

Systemic Risk Through Securitization: The Result of Deregulation and Regulatory Failure

by

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Abstract

This paper argues that private-label securitization without regulation is unsustainable. Without regulation, securitization allowed mortgage industry actors to gain fees and to put off risks. During the housing boom, the ability to pass off risk allowed lenders and securitizers to compete for market share by lowering their lending standards, which activated more borrowing. Lenders who did not join in the easing of lending standards were crowded out of the market.

In theory, market controls in the form of risk pricing could have constrained heightened mortgage risk without additional regulation. But in reality, as the mortgages underlying securities became more exposed to growing default risk, investors did not receive higher rates of return. Artificially low risk premia caused the asset price of houses to go up, leading to an asset bubble and creating a breeding ground for market fraud. The consequences of lax lending were covered up and there was no immediate failure to discipline the markets.

The market might have corrected this problem if investors had been able to express their negative views by short selling mortgage-backed securities, thereby allowing fundamental market value to be achieved. However, the one instrument that could have been used to short sell mortgage-backed securities – the credit default swap – was also infected with underpricing due to lack of minimum capital requirements and regulation to facilitate transparent pricing. As a result, there was no opportunity for short selling in the private-label securitization market. The paper ends with a proposal for countercyclical regulation to prevent a race to the bottom during the top of the business cycle.

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I. Subprime Happened for a Reason: Deregulation in a Time of Technological Change

Large-scale secondary markets for mortgage instruments have existed since the 1980s, but it was only in the late 1990s and 2000 that those markets were deregulated. Similarly, subprime home loans came of age in against the backdrop of mortgage deregulation in the 1980s. This article details the legal acts of commission and omission and the consequences of this deregulated environment, both due to the lack of regulation of new instruments and lax enforcement of the regulations that remained.

This deregulation and feeble enforcement enabled and drove the demand for new types of risky mortgages.¹ Specifically, these new types of mortgages were financed by the private-label securitization market, which developed originally in parallel with the more traditional Fannie Mae/Freddie Mac securitization structure (also known as “agency-backed” securitization). Wall Street firms bundled these mortgages into mortgage-backed securities for sale on the private-label market.² Initially, the private-label market securitized “jumbo” mortgages, which were larger but not necessarily riskier than mortgages securitized through Fannie Mae and Freddie Mac and which were bundled into securities whose movements tracked those of Fannie and Freddie very

¹ Wachovia’s former chairman and chief executive officer, Ken Thompson, described how securitization fed the demand for lax loans:

The financial engineering [securitization] was in fact among the primary contributors to the risky lending practices that led to home price bubbles in many markets. . . . Home prices were buoyed by the willingness of institutional investors across the world to buy these subprime loans in the form of complex securities created by investment banks.

Wachovia Corporation 2007 Annual Report at 3-4 (Feb. 19, 2008), available at thomson.mobular.net/thomson/7/2550/2995/ (viewed Dec. 31, 2008).

² For a description of private-label mortgage securitization, see Kathleen C. Engel & Patricia A. McCoy, *Turning a Blind Eye: Wall Street Finance Of Predatory Lending*, 75 *FORDHAM L. REV.* 2039 (2007).

closely.³ But starting in the 1990s, the private-label market evolved to securitize mortgages – most notably subprime mortgages and nontraditional mortgages⁴ -- that were qualitatively different from the lending historically supported either by depository institutions or agency-backed securitization in the United States.⁵

During the late 1990s, the private-label market was largely confined to “jumbo” prime mortgages. This of course changed. The private-label market grew dramatically, with issuances rising from 24 percent of all mortgage-backed securities in 2003, totaling \$586 billion, to a 55 percent share, totaling \$1.19 trillion, in 2005.⁶ A large share of the growth came from the subprime and Alt-A markets,⁷ while the total nonprime market, including home equity loans,⁸ grew to 46 percent of all home loans originated by 2006. (See Figure 1).

³ Together, Fannie Mae and Freddie Mac are known as the “government-sponsored entities” or “GSEs.” Their role has been to repackage mortgages into securities and guarantee these mortgages’ principal, returns, and payment to investors. For discussion of the evolving role of Fannie and Freddie, see Richard K. Green & Susan M. Wachter, *The Housing Finance Revolution*, 31st Economic Policy Symposium: Housing, Housing Finance, & Monetary Policy, Jackson Hole, Wyoming, Federal Bank of Kansas City, August 2007, available at www.kansascityfed.org/publicat/sympos/2007/PDF/2007.08.21.WachterandGreen.pdf; Richard K. Green & Susan M. Wachter, *The American Mortgage in Historical and International Context*, 19 J. ECON. PERSPECTIVES 93 (Fall 2005). Jumbo securities typically yielded returns to investors that were about 25 basis points higher than the rate of return of Fannie and Freddie securities.

⁴ Subprime mortgages carried higher interest rates and fees and were designed for borrowers with impaired credit. Nontraditional mortgages encompassed a variety of risky mortgage products, including option adjustable rate mortgages (“ARMs”), interest-only mortgages, and reduced documentation loans. Originally, these nontraditional products were offered primarily in the “Alt-A” market to people with near-prime credit scores but intermittent or undocumented income sources. Eventually, option ARMs, interest-only ARMs, and reduced documentation loans penetrated the subprime market as well. For a description of option ARMs and interest-only mortgages, see, e.g., Patricia A. McCoy, *Rethinking Disclosure in a World of Risk-Based Pricing*, 44 HARV. J. LEGIS. 123 (2007).

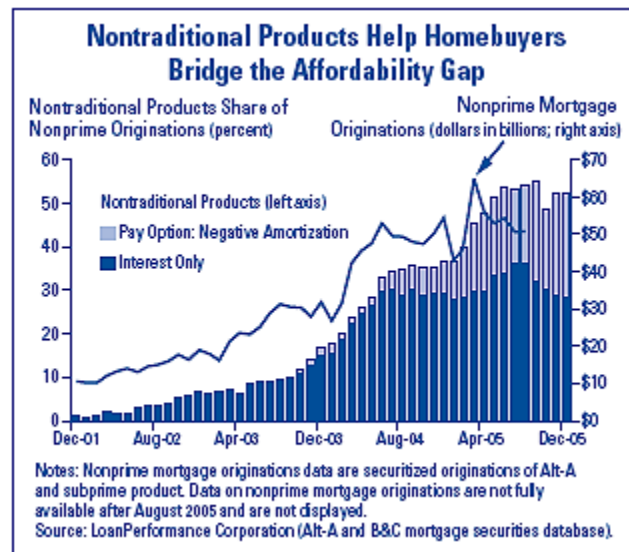
⁵ Stated differently, the private-label market securitized mortgages that were deemed “nonconforming” because they did not qualify for purchase by Fannie Mae or Freddie Mac. Nonconforming mortgages include mortgages whose balances exceed those permitted for purchase by Fannie Mae and Freddie Mac and other mortgages that do not meet Fannie Mae’s or Freddie Mac’s underwriting criteria.

⁶ Robert Stowe England, *The Rise of Private Label*, Mortgage Banking (Oct. 2006), available at <http://www.robertstoweengland.com/documents/MBM.10-06EnglandPrivateLabel.pdf>.

⁷ Freddie Mac, *Freddie Mac Update* 18 (December 2008), available at www.freddiemac.com/investors/pdf/investor-presentation.pdf.

⁸ We use the term “nonprime” to refer to subprime loans plus the Alt-A market. See note 4 *supra*.

Figure 1. Growth in Nontraditional Mortgages, 2002-2005



Source: FDIC Outlook, *Breaking New Ground in U.S. Mortgage Lending* (Summer 2006), available at www.fdic.gov/bank/analytical/regional/ro20062q/na/2006_summer04.html

The development of private-label securities differed from agency-backed securities in two interrelated ways. First, unlike Fannie Mae and Freddie Mac mortgage-backed securities (“MBS”), private-label MBS were heterogeneous in their terms. This made trading in private-label securities difficult and illiquid, with the consequence that rating agencies, not markets, assessed the risk of private-label MBS.

Second, Fannie Mae and Freddie Mac guaranteed the credit risk of the mortgage-backed securities that they issued. Thus, while Fannie/Freddie agency securities bore prepayment risk, they did not bear credit risk and were not priced or tranced for that risk. In contrast, private-label securitizers did not issue guarantees of credit risk. Consequently, the private-label market could and did pool nonconforming mortgages into “tranches” that varied by credit risk. These private-label MBS were bundled in turn into another type of mortgage security known as a collateralized debt obligation or “CDO,”

which was further differentiated through the tranching of MBS by credit risk. Rating agencies presumed that the senior tranches had virtually no credit risk while the junior tranches had more credit risk and therefore higher expected rates of return, with the “toxic tranches” carrying the most risk of all. In the end, of course, even the top AAA private-label tranches, designated the safest by the rating agencies, carried substantial risk.⁹

Capital markets’ mortgage financing for risky borrowers was enabled by technological change.¹⁰ One such change was securitization itself. Another change consisted of automated underwriting, which calibrated the default risk of individual borrowers -- albeit in an increasing house price regime, providing assurance (false as we will see) that individual borrower risk was limited. Again falsely, as we will see, it was believed that economically based risk was limited by geographical diversification.

As the empirical and theoretical literature detail,¹¹ the key determinant of default and foreclosure risk is the loan amount-to-value ratio. The development of the private-label market for subprime and nontraditional mortgages increased housing demand and home prices as well. But when the easing of credit could go on no further, housing prices fell nationwide starting in the last quarter of 2006.¹² Home prices plummeted, so sharply that by the end of 2008, every sixth borrower owed more than his or her home was

⁹ The concept was that the least risky tranche would very likely be paid off. In the end, though, all tranches were risky. See Andrey D. Pavlov, Zoltan Poznar, & Susan M. Wachter, *Subprime Lending and Real Estate Markets*, in MORTGAGE AND REAL ESTATE FINANCE ____ (Risk Books, 2008), for further discussion.

¹⁰ For a description of these technological changes, see Kathleen C. Engel & Patricia A. McCoy, *A Tale of Three Markets: The Law and Economics of Predatory Lending*, 80 TEX. L. REV. 1255 (2002).

¹¹ For an overview of the literature, see U.S. GOVERNMENT ACCOUNTABILITY OFFICE, MORTGAGE FINANCING: ACTIONS NEEDED TO HELP FHA MANAGE RISKS FROM NEW MORTGAGE LOAN PRODUCTS 23-25 (GAO-05-194 2005).

¹² Vikas Bajaj, *Home Prices Fall in More Than Half of Nation’s Biggest Markets*, N.Y. TIMES, Feb. 16, 2007.

worth.¹³ As loan defaults soared, investors fled the private-label securitization market and the subprime market collapsed. Ultimately, the subprime crisis evolved into contagion that paralyzed credit markets worldwide and triggered the deepest recession in the United States since the Great Depression.

This is the systemic risk that securitization without regulation engendered. This article identifies the fundamental reasons why securitization without regulation was unsustainable. The creation of structured finance for mortgage credit risk abetted the rise of the subprime market. But the market could not have developed without a regulatory environment that enabled its growth. In a deregulated environment, capital markets did and could have an appetite for almost any kind of risk, presumably so long as sufficiently large yields were gained in exchange.

But the fundamental and inevitable failure of markets derived from the lack of proper pricing of risk. As mortgages underlying securities became more exposed to growing default risk, investors did not in fact receive higher rates of return. In the end, many subprime loans had essentially no underwriting and default risk for subprime mortgages was neither calibrated, reserved for, nor priced. In this, deregulation had a key determining role since risk, while it existed and increased over time, was inescapably socialized in the end (perhaps as anticipated by some market actors), as the realized losses caused the global financial system to implode.

In Section II we describe congressional legislation deregulating mortgages in the 1980s that provided the environment for the more recent changes. In Section III we describe the explosion of subprime and Alt-A mortgages which followed. Section IV

¹³ Michael Corkery, *Mortgage 'Cram-Downs' Loom as Foreclosures Mount*, WALL ST. J., Dec. 31, 2008.

chronicles the federal and state response to the manifest deterioration in underwriting standards and the conscious inaction of federal banking regulators in the face of the impending crisis. In Section V, we then turn to a financial model which explains why the implosion and financial crisis inevitably followed deregulation and the absence of regulation. We conclude in Section VI with implications for policy going forward.

II. Deregulation by Congress

Our story of deregulation dates back to 1980, when the United States faced radically different economic challenges than today. In 1980, inflation was out of control, interest rates on first mortgages were skirting fourteen percent annually, and credit was increasingly tight in states with strict usury caps. Concerned about a credit drought and the solvency of thrift institutions, Congress passed two landmark pieces of legislation, one in 1980 and one in 1982, which deregulated residential mortgage credit substantially in the United States. The credit crisis played out against the backdrop of this legislation, which remains in effect.

In 1980, in the Depository Institutions Deregulation and Monetary Control Act of 1980 (“DIDMCA”),¹⁴ Congress repealed all usury caps on first-lien residential mortgages, including usury caps imposed by the states. Two years later, Congress deregulated home mortgages further by authorizing adjustable rate mortgages, balloon clauses, and negative amortization loans in the Alternative Mortgage Transactions Parity Act of 1982 (the “Parity Act”).¹⁵ In language reminiscent of the rhetoric during the housing boom of 2003-2006, industry commentators and regulators commended these

¹⁴ Pub. L. No. 96-221, 94 Stat. 132 (1980).

¹⁵ Pub. L. No. 97-320, §§ 801–807, 96 Stat. 1469, 1545–48 (1982).

products for making homeownership affordable by allowing borrowers to exchange lower initial monthly payments for higher payments on the back end.

With the passage of these two laws, disclosure was the only remaining federal mortgage regulation of any note. The federal Truth in Lending Act (“TILA”),¹⁶ passed in 1968, mandates uniform disclosures regarding cost for home loans. Its companion law, the federal Real Estate Settlement Procedures Act of 1974 (“RESPA”),¹⁷ requires similar standardized disclosures for settlement costs. Defects in both of these disclosure schemes, however, rendered them largely ineffectual in promoting informed comparison-shopping by consumers, especially for adjustable rate mortgages and for borrowers in the as yet to be developed subprime market.¹⁸

After 1982, Congress turned its back on any further regulation of residential mortgages, except for the Home Ownership and Equity Protection Act of 1994 (“HOEPA”).¹⁹ HOEPA was an early federal statute that imposed product controls on home mortgages to curtail abuses in the nascent subprime market. HOEPA had two important provisions. The first consisted of HOEPA’s high-cost loan provision,²⁰ which regulated the so-called high-cost refinance market and sought to eliminate abuses consisting of “equity stripping.” These provisions were hobbled, however, by their extremely limited reach – covering only the most exorbitant subprime mortgages – and their inapplicability to home purchase loans, reverse mortgages, and open-end home

¹⁶ 15 U.S.C. §§ 1601–1693r (2000).

