Unfortunately, such failures are hardly unexpected, even in the mortgage securitization markets.299 In fact, “[m]ortgage securitization has been tried several times in the United States and each time it has failed amid a credit bust.”300

Through its Troubled Asset Relief Program (TARP) and aggressive creation and use of loan facilities,301 the federal government provided much-needed assistance to many systemically

295 Murphy, supra note 170, at 4.

296 Id. Unlike Lehman Brothers, the federal government rescued AIG with an $85 billion loan because its retail businesses provided “sufficient collateral” for the loan. Estrada, supra note 281, at 1125. In addition, a key official at the Federal Reserve “noted that even if the Fed lent as much as $200 billion to Lehman, the sum might not be enough to ensure the firm’s survival in the absence of an acquirer.” FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 296. (citing Patrick Parkinson, then-Deputy Director of the Federal Reserve Board's Division of Research and Statistics).

297 Eggert, supra note 94, at 1261.

298 FED. DEPOSIT INS. CORP., FAILED BANK LIST (2012), available at http://www.fdic.gov/bank/individual/failed/banklist.csv (as of May 3, 2012). It should be noted that, for purposes of this list, a bank “fails” if it goes out of business or is acquired. See id. Also, while other causes or factors besides the financial crisis may be to blame, the increase in failures is so substantial that it is extremely unlikely.

299 “[I]ncreasing complexity, coupled with human complacency, among other factors, will make failures virtually inevitable.” The State of Securitization Markets, supra note 262, at 5 (statement of Steven L. Schwarz, Stanley A. Star Professor of Law and Business, Duke University School of Law). Professor Schwarz also feels that increasing complexity is inevitable, and thus failures are also inevitable. Id. at 15 (responding to a question from Chairman Reed).

300 Hancock & Passmore, supra note 195, at 1.

301 These facilities include the Term Securities Lending Facility (TSLF, created in 2008), the Primary Dealer Credit Facility (PDCF, created in 2008), and the Term Asset-Backed Securities Loan Facility (TALF, created in 2009), some of which have been closed since 2010. See FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at 294 & 396.
important financial institutions as well as the public. Although many U.S. politicians and nonprofessionals are outspoken critics of the government’s bailouts of failing institutions—primarily because such bailouts use taxpayer money—economists and finance experts generally agree that it was not only the correct choice but also that, had the government not injected this much-needed liquidity into the struggling firms and markets, the ensuing economic and financial shocks both nationally and globally would have been catastrophic. Even if it had refused to invest such vast amounts to bail out these institutions, however, the government would likely have taken on substantial additional debt.

In addition, although some commentators assert that bailout funds will virtually never be recovered, either due to the firm’s eventual failure or payment mismanagement, the available evidence does not support this proposition. Indeed, the Government Accountability Office recently announced that the AIG bailout will likely result in an approximately $15.1 billion profit for taxpayers, exclusive of interest and dividends.

IV. PICKING UP THE PIECES AND THE DODD-FRANK ACT

302 Based on an adjusted version of the Moody’s Analytics model, Alan Blinder and Mark Zandi conclude that, “without the government’s response, GDP in 2010 would be about 11.5% lower, payroll employment would be less by some 8½ million jobs, and the nation would now be experiencing deflation.” TARP Oversight: Evaluating Returns on Taxpayer Investments: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs, 112th Sess. 646 (2011).

303 Some experts believe that bailouts could be avoided by retooling the current regulatory scheme and/or passing new legislation. See generally, e.g., Randall D. Guynn, Are Bailouts Inevitable?, 29 YALE J. ON REG. 121 (2012).

304 See, e.g., JON GREGORY, COUNTERPARTY CREDIT RISK: THE NEW CHALLENGE FOR GLOBAL FINANCIAL MARKETS, at xxi (2010) (“Even more financial institutions would have failed were it not for government bailouts.”). In its 1994 report, GAO admitted that failure of a major OTC derivatives dealer could result in a taxpayer-funded bailout. GAO, DERIVATIVES, supra note 80, at 7.

305 “Even absent such large-scale bailouts . . . government debts typically rise about 86 percent in the three years following a systemic financial crisis, setting the stage for rating downgrades and, in the worst-case scenario, default.” Reinhart & Rogoff, supra note 174, at 1690 (based on a detailed analysis of 70 countries regarding financial crises); see also Hancock & Passmore, supra note 195, at 1.

