

THE COMMERCIAL REAL ESTATE BUBBLE

ADAM J. LEVITIN* AND SUSAN M. WACHTER**

ABSTRACT

Two parallel real estate bubbles emerged in the United States between 2004 and 2008, one in residential real estate, the other in commercial real estate. The residential real estate bubble has received a great deal of popular, scholarly, and policy attention. The commercial real estate bubble, in contrast, has largely been ignored.

This Article shows that the commercial real estate price bubble was accompanied by a change in the source of commercial real estate financing. Starting around 1998, securitization became an increasingly significant part of commercial real estate financing. The commercial mortgage securitization market underwent a major shift in 2004, however, as the traditional buyers of subordinated commercial real estate debt were outbid by collateralized debt obligations (CDOs). Savvy, sophisticated, experienced commercial mortgage securitization investors were replaced by investors who merely wanted “product” to securitize. The result was a decline in underwriting standards in commercial mortgage backed securities (CMBS).

The commercial real estate bubble holds important lessons for understanding the residential real estate bubble. Unlike the residential market, there is almost no government involvement in commercial real estate. The existence of the parallel commercial real estate bubble presents a strong challenge to explanations of the residential bubble that focus on government affordable housing policy, the Community Reinvestment Act, and the role of Fannie Mae and Freddie Mac.

TABLE OF CONTENTS

INTRODUCTION	84
I. RESIDENTIAL AND COMMERCIAL REAL ESTATE FINANCING . . .	88
II. THE CHANGE IN CMBS MARKET STRUCTURE	97
III. THE UNDERPRICING OF RISK IN THE CMBS MARKET	104
IV. ALTERNATIVE EXPLANATIONS OF THE CMBS BUBBLE	108
A. <i>Credit Rating Inflation</i>	108
B. <i>Regulatory Capital Arbitrage</i>	110
V. THE REBIRTH OF THE CMBS MARKET	112
CONCLUSION	116

* Bruce W. Nichols Visiting Professor of Law, Harvard Law School; Professor of Law, Georgetown University Law Center. The authors would like to thank Michael Lipson and Sarah Levitin for their comments and encouragement.

** Richard B. Worley Professor of Financial Management, The Wharton School, University of Pennsylvania

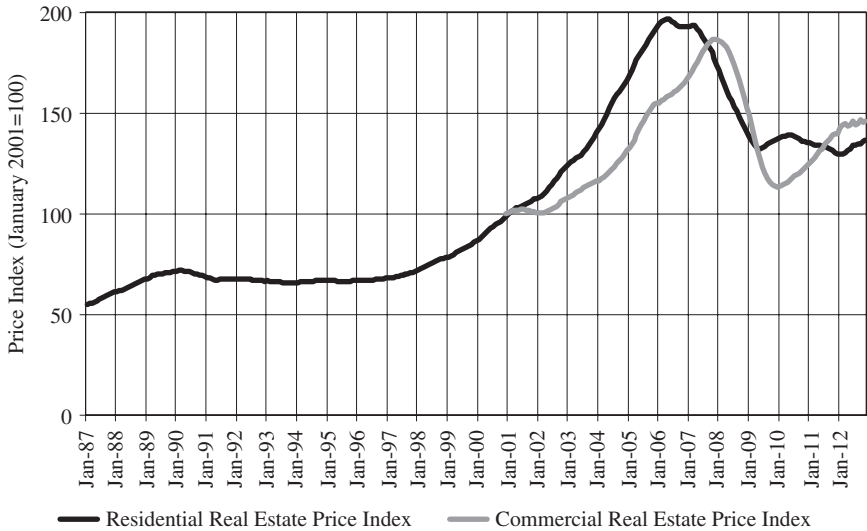
*Double, double toil and trouble
Fire burn, and cauldron bubble.
Macbeth, Act 4, sc. 1, 10–11*

INTRODUCTION

Two parallel real estate price bubbles emerged in the United States between 2004 and 2008, one in residential real estate, the other in commercial real estate.¹ The residential real estate price bubble has attracted a great deal of popular, scholarly, and policy attention.² In contrast, the commercial real estate price bubble and bust have been largely ignored. This Article is the first attempt at a comparative analysis between the commercial real estate price bubble and the residential real estate price bubble.

¹ Regarding the dating of the bubble, see Adam J. Levitin & Susan M. Wachter, *Explaining the Housing Bubble*, 100 GEO. L.J. 1177, 1206–08 (2012). Also, see Figure 1 for more information.

² See, e.g., FIN. CRISIS INQUIRY COMM'N, THE FINANCIAL CRISIS INQUIRY REPORT (2011); THOMAS SOWELL, THE HOUSING BOOM AND BUST (2010); VIRAL V. ACHARYA ET AL., GUARANTEED TO FAIL: FANNIE MAE, FREDDIE MAC, AND THE DEBACLE OF MORTGAGE FINANCE (2011); JAMES R. BARTH ET AL., THE RISE AND FALL OF THE U.S. MORTGAGE AND CREDIT MARKETS (2009); WILLIAM A. GRETCHEN MORGENSEN & JOSHUA ROSNER, RECKLESS ENDANGERMENT: HOW OUTSIZED AMBITION, GREED, AND CORRUPTION LED TO ECONOMIC ARMAGEDDON (2011); WILLIAM A. FREY, WAY TOO BIG TO FAIL: HOW GOVERNMENT AND PRIVATE INDUSTRY CAN BUILD A FAIL-SAFE MORTGAGE SYSTEM (Isaac M. Gradman ed., 2011); ROBERT M. HARDAWAY, THE GREAT AMERICAN HOUSING BUBBLE: THE ROAD TO COLLAPSE (2011); MICHAEL LEWIS, THE BIG SHORT: INSIDE THE DOOMSDAY MACHINE (2011); ADAM MICHAELSON, THE FORECLOSURE OF AMERICA: THE INSIDE STORY OF THE RISE AND FALL OF COUNTRYWIDE HOME LOANS, THE MORTGAGE CRISIS, AND THE DEFAULT OF THE AMERICAN DREAM (2009); BETHANY McLEAN & JOE NOCERA, ALL THE DEVILS ARE HERE: THE HIDDEN HISTORY OF THE FINANCIAL CRISIS (2011); GRETCHEN MORGENSEN & JOSHUA ROSNER, RECKLESS ENDANGERMENT: HOW OUTSIZED AMBITION, GREED, AND CORRUPTION LED TO ECONOMIC ARMAGEDDON (2011); LAWRENCE ROBERTS, THE GREAT HOUSING BUBBLE: WHY DID HOUSE PRICES FALL? (2008); ROBERT J. SHILLER, THE SUBPRIME SOLUTION: HOW TODAY'S GLOBAL FINANCIAL CRISIS HAPPENED, AND WHAT TO DO ABOUT IT (2008); MARK ZANDI, FINANCIAL SHOCK: A 360° LOOK AT THE SUBPRIME MORTGAGE IMPLOSION, AND HOW TO AVOID THE NEXT FINANCIAL CRISIS (2009).

FIGURE 1. COMMERCIAL AND RESIDENTIAL REAL ESTATE BUBBLES³

We show that the commercial real estate price bubble was accompanied by a change in the source of commercial real estate financing. Specifically, a “bubble” in commercial mortgage-backed securities (CMBS) accompanied the commercial real estate price bubble. The majority of commercial real estate (CRE) lending has always been financed by loans retained on banks’ portfolios.⁴ Beginning around 1998, however, a new financing channel for CRE was developing: commercial real estate securitization.⁵ Commercial mortgage securitization involves the pooling of CRE mortgages into an entity that funds the mortgages by issuing debt securities known as CMBS.⁶

CMBS are almost always tranching for credit risk,⁷ meaning that credit losses are allocated in a senior-subordinate structure, with investors in the

³ S&P/Case-Shiller Home Price Index Composite 10, CSXR-SA, S&P DOW JONES INDICES, <http://www.standardandpoors.com/indices/articles/en/us/?articleType=XLS&assetID=1245214507706> (last visited Feb. 8, 2013) (providing the residential real estate price index); *Moody’s/RCA CPPI, National All-Property*, available for download at http://www.rcanalytics.com/Public/rca_indices.aspx (last visited Feb. 8, 2013) (providing the commercial real estate price index).

⁴ BD. OF GOVERNORS OF THE FED. RESERVE SYS., FLOW OF FUNDS ACCOUNTS OF THE UNITED STATES – Z.1, HISTORICAL DATA, OUTSTANDING—UNADJUSTED (IN MILLIONS OF DOLLARS), t. L.220 (2012), available at <http://www.federalreserve.gov/releases/z1/current/z1.pdf> [hereinafter FLOWS OF FUNDS ACCOUNTS HISTORICAL DATA OUTSTANDING UNADJUSTED].

⁵ See FED. RESERVE BD. & SEC. & EXCH. COMM’N, REPORT TO CONGRESS ON MARKETS FOR SMALL-BUSINESS AND COMMERCIAL-MORTGAGE-RELATED SECURITIES 2 (1998), available at <http://www.federalreserve.gov/boarddocs/rptcongress/markets.pdf>.

⁶ See Nicola Cetorelli & Stavos Peristiani, *The Role of Banks in Asset Securitization*, FED. RESERVE BD. N.Y. ECON. POL’Y REV., July 2012, at 47, 48–49.

⁷ *Id.* at 49. Some GSE multifamily CMBS are tranching for credit risk, with the GSEs guaranteeing some tranches, but not others. See, e.g., *Multifamily K Series Certificates*, FREDDIE MAC, <http://www.freddiemac.com/mbs/html/product/kcerts.html> (last visited Dec. 6,

subordinated tranches of the securities taking losses before investors in the senior tranches.⁸ Thus, the first loss credit risk in a CRE securitization rests on the purchasers of the subordinated tranches of debt. The junior-most subordinated tranche is known as the “B-piece,” and B-piece investors receive diligence and control rights that other investors do not.⁹

The sale of the subordinated debt tranches is critical for a CMBS deal. It is comparatively easy to find buyers for the higher-grade senior debt, but unless the subordinated debt can also be sold, the deal’s economics cannot work. The subordinated debt is essentially the “equity” that is then leveraged by the senior debt. Thus, a small subordinated debt investment translates into a much larger CMBS investment in CRE.

Prior to 2004, there was a relatively small cohort of extremely sophisticated and experienced subordinated debt investors and the CMBS market remained limited in size.¹⁰ These subordinated debt investors exerted significant control over the credit risk in deals,¹¹ and their willingness to assume the first loss credit risk functioned as a market regulator of credit risk in the CRE market.

Beginning in 2004, however, the traditional subordinated debt investors began to be outbid by collateralized debt obligations (CDOs). The CDO packagers were not particularly concerned or experienced with CRE credit risk. Instead, they wanted “product” to securitize (in CDOs) and sell. As the savvy, sophisticated traditional B-piece investors were bid out of the market, there was a decline in underwriting standards in commercial real estate as supply rose to meet investor demand for investment-grade rated fixed-income products.¹²

If CMBS are underpriced, it could result in a temporary glut of financing that would enable CRE prices to be bid up beyond the level sustainable by long-run fundamentals. CMBS, however, are not the entirety of the CRE market, and this makes it difficult to state the effect of the CMBS price bubble on the CRE market. Although the percentage of CRE funded by CMBS grew during the bubble, the majority of CRE has been, and continues to be, funded by bank portfolio lending. Bank portfolio CRE lending grew in parallel with CMBS. Therefore, we do not argue that the CRE price bubble was caused by the CMBS bubble.

2012). This is different from the typical GSE MBS in which the GSEs hold all of the credit risk and investors hold the interest rate risk.

⁸ See Certorelli & Peristiani, *supra* note 6, at 49.

⁹ See Andrew V. Petersen, *The Emergence of Subordinated Debt Structures in European CMBS*, in *COMMERCIAL MORTGAGE-BACKED SECURITISATION: DEVELOPMENTS IN THE EUROPEAN CMBS MARKET* 147, 154 (Andrew V. Peterson ed., 2006).

¹⁰ See Brian DiDonato, *High-Yield Debt: Expanded Opportunities for Investors* 3 (Inst. Fiduciary Educ. Paper 2006), <http://www.kaahlsfiles.com/thesis/thesis%20papers/3%20Low/IFE%20High%20Yield%20Debt%20Paper.pdf>.

¹¹ See *id.*

¹² See JAMES D. GRANT, *MR. MARKET MISCALCULATES: THE BUBBLE YEARS AND BEYOND* 184–92 (2008).

While the contemporaneous rise of the CMBS bubble and the CRE price bubble are hard to explain other than through a causal connection, we cannot prove that such a connection exists. We recognize that other factors might have contributed to the CRE price bubble, including structured finance in general, such as the use of collateralized loan obligations (CLOs) to support bank portfolio lending. Yet at the same time, we know that the residential real estate bubble was caused primarily by a financing glut from private-label residential mortgage-backed securities.¹³ Thus, rather than arguing that the CMBS was the cause of the CRE bubble, we suggest that it likely contributed to the CRE bubble.¹⁴

The closely synchronous parallels between the CRE and residential real estate (RRE) bubbles present a conundrum. Despite some shared fundamentals (and market overlap in the area of multi-family residential housing), CRE and RRE have historically been separate markets.¹⁵ Thus, theories of the RRE bubble that point to government intervention in the housing market as the source of the bubble, be it through the Community Reinvestment Act or through affordable housing goals for Fannie Mae and Freddie Mac (the government-sponsored enterprises or GSE),¹⁶ founder on the CRE bubble. There is almost no government involvement in the CRE market, yet a parallel bubble emerged.

The CRE bubble has yet to attract significant scholarly interest. A pair of recent law review articles have discussed what should be done to revitalize the CRE or commercial mortgage securitization markets,¹⁷ but they do not explore the sources of the bubble (which in turn compromises attempts to prescribe market fixes). The most extensive exploration of the CRE bubble, a Congressional Oversight Panel (COP) report, concluded that “faulty” and “dramatically weakened” underwriting standards resulted in “riskier” commercial real estate loans during the mid-2000s.¹⁸ Professor Tanya Marsh,

¹³ Levitin & Wachter, *supra* note 1.