¹⁷ 12 U.S.C. §§ 2601–2617 (2000).

¹⁸ See, e.g., Patricia A. McCoy, *Rethinking Disclosure in a World of Risk-Based Pricing*, 44 HARV. J. LEGIS. 123 (2007); Elizabeth Renuart & Diane E. Thompson, *The Truth, the Whole Truth, and Nothing but the Truth: Fulfilling the Promise of Truth in Lending*, 25 YALE J. ON REG. 181 (2008). See also Richard K. Green & Susan M. Wachter, *The Housing Finance Revolution*, 31st Economic Policy Symposium: Housing, Housing Finance, & Monetary Policy, Jackson Hole, Wyoming, Federal Bank of Kansas City, August 2007, available at www.kansascityfed.org/publicat/sympos/2007/PDF/2007.08.21.WachterandGreen.pdf.

¹⁹ 15 U.S.C. §§ 1601, 1602(aa), 1639(a)–(b).

²⁰ 15 U.S.C. §§ 1602(aa)(1)–(4); 12 C.F.R. §§ 226.32(a)(1), (b)(1).

equity lines of credit.²¹ Lenders learned to evade the high-cost loan provisions rather easily by slightly lowering the interest rates and fees on subprime loans below HOEPA's thresholds and by expanding into subprime purchase loans.²²

HOEPA also has a second major provision, which gives the Federal Reserve Board the authority to prohibit unfair or deceptive lending practices and refinance loans involving practices that were abusive or against the interest of the borrower.²³ This provision was potentially broader than the first, because it allowed regulation of both the purchase and refinance markets, without regard to interest rates or fees. Federal Reserve Board chairman Alan Greenspan, however, declined to implement this provision.²⁴ It was only after defaults on subprime and other risky loans ballooned into a full-blown crisis that Greenspan's successor, Ben Bernanke, promulgated a binding rule banning specific loan abuses – and even then only for a limited group of loans -- in July 2008.²⁵ By then, however, the nonconforming mortgage markets had collapsed and the damage had been done.

In sum, two key federal statutes from the 1980s, the DIDMCA and the Parity Act, dismantled the existing prohibitions against a variety of risky loan features, including non-amortizing mortgages, negative amortization mortgages, balloon clauses, and other interest rate structures creating high potential payment shock. These two laws provided the deregulatory environment in which interest-only loans and option ARMs later

²¹ 15 U.S.C. §§ 1602(i), (w), (bb); 12 C.F.R. § 226.32(a)(2) (1997); EDWARD M. GRAMLICH, *SUBPRIME MORTGAGES: AMERICA'S LATEST BOOM AND BUST* 28 (Urban Institute Press, 2007).

²² At the same time, they added features to lower risk to lenders, for example, prepayment risk penalties.

²³ 15 U.S.C. § 1639(l)(2).

²⁴ House of Representatives, Committee on Oversight and Government Reform, *The Financial Crisis and the Role of Federal Regulators, Preliminary Transcript* 35, 37-38, 89 (Oct. 23, 2008), available at <http://oversight.house.gov/documents/20081024163819.pdf>.

²⁵ Federal Reserve System, *Truth in Lending: Final rule; official staff commentary*, 73 FED. REG. 44522 (July 30, 2008).

emerged. At the same time, Congress did not temper the new deregulatory environment with other types of prudential regulation, such as mandatory underwriting criteria and documentation requirements, to ensure that borrowers only received loans that they could afford and repay. The only exceptions consisted of two provisions in HOEPA, enacted in 1994. Of those two provisions, the high-cost loan provision had extremely narrow coverage and was easily evaded. The other provision, governing unfair and deceptive acts and practices, was potentially broader. This provision remained unused during the run-up to the credit crisis as the market evolved to enable the borrowing of sums that could not be repaid. The former Federal Reserve Board Chairman Alan Greenspan was opposed to limiting financial “innovation.” Meanwhile, the Bush Administration opposed legislation on Capitol Hill that was offered to regulate and limit risk in the subprime market and did not propose constructive legislation of its own. These omissions by Congress, the Federal Reserve, and the Executive Branch set the stage for what followed.

III. Race to the Bottom: The Aftermath of Technological Revolution and Deregulation

The initial deregulation was a necessary condition for the emergence of a critical mass of imprudent mortgages, but it was not sufficient. The mortgage industry itself was undergoing structural change in its financing mechanism that made it possible for mortgage professionals to sell products with heightened risk and to “disperse” that risk among investors at large.

In the aftermath of the Great Depression, the U.S. developed a mortgage system which was described in the movie, “It’s a Wonderful Life.” Home mortgage loans were

funded by bank deposits and made by local institutions to borrowers the bank knew personally. That all changed in the 1980s, due to the savings and loan crisis, which in fact had similarities to today's debacle:

The ignition of inflation in the late 1960s and 1970s altered the ability of depositories to fund long term, fixed rate mortgages: inflation pushed up nominal interest rates and required higher returns on deposits while asset returns were fixed at the low levels of historical fixed rates on long term mortgages which made up most of the thrift industry portfolios. Inadequately capitalized depository institutions (S&Ls) then advanced unsustainable commercial mortgages. Because these institutions often had no equity to protect, their managers had large incentives to make high-risk loans. If the loans failed, the institutions and their depositors were no worse off. If they paid off, however, the institution would return to solvency. Because S&Ls were not required to mark their assets to market, they were able to hide their distress until loans began defaulting. This points to the general issue, which we will return to, of the signaling power of price discovery in capital markets...

Congress and the Bush Administration bit the bullet by passing the Federal Institutions Reform, Recovery and Enforcement Act of 1989; this legislation liquidated insolvent Savings and Loans, and turned their assets over to the Resolution Trust Corporation, whose function was the disposition of the assets; cash raised from the sales were used to off-set the costs of the S&L failure to US taxpayers. At the same time thrift portfolios were restructured by exchanging below market mortgages for MBS that could be sold and the losses amortized rather than realized immediately. Thrifts solved their asset liability mismatch by selling fixed rate mortgages into the secondary market for securitization by MBS underwritten by one of the US secondary market agencies.²⁶

Going forward, thrifts held adjustable rate mortgages in their portfolio and securitized fixed rate mortgages underwritten by the GSEs. The market for the latter grew and specialized as it grew. Mortgage distributors began to specialize among originators, investors, and servicers. Advancement in technology pushed mortgage

²⁶ See Richard Green, Robert Mariano, Andrey Pavlov, & Susan Wachter, *Misaligned Incentives and Mortgage Lending in Asia*, National Bureau of Economic Research Working Paper 2007 (footnote omitted).

evolution further. Freddie Mac introduced automated underwriting which was implemented then by both GSEs and other large lenders for prime borrowers. By the late 1980s and 1990s, underwriting and risk assessment had improved greatly as pools of mortgages could be studied and default indicators could be better analyzed.

But while the algorithms for rationing credit became sophisticated, the algorithms for pricing subprime mortgages (to the extent such things even exist) faced a serious identification problem. From the period 1997 to 2005, the period in which the subprime market grew dramatically, nominal house prices in the United States rose rapidly and nearly ubiquitously. This meant that the incentive to default was extremely low – households had a strong incentive to sell their houses and preserve their equity rather than default.²⁷

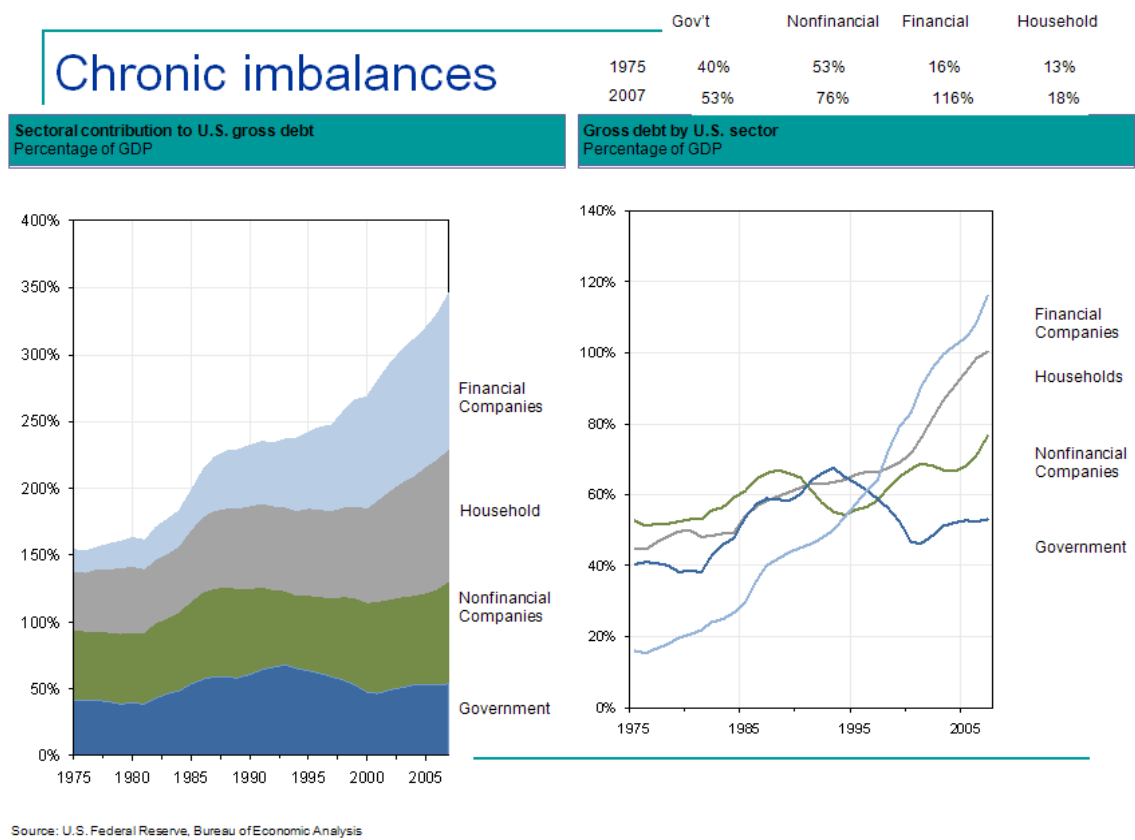
Automated underwriting and diversified fund pools did limit risk for a time, but of course could not prevent systemic risk. The expansion of lending without risk controls that was to follow increased prices unsustainably and promoted loans that could not be repaid. Eventually, lenders believed their ability to assess risk of loans was so good that they created ever more complicated mortgage instruments with different and complicated metrics of default risk pricing. The result was the nontraditional lending instruments of the past decade such as option ARMs, interest-only ARMs, and no documentation loans.

As debt instruments became more complex and the population of borrowers grew, so too did the balance of leverage in the United States. Between 1975 and 2007, the U.S. Government's gross debt as a percentage of gross domestic product ("GDP") had gone from forty to fifty three percent; the debt of nonfinancial companies as a percentage of GDP went from fifty three to seventy six percent. However, the ratio of household debt to GDP went from around forty three to near one hundred percent, while the ratio of

²⁷ Richard K. Green & Susan M. Wachter, *The Housing Finance Revolution*, 31st Economic Policy Symposium: Housing, Housing Finance, & Monetary Policy, Jackson Hole, Wyoming, Federal Bank of Kansas City, August 2007, available at www.kansascityfed.org/publicat/sympos/2007/PDF/2007.08.21.WachterandGreen.pdf.

financial company debt to GDP went from sixteen to one hundred sixteen percent, indicating an explosion of credit, particularly in housing and financial institutions. (See Figure 2).

Figure 2. Rising Leverage Levels by Sector, 1975 to 2007.



This leveraging in the consumer and financial sectors had been enabled by the evolution of nontraditional lending products. Between the end of 2001 and 2006, nontraditional lending instruments such as option ARMs offering negative amortization and interest-only mortgages with non-amortizing features went from under five percent of all nonprime originations to well over fifty percent. (See Figure 1 *supra*). Also, for Alt-A and subprime loans, while credit scores of borrowers remained relatively unchanged between 2002 and 2006, two default indicators increased substantially: loan-

to-value ratios and the percentage of originations exceeding eighty percent of combined loan-to-value ratios. At the same time, the spreads of rates over the bank cost of capital tightened. To make matters worse, a layering of risks occurred, with borrowers who were the most at risk obtaining low equity, no-amortization, reduced documentation loans. (See Figure 3).