In the wake of the most devastating financial crisis since the Great Depression, Congress passed the heavily-debated Dodd-Frank Wall Street Reform and Consumer Protection Act, which was signed into law by President Barack Obama on July 21, 2010. In many ways, this legislation was unprecedented in both its scope and brevity, towering at 849 pages. It also requires the creation of new federal agencies and offices, the creation and enforcement of hundreds of new rules, and that dozens of studies and reports be conducted. Most important, however, are the substantial reforms and additional regulation of the financial markets, much of which in still in its infancy more than two years later.

A. Orderly Liquidation Authority, SIFIs, and “Too Big To Fail”

Nobel economist Joseph Stiglitz, who has been especially active during the post-crisis period, expressed a common concern with “too big to fail” banks and their abuse of derivatives trading, stating plainly: “If they are too big to fail, then they are too big to be.” To mitigate the effects of major financial collapses in the future, Title II of the Dodd-Frank Act attempts to

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309 While these study and rulemaking requirements are mandated, they have not always been successfully carried out in a timely manner. See, e.g., DAVIS POLK & WARDWELL LLP, DAVIS POLK PROGRESS REPORT: TWO-YEAR ANNIVERSARY REPORT 2 (2012), available at http://www.davispolk.com/publications (reporting that, as of July 18, only 85 of the 221 rulemaking deadlines were met and resulted in finalized rules). SEC Chairman Mary Schapiro feels that rulemaking delays are due to the SEC’s desire to promulgate rules after sufficient consultation with experts. Financial Services and General Government Appropriations for 2012: Hearing Before the Subcomm. on Fin. Servs. & Gen. Gov't Appropriations of the H. Comm. on Appropriations, 112th Sess. 127 (2011) (statement of Mary Schapiro, Chairman, U.S. Secs. & Exch. Comm’n). The Treasury Department attributed this delay to calls to repeal the Dodd-Frank Act. Steve Liesman, Treasury Hits Back at Critics of Dodd-Frank Rules, CNBC NEWS, Jan. 12, 2012, available at http://www.cnbc.com/id/45971366.
prevent large banks and certain nonbank institutions from being disorderly liquidated\textsuperscript{312} since, as the recent crisis showed, such an event can cause the markets to seize.

Under the Act, covered companies\textsuperscript{313} are required to submit annually-supplemented resolution plans (otherwise known as “living wills”) outlining a plan for each company’s “rapid and orderly resolution in the event of material financial distress or failure.”\textsuperscript{314} This orderly liquidation authority (OLA) has been entrusted to the Federal Deposit Insurance Corporation (FDIC), which will act as receiver for failing companies covered by the provision.\textsuperscript{315} Under a recently-announced policy, the FDIC will exercise its OLA responsibilities by placing failing parent holding companies into receivership while allowing its subsidiaries to continue operating.\textsuperscript{316}

In addition to creating government agencies and subdivisions, as well as modifying the jurisdiction of many existing agencies, Dodd-Frank also consolidated or eliminated others.\textsuperscript{317}

The Office of Thrift Supervision (OTS), for instance, was abolished on October 19, 2011 under

\begin{itemize}
\item\textsuperscript{312} Dodd-Frank Act §§ 201-217.
\item\textsuperscript{313} A company is covered by § 165(d) if it is a nonbank financial company supervised by the Federal Reserve Board or a bank holding company with total consolidated assets of at least $50 billion. Resolution Plans Required, 76 Fed. Reg. 67,323, 67,323 (Nov. 1, 2011).
\item\textsuperscript{315} Dodd-Frank Act § 202(a) (codified at 12 U.S.C. § 5382).
\item\textsuperscript{316} Martin J. Gruenberg, Acting Chairman, FDIC, Remarks to Federal Reserve Bank of Chicago Bank Structure Conference (May 10, 2012) (referring to it as “[a] much more promising approach” than also seizing the parent's subsidiaries).
\end{itemize}
Title III.\textsuperscript{318} OTS had previously been responsible for overseeing thrift institutions; these responsibilities were then transferred to the other three federal bank regulatory agencies: the Federal Reserve Board; the Office of the Comptroller of the Currency; and the Federal Deposit Insurance Corporation.\textsuperscript{319}

Dodd-Frank also created the Financial Stability Oversight Council (FSOC) in Title I.\textsuperscript{320} The FSOC monitors the financial system for instability, creates and recommends heightened standards for large banks,\textsuperscript{321} and requires the Federal Reserve to monitor even nonbank financial institutions if they pose a risk to U.S. financial stability.\textsuperscript{322} Poor oversight of these kinds of bank and nonbank institutions, the latter termed “systemically important financial institutions” or SIFIs,\textsuperscript{323} is seen as a key contributor to the recent crisis.\textsuperscript{324} While banks will be subject to the FSOC’s watchful eye under more explicit criteria, the Council may choose to supervise specific nonbank institutions on a case-by-case basis.\textsuperscript{325} Furthermore, the legislation grants the Federal


\textsuperscript{319}Lynn, \textit{Agency Reform}, supra note 317, at 160.

