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A HISTORY OF MARKETS PAST:
INNOVATION AS A CASE OF INSTITUTIONAL MEMORY FAILURE

Abstract
Economic historians have suggested that mortgage-backed securities (MBS) in the United States emerged on at least three separate occasions: 1880s, 1900s, and 1970s. In this paper, I investigate the possibility that the prior instances of MBS markets are informative about the antecedents of the 2008 crisis. Specifically, I compare and contrast the security structures in three markets for mortgage-backed securities (MBS) in the United States in the 1880s, 1900s, and 1970s to investigate whether the lessons learned in the first two markets shaped the structure of MBS securities in the third. I find that the security structures in the third market shared important similarities with those of the previous markets, particularly, with regard to the mechanisms used to control the risks of investing in the securities. Tracing the security design across the three markets sheds light on failure of institutional memory to constrain the reemergence of financial instruments as innovations.
The massive foreclosures on residential real estate in the United States affected millions of families, bringing about bankruptcies of major financial firms and protracted unemployment. The need to make sense of the 2008 crisis produced an interest in understanding the work practices of financial market participants, energizing the social studies of finance as an emergent discipline (MacKenzie and Millo, 2008; Poon, 2009). This analytical lens built on ethnographic accounts of the financial services that emerged in the work of academic anthropologists (Ho, 2009; Knorr Cetina and Bruegger, 2002), journalists trained in anthropology (Tett, 2009), and practitioners (Lewis, 1990, 2010).

In exploring the evolution of the securities implicated in the financial crisis, scholars taking a historical lens focused on the role played by innovations in security design and the practices surrounding such innovations (Funk and Hirschman, 2014; MacKenzie, 2011; Vinokurova, 2018a and 2018b). These accounts leveraged the relative recency of the 2008 crisis to excavate the immediate antecedents of the securities in question, supplementing archival data with interviewing practitioners. However, they did not take advantage of the wider lens afforded by the historical method in interrogating the more distal ancestors of the securities in question. In this paper I contribute to filling in this gap by analyzing the connections between mortgage-backed securities (MBS), which were one type of securities widely used in the lead-up to the 2008 crisis and the prior U.S. MBS markets that emerged in 1880s and 1900s.

In this paper, I take the perspective of financial instruments as examples of innovation. Traditionally, innovation studies focus on the technology domain. One attraction of studying this context is the match between the association of technology with progress and the positive valence of the innovation construct (Abrahamson, 1994). Financial markets are an atypical and underutilized setting for investigating innovation. They are an atypical setting because unlike the technology context that inspires interest in understanding technological breakthroughs, investigations of financial innovation are often inspired by financial crises.

The fact that interest in the origins of financial products is often inspired by crises rather than breakthroughs has led technology and innovation researchers to question whether financial innovation qualifies as innovation. These questions translated into the setting being underutilized by innovation.
scholars. This underutilization is unfortunate because the financial market setting allows researchers to set aside the assumption of progress that imbues innovation research in the technology setting. Removing the assumption of progress allows for a clearer view of the innovations’ causes and consequences.

The study of financial markets affords innovation scholars another important advantage—namely, access to extensive documentation of the products in question. The legal contract nature of the products allows observation of minute changes in the securities’ structures. Such observations allow for an investigation of the mechanisms that enable the recurrence of similarities across different product generations. Furthermore, the comparison of different generations of similar products allows us to assess the extent of the market participants’ learning from the past as well as how the positioning of an idea as an innovation affects such learning.

**Choice of MBS markets**

In this paper, I consider the connections between the emergence and reemergence of mortgage-backed securities (MBS) markets in the United States in the 1880s, 1900s, and 1970s. The connections across the three markets offer insights into the role of institutional memory in the MBS market development. The U.S. MBS markets are of particular interest because of the discontinuous nature of the MBS development in the United States. Other countries’ forays into mortgage securitization are characterized by evolutionary change—the markets in Germany, France, and Denmark span centuries. By contrast, the U.S. markets emerge, flame out in a crisis, disappear, and reemerge.¹

In my analysis, I focus on securities offered to U.S. investors backed by residential real estate. This focus rules out the securities of U.S. mortgage companies created in the 1870s that targeted European investors (Brewer, 1976), the shares of mortgages in commercial properties offered by bond houses in the 1920s (Snowden, 1995), and the farm mortgage lending system created by the U.S. government in 1915 (Sparks, 1932). The three markets that I consider in this paper are for the debentures backed by western mortgages issued in the 1880s and 1890s, the mortgage participation certificates issued

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¹ Snowden (1995) argued that such continuity had to do with the European governments stepping in to relieve the crises that occurred in the markets in a way that preserved the integrity of mortgage lending institutions.
between 1900s and 1930s, and different types of MBS issued in the most recent market from 1970s through 2008.

