

# 11

## THE BUST

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What happens when a bubble bursts? In early 2007, it became obvious that home prices were falling in regions that had once boomed, that mortgage originators were floundering, and that more and more families, especially those with subprime and Alt-A loans, would be unable to make their mortgage payments.

What was not immediately clear was how the housing crisis would affect the financial system that had helped inflate the bubble. Were all those mortgage-backed securities and collateralized debt obligations ticking time bombs on the balance sheets of the world’s largest financial institutions? “The concerns were just that if people . . . couldn’t value the assets, then that created . . . questions about the solvency of the firms,” William C. Dudley, now president of the Federal Reserve Bank of New York, told the FCIC.<sup>1</sup>

In theory, securitization, over-the-counter derivatives and the many byways of the shadow banking system were supposed to distribute risk efficiently among investors. The theory would prove to be wrong. Much of the risk from mortgage-backed securities had actually been taken by a small group of systemically important companies with outsized holdings of, or exposure to, the super-senior and triple-A tranches of CDOs. These companies would ultimately bear great losses, even though those investments were supposed to be super-safe.

As 2007 went on, increasing mortgage delinquencies and defaults compelled the ratings agencies to downgrade first mortgage-backed securities, then CDOs. Alarmed investors sent prices plummeting. Hedge funds faced with margin calls from their repo lenders were forced to sell at distressed prices; many would shut down. Banks wrote down the value of their holdings by tens of billions of dollars.

The summer of 2007 also saw a near halt in many securitization markets, including the market for non-agency mortgage securitizations. For example, a total of \$75 billion in subprime securitizations were issued in the second quarter of 2007 (already down from prior quarters). That figure dropped precipitously to \$27 billion in the third quarter and to only \$12 billion in the fourth quarter of 2007. Alt-A issuance topped \$100 billion in the second quarter, but fell to \$13 billion in the fourth quarter of 2007. Once-booming markets were now gone—only \$4 billion in subprime or Alt-A mortgage-backed securities were issued in the first half of 2008, and almost none after that.<sup>2</sup>

CDOs followed suit. From a high of more than \$90 billion in the first quarter of 2007, worldwide issuance of CDOs with mortgage-backed securities as collateral plummeted to \$29 billion in the third quarter of 2007 and only \$5 billion in the fourth quarter. And as the CDO market ground to a halt, investors no longer trusted other structured products.<sup>3</sup> Over \$80 billion of collateralized loan obligations (CLOs), or securitized leveraged loans, were issued in 2007; only \$10 billion were issued in 2008. The issuance of commercial real estate mortgage-backed securities plummeted from \$232 billion in 2007 to \$12 billion in 2008.<sup>4</sup>

Those securitization markets that held up during the turmoil in 2007 eventually suffered in 2008 as the crisis deepened. Securitization of auto loans, credit cards, small business loans, and equipment leases all nearly ceased in the third and fourth quarters of 2008.

#### DELINQUENCIES: “THE TURN OF THE HOUSING MARKET”

Home prices rose 15% nationally in 2005, their third year of double-digit growth. But by the spring of 2006, as the sales pace slowed, the number of months it would take to sell off all the homes on the market rose to its highest level in 10 years. Nationwide, home prices peaked in April 2006.

Members of the Federal Reserve’s Federal Open Market Committee (FOMC) discussed housing prices in the spring of 2006. Chairman Ben Bernanke and other members predicted a decline in home prices but were uncertain whether the decline would be slow or fast. Bernanke believed some correction in the housing market would be healthy and that the goal of the FOMC should be to ensure the correction did not overly affect the growth of the rest of the economy.<sup>5</sup>

In October 2006, with the housing market downturn under way, Moody’s Economy.com, a business unit separate from Moody’s Investors Service, issued a report authored by Chief Economist Mark Zandi titled “Housing at the Tipping Point: The Outlook for the U.S. Residential Real Estate Market.” He came to the following conclusion:

Nearly 20 of the nation’s metro areas will experience a crash in house prices; a double-digit peak-to-trough decline in house prices. . . . These sharp declines in house prices are expected along the Southwest coast of Florida, in the metro areas of Arizona and Nevada, in a number of Cali-

ifornia areas, throughout the broad Washington, D.C. area, and in and around Detroit. Many more metro areas are expected to experience only house-price corrections in which peak-to-trough price declines remain in the single digits. . . . It is important to note that price declines in various markets are expected to extend into 2008 and even 2009.

