

All the Incentives Were Wrong: Opportunism and the Financial Crisis*

Neil Fligstein and Alexander Roehrkasse

Department of Sociology

University of California

Berkeley, CA 94720

February 2013

*This paper was originally prepared as a lecture for the “Law and Ethics Conference”, Yale Law School, February 15-16, 2013. It was also presented at the Annual Meetings of the American Sociological Association in New York, August 9-12, 2013. We would like to thank Diane Vaughan and Henry Pontell for their comments on an earlier draft.

Abstract

Numerous studies of the financial crisis of 2007-2009 have documented and explained problems of information and risk in the mortgage securitization industry. However, widespread evidence of fraudulent and collusive behavior throughout the industry is less well understood. This paper presents evidence about the extent and character of opportunistic behavior throughout the mortgage securitization process—nearly all of the major participants in the loan origination, securities underwriting, and shadow banking sectors have been implicated in civil and criminal lawsuits, and many have paid multibillion-dollar penalties. The paper also seeks to explain why this pattern of behavior became so widespread by examining (a) the incentives toward opportunism actors faced at both the individual and firm levels, and (b) the processes by which opportunistic behavior became normalized within organizations and organizational fields. Fee-based revenue schemes, limited supply of and intense demand for mortgage debt, and minimal regulatory oversight combined to provide incentives for various actors to defraud transacting partners. Our case challenges standard economic models of market-based regulation based on reputation and transaction costs. Instead, a sociological argument about the conditions under which market structures can systematically fail to prevent widespread opportunism, shows that regulatory institutions may be necessary to stabilize markets.

Introduction

The U.S. financial crisis of 2007-2009 has produced a large output of journalism and scholarship (see Lo [2012] for a review). Many accounts have treated the crisis as a problem of risk, knowledge, and complexity (MacKenzie 2011, Sikka 2009). But one of the most interesting and least studied aspects of the crisis is that so many actors seem to have behaved not myopically, but unethically—often to the point of illegality. Indeed, each of the top ten U.S. banks (by market share) involved in origination and securitization of residential mortgages, have been implicated in opportunistic behavior in litigation brought by regulators, prosecutors, and private parties. This behavior was not simply aggressive, but involved the purposive and gainful deception of trading partners.

Many banks offered loans to borrowers with no incomes or jobs, knowing they were likely to default. Others knowingly received incomplete and inaccurate documentation for these mortgages in order to sell or insure them more profitably. Banks that packaged mortgages into securities ignored or misrepresented the quality of loans and the extent of their due diligence. Others issued and underwrote securities they knew were likely to default, and bet against them even as they sold them to trusted clients. Finally, banks manipulated the underlying interest rates that affected the price of credit, enhancing gains on mortgage loans, mortgage backed securities (MBSs), and other derivative products like collateralized debt obligations.¹

Evidence suggests that these activities were not the aberrant machinations of rogue individuals or firms. Instead, they represent practices that became widely tolerated if not normative throughout the industry (Fligstein and Goldstein 2010). As we demonstrate, all of the largest firms by market share in every important market segment have faced or are currently facing civil or criminal litigation by U.S. and state governments and private parties for fraud or collusion. Many of these cases have been settled with

¹ For reasons of space and clarity, this paper does not address evidence of opportunism in the rating of MBSs or in the servicing of residential mortgages. Evidence of such opportunism, however, is commensurate with our analysis of other sectors.

multibillion dollar fines. We infer from the extent and severity of litigation following the financial crises that opportunism was not anomalous but rather systemic. We seek to explain this systematic behavior in terms of the structure of incentives financial actors faced.

The purpose of this paper is two-fold. Our first goal is to understand the *character* of opportunistic behavior evidenced throughout the mortgage securitization process by examining the main forms of fraudulent and collusive strategies undertaken at each point of this process by various actors. Who were the winners and losers of opportunism? To what extent did opportunism represent active deception, or simply *caveat emptor*? We find that in some cases, opportunism benefited organizations or whole groups of organizations, such as in the manipulation of the London Interbank Offer Rate (Libor). However, in other cases individuals behaved in such a way that pitted their interests against those of their organization, akin to Akerlof and Romer's (1993) theory of looting. This insight lends greater organizational nuance to the literature on opportunism.

Second, we seek to explain the widespread *extent* of opportunism. Why were individual firms and actors driven to fraud and collusion, and how did such practices become so widespread throughout the mortgage securitization industry? We show how the structure of the mortgage securitization process created strong incentives for individuals and firms to behave opportunistically. Systemic opportunism meant that nearly all actors operated at the edge of legality, with many of them crossing it.

This evidence provides a strong challenge to the predominant neoclassical economic theory of regulation, which suggests that opportunistic behavior should not have been normal to financial markets because actors had incentives to maintain transparency and protect their reputations, and possessed the requisite information and expertise to recognize and reject misconduct. Regulators seem largely to have agreed. But this theory has come under intense analytic and practical scrutiny. Indeed, as Alan Greenspan confessed in 2008: "I made a mistake in presuming that the self-interests of

organizations, specifically banks and others, were such as that they were best capable of protecting their own shareholders and their equity in the firms" (New York Times 2008).

Our paper begins with a discussion of the relevant theoretical literature. Then, we consider the process by which mortgages were processed, bought and sold as securities. Next we turn to a consideration of how fraud and collusion became part of the entire mortgage market. We describe how the structure of competition and compensation created incentives to commit fraud. We then document the nature of the fraud and its extensiveness across the industry. In concluding we discuss what this implies about our theories of regulation and the possibility of preventing such widespread illegal behavior in the future.

Theoretical Considerations

In order to understand the character and extent of fraud and collusion in the mortgage securitization market, we turn to two theoretical literatures: the economics literature on opportunism and regulation, and the sociological literature on crime in organizational context. Economists tend to argue that problems of opportunism and malfeasance are usually resolved by competitive markets because they create incentives for actors to protect their reputations and practice due diligence. Some dissenters within economics recognize that market-based regulation will be insufficient when competition or information is imperfect. But most economists hold that in sophisticated financial markets—often regarded as some of the “purest” markets—opportunities for fraud and collusion are rarely available, let alone worth pursuing.

Sociologists, on the other hand, view market actors’ opportunism more contextually. They see incentives and opportunities for fraud and collusion where markets are relatively unregulated (formally or informally), or when actors, transactions, and products are difficult to understand and evaluate.

Financial markets are rife with these kinds of opportunities and therefore, they are sites where we might expect illegal behavior. Sociologists also argue that malfeasance may not always be guided by a self-interested calculus, instead following from strategies for managing uncertainty or legitimacy problems. Therefore, while both economists and sociologists agree that opportunistic behavior is more likely to occur under some circumstances more than others, sociologists tend to see a broader array of motivations toward opportunism and recognize them as more pervasive.

We are interested in how the structural conditions that surrounded the making and regulating of an entire industry promoted opportunistic behavior. Indeed, as we document, risk-lovingness and short-sightedness fail to characterize behavior in this market adequately—corner-cutting, fraud and collusion became normalized to an extent greater than predicted by the neoclassical model. The sociological literature is more receptive than the economics literature to the idea that organizations may encourage actors to behave recklessly by structuring incentives or putting pressure on employees to engage in opportunistic and illegal behavior (Nettleman and Nettleman 1979). The point at which risk-taking becomes unethical or illegal is a fine line. But, once crossed, these practices often became standard operating procedures for all of the banks. If banks did not follow such practices, then they could be guaranteed their competitors would. This would mean they would leave money on the table. As we shall see, once all of the incentives thus became aligned to produce opportunistic behavior, the system worked efficiently to operate to make sure that this would not change until the business model collapsed.

The economics of opportunism

What is opportunism, and why does it arise? Williamson (1975, p. 26) defines opportunism as “self-interest with guile”—in other words, a willingness and propensity to gain through deception at others’ expense. Despite acknowledging it as a “controversial formulation” (Williamson 1993:97), Williamson uses opportunism to describe the general stance of economic actors because, he argues,

generalized opportunism is a prerequisite for the emergence of many forms of contracting and hierarchical organizations. Some have argued that Williamson's blanket characterization of human intention is too Machiavellian. Others such as von Werde (2011) suggest that Williamson's view is simply too vague and generalized to be analytically useful. Instead, von Werde specifies opportunism by situating it in the context of an exchange. He argues that opportunism is a departure from fair exchange, in which both sides realize their goals given their expectations of the situations:

“Opportunistic actors deliberately disappoint the expectations of their transaction partners to the transaction's usefulness or (economic) value, respectively, to their partners. Depending on the extent of the reduction of the transaction's usefulness, the corresponding partners would not have agreed on a transaction at all, or at least not at the stipulated conditions, if they had known the later unfair behavior of their counterparts *ex ante*” (2011: 1347-48).

Here, we use this relational definition of opportunism, but add to the set of opportunistic behaviors those in which actors cannot easily formulate clear expectations about the value of transactions, but nevertheless misrepresent the terms of the transaction or the transacted goods or services.

Clearly, opportunistic economic behavior can take many forms. Two of the main forms of opportunistic economic behavior that are illegal in the U.S. are fraud and collusion. Fraud is an economic crime that involves deliberate falsification or manipulation of information for gain. In the U.S., the establishment of fraud involves the demonstration that an actor has made a false statement of a material fact, has had knowledge that the statement is untrue, intended to deceive the alleged victim, and produced injury to the victim who relied on that information to decide to buy the product (American Law Institute, 1965: section 526).

Collusion, a special, cooperative form of fraud, occurs when two or more actors make an agreement to deceive or mislead another. Such cooperation is usually secretive, and is undertaken to gain a shared, unfair advantage over competitors, consumers, or others with whom they are negotiating. Actors usually collude to exert greater market power, thereby enabling them to fix prices or wages.