\textsuperscript{320}Dodd-Frank Act § 111 (codified at 12 U.S.C. § 5321); see also C. George Nnona, \textit{In the Wake of the Mortgage Bubble and Financial Crisis: What Should Securities Regulation Become?}, 79 UMKC L. Rev. 31, 39 (2010). In earlier drafts of the legislation, it was referred to as the Financial Services Oversight Council. H.R. 4173, 111th Cong. § 1001 (draft submitted to Senate, Jan. 20, 2010).


\textsuperscript{322}Id. § 113; DODD-FRANK: LAW, EXPLANATION AND ANALYSIS, supra note 172, ¶ 105, at 44.

\textsuperscript{323}Dodd-Frank Rulemaking: Volcker Rule and SIFI Proposals, COMMENTARY AND INSIGHTS (Skadden, Arps, Slate, Meagher & Flom LLP), Nov. 17, 2011, at 56.

\textsuperscript{324}Understandably, many proposed and used measures for determining whether a particular institution is a SIFI are based on historical empirical analysis of its total assets, debt, and equity, which act as a sort of baseline value. \textit{See}, e.g., Chen Zhou, \textit{Are Banks Too Big to Fail? Measuring Systemic Importance of Financial Institutions}, 6 INT’L J. CENT. BANKING 205 (2010).

Reserve’s Board of Governors the authority to demand reports by and examinations of nonbank financial institutions for any institution subject to the Fed’s supervision.\(^{326}\)

B. Improvements in Securitization and Banking

Securitization continues to occupy a large percentage of the financial markets. As recently as April 2011, the amount of outstanding securitizations far exceeded the amount of all marketable U.S. Treasury securities combined.\(^{327}\) Yet, as previously mentioned, the term “securitization” has no clear definition.\(^{328}\) As a result, financial experts have expressed dismay over the current status of the law even in the wake of Dodd-Frank. For instance, one professional at Deloitte recently stated that “[t]here has never been a time when so many pillars of the securitization process have been tossed up in the air without an indication as to how they will land.”\(^{329}\)

In response to the substantial problems in securitization demonstrated by the subprime mortgage crisis, Title X creates a consumer protection regulator with broad powers. This Consumer Financial Protection Bureau,\(^{330}\) currently headed by Richard Cordray, oversees the regulation and enforcement of at least eighteen federal consumer protection laws.\(^{331}\) However,

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\(^{326}\) Dodd-Frank Act § 161. The Fed’s authority applies even if another government agency is the primary regulator of the institution, but the Fed must consult with the primary regulator before requiring a report or examination. Id. § 161(c).

\(^{327}\) Gorton & Metrick, Securitization, supra note 28, at 1.

\(^{328}\) See supra note 9 and accompanying text.


\(^{330}\) Dodd-Frank Act § 1011.

\(^{331}\) Id. § 1002(12) (enumerating 18 specific consumer laws enforced by the CFPB). Other sections of Title X also expand the CFPB’s authority. See, e.g., id. § 1002(14) (defining "federal consumer financial law," a term used often in Title X, to include more than just the 18 enumerated laws).
the CFPB’s oversight authority primarily focuses on consumer protection and financing, such as credit cards, mortgages, student loans, along with certain large banks and mortgage servicers.\textsuperscript{332} As one of its first major undertakings, the CFPB announced plans to overhaul the residential mortgage market to improve transparency while making mortgage disclosures clearer and more easily understandable for borrowers.\textsuperscript{333}

Even though heightened international banking regulations had been discussed and in development prior to the financial crisis, the crisis pushed policymakers and central banks into overdrive in improving the current Basel II regulatory framework.\textsuperscript{334} A central tenet of the new Basel III agreement is capital adequacy requirements for banks, in a further attempt to prevent future economic shocks similar to that caused by the 2007 crisis.\textsuperscript{335} Although Basel III is still being refined and will not be completely phased in until 2019,\textsuperscript{336} the Federal Reserve recently extended the comment period regarding Basel III’s heightened capital requirements.\textsuperscript{337}


\textsuperscript{334} See TOWARDS BASEL III, supra note 311, at 5.


\textsuperscript{336} Alper, supra note 335.