With over 100 metro areas representing nearly one-half of the nation's housing stock experiencing or about to experience price declines, national house prices are also set to decline. Indeed, odds are high that national house prices will decline in 2007.<sup>6</sup>

For 2007, the National Association of Realtors announced that the number of sales of existing homes had experienced the sharpest fall in 25 years. That year, home prices declined 9%. In 2008, they would drop a stunning 17%. Overall, by the end of 2009, prices would drop 28% from their peak in 2006.<sup>7</sup> Some cities saw a particularly large drop: in Las Vegas, as of August 2010, home prices were down 55% from their peak. And areas that never saw huge price gains have experienced losses as well: home prices in Denver have fallen 18% since their peak.

In some areas, home prices started to fall as early as late 2005. For example, in Ocean City, New Jersey, where many properties are vacation homes, home prices had risen 144% since 2001; they topped out in December 2005 and fell 4% in the first half of 2006. By mid-2010, they would be 22% below their peak. Prices topped out in Sacramento in October 2005 and are today down nearly 50%. In most places, prices rose for a bit longer. For instance, in Tucson, Arizona, prices kept increasing for much of 2006, climbing 95% from 2001 to their high point in August 2006, and then fell only 3% by the end of the year.<sup>8</sup>

One of the first signs of the housing crash was an upswing in early payment defaults—usually defined as borrowers' being 60 or more days delinquent within the first year. Figures provided to the FCIC show that by the summer of 2006, 1.5% of loans less than a year old were in default. The figure would peak in late 2007 at 2.5%, well above the 1.0% peak in the 2000 recession. Even more stunning, first payment defaults—that is, mortgages taken out by borrowers who never made a single payment—went above 1.5% of loans in early 2007.<sup>9</sup> Responding to questions about that data, CoreLogic Chief Economist Mark Fleming told the FCIC that the early payment default rate “certainly correlates with the increase in the Alt-A and subprime shares and the turn of the housing market and the sensitivity of those loan products.”<sup>10</sup>

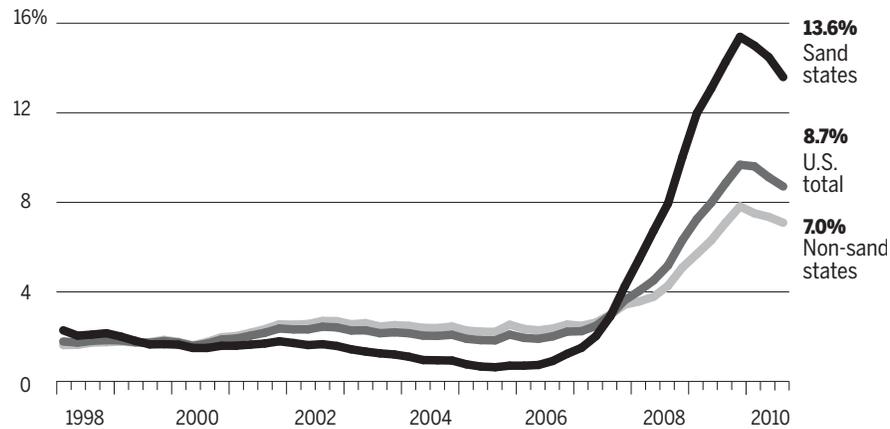
Mortgages in serious delinquency, defined as those 90 or more days past due or in foreclosure, had hovered around 1% during the early part of the decade, jumped in 2006, and kept climbing. By the end of 2009, 9.7% of mortgage loans were seriously delinquent. By comparison, serious delinquencies peaked at 2.4% in 2002 following the previous recession.<sup>11</sup>

Serious delinquency was highest in areas of the country that had experienced the biggest housing booms. In the “sand states”—California, Arizona, Nevada, and Florida—serious delinquency rose to 3% in mid-2007 and 15% by late 2009, double the rate in other areas of the country (see figure 11.1).<sup>12</sup>

## Mortgage Delinquencies by Region

Arizona, California, Florida, and Nevada—the “sand states”—had the most problem loans.