Figure 3. Underwriting Criteria for Adjustable rate Mortgages, 2002-2006

		ARMS									
Orig Yr		CLTV	CLTV>80	Seconds	Full Doc	IO%	DTI	FICO<700	Investor	WAC	SpdtoWAC
Prime	2002	66.4	4.1	1.9	56.0	46	31.0	20.7	0.7	5.5	-
	2003	68.2	10.1	10.9	48.6	53	31.8	21.8	1.6	4.6	-
	2004	73.5	20.7	23.1	51.2	71	33.5	22.0	2.1	4.5	-
	2005	74.1	21.7	26.8	47.3	81	33.6	18.9	1.9	5.4	-
	2006	75.3	26.2	35.3	33.6	91	37.2	19.5	2.3	6.2	-
Alt A	2002	74.3	20.8	2.7	29.3	26	35.4	46.4	9.9	6.3	0.8
	2003	78.0	33.3	23.4	28.1	56	35.3	44.7	12.9	5.6	1.0
	2004	82.6	46.9	39.1	32.6	75	36.2	44.3	15.3	5.5	1.0
	2005	83.5	49.6	46.9	28.3	83	37.0	40.5	16.5	6.0	0.6
	2006	85.0	55.4	55.4	19.0	87	38.3	44.2	13.5	6.8	0.6
Subprime	2002	81.2	46.8	3.7	66.9	1	40.0	93.4	4.7	8.5	3.0
	2003	83.5	55.6	9.9	63.5	5	40.2	91.6	4.9	7.5	2.9
	2004	85.3	61.1	19.1	59.9	20	40.6	90.6	5.3	7.1	2.6
	2005	86.6	64.4	28.1	55.9	32	41.2	89.7	5.4	7.3	1.9
	2006	86.7	64.0	31.0	54.6	20	42.1	91.8	5.7	8.2	2.0

Source: Loan Performance data as of November 2006. UBS, April 16, 2007, Thomas Zimmerman, "How Did We Get Here and What Lies Ahead"

Legend:
 CLTV: Combined loan-to value ratio
 Full Doc: Full documentation loans
 IO: Interest-only loans
 DTI: Average debt-to-income ratios
 FICO: Fair Isaac Company credit score
 WAC: Weighted average coupon (measuring spread)

% Full Doc declined

Not much change in FICO or DTI

Spreads declined

Many of these risky mortgage instruments were made in areas where housing was least affordable, such as California, Florida and Arizona, leading to concentrated areas of unsustainable housing values. (See Figures 4 and 5). Such concentration of risky loans puts the entire local markets at risk, above and beyond a potential change in the

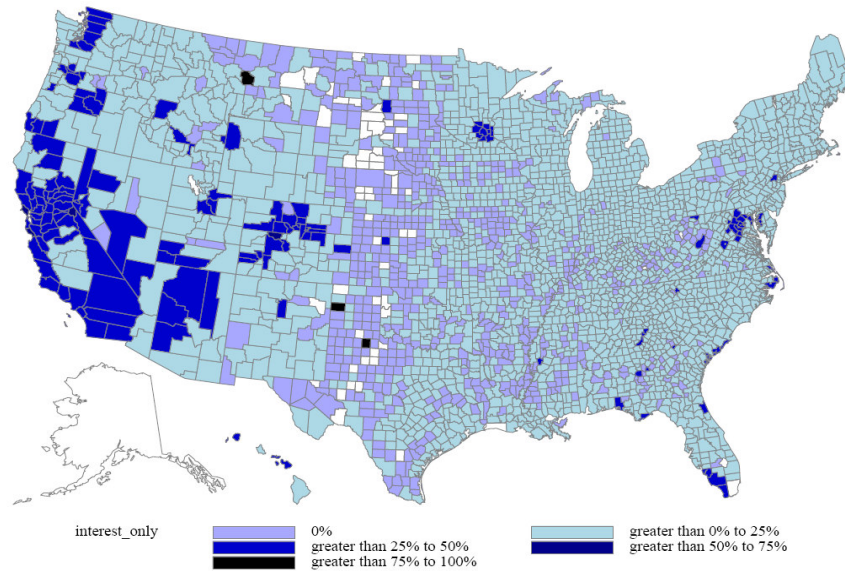
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fundamental demand for real estate, due to the sharp, sudden and extreme withdrawal of credit in the aftermath of a bubble.²⁸

²⁸ See Andrey D. Pavlov, Zoltan Poznar, & Susan M. Wachter, *Subprime Lending and Real Estate Markets*, in MORTGAGE AND REAL ESTATE FINANCE ____ (Risk Books 2008).

Figure 4. Geographic Distribution of Interest-Only Loans, 2006.

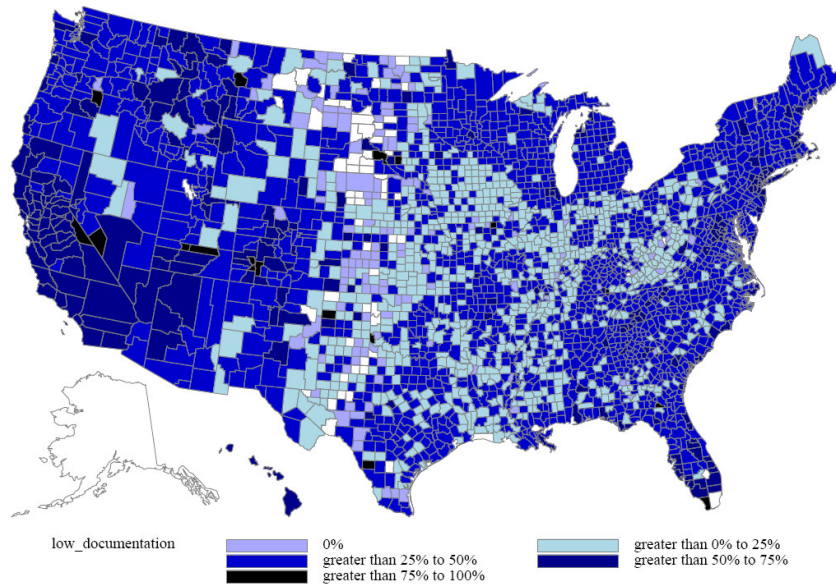
Interest_Only (%) in 2006



Source: Anthony Pennington-Cross, Mortgage Product Substitution and State Predatory Lending Laws, Presentation at the 2008 Mid-Year Meeting of the American Real Estate and Urban Economics Association, Washington, D.C., May 27, 2008.

Figure 5. Geographic Distribution of Low-Documentation Loans, 2006

Low_Documentation (%) in 2006



Revised Feb. 9, 2009

Source: Anthony Pennington-Cross, Mortgage Product Substitution and State Predatory Lending Laws, Presentation at the 2008 Mid-Year Meeting of the American Real Estate and Urban Economics Association, Washington, D.C., May 27, 2008.

The combination of easing credit standards and a growing economy resulted in a sharp increase in homeownership rates through 2004. As the credit quality of loans steadily grew worse over 2005 through 2007,²⁹ however, the volume of unsustainable loans grew and homeownership rates dropped.³⁰ (*See* Table 1).

²⁹ Subprime mortgage originated in 2005, 2006 and 2007 had successively worse default experiences than vintages in prior years. *See* Freddie Mac, *supra* note 7, at 19.

³⁰ *See* Jesse M. Abraham, Andrey Pavlov, & Susan Wachter, *Explaining the United States' Uniquely Bad Housing Market*, XII WHARTON REAL ESTATE REV. 24 (2008).

Table 1. U.S. Homeownership Rates, by Year

Period	U.S. Total, %	Non-Hispanic, %				Hispanic%
		White Alone	Black Alone	Other race alone	Two or more races	
1983	64.9	69.1	45.6	53.3	NA	41.2
1984	64.5	69	46	50.9	NA	40.1
1985	64.3	69	44.4	50.7	NA	41.1
1986	63.8	68.4	44.8	49.7	NA	40.6
1987	64	68.7	45.8	48.7	NA	40.6
1988	64	69.1	42.9	49.7	NA	40.6
1989	64	69.3	42.1	50.6	NA	41.6
1990	64.1	69.4	42.6	49.2	NA	41.2
1991	64	69.5	42.7	51.3	NA	39
1992	64.1	69.6	42.6	52.5	NA	39.9
1993	64.1	70.2	42	50.6	NA	39.4
1994	64	70	42.5	50.8	NA	41.2
1995	64.7	70.9	42.9	51.5	NA	42
1996	65.4	71.7	44.5	51.5	NA	42.8
1997	65.7	72	45.4	53.3	NA	43.3
1998	66.3	72.6	46.1	53.7	NA	44.7
1999	66.8	73.2	46.7	54.1	NA	45.5
2000	67.4	73.8	47.6	53.9	NA	46.3
2001	67.8	74.3	48.4	54.7	NA	47.3
2002	67.9	74.7	48.2	55	NA	47
2003	68.3	75.4	48.8	56.7	58	46.7
2004	69	76	49.7	59.6	60.4	48.1
2005	68.9	75.8	48.8	60.4	59.8	49.5
2006	68.8	75.8	48.4	61.1	59.9	49.7
2007	68.1	75.2	47.8	60.3	59	49.7

The timing of the explosion of nontraditional mortgage lending is also of interest. The major take-off in these products occurred in 2002, which coincided with the winding down of the huge increase in demand for mortgage securities through the refinance process. Coming out of the recession of 2001, interest rates fell and there was a massive securitization boom through refinancing that was fueled by low interest rates. The

private-label securitization industry had grown in capacity and profits. But in 2003, rising interest rates ended the potential for refinancing at ever lower interest rates, leading to an increased need for another source of mortgages to maintain and grow the rate of securitization and the fees it generated. The “solution” was the expansion of the market through nontraditional mortgages. In 2002, interest-only loans were under five percent of nonprime originations compared to over twenty-five percent in 2005. The share of negative amortization loans also grew during this period from near zero to over twenty percent of the market. (*See Figure 1 supra*). This expansion of credit swept a larger portion of the population into the potential homeowner pool, driving up housing demand and prices, and consumer indebtedness, as we see in Figure 2.

The growth in nonprime mortgages was accomplished through market expansion enabled by nontraditional mortgages and by qualifying more borrowing through easing of traditional lending terms. For example, while subprime mortgages were initially made as “hard money” loans with low loan-to-value ratios, by the height of their growth, combined loan-to-value ratios exceeded that of the far less risky prime market. (*See Figure 3 supra*). While the demand for riskier mortgages grew fueled by the need for product to securitize, the potential risk due to the unsustainability of the eroded lending standards also grew.

IV. Regulatory Failure

Deregulation, in the face of a massively changing mortgage market, was a pervasive characteristic of the lending environment of the past decade and even earlier. Congress laid the cornerstone for risk based pricing of mortgages through twin legislation

passed in 1980 and 1982 removing usury caps and deregulating loan products. Later, at the turn of the century in 1999 and 2000, Congress did not respond to the proliferation of systemic risk as overall lending became riskier. Moreover, Congress precluded the states from requiring mandatory reserving for credit default swaps issued by insurance companies and other entities which could have unveiled systemic risk. Thus left unregulated, credit default swaps turned into a major vector of global contagion during the recent credit crisis.

Federal regulators also played a crucial role in forging a deregulatory climate that allowed reckless loans to flourish. Repeatedly, federal banking regulators³¹ refused to exercise their substantial powers of rule-making, formal enforcement, and sanctions to crack down on the proliferation of poorly underwritten loans. In the meantime, in 2004, the Securities and Exchange Commission (“SEC”) allowed the largest U.S. investment firms to increase their leverage to 40 to 1, to voluntarily measure their capital levels, and decrease the level of oversight by the SEC. Together, the combined record of regulatory abdication helped improvident loans to flourish and boosted the demand for those loans by the investment banks that securitized them.

A. Residential Mortgage Origination Market

Federal regulators and the states were not powerless to stop the deterioration in mortgage underwriting standards that started in 2002 and later accelerated. To the contrary, when Congress deregulated residential mortgages in 1980, it preserved the

³¹ The four federal banking regulators include the Federal Reserve System, which serves as the central bank and supervises state member banks; the Office of the Comptroller of the Currency, which oversees national banks; the Federal Deposit Insurance Corporation, which operates the Deposit Insurance Fund and regulates state nonmember banks; and the Office of Thrift Supervision, which supervises savings associations.

longstanding authority of federal banking regulators and the states to prohibit reckless underwriting through binding regulations and unilateral, formal enforcement actions. Starting in 1999, a majority of the states enacted laws designed to curb imprudent underwriting of subprime loans. Federal banking regulators, however, openly and repeatedly refused to intervene in disastrous lending practices until it was too late. The onus was on federal regulators to act because two of those federal regulators had mounted an aggressive and successful preemption campaign to exempt lenders under their jurisdiction – accounting for approximately half of all subprime originations -- from the state laws. Those federally regulated lenders – and all lenders operating in states with weak regulation – were thereby given *carte blanche* to loosen their lending standards without regulatory intervention.

1. ***The Federal Reserve Board***

Our story begins with the Federal Reserve Board, which had the statutory power, starting in 1994, to curb lax lending not only for depository institutions, but for all lenders across-the-board. It declined to exercise that power in any meaningful respect, however, until after the nonprime mortgage market collapsed. Part of the fault lies with the Fed's supervisory process and part of it is due to the Fed's ideological blinders to needed regulatory reforms.

The Fed's supervisory process has three major parts and breakdowns are apparent in two out of the three. The part that appeared to work well was the Fed's role as the primary federal regulator for state-chartered banks that are members of the Federal

Reserve System.³² In general, these are community banks on the small side. In 2007 and 2008, only one failed bank – the tiny First Georgia Community Bank in Jackson, Georgia, with only \$237.5 million in assets – was regulated by the Federal Reserve System. It is not clear whether the Fed’s excellent performance in this regard is explained by the strength of its examination process, the limited role of member banks in risky lending, the fact that state banks had to comply with state anti-predatory lending laws,³³ or all three.

As the second part of its supervisory duties, the Fed regulates nonbank mortgage lenders owned by bank holding companies but not owned directly or indirectly by banks or thrifts. During the subprime boom, some of the largest subprime and Alt-A lenders were regulated by the Fed, including the top- and third-ranked subprime lenders in 2006, HSBC Finance and Countrywide Financial Corporation.³⁴ The Fed’s supervisory record with regard to these lenders was mixed. On one notable occasion, in 2004, the Fed levied a \$70 million civil money penalty against CitiFinancial Credit Company and its parent holding company, Citigroup Inc., for subprime lending abuses.³⁵ Otherwise, the Fed did not take public enforcement action against the nonbank lenders that it regulated. That may be because the Federal Reserve did not routinely examine the nonbank mortgage

³² Throughout this article, the data discussed regarding failed and near-failed banks and thrifts come from federal bank regulatory and S.E.C. statistics, disclosures, press releases, and orders; rating agency reports; press releases and other web materials by the companies mentioned; statistics compiled by the *American Banker*; and financial press reports.

³³ For a discussion of these laws, see Section IV.A.2 *infra*.

³⁴ Data provided by *American Banker*, available at www.americanbanker.com.

³⁵ Federal Reserve, Citigroup Inc. New York, New York and Citifinancial Credit Company Baltimore, Maryland: Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent, May 27, 2004.

lending subsidiaries under its supervision, which the late Federal Reserve Board Governor Edward Gramlich revealed in 2007.³⁶

Finally, the Fed regulates bank holding companies. In the Gramm-Leach-Bliley Act of 1999, Congress created a new type of expanded bank holding company – known as a financial holding company – that can own full-service investment banks and insurance underwriters in addition to banks. In Gramm-Leach-Bliley, Congress designated the Federal Reserve as the super-regulator for the new financial holding companies and charged it with supervising the significantly higher concentrated risks that financial conglomerates pose. In so doing, however, Congress tied the Federal Reserve’s hands in three significant respects. First, Congress instructed the Fed to focus holding company examinations on the holding company itself. The Fed is supposed to examine nonbank subsidiaries only to the extent that they could have a materially adverse effect on the safety and soundness of any bank or thrift affiliate due to its size, condition or activities or the nature or size of its transactions with the bank or thrift.³⁷ This provision in Gramm-Leach-Bliley helps explain why the Fed may have taken a relatively “hands-off” position with regard to the nonbank mortgage lenders under its aegis. Second, Congress told the Fed to rely on bank and thrift examination reports by other state and federal banking regulators to the fullest extent possible in lieu of examining those

³⁶ Edward M. Gramlich, *Boom and Busts, The Case of Subprime Mortgages*, Speech given August 31, 2007, Jackson Hole, Wyo., at symposium titled “Housing, Housing Finance & Monetary Policy,” sponsored by the Federal Reserve Bank of Kansas City, pp. 8-9, available at www.kansascityfed.org/publicat/sympos/2007/pdf/2007.09.04.gramlich.pdf.