Comparing security structures across three MBS markets

Economic historians have argued that the connection between the MBS market meltdowns of the 1890s and 1920s is that the U.S. mortgage lenders have missed the important institutional lessons of the European securitization experience. For instance, Snowden (1995) contrasts the lack of a centralized regulator for mortgage lending and the issuance of MBS in the United States with the highly centralized regulation of mortgage banking in Europe. Other scholars have similarly pointed to private market competition as causing the U.S. MBS crises (Simkovic, 2013). A question that received less attention in research on previous MBS markets to date is the degree of the differences and similarities in the structures of the securities issued across the three markets.

Comparing and contrasting the security structures across the three markets is important because these structures can speak to institutional memory (or lack thereof) in the U.S. MBS markets and the financial system more broadly. Since all three MBS markets ended in crashes, the similarity across the security structures could inform debates about whether and what market participants learn from financial crises. The subject of learning from financial crises is of interest for students of innovation because the persistence of the security structures would suggest that MBS market participants failed to learn not just from the overseas experience with mortgage securitization, but also from the experience of their U.S. predecessors. Furthermore, evidence of continuity in mortgage securitization practices would lend further credence to the arguments for the role played by the regulators in shaping the scope of action available to the innovators in financial markets (Funk and Hirschman, 2014).

MBS: 1880s and 1890s

The debentures issued by mortgage brokers in the 1880s solved the problem of providing mortgage financing for farm and city property in Midwestern and western states. The security issuance represented the efforts of mortgage brokers to cater to investors who lacked sufficient capital to buy individual mortgage loans. These securities gave investors the option to invest in western mortgages by buying
obligations of the mortgage brokers, collateralized by loans the companies deposited with a trustee. The mortgage companies collected borrower payments and passed them on to investors and also offered a guarantee of principal and/or interest repayment on the mortgages they originated. The guarantees allowed investors to forego the expense of researching the quality of individual mortgage loans.

The operation of these companies proceeded with no regulatory oversight until the early 1890s when bank supervisors in the eastern states in which the companies recruited investors started issuing licenses conditional on examining firms’ finances (Bogue, 1955). Market observers suggested that in the absence of regulatory supervision, mortgage companies selected lower quality collateral for the securities compared to the individual loans they sold to other investors (Gleed, 1890, p. 96).

The trustees who held the debentures’ collateral played a passive role in the issuance of securities—attest ing to the face value of the mortgages placed in the trust rather than the quality of the mortgages. In addition to selecting lower quality mortgages to begin with, the security issuers at their discretion could also replace the loans held by the trustees on the investors’ behalf. The records of J.B. Watkins, a Kansas-based mortgage lender that used the mortgage loans it could not sell individually to back the debentures, bear out this observation. These loans had shorter terms, smaller amounts, and higher risk compared to the mortgages that were sold as individual loans (Bogue, 1955).

In appealing to investors, MBS issuers advertised the risk diversification benefits of investing in multiple mortgages as offering protection for the investment’s performance (Gleed, 1890, p. 104). However, the benefits of such protection were undermined by the selection of mortgages into the collateral and the lack of investor insight as to what mortgages were included in the collateral. This lack of transparency translated into the investor preference for individual mortgages over the debentures, a preference observers found remarkable (Frederiksen, 1894, p. 216). In facing the trade-off between the benefit of risk diversification from holding a pool of mortgages and the transparency of investment offered by holding individual mortgages, investors opted for individual mortgages.

Contemporaries argued that the mortgage brokers reduced the securities’ appeal by failing to list their securities on public exchanges (Frederiksen, 1894, pp. 216-218). The crop failures of the late 1880s
resulted in defaults of many western mortgages. By the mid-1890s, most of the mortgage brokers failed, unable to honor their guarantees due to insufficient capitalization.

**MBS: 1900-1930s**

As the issuance of debentures backed by western mortgages wound to a close in the 1890s, securitization reemerged as an important financing source for urban mortgage lending. Specifically, the companies originally formed to insure the validity of property titles in American cities expanded their business into insuring the repayment of mortgages and mortgage lending. Like the western mortgage brokers before them, the mortgage insurance companies offered investors both individual mortgage loans and securities backed by mortgage loans. However, instead of debentures, they sold mortgage participation certificates—securities that represented partial ownership of mortgage loans these companies originated.