Generally, there are two types of solutions to solving problems of opportunism in the form of fraud or collusion. One is to create rules, laws, and regulations and have agencies whose job it is to police transactions and penalize infractions. The other is to rely on the appropriate design and maintenance of market mechanisms to solve such problems. Members of the Chicago School of Law and Economics have been the strongest proponents of market mechanisms as the right fix for opportunism. Beginning with Coase (1960) and Stigler (1971), and forcefully argued by Peltzman (1989), this school of thought makes the most important case against using state regulation. It is useful to summarize the argument.

With respect to fraud, perfectly competitive markets ensure that actors will care about their reputations for honesty. If transacting partners are or expect to be cheated, they will take their business elsewhere. Actors will behave in a forthcoming manner in order to maintain this reputation. There also exist in most markets formal and informal mechanisms by which exchange partners can settle their differences. When exchange is repeated or long lived, partners have an incentive to settle their disputes (Ellickson 1991). Industries and trade groups frequently form associations where information is exchanged, standards agreed to, and quality assured. Families and ethnic groups can provide additional insurance that transacting parties won't be cheated. With respect to collusion, economists likewise tend to think that competition will dismantle such relationships. Oligopolists who raise prices too high face the probability that new competitors will emerge offering lower prices. Moreover, cartels are inherently unstable, as partners will be tempted to cheat a price agreement and sell more of the product at a lower price in order to increase their market share.

The core of these arguments about fraud and collusion is that competition and the social structuring of exchange relationships creates carrots and sticks that push firms toward good behavior and away from opportunistic behavior. A fallback position for the law and economics school is the idea

that if competition and informal mechanisms fail to work, private actors can sue one another in courts (Coase 1960). These arguments cast regulation as *unnecessary*.

One of the Chicago School's most potent arguments against regulation is the idea that regulation is itself *harmful*. Regulators have three problems that make it difficult for them to be successful. First, they frequently lack the competence to intervene into a fast-moving market process until it is too late, and the ill timing of their interventions can have unintended consequences. Second, regulators can have self-interest in impeding market actors from transacting, and in extreme cases may act as rent seekers who feather their own nests at the expense of businesses who are trying to compete honestly. Third, certain businesses can "capture" regulators and compel them to serve their narrow interests. Thus, regulators can intentionally or unintentionally come to favor incumbent firms by protecting oligopolies through the ruse of using lots of expensive regulation (see Shleifer, 2009 for an elegant synopsis of this perspective).

There are several problems with the generally benign, economic view of the problem of opportunism. First, it assumes that opportunism comes from the absence of competition, and that competitive processes themselves do not produce incentives towards opportunism. If firms only compete on price and quality, then opportunism is not a problem. But if firms compete using strategies that consistently create incentives for actors to take advantage of their exchange partners, opportunistic behavior can become a "standard operating procedure" in the industry. Second, the economic perspective also assumes that actors will recognize when they have been taken advantage of and will have the resources to take the issue to courts. Often, victims of malfeasance understand neither that they have been taken advantage of, nor how. Even if they do, high litigation costs put firms with deep pockets at distinct advantages. Finally, there is good empirical evidence that the lack of effective regulation makes it more likely that firms will behave opportunistically (for some reviews, see Braithwaite 1985, Vaughan 1999, Simpson 2010).

Not all economists share such an optimistic view of how market competition produces incentives for most actors to act without guile. Akerlof and Romer (1993) propose that under certain conditions firm leaders might abandon efforts to maximize shareholder value through price competition, instead opting to “loot” their firms for their personal gain. Looting is defined as the situation in which the owners of firms will find it makes more sense to bankrupt their firm by paying themselves more money than they could make if the firm prospered. This is likely to occur when “poor accounting, lax regulation, or low penalties for abuse give owners an incentive to pay themselves more than their firms are worth and default on their debt obligations” (1993:2). Their model makes an important distinction for our purposes. The usual assumption of risk-taking in economics is that actors may “go for broke” and take risks that may profit their firms, but may also ultimately force them out of business. In the case of looting, actors choose instead to bankrupt their firms intentionally because they can personally make more money than improving their firms’ competitive stances.

Akerlof and Romer apply this model to the savings and loan industry crisis in the late 1980s. It is useful to quote their main conclusion:

“Using an analogy with options pricing, economists developed a nice theoretical analysis of excessive risk taking strategies. The problem with this explanation for events of the 1980s is that someone who is gambling that his thrift might actually make a profit would never operate the way many thrifts did, with total disregard for even the most basic principles of lending: maintaining reasonable documentation about loans, protecting against fraud and abuse, verifying information on loan applications, even bothering to have borrowers fill out loan applications” (1993:4).

Akerlof and Romer’s perspective therefore offers a challenge to the Chicago School view of market regulation. They suggest that if the right conditions hold (lack of accounting, low regulation, low chance of getting caught, and the ability to pay oneself a lot more money than one might make otherwise), one can expect to see market actors behaving with guile.

Sociological perspectives

There is a long-standing sociological literature on crime in markets. Sutherland (1949) argued that the main condition under which white-collar crimes were committed was when there was a viable market opportunity to do so. Since Sutherland, sociologists have tended to be more skeptical than economists that the market itself is consistently sufficiently vigilant to provide both incentives and signals to prevent unethical or illegal behavior. Sociology's conclusion mirrors Akerlof's and Romer's: under the right organizational conditions, executives, managers, and employees will commit acts of fraud and collusion.

Contemporary debates focus on elaborating the genesis of market malfeasance (Braithwaite, 1985; Vaughan, 1999; 2002, Simpson, 2010). In particular, scholars ask whether and why economic crimes result from the actions of rogue individuals in firms, rogue firms that encourage or standardize questionable or illegal tactics, or entire industries through which an ethos of opportunism can spread (Clinard and Yeager, 1980). It is likely that there are different explanations—and, accordingly, different policy responses—for these three types of deviant behavior. So, for example, if one is concerned with controlling a “few bad apples” within a firm, the causes and solutions to such criminal behavior are quite different than if one is discussing a cartel fixing prices throughout a market. We focus on the literature that is concerned with the conditions under which firms and industries might turn out to pursue unethical or illegal behavior.

Edelman and Suchman (1997) argue broadly that the empirical study of the relationship between law and organizations has focused mostly either on how law impacts organizations or alternatively how organizations come to co-opt the legal system. They propose that there is a dialectical relationship between law and organizations such that over time there will be action and reaction on both sides. While their focus is not on law-breaking *per se*, they imply that organizations will work to undermine constraints on their behavior that are imposed by law.

Needleman and Needleman (1979) propose that there are two sorts of ways in which organizations can be criminal, what they term crime-coercive and crime-facilitative. In crime coercive organizations, corporate systems force members to commit crimes. In crime facilitative organizations like many financial firms, there are tempting structural conditions, high incentives and low probabilities of getting caught, and these will increase the likelihood of crime. Braithwaite (1985) argues that the sociological literature has established that firms will be more likely to engage in illegal behavior when there are low odds of being detected. He shows that the degree to which regulators are either not able to monitor firms or have been captured by firms is related to firms being able to take advantage of transacting partners.

Vaughan (1999) makes several useful distinctions. She argues that conceptually, “routine nonconformity” (her term for unethical or illegal acts) is embedded in three aspects of organizational life: the environment, the organization itself, and the cultural frameworks of participants. The case can be made that the incentives to engage in such behavior can originate in any of these features of social life, and therefore organizational misconduct can be a result of any of these three factors. She suggests in particular that the regulatory and competitive environments and an organization’s culture can have the largest effects on criminogenetic behavior. She suggests that when one firm goes rogue, it provides a model for other firms to emulate their practices. This is more likely to occur when regulation is lax and there is some difficulty in observing that a crime has been committed. There is an active interest in studying such behavior (Baker and Faulkner 1993; see Simpson 2010 for a recent review).

The sociological literature alerts us to the fact that criminal behavior on the part of individuals, firms, and whole industries is a variable. Its likelihood will depend on the degree to which these individual and collective actors are regulated by outsiders and the difficulty of discovering that crime. It also suggests that organizations and even entire industries can become characterized by such practices. Models of successful criminal behavior can diffuse across firms and become the standard practice of an

industry. The literature also implies that how this happens will depend on the nature of the crime and the forces that might encourage the diffusion of such practices.

The financial industry has proved a rich source of empirical evidence for sociological inquiry. Contrary to economists, sociological theorists view finance as a place where many of the initial conditions favoring unethical or illegal behavior tend to flourish. These crimes are often arcane and sometimes difficult to detect. Financial deregulation has meant that regulators have removed themselves from the active management of financial markets. Indeed, the past thirty years have witnessed abundant financial scandal. Some cases involve particular individuals (e.g. Bernie Madoff), other particular firms (e.g. Enron or Worldcom), and still others entire industries (e.g. the savings and loan industry in the 1980s and 1990s). It is useful to review what some of the empirical studies have found.

Zey (1999) studied forty-eight cases of security fraud in the 1980s in firms that packaged different kinds of financial instruments. Her findings support the argument that the crimes were difficult to detect, required a high degree of expertise to pull off, and required a dense network of actors who existed in a centralized structure where they were in constant communication.

The savings and loan industry during the 1980s and 1990s was an important research site in the literature. Black et al. (1995) show that while some of the behavior of savings and loans were simply engaging in highly risky behavior, at the core of what happened were a set of banks that set out to do real estate deals that would end up putting the banks into bankruptcy while at the same time enriching their owners. Calavita and Pontell (1990) show how regulators facilitated the looting of these banks by engaging in deregulation with little oversight. Tillman and Pontell (1995) show that banks that tended to pursue certain kinds of risky investment strategies like direct investment in land and real estate deals instead of making home loans to individuals were the most likely to have committed illegal acts.

Prechel and Morris (2011) studied financial restatements as an indicator of corporate malfeasance from the mid-1990s until the mid-2000s. Their findings show how particular dependencies, incentives, and opportunities are correlated with financial malfeasance. Capital dependence on investors and managerial strategies for bolstering shareholder value both create incentives toward financial malfeasance, and the multilayer-subsidary form and structure of corporate political contributions creates opportunities for such malfeasance.