³⁷ Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, § 111 (codified at 12 U.S.C. § 1844(c)(2)(C)).

institutions itself.³⁸ Finally, Congress curtailed the Fed's ability to examine an investment bank or insurance underwriting subsidiary of a financial holding company except in three limited circumstances.³⁹ Otherwise, the Board must rely on examination reports by the Securities and Exchange Commission, state securities regulators, or state insurance regulators.⁴⁰ In the process, Congress hamstrung the Fed by asking it to supervise the systemic risk posed by financial holding companies without giving it the examination capabilities or full information needed to carry out that role.⁴¹

As for the Fed's ideological blinders, the Board had the statutory power to impose significant underwriting controls on depository and nonbank lenders alike, but declined to exercise that power until it was too late. This power consisted of the Fed's statutory authority under the unfair and deceptive acts and practices provision of HOEPA to crack down on lax underwriting and consumer abuses through regulations with universal coverage. When he served on the Fed, former Governor Edward Gramlich urged then-Chairman Alan Greenspan to exercise the Fed's power to address unfair and deceptive loans under HOEPA. Greenspan refused, preferring instead to rely on non-binding

³⁸ Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, § 111 (codified at 12 U.S.C. § 1844(c)(2)(D)).

³⁹ First, the Fed may initiate an examination if it has reasonable cause to believe that the subsidiary is engaged in activities that pose a material risk to an affiliated depository institution. Second, the Board may conduct an examination if it reasonably determines, after reviewing relevant reports, that an examination is necessary to assess the subsidiary's systems for monitoring and controlling financial and operational risks to its bank and thrift affiliates. Finally, an examination may go forward if the Board, based on reports and other available information, has reasonable cause to believe that a subsidiary is not in compliance with any federal law that is within the Board's specific jurisdiction (including restrictions on interaffiliate transactions) when the Board cannot make that determination through examination of the bank or thrift affiliate or the parent holding company. Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, § 111 (codified at 12 U.S.C. § 1844(c)(2)(B)).

⁴⁰ Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, § 111 (codified at 12 U.S.C. § 1844(c)(2)(E)).

⁴¹ See, e.g., Eric Lipton & Stephen Labaton, *Deregulator Looks Back, Unswayed*, N.Y. TIMES, November 17, 2008.

statements and guidances.⁴² This reliance on statements and guidances had two disadvantages: one, major lenders routinely dismissed the guidances as mere “suggestions” and, two, guidances did not apply to independent nonbank mortgage lenders.

The Federal Reserve did not relent until July 2008, when under Chairman Ben Bernanke’s leadership, it finally promulgated binding HOEPA regulations banning specific types of lax and abusive loans. Even then, the regulations were mostly limited to higher-priced mortgages, which the Board confined to first-lien loans of 1.5 percentage points or more above the average prime offer rate for a comparable transaction, and 3.5 percentage points for second-lien loans. Although shoddy nontraditional mortgages below those triggers had also contributed to the credit crisis, the rule left those loans – plus prime loans – mostly untouched.⁴³

The rules, while badly needed, were too little and too late. On October 23, 2008, in testimony before the House of Representatives Oversight Committee, Greenspan admitted that “those of us who have looked to the self-interest of lending institutions to protect shareholder’s equity (myself especially) are in a state of shocked disbelief.”

⁴² House of Representatives, Committee on Oversight and Government Reform, “The Financial Crisis and the Role of Federal Regulators, Preliminary Transcript” 35, 37-38 (Oct. 23, 2008), available at <http://oversight.house.gov/documents/20081024163819.pdf>. Greenspan told the House Oversight Committee in 2008:

Well, let’s take the issue of unfair and deceptive practices, which is a fundamental concept to the whole predatory lending issue.

The staff of the Federal Reserve . . . say[] how do they determine as a regulatory group what is unfair and deceptive? And the problem that they were concluding . . . was the issue of maybe 10 percent or so are self-evidently unfair and deceptive, but the vast majority would require a jury trial or other means to deal with it . . .

Id. at 89.

⁴³ Federal Reserve System, *Truth in Lending: Final rule; official staff commentary*, 73 FED. REG. 44522, 44536 (July 30, 2008). The Board set those triggers with the intention of covering the subprime market, but not the prime market. *See id.* at 44536-37.

House Oversight Committee Chairman Henry Waxman asked Greenspan whether “your ideology pushed you to make decisions that you wish you had not made?” Greenspan replied:⁴⁴

Mr. GREENSPAN. . . . [Y]es, I found a flaw, I don’t know how significant or permanent it is, but I have been very distressed by that fact. . . .

Chairman WAXMAN. You found a flaw?

Mr. GREENSPAN. I found a flaw in the model that defines how the world works, so to speak.

Chairman WAXMAN. In other words, you found that your view of the world, your ideology, was not right, it was not working.

Mr. GREENSPAN. Precisely. That’s precisely the reason I was shocked, because I had been going for 40 years or more with very considerable evidence that it was working exceptionally well.⁴⁵

2. *Re-regulation by the States and Federal Obstruction*

During the long hiatus when the Federal Reserve Board refused to regulate unfair and deceptive mortgage practices, many of the states took action of their own. Despite HOEPA’s passage in 1994, increasingly it became evident that HOEPA was incapable of halting equity stripping and other sorts of subprime abuses. By the late 1990s, some cities and states were contending with rising foreclosures and some jurisdictions were contemplating regulating subprime loans on their own. Notwithstanding the 1980s federal legislation deregulating mortgages, Congress had preserved discretion for the

⁴⁴ House of Representatives, Committee on Oversight and Government Reform, “The Financial Crisis and the Role of Federal Regulators, Preliminary Transcript” 36-37 (Oct. 23, 2008), available at <http://oversight.house.gov/documents/20081024163819.pdf>.

⁴⁵ Testimony of Dr. Alan Greenspan before the House of Representatives Committee of Government Oversight and Reform, October 23, 2008, available at <http://oversight.house.gov/documents/20081023100438.pdf>.

states to regulate home mortgages, so long as they did not impose usury caps or prohibit alternative mortgage products outright.

Many states already had older statutes on the books regulating prepayment penalties and occasionally balloon clauses. These laws were relatively narrow, however, and did not address other types of new abuses that were surfacing in subprime loans. Consequently, in 1999, North Carolina became the first state to address the larger problem by enacting a comprehensive anti-predatory lending law.⁴⁶ Soon, other states followed suit and passed anti-predatory lending laws of their own. These newer state laws implemented HOEPA's design but frequently had expanded coverage or imposed stricter regulation on subprime loans. By year-end 2005, twenty-nine states and the District of Columbia had enacted one of these "mini-HOEPA" laws. Some states also passed stricter disclosure laws or laws regulating mortgage brokers. By the end of 2005, only six states – Arizona, Delaware, Montana, North Dakota, Oregon, and South Dakota – lacked laws regulating prepayment penalties, balloon clauses, or mandatory arbitration clauses, all of which were associated with exploitative subprime loans.⁴⁷

The states that enacted anti-predatory lending laws did not legislate in a vacuum, however. Here, a bit of history is in order. In 1996, the federal regulator for thrift institutions – the Office of Thrift Supervision or OTS – promulgated a sweeping preemption rule declaring that henceforth federal savings associations did not have to

⁴⁶ N.C. GEN STAT. § 24-1.1E (2000).

⁴⁷ See Raphael Bostic, Kathleen C. Engel, Patricia A. McCoy, Anthony Pennington-Cross & Susan Wachter, *State and Local Anti-Predatory Lending Laws: The Effect of Legal Enforcement Mechanisms*, 60 J. ECON. & BUS. 47-66 (2008), full working paper version available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1005423.

observe state lending laws.⁴⁸ Initially, this rule had little practical effect because any state anti-predatory lending provisions on the books then were fairly narrow.⁴⁹

Following adoption of the OTS preemption rule, federal thrift institutions were relieved from having to comply with state consumer protection laws. That was not true, however, for national banks, state banks, state thrifts, and independent nonbank mortgage lenders and brokers. The stakes rose considerably starting in 1999, once North Carolina passed its anti-predatory lending law. As state mini-HOEPA laws proliferated, national banks lobbied their regulator – a federal agency known as the Office of the Comptroller of the Currency or OCC – to clothe them with the same federal preemption as federal savings associations. They succeeded and, in 2004, the OCC issued its own preemption rule banning the states from enforcing their laws impinging on real estate lending by national banks and their subsidiaries.⁵⁰

OTS and the OCC had institutional motives to grant federal preemption to the institutions that they regulated. Both agencies depend almost exclusively on fees from their regulated entities for their operating budgets. Both were also eager to persuade state-chartered depository institutions to convert to a federal charter. In addition, the OCC was aware that if national banks wanted federal preemption badly enough, they might defect to the thrift charter to get it. Thus, the OCC had reason to placate national

⁴⁸ 12 C.F.R. §§ 559.3(h), 560.2.

⁴⁹ Bostic et al., *supra* note 47, at ___; Office of Thrift Supervision, *Responsible Alternative Mortgage Lending: Advance notice of proposed rulemaking*, 65 Fed. Reg. 17811, 17814-16 (2000).

⁵⁰ Office of the Comptroller of the Currency, *Bank Activities and Operations; Final rule*, 69 FED. REG. 1895 (2004) (codified at 12 C.F.R. § 7.4000); Office of the Comptroller of the Currency, *Bank Activities and Operations; Real Estate Lending and Appraisals; Final rule*, 69 FED. REG. 1904 (2004) (codified at 12 C.F.R. §§ 7.4007-7.4009, 34.4). National City Corporation, the parent of National City Bank, N.A., and a major subprime lender, spearheaded the campaign for OCC preemption. *Predatory lending laws neutered*, ATLANTA JOURNAL-CONSTITUTION, Aug. 6, 2003.

banks to keep them in its fold. Similarly, the OTS was concerned about the steady decline in thrift institutions. Federal preemption provided an inducement to thrift institutions to retain the federal savings association charter.

Agency turf wars were not the only motivation at work. Concomitantly, OCC regulators and their federal bank regulator counterparts were true believers in the ability of market structures and new instruments to contain risk. When market innovations could contain risk, the thinking went, why have government regulation? Federal regulators extolled credit derivatives, including credit default swaps, for their ability to hedge default risk on loans. They embraced securitization as a way for depository institutions to make fees while pushing credit risk and interest rate risk off of their books. And, in a case of exceptionally poor timing, federal banking regulators changed the risk-based capital rules to allow the largest, internationally active depository institutions to compute their minimum capital requirements themselves, using a statistical model known as “Value-at-Risk” or “VaR.” Regulators adopted this change in December 2007, just as the VaR model was becoming discredited for failing to anticipate the subprime crisis. Tragically, taken together these techniques encouraged a silo mentality in which federally banking regulators ignored heightened risks so long as banks and thrifts were able to shift those risks to other market participants outside of the banking system.⁵¹

The OTS rule occasioned relatively little outburst when it was adopted. In contrast, there was pronounced public outcry over the OCC rule, coming as it did during the George W. Bush Administration, which was hostile to attempts to regulate mortgages. For decades, it had been taken as a given that states regulated consumer protection at

⁵¹ See, e.g., Joe Nocera, *Risk Mismanagement*, N.Y. TIMES, Jan. 2, 2009.

national banks. The OCC rule overrode that tradition by blocking the states' ability to protect their citizens from consumer protection violations by national banks. The OCC rule even extended federal preemption to national bank subsidiaries that were state-chartered nonbank mortgage lenders. In a companion rule, moreover, the OCC denied permission to the states to enforce their own laws that were *not* federally preempted – state lending discrimination laws as just one example – against national banks and their subsidiaries. After a protracted court battle, the controversy ended up in the U.S. Supreme Court, which upheld the OCC preemption rule in its entirety.⁵²

Federal preemption might not have devolved into regulatory failure had OTS and the OCC replaced state regulation with a comprehensive set of binding rules prohibiting lax underwriting of home mortgages. The OCC did adopt one rule in 2004 prohibiting unfair and deceptive acts and practices and mortgages made without regard to the borrower's ability to repay, but the vagueness of that rule made it easy to evade. OTS replaced binding rules by the states with no rules at all. In lieu of binding rules, federal banking regulators, including the OCC and OTS, issued a series of advisory letters and guidelines against predatory or unfair mortgage lending practices by insured depository institutions.⁵³ Federal regulators disavowed binding rules during the run-up to the

⁵² Watters v. Wachovia Bank, N.A., 550 U.S. 1 (2007); Peterson; Wilmarth. The OCC and the OTS left some areas of state law untouched, namely, state criminal law and state law regulating contracts, torts, homestead rights, debt collection, property, taxation, and zoning. Both agencies, though, reserved the right to declare that any state laws in those areas are preempted in the future. For fuller discussion, see Patricia A. McCoy & Elizabeth Renuart, *The Legal Infrastructure of Subprime and Nontraditional Mortgage Lending* (with Elizabeth Renuart), in *BORROWING TO LIVE: CONSUMER AND MORTGAGE CREDIT REVISITED* (Nicolas P. Retsinas & Eric S. Belsky eds., Brookings Institution Press, 2008), working paper version at http://www.jchs.harvard.edu/publications/finance/understanding_consumer_credit/papers/ucc08-5_mccoy_renuart.pdf.

⁵³ See, e.g., Office of the Comptroller of the Currency, *Guidelines for National Banks to Guard Against Predatory and Abusive Lending Practices*, Advisory Letter 2003-2 (Feb. 21, 2003); Office of the Comptroller of the Currency, *Avoiding Predatory and Abusive Lending Practices in Brokered and*

subprime crisis on grounds that the guidelines were more flexible and that the agencies enforced those guidelines through bank examinations and informal enforcement actions.⁵⁴

Informal enforcement actions are limited to negotiated, voluntary agreements between regulators and the entities that they supervise, which makes it easy for management to drag out negotiations to soften any restrictions and to bid for more time. Furthermore, examinations and informal enforcement are highly confidential, making it easy for a lax regulator to hide its tracks.