¹⁴ There is insufficient data to test that point. The data are not available for the most obvious test—an examination of the relative CRE price increases in markets in which CMBS played a more or less prominent financing role.

¹⁵ See *Looking For Income? Consider REITs*, FIDELITY (Feb. 29, 2012), <https://www.fidelity.com/viewpoints/reits-tale-two-markets>.

¹⁶ See, e.g., Peter J. Wallison, *Dissenting Statement*, in THE FINANCIAL CRISIS INQUIRY REPORT, at 443, 444–45 (Fin. Crisis Inquiry Comm’n eds., 2011).

¹⁷ See Tanya D. Marsh, *Too Big to Fail vs. Too Small to Notice: Addressing the Commercial Real Estate Debt Crisis*, 63 ALA. L. REV. 321, 380–82 (2012) (discussing policies that could be adopted to address the commercial real estate debt crises); see also Robert A. Brown, *Financial Reform and the Subsidization of Sophisticated Investors’ Ignorance in Securitization Markets*, 7 N.Y.U. J.L. & BUS. 105, 117–121 (2010) (arguing that CMBS deal structures provided CMBS investors significantly greater protections than RMBS investors and that CMBS investors have fared better as a result).

¹⁸ See, CONG. OVERSIGHT PANEL, FEBRUARY OVERSIGHT REPORT: COMMERCIAL REAL ESTATE LOSSES AND THE RISK TO FINANCIAL STABILITY 20, 27–28 (2010), available at <http://cybercemetery.unt.edu/archive/cop/20110402035627/http://cop.senate.gov/documents/cop-021110-report.pdf>. Professor Levitin served as Special Counsel to the Congressional Oversight Panel, but had only tangential involvement with this report.

however, has argued that the COP report “assumes too much,” as its primary evidence are surveys of senior loan officers, which do not provide the granular evidence necessary to conclude that underwriting standards were substantially weakened.¹⁹ Instead, Marsh argues that research needs to examine debt service covenant ratios, reserves, and loan covenants.²⁰

A trio of focused studies by real estate economists Timothy J. Riddiough and Jun Zhu,²¹ Richard Stanton and Nancy Wallace,²² and Andrew Cohen²³ have all separately explored the role of credit rating agencies in the CMBS bubble. While we do not disagree with their assertions of debased CMBS credit ratings in the lead up to the financial crisis, these papers and the literature in general have missed a major institutional market structure shift. In this Article, we explain this shift, which has important implications for the CMBS market going forward.

This Article begins by explaining the differences in the financing of RRE and CRE in Part I. It then turns in Part II to a discussion of the changes in CRE financing and the institutional structure of the CMBS market during the bubble, and in Part III to the decline in CMBS underwriting. Part IV considers alternative explanations of the CMBS bubble. Part V considers why the private-label CRE securitization market has returned, whereas the private-label RRE securitization market remains moribund. Our final section concludes.

I. RESIDENTIAL AND COMMERCIAL REAL ESTATE FINANCING

Real estate is the world’s largest asset class, and real estate investment is typically leveraged. Real estate investors use leverage to boost returns, but also because the purchase and improvement of real estate is a capital-intensive endeavor and investors often do not wish to tie up their liquidity in a single, illiquid asset. Thus, borrowing is at the heart of the real estate market, and real estate borrowing is almost always secured with mortgages on the real estate.

While there are many common characteristics to all real estate lending, there are important distinctions between residential and commercial real estate finance. First, any financing must look at the source of repayment. This varies significantly between RRE and CRE.

¹⁹ Tanya D. Marsh, *Understanding the Commercial Real Estate Debt Crisis*, 1 HARV. BUS. L. REV. ONLINE 33, 37 (2011).

²⁰ *Id.*

²¹ See Timothy J. Riddiough & Jun Zhu, *Shopping, Relationships, and Influence In the Market for Credit Ratings* (Nov. 2009) (unpublished manuscript), available at http://merage.uci.edu/ResearchAndCenters/CRE/Resources/Documents/03%20Riddiough%20CreditRatingsGame_11-09.pdf.

²² See Richard Stanton & Nancy Wallace, *CMBS Subordination, Ratings Inflation, and the Crisis of 2007–2009* (Nat’l Bureau of Econ. Research, Working Paper No. 16206, 2010).

²³ See Andrew Cohen, *Rating Shopping in the CMBS Market* (Oct. 2011) (unpublished manuscript), <http://www.federalreserve.gov/events/conferences/2011/rsr/papers/Cohen.pdf>.

In the U.S., RRE loans are frequently non-recourse as either a *de jure* or a *de facto* matter. This means that the lender is looking first to voluntary payments from the borrower's income and other assets as a source of repayment, but ultimately to the property itself. If the borrower cannot or will not pay the mortgage loan, then the lender's recovery in foreclosure will be the property's value minus transaction costs. Accordingly, RRE underwriting focuses on various debt-to-income (DTI) ratios—ratios that measure the ability of the borrower to service the debt from current income—and the loan-to-value (LTV) ratio—which measures the ability of the property itself as a source of repayment.

CRE loans are almost always nonrecourse, and often made to single-purpose entities formed specifically to hold the real estate, although they are sometimes supported by guarantees from third parties, including personal guarantees from the property owner. The repayment source for CRE loans differs, however, from RRE loans. CRE loans are for income-producing properties, whereas RRE loans (other than loans to small landlords with 1–4 family properties) are not for income-producing properties.²⁴ This Article does not consider the financing of multi-family properties (defined as housing more than five families); although securities backed by multi-family properties are considered CMBS, they are a separate and distinct submarket with a different cast of institutional players.

Thus, whereas voluntary payments on RRE loans come first from the personal income and assets of the owner *unrelated to the property*, a CRE loan is typically financed based on the *rents from the property*. In the case of a loan made to a single-purpose entity borrower that is merely a shell holding company for the real estate, there is no income unrelated to rents from the property. This means that a CRE lender is concerned not just about DTI and LTV ratios for its underwriting, but also about the debt service coverage ratio (DSCR)—the ratio of rents from the property to mortgage payments.

Nonrecourse RRE and CRE lending has an implicit “put option” for the borrower included in the loan. The borrower may satisfy the debt by surrendering the property to the lender. This is the equivalent of a “put option” to repurchase the loan, with the strike price being the value of the property. The option is only “in the money” if the property is worth less than the amount owed on the loan (the LTV > 100%), meaning that the property is “upside down” or “underwater” or that there is “negative equity.”

Different factors may mitigate against strategic use of this put option in RRE and CRE. In the RRE context, the property being the borrower's residence as well as an investment serves as a major deterrent against exercising the “put option” through “jingle mail” or “strategic default.” Residential real estate is both an investment and a consumable, and the transaction costs combined with idiosyncratic preferences for particular residences serve as

²⁴ See Charles C. Tu & Mark J. Eppli, *Term Default, Balloon Risk, and Credit Risk in Commercial Mortgages*, J. FIXED INCOME, Dec. 2003, at 42.

strong counterweights to strategic default.²⁵ RRE borrowers also benefit from the fact that mortgage interest on some RRE loans is tax deductible up to \$1,000,000.²⁶ Additionally, consumer credit reporting acts as a disincentive for strategically defaulting in the residential context.²⁷ For CRE, consumption value is rarely a factor (although sometimes CRE borrowers will use the CRE themselves), but personal or third party guarantees may serve as a disincentive to strategically default.

Not only do the repayment sources and use of properties vary between RRE and CRE, but so too does financing. RRE loans tend to be *much* smaller than CRE loans since the value of a residence is typically less than for an office building, for example. A typical RRE loan is for \$200,000, while CRE loans start in the millions and can be for tens of millions or even more for unusual marquee properties. The larger size of CRE loans means that there is greater credit risk exposure on any single property, which affects CMBS securitization structures, as explained below in Part II.

Furthermore, lenders' exposure to interest rate risk differs between RRE and CRE. RRE loans tend to have longer terms than CRE loans. Whereas RRE loans are often for terms of 15–30 years, the standard CRE loan has a 10-year term,²⁸ and longer CRE loans are uncommon. RRE loans are typically fully amortized, while CRE loans are rarely fully amortized.²⁹ CRE loans are either interest-only, with a balloon payment of principal upon maturity or are partially amortized with an amortization period longer than the term of the loan, such as a "10/25," which has a 10-year term and a 25-year amortization, meaning that there is a balloon payment of part of the principal due at maturity.³⁰ Although a sinking fund can be used to accumulate principal for the balloon payment, CRE loans are often intended to be rolled over or refinanced when their terms expire.

In the U.S., RRE loans can usually be easily refinanced or prepaid because they are commonly fixed-rate loans with no prepayment penalties. This means that for most RRE loans, the lender bears the interest rate risk. If rates go up, the lender is stuck holding a below-market rate asset. If rates go down, the borrower will refinance into a market rate product.

²⁵ Strategic default (also known as "ruthless default") means that the homeowner exercises the "put option" implicit in a non-recourse mortgage by abandoning the property to the lender when the put option becomes "in the money" because the loan is "underwater" meaning that the property securing the loan is worth less than the unpaid balance on the loan.

²⁶ 26 U.S.C. § 163(h)(ii) (2006) (permitting tax deduction of interest paid on home mortgages of up to \$1 million).

²⁷ *Credit Reports and Credit Scores*, BD. OF GOVERNORS OF THE FED. RESERVE SYS., <http://www.federalreserve.gov/creditreports/> (last visited Feb. 5, 2013).

²⁸ See Sheridan Titman, Stathis Tompaidis & Sergey Tsyplakov, *Determinants of Credit Spreads in Commercial Mortgages*, 33 REAL ESTATE ECON. 711, 717 (2005).

²⁹ See Tu & Eppli, *supra* note 24, at 42–43.

³⁰ *Id.*

CRE loans are also usually fixed-rate loans,³¹ but CRE loans typically have some sort of prepayment penalty,³² yield maintenance clause,³³ lock-out provision,³⁴ or defeasance term³⁵ that prevents or discourages refinancing if interest rates fall. Moreover, the relatively short term of CRE loans reduces interest rate risk. Thus, CRE lenders have much less exposure to interest rate risk than RRE lenders. They may end up holding an asset with a below-market rate, but they will not lose their above-market rate assets to refinancing. As we explain in Part II below, this means that CMBS securitization structures are focused solely on credit risk.

Residential loans are financed primarily through securitization. 62% of residential mortgages by dollar volume are securitized,³⁶ but securitization rates have been above 80% in recent years.³⁷ Even this figure understates the importance of securitization for RRE finance, as it includes “jumbo” loans and second lien loans that do not qualify for purchase by government-sponsored entities or for FHA-insurance and therefore are securitized at substantially lower rates.³⁸

³¹ Andreas D. Christopoulos, Robert A. Jarrow & Yildiray Yildirim, *Commercial Mortgage-Backed Securities (CMBS) and Market Efficiency with Respect to Costly Information*, 36 REAL ESTATE ECON. 441, 445 (2008).

³² *Id.* A prepayment penalty permits prepayment, but requires an additional penalty payment for prepaying.

³³ A yield maintenance clause permits prepayment, but requires a prepayment penalty such that the yield received to maturity by the lender is not affected.

³⁴ A lock-out provision prohibits prepayment for a certain term.

³⁵ Defeasance is a procedure for permitting the exchange of collateral. See Megan W. Murray, Note, *Prepayment Premiums: Contracting for Future Financial Stability in the Commercial Lending Market*, 96 IOWA L. REV. 1037, 1053–54 (2011). In a typical defeasance situation, the borrower wishes to sell the mortgaged property. Because of a due-on-sale clause in the mortgage, this sale would trigger a prepayment. For Real Estate Mortgage Investment Companies (REMICs) this presents a particular problem because any prepayment must be distributed to the REMIC investors; it cannot be held and reinvested by the REMIC. See 26 U.S.C. § 860G(a)(5)–(6) (2006) (defining a REMIC “permitted investment” to include a “cash flow investment” and then defining “cash flow investment” as “any investment of amounts received under qualified mortgages for a temporary period before distribution to holders of interests in the REMIC. . . .”) (emphasis added); see also 26 C.F.R. § 1.860G-2(8)(g) (2006).

The REMIC tax rules, however, permit the borrower to substitute alternative collateral of government securities for the real estate collateral if the mortgage documents permit such a substitution. See 26 C.F.R. § 1.860G-2(a)(8)(ii)(A)–(D). The purpose is to facilitate a sale of the property rather than to collateralize the REMIC with non-qualified property types, and the defeasance occurs after two years from the REMIC’s start-up date. *Id.* Thus, the mortgage lien on the real estate is cancelled, but the mortgage note remains outstanding and is paid through the cash flow on government securities. For more on REMIC rules see *infra* note 51.

³⁶ INSIDE MORTGAGE FINANCE, 2011 MORTGAGE MARKET STATISTICAL ANNUAL (2011).

³⁷ *Id.*

³⁸ *Id.* The RRE financing market has been undergoing significant changes over the past two decades. Prior to the 1990s, most RRE loans were held in portfolio by their originating lenders, with a significant minority securitized through government-sponsored entities Fannie Mae and Freddie Mac or the government agency Ginnie Mae (for FHA-insured and VA-guaranteed loans). See Patricia A. McCoy, Andrey D. Pavlov & Susan M. Wachter, *Systemic Risk Through Securitization: The Result of Deregulation and Regulatory Failure*, 41 CONN. L. REV. 493, 501–03 (2009). The Savings and Loan (S&L) crisis highlighted the interest rate risks for depositories funding long-term, fixed-rate assets like mortgages through short-term, flighty

The majority of CRE remains financed through portfolio lenders. Approximately 80% of CRE (excluding multifamily residential CRE) debt is currently held in portfolio, rather than securitized.³⁹ Depositories, particularly commercial banks dominate the CRE market, holding roughly half of all CRE debt.⁴⁰ Life insurance companies also play a major role in CRE portfolio lending, holding approximately 10% of CRE debt outstanding.⁴¹ The GSEs hold significant CRE in their own portfolios, but it is exclusively multi-family housing; they do not purchase mortgages backed by office, industrial, retail, or hospitality properties.

As Figure 2 shows, however, an increasingly large share of commercial real estate debt is now financed through commercial mortgage backed securities (CMBS). The issuance of CMBS began gingerly with the Resolution Trust Corporation's efforts to dispose of the assets of failed thrifts.⁴² The RTC began to securitize the failed S&Ls' CRE portfolios in the mid-1990s.⁴³ The success of the RTC securitizations showed that a market could work in CMBS and soon private CMBS deals were being done.⁴⁴ By 2007, CMBS accounted for 26% of CRE debt outstanding and 46% of CRE debt originated in 2007.⁴⁵

liabilities like deposits. *Id.* As interest rates rose in the late 1970s, S&Ls had to offer increasingly high rates to their depositors. See Richard Green et al., *Misaligned Incentives and Mortgage Lending in Asia* 6–7 (Univ. of Pa. Law Sch. Inst. for Law & Econ., Research Paper No. 08-27, 2008), available at <http://ssrn.com/abstract=1287687#>. Yet the S&Ls' primary assets were long-term, fixed-rate mortgages. *Id.* As a result, the S&Ls found themselves paying higher rates than they were earning and were rapidly decapitalized. See McCoy et al., *supra*, at 540.

The mortgage market responded to the problem of rising interest rates in two ways. First, adjustable-rate mortgages became more prevalent, particularly in light of regulatory changes making it possible for federally-chartered banks and S&Ls to issue adjustable-rate obligations. See *id.* at 502. Adjustable-rate mortgages, however, merely transfer interest rate risk from the lender to the borrower, which limits their popularity with consumers because consumers are ill-equipped to handle interest rate risk.

The second response was a shift in mortgage financing away from depositaries and toward securitization. See *id.* at 495–96. Securitization of fixed-rate mortgages places the interest rate risk on mortgage-backed securities investors, who are often better able to match asset and liability durations than depositaries. Until the mid-1990s almost all residential mortgage securitization was done by Fannie Mae, Freddie Mac, and Ginnie Mae; there was only a small private-label securitization market in ultra-prime “jumbo” mortgages. See *id.* at 496–97. The growth and profitability of the real estate securitization market in the 1980s and early 1990s, however, encouraged the entry of private financial institutions, which focused on the riskier subprime market.

³⁹ FLOWS OF FUNDS ACCOUNTS HISTORICAL DATA OUTSTANDING UNADJUSTED, *supra* note 4, at t. F.220.

⁴⁰ *Id.*

⁴¹ *Id.*

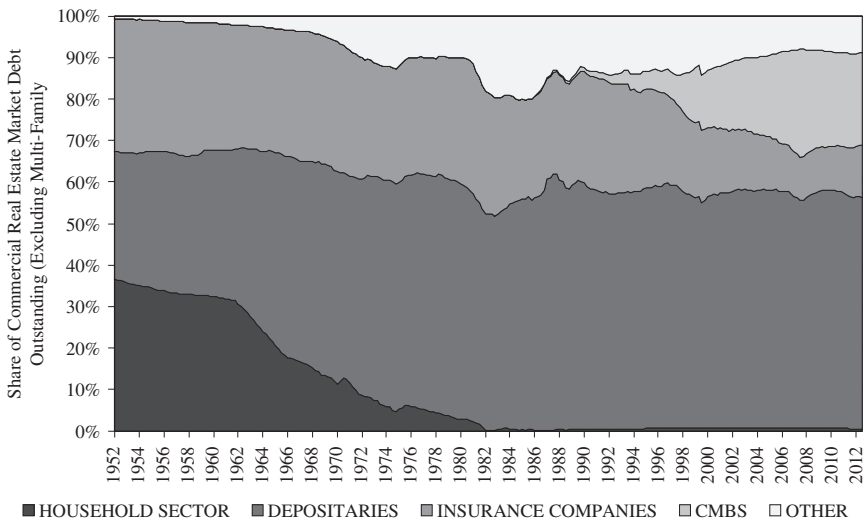
⁴² Andreas D. Christopoulos, Robert A. Jarrow & Yildiray Yildirim, *Commercial Mortgage-Backed Securities (CMBS) and Market Efficiency with Respect to Costly Information*, 36 REAL ESTATE ECON. 441, 441 (2008).

⁴³ *Id.*

⁴⁴ See *id.*

⁴⁵ FLOWS OF FUNDS ACCOUNTS HISTORICAL DATA OUTSTANDING UNADJUSTED, *supra* note 4, at t. F.220.

FIGURE 2. MARKET SHARE OF OUTSTANDING COMMERCIAL REAL ESTATE FINANCING (MULTI-FAMILY EXCLUDED) BY FINANCING CHANNEL⁴⁶



The properties supporting CMBS are much more geographically concentrated than those supporting RMBS. CMBS are backed by properties from roughly sixty major urban markets—markets that are large enough to provide sufficient comparable properties for appraisal purposes. Thus, for these sixty or so markets, CMBS plays a proportionally greater financing role, meaning that the above figures understate the importance of the CMBS financing channel in certain markets. Publicly available market-specific data on financing channels does not exist, but CMBS is focused on these larger markets where information on factors like vacancy rates, market demand (absorption rates) are available.

Also, unlike the RMBS market, the CMBS market is almost entirely private-label securitization. (See Figures 3 and 4 below.) The sole CRE securitized by the GSEs or guaranteed by Ginnie Mae are multi-family residences, and the GSEs and Ginnie Mae account for the majority of multi-family-backed CMBS.⁴⁷ The CMBS market for other CRE property classes such as industrial, retail, office, and hospitality, is financed solely by the private market.

⁴⁶ *Id.* at t. L.220 (“Other” includes finance companies, nonfinancial corporate businesses, and nonfarm noncorporate businesses, GSEs, pension plans, government, REITs, and finance companies) (multi-family properties are excluded).

⁴⁷ *Id.* at t. L.219 (multifamily mortgages).

FIGURE 3. NUMBER OF CMBS DEALS (INCLUDING MULTIFAMILY) ANNUALLY⁴⁸

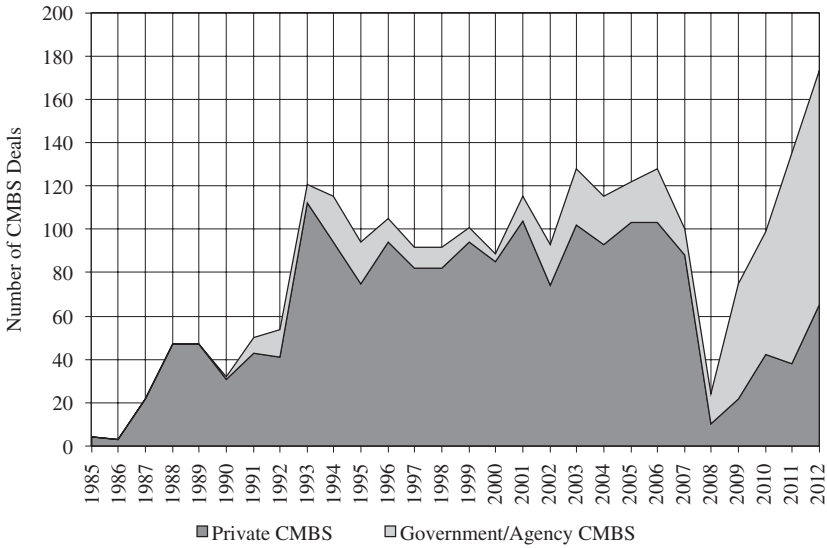
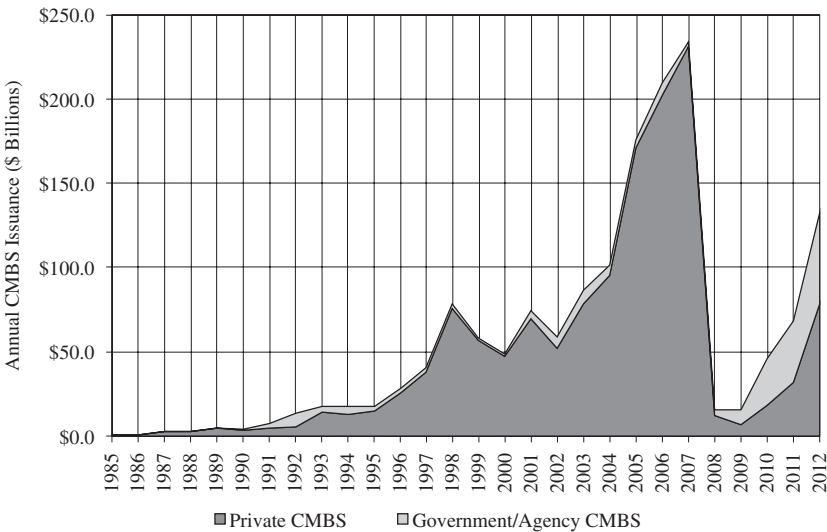


FIGURE 4. TOTAL CMBS DOLLAR VOLUME ISSUANCE ANNUALLY (INCLUDING MULTIFAMILY)⁴⁹



⁴⁸ CMBS Database, COMMERCIAL MORTGAGE ALERT, http://www.cmalert.com/about_cmbs.php.

⁴⁹ *Id.*

CMBS are one of the simplest securitization structures, as they usually feature no internal credit enhancements other than the senior-subordinate structure of the tranches. Internal credit enhancements commonly found in RMBS such as excess spread or over-collateralization are extremely rare in CMBS.⁵⁰

The vast majority of CMBS is comprised of loans that are originated with an eye toward securitization, known as “conduit” loans.⁵¹ Some loans

⁵⁰ See Cohen, *supra* note 23.

⁵¹ CMBS are almost always structured for pass-through federal tax status as Real Estate Mortgage Investment Conduits (REMICs). See 26 U.S.C. §§ 160–160G (2006). Accordingly, CRE loans originated with an eye toward securitization are known as “conduit loans,” and CRE lenders who intend to securitize the loans they make, rather than hold them in portfolio, are known as “conduit lenders”. (A few CMBS have been structured as Financial Asset Securitization Investment Trusts (FASITs), another type of pass-through federal tax structure, authorization for which has since been repealed, in part because this structure never found favor in CMBS or any other type of securitization.) See STEVE BERGSMAN, MAVERICK REAL ESTATE FINANCING: THE ART OF RAISING CAPITAL AND OWNING PROPERTIES LIKE ROSS, SANDERS AND CAREY 49–51 (2006).

REMIC status means that the securitization vehicle (referred to as “the REMIC”) that elects for REMIC treatment is generally not taxed on the income it collects from the loans it owns. See ALSTON & BIRD LLP, REMIC TAX CONCERNS SURROUNDING FORECLOSURES 2 (2012), available at <http://www.alston.com/Files/Publication/94d73e69-1d90-4357-ae25-56e43c20a17b/Presentation/PublicationAttachment/6e513286-604a-41f4-9d2b-5713fec83da/12-146%20Tax%20Concerns%20Foreclosures.pdf>. Instead, there is only a single level of taxation, on the CMBS investors for the income they receive on the CMBS. The tax-advantaged REMIC status is critical to the economics of CMBS; without pass-through tax status, the post-tax yields on CMBS would be unappealingly low.

The structure of CMBS deals and indeed the underlying loans is heavily shaped by the need to qualify for REMIC status. The REMIC rules place limits on how CMBS securities may be structured, what the collateral in a CMBS deal may be, limits on the modification of the terms of the collateral loans, and restrictions on when the tax-privileged vehicle may acquire and dispose of property.

A REMIC may have only one class of “residual interests,” 26 U.S.C. § 860D(a)(2)–(3), which means anything other type of interest than one which pays a specified principal amount, 26 U.S.C. §§ 860G(a)–(b), and the residual interest must pay out pro rata, 26 U.S.C. § 860D(a)(3). This restricts the ability to structure REMICs’ residual interests. REMIC status does not mandate the use of a particular type of entity, and CMBS employ a variety of entities, including corporations (with a mandatory independent director and unanimity requirement for bankruptcy filing), limited partnerships (with an SPE as the general partner to avoid the risk of dissolution upon the general partner’s bankruptcy under the Revised Uniform Limited Partnership Act), limited liability companies (again with an SPE as a member) and trusts. See *U.S. CMBS Legal and Structured Finance Criteria: Special-Purpose Bankruptcy-Remote Entities*, STANDARD & POORS (May 1, 2003), <http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245319379077>. This contrasts with RMBS, where the trust form is almost always used. CMBS often eschews the trust form because of the desire to have more active management involvement than is possible with a trust.

A REMIC’s assets must be principally secured by a real estate interest, 26 U.S.C. § 860D(a)(4), which IRS regulations have defined as being at 125% LTV or lower. 26 C.F.R. § 1.860G-2(a)(1) (capping value to loan ratios for REMIC eligible assets at 80%, which is 125% loan-to-value). These assets may include mortgages, deeds of trust or participation certificates in pools of mortgage pass-throughs. 26 C.F.R. § 1.860G-2(a)(5).

While not required by REMIC rules, CMBS conduit loans are almost always first-lien loans (including credit tenant leases—loans secured by both the property and the rents from the property’s tenants). While second liens are done in CRE financing, the more common form of second lien financing is the mezzanine loan. A mezzanine loan is a loan secured not by the property itself, but by the equity of the company that holds the equity interest in the property,

in CMBS are not originated with securitization in mind; they were intended to be portfolio loans that were subsequently securitized because the lender had liquidity or regulatory capital needs or simply saw a favorable market opportunity.⁵² While the percentage of deals with originated-for-securitization (OFS⁵³) collateral has been above 70% since 1998, it increased between 2004 and 2008—the years of the bubble—to 90%. (See Figure 5.)

typically an LLC. Mark S. Fawer & Michael J. Waters, *Mezzanine Loans and the Intercreditor Agreement: Not Etched in Stone*, REAL ESTATE FIN. J., Spring 2007, at 79, 80. The advantage to this arrangement is that it permits much faster foreclosure, as the LLC interests are personal and thus foreclosed on through Uniform Commercial Code (UCC) procedures, rather than through real estate law. *Id.* at 81. A UCC foreclosure can occur in a matter of weeks, whereas a real estate foreclosure may take months or years. *See id.* Mezzanine loans are typically used to finance new construction, to fund the purchase of underperforming properties on the assumption that higher occupancy rates and thus cash flows are possible, and as a means by which equity-holders can cash out their equity in REMIC properties where prepayment is not feasible because of penalties, yield maintenance, lockout, or defeasance clauses.

The basic idea behind a REMIC's pass-through tax status is that the REMIC is a passive holding shell for mortgages. Accordingly, REMICs are restricted in their ability to acquire, modify and dispose of mortgages. REMICs must acquire their assets on or within 3 months of their startup date, meaning the date on which the REMIC issues its securities, 26 U.S.C. § 860G(a)(3), (9) (defining "qualified mortgage" and "startup date"), unless the asset is a "qualified replacement mortgage" which must be received within 2 years of the REMIC's startup date. 26 U.S.C. § 860G(a)(4). This prevents REMICs from acting as mortgage investment firms. (*See also* Murray, *supra* note 35, on defeasance restrictions for REMICs.) Similarly, REMICs are subject to a punitive 100% tax on all net income from prohibited transactions, which includes any disposal of a mortgage not "incident to the foreclosure, default, or imminent default of the mortgage." 26 U.S.C. § 860F(a)(2)(A)(ii). Likewise, REMICs are restricted in their ability to modify mortgages without the modification being treated as a prohibited transaction, subject to the punitive taxation. 26 C.F.R. § 1.860G-2(b). A major exception is for modification of mortgages where the "[c]hanges in the terms of the obligation [are] occasioned by default or a reasonably foreseeable default." 26 C.F.R. § 1.860G-2(b)(3)(i).

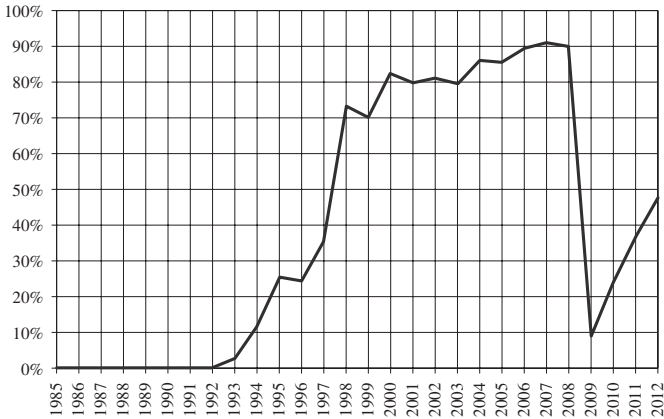
Conduit lenders do hold some risk on the CMBS loans. First, they have warehouse risk, meaning that they are exposed to the performance of the loan between the time of origination and the time of securitization. If the market freezes or it is not possible to securitize the loan for some reason, the conduit lender will be forced to retain the loan. This can be particularly problematic for conduit lenders that funded the loan using a warehouse line of credit; the inability to sell the loan into the securitization market means that the conduit lender cannot repay its warehouse line of credit and will see its financing costs increase.

Conduit lenders also hold risk on the loans they securitize in the form of the representations and warranties they make about the loans in the securitization process. If the representations and warranties are violated, the conduit lender may be required to repurchase the loan from the securitization pool, which place both a liquidity strain on the conduit lender and exposes the conduit lender to the loan's performance going forward.

⁵² The original CMBS securitizations by the Resolution Trust Corporation all involved loans that had originally been in the portfolios of failed banks.

⁵³ For more information on OFS collateral in CMBS, see Xudong An, Yongheng Deng & Stuart A. Gabriel, *Asymmetric Information, Adverse Selection and the Pricing of CMBS 28–29* (Jan. 29, 2010) (unpublished manuscript), available at <http://merage.uci.edu/ResearchAndCenters/CRE/Resources/Documents/01-%20Gabriel-An-Deng%20Asymmetric%20Paper.pdf> (finding that OFS loans are priced to include a "lemons discount").

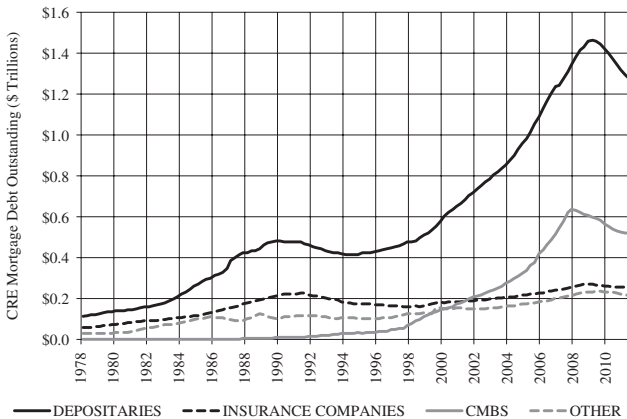
FIGURE 5. PERCENTAGE OF CMBS DEALS WITH ORIGINATED-FOR-SECURITIZATION (OFS) COLLATERAL⁵⁴



II. THE CHANGE IN CMBS MARKET STRUCTURE

There was a dramatic growth in the CMBS market in the decade from 1998 to 2007.⁵⁵ During this decade, the CMBS market not only grew in size; it also witnessed a dramatic change in the identity of its participants.

FIGURE 6. MARKET SHARE OF OUTSTANDING COMMERCIAL REAL ESTATE FINANCING BY FINANCING CHANNEL⁵⁶



⁵⁴ CMBS Database, *supra* note 48 (authors’ calculation).

⁵⁵ See Figure 6, *infra*.

⁵⁶ FLOWS OF FUNDS ACCOUNTS HISTORICAL DATA OUTSTANDING UNADJUSTED, *supra* note 4, at L. 220 (commercial mortgages). “Other” includes finance companies, nonfinancial corporate businesses, and nonfarm non-corporate businesses, GSEs, pension plans, government, REITs, and finance companies. Multi-family properties are excluded.

Historically, CMBS were focused on credit risk because CMBS are prone to idiosyncratic default risk—the risk of major loss because of a small number of loan defaults.⁵⁷ In contrast to RMBS, CMBS pools feature small numbers of loans with large balances.⁵⁸ Whereas an RMBS issuance will be backed by a pool of thousands of properties, a CMBS pool will be backed by dozens or hundreds or sometimes even a single property.⁵⁹ Therefore, in a CMBS pool, the relative importance of any particular property’s performance is much greater than in an RMBS pool, where idiosyncratic default risk is largely eliminated through diversification.

CMBS’s concern about credit risk has resulted in a very different deal structure than in RMBS. A CMBS deal is divided into two parts, an “A-piece” and a “B-piece.”⁶⁰ The A-piece consists of the investment-grade tranches, whereas the B-piece consists of the subordinated, non-investment-grade tranches.⁶¹ Because credit risk is concentrated on the B-piece, CMBS deals provide special rights and protections to B-piece investors, beginning in the origination process.⁶²

After a pool of commercial real estate mortgages is created, the CMBS deal sponsor presents the pool to rating agencies to get a sense of what the rating will be given particular structures and credit enhancements.⁶³ Next the pool is presented for bidding to B-piece investors.⁶⁴ The winning bidder performs additional diligence on the pool.⁶⁵ As the result of the diligence, the B-piece investor will sometime insist on “kickouts”—the removal of particular

⁵⁷ *CMBS Pricing*, TREPP, http://www.trepp.com/templ_a.cgi?whichTrepp=m&cmbs_product=pricing (“In the RMBS universe, credit concerns are dwarfed by interest rate risk considerations. In the CMBS universe, however, the opposite is true. Credit risk dominates the analytical process in CMBS as interest rate sensitivity, while still relevant, is of secondary concern.”). RMBS investors have historically been more focused on interest rate risk, which is a much smaller concern for CMBS investors. CMBS have little prepayment risk because most CRE loans have prepayment penalties, yield maintenance, or defeasance provisions that make refinancing impractical. See FRANK J. FABOZZI, *FIXED INCOME ANALYSIS 300* (2nd ed. 2007). Instead, their prepayment characteristics are similar to corporate bonds. *Id.*

⁵⁸ Patrick Corcoran & Joshua Phillips, *Floating Rate Commercial Mortgage-Backed Securities*, CMBS WORLD, Summer 2000, at 14, 15.

⁵⁹ The median (mean) number of properties in a U.S.-denominated CMBS deal with US collateral is 99 (130), and the median (mean) number of loans of is 53 (119) with median (mean) loan size of \$6.62 million (\$6.19 million). *CMBS Database*, *supra* note 48 (authors’ calculations). The typical US residential mortgage loan is for about \$200,000. *Id.*

⁶⁰ See Kenneth J. Cusick, *Understanding CMBS: A Borrower’s Handbook*, CUSICK FINANCIAL 3 (2009), available at <http://www.cusickfinancial.com/Borrower's%20CMBS%20Handbook.pdf>.

⁶¹ *See id.*

⁶² See Larry Cordell & Adam J. Levitin, *What RMBS Servicing Can Learn from CMBS Servicing* (Geo. Law & Econ. Research Paper, 2010), available at <http://ssrn.com/abstract=1640326>.

⁶³ CW Capital Investments, *The Evolution of the CMBS Market*, Powerpoint Slides for a presentation at the CRE Annual Convention, Maui, Hawaii, slide 11 (October 23–26, 2006), http://www.cre.org/images/events/hawaii_06/presentations/hawaii_06_silva.ppt.

⁶⁴ *Id.*

⁶⁵ *Id.*

loans from the pool.⁶⁶ Once negotiations with the B-piece investor are finalized, the deal is presented to the rating agencies for rating, and once the bonds are rated, the prospectus for the investment grade (A-piece) is circulated to investors.⁶⁷

Before 2004, there were only a small number of B-piece investors. This meant that they could exert significant market power and insist on kickouts for any properties with which they were uncomfortable. Kickouts are expensive for CMBS deal sponsors, typically investment banks that are borrowing money on warehouse lines from commercial banks to finance the purchase of CRE loans that they are pooling for securitization. If a property is kicked out of a deal, the deal sponsor will have to continue to hold that property itself, which means the sponsor is left financing a lemon. The risk of kickouts thus led CMBS deal sponsors to be careful in their selection of properties for pools, which meant that riskier CRE ventures did not get securitized. Because riskier ventures were consigned to balance sheet lending, underwriting standards retained discipline. The strength of subordinate lenders in the CMBS market kept underwriting standards in check.⁶⁸

This market equilibrium changed in 2004, as the B-piece market dramatically expanded with the maturation of the CDO market for CRE.⁶⁹ As a real estate investment trust (REIT) noted in a 2004 letter to investors:

The flurry of new entrants and the emergence of improved CDO technology have dramatically changed the dynamics of B-Piece acquisition. The norm for a B-Piece investor has changed from a buy-and-hold mentality to a CDO warehouse mentality. Many B-Piece investors are aggressively pursuing product with the intent of aggregating it for resale in the form of a CDO. This factor has changed the focus on subordination levels, credit quality, and required yields from appropriate long-term risk-return balancing from a real estate perspective to that of short-term stability until CDO execution. Between the high CDO proceeds (and don't forget who is buying those bonds) and the fees from special servicing and

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ See *The Evolution of Commercial Real Estate (CRE) CDOs*, NOMURA FIXED INCOME RES. (Jan. 4, 2006), http://www.securitization.net/pdf/Nomura/CRE-CDO_4Jan06.pdf (“Subordinate lenders often exercise great influence on the fortune of troubled CRE loans, and the involvement of commercial real estate experts also benefits other CDO investors.”).

⁶⁹ See *id.* at 1. CRE CDOs had existed since 1999. *Id.* Originally they were created to provide “long-term, non-mark-to-market financing for CMBS B-piece buyers.” See *id.* (“Since the early days, the primary motivation of CRE CDOs has been the financing needs of B-piece buyers and special servicers, who have extensive experience in the commercial real estate market.”). The first CRE CDOs were liquidity provision mechanisms for B-piece buyers, not a source of market demand for CRE assets in their own right. The line between providing spot liquidity and becoming a liquidity spigot for the entire market is a fine one, however. Put differently, too much liquidity is no longer liquidity—it’s a credit bubble bath.

asset management, the B-Piece investors have very low basis in their interests—no investment at risk.⁷⁰

CDOs represented not only a problem of non-expert CRE investors entering the market, but also a separate agency problem, in that the incentives of CDO managers do not track those of CDO investors.⁷¹ Agency problems are

⁷⁰ ARCap, REIT, Inc. *An Open Letter to Investment Grade Investors: Buyer Beware* 1, 2 The B-Piece 1 (Oct. 2004) (on file with the Harvard Business Law Review).

⁷¹ CDO managers are compensated through two separate management fees, a senior and a subordinated fee. See Douglas J. Lucas, Laurie Goodman & Frank Fabozzi, *Collateralized Debt Obligations and Credit Risk Transfer* 7, (Yale Int'l Ctr. For Fin., Working Paper No. 07-06, 2007), <http://ssrn.com/abstract=997276>. The senior fee is paid at the top of the cash flow waterfall, before any of the investors in the CDO receive payment. See *id.* The subordinated fee is paid after all of the investors other than the “equity tranche” are paid. See *id.* It is the junior most “debt” tranche in the CDO. See *id.* The subordinated fee portion is typically twice the size of the senior fee portion. Manual Arrive & Pablo Mazzini, *Outlook on the CLO Manager Landscape: Features of the Survivors*, THE HEDGE FUND J. (Oct. 2008), <http://www.thehedgefundjournal.com/magazine/200810/research/outlook-on-the-clo-manager-landscape-.php>. (in Europe the term CLO (collateralized loan obligation) is often used for CDO, rather than in its American usage which denotes a securitization of corporate loans).

The fees are based on assets under management, but because of their structuring, the subordinated fee depends on both assets under management and the CDO's performance; if the CDO performs poorly, the subordinated fee will be too far down in the cash flow waterfall to receive a recovery. The belief was that keeping the majority of CDO manager compensation in a subordinated fee would align the CDO manager's incentives with those of the CDO investors. RICK WATSON & JEREMY CARTER, *ASSET SECURITISATION AND SYNTHETIC STRUCTURES: INNOVATIONS IN THE EUROPEAN CREDIT MARKETS* 189 (2006).

In fact, this fee structure encourages CDO managers to (1) maximize assets under management and (2) maximize the short-term return on those assets, even at the expense of long-term performance. While the senior/subordinate structure of CDO managers' fees has some resemblance to that of B-piece investor/special servicers for commercial mortgage-backed securities, it does not fully align the CDO manager's interests with those of investors, the way a “horizontal” tranche that would take a pro rata recovery on all assets in the CDO would do. First, if the CDO manager's fee level is high enough, the CDO manager may be content leaving money on the table in the form of the subordinated tranche; the CDO manager may be making enough money from the senior fee, that income from the subordinated tranche is irrelevant. This appears to have been the case with the infamous CDO manager Wing Chau, memorably described in Michael Lewis' *The Big Short*. See LEWIS, *supra* note 2, at 138–43.

Second, this structure does not compensate the CDO manager based on the ultimate performance-to-maturity of the CDO. Instead, like hedge fund managers, the CDO manager is compensated based on short-term performance. The result is a replication of the dynamics of the bonus-pool reward system and its “fake alpha” problem, with compensation based on short-term excess returns, rather than long-term performance. The CDO manager's fees are paid from both interest and principal payments received by the CDO. Many assets held by CDOs have balloon payment structures, so that in the initial years of the CDO, the assets will be making only interest payments, not principal payments. See CORNERSTONE RESEARCH, *COMMERCIAL REAL ESTATE: IS ANOTHER CRISIS LOOMING?* 7 (2010), available at http://www.cornerstone.com/files/upload/Cornerstone_Research_Commercial_Real_Estate.pdf. The CDO manager's fees, however, have senior and subordinate status in both interest and principal payment waterfalls.

This structure incentivizes CDO managers to load up on high-risk, high-return assets. While many of these assets will eventually default, the defaults will not all happen at the beginning of the CDO's life. This means that for a while, at least, the interest payments received by the CDO will be quite high, so there will be cash flows to cover the subordinated fee. As defaults rise, the subordinated fee may become out-of-the-money, but it may not matter. Unlike investors, CDO managers do not necessarily have any principal invested in the CDO. Thus, any income is in essence “gravy.” The CDO manager may have some reputation connected with

endemic to all securitization. They also exist in bank lending. But the essential problem with the entry of the CDOs into the CRE market was not the agency problem, but the information and expertise problem. Agency problems merely exacerbated the expertise and information problems.

The result of the expansion of the B-piece market was increasing liquidity in CRE lending. This was accompanied by deterioration in underwriting standards, as CRE loan originators became agents for securitization conduits, eager to increase volume and without skin in the game. Thus, the same REIT letter to investors observed that by 2004:

Competition among lenders [in the commercial real estate market] is so fierce that borrowers can dictate terms that fly in the face of accepted credit standards. High loan proceeds, low debt service coverage requirements, aggressive property valuations, limited or no reserve requirements, substantial interest-only periods and other similarly aggressive loan terms are increasingly prevalent in conduit transactions. Combined with the non-recourse nature of conduit lending, these terms make it possible for a borrower to purchase and finance a property with little or no equity, strip cash flow for an extended period of time while the property performs, and then “put” the property back to the CMBS trust if the property fails to perform. Between the high loan proceeds and the immediate cash flow, borrowers often have absolute no equity in a property—no investment at risk.⁷²

Structured finance attorneys Stuart Goldstein and Angus Duncan also observed the same phenomenon:

As competition for commercial real estate product has grown, firms have found themselves chasing loans in the US that did not neatly fit into the CMBS ‘box.’ We have seen the emergence of mezzanine loans, B notes, B participations and preferred equity as means of offering mortgage loan borrowers increased leverage. Originators of this collateral and investors in the B pieces of conduit securitizations wanted to be able to securitise this product, but the rules relating to CMBS would not permit it.⁷³

CDOs offered the solution for securitizing nontraditional CRE collateral.⁷⁴

the CDO, but reputational constraints may be irrelevant if the CDO manager can make enough money in a short time. Put differently, the structure of CDO manager compensation enables one to “get rich quick” and then retire, leaving the CDO investors to hold the bag.

⁷² ARCap, *supra* note 70. .

⁷³ Stuart Goldstein & Angus Duncan, *The Developing Global Market for CRE CDOS*, ISR CDO SUPPLEMENT (March 2007), <http://www.cadwalader.com/assets/article/030107DuncanGoldsteinISR.pdf>.

⁷⁴ CDOs also contributed to the growth in portfolio lending, as they purchased not only CMBS, but also various junior interests in real estate such as B-notes, mezzanine loans, and the like. As Jonathan Shlis has noted:

By 2004, however, the CRE CDO market had begun to change and with it the leverage that traditional B-piece buyers had over quality of CMBS underwriting declined. As the CRE CDO market expanded, a new class of B-piece buyers emerged. These new buyers were primarily conduit buyers, looking to repackage the B-pieces they purchased into CRE CDOs. As intermediaries, rather than end-investors, these new B-piece buyers were not particularly concerned about credit risk and lacked the long-standing CRE experience of traditional B-piece buyers. Not surprisingly, underwriting standards deteriorated.

Because it was now much easier for CMBS sponsors to sell the B-piece of deals, CMBS volume boomed along with CRE CDO volume. (See Figures 7 and 8, below.) CRE CDOs nearly tripled in volume from 2004 to 2005 and CRE CDO volume was nearly a fifth of the total CMBS market. Moreover, existing CRE CDOs and CDOs were also resecuritized, creating an investment cocktail with unique “complexity and high leverage.”⁷⁵ The expansion of CMBS relative to CDOs was essentially a leveraging of CDO investment in the B-piece with AAA-rated senior tranche investment. Thus a dollar in CDO investment in a CMBS B-piece translated into substantially more dollars in CMBS financing of CRE, and a dollar in CDO investment translated into yet more dollars in CMBS financing of CRE. Thus, a small expansion of the B-piece market meant a much larger expansion of credit for CMBS and thus for CRE.

Prior to 2004/2005, CRE CDOs were terra incognita—and deservedly so—to most commercial real estate borrowers. Before those dates, CRE CDOs almost always were comprised solely of REIT debt, and, importantly, unrated and below-investment-grade rated CMBS tranches known as first loss pieces (“B-Piece”), providing long term financing to B-Piece buyers, thereby adding liquidity and providing a degree of risk sharing to the CMBS process. But in 2004, B-Notes [subordinated mortgage notes], mezzanine loans [loans made to LLC development companies that own the equity in real estate developments], credit tenant leases, loans and debt-like preferred equity were included with B-Pieces and REIT debt in CRE CDOs. And then in 2005, first mortgage commercial real estate loans—“whole loans”—started becoming collateral assets in CRE CDOs [meaning that whole loans were going directly into CDOs, rather than into CMBS].

Jonathan Shils, *Managed CRE CDO v. CMBS: Is One Better For A Borrower?*, THE AM. L. INST. CONTINUING LEGAL EDUCATION GROUP, http://files.ali-aba.org/thumbs/datastorage/skoob/articles/TAB16-Shils_thumb.pdf.

⁷⁵ Nomura, *supra* note 68.

FIGURE 7. CMBS AND CRE CDO ISSUANCE VOLUME⁷⁶

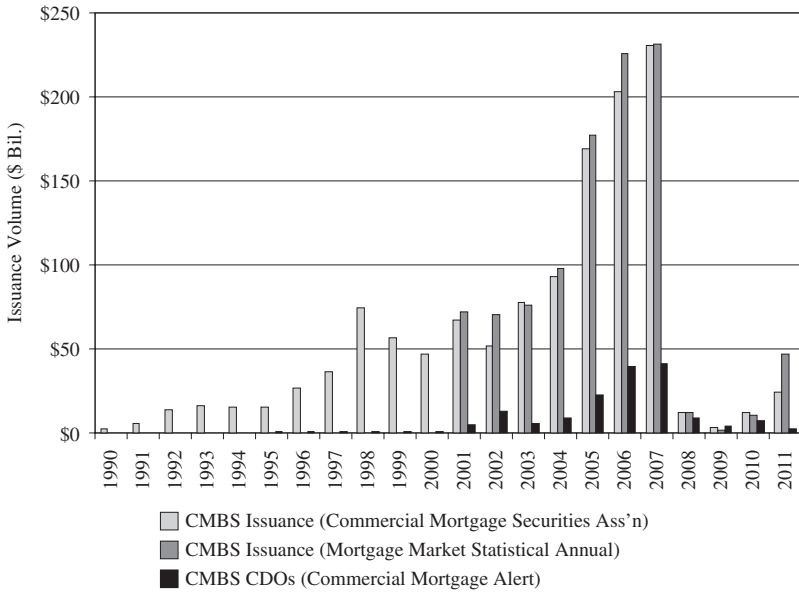
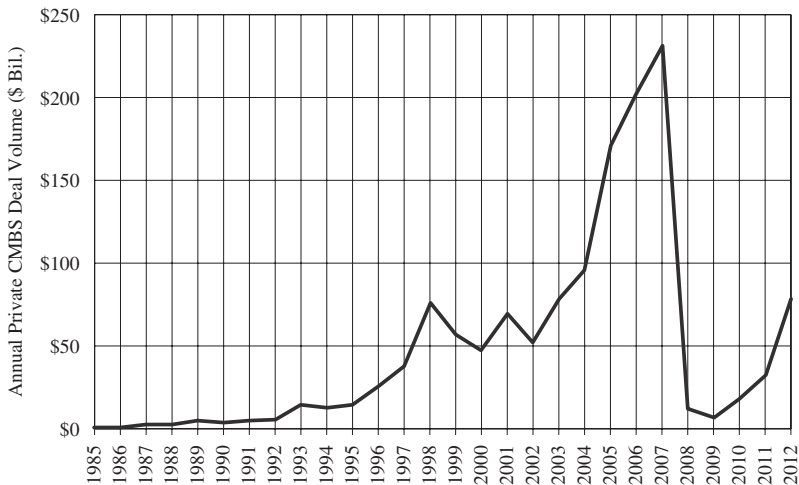


FIGURE 8. ANNUAL PRIVATE (NON-GSE/NON-GOVERNMENT) CMBS DEAL AMOUNTS (\$ BILLIONS)⁷⁷



⁷⁶ COMMERCIAL MORTG. SEC. ASSOC.; COMMERCIAL MTG ALERT, SUMMARY OF CDS ISSUANCE, available at <http://www.cmalert.com/ranking.php?rid=319>; INSIDE MORTGAGE FINANCE, 2010 MORTGAGE MARKET STATISTICAL ANNUAL (2010).

⁷⁷ CMBS Database, supra note 48 (authors' calculations). Curiously, while aggregate annual deal amounts increased significantly during the bubble, the number of deals was static;

The development of the “new breed of CRE CDOs” created “added complexity in analyzing exposures to the commercial real estate sector that involve multiple layers of pooling and tranching⁷⁸ Accordingly, Nomura Fixed Income Research observed in 2006, that “Unfortunately, it is not clear at present if the rating agencies and market participants fully appreciate the implications of structural characteristics in different CRE assets [CRE, CMBS, CRE CDOs, and CRE CDOs].”⁷⁹

III. THE UNDERPRICING OF RISK IN THE CMBS MARKET

As with RMBS, CMBS underwriting standards declined noticeably from 2004 to 2007. This can be measured through observable loan characteristics.⁸⁰ Loan structures were changing as interest-only loans became increasingly common, rising from 47% of CMBS loans in 2004 to 86% in 2007.⁸¹ This meant that there was decreasing protection from balloon risk at the loan level and less build of subordination at the deal level; with an amortizing loan, subordination levels increase as principal is paid off on the loan, making the senior tranches *safer* over time.

Stated DSCRs also began to decline in 2004.⁸² The true extent of this decline may not be observable because of changes in how DSCRs were calculated. During this period, so-called “pro forma” loans emerged in CRE. Pro forma loans were the CRE equivalent of NINJA (no income, no job, no assets) loans in the RRE market. Pro forma loans calculated the DSCR are based on *prospective* rents, including leases anticipated, but not in-place and future rent increases, rather than leases in hand.⁸³ In other words, pro forma loans’ DSCRs were solely aspirational. Thus, the decline in DSCR might well have been more pronounced than stated numbers show.

Stated, observable LTVs remained steady during this period.⁸⁴ However, the presence of steady LTVs in a period with inflated asset prices actually indicates declining underwriting standards; if asset prices are inflated,

in other words, the average deal size increased significantly, rather than the number of deals. To some degree, of course, this reflects CRE price inflation from the bubble.

⁷⁸ Nomura, *supra* note 68.

⁷⁹ *Id.*

⁸⁰ Beyond these observable factors, we cannot rule out the existence of other, non-observable changes in the underwriting of CMBS.

⁸¹ Bill Pollert, *Investors Strike Shuts Down Credit Markets* 16, 18 (Feb. 1, 2008), http://warrington.ufl.edu/graduate/academics/msf/docs/speakers/presentation_WPollert1.pdf; see also Joseph Gyourko, *Understanding Commercial Real Estate: Just How Different from Housing Is It?* 28 (Nat’l Bureau of Econ. Research, Working Paper No. 14708, 2009), available at <http://www.nber.org/papers/w14708> (between 2003 and 2007, the fraction of conduit loans with partial or full IO periods went from 10% to 90%).

⁸² Stanton & Wallace, *supra* note 22, at 8.

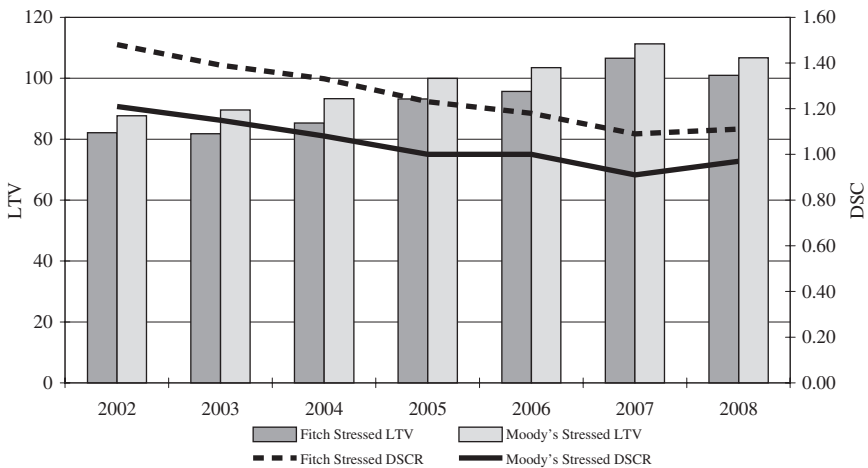
⁸³ Gyourko, *supra* note 81, at 6, 29 (citing \$40 billion in pro forma loans in market); see also Richard Stanton & Nancy Wallace, *CMBS Subordination, Ratings Inflation, and Regulatory-Capital Arbitrage* (Aug. 6, 2012), <http://faculty.haas.berkeley.edu/stanton/papers/pdf/cmbx.pdf> (recognizing that pro forma underwriting might debase DSCRs).

⁸⁴ Stanton & Wallace, *supra* note 22, at 8.

steady underwriting standards would require declining LTVs. If so, then a lack of volatility in CMBS pricing would indicate not steady underwriting standards, but declining underwriting standards because the pricing would have held steady while risk increased.

The rating agencies themselves seemed to understand that underwriting quality was declining. CMBS ratings involve the credit rating agency taking the loan-level data given to it by the CMBS deal sponsor and re-underwriting the loans based on what the rating agency believes are the stable cash flows, which produce a new “stressed LTV” and “stressed DSCR.”⁸⁵ If one looks at the rating agencies’ stressed LTV ratios, those ratios actually increased and stressed DSCRs fell.⁸⁶ (See Figures 9 and 10)

FIGURE 9. DECLINE IN CMBS UNDERWRITING STANDARDS⁸⁷

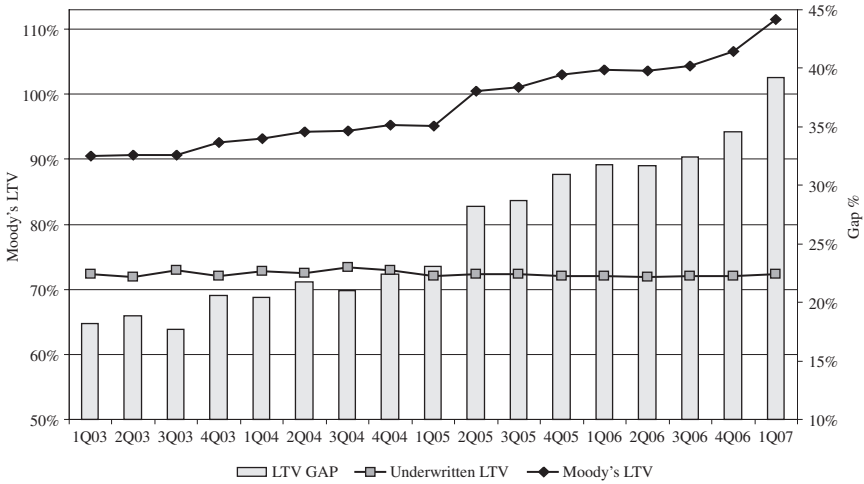


⁸⁵ See Cohen, *supra* note 23, at 4, 16–17.

⁸⁶ See *id.*; see also Fig. 4 and 5, *supra*. Notably, these stressed LTVs and DSCRs were available to investors in “pre-sale” reports from the ratings agencies. The disconnect between the ratings and the analysis is an important topic beyond the scope of this Article.

⁸⁷ Joseph N. Iadarola, Jr., *The Opportunity for Investing in Commercial Mortgage Debt 4* (Babson Capital Management LLC Research Paper No. CRE3701_08/413, 2008), available at <http://www.babsoncapital.com/BabsonCapital/http/bcstaticfiles/Research/file/The%20Opportunity%20for%20Investing%20in%20Commercial%20Mortgage%20Debt.pdf>.

FIGURE 10. CMBS LTVs COMPARED WITH CMBS STRESSED LTVs⁸⁸

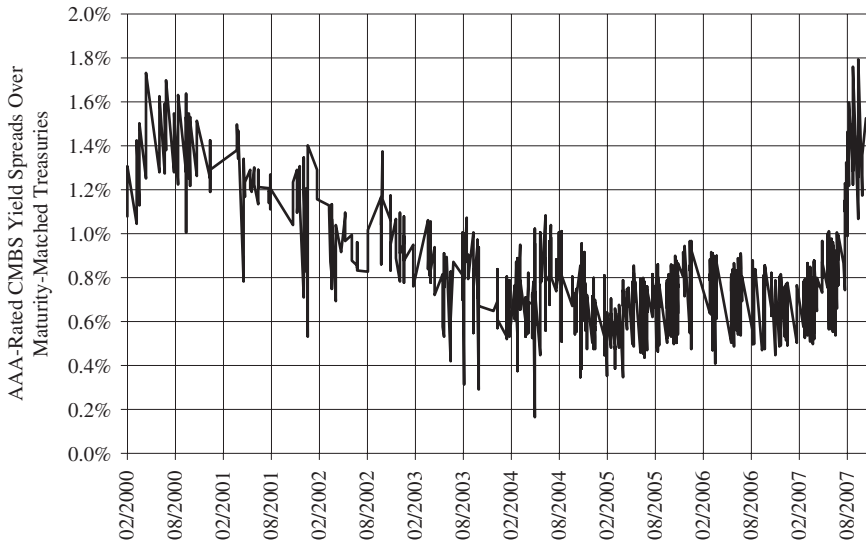


It is remarkable that even as risk for CMBS investors was noticeably increasing, the spreads between CMBS tranches and Treasuries narrowed.⁸⁹ In other words, *as risk increased, the risk premium on CMBS fell*. This means that CMBS prices (the risk premium) declined while CMBS volume increased, indicating that the supply curve for the CMBS financing market shifted to outwards (to the right), and that this shift was larger than any shift in the demand curve. In other words, there was excessive demand for CMBS, which meant that there was an oversupply of CMBS financing for CRE, which pushed down CRE financing prices and thus enabled CRE borrowers to take on more debt and thereby may have helped to bid up CRE prices.

⁸⁸ MOODY'S STRUCTURED FIN., US CMBS: CONDUIT LOAN UNDERWRITING CONTINUES TO SLIDE-CREDIT ENHANCEMENT INCREASE LIKELY 2 (Apr. 10, 2007), available at <http://www.mbaa.org/files/Conferences/2007/CREFAAssetAdmin2007/ConduitLoanUnderwriting.pdf>.

⁸⁹ See Figure 11, *infra*.

FIGURE 11. AAA-RATED CMBS YIELD SPREADS OVER MATURITY-MATCHED TREASURIES⁹⁰



In other work, we have documented the same phenomenon with RMBS.⁹¹ With CMBS, as with RMBS, we believe the supply glut that resulted in an increase in MBS volume even as risk premia declined was caused first and foremost by the emergence of CDOs as major buyers of MBS.

Historically, CMBS maintained discipline over underwriting standards in a manner parallel to RMBS. CMBS's reliance on subordinated debt investors to uphold underwriting standards is similar to reliance on Agencies for underwriting standards; in both cases, the underwriting standards are being upheld by a party in the first loss position on the MBS, as the Agencies hold the credit risk on their MBS. In both cases, this discipline was unraveled: for RMBS, it was the market's shift to PLS (and the GSEs resulting competition

⁹⁰ CMBS data comes from the Commercial Mortgage Alert CMBS pricing database, an extensive private subscription data source covering all commercial mortgage securitizations. From the CMA Database, we removed all tranches with the following characteristics: (1) all deals with non-US collateral, (2) all deals or tranches not denominated in dollars, (3) all deals with Ginnie Mae or GSE issuers, (4) all deals with unidentified issuers, (5) all deals priced after 2007, (6) all deals priced before 2000, (7) all deals with adjustable rate notes or mixed fixed/adjustable notes, (8) all deals without ratings by at least one of Moody's, S&P, or Fitch's, (9) all deals other than conduit or fusion (conduit and large loan) deals. This left us with a sample of 1204 AAA tranches. We matched maturities with 1, 2, 3, 5, 7, 10, and 20-year Treasuries as closely as possible and then calculated the spread using the "corporate bond equivalent" coupon measure in the CMA database (converting coupons on CMBS into 360-day semi-annually paid corporate bond equivalents), which is depicted in the graph. *CMBS Database, supra* note 48 (authors' calculations).

⁹¹ See Levitin & Wachter, *supra* note 1, at 1203–06.

for market share resulting in the equivalent of an insurer rate war), while for CMBS, it was the dilution and bypassing of the small, skilled cadre of B-piece investors by resecuritization. In both cases, underwriting standards were arbitrated by a shifting of risk to a less disciplined market, and in both cases the emergence of the CDO as a major class of buyer was critical. For RMBS, the CDO enabled the expansion of the PLS market, which undermined the traditional underwriting discipline in the Agency market, while for CMBS, the CDO undermined the traditional underwriting discipline from the B-piece market.

IV. ALTERNATIVE EXPLANATIONS OF THE CMBS BUBBLE

To date no one has proposed an alternative theory of the CMBS bubble, much less the CRE bubble. It is possible, however, to educe alternative theories from existing work, particularly that of real estate economists Timothy J. Riddiough and Jun Zhu, Andrew Cohen, and Richard Stanton and Nancy Wallace.⁹² We emphasize that none of these authors present their work as explaining either the CMBS bubble, and, therefore, we are not arguing with their work. Instead, from their work it is possible to extrapolate theories of the CMBS bubble.

Our point here is merely to show that such extrapolation is unwarranted. Stanton & Wallace's work points to important factors that *contributed* to the CMBS bubble, but these factors alone were insufficient to create the bubble. They were at most amplifying factors, rather than driving force behind the bubble.

A. Credit Rating Inflation

Riddiough & Zhu, Stanton & Wallace, and Cohen have all commented on declining CMBS subordination relative to ratings support.⁹³ Subordination is the primary method of credit support in CMBS. From 1996 onwards the level of subordination in CMBS has been declining relative to credit rating,⁹⁴ a phenomenon these authors ascribe to competition among ratings agencies for ratings business. Stanton & Wallace, in particular, argue that by 2005 the subordination levels had fallen too far to be justified, and that had subordination levels stayed steady since 2000, there would have been no losses to senior bonds in most CMBS deals.⁹⁵ From this, one might reasonably extrapolate that debased ratings resulted in an underpricing of risk in

⁹² See Riddiough & Zhu, *supra* note 21; Stanton & Wallace, *supra* note 22; Cohen, *supra* note 23.

⁹³ See Riddiough & Zhu, *supra* note 21; Stanton & Wallace, *supra* note 22; Cohen, *supra* note 23.

⁹⁴ See Stanton & Wallace, *supra* note 22, at 3–4 (figure 1).

⁹⁵ *Id.* at 3, 5.

CMBS (from investors who rely on ratings), resulting in a glut of financing for CMBS.

It is hard, however, to attribute the CMBS bubble to ratings inflation. For starters, the decline in subordination levels required begins in 1996, nearly a decade before the CMBS bubble emerges.⁹⁶ There were no sudden declines in the subordination levels, but rather a steady descent from 1996 to 2005 at which point they remained largely static.⁹⁷ Thus, it is hard to see a temporal connection between ratings inflation and the CMBS bubble.

Ratings inflation may nevertheless have contributed to the CMBS bubble. Inflated ratings based on declining subordination requirements meant that it was possible to produce even more investment-grade CMBS with less junk-grade CMBS by-product. As the non-investment-grade CMBS are the harder securities to sell, the decreasing ratio of junk-grade to investment-grade CMBS facilitated CRE securitization.

Nonetheless, it was still necessary to sell the lower-rated, junior securities. If the junior junk tranches of a securitization cannot be sold, the economics of the deal simply do not work. If \$500 million of CRE debt is securitized, it is necessary to sell \$500 million in CMBS.⁹⁸ The interest flows on the CRE will be reallocated according to tranching to compensate for the relative credit risk, but the principal amount of the CMBS will closely or exactly match that of the securitized CRE. Investors will not pay over face value for CMBS, or if they do, it will be only marginally over face value, as their upside is capped with a fixed-income investment. Therefore, unless every tranche of a CMBS deal can be sold, the economics of CRE securitization do not work. In this regard, securitization is much like hog farming: it is only profitable to raise hogs (or so we are told) unless you can sell the bacon, chops, and hams *as well as* the snouts, tails, trotters, and unmentionables.⁹⁹

Lower subordination requirements meant that in any particular CMBS deal the *relative* size of the junior tranches to the seniors was limited. But as Figure 7, above, shows, the absolute size of CMBS deals and of the CMBS market was expanding at an incredible rate during the CRE bubble period. The net effect was that even with debased ratings, it was necessary for CMBS deal sponsors to place in *absolute* terms many more dollars of junior CMBS tranches. The key question, then, is how they did it. As we have seen,

⁹⁶ See Stanton & Wallace, *supra* note 22, at 4 (figure 1).

⁹⁷ See *id.*

⁹⁸ If the CMBS are sold with an original issue discount or are overcollateralized, it is possible to sell CMBS for something less than the aggregate face value of the CRE debt that has been securitized.

⁹⁹ We owe this analogy to financial commentator Yves Smith (Susan Webber) who has explained, "CDOs were originally devised as a way to dress up these junior layers [of MBS] and make them palatable to a wider range of investors, just as unwanted piggy bits get ground up with a little bit of the better cuts and a lot of spices and turned into sausage." YVES SMITH, HOW UNENLIGHTENED SELF INTEREST UNDERMINED DEMOCRACY AND CORRUPTED CAPITALISM 247 (2010).

the answer was the CRE CDO, which purchased the financial equivalent snouts, tails, trotters, and unmentionables, ground them up with some spices into the financial slurry known as a CDO and resold tranches of this slurry as premium sausage (with the unsellable parts resecuritized yet again as CDOs). Moreover, because the CRE CDOs did not exercise their kickout rights as B-piece holders as vigorously as traditional B-piece investors, the overall quality “hog” became a degenerate, ignoble beast, thereby reducing the quality of both the “bacon” and the “sausage.”

B. Regulatory Capital Arbitrage

Stanton & Wallace also note that in 2002 the federal bank regulators changed their risk-based capital weights for CMBS held as long-term investments and that this encouraged federally-regulated banks to securitize commercial real estate and hold highly-rated CMBS tranches instead of whole loans.¹⁰⁰ While Stanton & Wallace do not claim that the change in regulatory capital requirements was responsible for the CMBS bubble, they argue that these changes could have reduced “the incentive for rating agencies to acquire information, in turn leading to rating inflation.”¹⁰¹

We agree, but again do not think that regulatory capital arbitrage alone explains the CMBS bubble. Instead, we believe that the changes in regulatory capital requirements made CDOs all the more indispensable as market participants because without the CDOs the banks could not capitalize on the change in regulatory capital requirements.

All banks are required to maintain a minimum ratio of total capital (after deductions) to risk-based assets of 8%.¹⁰² Prior to 2002, both commercial real estate loans and CMBS of any rating had 100% risk-weightings for regulatory capital purposes.¹⁰³ This meant that for every \$100 of CRE or CMBS, banks had to hold roughly \$8 in regulatory capital, thereby limiting the banks’ leverage, by implying a maximum of \$92 in liabilities for this \$8 in capital.

In 2002, however, the federal bank regulators changed their risk-based capital treatment of CMBS in the U.S. implementation of the 1988 Basel I

¹⁰⁰ Stanton & Wallace, *supra* note 22, at 36–39.

¹⁰¹ *Id.* at 36.

¹⁰² All citations provided are for the Office of the Comptroller of the Currency and thus national banks. There are equivalent regulations for the Federal Reserve, 12 C.F.R. §§ 208, app. A, t. 1, 225, app. A; FDIC, 12 C.F.R. § 325.3, 567, and the Office of Thrift Supervision, 12 C.F.R. § 567.2.

See 12 U.S.C. § 3907(a)(2) (2006) (authorizing the OCC to set capital requirements for national banks); 12 C.F.R. §3.6(a) (2001) (requiring risk-based capital requirements for national banks); 12 C.F.R. § 3, app. A § 1(b)(1) (2001) (8% ratio mandated after Dec. 31, 1992).

¹⁰³ 12 C.F.R. §§ 3, app. A 4(a) (100% risk-weighting for all assets without specified risk-weightings); 4(a)(4)(iii) (100% risk-weighting for any subordinated interests in securitizations) (2001).

Capital Accord.¹⁰⁴ Instead of 100% risk weighting, CMBS received different risk-weightings depending on their credit rating.¹⁰⁵ Thus, AAA-rated CMBS received a 20% risk-weighting (equivalent to the risk-weighting of GSE-securities),¹⁰⁶ AA-rated CMBS received a 50% risk-weighting (equivalent to the risk-weighting of whole-loan first-lien residential mortgages),¹⁰⁷ with BBB-and lower CMBS retaining a 100% risk-weighting.¹⁰⁸

This change made AAA- and AA-rated CMBS relatively more attractive investments for US banks, as \$100.00 in AAA-rated CMBS now only required \$1.60 in regulatory capital, instead of \$8.00, thereby enabling greater leverage (and potentially higher returns for the banks' equity holders). Similarly \$100.00 in AA-rated CMBS now only required \$4.00 in regulatory capital instead of \$8.00. Stanton & Wallace calculate that by 2007, this change in risk-weightings was saving US banks some \$2.29 billion in regulatory capital.¹⁰⁹

The 2002 changes not only *reduced* the risk-based capital requirements for some CMBS, but they *increased* the risk-based capital requirements for other CMBS. The 2002 changes increased the risk-based capital requirements for BB-rated CMBS, from 100% to 200%, meaning that banks would have to hold \$16.00 in capital for every \$100.00 in BB-rated CMBS.¹¹⁰ CMBS with a rating of B or lower were subjected to a dollar-for-dollar capital requirement,¹¹¹ meaning \$100 of CMBS required \$100 of risk-based capital; no leverage whatsoever was permitted on such investments.

The importance of these changes is that although the changes made highly-rated CMBS more attractive to banks, the changes made lower-rated CMBS much less attractive to banks. And, as we have seen, securitization is

¹⁰⁴ See Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Capital Treatment of Recourse, Direct Credit Substitutes and Residual Interests in Asset Securitizations, 66 Fed. Reg. 59614 (Nov. 29, 2001). On the Basel capital accords generally, see DANIEL K. TARULLO, BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION (2008). The 2002 change was a U.S.-specific implementation change, and not a change in the Basel Capital Accord.

¹⁰⁵ 12 C.F.R. §3, app. A, § 4(d)(1), t. B. (traded positions), 4(d)(2) (non-traded positions) (2002).

¹⁰⁶ 12 C.F.R. §3, app. A § 3(a)(2)(vi) (20% risk-weighting for GSE securities); 3(a)(2)(vii) (20% risk-weighting for GSE-guaranteed securities, for example, MBS) (2002).

¹⁰⁷ 12 C.F.R. § 3, app. A § (a)(3)(iv) (50% risk-weighting for first-lien single family mortgages conforming to various underwriting requirements); 3(a)(3)(v) (50% risk weighting for first-lien multifamily mortgages conforming to various underwriting requirements); 3(a)(3)(vi) (50% risk-weighting for non-tranched, that is, pass-through, private-label MBS if the underlying mortgages would qualify for 50% risk-weighting) (2012).

¹⁰⁸ 12 C.F.R. § 3, app. A, § 4(d)(1), tbl. B. (traded positions), 4(d)(2) (non-traded positions) (2012).

¹⁰⁹ Stanton & Wallace, *supra* note 22, at 41.

¹¹⁰ 12 C.F.R. § 3, app A § 4(d)(1), tbl. B. (traded positions receive 200% risk-weighting for BB-rating), 4(d)(2) (non-traded positions treated as traded positions); 4(a)(12) (defining "residual interest" to include securitization interests in which the bank's credit risk "exceeds a *pro rata* share of th[e] bank's claim on the [securitized] asset, whether through subordination provisions or other credit enhancement techniques . . .") (2012).

¹¹¹ 12 C.F.R. §3, app A § 4(f)(3) (2012) (dollar-for-dollar risk-weighting for all other residual interests not otherwise provided for in regulations).

simply not economical unless both the senior and junior tranches of a deal can be sold. Making it easier to sell the senior tranches at the expense of restricting the market in junior tranches hardly facilitates securitization, particularly as there is normally a much larger market for investment-grade securities than non-investment-grade securities. In short, it is hard to attribute the CMBS bubble to changes in regulatory capital risk-based weighting requirements.¹¹²

V. THE REBIRTH OF THE CMBS MARKET

The CMBS market has not returned to its pre-crisis vitality. But compared to the RMBS market, CMBS has witnessed a cautious reemergence.¹¹³ From September 2008 through December 2012, there were only nine registered domestic private-label RMBS deals based on new collateral with a total issuance volume of \$2.83 billion, all from a single shelf.¹¹⁴ In contrast, there have been 463 domestic CMBS deals for a total issuance of \$233.9 billion, despite CMBS having traditionally been a much smaller market than RMBS.¹¹⁵ Nonetheless, it is important not to overstate the revival of the CMBS market. Most of the post-crisis CMBS deals—298 to be specific—have been government or GSE deals, some of which include sharing of credit risk with private investors.¹¹⁶ Of the 165 private CMBS deals, 57 have been a type of resecuritization known as a “re-REMIC,” which is used primarily as a regulatory capital arbitrage device for existing CMBS, rather than for the financing of new CRE loans.¹¹⁷

¹¹² As with ratings debasement, changes in risk-based capital regulations certainly accelerated the bubble, but were themselves insufficient to create the CMBS, much less the CRE bubble. First, the change in banks’ risk-based capital regulations applied to *all* securitizations, not just CMBS. Thus, the impact of the regulatory capital change was to make investment in highly-rated tranches of all asset-backed securities more appealing to banks, rather than specific to CMBS. Second, \$3.54 billion in regulatory capital savings is very little when spread out over the whole US banking industry. In 2007, there was \$420 billion in Tier 1 regulatory capital among banks that held any CMBS. *FDIC Statistics on Depository Institutions*, FED. DEPOSIT INSURANCE CORP., <http://www2.fdic.gov/SDI/index.asp>. It is hard to imagine this small of a change in regulatory capital, especially when spread out over several institutions, being enough to fuel a major growth in the CMBS market.

¹¹³ See Figures 3 and 4, *supra*.

¹¹⁴ *ABS Database*, ASSET-BACKED ALERT, http://www.abalert.com/about_abs.php (last visited Feb. 8, 2013). There were 336 resecuritizations of mortgages (re-REMICs) with volume of \$140.5 billion, as well as another 44 privately-placed deals totaling \$12.6 billion covering manufactured housing, non-performing loans, and regular mortgages. *Id.* See also Kerri Panchuk, *Redwood Trust plans nearly \$1 billion in private RMBS deals*, HOUSINGWIRE, (May 6, 2011), <http://www.housingwire.com/2011/05/06/redwood-trust-plans-nearly-1-billion-in-private-rmbs-deals>; Steve Bergsman, *Come Back, Private-Label RMBS!* MORTGAGEORB (Nov. 30, 2011), http://www.mortgageorb.com/e107_plugins/content/content.php?content.10356.

¹¹⁵ See *CMBS Database*, *supra* note 48 (authors’ calculations).

¹¹⁶ *Id.* The breakdown is 154 Ginnie Mae deals, 75 Freddie Mac deals, 61 Fannie Mae deals, 7 FDIC deals, and one NCUA deal.

¹¹⁷ *Id.* Moreover, two non-re-REMIC deals have been entirely or majority multifamily deals. *Id.*

Put differently, there have only been 109 regular private CMBS deals between September 2008 and the end of 2012, with a deal volume of \$105.8 billion.¹¹⁸ (Given the presence of credit risk-sharing deals such as Freddie Mac's K-Series,¹¹⁹ the real amount of private risk-capital that has entered the CMBS market post-crisis is somewhat larger.) To be sure, the private CMBS market picked up strength in 2012, with 65 deals (only 6 of which were re-REMICs), accounting for \$47.9 billion.¹²⁰ While this is a shadow of the former non-government/non-agency CMBS market, which peaked at \$231 billion in *annual* issuance in 2007,¹²¹ it is two orders of magnitude larger than the post-crisis non-government/non-agency RMBS market.

The prevalence of re-REMICs in the post-crisis CMBS market is not an indication of the market's strength. Re-REMICs are similar to CDOs in that they are resecuritization, but whereas CMBS CDOs were typically formed using newly issued CMBS as assets and thus provided part of the financing for CMBS and ultimately CRE loans, re-REMICs do not put new capital into the CRE market. Instead, re-REMICs repackage seasoned CMBS and CDO tranches, particularly those that have been downgraded, so as to enable regulatory capital relief for the banks and insurance companies holding the CMBS.¹²²

Lower rated MBS carry higher regulatory capital charges. By resecuritizing downgraded MBS, banks and insurance companies (subject to National Association of Insurance Commissioners (NAIC) capital regulation) can lower the regulatory capital charge on the senior tranches of the resecuritization, and can try to sell the lower rated tranches to high-yield investors. To wit, a BB-rated CMBS would have a 350% risk-weight under the 2004 Basel II capital framework¹²³ (in effect since late 2008 in the United States), but it could be resecuritized into a AAA-rated tranche representing 70% of the original security, with a 28% risk-weighting, a BB-tranche risk weighted at less than 350% and a junk tranche.¹²⁴ If a bank held onto the senior tranche and sold the other two tranches, it would significantly reduce its regulatory capital requirement and could thus recapitalize without having to raise equity capital and dilute existing shareholders. Insurance companies can similarly arbitrage NAIC asset level designations.

¹¹⁸ See *CMBS Database*, *supra* note 48 (authors' calculations).

¹¹⁹ See *Multifamily K Series Certificates*, *supra* note 7.

¹²⁰ See *CMBS Database*, *supra* note 48 (authors' calculations).

¹²¹ *Id.*

¹²² Miles Weiss & David Mildeberg, *Bank of America Re-Remics Cut Mortgage Debt as Basel Rules Loom*, BLOOMBERG, (Oct. 14, 2010), <http://www.bloomberg.com/news/2010-10-14/bank-of-america-re-remics-reduce-mortgage-debt-as-basel-capital-rules-loom.html>.

¹²³ BANK FOR INT'L SETTLEMENTS [BIS]. BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARD: A REVISED FRAMEWORK ¶ 567 (2004).

¹²⁴ Joseph Rosta, *Re-REMICs Redux*, AM. BANKER (Dec. 1, 2009), http://www.americanbanker.com/magazine/119_12/re-remics-redux-1004225-1.html.

While it is possible that the regulatory capital relief from re-REMICs frees up funds at banks and insurance companies that are then used for new CRE lending, the connection is much less direct than with CMBS CDOs. Other factors may also be driving the use of re-REMICs. It could be a preemptive defensive move against further ratings downgrades, it could bear tax-advantages, it could be a cost-efficient funding strategy, it could be an economic trading arbitrage, or it could simply make AAA-rated bonds more saleable.¹²⁵

The emergence of re-REMICs illustrates structured finance's reluctance to let any value go to waste. While the CMBS market has rebounded in a way the RMBS market has not, the CMBS market is still a shell of its former self and is now primarily a government-dominated market focused on the securitization of multi-family housing units.¹²⁶

Still, it is worth considering why the CMBS market revived, while the RMBS market remains moribund. Several reasons emerge. First, CMBS has better checks and balances to protect investors,¹²⁷ including a better diligence process for underwriting. Part of this is simply that a different level of diligence is feasible when dealing with one or two or even 300 properties, rather than 7,000, but part is also the particular diligence rights awarded to the B-piece investor.

Second, rents are what support CRE cash flows, and the rents on CRE properties continue to be paid even if the owner of the CRE defaults on its mortgage.¹²⁸ With RRE, the cash flows come directly from the mortgagor. Therefore, if the mortgagor defaults, the property often does not produce cash flows after default.¹²⁹ With CRE, however, the cash flows from the property continue (albeit at potentially reduced levels) even if the mortgagor is in default.¹³⁰ This is not to say that loss severities on CRE defaults cannot

¹²⁵ See MARTY ROSENBLATT, DELOITTE & TOUCHE LLP, *SPEAKING OF SECURITIZATION: THE RE-REMIC PHENOMENON 1* (2009), available at http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_fsi_Sec_RE_Speaking%20of%20Securitization-June%202009.pdf.

¹²⁶ See *CMBS Database*, *supra* note 48 (authors' calculations).

¹²⁷ Robert A. Brown, *Financial Reform and the Subsidization of Sophisticated Investors' Ignorance in Securitization Markets*, 7 N.Y.U. J.L. & BUS. 105 (2010) (arguing that CMBS deal structures provided CMBS investors significantly greater protections than RMBS investors and that CMBS investors have fared better as a result).

¹²⁸ See *id.* at 133.

¹²⁹ There are exceptions to this situation, to be sure. First, the mortgagor may cure the default and then remain current on payments. Second, the mortgagor may continue to pay in delinquency, such as being a "rolling 30" (always 30 days delinquent) or a "rolling 60" (always 60 days delinquent). After 90 days of delinquency on a payment, however, foreclosure actions are typically commenced. While some borrowers will make payments even after a foreclosure is commenced, they will often be refused lest acceptance be interpreted as agreement to forbear. Even if the borrower ceases to make payments, servicers of securitized mortgages have an obligation to advance the payments to the investors out of their own funds. These advances are recoverable, but without interest, and the obligation to advance is only for advances the recovery of which is reasonably foreseeable.

¹³⁰ Tenants can be directed to pay their rents to the mortgagee (now the new owner) or simple to a lockbox whose control can be transferred.

be severe, but a default on CRE does not always mean the end of cash flows the way a RRE foreclosure does.¹³¹

Third, the CRE foreclosure process has not ground to a halt the way it has for RRE in many states. In part this is because states' efforts to slow foreclosures through procedural hurdles like mandatory mediation do not apply to CRE, but it is due in larger part to the relative absence of documentation and servicing issues in CMBS. CMBS has not had a "robosigning" scandal and resulting federal and state investigations and litigation. Relatedly, because CMBS boasts superior workout mechanisms, there has not been as much pressure on the system through foreclosures. It is hard to imagine a major revitalization of the RMBS market until and unless servicing issues, among others, are resolved; investors have learned that servicing is an important determinant of loss severity given default. In CMBS, the special servicer structure helps ensure better incentive alignment between servicers and investors when dealing with defaulted loans.

Finally, there is a cohort of savvy credit risk investors for CMBS that has never really existed for RMBS. The RMBS "B-piece" was traditionally either retained or resecuritized. Indeed, no one speaks of RMBS as having a "B-piece" because the concept does not exist in practice. Accordingly, the real (that is, non-CDO) RMBS investor base as a whole did not understand itself as taking on first-loss credit risk.¹³² To the extent that a body of credit risk investors exists for RMBS, they appear to be substantially smaller than for CMBS, not least because RMBS offers them less control than CMBS.

Better underwriting diligence, better servicing, and the participation of a body of sophisticated credit risk investors all seem to be factors explaining why CMBS has rebounded to a greater degree than RMBS. Nonetheless, the CMBS market is still much smaller and differently composed than before financial collapse in 2008, and its prospects for rapid expansion seem limited for the near future because the CRE market will continue to lag absent economic growth.

¹³¹ Adam J. Levitin & Tara Twomey, *Mortgage Servicing*, 28 *YALE J. ON REG.* 1 (2011); Larry Cordell & Adam J. Levitin, *What RMBS Servicing Can Learn From CMBS Servicing* (Geo. L. & Econ. Research Paper No. 11-01, Aug. 2011), available at <http://ssrn.com/abstract=1324023>. The CMBS special servicer structure is far from perfect, however; there can be major conflicts between CMBS special servicers and CMBS investors, particularly investors in senior tranches. See Brent W. Ambrose, Anthony B. Sanders, & Abdullah Yavas, *CMBS Special Servicers and Adverse Selection in Commercial Mortgage Markets: Theory and Evidence* (Feb. 2, 2010) (unpublished manuscript), available at <http://merage.uci.edu/ResearchAndCenters/CRE/Resources/Documents/02%20-%20Sanders-CMBS%20Servicing.pdf>; Yingjin Hila Gan & Christopher Mayer, *Agency Conflicts, Asset Substitution, and Securitization* (Nat'l Bureau of Econ. Research, Working Paper No. 12359, 2006), available at <http://www.nber.org/papers/w12359>.

¹³² Levitin & Wachter, *supra* note 1. There are some important exceptions. NIMS investors were exposed to credit risk, but they were primarily investing in a binary prepayment gamble. Mezzanine investors included some hedge funds, but they thought they were well protected from credit risk by the junior tranches.

CONCLUSION

The CMBS and CRE bubbles have remained largely neglected in the scholarly literature. In this Article we have attempted to explain the CMBS and the CRE bubbles and how they relate to the RRE bubble. The comparison between the CRE and RRE bubbles is a critical one for understanding what did *not* cause the RRE bubble. The CRE bubble presents a serious challenge to theories of the RRE bubble that implicate GSE affordable housing goals or the Community Reinvestment Act (CRA) of 1977 as the drivers of the RRE bubble.¹³³

It is hard to fathom how the GSE's statutory affordable housing goals,¹³⁴ which set targets for GSE loan purchases and investments in order "to facilitate credit access and homeownership among lower-income and minority households,"¹³⁵ could only have affected anything other than multi-family housing, as the GSEs have no involvement with industrial, retail, office, or lodging properties. Yet the CRE bubble was hardly limited to multi-family housing.

Similarly, the CRA has no bearing on CRE.¹³⁶ Claims about the CRA's role in the housing bubble have been debunked elsewhere based on other

¹³³ For such theories, see generally PETER J. WALLISON, FIN. CRISIS INQUIRY COMM'N, THE FINANCIAL CRISIS INQUIRY REPORT, DISSENTING STATEMENT 444 (2011) ("[T]he sine qua non of the financial crisis was U.S. government housing policy, which led to the creation of 27 million subprime and other risky loans—half of all mortgages in the United States—which were ready to default as soon as the massive 1997–2007 housing bubble began to deflate. If the U.S. government had not chosen this policy path—fostering the growth of a bubble of unprecedented size and an equally unprecedented number of weak and high risk residential mortgages—the great financial crisis of 2008 would never have occurred."); Edward Pinto, *Acorn and the Housing Bubble*, WALL ST. J., Nov. 13, 2009, at A23; Peter J. Wallison, *The True Origins of the Financial Crisis*, AM. SPECTATOR, Feb. 2009, at 22; Peter J. Wallison, *Cause and Effect: Government Policies and the Financial Crisis*, AM. ENTER. INST. FOR PUB. POL'Y RESEARCH (November 2008), http://www.aei.org/files/2008/11/25/20081203_1123724NovFSOg.pdf; THOMAS SOWELL, THE HOUSING BOOM AND BUST (2009).

¹³⁴ Housing and Community Development Act of 1992 §§ 1331–34, 12 U.S.C. §§ 4561–64 (2006). From 1993 to 2008, the affordable housing goals were supervised by the Secretary of Housing and Urban Development (HUD): starting in 2010, they came under the supervision of the Federal Housing Finance Agency (FHFA). Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289 § 1128(b), 122 Stat. 2654, 2696 (transferring authority from HUD to FHFA). The affordable housing goals are enforced by the GSE regulator, currently the FHFA, formerly OFHEO. If a GSE fails to meet the affordable housing goals and does not present and pursue an acceptable remedial plan, monetary penalties and injunctive relief are available to the regulator. 12 U.S.C. § 4566(c)(1) (Supp. 111 2010). The housing goals consist of three general measures: low-to-moderate income, special affordable, and underserved areas, as well as special subgoals for special affordable multifamily and home purchase (as opposed to refinancing). 12 U.S.C. §§ 4562–65 (Supp. 111 2010). The goals are measured as the ratio of qualifying mortgages financed to total mortgages financed, with certain mortgages excluded.

¹³⁵ Xudong An & Raphael W. Bostic, *GSE Activity, FHA Feedback, and Implications for the Efficacy of the Affordable Housing Goals*, 36 J. REAL EST. FIN. & ECON. 207, 207–08 (2008).

¹³⁶ The Community Reinvestment Act (CRA) was passed in 1977 in response to concerns about banks not offering financial services in minority or low-income neighborhoods. Michael S. Barr, *Credit Where It Counts: The Community Reinvestment Act and Its Critics*, 80 N.Y.U.

evidence,¹³⁷ and the existence of the parallel CRE bubble indicates that the CRA was not necessary for the emergence of a bubble. No CRA was necessary for the CRE bubble to emerge.

The key point about the CMBS bubble is that it grew in an entirely private environment. The CRE bubble was associated with the expansion of CMBS, the CMBS price bubble, and a shift in the institutional make-up of CMBS financing. The expansion of CMBS was part of an overall increase in the supply of credit in the real estate sector. The causes of the oversupply are multifold, including the global savings imbalance (or “global savings glut” in Federal Reserve Chairman Ben Bernanke’s parlance¹³⁸) that created an insatiable demand for AAA-rated assets of any sort.¹³⁹ AAA-rated assets could only be manufactured en masse via structured finance, that is, securitization. At a time when only a dozen public companies and a handful of

L.REV. 513, 516–17 (2005). The CRA encourages covered financial institutions to serve these communities by making the individual bank’s service a factor that regulators must consider in determining whether to approve the institution’s mergers with and acquisitions of other depository institutions, as well as whether to approve the expansion of bank holding companies into other types of financial activities. *See* 12 U.S.C. § 1831u(b)(3) (2006) (CRA requirement for interstate mergers); *see also* 12 U.S.C. § 1831y(a) (2006) (CRA Sunshine Requirements); 12 U.S.C. § 1843(l)(2) (2006) (CRA requirement for financial subsidiaries engaging in expanded financial activities). The CRA does mandate any lending, and charitable contributions, such as donations to soup kitchens, to qualify for CRA credit. [Needs cite] It is difficult, however, for CRE investment to qualify for CRA credit, because even if the property is in a bank’s CRA geographic assessment area, few, if any CRE loans are made to low-to-moderate income borrowers. CRE investment is, by its very capital-intensive nature, not an activity for the low-to-moderate income.

¹³⁷ *See, e.g.*, FIN. CRISIS INQUIRY COMM’N, THE COMMUNITY REINVESTMENT ACT AND THE MORTGAGE CRISIS 6 (2010) (preliminary staff report), available at http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/2010-0407-Preliminary_Staff_Report_-_CRA_and_the_Mortgage_Crisis.pdf; *see also* Memorandum from Glenn Canner, Senior Adviser, Div. of Research and Statistics, Fed. Reserve Bd., & Neil Bhutta, Economist, Fin. Structure Section, Div. of Research and Statistics, Fed. Reserve Bd., to Sandra Braunstein, Dir., Consumer and Cmty. Affairs Div., Fed. Reserve Bd. 3 (Nov. 21, 2008), http://www.federalreserve.gov/newsevents/speech/20081203_analysis.pdf; Neil Bhutta & Glenn B. Canner, *Did the CRA Cause the Mortgage Meltdown?*, COMMUNITY DIVIDEND (Mar. 1, 2009), http://www.minneapolisfed.org/research/pub_display.cfm?id=4136; *see also* Ellen Seidman, *No, Larry, CRA Didn’t Cause the Sub-Prime Mess* (Apr. 15, 2008, 9:55 AM), <http://www.newamerica.net/blog/asset-building/2008/no-larry-cra-didn-t-cause-sub-prime-mess-3210>; Elizabeth Laderman & Carolina Reid, FED. RESERVE BANK OF S.F., *CRA Lending During the Subprime Meltdown*, in REVISITING THE CRA: PERSPECTIVES ON THE FUTURE OF THE COMMUNITY REINVESTMENT ACT 115, 124 (2009) (published by the Federal Reserve Banks of Boston and San Francisco), http://www.frbsf.org/publications/community/cra/cra_lending_during_subprime_meltdown.pdf (finding that CRA-subject institutions were less likely to make subprime loans in California and that subprime loans made by CRA-subject institutions in CRA assessment areas outperformed these institutions’ subprime loans made outside CRA-assessment areas).

¹³⁸ *See* Ben S. Bernanke et al., *International Capital Flows and the Returns to Safe Assets in the United States, 2003–2007* (Feb. 2011), FED. RESERVE SYS., <http://www.federalreserve.gov/pubs/ifdp/2011/1014/default.htm>.

¹³⁹ *See* Gary B. Gorton, *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007* (May 11–13, 2009) (unpublished manuscript), <http://www.frbatlanta.org/news/Conferen/09fmc/gorton.pdf>.

sovereign issuers bore AAA ratings, over 60,000 structured securities were rated AAA.¹⁴⁰

The critical lesson from the CMBS bubble is that the creation of AAA-rated structured securities has an inevitable non-investment grade by-product (the B-piece), and the deal economics simply do not work unless the B-piece can be sold. Therefore, the essential, *but for* factor in the CMBS bubble was the rise of CDOs, which changed the B-piece market and loosened the traditional constraints on credit risk. The expansion of the B-piece market via the CDOs enabled the massive “leverage” of expanded investment in AAA-rated CMBS and credit in the CRE market. While the resecuritization game could only be repeated a couple of times, it was sufficient to fuel the CMBS bubble for a few years, which likely contributed to the CRE price bubble.

The CMBS and CRE bubbles show that market discipline is not such an easy thing to come by.¹⁴¹ The market can serve as a regulator, but for market discipline to work, risk needs to be in the hands of those who understand it.¹⁴²

¹⁴⁰ See Lloyd Blankfein, *Do Not Destroy the Essential Catalyst of Risk*, FINANCIAL TIMES, Feb. 8, 2009, at 7 (“In January 2008, there were 12 triple A-rated companies in the world. At the same time, there were 64,000 structured finance instruments . . . rated triple A.”).

¹⁴¹ This is especially true in a market in which participants can be manufactured to create demand, as in the case of CDOs. See William W. Bratton Jr. & Adam J. Levitin, *A Transactional Genealogy of Scandal: From Michael Milken to Enron to Goldman Sachs*, 86 S. CAL. L. REV. (forthcoming 2013).

¹⁴² See Anat Admati, Peter Conti-Brown, & Paul Pfleiderer, *Liability Holding Companies*, 59 UCLA L. REV. 852 (2012) (discussing expertise in liability management).