Additionally, the Basel Committee has already released rules for how systemically-important banks must hold extra capital, which will go into effect by 2016.338

C. Derivatives, Risk Retention, and “Skin in the Game”

Because derivatives (particularly credit default swaps) were seen as a crucial factor in the recent financial crisis, Title VII attempts to resolve some of the issues that made derivatives speculation so deleterious to the markets.

First, the Act requires particular swaps339 to be cleared through a derivatives clearinghouse where a clearinghouse accepts them for clearing.340 Also, swaps subject to this clearing requirement must occur on an exchange or through a swap execution facility.341 Banks using clearinghouses where clearing is not required, on the other hand, will benefit from lower capital requirements and capital charges on transactions.342


339 While the term “swap” has a settled financial definition, the Dodd-Frank Act requires the SEC and the CFTC to draft clear definitions of what types of transactions constitute swaps under the legislation. See Dodd-Frank Act §§ 712(d)(1) & 721(c). In July 2012, the agencies approved these definitions, which should provide significant clarity to what transactions must comply with Dodd-Frank’s many swap-specific requirements. Silla Brush, CFTC Approves Swap Definition Triggering Dodd-Frank Rules, BLOOMBERG BUSINESSWEEK, Jul. 11, 2012, available at http://www.businessweek.com/news/2012-07-10/cftc-votes-4-1-to-approve-swap-definition-starting-overhaul.

340 Dodd-Frank Act § 723(a)(2); see Lynn, Global Response, supra note 318, at 57. Commercial hedgers are exempted from this requirement. Lynn, Global Response, supra note 318, at 57. A derivatives clearinghouse is also commonly referred to as a “central clearing counterparty” (CCP). See generally Darrell Duffie & Haoxiang Zhu, Does a Central Clearing Counterparty Reduce Counterparty Risk?, 1 REV. ASSET PRICING STUD. 74 (2011). Recently, the CFTC published its first clearing determination—a list of specific swaps which will require clearing by a registered derivatives clearing organization (DCO)—for public comment. Press Release, Commodity Futures Trading Commission, CFTC Proposes Clearing Determination for Certain Credit Default Swaps and Interest Rate Swaps (Jul. 24, 2012), available at http://www.cftc.gov/PressRoom/PressReleases/pr6311-12.


Even though this substantial increase in the use of clearinghouses will almost certainly provide more market stability, Congress recognized that clearing creates little to no benefit if the vast majority of clearinghouses are owned by only a few banks.\(^{343}\) Such a concentration of power would likely lead to inefficiencies, if not practically-insurmountable conflicts of interest. In response, the Dodd-Frank Act gives regulators broad authority to adopt less restrictive requirements for a company to undertake the role of a derivatives clearinghouse.\(^{344}\) Moreover, regulators may also adopt “strong conflict of interest rules” regarding the control of clearing and trading facilities, thus providing additional safeguards.\(^{345}\) The Act also mandates additional requirements regarding registration, minimum capital, reporting, business conduct, and other areas, where the firm is a major participant in derivatives markets.\(^{346}\)

Second, banks must move certain swap activities to their affiliates, unless such activities “are for hedging purposes or relate to traditional bank investment categories,” such as interest rate or foreign exchange swaps.\(^{347}\) In a still-contentious move,\(^{348}\) Congress further extended the Act’s reach to include transactions occurring wholly outside the United States, such as where a counterparty is a foreign-based subsidiary of a U.S. company or where a transaction threatens the derivatives trades will incur a capital charge” under Basel III, the charge will be only 2% for cleared trades as compared to a charge of between 2% and 15% for derivatives trades not cleared. \(^{Id.}\)


\(^{345}\) Greenberger, supra note 344 (manuscript at 4).

\(^{346}\) Lynn, Global Response, supra note 318, at 57.

\(^{347}\) Id. Credit default swaps are also allowed as long as they are cleared. \(^{Id.}\)

interests of the U.S. economy. Although these requirements also originally applied to swaps traded overseas under Dodd-Frank’s extraterritoriality provisions—causing significant friction in the international financial community—the CFTC has since unanimously voted to relax this requirement where the trade takes place in a foreign jurisdiction with rules comparable to those in the United States, referred to as “substituted compliance” jurisdictions. This enhanced regulation of the swaps markets should significantly improve financial stability, on both domestic and global scales, by allowing more comprehensive oversight of swaps and related financial instruments.