IN PERCENT, BY REGION



NOTE: Serious delinquencies include mortgages 90 days or more past due and those in foreclosure.

SOURCE: Mortgage Bankers Association National Delinquency Survey

Figure 11.1

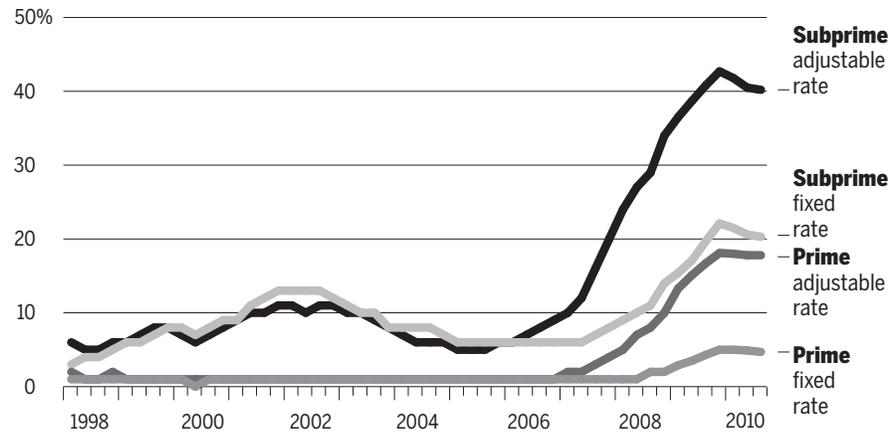
Serious delinquency also varied by type of loan (see figure 11.2). Subprime adjustable-rate mortgages began to show increases in serious delinquency in early 2006, even as house prices were peaking; the rate rose rapidly to 20% in 2007. By late 2009, the delinquency rate for subprime ARMs was 40%. Prime ARMs did not weaken until 2007, at about the same time as subprime fixed-rate mortgages. Prime fixed-rate mortgages, which have historically been the least risky, showed a slow increase in serious delinquency that coincided with the increasing severity of the recession and of unemployment in 2008.

The FCIC undertook an extensive examination of the relative performance of mortgages purchased or guaranteed by the GSEs, those securitized in the private market, and those insured by the Federal Housing Administration or Veterans Administration (see figure 11.3). The analysis was conducted using roughly 25 million mortgages outstanding at the end of each year from 2006 through 2009.<sup>13</sup> The data contained mortgages in four groups—loans that were sold into private label securitizations labeled subprime by issuers (labeled SUB), loans sold into private label Alt-A securitizations (ALT), loans either purchased or guaranteed by the GSEs (GSE), and loans guaranteed by the Federal Housing Administration or Veterans Administration (FHA).<sup>14</sup> The GSE group, in addition to the more traditional conforming GSE loans,

## Mortgage Delinquencies by Loan Type

*Serious delinquencies started earlier and were substantially higher among subprime adjustable-rate loans, compared with other loan types.*

IN PERCENT, BY TYPE



NOTE: Serious delinquencies include mortgages 90 days or more past due and those in foreclosure.

SOURCE: Mortgage Bankers Association National Delinquency Survey

*Figure 11.2*

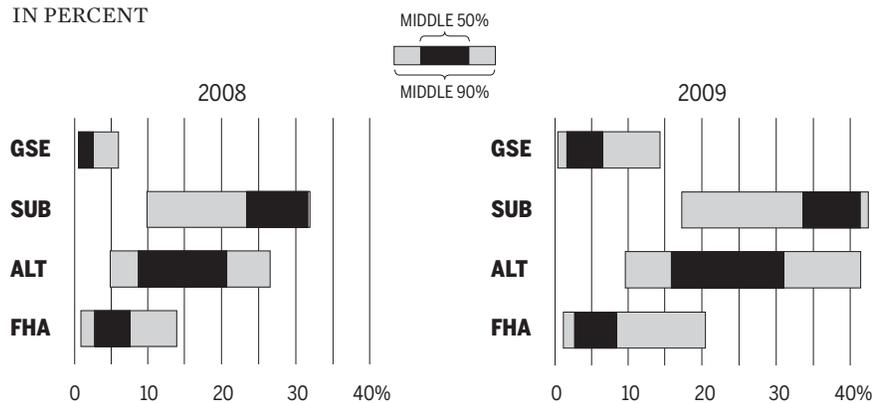
also includes mortgages that the GSEs identified as subprime and Alt-A loans owing to their higher-risk characteristics, as discussed in earlier chapters.