What does our literature review imply about how to understand the financial crisis of 2007-2009? We suggest that there is *prima facie* evidence that regulators either lacked the inclination to regulate or knowledge of what banks were doing. This created incentives for banks to engage in risky and illegal behavior as the theoretical literature suggests (Simpson 2010, Tomasic 2011, Hansen 2009). What we think is less well understood is how the incentives and structure of the industry worked to favor fraud as a regular part of bank activities. We suggest that the fraud resulted from two main forces.

First, many of the largest banks vertically integrated their production by combining mortgage origination with the issuance, underwriting, and trading of mortgage-backed financial products. Banks made fee income off of all stages of this process. They also were heavy purchasers of such investments, which they largely bought with borrowed money. Vertically integrated structures required a constant if not increasing stream of mortgages to sustain themselves (Fligstein and Goldstein, 2010). A major factor pushing banks to begin engaging in systematically fraudulent activities was the shift beginning in 2003 from conventional to subprime mortgages as the main source of securitized debt. In order to originate enough of securable debt, banks pushed their origination units to fund more subprime loans with decreasing concern for the quality of borrowers or of mortgage documentation. Thus, banks were driven to defraud both borrowers and investors about the riskiness of these loans. Once such fraud became established as possible and profitable, intense competition in the industry led to the rapid adoption of these malpractices as standard.

Second, most actors' pay was directly or indirectly tied to the volume of mortgages that were originated, securitized, and traded. Therefore, in the face of short supply of high-quality debt, originators' and traders' incentives often mirrored firms' motivations to deal deceptively in low-quality debt. On the one hand, many individuals saw few downside risks to fraud because high inter-firm mobility diminished reputational concerns and fears of oversight and reprimand (Ho 2009). On the other hand, upper management—whose compensation often was usually tied to shareholder value—encouraged or demanded opportunistic behavior from employees to bolster profits. As such, firms not only did not provide oversight to prevent opportunistic behavior but instead actively aligned incentives to encourage it.

The Changing Organizational Structure of the Mortgage Securitization Industry

In order to contextualize our discussion of opportunistic and illegal acts in the financial crisis of 2007-2009, it is useful to discuss the process of securitizing mortgages. A mortgage-backed security (MBS) is a bond backed by a set of mortgages that entitles the bondholder to part of the monthly payments made by the set of mortgage borrowers. The creation and sale of the security, however, is predicated upon numerous exchanges, and the emergence of this complex transactional structure has been documented in a number of places (Barmat, 1990; Brendsel, 1996; Jacobides, 2005; Kendall, 1996). Each of these exchanges can be thought of as a separate market. Borrowers purchasing homes would take loans from lenders, also known as mortgage originators. These originators could be local banks, commercial banks, or specialized mortgage brokers. The originators would sell the loans to securities issuers, or sometimes to wholesalers who would in turn bundle loans together to sell to issuers. MBS issuers packaged individual mortgage loans into financial instruments like MBSs that they issued to investors. Rating agencies evaluated the quality of these securities based on the risks of the mortgage loans that undergirded them. Securities underwriters served as liaisons between issuers and the

institutional investors who bought MBSs, tailoring specific investments to trusted clients and raising capital from them to fund securitization. Mortgagers would make monthly payments to servicers, who would distribute the payments to bondholders. Figure 1 provides a diagram illustrating the basic role structure of securitization deals.

(Figure 1 about here)

Over the last three decades, the organizational structure of this process has changed significantly. Circa 1990, each of these market roles tended to be filled by different financial firms. But by the early 2000s, the largest banks had become vertically integrated, incorporating each of these roles, including the origination, underwriting, and issuance of securities, as well as investment in them (Fligstein and Goldstein, 2010). This organizational transformation closely related to increased origination and securitization of low-quality loans over the same period. We briefly outline these related transformations.

Through the 1990s, MBS issuance was dominated by government-sponsored enterprises (GSEs)—Fannie Mae, Freddie Mac, and the government-owned mortgage insurer, Ginnie Mae. These financial institutions mostly bought mortgages from originators to package and issue as MBSs with the help of investment banks as underwriters. These MBSs were attractive to investors because credit ratings agencies would give them sound ratings based on the widespread belief that the GSE-issued bonds were implicitly backed by the federal government.

Securities issued by GSEs—called agency-backed securities—were of a particular type. In general, the riskiness, pricing, and potential profitability of MBSs are principally distinguished by the types of underlying mortgages they comprise, such as conventional, Alt-A, “subprime,” or home equity loans. The types of mortgages relate to the characteristics of the borrower and the mortgage contract. Importantly, only conventional (“prime”) mortgages were eligible for inclusion in the mortgage pools of

the GSE-issued securities.² That fact that the GSEs were generally barred from issuing MBSs backed by non-conforming loans created a market segmentation whereby GSEs dominated issuance in the prime market, while securitization of nonconventional loans was conducted almost exclusively by an array of private firms, most of whom specialized in nonconventional origination.³

With time, financial firms realized that they could enhance profits by integrating vertically to incorporate multiple functions in the securitization process. Internalization of this whole value chain within large firms, and resulting high-throughput scale economies, represented a kind of industrialization where the goal was to mass-produce financial instruments. Countrywide Financial pioneered this model in the 1990s, and their spectacular success spurred many of the largest investment banks, commercial banks, and mortgage lenders aggressively to follow suit.

In turn, the nonconventional part of the market grew dramatically, particularly after 2003. Then, less than 30 percent of mortgages originated were nonconventional, but by 2007 this figure had risen to 70 percent (Fligstein and Goldstein, 2010). This drastic qualitative shift in mortgage origination resulted most basically from the exhaustion of the supply of mortgagors eligible for conventional loans. By 2003, most such borrowers had bought or refinanced their homes. Therefore, in order to sustain their throughput profit models and to meet investors' unerring demand for debt to securitize, issuers and underwriters increasingly used nonconventional mortgage debt as the assets underlying MBSs and other securities products.

The Incentive Structure of the Industry, 2003-2008

² To qualify for a prime or conventional mortgage, a person needed 20% down and a credit score of 660 or above (the average score is 710 on a scale from 450-900). Mortgagees who lacked these qualifications but were willing to pay a higher interest rate and/or higher fees could qualify for various types of nonconventional mortgages.

³ We will use the term nonconventional to describe all of these types of loans and reserve the term subprime for a particular type of nonconventional mortgage (which are also called B/C). Subprime MBS refers specifically to securitizations of B/C mortgage pools. Here are the conditions that could qualify a mortgagee as subprime: two or more loan delinquencies in the last 12 months; one or more 60 day loan delinquencies in the last 24 months; judgment, foreclosure, or repossession in the prior 24 months; bankruptcy in the past 5 years; a FICO score less than 660; and debt service to income ratio of 40% or greater. If one's credit was a bit better, one could qualify for an intermediate "Alt-A" mortgage, often without any proof of income. Jumbo mortgages refer to mortgages which failed to conform to GSE standards because they were too large. Jumbo loans were typically for luxury homes or in homes in high-cost markets. Home equity loans (HEL) refer to loans that borrow against the equity value of one's home.

We now explain how the aforementioned organizational transformation in the mortgage securitization industry created opportunities and incentives for unethical and illegal behavior in each part of the industry beginning around 2003. The mortgage securitization process represented a \$2-4 trillion industry each year from 2003 to 2007. It was the most profitable industry in the U.S., accounting for between 30 and 40 percent of nationwide corporate profits each year from 2003 to 2007 (Krippner 2010; Fligstein and Goldstein 2010). Why and how did it become so corrupt?

A large proportion of revenue generated in the securitization process came from fees (Levine 2007; Currie 2007; DeYoung and Rice 2003). Because the business models of originators, wholesalers, issuers and underwriters all depended on fees rather than returns to investments, and because they all passed most mortgage risks along to institutional investors (which did often include themselves), they were principally concerned with questions of volume rather than quality. Firms were driven to originate, service, and securitize as many loans as possible, but did not have a direct financial interest in whether or not they were well documented or likely to be repaid. This led them to contract predatory and foolhardy loans, to document them poorly or falsely, and to mislead investors about these facts.

Banks' virtually insatiable demand for MBSs was in tension with the diminishing supply of quality mortgages available to securitize. Fee-based throughput revenue generation required dealing in ever-riskier mortgages and securities based upon them. Despite technological innovations in the managing of riskier investments such the tranching of mortgages and the development of collateralized debt obligations, the low quality of available debt to securitize increased pressure on originators and underwriters to misrepresent them in order to sell them investors interested in profitable but secure investments. That said, many firms turned to dealing in nonconventional mortgage debt not out of sheer necessity: such loans and securities built upon them proved to be more lucrative because there were higher fees to be charged for originating them and they tended to have higher interest rates.

The vertical integration of firms, which often served simultaneously as originators, issuers, servicers and underwriters, helped the fee-based business model to proliferate and eliminated transaction points at which demands for due diligence would have been more likely to occur. Individual employees compensation was usually tied to volume, replicating firm-level incentives to generate loan products irrespective of quality. Mortgage originators made money when they sold loans. Mortgage issuers and underwriters made money when they packaged mortgages into securities. Traders made money when they bought and sold mortgage securities. Banks and other investors made money when they borrowed money at a low interest rate to purchase securities. CEO pay was tied to corporate profits, which soared as mortgage activity increased and fell when it declined. Boards of directors observed how all of the principle banks were making money hand over fist by aggressively expanding mortgage lending (particularly subprime mortgages) and securitization. If top managers needed any encouragement to get their teams to produce more mortgages and securities, boards of directors were there to push management to take on more and more risk (Tett, 2009).

At both the firm and individual levels, risk-based pricing increased incentives to deal in riskier products. Nonconventional mortgages—loans made to borrowers with lower credit scores—and securities based upon them yielded higher fees for originators and underwriters as well as higher rates of return for investors. Bankers had strong financial incentives to reap higher commissions by downplaying the mortgage risk underlying these investments in order to sell more of them.