While the firms claimed to focus on residential mortgages, their mortgage lending activities also included higher risk lending on commercial real estate and vacant land (Alger, 1934).

The mortgage participation certificates issued by the mortgage insurance companies in the 1900s were similar to debentures of the 1880s in that the mortgage insurance companies also designated certain mortgages on their books as backing specific mortgage certificates. However, instead of depositing the documentation for the mortgages backing these certificates with independent trustees, the companies at times used their own subsidiaries as both trustees for the mortgage documentation and depositories for collecting the interest and principal payments from the mortgage borrowers (Alger 1934).

As with the debentures of the 1880s, the MBS issuers exercised control over which mortgages would be included in the certificates’ collateral. This control allowed the issuers to select lower quality mortgages (e.g., mortgages on vacant land or commercial properties) as collateral for the certificates. One selection criterion was whether investors interested in buying individual mortgages rejected the loans in question (Alger, 1934, p. 95). Furthermore, higher quality mortgages would be removed from the pool and replaced with lower quality ones when other investors expressed interest in buying the specific loans or when the guaranteeing firms needed to post high-quality collateral to borrow money from the
Reconstruction Finance Corporation (RFC)—a federal entity created to provide relief from the Great Depression (Alger, 1934, pp. 118-120).

As with the mortgage brokers of the 1880s, the mortgage insurance companies operated with few regulatory constraints. In theory, they were supervised by the New York State Department of Insurance. In practice, the department lacked the resources necessary to offer effective supervision. The real estate downturn of the Great Depression resulted in bankruptcies of the vast majority of the mortgage insurance companies whose capital was dwarfed by the amount of mortgages they guaranteed.

Exacerbating the problem of insufficient reserves held by the MBS issuers, failure to diversify the risk of their holdings hampered the issuers’ ability to honor their guarantees. In both the 1880s and the 1900s, MBS issuers invested the funds backing the guarantee in real estate. The lack of diversification away from real estate made the issuers’ guarantees and solvency vulnerable to potential downturns in real estate prices. In both the 1890s market crises and the Great Depression, as the real estate prices dropped after a boom, the companies’ assets largely invested in mortgages depreciated rapidly, thus rendering the companies unable to honor the guarantees embedded in the securities. The combination of targeting the less sophisticated investors and the nonexistent regulatory oversight enabled the MBS issuers to take advantage of the investors by allocating low quality mortgages to the securities’ collateral.

In the aftermath of the Great Depression, a host of government institutions were created to stabilize and inject liquidity into the mortgage market. These institutions included the Home Owners Loan Corporation (HOLC)—an entity that bought and restructured defaulted loans; the Federal Housing Administration (FHA)—an agency that offered mortgage insurance backed by the federal government, and the Federal National Mortgage Association (FNMA or Fannie Mae)—an agency tasked with buying mortgages from mortgage lenders, thus, creating a secondary market for mortgages.

**MBS: 1970s onward**

The third MBS market grew out of government efforts to shift the mortgage-market stabilization efforts to the private sector. To this end, in 1968 the U.S. Congress authorized the issuance of MBS bearing the full-faith and credit guarantees of the federal government. The first securities issued under the act in 1970
came in two types—mortgage-backed bonds and pass-through certificates. The structures of the former resembled debentures of the 1880s while the latter resembled the participation certificates of the 1900s by representing partial ownership of pools of mortgage loans. Over time, the more bond-like MBS retained the bond label while acquiring more mortgage features, a process that culminated in the issuance of Collateralized Mortgage Obligation (CMO)—a security accepted by the bond investors (Vinokurova, 2018a). The tools introduced to convince investors that MBS were bonds in the 1980s were applied to managing default risk in the 1990s, contributing to the development of a market for non-government insured MBS—a market that ground to a halt in 2008 (Vinokurova, 2018b).

**Findings summary**

The analysis above lends credence to the “need for centralized regulation” hypothesis put forth by Snowden (1995) and Simkovic (2016). Given the presence of systemic risk in mortgage lending, only a centralized regulator with deep pockets, i.e., the federal government can serve as a credible backstop for the risks inherent in mortgage securitization. In contrast the U.S. institutional context for the three markets was characterized by fragmented mortgage lending with a limited role of the government.