Within each of the four groups, the FCIC created subgroups based on characteristics that could affect loan performance: FICO credit scores, loan-to-value ratios (LTVs), and mortgage size. For example, one subgroup would be GSE loans with a balance below \$417,000 (conforming to GSE loan size limits), a FICO score between 640 and 659 (a borrower with below-average credit history), and LTV between 80% and 100%. Another group would be Alt-A loans with the same characteristics. In each year, the loans were broken into 576 different subgroups—144 each for GSE, SUB, ALT, and FHA.<sup>15</sup>

Figure 11.3 graphically demonstrates the results of the examination. The various bars show the range of average delinquencies for each of the four groups examined, based on the distribution of delinquency rates within the 144 subgroups for each loan category. The black portion of each bar represents the middle 50% (25% on either side of the median) of the distribution of average delinquency rates. The full bar, including both dark and light shading, represents the middle 90% of the distribution of average delinquency rates. The bars exclude the 5% at the extremes of each end of the distribution. For example, at the end of 2008, the black portion of the GSE bar

## Loan Performance in Various Mortgage-Market Segments

Bars shows distribution of average rate of serious delinquency.



NOTE: Serious delinquencies include mortgages 90 days or more past due and those in foreclosure.  
SOURCE: FCIC calculations, based on CoreLogic and Loan Processing Service Inc.

Figure 11.3

spans a 0.6% average delinquency rate on the low end and a 2.4% average delinquency rate on the high end. The full bar for the GSEs spans average delinquency rates from 0.1% to 6.0%. That means that only 5% of GSE loans were in subgroups with average delinquency rates above 6.0%. In sharp contrast, the black bar for private-label subprime securitizations (SUB) spans average delinquency rates between 24.0% on the low end and 31.0% on the high end, and the full bar spans average delinquency rates between 10.0% and 32.0%. That means that only 5% of SUB loans were in subgroups with average delinquency rates below 10%. The worst-performing 5% of GSE loans are in subgroups with rates of serious delinquency similar to the best-performing 5% of SUB loans.<sup>16</sup>

By the end of 2009, performance within all segments of the market had weakened. The median delinquency rate—the midpoints of the black bars—rose from 1% in 2008 to 2.5% for GSE loans, from 29% to 39% for SUB loans, from 12% to 21% for Alt-A loans, and remained at roughly 6% for FHA loans.

The data illustrate that in 2008 and 2009, GSE loans performed significantly better than privately securitized, or non-GSE, subprime and Alt-A loans. That holds true even when comparing loans in GSE pools that share the same key characteristics with the loans in privately securitized mortgages, such as low FICO scores. For example, among loans to borrowers with FICO scores below 660, a privately securitized mortgage was more than four times as likely to be seriously delinquent as a GSE.

In 2008, the respective average delinquency rates for the non-GSE and GSE loans were 28.3% and 6.2%. These patterns are most likely driven by differences in underwriting standards as well as by some differences not captured in these mortgages.<sup>17</sup> For instance, in the GSE pool, borrowers tended to make bigger down payments. The FCIC's data show that 58% of GSE loans with FICO scores below 660 had an original loan-to-value ratio below 80%, indicating that the borrower made a down payment of at least 20% of the sales price. This relatively large down payment would help offset the effect of the lower FICO score. In contrast, only 31% of loans with FICO scores below 660 in non-GSE subprime securitizations had an LTV under 80%. The data illustrate that non-agency securitized loans were much more likely to have more than one risk factor and thereby exhibit so-called risk layering, such as low FICO scores on top of small down payments.

GSE mortgages with Alt-A characteristics also performed significantly better than mortgages packaged into non-GSE Alt-A securities. For example, in 2008 among loans with an LTV above 90%, the GSE pools have an average rate of serious delinquency of 5.7%, versus a rate of 15.5% for loans in private Alt-A securities.<sup>18</sup> These results are also, in large part, driven by differences in risk layering.

Others frame the situation differently. According to Ed Pinto, a mortgage finance industry consultant who was the chief credit officer at Fannie Mae in the 1980s, GSEs dominated the market for risky loans. In written analyses reviewed by the FCIC staff and sent to Commissioners as well as in a number of interviews, Pinto has argued that the GSE loans that had FICO scores below 660, a combined loan-to-value ratio greater than 90%, or other mortgage characteristics such as interest-only payments were essentially equivalent to those mortgages in securitizations labeled subprime and Alt-A by issuers.

Using strict cutoffs on FICO score and loan-to-value ratios that ignore risk layering and thus are only partly related to mortgage performance (as well as relying on a number of other assumptions), Pinto estimates that as of June 30, 2008, 49% of all mortgages in the country—26.7 million of them—were risky mortgages that he defines as subprime or Alt-A. Of these, Pinto counts 11.9 million, or 45%, that were purchased or guaranteed by the GSEs.<sup>19</sup> In contrast, the GSEs categorize fewer than 3 million of their loans as subprime or Alt-A.<sup>20</sup>

Importantly, as the FCIC review shows, the GSE loans classified as subprime or Alt-A in Pinto's analysis did not perform nearly as poorly as loans in non-agency subprime or Alt-A securities. These differences suggest that grouping all of these loans together is misleading. In direct contrast to Pinto's claim, GSE mortgages with some riskier characteristics such as high loan-to-value ratios are not at all equivalent to those mortgages in securitizations labeled subprime and Alt-A by issuers. The performance data assembled and analyzed by the FCIC show that non-GSE securitized loans experienced much higher rates of delinquency than did the GSE loans with similar characteristics.

In addition to examining loans owned and guaranteed by the GSEs, Pinto also commented on the role of the Community Reinvestment Act (CRA) in causing the crisis, declaring, "The pain and hardship that CRA has likely spawned are immeasurable."<sup>21</sup>

Contrary to this view, two Fed economists determined that lenders actually made few subprime loans to meet their CRA requirements. Analyzing a database of nearly 14 million loans originated in 2006, they found that only a small percentage of all higher-cost loans as defined by the Home Mortgage Disclosure Act had any connection to the CRA. These higher-cost loans serve as a rough proxy for subprime mortgages. Specifically, the study found that only 6% of such higher-cost loans were made to low- or moderate-income borrowers or in low- or moderate-income neighborhoods by banks and thrifts (and their subsidiaries and affiliates) covered by the CRA. The other 94% of higher-cost loans either were made by CRA-covered institutions that did not receive CRA credit for these loans or were made by lenders not covered by the CRA. Using other data sources, these economists also found that CRA-related subprime loans appeared to perform better than other subprime loans. “Taken together, the available evidence seems to run counter to the contention that the CRA contributed in any substantive way to the current crisis,” they wrote.<sup>22</sup>

Subsequent research has come to similar conclusions. For example, two economists at the San Francisco Fed, using a different methodology and analyzing data on the California mortgage market, found that only 16% of loans made by CRA-covered lenders were located in low- and moderate-income census tracts versus over 20% for independent mortgage companies not covered by the CRA. Further, fewer than 30% of the loans made by CRA lenders in low-income communities were higher priced, even at the peak of the market. In contrast, about one-half of the loans originated by independent mortgage companies in these communities were higher priced. And after accounting for characteristics of the loans and the borrowers, such as income and credit score, the authors found that loans made by CRA-covered lenders in the low- and moderate-income areas they serve were half as likely to default as similar loans made by independent mortgage companies, which are not subject to CRA and are subject to less regulatory oversight in general. “While certainly not conclusive, this suggests that the CRA, and particularly its emphasis on loans made within a lender’s assessment area, helped to ensure responsible lending, even during a period of overall declines in underwriting standards,” they concluded.<sup>23</sup>

Overall, in 2004, 2005, and 2006, CRA-covered banks and thrifts accounted for at least 60% of all mortgage lending but only between 36% and 41% of higher-priced mortgages. Independent mortgage companies originated less than one-third of all mortgages but about one-half of all higher-priced mortgages.<sup>24</sup> Finally, lending by nonbank affiliates of CRA-covered depository institutions is counted toward CRA performance at the discretion of the bank or thrift. These affiliates accounted for another roughly 10% of mortgage lending but about 12% of high-price lending.

Bank of America provided the FCIC with performance data on its CRA-qualifying portfolio, which represented only 7% of the bank’s mortgage portfolio.<sup>25</sup> In the end of the first quarter of 2010, 8% of the bank’s \$212 billion portfolio of residential mortgages was nonperforming: 21% of the \$15 billion CRA-qualifying portfolio was nonperforming at that date.

John Reed, a former CEO of Citigroup, when asked whether he thought government policies such as the CRA played a role in the crisis, said that he didn’t believe

banks would originate “a bad mortgage because they thought the government policy allowed it” unless the bank could sell off the mortgage to Fannie or Freddie, which had their own obligations in this arena. He said, “It’s hard for me to answer. If the reason the regulators didn’t jump up and down and yell at the low-doc, no-doc subprime mortgage was because they felt that they, Congress had sort of pushed in that direction, then I would say yes.”<sup>26</sup>

“You know, CRA could be a pain in the neck,” the banker Lewis Ranieri told the FCIC. “But you know what? It always, in my view, it always did much more good than it did anything. You know, we did a lot. CRA made a big difference in communities. . . . You were really putting money in the communities in ways that really stabilized the communities and made a difference.” But lenders including Countrywide used pro-homeownership policies as a “smokescreen” to do away with underwriting standards such as requiring down payments, he said. “The danger is that it gives air cover to all of this kind of madness that had nothing to do with the housing goal.”<sup>27</sup>

#### RATING DOWNGRADES: “NEVER BEFORE”

Prior to 2004, the ratings of mortgage-backed securities at Moody’s were monitored by the same analysts who had rated them in the first place. In 2004, Nicolas Weill, Moody’s chief credit officer and team managing director, was charged with creating an independent surveillance team to monitor previously rated deals.<sup>28</sup>

In November 2006, the surveillance team began to see a rise in early payment defaults in mortgages originated by Fremont Investment & Loan,<sup>29</sup> and downgraded several securities with underlying Fremont loans or put them on watch for future downgrades. “This was a very unusual situation as never before had we put on watch deals rated in the same calendar year,” Weill later wrote to Raymond McDaniel, the chairman and CEO of Moody’s Corporation, and Brian Clarkson, the president of Moody’s Investors Service.<sup>30</sup>

In early 2007, a Moody’s special report, overseen by Weill, about the sharp increases in early payment defaults stated that the foreclosures were concentrated in subprime mortgage pools. In addition, more than 2.75% of the subprime mortgages securitized in the second quarter of 2006 were 60 days delinquent within six months, more than double the rate a year earlier (1.25%). The exact cause of the trouble was still unclear to the ratings agency, though. “Moody’s is currently assessing whether this represents an overall worsening of collateral credit quality or merely a shifting forward of eventual defaults which may not significantly impact a pool’s overall expected loss.”<sup>31</sup>

For the next few months, the company published regular updates about the subprime mortgage market. Over the next three months, Moody’s took negative rating actions on 4.5% of the outstanding subprime mortgage securities rated Baa. Then, on July 10, 2007, in an unprecedented move, Moody’s downgraded 399 subprime mortgage-backed securities that had been issued in 2006 and put an additional 32 securities on watch. The \$5.2 billion of securities that were affected, all rated Baa and lower, made up 19% of the subprime securities that Moody’s rated Baa in 2006. For the time

being, there were no downgrades on higher-rated tranches. Moody's attributed the downgrades to "aggressive underwriting combined with prolonged, slowing home price appreciation" and noted that about 60% of the securities affected contained mortgages from one of four originators: Fremont Investment & Loan, Long Beach Mortgage Company, New Century Mortgage Corporation, and WMC Mortgage Corp.<sup>32</sup>

Weill later told the FCIC staff that Moody's issued a mass announcement, rather than downgrading a few securities at a time, to avoid creating confusion in the market.<sup>33</sup> A few days later, Standard & Poor's downgraded 498 similar tranches. These initial downgrades were remarkable not only because of the number of securities involved but also because of the sharp rating cuts—an average of four notches per security, when one or two notches was more routine (for example, a single notch would be a downgrade from AA to AA-). Among the tranches downgraded in July 2007 were the bottom three mezzanine tranches (M9, M10, and M11) of the Citigroup deal that we have been examining, CMLTI 2006-NC2. By that point, nearly 12% of the original loan pool had prepaid but another 11% were 90 or more days past due or in foreclosure.<sup>34</sup>

Investors across the world were assessing their own exposure, and guessing at that of others, however indirect, to these assets. A report from Bear Stearns Asset Management detailed its exposure. One of its CDOs, Tall Ships, had direct exposure to our sample deal, owning \$8 million of the M7 and M8 tranches. BSAM's High-Grade hedge fund also had exposure through a \$10 million credit default swap position with Lehman referencing the M8 tranche. And BSAM's Enhanced Leverage hedge fund owned parts of the equity in Independence CDO, which in turn owned the M9 tranche of our sample deal. In addition, these funds had exposure through their holdings of other CDOs that in turn owned tranches of the Citigroup deal.<sup>35</sup>

Then, on October 11, Moody's downgraded another 2,506 tranches (\$33.4 billion) of subprime mortgage-backed securities and placed 577 tranches (\$23.8 billion) on watch for potential downgrade. Now the total of securities downgraded and put on watch represented 13.4% of the original dollar volume of all 2006 subprime mortgage-backed securities that Moody's had rated. Of the securities placed on watch in October, 48 tranches (\$6.9 billion) were originally Aaa-rated and 529 (\$16.9 billion) were Aa-rated. All told, in the first 10 months of 2007, 92% of the mortgage-backed security deals issued in 2006 had at least one tranche downgraded or put on watch.<sup>36</sup>

By this point in October, 13% of the loans in our case study deal CMLTI 2006-NC2 were seriously delinquent and some homes had already been repossessed. The M4 through M8 tranches were downgraded as part of the second wave of mass downgrades. Five additional tranches would eventually be downgraded in April 2008.<sup>37</sup>

Before it was over, Moody's would downgrade 83% of all the 2006 Aaa mortgage-backed securities tranches and all of the Baa tranches. For those securities issued in the second half of 2007, nearly all Aaa and Baa tranches were downgraded. Of all

tranches initially rated investment grade—that is, rated Baa3 or higher—76% of those issued in 2006 were downgraded to junk, as were 89% of those from 2007.<sup>38</sup>

#### CDOs: “CLIMBING THE WALL OF SUBPRIME WORRY”

In March 2007, Moody’s reported that CDOs with high concentrations of subprime mortgage-backed securities could incur “severe” downgrades.<sup>39</sup> In an internal email sent five days after the report, Group Managing Director of U.S. Derivatives Yuri Yoshizawa explained to Moody’s Chairman McDaniel and to Executive Vice President Noel Kirnon that one managing director at Credit Suisse First Boston “sees banks like Merrill, Citi, and UBS still furiously doing transactions to clear out their warehouses. . . . He believes that they are creating and pricing the CDOs in order to remove the assets from the warehouses, but that they are holding on to the CDOs . . . in hopes that they will be able to sell them later.”<sup>40</sup> Several months later, in a review of the CDO market titled “Climbing the Wall of Subprime Worry,” Moody’s noted, “Some of the first quarter’s activity [in 2007] was the result of some arrangers feverishly working to clear inventory and reduce their balance sheet exposure to the subprime class.”<sup>41</sup> Even though Moody’s was aware that the investment banks were dumping collateral out of the warehouses and into CDOs—possibly regardless of quality—the firm continued to rate new CDOs using existing assumptions.

Former Moody’s executive Richard Michalek testified to the FCIC, “It was a case of, with respect to why didn’t we stop and change our methodology, there is a very conservative culture at Moody’s, at least while I was there, that suggested that the only thing worse than quickly getting a new methodology in place is quickly getting the wrong methodology in place and having to unwind that and to fail to consider the unintended consequences.”<sup>42</sup>