Under Dodd-Frank, swaps entities will receive no federal assistance, including bailout or access to the Fed’s discount window. However, this prohibition is subject to exceptions, such as where the swaps entity is an insured depository institution trading in swaps for hedging or other permissible banking purposes. This also applies to entities trading on CDS (which is not considered a “permissible banking purpose”) except where the CDS have been cleared by a derivatives clearing organization (DCO) or clearing agency that is registered or exempt from registration. Additionally, insured depository institutions may have or establish an affiliate which is a swaps entity. The Act does qualify each of these “allowances,” however, by

349 See id. at 4 (citing Dodd-Frank Act § 722(d)).
352 See, e.g., id. § 716(d)(1).
354 Dodd-Frank Act § 716(c).
explicitly eliminating any possibility for taxpayer-funded bailouts of swaps entities, regardless of whether the entity falls under an exception mentioned above.355

According to Title IX, securitizers must retain at least five percent of the credit risk for any asset that they sell, transfer, or convey.356 Congress created this risk retention requirement—popularly known as the Act’s “skin in the game” requirement357—largely to prevent or diminish the moral hazard, where a securitizer has no incentive to diligently screen underlying assets, which was evident in pre-crisis securitizations.358 While the Act does exempt low-risk mortgages from this requirement, they must meet certain minimum, yet heightened, standards.359

Like those required by many other Dodd-Frank provisions, Congress mandated that regulators conduct an extensive study and report on how the Act’s risk retention requirements will affect securitization markets.360 In this report, the Financial Stability Oversight Council recognized that although adequate risk retention can alleviate many problems observed during the crisis, overly-stringent retention requirements “could constrain lending, and consequently,

355 Id. §§ 716(i)(1) & (3).
356 Lynn, Global Response, supra note 318, at 56; DODD-FRANK: LAW, EXPLANATION AND ANALYSIS, supra note 172, ¶ 4255, at 410. The Act’s language, requiring that securitizers retain “not less than” 5% of an asset’s risk, places only a minimum on retention; regulators may increase this through the rulemaking process. Dodd-Frank Act § 941(b) (codified at 15 U.S.C. § 78o-11(e)(1)(B)).
357 This language comes from Sen. Chris Dodd, one of the namesakes of the Act: “When securitizers retain a material amount of risk, they have ‘skin in the game,’ aligning their economic interests with those of investors in asset-backed securities.” S. REP. NO. 111-176, at 129.
358 DODD-FRANK: LAW, EXPLANATION AND ANALYSIS, supra note 172, ¶ 4255, at 410; see also FIN. STABILITY OVERSIGHT COUNCIL, U.S. DEP’T OF TREASURY, MACROECONOMIC EFFECTS OF RISK RETENTION REQUIREMENTS 410 (2011) [hereinafter FSOC REPORT].
359 Lynn, Global Response, supra note 318, at 56; see Dodd-Frank Act § 941(b) (codified at 15 U.S.C. § 78o-11(e)(4)) (exempting “qualified residential mortgages” from risk retention requirements).
360 Dodd-Frank Act § 941(c).
the formation of credit.” The report also states multiple times that risk retention is only one of many reforms mandated by Dodd-Frank. Because of this, regulators may decide to leave the Act’s five percent minimum as the standard, requiring greater risk retention only where truly necessary.

D. The Volcker Rule and Proprietary Trading

The so-called Volcker Rule, named after its key proponent former Federal Reserve Chairman Paul Volcker, prohibits many types of companies from engaging in proprietary trading. As used in the Dodd-Frank Act, “proprietary trading” occurs only where a transacting entity acts as a principal for its own trading account, where the transaction is for the purchase or sale of any of a number of financial instruments. In this sense, the Volcker Rule attempts to

361 FSOC REPORT, supra note 358, at 30.

362 See, e.g., id.


365 See Onnig H. Dombalagian, Proprietary Trading: Of Scourges, Scapegoats, and Scofflaws 5 (Tulane Univ. Sch. of Law Pub. Law & Legal Theory Working Paper Series, Paper No. 12-14, 2012), available at http://ssrn.com/abstract=2101109. Many of the terms and phrases used here, such as “trading account,” are also defined in the Act. Id. Professor Charles Whitehead asserts that, while the Rule may cause proprietary trading to decline, it will more likely concentrate such trading—and its attendant risks—in less-regulated businesses such as hedge funds. Charles K. Whitehead, The Volcker Rule and Evolving Financial Markets, 1 HARV. BUS. L. REV. 39, 44-46 (2011). Due to the magnitude of proprietary trading before the financial crisis and its increasing importance in global banking, regulators should address this concern, since failure to do so would undermine a key reason for the Rule: reducing systemic risk in modern financial markets.
separate traditional commercial banking from investment banking, which created much of the liquidity and stability risks leading up to the recent financial crisis.