3. *Effectiveness of OTS and OCC Oversight*

Regulatory inaction can be difficult to prove, particularly if it is shrouded in the guise of confidential procedures such as bank examinations and informal supervisory proceedings. In the wake of the subprime crisis, however, federal securities filings, static pool reports, and the failure and near-failure of a host of insured depository institutions provided insight into regulatory lapses by the OCC and OTS.

a. *The Office of Thrift Supervision*

Although OTS was the first agency to adopt federal preemption, it managed to fly under the radar during the subprime boom, overshadowed by its larger sister agency, the OCC. After 2003, while commentators were busy berating the OCC preemption rule, OTS allowed the largest federal savings associations to embark on an aggressive campaign of expansion through option adjustable rate mortgages, subprime loans, and low-documentation and no-documentation loans.

Purchased Loans, Advisory Letter 2003-3 (Feb. 21, 2003); Office of the Comptroller of the Currency, *OCC Guidelines Establishing Standards for Residential Mortgage Lending Practices*, 70 Fed. Reg. 6329 (2005).

⁵⁴ Office of the Comptroller of the Currency, *Bank Activities and Operations; Real Estate Lending and Appraisals; Final rule*, 69 FED. REG. 1904 (2004).

Autopsies of failed depository institutions in 2007 and 2008 show that five of the seven biggest failures were OTS-regulated thrifts. Two other enormous thrifts during that period – Wachovia Mortgage, FSB and Countrywide Bank, FSB⁵⁵ -- were forced to arrange hasty takeovers by better capitalized bank holding companies to avoid failing. By December 31, 2008, thrifts totaling \$355 billion in assets had failed in the previous sixteen months on OTS' watch.

The reasons for the collapse of these thrifts evidence fundamental regulatory lapses by OTS. Almost all of the thrifts that failed in 2007 and 2008 – and all of the larger ones -- succumbed to massive levels of imprudent home loans. IndyMac Bank, FSB, which became the first major thrift institution to fail during the current crisis in July 2008, manufactured its demise by becoming the nation's top originator of low-documentation and no-documentation loans. These loans, which became known as "liar's loans," infected both the subprime market and credit to borrowers with higher credit scores. Low-documentation, or stated income, loans dispensed with verifying the borrower's employment and income. No-documentation loans were made without inquiry as to the borrower's employment or income. By 2006 and 2007, over half of IndyMac's home purchase loans were subprime loans and IndyMac Bank approved up to half of those loans based on low or no documentation.

Washington Mutual Bank, popularly known as "WaMu," was the nation's largest thrift institution in 2008, with over \$300 billion in assets. WaMu became the biggest U.S. depository institution in history to fail on September 25, 2008, in the wake of the

⁵⁵ Countrywide Bank converted from a national bank charter to a federal thrift charter in March 2007 in a quest for laxer OTS regulation. Binyamin Appelbaum and Ellen Nakashima, *Regulator Played Advocate Over Enforcer*, WASHINGTON POST, November 23, 2008.

Lehman Brothers bankruptcy. WaMu was so large that OTS examiners were stationed there permanently onsite. Nevertheless, from 2004 through 2006, despite the daily presence of the resident OTS inspectors, risky option ARMs, second mortgages, and subprime loans constituted over half of WaMu's real estate loans each year. By June 30, 2008, over one fourth of the subprime loans that WaMu originated in 2006 and 2007 were at least thirty days past due. Eventually, it came to light that WaMu's management had pressured its loan underwriters relentlessly to approve more and more exceptions to WaMu's underwriting standards in order to increase its fee revenue from loans.⁵⁶

Downey Savings & Loan became the third largest depository institution to fail in 2008 and, like WaMu, Downey had loaded up on option ARMs and subprime loans. When OTS finally had to put it into receivership, over half of Downey's total assets consisted of option ARMs and nonperforming loans accounted for over fifteen percent of the thrift's total assets.

In short, the three largest depository institution failures in 2007 and 2008 that stemmed from the subprime crisis resulted from high concentrations of poorly underwritten loans, including low- and no-documentation ARMs (in the case of IndyMac) and option ARMs (in the case of WaMu and Downey) that were often only underwritten to the introductory rate instead of the fully indexed rate.⁵⁷ During the

⁵⁶ Peter S. Goodman & Gretchen Morgenson, *Saying Yes, WaMu Built Empire on Shaky Loans*, N.Y. TIMES, Dec. 28, 2008.

⁵⁷ Almost always during the housing boom, the introductory rate on subprime and nontraditional ARMs was lower – in some cases, substantially lower – than the fully indexed rate. When the introductory period expired and the ARM adjusted upward to the fully indexed rate, the monthly payment could increase overnight by 20% to 100% or more, depending on the type of product and interest rate movements. This payment shock was especially severe for option ARMs and only slightly less severe for interest-only ARMs. Lenders who qualified loan applicants at the introductory rate, not the fully indexed rate, substantially increased the risk of default because many borrowers could not afford the increased payments upon loan reset. See, e.g., Department of the Treasury et al., *Interagency Guidance on Nontraditional Mortgage Product Risks; Final guidance*, 71 FED. REG. 58609 (2006).

housing bubble, OTS issued no binding rules to halt the proliferation by its largest regulated thrifts of option ARMs, subprime loans, and low- and no-documentation mortgages. Instead, OTS relied on recommendations issued in the form of guidances. IndyMac, WaMu, and Downey apparently treated the guidances as solely advisory, however, as evidenced by the fact that all three made substantial numbers of hazardous loans in late 2006 and in 2007 in direct disregard of an interagency guidance on nontraditional mortgages issued in the fall of 2006 and subscribed to by OTS that prescribed underwriting ARMs to the fully indexed rate.⁵⁸

The fact that the three institutions continued to make loans in violation of the guidance suggests that OTS examinations failed to enforce the guidance. Similarly, OTS fact sheets on the failures of all three institutions show that the agency consistently declined to institute timely formal enforcement proceedings against those thrifts prohibiting the lending practices that resulted in their demise. In sum, OTS supervision of residential mortgage risks was confined to “light touch” regulation in the form of examinations, nonbinding guidances, and occasional informal agreements that ultimately failed to work.

b. *The Office of the Comptroller of the Currency*

A similar form of “light touch” regulation was apparent at the OCC. Arguably, the OCC was somewhat more proactive than OTS because it did promulgate one rule, in 2004, prohibiting mortgages to borrower who could not afford to repay. However, the

⁵⁸ Department of the Treasury et al., *Interagency Guidance on Nontraditional Mortgage Product Risks; Final guidance*, 71 FED. REG. 58609 (2006).

rule was vague both in design and execution, allowing lax lending to proliferate at national banks and their mortgage lending subsidiaries through 2007.

Despite the 2004 rule, through 2007, large national banks continued to make large quantities of low- and no-documentation loans and subprime ARMs that were solely underwritten to the introductory rate. In 2006, for example, fully 62.6 percent of the first-lien home purchase mortgages made by National City Bank, N.A., and its subsidiary, First Franklin Mortgage, were higher-priced subprime loans. Starting in the third quarter of 2007, National City Corporation reported five straight quarters of net losses, largely due to those subprime loans. Just as with WaMu, the Lehman Brothers bankruptcy ignited a silent run by depositors and pushed National City Bank to the brink of collapse. Only a shotgun marriage with PNC Financial Services Group in October 2008 saved the bank from FDIC receivership.

The five largest U.S. banks in 2005, which were all national banks, likewise made heavy inroads into low- and no-documentation loans. The top-ranked Bank of America, N.A., had a thriving stated-income and no-documentation loan program which it only halted in August 2007, when the market for private-label mortgage-backed securities dried up. Bank of America securitized most of those loans, which may be why the OCC tolerated such lax underwriting practices. Similarly, in 2006, the OCC overrode public protests about a “substantial volume” of no-documentation loans by JPMorgan Chase Bank, N.A., the second largest bank in 2005, on grounds that the bank had adequate “checks and balances” in place to manage those loans.

Citibank, N.A., was the third largest U.S. bank in 2005. In September 2007, the OCC approved Citibank’s purchase of the disreputable subprime lender Argent

Mortgage, even though subprime securitizations had slowed to a trickle. Citibank thereupon announced to the press that its new subsidiary – christened “Citi Residential Lending” – would specialize in nonprime loans, including reduced documentation loans. But not long after, by early May 2008 after Bear Stearns narrowly escaped failure, Citibank was forced to admit defeat and dismantle Citi Residential’s lending operations.

The fourth largest U.S. bank in 2005, Wachovia Bank, N.A., originated low- and no-documentation loans through its two mortgage subsidiaries. Wachovia Bank originated such large quantities of these loans – termed Alt-A loans – that by the first half of 2007, Wachovia Bank was the twelfth largest Alt-A lender in the country. These loans performed so poorly that between December 31, 2006 and September 30, 2008, the bank’s ratio of net write-offs on its closed-end home loans to its total outstanding loans jumped 2400%. Concomitantly, the bank’s parent company, Wachovia Corporation, was reported its first quarterly loss in years due to rising defaults on option ARMs made by Wachovia Mortgage, FSB, and its Golden West predecessor. Public concern over Wachovia’s loan losses triggered a silent run on Wachovia Bank in late September 2008, following Lehman Brothers’ failure. To avoid receivership, the FDIC brokered a hasty sale of Wachovia to Wells Fargo after Wells Fargo outbid Citigroup for the privilege.

Wells Fargo Bank, N.A., was in better financial shape than Wachovia, but it too made large quantities of subprime and reduced documentation loans. In 2006, over 23 percent of the bank’s first-lien refinance mortgages were high-cost subprime loans. Wells Fargo Bank also securitized substantial numbers of low- and no-documentation mortgages in its Alt-A pools. In 2007, a Wells Fargo prospectus for one of those pools stated that Wells Fargo had relaxed its underwriting standards in mid-2005 and did not

verify whether the mortgage brokers who had originated the weakest loans in that loan pool complied with its underwriting standards before closing. Not long after, by July 25, 2008, 22.77 percent of the loans in that loan pool were past due or in default.

As the Wells Fargo story suggests, the OCC depended on voluntary risk management by national banks, not regulation of loan terms and practices, to contain the risk of improvident loans. A speech by the then-Acting Comptroller, Julie Williams, confirmed as much. In 2005, Comptroller Williams, in a speech to risk managers at banks, coached them on how to “manage” the risks of no-doc loans through debt collection, higher reserves, and prompt loss recognition. Securitization was another such risk management device. Three years later, in 2008, the Treasury Department’s Inspector General issued a report that was critical of the OCC’s supervision of risky loans.⁵⁹ Among other things, the Inspector General criticized the OCC for not instituting formal enforcement actions while lending problems were still manageable in size. In his written response to the Inspector General, the Comptroller, John Dugan, conceded that “there were shortcomings in our execution of our supervisory process” and ordered OCC examiners to start initiating formal enforcement actions on a timely basis.⁶⁰

The OCC’s record of supervision and enforcement during the subprime boom reveals many of the same problems that culminated in regulatory failure by OTS. Like OTS, the OCC avoided formal enforcement actions in most instances in favor of examinations and informal enforcement. Neither of these supervisory tools obtained compliance with the OCC’s 2004 rule prohibiting loans to borrowers who could not repay. Although the OCC supplemented that rule later on with more detailed

⁵⁹ Office of Inspector General, Department of the Treasury, “Safety and Soundness: Material Loss Review of ANB Financial, National Association” (OIG-09-013, Nov. 25, 2008).

⁶⁰ *Id.*

guidances,⁶¹ some of the largest national banks and their subsidiaries apparently decided that they could ignore the guidances, judging from their lax lending in late 2006 and in 2007. The OCC's emphasis on managing credit risk through securitization, reserves, and loss recognition, instead of through product regulation, likely encouraged that *laissez faire* attitude by national banks.

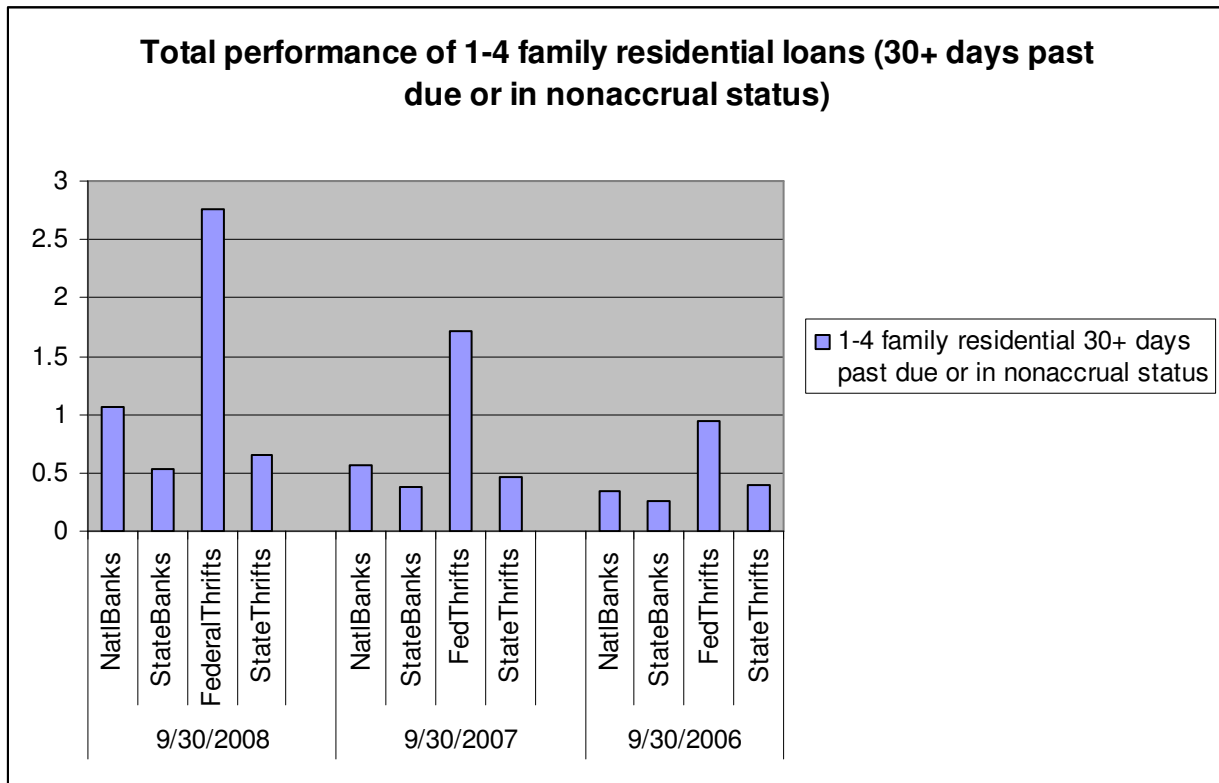
c. *Judging by Results: Loan Performance By Charter*

In defense of federal preemption, OCC and OTS regulators have argued that under the umbrella of federal preemption, their agencies offer “comprehensive” supervision resulting in lower default rates on residential mortgages. The evidence shows otherwise.