The fixed supply of conventional mortgages led bankers to meet investor demand by devising every more esoteric derivative instruments based on tranches of existing securities. The complexity of these products allowed sophisticated firms to sell them profitably to unwitting investors. In this way, traders were able to ride the mark up as well as down by betting against the very derivative products they sold to clients, to whom they would later plead caveat emptor.

Because interest rate fluctuation undergirded the profit margins of securities products at multiple points—from the rates on underlying adjustable rate mortgages to the money markets in which firms borrowed to fuel underwriting and investment (Gorton 2010, Acharya et al. forthcoming)—bankers had strong incentives to collude in manipulating market interest rates. Combined with a minimal regulatory threat, this structure of incentives led mortgage securitization innovators to push ethical and legal envelopes by behaving opportunistically. They soon found themselves joined by their principal competitors, who believed that such strategies presented new opportunities they could not afford to pass up.

It is important to disentangle our story from what has been called the “originate to distribute” version of the story (Ashcroft and Schuermann 2008; Purnanandam, 2011; Immergluck 2009; see Mayer et. al. (2009) for a literature review). Here, scholars have observed that originators and issuer/underwriters did not care whether or not people could pay back their mortgages because they were creating products that they would pass on to others. In essence, they made money off fees and passed the risk onto the ultimate holders of the bonds. The problem with this account is twofold. First, while it may explain why banks behaved recklessly, it fails to explain why they behaved opportunistically—that is, defrauded their transaction partners for their own gain and at others’ expense. Second, it misses the fact that banks were amongst their own best customers. Most of the largest financial firms who originated and securitized mortgages bought those products and held them in their portfolios (Fligstein and Goldstein, 2010). Indeed, a growing body of empirical data shows how banks borrowed money from the asset backed commercial paper market to fund the purchase of mortgage securities products. (Acharya and Richardson 2009; Diamond and Rajan 2009; Acharya, Schnabl, and Suarez forthcoming; Gorton, 2010).

Why did the banks drink from the very well they poisoned? Rapidly increasing home prices and stellar ratings bolstered banks’ confidence in the mortgages and securities they dealt in. These

investments were profitable, and appeared secure in corporate portfolios. But as the subprime housing market began to crumble, banks began to realize that many of the securities on their books were worth far less than they thought. This caused bank leaders to actively mislead shareholders about the riskiness of the mortgage-based assets they held on their own books, while at the same time their personal incomes were growing. We liken this within-organization misrepresentation to the special form of opportunism identified by Akerlof and Romer (1993) as “looting.”

Importantly, however, the systemic dynamic of fraud cannot be sufficiently explained solely as the product of incentives. Equally important were the methods by which banks made profits. These methods worked so well, that it encouraged everyone in the industry to engage in more and more risky mortgage lending. The sheer size of the profits meant that the party could only continue if more and more mortgages could be found to package into MBSs and CDOs. In order to keep their mortgage securitization business going, banks needed more mortgages.

Moreover, the initial profitability and perceived security of MBSs and CDOs, as well as the intensely competitive structure of the origination, securitization and investment markets put pressure on actors in all parts of the system to rely on these investments. The sociology of markets tells us that these business models, once in place, pushed growing numbers of firms to pursue similar strategies, at times even irrespective of their financial consequences (DiMaggio and Powell 1981, Fligstein 2001). This implies that not only were the individual incentives in place for everyone involved to continue to create more and more mortgage products, but the entire structure of the business was built with practices that pushed this forward. Individual incentives, standard operating practices, and the actions of one’s competitors pushed all involved to undertake actions that we now know were imprudent. But, it went much farther than this. What eventually pushed the industry into illegality was that there were not enough mortgages to make securities. The turn to subprime in 2003 was a last-ditch attempt to keep the party going. But, the relentless pressure on originators and issuer/underwriters finally caused them

exploit informational asymmetries to deceive borrowers, investors, and regulators. In many cases, such as with predatory lending, these parties lacked not only information, but also the resources to enforce fair play *ex post* through litigation. It were these desperate, fraudulent acts that his pushed individuals and firms within the mortgage securitization industry into the realm of illegality.

Case Studies

In this section we discuss widespread evidence of opportunistic behavior at three critical transaction points in the mortgage securitization process—origination, securities underwriting, and interest rate-setting. At each point, one or multiple parties to the typical transaction faced incentives to deceive or otherwise violate the expectations of another party. As evidence of the novelty and pervasiveness of opportunistic behavior we evaluate the frequency and severity of post-crisis litigation pertaining to each of these transaction points. We also identify incentive structures and monitoring and enforcement breakdowns that created opportunities and motivations for fraud and collusion.

Mortgage Origination

The mortgage origination process involves transactions between mortgagers who borrow money to purchase residential homes, and mortgage originators who lend them the money. Mortgagers are most likely to be individuals and families, but are often aided in their borrowing strategies by real estate agents, loan officers, and other experts. Originators may be mortgage companies, S&L banks, commercial banks, or other retail lenders. Widespread opportunistic behavior has been documented by parties on both sides of this transaction. On the one hand, mortgagers have engaged in mortgage fraud—dissembling lenders of their ability or intention to fulfill the debt obligations they contract. On the other hand, originators have engaged in a broad array of fraudulent and discriminatory practices broadly defined as “predatory lending.”

Mortgage fraud can take many forms, and can be perpetrated by numerous actors on the borrower-side of the origination transaction. On the one hand, borrowers may misrepresent themselves in loan applications to receive loans or loan terms that honest disclosure would not have afforded. Occupant borrowers may lie about their income, employment status, or outstanding liabilities to receive better rates. The once-popular, now-abandoned stated-income loans—colloquially known as “liar’s loans”—made such deceit very easy. Residential investors may misrepresent themselves as owner-occupants in order to receive better interest rates. On the other hand, actors may commit mortgage fraud-for-profit schemes. Borrowers may seek out inflated appraisals of homes in order to profit from cash-out refinancing. Mortgage experts may also cooperate to execute more elaborate schemes involving “straw borrowers” or naive investors. Coordinating parties usually profit by absconding with fees and inflated loans. Under US Federal law, mortgage fraud is prosecuted criminally as bank fraud, wire fraud, mail fraud or money laundering. The rapid rise of mortgage fraud in the early 21st century has also led states to develop their own penalties for mortgage fraud.

Evidence overwhelmingly suggests that mortgage fraud became a systemic problem in the years before the mortgage meltdown.⁴ In 2004 the FBI stated that its investigations into mortgage fraud had increased five-fold over the previous three years, and that mortgage fraud was becoming an “epidemic” threatening to create a crisis on par with the savings and loan crisis.⁵ Between 2002 and 2007, the number of reports filed by banks suspecting mortgage fraud increased eightfold, from 5,623 to 47,717, leaving regulators unable to keep pace in investigating and prosecuting suspected malfeasance.⁶ In 2008, a multi-agency effort titled “Operation Malicious Mortgage” identified more than 400 defendants in mortgage fraud schemes associated with \$1 billion in losses nationwide.⁷ In 2010, the multi-agency

⁴ See Koller, Cynthia A. (2012). *White Collar Crime in Housing: Mortgage Fraud in the United States*. El Paso, TX: LFB Scholarly; Patterson, Laura A., & Koller, Cynthia A. Koller (2011). "Diffusion of Fraud Through Subprime Lending: The Perfect Storm." In Mathieu Deflem (ed.) *Economic Crisis and Crime* (Sociology of Crime Law and Deviance, Volume 16), Emerald Group Publishing Limited, pp.25-45.

⁵ <http://www.cnn.com/2004/LAW/09/17/mortgage.fraud/>

⁶ <http://www.nytimes.com/2007/12/25/us/25fraud.html?scp=1&sq=officials+mortgage+fraud&st=nyt>

⁷ http://www.fbi.gov/news/stories/2008/june/malicious_mortgage061908

Financial Fraud Enforcement Task Force completed “Operation Stolen Dreams,” which involved 1,215 criminal mortgage fraud defendants allegedly responsible for more than \$2.3 billion in losses nationwide.⁸

Why did mortgage fraud become so pervasive? First, lender underwriting standards became more lax. A booming housing market decreased lenders’ incentives to monitor fraud because the costs of default were often mitigated by home price increases, regardless of borrowers’ creditworthiness. A secondary mortgage market further minimized originators’ hazards. Second, the fee structure of mortgage professionals created incentives for deceit. Naïve borrowers were frequently abetted in mortgage fraud by loan officers, real estate agents, appraisers, closing agents, or attorneys because such opportunistic stakeholders were compensated only when a successful mortgage transaction closes and mortgage fraud often facilitated more and larger transactions.⁹

On the other side of the origination transaction are mortgage originators, or home lenders. Opportunistic behavior by originators is often referred to under the rubric of “predatory lending.” While predatory lending has no concise legal definition, the FDIC characterizes the behavior as “imposing unfair and abusive loan terms on borrowers.”¹⁰ While the precise practices fitting this definition are diverse and often complex, in the context of mortgage origination they may be crudely categorized into three types of opportunistic behavior. First, lenders may misrepresent or conceal information about the home loan, such as eligibility criteria, loan add-ons, or balloon payments, or about the origination process, such as commissions earned by brokers. Second, lenders may price loans in ways that are unfair or discriminatory, such as in channeling minorities into high-cost loans. Third, lenders may contract loans with the expectation that the borrower will not actually be able to fulfill their debt obligation. A variety of laws regulate these forms of opportunism in mortgage origination. At the federal level,

⁸ <http://www.justice.gov/opa/pr/2010/June/10-opa-708.html>; <http://dealbook.nytimes.com/2010/06/11/f-b-i-readies-for-mortgage-fraud-clampdown/>

⁹ http://www.justice.gov/usao/briefing_room/fin/mortgage.html

¹⁰ <http://www.fdicog.gov/reports06/06-011.pdf>

deceptive lending practices are criminalized under the Truth in Lending Act, most particularly the subsidiary Home Ownership and Equity Protection Act. Discriminatory lending practices are covered under the Fair Housing Act and the Equal Credit Opportunity Act. Moreover, 25 states have created specifically anti-predatory lending laws. In certain cases, banks such as Goldman Sachs and Morgan Stanley that underwrote but did not directly broker mortgages have been found liable for the predatory practices they helped finance.

Opportunistic lending was alarmingly widespread among mortgage originators. Indeed, *each of the top ten mortgage originators by market share circa 2007 have been implicated in fraudulent or discriminatory lending practices.* The majority of lenders have settled in suits brought by regulators and borrowers alleging predation. The nation's largest home lender Countrywide Financial settled a civil suit with eleven state attorneys general in October 2008 over alleged predatory lending practices. In that suit, Countrywide agreed to \$8.4 billion in direct loan relief for some 400,000 mortgagors—the largest predatory lending settlement in history.¹¹ As a result of purchasing Countrywide, Bank of America has paid numerous settlements in predatory lending suits, including \$3 billion in loan modifications and fines in a 2010 settlement with the Massachusetts Attorney General¹² and \$335 million in fines to the Department of Justice in 2011 for charging higher rates and fees to minorities and steering them disproportionately into subprime loans.¹³ (Independent of its Countrywide holdings, Bank of America has otherwise settled for billions of dollars in suits alleging predation in mortgage servicing.) In 2011, Wells Fargo settled a redlining suit brought by the City of Memphis and Shelby County in Tennessee for \$425 million in new lending and \$7.5 million in payments,¹⁴ and in July 2012 the bank also settled a discriminatory lending case with the Department of Justice for \$175 million.¹⁵ In May 2004 the Federal

¹¹ <http://www.nytimes.com/2008/10/06/business/06countrywide.html?ref=litigation>

¹² <http://www.mass.gov/ago/news-and-updates/press-releases/2010/ag-coakley-secures-3-billion-in-loan.html>

¹³ <http://www.nytimes.com/2011/12/22/business/us-settlement-reported-on-countrywide-lending.html>

¹⁴ <http://www.nytimes.com/2011/05/06/business/06redlining.html>;

<http://www.nytimes.com/2009/06/07/us/07baltimore.html?pagewanted=all>; <http://money.cnn.com/2012/05/30/news/companies/wells-fargo-memphis/index.htm>

¹⁵ <http://www.nytimes.com/2012/07/13/business/wells-fargo-to-settle-mortgage-discrimination-charges.html>

Reserve fined Citigroup \$70 million for abuses in personal and mortgage loans to low-income and high-risk borrowers.¹⁶ The State of California negotiated a \$2 billion settlement in December 2010 for predatory lending practices undertaken by Wachovia.¹⁷ Mortgage broker SunTrust settled in May 2012 with the Department of Justice for \$21 million for discriminatory lending.¹⁸ Finally, the Independent National Mortgage Corporation (IndyMac) has settled in numerous predatory lending suits brought by home borrowers.¹⁹

The other top-10 banks have had reckless and opportunistic origination behavior exposed through other channels. The FDIC is currently seeking \$900 million in damages from two top Washington Mutual executives who allegedly led the bank on a “lending spree” during the mortgage meltdown, and a US Senate investigation found evidence of widespread opportunism in that bank’s lending behavior.²⁰ As of August 2012, Residential Capital is under investigation by the SEC for fraud in mortgage origination and servicing, and has settled in servicing-related suits.²¹ Finally, numerous origination-related suits against JPMorgan Chase have yet to be resolved,²² though the bank has settled in servicing-related predation cases. Moreover, in March 2008, an internal memo from Chase’s mortgage lending division was leaked which detailed procedures for circumventing safeguards on its automated lending software in order to get unduly risky loans approved.²³

Why did the largest and most powerful mortgage originators so consistently engage in opportunistic lending? First, simple deceptive practices could channel unsophisticated borrowers into loans that were more expensive than ones to which they were entitled. The massive increase in housing and credit supply generated through the securitization process meant that larger numbers of less

¹⁶ <http://www.nytimes.com/2004/05/28/business/fed-assesses-citigroup-unit-70-million-in-loan-abuse.html>

¹⁷ http://blogs.sfgate.com/thesnitch/2010/12/jerry_brown_wells_fargo.php

¹⁸ <http://www.justice.gov/opa/pr/2012/May/12-crt-695.html>;

http://colorlines.com/archives/2012/05/suntrust_settles_lending_discrimination_suit_for_21_million.html

¹⁹ <http://www.responsiblelending.org/mortgage-lending/research-analysis/indymac-what-went-wrong.html>

²⁰ <http://www.sfgate.com/business/article/Washington-Mutual-rewarded-issuance-of-risky-loans-2374992.php>;

<http://www.nytimes.com/2011/03/18/business/18bank.html>

²¹ <http://dealbook.nytimes.com/2012/08/28/s-e-c-investigates-rescap-for-potential-mortgage-fraud/>

²² http://seattletimes.com/html/localnews/2008764830_bellletowers20m.html

²³ http://www.oregonlive.com/business/index.ssf/2008/03/chase_mortgage_memo_pushes_che.html

financially literate home borrowers would have been potential victims of such practices. The proliferation of cheap credit also allowed marginal lenders to engage in sizable mortgage origination. Second, the fee structure by which originators profited created incentives for them to maximize the volume of loans they originate, irrespective of loan quality. In both prime and subprime markets, mortgage underwriters usually paid loan brokers to bring them loans. When brokers were compensated in terms of yield spread premiums—the difference between the rate charged and the par rate—brokers have incentives to inflate that rate through deception or discrimination (Renuart 2004). When mortgage brokers were compensated through fees, they had incentives to conceal add-ons and penalties.

Issuing and Underwriting

The process of turning loans into MBS usually involves the creator, or issuer, of the MBS contracting the service of an underwriter, whose job it is to raise capital from investors to purchase the newly issued securities. The underwriter is most often an investment bank, ostensibly well-versed in the financial needs and interests of large, institutional investors that buy the securities—actors like savings and loan, investment and commercial banks, mutual funds, corporations, and GSEs. Underwriters assume some of the risks in distributing MBSs because they are usually obliged to retain the securities if they cannot raise enough capital to sell them in public auctions. The issuer and underwriter roles are often fulfilled by the same party.

MBS underwriters may behave opportunistically in at least two distinct ways, each involving the misrepresentation of the quality of the investments they sell. When underwriters are marketing MBSs to institutional investors, they may deceive those investors about the assets underlying the bond they are selling. When underwriters hold MBSs on their own books, they may deceive shareholders about the extent or quality of those holdings. In both cases, active and explicit misrepresentation usually constitutes securities fraud. U.S. financial law generally sets fairly high standards for demonstrating

specific, knowledgeable and intentional acts of deception.²⁴ Despite this high bar, many suits and settlements have been brought relating to securities fraud in MBS underwriting following the financial crisis.²⁵ Many such cases have claimed that by abandoning underwriting standards, investment banks at least implicitly misrepresented the quality of the investments they sold.²⁶

Somewhat less clear are cases in which underwriters do not explicitly misrepresent their products, but nevertheless market and sell investments they know to be poor ones. For example, Goldman Sachs settled for \$550 million a civil suit brought by the SEC in April 2010, in which the bank allegedly created and sold mortgage-backed investments designed to fail. In that case, Goldman invoked *caveat emptor* in its defense, and maintained no legal wrongdoing.²⁷ Nobel Laureate Paul Krugman would later say of the case: "That's what I would call looting."²⁸

As with the mortgage origination process, evidence exists of widespread opportunistic behavior in the MBS underwriting process. *The top-ten non-agency MBS underwriters circa 2008, which together represented a 74.1% market share, have all been implicated in securities fraud.* Eight of these ten banks have settled with regulators or investors over underwriting-related fraud. The largest MBS underwriter Credit Suisse settled with the SEC for \$120 million in November 2012 for deceiving investors about the solvency of mortgages underlying securities it sold.²⁹ In November 2011 Deutsche Bank settled for \$145 million with five failed credit unions it misled about risks underlying MBSs it sold them,³⁰ and in March 2012 settled for another \$32.5 million with pension fund investors who alleged the bank made false

²⁴ <http://www.nytimes.com/2009/10/09/business/09norris.html>?

²⁵ Some such suits have been brought using special provisions, such as under the Martin Act in the State of New York (see: <http://dealbook.nytimes.com/2010/05/13/cuomo-and-the-broad-power-of-the-martin-act/?ref=mortgagebackedsecurities>), or Sections 11 and 12 of the Securities Act of 1933 (see: <http://dealbook.nytimes.com/2011/09/06/u-s-takes-hard-line-in-suits-over-bad-mortgages/>).

²⁶ <http://www.americanbanker.com/syndication/ncua-sues-jpmorgan-chase-over-mortgage-securities-1055248-1.html>

²⁷ <http://www.nytimes.com/2010/04/17/business/17goldman.html>; <http://www.nytimes.com/2010/04/17/business/17abacus.html>;
<http://dealbook.nytimes.com/2010/04/19/the-goldman-defense-caveat-emptor/>;

<http://www.nytimes.com/2010/07/16/business/16goldman.html>; <http://www.nytimes.com/2010/04/27/business/27sorkin.html>;
<http://www.nytimes.com/2009/12/24/business/24trading.html>;

²⁸ <http://www.nytimes.com/2010/04/19/opinion/19krugman.html>

²⁹ <http://www.nytimes.com/2012/11/17/business/jpmorgan-and-credit-suisse-to-pay-417-million-in-mortgage-settlement.html>

³⁰ <http://www.nytimes.com/2011/11/15/business/citigroup-and-deutsche-bank-settle-claims-over-securities.html>

statements about loan underwriting standards, property appraisals, loan-to-value ratios and credit ratings on securitized loans.³¹

Bank of America has since 2011 been attempting to arrange a settlement for \$8.5 billion for deceiving 24 institutional investors about the quality of holdings in 530 deals representing \$424 billion in underlying mortgages,³² and has faced numerous other suits from investors, insurers, and regulators. In 2011 Bank of America settled for \$2.5 billion for poor-quality loans Countrywide deceptively sold to Fannie Mae and Freddie Mac,³³ and for another \$10 billion in early 2013 for similar reasons.

In 2010, Countrywide CEO Anthony Mozilo, accused of hiding growing risks from investors in mortgage-backed investments and profiting from insider stock trades, settled with the SEC for \$67.5 million.³⁴ In the same year the bank agreed to pay \$600 million to settle several class action lawsuits by shareholders alleging the company concealed risks as it grew more lax in its lending practices.³⁵

Top executives at Lehman Brothers settled a class-action lawsuit by pension fund investors for \$90 million in 2011,³⁶ and the firm paid another \$8.25 million in 2011 to the New Jersey Department of the Treasury for its separate fraud claims.³⁷

In 2010 Citigroup settled for \$75 million with the SEC over public statements misrepresenting its exposure to subprime mortgage risk,³⁸ again with the SEC in 2011 for \$285 over allegations that it misled investors about the mortgages underpinning CDOs it sold and was simultaneously betting against,³⁹ and with another federal regulator the same year for \$20.5 million over claims it misled credit unions about

³¹ <http://www.bloomberg.com/news/2012-03-26/deutsche-bank-to-pay-32-5-million-to-settle-mortgage-suit-1-.html>

³² <http://www.nytimes.com/2011/06/30/business/30mortgage.html?hp>

³³ <http://dealbook.nytimes.com/2011/01/03/fannie-and-freddie-continue-to-collect-on-bad-loans/>

³⁴ <http://www.nytimes.com/2010/10/16/business/16countrywide.html>; <http://www.nytimes.com/2010/10/17/business/17trial.html>;

<http://www.nytimes.com/2011/02/20/business/20mozilo.html>

³⁵ <http://www.nytimes.com/2010/08/03/business/03countrywide.html>; <http://dealbook.nytimes.com/2011/02/25/bank-of-america-settles-countrywide-case/>

³⁶ <http://dealbook.nytimes.com/2011/08/25/former-lehman-officials-to-pay-90-million-to-settle-suit/>

³⁷ <http://dealbook.nytimes.com/2011/08/29/lehman-legal-problems-appear-to-be-fading/>

³⁸ <http://www.nytimes.com/2010/09/25/business/25sec.html>

³⁹ <http://www.nytimes.com/2011/10/20/business/citigroup-to-pay-285-million-to-settle-sec-charges.html>

the quality of MBSs it sold them.⁴⁰ In August 2012 Citi also settled with shareholders for \$590 million in a class-action suit alleging the bank concealed its exposure to CDOs backed on MBSs, and also \$25 million to another group of investors over similar misrepresentations of securities products it sold them.⁴¹

JPMorgan Chase settled in 2012 a suit brought by the SEC for \$269.9 million for misstating the delinquency status of mortgages that provided collateral for MBSs it underwrote.⁴² Finally, in 2012 Bear Stearns settled a suit for \$275 with investors to whom the bank made “materially false and misleading” statements about its holdings, particularly internal hedge funds heavily invested in crumbling MBSs,⁴³ and currently faces numerous outstanding suits from regulators and investors.

Despite these abundant settlements, private and public litigation continues to mount against leading banks. All of the extant top-ten underwriters were indicted in 2011 in an ongoing suit by the Federal Housing Finance Authority against 17 major banks over the misrepresentation of MBSs they sold to Fannie Mae and Freddie Mac.⁴⁴ Moreover, in January 2012, US President Barack Obama created the federal-state Residential Mortgage Backed Securities Working Group to pursue an ongoing coordinated agenda of investigation and prosecution into fraud in the issuance and underwriting of MBSs.

Why was the mortgage underwriting process so wrought with opportunistic behavior? First, individual bankers were often paid different commissions according to the types of securities they underwrote. Sometimes this compensation structure provided incentives to misrepresent the riskiness of assets underlying securities. For example, in 2009 two executives at Credit Suisse were convicted of

⁴⁰ <http://www.nytimes.com/2011/11/15/business/citigroup-and-deutsche-bank-settle-claims-over-securities.html>

⁴¹ <http://dealbook.nytimes.com/2012/08/29/citigroup-in-590-million-settlement-of-subprime-lawsuit/>;
<http://dealbook.nytimes.com/2012/08/29/citigroup-in-590-million-settlement-of-subprime-lawsuit/>

⁴² <http://www.nytimes.com/2012/11/17/business/jpmorgan-and-credit-suisse-to-pay-417-million-in-mortgage-settlement.html>

⁴³ <http://dealbook.nytimes.com/2012/06/07/bear-stearns-investors-settle-claims-for-275-million/>; <http://www.bloomberg.com/news/2012-11-09/bear-stearns-settlement-gets-u-s-judge-s-approval.html>

⁴⁴ These banks are: Ally Financial/GMAC, Bank of America, Barclays, Citigroup, Countrywide, Credit Suisse, Deutsche Bank, First Horizon, GE, Goldman, HSBC, JPMorgan, Merrill Lynch, Morgan Stanley, Nomura, Royal Bank of Scotland, Societe Generale. See: <http://www.nytimes.com/2011/09/02/business/us-is-set-to-sue-dozen-big-banks-over-mortgages.html>;
<http://www.nytimes.com/2011/09/03/business/bank-suits-over-mortgages-are-filed.html>; <http://dealbook.nytimes.com/2011/09/06/u-s-takes-hard-line-in-suits-over-bad-mortgages/>; <http://www.fhfa.gov/Default.aspx?Page=110>

securities fraud for lying to investors, maintaining that securities they sold were underpinned by student loan debt rather than mortgage debt in order to gain higher commissions.⁴⁵ Second, when their compensation packages were highly sensitive to stock price fluctuation and when MBSs were held by underwriting banks, executives had strong individual incentives to misreport their exposure to securities backed by bad loans (Burns and Kedia 2006). Third, intense competition among commercial banks that had newly entered the securities underwriting business led to the emergence of the co-led syndicate underwriting structure. This underwriting structure created free-rider problems in the quality control of securities issues at the very same time that the repeal of Glass-Steagall allowed new and riskier issuers to enter the market (Shivdasani and Song 2011). For example, a 2010 lawsuit brought by Cambridge Place Investment Managements alleges that 15 Wall St. Banks, including all of the extant top-ten underwriters circa 2007, failed to perform the due diligence they each claimed to have done in certifying the quality of home loans underlying securities they sold.⁴⁶

Collusion in Libor Rate-setting

Whether originating a mortgage or issuing a MBS, financial actors must choose a rate at which to lend money. This rate is usually based upon a market index, and one of the most common is the London Interbank Offer Rate (Libor). Libor serves as a benchmark for determining the borrowing costs for some \$750 trillion in financial transactions. It is calculated daily by averaging the rates major international banks say they charge one another.

Banks may behavior opportunistically in the interest rate-setting process by misreporting the rates they actually charge. They may do this for two distinct reasons. On the one hand, banks may artificially inflate or depress the rates they report in order to make specific transactions more lucrative.

⁴⁵ <http://www.justice.gov/usao/nye/pr/2008/2008sep03.html>; <http://www.nytimes.com/2008/09/04/business/04auction.html>;
<http://dealbook.nytimes.com/2009/08/18/former-broker-at-credit-suisse-is-found-guilty/>

⁴⁶ <http://www.nytimes.com/2010/07/11/business/11gret.html>; <http://dealbook.nytimes.com/2010/07/12/mortgage-investor-sues-15-banks-over-subprime/?ref=mortgagebackedsecurities>

This may enhance the profitability of financial derivatives banks trade in, or of the mortgage loans underlying them. For example, a lawsuit brought by US homeowners against 12 major banks draws on statistical evidence that between 2000 and 2009, Libor consistently rose on the first day of the month, when adjustable rate mortgages based on the index usually reset.⁴⁷ On the other hand, banks may report rates below their actual costs to borrowing in order to misrepresent their firms' financial health. For example, amid regulatory scrutiny in April 2008, a Barclays employee told an official at the Federal Reserve Bank of New York that "we know we're not posting, um, an honest" rate, but were doing so to "fit in with the rest of the crowd."⁴⁸ Opportunism may therefore be aimed at dissembling shareholders and regulators as well as borrowers and investors. Libor rate manipulation is likely to constitute wire fraud, which carries a maximum sentence of 30 years in prison. When patterns of collusion are demonstrable, violations of the Sherman Antitrust Act and the Racketeer Influenced and Corrupt Organizations Act allow for the award of triple damages.⁴⁹

Evidence of opportunism in the Libor rate-setting process is currently unfolding, but already extensive. In 2007-8, 16 international banks submitted rates by which to set the US dollar Libor, most of whom were major participants in commercial paper markets used to finance the trading of MBSs and CDOs. At present, regulators from at least seven countries are investigating Libor rigging, and some 20 banks have been named in investigations and lawsuits.⁵⁰ Uncharacteristically, instead of closing ranks major banks under scrutiny have sought to highlight the fraudulent actions of coconspirators, many of which extend to the firms' highest ranks.⁵¹ Moreover, in private suits, institutional investors like local governments are also seeking to recoup losses to alleged rate manipulation.⁵² Analysts have predicted

⁴⁷ <http://www.cnn.com/id/49412365>

⁴⁸ <http://dealbook.nytimes.com/2012/07/13/barclays-informed-new-york-fed-of-problems-with-libor-in-2007/?ref=barclaysplc>

⁴⁹ <http://dealbook.nytimes.com/2012/07/03/whats-next-after-the-barclays-settlement/>

⁵⁰ <http://online.wsj.com/article/SB10001424052702303612804577528852646272314.html>; <http://www.economist.com/node/21558281>

⁵¹ <http://dealbook.nytimes.com/2012/08/05/banks-in-libor-inquiry-are-said-to-be-trying-to-spread-blame/>

⁵² <http://www.nytimes.com/2012/09/05/business/banks-facing-suits-as-states-weigh-their-libor-losses.html>

that the financial industry could face as much as \$20 billion in penalties for Libor manipulation.⁵³ One banking chief called the Libor scandal “the banking industry’s tobacco moment.”⁵⁴

Three major settlements with regulators have evidenced the manner and extent of opportunism in the Libor rate-setting process. In June 2012, Barclays agreed to pay \$450 million in settling with American and British authorities over manipulation accusations.⁵⁵ Barclays traders attempted to manipulate Libor rates in order to enhance profits, and top executives have been implicated in depressing rates to disguise its exposure to the financial crisis.⁵⁶ In December 2012, UBS became the first major financial institution in 20 years to plead guilty to felony wire fraud for its role in manipulating Libor. The bank agreed to pay \$1.5 billion in penalties to American, British and Swiss regulators, and the Justice Department also filed criminal suits against two former UBS traders. UBS manipulated rates both for the purposes of enhancing profits and conceal financial distress, and its plea documented more than 2,000 instances of illegal activity undertaken by dozens of employees across continents.⁵⁷ The Royal Bank of Scotland settled with American and British regulators for \$612 million in a rate-rigging case, and its Japanese unit was also forced to plead guilty to felony wire fraud.⁵⁸

Other banks have failed to reach settlements but are likely to. Citigroup and JPMorgan Chase have admitted to colluding with other banks in rate manipulation, but in cooperating with regulators have maintained that fraud does not extend to the upper ranks of its management, as at Barclays.⁵⁹ Deutsche Bank has said it has aside money to cover potential fines from Libor manipulation, and along

⁵³ http://topics.nytimes.com/top/reference/timestopics/subjects/l/london_interbank_offered_rate_libor/index.html

⁵⁴ <http://www.economist.com/node/21558281>

⁵⁵ <http://dealbook.nytimes.com/2012/06/27/barclays-said-to-settle-regulatory-claims-over-benchmark-manipulation/>

⁵⁶ <http://dealbook.nytimes.com/2012/07/02/barclays-executives-said-to-know-of-low-rates/>; <http://dealbook.nytimes.com/2012/07/03/chief-executive-of-barclays-resigns/>; <http://dealbook.nytimes.com/2012/07/16/former-senior-barclays-executive-faces-scrutiny-in-parliament/>

⁵⁷ <http://dealbook.nytimes.com/2012/12/11/three-arrested-in-connection-to-rate-rigging-scandal/>;

<http://dealbook.nytimes.com/2012/12/19/leniency-denied-ubs-unit-admits-guilt-in-rate-case/>;

<http://dealbook.nytimes.com/2012/12/19/as-unit-pleads-guilty-ubs-pays-1-5-billion-in-fines-over-rate-rigging/>

⁵⁸ <http://dealbook.nytimes.com/2013/02/06/as-unit-pleads-guilty-r-b-s-pays-612-million-over-rate-rigging/?hp>

⁵⁹ <http://dealbook.nytimes.com/2012/08/05/banks-in-libor-inquiry-are-said-to-be-trying-to-spread-blame/>; one former Citibank trader has been arrested in connection with rate manipulation (see: <http://dealbook.nytimes.com/2012/12/11/three-arrested-in-connection-to-rate-rigging-scandal/>) and Citibank and JPMorgan Chase are also the principal focus of CFTC inquiries (see: http://topics.nytimes.com/top/reference/timestopics/subjects/l/london_interbank_offered_rate_libor/index.html)

with HSBC has been implicated in settlements with Barclays and UBS.⁶⁰ Credit Suisse and Bank of America have found “more limited actions” taken by their employees to manipulate rates.⁶¹

As originally conceived, the relatively casual Libor rate-setting system depended upon the trust and responsibility of a small group of like-minded bankers. In light of the increased scale and interconnectedness of global credit markets many have pointed to deep problems in the rate setting system, and insiders have identified collusion and fraud dating back decades and reaching into the upper echelons of bank management.⁶² In response to revelations about Libor rigging, Federal Reserve chairman Ben Bernanke said that he did not have “full confidence” in the rating system, and considered it “structurally flawed.”⁶³ The scandal also prompted British regulators to take over for the British Bankers’ Association in overseeing the rate-setting process.⁶⁴ Why has the rate-setting process been marked by such opportunism?

First, traders had incentives and opportunities to collude with counterparts at other brokerages. For example, Barclays’ heavy investment in derivatives products in 2007 meant that it stood to gain or lose as much as \$40 million per day from normal movement in Libor, making even minor adjustments highly consequential.⁶⁵ Evidence from settlements indicated traders expected bonuses from their employees for more lucrative transactions, and kickbacks from one another in exchange aid in rate fixing.⁶⁶ Second, executives had incentives to instruct their deputies to depress rates when the financial health of their firms was in question. For example, when Barclays CEO Robert Diamond, then head of the investment banking unit, learned that British regulators were concerned about the high rates his

⁶⁰ <http://dealbook.nytimes.com/2012/08/05/banks-in-libor-inquiry-are-said-to-be-trying-to-spread-blame/>

⁶¹ <http://dealbook.nytimes.com/2012/08/05/banks-in-libor-inquiry-are-said-to-be-trying-to-spread-blame/>

⁶² <http://www.informath.org/media/a72/b3.htm>; <http://www.reuters.com/video/2012/08/07/libor-collusion-was-rife-culture-went-ri?videoid=236894451>

⁶³ <http://dealbook.nytimes.com/2012/07/19/libor-scandal-shows-many-flaws-in-rate-setting/?hp>; Despite regulators’ knowledge of criminal behavior as early as 2008, they failed to prevent further misdeeds (see: <http://dealbook.nytimes.com/2012/07/13/barclays-informed-new-york-fed-of-problems-with-libor-in-2007/?ref=barclaysplc>).

⁶⁴ <http://dealbook.nytimes.com/2012/09/28/british-regulators-unveil-overhaul-to-libor/>

⁶⁵ <http://www.economist.com/node/21558281>

⁶⁶ <http://dealbook.nytimes.com/2012/12/19/leniency-denied-ubs-unit-admits-guilt-in-rate-case/>

bank was reporting, his top deputies instructed lower-level employees to depress rates in order to conceal actual threats to the firm's well-being.⁶⁷ (Diamond has since resigned.) Third, because firms reported estimates, not actual prices, dissemblance was hard to prove without explicit evidence of collusion. "There is no reporting of transactions, no one really knows what's going on in the market," said one former senior trader closely involved in setting Libor at a major bank.⁶⁸

Conclusion

The financial crisis of 2007-2009 offers several challenges to our understanding of the relationship between market structure, regulation, and economic behavior. Ours is not a story in which a few bad apples undertook aggressive behavior that was illegal. Rather, incentives for organizations and their employees lined up to produce illegal and unethical behavior that became embedded in the standard operating procedures of organizations. Many actors at each point in the mortgage securitization process consistently engaged in opportunistic behavior as a matter of everyday business. As we have shown, the largest firms in all of these markets were the core participants in fraud and collusion.

The most severe challenge our evidence presents is to the Chicago School-inspired theory of self-regulating markets. This regulatory strategy—largely adopted by U.S. agencies—seems to have failed miserably. Self-regulation was consistently undermined by the incentives faced by most actors in the mortgage securitization process, ranging from directors of major banks to loan officers at peripheral mortgage origination firms. Everyone made money when the throughput of this process was large and growing. As the supply of conventional mortgages dried up, everyone had incentives to pursue nonconventional mortgages, which resulted in higher fees and could be packaged to produce greater returns. But absent rigorous regulatory oversight and penalization, few actors had downside incentives

⁶⁷ <http://dealbook.nytimes.com/2012/07/02/barclays-executives-said-to-know-of-low-rates/>; <http://dealbook.nytimes.com/2012/07/03/chief-executive-of-barclays-resigns/>; <http://dealbook.nytimes.com/2012/07/16/former-senior-barclays-executive-faces-scrutiny-in-parliament/>

⁶⁸ <http://www.economist.com/node/21558281>

to opportunism. At organizational and individual levels, originators, issuers, underwriters, and financiers could all enhance their incomes by misrepresenting themselves, their products, or the environment. These actors did not seem to fear the consequences of fraud for their reputations or their legal departments. This is in no small part because they did not expect to be caught, either by regulators or by the comparatively naïve and uninformed parties they often transacted with. It is also because many did not believe they would be around when any reckoning might occur (Ho 2009). Finally, it is because such practices became normalized, and an intensely competitive environment impelled organizations and actors within them to adopt opportunistic strategies as standard operating practices, irrespective of the consequences they might reasonably have foreseen.

By the time regulators understood what had happened, they became convinced that to act against all of the banks would likely further weaken them and push the entire banking system into collapse.

Our sociological theories of market processes also need some rethinking. Sociologists have generally viewed the social structures that make markets work as benign and facilitative. Granovetter's (1985) argument about social embeddedness focuses on the relationship between social structure and the possibility of malfeasance. But most empirical studies of social embeddedness have focused on its impact on prices or on actors' choices about whom to transact with (DiMaggio and Louch 1998; Mizuchi, Stearns, and Marquis 2006). Less attention has been paid to the conditions under which embeddedness may actually prevent or facilitate opportunism. The entire structure of the mortgage securitization industry was rife with such behavior. How can it be explained?

The sociological literature on crime and deviant behavior in organizations offers some important insights. Historically, that literature has been marginal to the sociology of organizations. But as we have demonstrated, the predictive conditions this literature identifies were largely present throughout the mortgage securitization chain. Lax regulation, products that were difficult to understand, revenue and

compensation structures that demanded throughput, and intensely competitive dynamics that catalyzed isomorphic behavior created incentives for many actors to cutting corners systematically, and lie about it.