The illusion of government oversight exacerbated these conditions. In the western farm mortgage market, the banking regulators of eastern states started auditing the western mortgage companies soliciting investors in their state. While the regulators disavowed any knowledge of the quality of the underlying mortgages, their work lent credibility to the securities issuers by creating the impression of government scrutiny of the mortgage companies’ operation. In the second MBS market, the title insurance companies operated under the supervision of the New York State Department of Insurance. Despite the companies advertising such supervision, the insurance department lacked the staff and the expertise necessary to conduct regular audits of the companies. The participation of Ginnie Mae, Fannie Mae, and Freddie Mac in the third market translated the agencies’ government and quasi-government status into an impression of government oversight.

Furthermore, in absence of government oversight, investors across the three markets suffered from a collective action problem. In case of security default the common interests of multiple investors in
the same pool of mortgages hindered the resolution of the crisis. This affliction became evident as the defaults multiplied. Following a period of lackluster crops, the observers of the 1880s market commented “the investor under the debenture system is without speedy remedy. He is part of a series. He cannot move independently” (Gleed, 1890, p. 105). To address the collective action problem in the aftermath of the Great Depression, the New York State Superintendent of Insurance formed the Mortgage Protection Corporation that coordinated the actions of the multiple holders of the certificates (Weil, 1933). Such collective action problems were also evident in the aftermath of the 2008 crisis where loan securitization status affected homeowners’ ability to obtain mortgage modifications.

In summary, the three markets for MBS share several common features. One, the securities were created as investment vehicles that channeled investor capital into mortgage lending. The efforts to design these vehicles focused on furthering the MBS issuers’ goal of putting on the balance sheets the proceeds of the sale while distancing themselves from the risks inherent in the securities. Two, the MBS issuers sought to assuage investor concerns about the credit quality of the underlying mortgages. The assurances the issuers offered invoked the benefits of risk diversification stemming from the securities collateral consisting of multiple loans—a diversification insufficient to protect investors from systemic risks.

**Implications for the concept of innovation**

The analysis of the similarities and differences across the three MBS markets allows insight into the role played by the failure of institutional memory in the development of financial “innovations.” The three markets share institutional similarities—limited government oversight over security issuance, lack of a centralized exchange for trading the securities, lack of transparency as the securities’ collateral, and the collective action problems facing investors if the securities were to default. Despite these similarities, it is not clear that the market pioneers in the second and third markets learned lessons from the experience of their predecessors. The market participants in the third market who knew about the drastic reductions in house price values during the Great Depression framed the recurrence of such reductions as an unlikely event. The awareness of the MBS issuance in the 1920s did not seem to penetrate into the firms and regulators devising the new securities (Ross, 1987).
One of the issues raised by this history is whether holding mortgage-backed securities offered benefits over and above investing in either individual mortgage loans or other, publicly listed securities. In the first two markets, more sophisticated investors opted for holding individual loans instead of the securities on offer. In the third market, combination of federal guarantees and risk management tools grounded in risk diversification attracted institutional investors. This attraction did not resolve the issues that plagued the earlier MBS markets.

My analysis identifies two challenges faced by market participants in learning from the crises: 1) drawing the right lessons and 2) remembering the lessons drawn. The reemergence of the MBS markets in the U.S. is symptomatic of failure on both fronts. All three markets suffered from a lack of regulatory supervision, lack of transparency as to the contexts of security collateral, and lack of appreciation for the systemic risks inherent in MBS issuance. The former two issues were evident to market contemporaries in the first two markets, but not remedied in the third market. The third issued continues to be insufficiently recognized by the market participants today.

This analysis suggests that memory plays a crucial role for preventing the recurrence of financial crises. Even if the right lessons are drawn, without memory for what lessons triggered institutional change in the crisis aftermath, this change can be reversed allowing for crisis recurrence. The repeal of the Glass-Steagall Act in 1999 is an example of what happens when the passage of time erases the memory of why institutional change was necessary. What is needed is a combination of institutional change and a means to remember the connection between the change and the events the change is meant to forestall.

The case examined in this paper illustrates the relationship between innovation, institutional memory, and financial crises. Failure to identify, remedy, and memorialize the connection between the innovation and its consequences in the aftermath of a crisis enables institutional forgetting and, consequently, crisis recurrence. The conditions that enable the reemergence of financial instruments and the associated crises are the persistence of the institutional setting and a failure of institutional memory for the instruments’ prior performance. Absent changes in the institutional setting, the reemergence of securities that failed in previous markets will produce the same failure. The failure of memory allows the
financial instruments that failed in the past to reemerge as innovations. Treating these instruments as innovations by definition foregoes and forecloses learning from the past, setting the stage for the next crisis.

References:


