

Exhibit 98
to
Affidavit of Daniel M. Reilly
in Support of Joint Memorandum of
Law in Opposition to Proposed Settlement

CHAPTER
THIRTY-ONE

**NONAGENCY RESIDENTIAL
MORTGAGE-BACKED
SECURITIES**

DAPENG HU, PH.D., CFA
Managing Director
BlackRock Solutions

ROBERT GOLDSTEIN
Managing Director
BlackRock Solutions

Nonagency RMBS refers to residential mortgage-backed securities that are not guaranteed by government-sponsored enterprises (GSEs) or government agencies. It includes securities backed by prime jumbo, alternative-A (Alt-A), pay-option adjustable-rate mortgages (Option ARMs), subprime, second lien, and manufactured housing (MH) mortgage loans. While the category encompasses a wide range of instruments, from high-quality vanilla loans to loans at the most creative but risky end of the spectrum, these mortgages are mostly nonconforming, either larger than the agency conforming limit or not conforming to the agency underwriting standard. Each nonagency RMBS deal contains hundreds to thousands of mortgage loans. Different from agency RMBS, nonagency RMBS have both prepayment and credit risks. The cash flows of a deal are structured into various pools or tranches so that various tranches bear different risks to suit different investors. Each tranche is an RMBS bond.

Before the financial crisis, prime jumbo, Alt-A, and option ARMs were often referred to as nonagency collateralized mortgage obligations (CMO) and subprime, second lien, and manufactured housing were often referred to as

The views here are the authors' only and do not represent the views of BlackRock or BlackRock Solutions. The authors thank Mark Paltrowitz for both organizing this chapter and our many discussions on this topic. The authors thank Oliver Faltin-Traeger, Carolina Marquez, Sean Li, Ye Li, Julie Li, Sarah Rombom, Shirlee Tevet and Gauhar Turmuhambetva for their help in researching and editing this chapter. The authors also thank Akiva Dickstein, Jae Kim, Adam Levi, Randy Robertson, Biju Thuruthimattam, John Vibert, and Kishore Yalamanchili for helpful discussions on these materials.

ratings, and sell the tranches in the capital markets as RMBS. Major issuers include banks, mortgage companies, real estate investment trusts (REITs), investment banks, and the like. Rating agencies analyze the collateral loss and deal structure and assign credit ratings to each tranche. They also conduct surveillance of existing bonds to determine if they are eligible for rating upgrades or downgrades. The major rating agencies are Moody's, S&P, and Fitch. Trustees administer the deals including releasing remittance reports that detail the performance of the collateral and the bonds and distributing the cash flows to investors.

Mortgage servicers play a critical role in the nonagency RMBS life cycle. They collect payments from borrowers and pass them on to trustees. Depending on the type of deal and the terms of the prospectus, the servicer will generally be responsible for advancing principal and interest payments for delinquent borrowers, provided the servicer believes that the advanced amounts are recoverable. Servicers are also responsible for collection, foreclosure, real estate-owned (REO), and liquidation efforts. Recently, servicers have also become responsible for conducting loan modifications.

During the nonagency securitization boom, several industry participants built vertically integrated securitization businesses named conduits. These businesses acquired loans, either funding them directly through brokers or through a flow program with various correspondents for ultimate securitization exit. They also typically retained the servicing rights to the purchased loans, either performing the servicing themselves or subcontracting to third-party servicers. The "traditional" conduits include names such as Wells Fargo, Countrywide, and ResCap (formerly GMAC-RFC), although, as noted earlier, conduits may also be active in retail originations. From 2004 to 2006, Wall Street dealer shelves such as BSABS/BALTA (Bear Stearns), HEAT (CSFB), and SASC (Lehman) were very active in this segment.

Evolution of Nonagency RMBS Market

Nonagency securitization started in the 1980s. During the early stages of the RMBS market's development, there was an essentially binary division in the secondary mortgage market between agency pools/deals and nonagency deals. Loans that were not agency-eligible were either retained as whole loans or put into a "nonagency deal." The gradations in credit quality and underwriting that later characterized the nonagency sector were, at that point, mostly absent. As a consequence, nonagency deals issued in the 1980s and early 1990s frequently contained a wide variety of collateral types.

In the early 1990s nonagency RMBS began to employ more systematic underwriting standards that were similar to those of the GSEs, which resulted in more homogenous credit quality among prime jumbo deals. Credit (FICO) scores began to be used in mortgage lending providing a consistent industry-wide measurement of credit risk levels. This helped instigate the shift from generic "nonagency deals" to "prime jumbo," "Alt-A," and "subprime" deals. Prime jumbo was the dominant sector while Alt-A was the smallest.

As the housing market started booming in the early 2000s, U.S. mortgage lending began to move away from its traditional roots in 30-year fixed-rate product. Various alternative affordability products emerged and expanded rapidly. Hybrid adjustable-rate mortgages (ARMs) captured a larger slice of the origination market, as did hybrid nonamortizing (i.e., interest-only) and negatively amortizing products. Before 2003, nonagency RMBS accounted for about 20% of the total U.S. RMBS new issuance market. Beginning in 2004, the nonagency market captured an increasing portion of market share from the agency sector, still dominated by prime jumbo. By 2005, securitized nonagency RMBS origination surpassed the agency origination and reached \$1.2 trillion, with subprime as the largest nonagency sector followed by Alt-A.

Nonagency securitization was further fueled by the adoption of the pay-as-you-go (PAUG) structure in ABS credit default swaps (CDS) and the rapid expansion of the ABS CDO market. Traditional corporate CDS combines a credit event (typically a bankruptcy) and a physical settlement. However, Subprime ABS deals usually lack a hard or clear-cut credit event. Both principal write down (loss on principal) and interest payment shortfall (loss on interest) are incremental and reversible. In addition, credit protection used to exist through the cushion of mezzanine tranches, which was typically 5% to 10% of a deal's total capital structure or about several million dollars in size. The small size of ABS credit tranches made it very difficult for a protection buyer, other than someone who owned the tranche already, to find a reference obligation to deliver in order to make the physical settlement. These difficulties worked against the wide use of the corporate CDS template in the ABS market. In 2005 the industry adopted the pay-as-you-go structure for ABS CDS deals.² Under this structure, if an ABS security encounters a principal loss or an interest shortfall, the protection seller pays the protection buyer the amount of the loss or shortfall. If the security later catches up on the payment, the protection buyer returns the payment to the protection seller. This template essentially made ABS CDS work just like a cash bond, which greatly increased the liquidity of ABS CDS.

The pay-as-you-go template facilitated two key developments that ultimately became critical triggers of the financial crisis: an ability to short the market and the creation of synthetic ABS CDOs. Shortly after the adoption of pay-as-you-go ABS CDS, ABX, an index for or a basket of subprime ABS CDS, was launched. Many market participants who had not historically been active in the U.S. mortgage markets turned to the ABX indices as a way to express their views on mortgage credit. ABX prices became the market barometer of nonagency RMBS and the dominant instrument for shorting the nonagency market. The creation of synthetic ABS allowed the ABS CDO machine to roar. Synthetic ABS, as opposed to cash bonds, refers to using ABS CDS contracts to create cash flows that are similar to owning the reference bond. Before 2005 the demand for CDO

2. Pay-as-you-go was essentially adopted from the payment template of monoline insurance companies that guaranteed the timely payment of scheduled interest and principal amortization.

bonds was greater than the supply of cash assets. Synthetic ABS liberated CDO managers from the relative scarcity of cash bonds by allowing them to create tens of billions of synthetic or hybrid (mix of cash and synthetic bonds) instruments without actual mortgage origination, the most resource-intensive part of the securitization process. This greatly magnified the impact of nonagency mortgage defaults on the overall financial system.

The surge in nonagency mortgage demand directly led to the relaxation of mortgage underwriting criteria. Total combined loan-to-value ratios were increasing as borrowers were not always required to put down substantial equity in order to buy a house. Debt-to-income ratio, credit score, and documentation requirements were all loosened. Appraisal values were often inflated in order to qualify for a loan, underwriting due diligence was often compromised, and the share of affordability products (interest-only, negative amortization, etc.) increased sharply.

The consequence of loose underwriting soon became apparent as early pay defaults (EPDs, refer to delinquency within the first few payment periods) ramped up sharply in newly issued 2006 subprime deals. At the same time, the housing market started to weaken and home sales slowed. This accelerated the 2006 vintage delinquency rates as many borrowers did not have any equity buffer. As delinquency levels continued to rise rapidly beyond EPD in late 2006, it became clear that 2006 vintage was seriously challenged from credit perspective and market prices for associated bonds started to fall.

By early 2007 as the housing market showed no signs of a soft landing and both subprime and Alt-A delinquency rates accelerated monthly, the capital markets started to penalize all RMBS prices and many leveraged investors had to deleverage in order to meet margin calls. This triggered a vicious cycle:

decreased valuations → deleveraging → further valuation
decreases → more deleveraging

As a consequence, the demand for new issuance vanished and many originators either went out of business or ceased production. By the end of 2007, almost all nonagency originations had stopped. Nonagency securitization ground to a halt and RMBS spreads widened dramatically. Through the vicious cycle and thanks to the large exposures to ABS CDS and CDO, the credit problem in the nonagency RMBS market quickly transferred to turmoil in the entire credit market.

It is also worth noting the interplay of the capital markets turmoil and deterioration in fundamentals. The liquidity freeze in the capital markets led to a stop in nonagency mortgage origination, which in turn shut off refinancing channels for nonagency mortgage borrowers. Often prepayment and default “compete” because a borrower will look for opportunities to refinance into lower monthly payments or to sell the house before ultimately defaulting. The lack of prepayment opportunities led to a further increase in defaults. At the same time, the credit crunch and liquidity squeeze further froze the housing market and put more downward pressure on home sales and price movements. The deterioration in the housing market further fueled worsening of mortgage credit fundamentals.

A downward spiral unfolded as banks started to mark-to-market their balance sheet assets. The mounting nonagency mortgage related credit losses not only led to huge write downs to bank balance sheets, it also dramatically increased the capital reserve requirements for these large institutions, which further worsened market liquidity. Because many banks and large financial institutions were the major issuers and holders of RMBS, ABS CDS, and CDO assets, the mortgage credit meltdown eventually led to the downfall of large institutions including Bear Stearns, Washington Mutual, Lehman Brothers, AIG, Fannie Mae, and Freddie Mac.

Since late 2008, the nonagency sector has been in runoff mode with very little new issuance. Asset valuation hit a rock bottom in March 2009 and has since been in recovery. CDO liquidation and bank sales provided supply of existing bonds to the market. As of the end of 2010, there are \$1.46 trillion nonagency RMBS outstanding, with about \$432 billion of Alt-A, \$395 billion of subprime, \$318 billion of Prime, \$158 billion of Option ARM, and \$156 billion of second lien. 2006 and 2005 are the two largest vintages, followed by 2007 as a distant third.

During the crisis, the vast majority of AAA bonds experienced rating downgrades, including 99% of Option ARM, 97% of Alt-A, 94% of subprime, and 85% of prime bonds. Many were downgraded from AAA to below investment grade. Only a small amount of outstanding nonagency RMBS remain above investment grade at the end of 2010. As shown in Exhibit 31-1, most 2005, 2006, and 2007 vintage bonds are below investment grade. While most seasoned bonds (2004 and earlier) remain investment grade, the number of bonds and remaining balances in these vintages are small.

Since early 2010, re-securitization has emerged as a meaningful mechanism to help absorb and repackage the universe of nonagency RMBS. Re-securitizations, also known as re-REMICs, place nonagency RMBS bonds into a trust that then issues a senior and a junior bond to investors. Recent re-REMICs were primarily created using bonds that were AAA at issuance. They have utilized a simple structure in which the senior bonds receive all of the principal cash flows until they are paid off while all of the losses are first absorbed by the junior bonds. The presence

EXHIBIT 31-1

Percentage of Investment Grade Bonds within Each Vintage, Notional Balance Weighted, as of December 2010

Vintage	Prime	Alt-A	Option ARM	Subprime
2003	98	93.9	79.4	88.6
2004	92.4	81.8	61.4	81.8
2005	58.4	22.9	24.2	48.4
2006	18.3	4.4	7	13.3
2007	7.8	4	5.9	13

Sources: Moody's, S&P, Fitch, and BlackRock Solutions.

of junior bonds provides the senior bonds a greater credit enhancement than available on the underlying bonds individually; hence, the senior bonds can obtain AAA ratings to meet investor needs. One other benefit of these transactions is that they provide capital relief by allowing new AAA bonds to be created and retained while selling a smaller quantity of lower-rated bonds. Another attempt to revive the nonagency market is the introduction of PrimeX indices in April 2010. PrimeX allow investors to synthetically gain exposure to a basket of prime jumbo RMBS deals via CDS. Since inception, they have been traded fairly actively and have facilitated the trading of existing prime bonds.³

The basic elements of securitization—aggregation and subdivision of mortgage pools—has been an important housing finance channel. In spite of the considerable stress in securitization in 2007–2010, we expect nonagency RMBS will undergo structural and regulatory reforms and return to a more stable level.

COLLATERAL

Collateral analysis is a key component of relative value analysis for nonagency RMBS. Here we provide an overall review of the major characteristics of nonagency mortgages, their performance, and major issues in analyzing the collateral for nonagency RMBS deals.

Collateral Characteristics

Different products, vintages, and deals each have different characteristics. These characteristics, together with the macroeconomic environment, drive different prepayment and credit performance. Exhibit 31–2 provides the average characteristics of prime, Alt-A, option ARM, subprime, and second lien collateral.

Fixed versus Hybrid

Hybrid borrowers are typically more leveraged than fixed-rate borrowers. In addition the rate reset can cause substantial payment shocks under an increasing rate environment. Therefore, hybrid loans tend to have worse credit performance. In terms of prepayments, hybrids are also very different from fixed-rate mortgages. Before the crisis, hybrid mortgages prepaid faster than fixed-rate products. Now, with the higher perceived credit risks, hybrid prepayments are substantially slower than fixed prepayments. While hybrids are 40% of prime collateral, they represent 75% of subprime collateral. Unlike prime or Alt-A hybrids, subprime hybrids are dominated by short-reset products such as 2/28 and 3/27. While most prime or Alt-A hybrids reset every 12 months and the rate can go either up or down and is subject to caps and floors, most subprime hybrids reset every 6 months and the rate can only reset up.

3. See Dapeng Hu and Kishore Yalamanchili, "PrimeX—A Roadmap for Investors," *American Securitization* 4, 3 (August 2010), pp 19–21.