Moreover, the Rule’s scope is quite broad, and applies to not only U.S. banks but also any bank with a U.S. branch or subsidiary. Though Congress and regulators have created a “carve-out” exempting deals between non-U.S. counterparties, finance professionals still express concern because it remains unclear who or what transaction will qualify for such an exemption. Furthermore, some professionals allege that what constitutes “proprietary trading” is still unclear, and a number of banks have already relocated or transferred their trading desks into other divisions.

In addition, the Volcker Rule severely limits banks in the hedge and private equity funds that they manage. Banks are also prohibited from proprietary trading (i.e., trading for their own accounts), but may undertake specified “permitted activities.” However, even these permitted activities may be regulated or completely prohibited if they would result in a material

366 Whitehead, supra note 365, at 41-42.
369 Bates, supra note 367, at 78. Bates asserts, for example, that a transaction between non-U.S. counterparties executed on a U.S. exchange would not qualify. Id.
370 Although the Act defines “proprietary trading” in § 619 for purposes of the Bank Holding Company Act of 1956 (defined at 12 U.S.C. § 1853(h)(4)), Bates argues that it is still unclear if genuine hedging could still fall under the Act’s prohibition. Id.; see Whitehead, supra note 365, at 48-49.
371 See Dombalagian, supra note 365, at 3.
372 Lynn, Global Response, supra note 318, at 57.
373 Id. In its codified form, there are ten “permitted activities.” Dodd-Frank Act § 619 (codified at 12 U.S.C. §§ 13(d)(1)(A)-(J)).
Though nonbank financial companies are not similarly prohibited from engaging in proprietary trading, these firms “are subject to additional capital and quantitative requirements.” But while the Volcker Rule may seem to punish banks that engage in proprietary trading, the Rule does not limit the ability of banks or financial companies supervised by the Federal Reserve Board from selling or securitizing loans that are otherwise permitted by law.

In its enacted form, the Rule has received much backlash from businesses and legislators alike, and the House Financial Services Committee recently began seeking comments on and alternatives to the Volcker Rule. However, it must be remembered that the Volcker Rule is still in its infancy, and will not even be enforced until 2014. Regulators continue to draft and propose rules and interpretations, as well as earnestly solicit and review comments on its proposals, so firms should resist making any radical changes and instead avail themselves of the regulatory process until the Rule’s scope and application are more clearly fleshed out.

E. Credit Rating Agency Reform

Congress recognized some potential issues in the credit rating process prior to the financial crisis, in response to the Enron and WorldCom debacles of the early 2000s and the subsequent enactment of the Sarbanes-Oxley Act. In an effort to prevent similar problems with credit ratings—particularly the agencies’ failure to react promptly to defaults and significant

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375 Lynn, Global Response, supra note 318, at 57.
376 Dodd-Frank Act § 619 (amending 12 U.S.C. § 1851(g)(2)).
378 See supra note 363 and accompanying text.
credit events—Congress passed the Credit Rating Agency Reform Act of 2006.\(^\text{380}\) In its 2010 report, the Financial Crisis Inquiry Commission described the three major credit rating agencies as “key enablers of the financial meltdown” and “essential cogs in the wheel of financial destruction.”\(^\text{381}\) In response, Congress created or enhanced many facets of government oversight related to credit rating agencies through the enactment of Title IX of the Dodd-Frank Act.

Subtitle C of Title IX directly confronts many of the issues in the credit rating process that led to the subprime crisis.\(^\text{382}\) To begin with, this Subtitle provides the SEC with enhanced oversight of credit rating agencies, as well as rulemaking authority over the transparency of and methodologies used in the credit rating process.\(^\text{383}\) It also allows the SEC to create and oversee the use of universal credit rating symbols.\(^\text{384}\) The Act further mandates more independence in the rating agencies’ corporate governance, and requires them to adopt stricter internal controls.\(^\text{385}\)

Dodd-Frank also establishes the Office of Credit Ratings within the SEC, the goal of which is to eliminate conflict-of-interest problems as well as promote accurate credit ratings.\(^\text{386}\)


\(^{381}\) FINANCIAL CRISIS INQUIRY REPORT, supra note 83, at xxv.

\(^{382}\) Dodd-Frank Act § 931.

\(^{383}\) Id. § 932.

\(^{384}\) Id. § 938.