Recent data from the Federal Deposit Insurance Corporation reports that among depository institutions, federal thrift institutions had the worst default rate for one-to-four family residential mortgages from 2006 through 2008. (See Figure 6).

⁶¹ See note 53 *supra*.

Figure 6. Total Performance of Residential Mortgages by Depository Institution Lenders



Source: FDIC Statistics on Depository Institutions

The second-worst performance record among depository institution lenders went to national banks. State thrifts had better default rates than either type of federally chartered institution in 2007 and 2008. State banks consistently had the lowest default rates of all.

Among these charter types, the only ones that enjoy federal preemption are national banks regulated by the OCC and federal thrift institutions regulated by the OTS. State banks and state thrift institutions do not. Thus it appears, at least among depository institutions, that federal preemption was associated with *higher* default rates, not lower rates, during 2006 through 2008, when credit standards hit bottom⁶² and the mortgage

⁶² See note 29 *supra*.

market imploded. These data do not address whether that independent nonbank lenders have even higher default rates in some states and that may in fact be the case.

Nevertheless, the data undercut the assertion that federal preemption reduces default rates among mortgages by depository institution lenders. To the contrary, the lowest default rates were at state banks and thrifts, which are subject both to state and federal regulation.

4. *Coda*

After the magnitude of the subprime debacle became known, federal regulators became adept at blaming the states for not regulating independent mortgage lenders and brokers effectively. Certainly, some states regulated these actors more heavily than others and some states failed to regulate them at all. But the attack on the states obscures two essential facts. First, by the end of 2005, the majority of states *had* enacted comprehensive laws of varying strengths to address improvident subprime loans. Indeed, proactive states adopted their laws years before the OCC, OTS, and the Federal Reserve Board took any meaningful action. Second, through their preemption rules, the OCC and OTS blocked enforcement of the most meaningful body of laws regulating reckless loan products – the state mini-HOEPA laws – for federal savings associations, national banks, and their mortgage lending subsidiaries. The Federal Reserve Board meanwhile refused to exercise its authority under HOEPA to correct the unlevel playing field by promulgating binding rules against unfair and deceptive acts and practices that applied to virtually all lenders nationwide. As a result, meaningful regulation was non-existent at worst and ineffective at best for lenders cloaked with federal preemption and for lenders in unregulated states.

B. Capital Markets Regulation

Regulatory failure was most visible in the mortgage origination market. Behind the scenes in capital markets regulation, however, other types of regulatory failure served to compound the risks taken by private-label securitization. For instance, an obscure decision by the Securities and Exchange Commission in 2004 allowed the five top investment banks to reduce their capital to miniscule levels and become dangerously leveraged. In the process, almost all of those banks took outside risks in subprime securitizations because they had very little skin in the game. Similarly, had there been laws imposing liability on investment banks and other securitizers of subprime mortgages for financing abusive loans, securitizers might have exercised real due diligence. Because those lawsuits were exceedingly difficult to bring, securitizers had no liability to curb their moral hazard and force them to perform serious due diligence.⁶³

A successful bipartisan campaign to deregulate credit default swaps a decade ago also hastened the housing bubble and its aftermath. In a properly functioning market, credit default swaps could have helped contain the overheated housing market that fed on lax loans. Because they were left unregulated, however, credit default swaps ultimately increased systemic risk by linking the solvency of major financial firms to the full performance of interlinked contractual obligations.

These two major gaps in capital regulation and credit default swap oversight drove the global financial system to near-collapse in 2008. Both of these gaps were by design.

⁶³ Frequently, the state holder-in-due course rule shielded securitizers from liability to injured borrowers for fraud or abusive loans. See Engel & McCoy, *Turning a Blind Eye*, *supra* note 2.

1. Lax Securities and Exchange Commission Regulation

Four years after the Securities and Exchange Commission decided to exempt the five largest U.S. investment banks from mandatory capital standards, all five underwent near-collapse in 2008. In March of that year, Bear Stearns was saved only through a \$29 billion infusion of cash from the Federal Reserve Board and a shotgun wedding to JPMorgan Chase. Almost six months later to the day, the federal government allowed Lehman Brothers to fail. In the maelstrom that ensued, Merrill Lynch hastily brokered its sale to Bank of America. The last two leading independent Wall Street firms, Goldman Sachs and Morgan Stanley, filed rush applications to become bank holding companies in order to assure permanent access to the Fed's discount window.⁶⁴

Bear Stearns, Lehman Brothers, and Merrill Lynch were brought to their knees by bad subprime mortgage-backed securities and CDOs. However, the immediate reason for their rapid demise lies not so much with their asset holdings as with their funding structure. All five investment banks were highly leveraged in early 2008 and depended on short-term debt in the form of tri-party repos and other instruments for the bulk of their financing. When the market lost confidence in the quality of the subprime collateral that Bear Stearns and Lehman Brothers posted for a large portion of their debt, their funding evaporated virtually overnight.

The ability of the five investment banks to become so leveraged dates back to a 2004 regulatory decision by the Securities and Exchange Commission. That year, at the urging of the five investment banks, the SEC relaxed the maximum leverage ratios for

⁶⁴ See, e.g., Stephen Labaton, *Agency's '04 Rule Let Banks Pile Up New Debt, and Risk*, N.Y. TIMES, October 3, 2008.

investment banks with more than \$5 billion in assets.⁶⁵ As it happened, only Bear Stearns, Lehman Brothers, Merrill Lynch, Morgan Stanley, and Goldman Sachs exceeded that asset threshold.

Leverage ratios limit how much debt investment banks can take on for every dollar in equity. The lower the leverage ratio, the more capital an investment bank has as a buffer against loss. Similarly, lower leverage ratios serve as a natural brake against excessive risk. The SEC's obscure 2004 rule, known as the "net capital" rule, essentially outsourced minimum capital requirements to the five largest investment banks by allowing them to set their own minimum capital levels using their internal mathematical models.⁶⁶

The five investment banks took full advantage of the net capital rule. At its demise, Bear Stearns had a leverage ratio of 33, meaning that it borrowed \$33 for every \$1 in equity. In 2007, Morgan Stanley's ratio was equally high. That year, Merrill Lynch's leverage ratio climbed to 31.9 from 15 in 2003, and Goldman Sachs' ratio topped out at 28. Meanwhile, Lehman Brothers' leverage ratio on March 31, 2008 stood at 31.7. In contrast, large, internationally active commercial banks have leverage ratios of about 11.⁶⁷

As a quid-pro-quo for net capital rule, the SEC required the holding companies of all investment banks that took advantage of that rule to consent to group-wide

⁶⁵ Securities and Exchange Commission, *Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities: Final rule*, 69 FED. REG. 34428 (June 21, 2004).

⁶⁶ *Id.*; Labaton, *supra* note 64.

⁶⁷ See, e.g., Jon Hilsenrath, Damian Paletta & Aaron Lucchetti, *Goldman, Morgan Scrap Wall Street Model, Become Banks in Bid to Ride Out Crisis*, WALL ST. J., September 22, 2008; Stephen Labaton, *Agency's '04 Rule Let Banks Pile Up New Debt, and Risk*, N.Y. TIMES, October 3, 2008; Susan Pulliam, Serena Ng & Randall Smith, *Merrill Upped Ante as Boom in Mortgage Bonds Fizzled*, WALL ST. J., April 16, 2008; Louise Story, *Making Trouble for Lehman*, N.Y. TIMES, June 4, 2008.

supervision and examination by the SEC.⁶⁸ By statute, the SEC lacks formal legislative authority to regulate the holding companies of investment banks. Nevertheless, the European Union was insisting at the time that the SEC regulate the parent companies, otherwise the EU would regulate the foreign subsidiaries of U.S. investment banks operating in Europe. Thus, the agreement by the largest investment banks to submit to SEC oversight in exchange for looser capital requirements was a means of freeing the investment banks' European operations from EU supervision.⁶⁹

After the rule came out, however, the SEC did not take parent company oversight seriously. The office that the SEC created to examine the holding companies only had seven staff members assigned to monitor five global financial empires with combined assets exceeding \$4 trillion. What was supposed to be SEC oversight at the consolidated holding company level instead devolved into industry self-regulation. In late September 2008, the SEC finally dismantled the program, after the SEC's Chairman Christopher Cox admitted: "[V]oluntary regulation does not work."⁷⁰

Despite these holes in SEC oversight of consolidated holding companies, the agency had warning of the problems that destroyed Bear Stearns, but ignored them. In September 2008, the SEC's Inspector General issued a report concluding that the SEC "became aware of numerous potential red flags prior to Bear Stearns' collapse, regarding its concentration of mortgage securities, high leverage, shortcomings of risk management in mortgage-backed securities and lack of compliance with the spirit of certain Basel II

⁶⁸ Securities and Exchange Commission, *Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities: Final rule*, 69 FED. REG. 34428 (June 21, 2004); Labaton, *supra* note 67.

⁶⁹ See, e.g., Stephen Labaton, *Agency's '04 Rule Let Banks Pile Up New Debt, and Risk*, N.Y. TIMES, October 3, 2008.

⁷⁰ See, e.g., *id.*

standards, but did not take actions to limit these risk factors.” This remained the case even after the collapse of two Bear Stearns hedge funds in June 2007. According to the Inspector General, “it is undisputable [sic] that the [consolidated oversight] program failed to carry out its mission in its oversight of Bear Stearns.”⁷¹

2. Credit Default Swaps

In the capital markets arena, Congress also deserves blame for the housing price bubble and the systemic risk. As we describe below,⁷² Congress could have helped to place a brake on the resulting contagion of global proportions by authorizing regulation of credit default swaps and the creation of a well-functioning market for those swaps. Instead, twice over the past decade, Congress granted blanket exemptions for credit default swaps from regulation by statute.

A triad of extraordinary events in 2008 – the federal government’s rescue of Bear Stearns, its bailout of AIG, and its decision to let Lehman Brothers fail, with catastrophic consequences – were united by a common thread. The common thread consisted of the federal government’s concern whether credit default swap (“CDS”) exposure posed sufficient systemic risk to threaten the financial system. In each case, the ailing firm had hundreds of billions of dollars in CDS exposure to other financial firms.

The idea behind a credit default swap is simple. Imagine that a major bank makes a hundred-million dollar loan to a major corporation. The bank is concerned about sizeable losses if the corporation defaults. Furthermore, federal banking regulators require the bank to hold a substantial amount of capital as a buffer against loss.

⁷¹ U.S. Securities and Exchange Commission, Office of Inspector General, “SEC’s Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program” viii-xi (Report No. 446-A, Sept. 25, 2008), available at <http://www.sec.gov/about/oig/audit/2008/446-a.pdf>.

⁷² See Section V.A. *infra*.

In the early 1990s, JP Morgan invented the credit default swap as a way to hedge credit risk and reduce capital requirements.⁷³ In a plain vanilla credit default swap, the bank (known as the buyer) secures a promise from a third party (the seller) to assume the risk of default and to pay the buyer a stated amount in the event the loan defaults. In exchange for that promise, the buyer pays a regular fee to the seller. The seller, in turn, can buy credit default swap protection from someone else to hedge the seller's own liability. This is possible because in the world of CDS, the buyer of the credit protection does not need to own or have an interest in the loan or bond that is the subject of the protection.

Eventually, CDS were used to hedge the risk of possible defaults on subprime mortgage-backed securities and collateralized debt obligations ("CDOs"). In addition, investment banks bundled CDS into offerings of synthetic CDOs, which sought to track the returns on ordinary CDOs. Finally, speculators bought CDS as bets that companies would default on their bonds. The CDS market exploded as the housing bubble expanded. By 2008, the total notional amount of outstanding CDS totaled anywhere from \$43 to \$66 *trillion*, vastly more than the debts that they insured.⁷⁴

To date, the CDS market has been largely unregulated, both in the United States and abroad. CDS involve features of commodities, securities, and insurance and thus could fall within one or more of those regulatory schemes. They largely escape all of those regulatory regimes, however, due to ironclad exceptions that exempt CDS from most regulation.

⁷³ Matthew Phillips, *The Monster That Ate Wall Street*, NEWSWEEK, October 6, 2008.

⁷⁴ See, e.g., Gretchen Morgenson, *In the Fed's Cross Hairs; Exotic Game*, N.Y. TIMES, March 23, 2008; Phillips, *supra* note 73.

This dearth of regulation is not an accident, but the result of lobbying by investment banks that profited from the lack of transparency of CDS.⁷⁵ Senator Phil Gramm, at the urging of investment banks, pushed through amendments to the Commodities Exchange Act in 2000 that gave CDS a blanket exemption from commodities regulation. Previously, Wendy Gramm, the Senator's wife, had adopted rules in 1989 and 1993, while she was head of the Commodity Futures Trading Commission, exempting some swaps from commodities regulation. In November 1999, Treasury Secretary Larry Summers, Alan Greenspan, and SEC Chairman Arthur Levitt, Jr., gave Phil Gramm the green light when they issued a report recommending further deregulation of swaps. The following year, the Senator finished the job that his wife had begun.⁷⁶

Gramm also engineered a broad exemption for CDS from securities regulation. In the eponymous Gramm-Leach Bliley Act of 1999, Gramm inserted an exclusion from the definition of a regulated security for all security-based and non-security-based swap agreements.⁷⁷ As a result of this provision and that fact that most CDS are not traded on an exchange, those instruments are exempt from most aspects of securities law. Similarly, New York State – the most likely would-be insurance regulator for CDS – amended its insurance code in 2004 to exclude CDS from oversight.⁷⁸ In any case, the

⁷⁵ See, e.g., Matthew Leising, *Fed Refuses Banks Request to Limit Credit-Default Swap Clearing*, BLOOMBERG.COM, December 12, 2008.

⁷⁶ 7 U.S.C. §§ 1a(13), 2(d), 2(g) (discussed in Robert F. Schwartz, *Risk Distribution in the Capital Markets: Credit Default Swaps, Insurance and a Theory of Demarcation*, 12 FORDHAM J. CORP. & FIN. L. 167, 171-72 (2007)); Eric Lipton & Stephen Labaton, *Deregulator Looks Back, Unswayed*, N.Y. TIMES, November 17, 2008.

⁷⁷ Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, §§ 206A(a)(3), (b)(1)-(b)(4), 206B, 206C; 15 U.S.C. §§ 77b-1, 78c, 78c-1. See Eric Lipton & Stephen Labaton, *Deregulator Looks Back, Unswayed*, N.Y. TIMES, November 17, 2008; Schwartz, *supra* note 76, at 172.

⁷⁸ N.Y. Ins. Law § 6901(j-1); 2004 N.Y. Sess. Laws. Ch. 605 (S. 6679-A). See Schwartz, *supra* note 76, at 173-74, 183.

federal changes instigated by Gramm preempted the ability of the states to require credit default swap sellers to back CDS with reserves.

The only regulatory constraint on CDS of any significance consists of the fact that CDS are subject to the anti-fraud and anti-manipulation prohibitions of the Securities Act of 1933 and the Securities Exchange Act of 1934. Federal banking regulators are also supposed to oversee the risk management of CDS that are held by depository institutions and their holding companies.⁷⁹ Other than that, CDS are unregulated.

Credit default swaps were first devised as a hedge against risk. Ironically, during the credit crisis, CDS magnified risk, instead of hedging it, in ways that had not been well appreciated before. The central problem is that the CDS market creates daisy chains of counterparty liability, whereby one buyer relies on the solvency of its seller to cover the buyer's own CDS exposure to another buyer down the chain.

Let's say, for example, that a commercial bank buys a credit default swap from an investment bank to hedge against default on a bond issued by Corporation X. The investment bank, in turn, hedges its exposure to the commercial bank by buying a CDS from an insurance company on the Corporation X bond. Now assume that Corporation X files for bankruptcy and defaults on the bond. The commercial bank will demand payment from the investment bank under the CDS, which in turn will demand payment from the insurance company. If the insurance company is insolvent and cannot make its promised payment, the investment bank will now face full exposure without any hedge. If that exposure is too large, it could force the investment bank into bankruptcy, which in turn would saddle the commercial bank with the losses on the Corporation X bond. In

⁷⁹ Securities Act of 1933, § 17(a); Securities Exchange Act of 1934, §§ 9(a), 10(b), 15(c)(1), 16(b), 20(d).

this way, a CDS default by one counterparty can lead to a domino effect of insolvencies of other counterparties down the line.

This daisy chain problem, in part, results from the way that CDS are traded. Most CDS are traded over-the-counter and not on an exchange. This means that each CDS is the product of private negotiation between two parties, usually with a dealer in-between. In each transaction, the buyer depends on the credit quality of the seller for assurance of protection. The buyer, however, does not know how much total CDS exposure the seller has assumed. Similarly, the buyer does not know if the seller has bought protection from someone else to defray its CDS obligation to the buyer. Furthermore, the buyer does not know whether that someone else is good for the money. And unlike insurance, CDS are not backed by statutorily mandated reserves or governmental guaranties, and, in fact, are precluded from this, as we have seen.

Similarly, the bespoke nature of CDS means that some CDS contracts are not standardized. Before the credit crisis, it had been widely believed that CDS contracts invariably used standardized language developed by the International Swaps and Derivatives Association (ISDA). Unfortunately, as the events of 2008 brought to light, some ailing financial firms held large quantities of customized CDS contracts. To the extent that CDS contracts are not standardized, it is difficult to trade them on an exchange and cumbersome to unwind them.

The lack of any exchange meant that there was no place where buyers and sellers stood ready to trade CDS. It also meant that CDS lacked transparent pricing because there was no central place where prices were posted. Both of these problems hamstrung

the liquidity of CDS and the ability to settle CDS claims if the underlying obligor went bankrupt or if the seller of a CDS defaulted.

When the Federal Reserve Board decided to bail out AIG in September 2008, AIG owed \$441 billion in CDS obligations on mortgage-backed securities and other bonds to other financial firms, including Lehman Brothers. AIG's near-fatal exposure to CDS was racked up by a 377-person office in London's Canary Wharf, known as AIG Financial Products and run by Joseph J. Cassano. The federal government ultimately decided to bail out AIG due to fears that if AIG went down, it would pull down numerous other firms. That fear unfortunately materialized when Lehman Brothers failed and defaulted on its own massive CDS exposure. Later, it turned out that AIG's biggest trading partner was Goldman Sachs. AIG's failure reportedly would have inflicted up to \$20 billion in damage on Goldman.⁸⁰

Under the terms of the CDS that AIG sold to European banks and other buyers, AIG did not have to post collateral against that exposure so long as AIG stayed highly rated and the value of the bonds that it insured did not decline.⁸¹ Starting in 2007, however, many of the underlying subprime bonds and CDOs that AIG guaranteed fell in value, due both to defaults and the breakdown in secondary trading. In the first half of 2008, AIG sustained net losses of \$13.2 billion, much of that on mortgage-backed securities, CDOs and CDS. Despite those write-downs, analysts kept questioning whether AIG's valuations of those bonds and CDS were still overvalued, an inquiry that gathered steam after Merrill Lynch slashed the value of its own CDS to 13 cents on the

⁸⁰ See, e.g., Gretchen Morgenson, *Behind Biggest Insurer's Crisis, A Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008; Phillips, *supra* note 73.

⁸¹ See, e.g., Gretchen Morgenson, *Behind Biggest Insurer's Crisis, A Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008; Gretchen Morgenson, *First Comes the Swap. Then It's the Knives*, N.Y. TIMES, June 1, 2008; Phillips, *supra* note 73.

dollar in July 2008. By September 15, 2008, rating agencies downgraded AIG, forcing it to raise about \$15 billion in collateral to meet a margin call on its CDS. At that point, AIG needed a federal rescue to survive, because while it had \$15 billion in assets, those assets were illiquid and could not be readily converted to cash.⁸²

AIG Financial Products was not an insurer and thus was free from insurance regulation. Back in the United States, however, AIG's holding company owned a thrift institution, which made it a savings and loan holding company. As such, both the holding company and AIG Financial Products were subject to OTS supervision. While OTS lacked authority to prohibit normal trading in CDS, it did supervise risk management. According to the *New York Times*, "a handful of [OTS] officials were always on the scene at an A.I.G. Financial Products branch office" in Wilton, Connecticut. On March 10, 2008, OTS belatedly wrote AIG to express concern that the "corporate oversight of AIG Financial Products . . . lack[ed] elements of independence, transparency, and granularity." After concluding that AIG's super senior CDS were overvalued and that AIG's valuation system lacked sufficient accuracy for "effective risk management," OTS cut the holding company's examination grades for risk management and earnings, plus its composite examination grade. OTS further requested AIG to submit a corrective action plan. C.K. Lee, the OTS official who wrote the letter, later told *MSN Money* that "[w]e missed the impact" of the margin call triggers.⁸³

⁸² Michael J. de la Merced & Gretchen Morgenson, *Big Insurer Seeks Cash As Portfolio Plummet*, N.Y. TIMES, Sept. 15, 2008; Gretchen Morgenson, *Behind Biggest Insurer's Crisis, A Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008; Gretchen Morgenson, *Naked Came the Speculators*, N.Y. TIMES, August 10, 2008.

⁸³ Letter from C.K. Lee, Managing Director, Complex & International Organizations, OTS, to American International Group, Inc., dated March 10, 2008, available at <http://oversight.house.gov/documents/20081007102407.pdf>; Jeff Gerth, *Was AIG Watchdog Not Up To The Job?*, MSN MONEY, November 10, 2008; Gretchen Morgenson, *Behind Biggest Insurer's Crisis, A Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008.

The OTS action came too late to turn the company around. Lee changed jobs in OTS in April 2008 and his unit was disbanded. In the meantime, AIG missed its deadline to submit the corrective plan and the plan it eventually submitted did not salvage the company.⁸⁴ This history caused the General Accountability Office, in 2007, to question OTS' ability to oversee complex international organizations such as AIG and to urge OTS to "focus more explicitly and transparently on risk management and controls."⁸⁵ OTS' failure to halt the mushrooming CDS exposure at AIG was partly due to agency failure. But it also underscores the difficulty that national regulators have in adequately supervising international operations in overseas locations with overlapping jurisdiction.

In sum, deregulation and federal regulators' subsequent failure to exercise their traditional oversight powers laid the foundation for the underpricing of risk and the erosion in lending standards in three major respects. First, Congress and federal banking regulators abdicated their responsibility to nip careless lending practices in the bud before those practices threatened the solvency of financial institutions and the financial system itself. Second, the Securities and Exchange Commission increased the capital markets demand for imprudent loans by allowing the largest investment banks to securitize those loans with little skin in the game. Finally, Congress, by deregulating credit default swaps, crippled the ability of CDS to constrain the overheated housing market and furthermore turned CDS into a trigger for contagion. The subprime crisis and the

⁸⁴ Jeff Gerth, *Was AIG Watchdog Not Up To The Job?*, MSN MONEY, November 10, 2008.

⁸⁵ UNITED STATES GENERAL ACCOUNTABILITY OFFICE, FINANCIAL MARKET REGULATION: AGENCIES ENGAGED IN CONSOLIDATED SUPERVISION CAN STRENGTHEN PERFORMANCE MEASUREMENT AND COLLABORATION 57 (GAO-07-154, March 2007).

financial devastation that ensued could not have occurred without the acts of regulatory commission and omission that preceded them.

V. Non-transparent and Illiquid Securitization and Fee-driven Profit Incentives

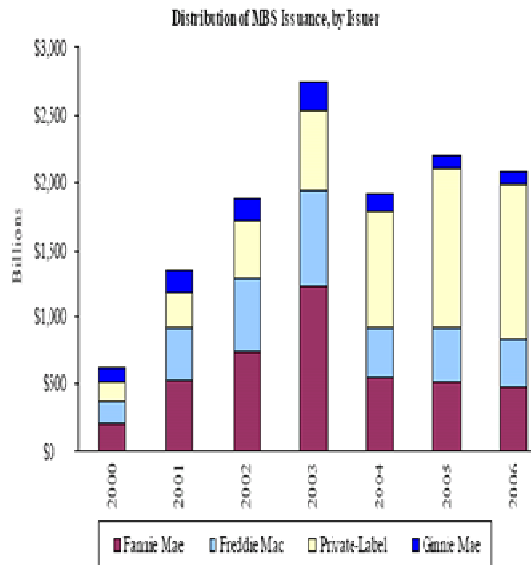
In theory, market controls in the form of risk pricing could have controlled mortgage risk without additional regulation. But one of the surprising phenomena of this expansion of nonprime mortgage lending was that as systemic risk increased, risk premia did not. From 2002 to 2006, subprime loans with a combined loan-to-value ratio greater than 80 percent increased from 46.8 to sixty four percent. Yet over that period, spreads actually declined from 300 to 200 basis points over weighted average coupon (“WAC”). During this same period other risk-generating factors, such as the widespread use of low- and no-documentation lending, were increasingly “layered” on and compounded, with only FICO scores remaining relatively constant with about ninety-two percent of mortgage borrowers having a FICO score under 700. (See Figure 3 *supra*). The question of course is why.

In part, as housing prices increased, the demand for more “affordable” lending products increased. But the reverse was also true and more fundamental to the process. Private-label securitization and the outsized fees gained at every stage of origination and distribution increased the demand for nonprime lending products. Key to this process were the fees and profits which were driven by product, both at the origination stage and the several stages of securitization including, the fees earned by bundling, tranching, and rating of securities. Lenders and mortgage brokers competed for borrowers and relaxed lending standards to gain market share. They did so with such thirty-year mortgage instruments as hybrid 3/27 teaser rate loans which were underwritten at temporarily low

rates for 3 years, with spikes of mortgage payments to follow. As lenders sought to expand their market share, there was no other way to do so than to compete for loans and lower standards which also activated more borrowing.

Lenders who did not join in the easing of lending standards through liberalized mortgage terms such as acceptance of no documentation loans could not get mortgage product and were crowded out of the market. Broadly this explains what happened to government insured lending through the Federal Housing Administration (“FHA”), which did not erode its underwriting standards.⁸⁶ And Fannie and Freddie also lost market share.⁸⁷ (See Figure 6).

Figure 6. Respective Market Shares of Private-Label Securitization, Fannie Mae, Freddie Mac, and GNMA



⁸⁶ See, e.g., U.S. GOVERNMENT ACCOUNTABILITY OFFICE, FEDERAL HOUSING ADMINISTRATION: PROPOSED LEGISLATIVE CHANGES WOULD AFFECT BORROWER BENEFITS AND RISKS TO THE INSURANCE FUNDS 5-11 (GAO-07-1109T 2007).

⁸⁷ According to the *New York Times*, shortly after Daniel Mudd became the head of Fannie Mae, Angelo Mozilo, the chief executive of Countrywide Financial, then the country’s biggest mortgage lender and a huge supplier of conforming loans to Fannie Mae, met with Mudd and demanded that Fannie Mae start buying Countrywide’s riskier loans. Otherwise, Mozilo reportedly warned, Countrywide would stop selling its conforming loans to Fannie Mae and instead securitize them on the private-label market. Charles Duhigg, *Pressured to Take More Risk, Fannie Reached Tipping Point*, N.Y. TIMES, Oct. 5, 2008.

Source: Paul Krugman, *Innocent Bystanders*, N.Y. Times, July 14, 2008.

And of course the mortgage product originated, securitized, tranced and rated was associated with high and growing fees. But what of the short and long run risk exposure?

As we have documented, the very process of securitization, in the absence of regulation and in the presence of specific deregulatory steps, allowed all parties in the transactions to gain fees and to put off risks. Originators gained fees but did not hold mortgages, while securitizers, servicers, and trustees in the absence of assignee liability also were protected while booking fees. Rating agencies also gained fees, which at their height, were responsible for a majority of these entities' profits. Investment advisors and managers were able to obtain higher yields on very highly rated bonds, also obtaining higher fees and improved compensation. And investors themselves were able to offload much of the risk to weakly regulated insurers who were happy to issue credit default swaps at little cost.

As lenders raced to the bottom to gain market share, the problem of potential long-run risk exposure was hidden in the short run by higher housing prices, as the higher prices allowed borrowers to avoid default through mortgage refinancings or sales of homes when mortgage payments became unsustainable. But the equally important concealment of risk exposure came about because these mortgages were pooled into complicated securities through a non-transparent process. Thus, after these securities were sold to the secondary market, they remained illiquid in investors' balance sheets. The important question that this illiquidity answers is why did the asset prices of mortgage-backed securities remain elevated at unsustainable levels when the price of risk, that is the price of the mortgage-backed securities, did not reflect the likely future

collapse of housing prices and with that the likely future loss of the collateral which supposedly made these securities bullet-proof?

A. Why and How Illiquidity and the Lack of Transparency Mattered to the Boom and Bust Cycle

Private-label mortgage-backed securities were held in portfolios and were typically not traded; they were not standardized and therefore they could not be traded in a liquid market. In a liquid market, investors are able to express their negative views by short selling, or taking a long position if they believe there is possibility of appreciation. Through this process, fundamental market value is achieved. However, the traditional real estate investment market does not allow for short selling. It is impossible to make a bet that the value of a real estate asset will fall.

This imbalance could be mitigated through short selling of mortgage-backed securities. Short selling would be a market-stabilizing tool if the underlying asset was perceived to be overvalued or the securitized mortgages were too risky. Short selling the mortgage-backed security market would lower the price of these securities, thus raising the cost of the underlying mortgages to the borrower. Furthermore, the higher cost of capital for investors in the underlying real estate would mean that the appreciation of the asset would be dampened.

However, in the private-label market, mortgage debt was securitized in a way that did not allow for short selling. Each mortgage pool was unique making the valuation process by a common metric very complicated. Pricing of pools of mortgages and tranches of diverse pools was extremely difficult. As a result, trading of these non-transparent securities were uncommon and they remained illiquid, priced based on a

mark-to-original model instead of marked-to-market. Only optimists were able to participate in the pricing process. The illiquid asset class of the underlying real estate was augmented by the equally illiquid mortgage-backed security market as prices ticked upward with unchecked pressure.

Although there was no way to short these mortgage-backed securities, there was a way to price a position on the risk of default. For some investors who were exposed to underpriced MBS and who may have indeed been aware of this underpricing, even in the absence of trading opportunities, could protect themselves through credit default swaps. The pricing of CDS could have been a way to keep the upward pressure of MBS prices in check. They could have allowed risk to be allocated to the party best capable of managing it and allow market participants to take a negative position on MBS by increasing the price of the credit protection. However, as we have seen, CDS issuers were under little scrutiny by regulators and were not required to post reserves against the CDS they issued if they were AAA rated. These CDS issuers could recognize the revenues from these issuances immediately and book the return to support their balance sheet.

The main condition of this cycle was that the CDS issuers keep their AAA rating. If this was lost, major issuers would be essentially bankrupt. The price of credit protection was cheap since reserving was not required. In fact, state action to require reserving was countermanded by congressional legislation, as we have seen, and as a result reserving for the “insurance” in fact was not in place. Counterparty risk, that is the risk that insurance would in fact not be paid out in the event of default, had to be perceived to be significant, but the fact that essentially all mortgage securities were backed by such “insurance” also had to be recognized so that, in the hierarchy of all

entities that were possibly too big to fail, the AAA providers of CDS excelled. The issuance of CDS and booking of fees both by the CDS issuers and those “insured” by the CDS, along with the creation of potential losses of such magnitude that the CDS issuers and the insured would have to be rescued, gives rise to moral hazard consequences similar to those posed by deposit insurance in the 1980s savings and loan crisis.

Unfortunately, as with the pricing of mortgages securitized into MBS, a race to the bottom ensued as CDS “protected” players and others fought for market share. For example, if one CDS issuer was overly aggressive in the market, it could and in fact did cause a mass underpricing of risk in the entire market very quickly.⁸⁸ Such underpricing behavior forces a race to the bottom across the lending institutions, with market-wide consequences, when the number of underpricers reaches a critical level. Other companies would face the choice of either lowering the too low cost of the CDS or exiting the growing market.⁸⁹

Underpricing of CDS translates very quickly and directly into underpricing of mortgage loans available for real estate investors and borrowers. In fact, over the 2004–2006 period, the spread of lending rates relative to risk over the risk-free rates declined all while the underwriting standards were deteriorating. This spread decrease is seen in

⁸⁸ In the presence of demand deposit insurance, lending officials of banks have been induced to underprice risk to gain short-term profits. *See, e.g.,* Patricia A. McCoy, *The Moral Hazard Implications of Deposit Insurance: Theory and Evidence*, in 5 CURRENT DEVELOPMENTS IN MONETARY AND FINANCIAL LAW 417, 423 (International Monetary Fund, 2008). *See also* Andrey Pavlov & Susan M. Wachter, *The Inevitability of Market-Wide Underpricing of Mortgage Default Risk*, 34 REAL ESTATE ECON. 479 (2006).

⁸⁹ The longer the underlying real estate cycle, the greater the value of the put option and the elasticity of demand for bank loans and the greater the probability that the market will enter into an equilibrium in which all banks underprice risk. *See* Andrey Pavlov & Susan M. Wachter, *The Inevitability of Market-Wide Underpricing of Mortgage Default Risk*, 34 REAL ESTATE ECON. 479 (2006). Moral hazard and agency issues in the misallocation of risk clearly result from entities that are either government insured or otherwise “too big to fail.”

Figure 3. The column titled WAC represents the weighted average coupons for the mortgages issued in their respective years, while the column titled “Spd to WAC” shows the spread of the coupon over the risk-free rate. During the 2004-2006 period, these spreads decreased by as much as 40%, reflecting the belief that these new subprime and Alt-A loans were becoming relatively safe, causing lenders to become overly comfortable giving out these mortgage loans. This simultaneous deterioration of the lending standards and the cost of lending over the cost of capital for lenders was quickly absorbed by the underlying real estate equity markets through higher asset prices. The higher asset prices were then sustainable only as long as the lending standards and cost of credit stayed at their lows.

B. *Modeling the Effect of Deregulation*

Higher asset pricing came with the underpricing of risk and deterioration in lending standards, which as we have seen were enabled by deregulation and by the lack of regulation in the face of these new instruments. These price rises were not incidental or accidental but the inevitable result of lending standard deterioration with underpricing of risk. In other words, when the risk premium on residential mortgages drops to an artificially low level, that causes the asset price of houses to go up, leading to an asset bubble and creating a breeding ground for market fraud. The result is the consequences of lax lending are covered up, and thus markets are not disciplined by immediate failure.

This can be seen as mathematically so, as demonstrated in Pavlov and Wachter (2008).⁹⁰ Basically, the transaction price of an asset financed through a non-recourse loan is the composite of the fundamental value of the asset, V , the market value of the mortgage loan, M , and the face value of the adjustable rate mortgage loan, B :

$$P = V(\sigma) - M(\sigma, s(\sigma)) + B, \quad (1)$$

where σ denotes the expected future volatility of the asset and s denotes the spread of lending over risk-free interest rates. This spread compensates the lender for the default risk of the mortgage. If this default risk is priced correctly, then the market value and the face value of the mortgage are the same, $M(\sigma, s(\sigma)) = B$, and the transaction price equals the fundamental value of the asset. If the risk of default is underpriced, then the transaction price of the real estate asset reflects not only the fundamental value of the asset, but also the mispricing of the mortgage, $B - M(\sigma, s(\sigma))$. If the market value of the mortgage is below the face value of the mortgage, then the transaction price exceeds the fundamental value of the asset because efficient equity markets take advantage of the mispricing and the asset is assumed to be of fixed supply.

A change in the spread, s , between lending rates of the bank cost of capital may in some cases be a rational response to declines in the volatility of the underlying asset. In this case,

$$\frac{\partial P}{\partial \sigma} = \frac{\partial V}{\partial \sigma} = 0 \quad (2)$$

⁹⁰ Andrey D. Pavlov & Susan M. Wachter, *Mortgage Put Options and Real Estate Markets*, 38 J. REAL ESTATE FINAN. & ECON. 145 (2008).

Since the spread adjusts to compensate the lender for the changes in the value of the put option imbedded in the mortgage loan, $\frac{\partial M}{\partial \sigma} + \frac{\partial M}{\partial s} \frac{\partial s}{\partial \sigma} = 0$. If the change in volatility of the asset is fully diversifiable, then $\frac{\partial V}{\partial \sigma} = 0$. If the increase in volatility affects the covariance of the asset return with the market, then $\frac{\partial V}{\partial \sigma} < 0$, but still relatively small.⁹¹

The response of the asset price to the spread is:

$$\frac{\partial P}{\partial s} = \frac{\partial P / \partial \sigma}{\partial s / \partial \sigma} = \frac{\partial V / \partial \sigma}{\partial s / \partial \sigma} = 0 \quad (3)$$

Therefore, the correlation between transaction prices and lending spread is zero if the increase in asset volatility is diversifiable, and close to zero if it affects the covariance between the asset and the overall market.

If, on the other hand, the spread declines because of underpricing, not in response to changes in expected future asset volatility, the response of the price to the spread is very different:

$$\frac{\partial s}{\partial \sigma} = 0, \quad \frac{\partial V}{\partial s} = 0, \quad \frac{\partial M}{\partial s} > 0, \quad (4)$$

therefore,

⁹¹The price impact of real estate volatility changes through the covariance with the overall market are likely to be far smaller than the impact through changing the value of the option to default.

$$\frac{\partial P}{\partial s} = \frac{\partial V}{\partial s} - \frac{\partial M}{\partial s} = -\frac{\partial M}{\partial s} < 0. \quad (5)$$

In other words, if the decline in the spread of lending rates over the risk-free interest rate is due to lender underpricing of credit risk, asset prices move above fundamental levels.

This asset price bubble, in turn, serves as its own cover-up because rising housing prices enable borrowers who have unaffordable mortgages to avoid default by refinancing their loans. Note that the bubble and cover up are inevitable if misaligned incentives drive the underpricing of the credit risk due to agency conflicts deriving from the moral hazard problem of providing “too big to fail” entities, such as CDS issuers with fee incentives to produce “insurance.” A well-functioning pricing system would have gone a long way toward preventing this, because short-sales by pessimists and realists would have kept prices in check. In the private-label MBS context, however, the pricing system did not work properly because of the absence of deep and liquid secondary markets where private-label securities and CDS could be traded.

VI. Is securitization the problem or the answer? Going forward

There were many benefits to securitization both in the investment and housing markets. However, is properly constructed securitization enough for a sustainable housing finance system? For that to happen, certain conditions must be met. One very important component of any market is liquidity to insure the accurate pricing of securities. In a liquid mortgage market, private-label MBS must be more transparent and as a result, tradable. CDS, the effective short on MBS, must be tradable as well. With

tradable instruments, market participants are able to express their negative view of the value of mortgages and keep valuation in check. On the other hand, if there are participants who are able to circumvent the transparent securitization process, they will gain market share through a system of underpricing. The potential of short-run profits for some short-run maximizers will start a race to the bottom that results in the general underpricing of risk as the housing asset market inflates to unsustainable valuation levels.

Efficient markets don't self-organize: they need to be cued and maintained by regulatory oversight.⁹² Indeed, as the mix of MBS and CDS participants grows larger, there is an increasing need for regulation, due to the incentives to defeat a transparent trading process to earn higher short-run profit. Even in the absence of securitization of mortgage debt, in a bank-based mortgage system and the presence of deposit insurance, lenders will eventually underprice risk through competition and lack of negative correction through market price signals.⁹³ Although it can be difficult to detect mispriced lending in a securitization system, it can be even harder to detect overly aggressive lending practices without securitization vehicles. Prior to the current securitization, crises have arisen when bank-based systems misallocated risk between the mortgages that they issued and the deposit base that capitalized their balance sheets. The savings and loan crisis in the 1980s is a good example of this imbalance, when bank competition pushed lending rates lower and lower as the return banks had to pay depositors increased.

⁹² See, e.g., Robert Ahdieh, *Law's Signal: A Cueing Theory of Law in Market Transition*, 77 SO. CAL. L. REV. 215 (2004).

⁹³ See Andrey Pavlov & Susan M. Wachter, *The Inevitability of Market-Wide Underpricing of Mortgage Default Risk*, 34 REAL ESTATE ECON. 479 (2006). Increased regulation of lenders will help prevent this underpricing. However, there is evidence that lenders will eventually circumvent this regulation through creative lending practices and structuring.

Similar bank decapitalization through aggressive lending happened in Japan in 1992 as well as in the Asian financial crisis of 1997. Currently, Ireland appears to be in the midst of such a crisis.⁹⁴

So if regulation is necessary, in what form will it be most effective? Balance sheet investors of any mortgage related products should be subject to prudential regulation. First, regulation should assure that the balance sheets of mortgage market players are well capitalized. When asset prices are negatively correlated with lending spreads, raising a high probability of underpricing of debt and risk, consideration should be given to instituting “speed bumps” that would require higher minimum capital reserves. Second, statutory product controls on mortgage loans are needed to counter the pro-cyclicality of risk decisions. Unfair and deceptive acts and practices laws, adopted *before* problems emerge and with broader coverage than the 2008 rules adopted by the Federal Reserve Board, would help counteract the pro-cyclical easing of credit standards. Securitizer liability provisions in those laws would provided needed incentives to curb moral hazard by investment banks and other securitizers. Third, regulation should focus on shifting the incentives of market participants, both in compensation structures and contracting devices, to favor the long-term reduction of risk over short-term gains. Finally, creating centralized, standardized markets for the trading of credit default swaps and mortgage-backed securities would facilitate the short selling needed to keep asset prices at fundamental levels.

⁹⁴ See Richard Green, Robert Mariano, Andrey Pavlov, & Susan Wachter, *Misaligned Incentives and Mortgage Lending in Asia*, National Bureau of Economic Research Working Paper 2007. Also see Joe Nocera, *Risk Mismanagement*, N.Y. TIMES MAGAZINE, Jan. 4, 2009.

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Looking forward, neither increased regulation nor transparent securitization alone can sustain stability. Moreover, the moral hazard of institutions that are “too big to fail” vastly increased as a result of this crisis. Many of the banks are still encumbered by securities that are marked to models instead of marked to market. Because marking this mortgage debt down to market prices would put pressure on already decapitalized banks, this has not been done, creating additional moral hazard going forward.

Once banks have shed their legacy debt dating from the height of the credit bubble and modify loans in an economically rational manner, they will begin to serve their purpose again. There will be arbitrage opportunities and opportunities for the reemergence of securitization in this market. However, the steps we have outlined are necessary to move forward into a new economy in a responsible way and to prevent the mistakes of the past.