Our paper has only scratched the surface of questions about the exact mechanisms by which illegal behavior spread across the mortgage securitization industry. We know very little about the pioneers of such tactics and how they spread across banks. We also know almost nothing about how such opportunism became so rampant at *every* phase of the process. One can surmise that each of the markets discussed became dominated by unethical tactics at the interface of suppliers and customers. But much of the pressure came from the vertical integration of banks.

Another challenging question is why banks bought the very mortgage-backed securities and collateralized debt obligations that they knew were of dubious quality. We think there are a number of possible answers to this. It may have been the case that the underwriters and issuers operated independently of the traders in the organization who bought and sold investments for the bank's own portfolio. In other words, different units within banks may have accidentally tricked one another: traders under pressure to create sound but profitable portfolios may have taken the stellar ratings of shaky securities at face value, even as in-house issuers and underwriters misrepresented them.

A more compelling explanation is that neither issuer/underwriters nor traders in any given firm had incentives to care about the real quality of the loan portfolio of their firm, even if they suspected that the quality of the securities was in question. Those who worked in securitization and trading had pressures and incentives working to produce and buy as much of these securities as they could. One can imagine that any trader who told their boss that they had doubts about the quality of the securities would have been told to either buy them or find a new job. Since many of these securities were rated AAA, they had justification not to worry about their riskiness. They viewed their jobs as being narrowly about producing securities and investments for the firms and did not care about the longer term. Finally,

some banks bought credit default swaps for some of their MBSs and CDOs, and these operated as a kind of insurance against default on such instruments.

The task of preventing a recurrence of the events we describe is a daunting one. While the Chicago School's view of regulation is clearly problematic, good regulatory solutions in the arena of complex and dynamic financial products is not straightforward. Likewise challenging is the identification of tipping points at which illegal and unethical practices become widely diffuse. The financial sector represents a market domain where fraud and collusion are consistently more common than in other domains, and this is in part due to the inherent difficulty in assessing financial crimes. But why do such crimes become so very widespread at particular historical moments? The only good historical comparison—the savings and loan crisis—was both a simpler and smaller incident than the systematic opportunism and attendant crises we document. That the largest financial market in America, the market for mortgages and mortgage securities, could have tipped over into standardized unethical and illegal behavior should give us all pause.

Bibliography

Acharya, V. and M. Richardson, 2009. *Critical Review*, Vol. 21, Nos. 2 & 3, pp. 195-210.

_____, Schnabl, G. and G. Suarez. Forthcoming. "Securitization without risk transfer." *Journal of Financial Economics*.

Akerlof, G. and P. Romer. 1993. "Looting: The Economic Underworld of Bankruptcy for Profit", *Brookings Papers on Economic Activity* 24: 1-73. Washington, D.C.: Brookings Institution.

American Law Institute. 1965. Restatement of Law: Torts. Philadelphia, Pa.: American Law Institute.

Ashcroft, A. and T. Schuermann. 2008. "Understanding the securitization of sub-prime mortgage credit." Working Paper. New York Federal Reserve.

Baker, W. and R. Faulkner. "The social organization of conspiracy: illegal networks in the heavy electrical equipment industry." *American Sociological Review* 58: 837-860.

Black, W., K. Calavita and H. Pontell. 1995. "The savings and loan debacle of the 1980's: White-collar crime or risky business?" *Law and Policy* 17:23-55.

Barmat, J. 1990. "Securitization: An Overview." Pp. 3-22 in The Handbook of Asset-Backed Securities, edited by Jess Lederman. New York: New York Institute of Finance.

Braithwaite, J. 1985. "White Collar Crime". *Annual Review of Sociology* 11: 1-25.

Brendsel, L. 1996. "Securitization's Role in Housing Finance: The Special Contributions of Government Sponsored Entities." Pp. 17-30 in *A Primer on Securitization*, edited by Leon T. Kendall and Michael J. Fishman. Cambridge: The MIT Press.

Calavita, K. and H. Pontell. 1990 "Heads I Win, Tails You Lose: Deregulation, Crime, and Crisis in the Savings and Loan Industry," *Crime and Delinquency* 36: 309-41.

Clinard, M.B. and P. C. Yeager. 1980 *Corporate Crime*. New York: Free Press.

Coase, R. 1960. "The problem of social cost." *Journal of Law and Economics* 3:1-44.

Currie, A. 2007. "Buy or build: the vertical integrator's dilemma." *Mortgage Broker*. May, 2007.

DeYoung, R. and T. Rice. 2003. "How do banks make money?" *Economic Perspectives* 34-48.

Diamond, D. and R. Rajan. 2009. "The Credit Crisis: Conjectures about Causes and Remedies," *American Economic Review*, American Economic Association, vol. 99(2), pages 606-10, May.

Edelman, L.B. and M. C. Suchman. 1997 "The Legal Environments of Organizations," *Annual Review of Sociology* 24: 479-515.

Ellickson, R. 1991. Order Without Law. Cambridge, ma.: Harvard University Press.

Fligstein, N. and A. Goldstein. 2010. "The anatomy of the mortgage securitization crisis." Pp. 29-70 in M. Lounsbury and P. Hirsch (ed.) Markets on Trial: The Economic Sociology of the U.S. Financial Crisis. Bingham, U.K.: Emerald Publishing.

_____. and J. Habinek. 2012. "Sucker punched by the invisible hand: the spread of the worldwide financial crisis, 2007-2010." Paper presented at the Annual Meeting of the American Sociological Association, Denver, Co., August 9-12, 2012.

Gorton, G. 2010. Slapped by the Invisible Hand. New York: Oxford.

Granovetter, M. 1985. "Economic action and social structure: the problem of embeddedness" American Journal of Sociology pp. 481-510.

Hansen, L. 2009. "Corporate financial crime: social diagnosis and treatment." *Journal of Financial Crime* 16: 28-40.

Immergluck, D. 2010. Foreclosed: High-Risk Lending, Deregulation, and the Undermining of America's Mortgage Market. Ithaca, NY: Cornell University Press.

Jacobides, M.G. 2005. " Industry change through vertical disintegration: how and why markets emerged in mortgage banking." *Academy of Management Journal* 48: 465-498.

Kendall, L. 1996. "Securitization: A New Era in American Finance." Pp. 1-16 in *A Primer on Securitization*, edited by Leon T. Kendall and Michael J. Fishman. Cambridge: The MIT Press.

Krippner, G. 2005. "The "financialization" of the American economy." *Socioeconomic Review* 3: 173-208.

_____. 2011. Capitalizing on Crisis. Cambridge, Ma.: Harvard University Press.

Levine, J. 2007. "The vertical integration strategy." *Mortgage Banking*. February 1, 2007.

Lo, A. 2012. "Reading About the Financial Crisis: A 21-Book Review." *Journal of Economic Literature* 50:151-178.

MacKenzie, D. 2011. "The Credit Crisis as a Problem in the Sociology of Knowledge." *American Journal of Sociology* 116: 1778-1841.

Maclean, T. 2001. "Thick as Thieves: A Social Embeddedness Model of Rule Breaking in Organizations." *Business and Society*: 40: 167-196.

Mayer, C., K. Pence, and S. Sherlund. 2009. "The rise in mortgage defaults." *Journal of Economic Perspectives* 23: 27-50.

- Needleman, M. and C. Needleman. 1979. "Organizational Crime: Two Models of Criminogenesis". *Sociological Quarterly* 20: 517-528.
- New York Times. 2008. "Greenspan concedes error on regulation." October 23, 2008. Accessed on December 28, 2012 at <http://www.nytimes.com/2008/10/24/business/economy/24panel.html?emc=eta1>.
- Purnanandam, A. 2011. "Originate to distribute model and the subprime mortgage crisis." *Review of Financial Studies* 24: 1881-1915.
- Peltzman, S. 1989. "The economic theory of regulation after a decade of deregulation." *Brookings Papers on Economic Activity*, Special issue: 1-44. Washington, D.C.: Brookings Institution.
- Prechel, H. and T. Morris. 2010. "The Effects of Organizational and Political Embeddedness on Financial Malfeasance in the Largest U.S. Corporations: Dependence, Incentives, and Opportunities." *American Sociological Review* 75(3) 331–354.
- Shleifer, A. 2005. "Understanding Regulation". *European Financial Management* 11: 439–451.
- Simpson, S. and N. Piquero. 2002. "Low Self-Control, Organizational Theory, and Corporate Crime". *Law and Society Review* 36: 509-48.
- Simpson, S. 2010. "Making Sense of White-Collar Crime: Theory and Research". *Ohio State Journal of Criminal Law* 8: 481-504.
- Stigler, G. 1971. "The theory of economic regulation." *Bell Journal of Economics* 2:3-21.
- Sutherland, E. 1949. White Collar Crime. New York: Holt, Rinehart & Winston.
- Tett, G. 2008. Fool's Gold. London, Eng.: Little, Brown.
- Tillman, R. and H. Pontell. 1995. "Organizations and Fraud in the Savings and Loan." *Social Forces* 73: 1439-1463.
- Tomasic, R. 2011. "The financial crisis and the haphazard pursuit of financial crime." *Journal of Financial Crime* 18: 17-31.
- Vaughan, D. 1999 "The Dark Side of Organizations: Mistake, Misconduct, and Disaster," *Annual Review of Sociology* 25: 271-305.
- _____. 2002. "Criminology and the sociology of organizations: Analogy, comparative social organization, and general theory". *Crime, Law & Social Change* 37: 117–136
- Werder, A. 2011. "Corporate governance and stakeholder opportunism." *Organization Science* 22: 1345-1358.
- Williamson, O. 1975. Markets and Hierarchies. New York: Free Press.

Zey, M. 1999. "The Subsidiarization of the Securities Industry and the Organization of Securities Fraud Networks to Return Profits in the 1980s." *Work and Occupations*: 26: 50-76.

Figure 1: The social structure of mortgage securitization