\(^{385}\) See id. § 932. Some commentators, including Professor Claire Hill, doubt that these provisions will provide any real benefit when rating corrupt companies. See Claire A. Hill, Limits of Dodd-Frank’s Rating Agency Reform, 15 CHAP. L. REV. 133, 145-46 (2011).

\(^{386}\) Dodd-Frank Act § 932. Although the Dodd-Frank Act was signed into law in mid-2010, the Office of Credit Ratings only opened its doors in June 2012. Emily Chasan, SEC’s New Credit Rating Office Opens as Pressure Mounts on Firms, CFO J. (Jun. 15, 2012, 4:37 PM EST), http://blogs.wsj.com/cfo. Prior to that, the SEC’s Division of Trading and Markets and Office of Compliance and Examinations assumed its duties and responsibilities. See id.
The SEC may even deregister a credit rating agency if it fails to provide accurate ratings over a period of time. Furthermore, investors may now sue CRAs for “knowing or reckless” failures, holding the agencies to the same standards that are applied to registered public accounting firms and securities analysts. Title IX additionally removes references to credit ratings, and related terms such as “investment grade,” from various statutes and rules. Furthermore, the SEC now has authority to qualify and regulate credit rating analysts, as well as an obligation to create and enforce a system of professional standards for these analysts.

Since credit ratings and CRAs contributed to the financial crisis on many fronts (e.g., by the ineffective regulation and oversight of rating agencies prior to the financial crisis, the agencies’ lax standards and diligence, as well as the inherently-conflicting “issuer pays” model used by the agencies), the legislative response must be equally broad yet thorough to ensure these issues will not cause similar calamity after memories of the recent crisis fade from investors’ minds. As a result, these additional regulatory powers bode very well for the future, for both investors and institutions alike.

387 Lynn, Global Response, supra note 318, at 56.
388 Id. (citing Dodd-Frank Act § 933); DODD-FRANK: LAW, EXPLANATION AND ANALYSIS, supra note 172, ¶ 4195, at 399.
390 Dodd-Frank Act § 936; DODD-FRANK: LAW, EXPLANATION AND ANALYSIS, supra note 172, ¶ 4210, at 401.
391 Professor Frank Partnoy contends that, because of minimal incentives for investors to pay for credit ratings, shifting to an “investor pays” model is not a viable option. Partnoy & Darbellay, supra note 389, at 10. However, other commentators assert that there are no major barriers to adopting an “investor pays” subscription model, or even other models. See generally Damien Fennell & Andrei Medvedev, An Economic Analysis of Credit Rating Agency Business Models and Ratings Accuracy (Fin. Servs. Auth Occasional Paper Series, Paper No. 41, 2011), available at http://ssrn.com/abstract=2026432; U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-12-240, CREDIT RATING AGENCIES: ALTERNATIVE COMPENSATION MODELS FOR NATIONALLY RECOGNIZED STATISTICAL RATING ORGANIZATIONS (2012).
F. Final Thoughts on Dodd-Frank

Although the Dodd-Frank Act—a major regulatory overhaul—moved from inception to enacted law within only two to three years, Congress appears to have recognized that this shortened period is no excuse for passing shoddy or incomprehensible legislation. Indeed, Congress demonstrated its collective wisdom by giving regulators substantial discretion over rulemaking and enforcement, thus allowing regulators (who have much more experience in their particular subject matter areas than Congress) to fashion policies that accurately reflect and confront the practical issues arising in the financial markets. By mandating that regulators conduct numerous studies and adopt dozens of new rules, many after intensive and lengthy comment periods, Congress sought to ensure that regulators develop a clear understanding of how the rules can and should be applied in the real world. Giving such discretion to regulators, who have significant practical experience with financial markets and are much more likely to understand practitioners’ concerns, should help to relieve some of the concerns of finance professionals and lead to more stable markets.

CONCLUSION

Financial crises may, as was the recent crisis, devastating to United States and global markets. However, it must be clearly understood that, regardless of the preventative steps taken beforehand or curative steps taken during such a crisis, these terrible events will undoubtedly occur.392 While this is not a pleasant assumption, history clearly demonstrates that such a conclusion is inescapable. Notwithstanding this universal axiom, the magnitude and duration of these crises can be mitigated through effective regulation and responsible business practices.

392 “Outside a small number of experts, few people fully appreciate the universality of financial crises.” Reinhart & Rogoff, supra note 174, at 1697.
Dodd-Frank, though enacted only two years ago, has already changed the financial game through its vast regulatory overhaul. Although the “perfect storm” of factors that lead to the subprime mortgage crisis still lingers, the economic outlook has improved significantly since those dark days began only a few years ago. The Act proposes many reforms in an effort to prevent such carnage in the future, including the new orderly liquidation authority, the Volcker Rule’s prohibition on proprietary trading by banks, credit risk retention requirements, as well as enhanced regulation of credit rating agencies and the ratings process. Rather than focus on only one or two particularly troublesome areas, Congress enacted this comprehensive and ambitious legislation in an attempt to simultaneously neutralize several major problems in the financial markets uncovered during the recent crisis. This approach not only will help avoid future crises caused by those problems, but also has had the attendant effect of improving investor confidence in the aftermath of the recent crisis, which has consequently aided in stabilizing financial markets more quickly than in the absence of such legislation.

The 2007 financial crisis presented problems encompassing several vital aspects of the global financial system and economy. It has touched virtually everyone, and its full effects will not be felt or understood for many years. However, by passing the comprehensive Dodd-Frank Act, Congress has put into place several useful tools for managing financial risks and promoting financial stability in the U.S. and around the world. While we may not truly understand how Dodd-Frank’s policies will fare until another crisis develops, this legislation gives us reason to be at least cautiously optimistic that its mandates will protect the financial system from such shocks in the future.
APPENDIX A: GLOSSARY OF SECURITIZATION TERMS

Arbitrage: Occurs where a party or parties to an agreement structure it in order to take advantage of differences in the agreement’s effects compared to legal, regulatory, or other treatment. Example: using a particular corporate entity form over another due to less regulatory burdens (regulatory arbitrage).

Arbitrageur: An individual or entity that commits arbitrage.

Asset: Property or rights, either tangible or intangible; in securitizations, often property or rights to property that can be pooled and sold to investors.

Asset Securitization: See “Securitization”

Bankruptcy-Remote Entity (BRE): An SPV designed to be isolated from its originator or, more accurately, from its originator’s risk of insolvency.

Bond: A commonly-used type of debt instrument.

Collateral: Assets offered by a borrower to secure lending; in the event the borrower defaults, the lender may recover or liquidate these assets to satisfy the debt.

Collateralized Debt Obligation (CDO): General term used to refer to an instrument backed by a type or types of debt; includes bonds (CBO), mortgages (CMO), funds (CFO), and asset-backed securities (ABS).

Coupon: Right to receive periodic payments on a financial instrument (especially bonds) as well as a final payment of principal at maturity; amounts are often set in relation to a percentage of the principal amount.

Credit Derivative: A derivative which transfers credit risk on a reference entity or obligation.

Debt Instrument: A financial instrument with a predetermined life span that promises one or more cash flows, generally in the form of coupons.

Derivative: A financial instrument which derives its value from a referenced item, such as an asset, index, or rate.

Equity Instrument: A financial instrument that has no predetermined life span, but may entitle the holder to receive cash flows in the form of dividends; often includes voting rights.

Issue: The creation or sale of securities to investors; also used to describe securities that have been sold in the same securities offering.

Leverage: A process used to maximize available financial resources, often through the purchase, sale, or use of debt and other financing.

Multiseller Securitization Conduit (MSC): A securitization structure in which multiple originators (“sellers”) transfer assets into a single SPV.
Multi-Tier Securitization: A securitization in which the underlying assets are transferred from the originator to an SPV (the first-tier SPV, often bankruptcy-remote), which in turn transfers the assets to another (second-tier) SPV; can be repeated indefinitely.

Originator: An entity that initiates a securitization by creating the collateral for an asset-backed security and transfers it, directly or indirectly, to a securitizer.

Securitization: A process by which assets are pooled, underwritten, and then securities are issued and sold to investors; often used to create a consistent payment stream based on otherwise-illiquid assets.

Special Purpose Entity (SPE): See “Special Purpose Vehicle (SPV)”

Special Purpose Vehicle (SPV): An entity which is formed or exists for a limited purpose, typically for holding assets or issuing securities; generally formed as a limited liability partnership, limited liability company, a trust, or a corporation to minimize the risk of the SPV’s insolvency.

Structured Finance: Process used to produce or obtain financing other than through traditional debt and equity instruments; includes securitization.

Synthetic Securitization: A securitization which uses credit derivatives to transfer the credit risk of the underlying assets.

Tranche: A grouping of securities based on particular qualities chosen by the originator; often used to obtain superior credit ratings on risky securities.

Tranching: The process of creating or using tranches.

True Sale (of Assets): A transfer of assets that closely resembles a regular transaction between disinterested parties; in securitization, generally results in removing the assets from the originator’s bankruptcy estate in the event of insolvency.