In July, McDaniel gave a presentation to the board on the company’s 2007 strategic plan. His slides had such bleak titles as “Spotlight on Mortgages: Quality Continues to Erode,” “House Prices Are Falling . . .,” “Mortgage Payment Resets Are Mounting,” and “1.3 MM Mortgage Defaults Forecast 2007–08.”<sup>43</sup> Despite all the evidence that the quality of the underlying mortgages was declining, Moody’s did not make any significant adjustments to its CDO ratings assumptions until late September.<sup>44</sup> Out of \$51 billion in CDOs that Moody’s rated after its mass downgrade of subprime mortgage-backed securities on July 10, 2007, 88% were rated Aaa.<sup>45</sup>

Moody’s had hoped that rating downgrades could be staved off by mortgage modifications—if their monthly payments became more affordable, borrowers might stay current. However, in mid-September, Eric Kolchinsky, a team managing director for CDOs, learned that a survey of servicers indicated that very few troubled mortgages were being modified.<sup>46</sup> Worried that continuing to rate CDOs without adjusting for known deterioration in the underlying securities could expose Moody’s to liability, Kolchinsky advised Yoshizawa that the company should stop rating CDOs until the securities downgrades were completed. Kolchinsky told the FCIC that Yoshizawa “admonished” him for making the suggestion.<sup>47</sup>

By the end of 2008, more than 90% of all tranches of CDOs had been downgraded. Moody's downgraded nearly all of the 2006 Aaa and all of the Baa CDO tranches. And, again, the downgrades were large—more than 80% of Aaa CDO bonds and more than 90% of Baa CDO bonds were eventually downgraded to junk.<sup>48</sup>

#### LEGAL REMEDIES: “ON THE BASIS OF THE INFORMATION”

The housing bust exposed the flaws in the mortgages that had been made and securitized. After the crisis unfolded, those with exposure to mortgages and structured products—including investors, financial firms, and private mortgage insurance firms—closely examined the representations and warranties made by mortgage originators and securities issuers. When mortgages were securitized, sold, or insured, certain representations and warranties were made to assure investors and insurers that the mortgages met stated guidelines. As mortgage securities lost value, investors found significant deficiencies in securitizers' due diligence on the mortgage pools underlying the mortgage-backed securities as well as in their disclosure about the characteristics of those deals. As private mortgage insurance companies found similar deficiencies in the loans they insured, they have denied claims to an unprecedented extent.

Fannie and Freddie acquired or guaranteed millions of loans each year. They delegated underwriting authority to originators subject to a legal agreement—representations and warranties—that the loans meet specified criteria. They then checked samples of the loans to ensure that these representations and warranties were not breached. If there was a breach and the loans were “ineligible” for purchase, the GSE had the right to require the seller to buy back the loan—assuming, of course, that the seller had not gone bankrupt.

As a result of such sampling, during the three years and eight months ending August 31, 2010, Freddie and Fannie required sellers to repurchase 167,000 loans totaling \$34.8 billion. So far, Freddie has received \$9.1 billion from sellers, and Fannie has received \$11.8 billion—a total of \$20.9 billion.<sup>49</sup> The amount put back is notable in that it represents 21% of \$163 billion in credit-related expenses recorded by the GSEs since the beginning of 2008 through September 2010.<sup>50</sup>

In testing to ensure compliance with its standards, Freddie reviews a small percentage of performing loans and a high percentage of foreclosed loans (including well over 90% of all loans that default in the first two years). In total, Freddie reviewed \$76.8 billion of loans (out of \$1.51 trillion in loans acquired or guaranteed) and found \$21.7 billion to be ineligible, meaning they did not meet representations and warranties.<sup>51</sup>

Among the performing loans that were sampled, over time an increasing percentage were found to be ineligible, rising from 10% for mortgages originated in 2005 to 23% in 2008. Still, Freddie put back very few of these performing loans to the originators. Among mortgages originated from 2005 to 2008, it found that 17% of the delinquent loans were ineligible, as were 27% of the loans in foreclosure.<sup>52</sup> Most of these were put back to originators—again, in cases in which the originators were still in op-

eration. Sometimes, if the reasons for ineligibility were sufficiently minor, the loans were not put back.

Overall, of the delinquent loans and loans in foreclosure sampled by Freddie, 20% were put back. In 2009 and 2010, Freddie put back significant loan volumes to the following lenders: Countrywide, \$1.9 billion; Wells Fargo, \$1.2 billion; Chase Home Financial, \$1.1 billion; Bank of America, \$476 million; and Ally Financial, \$453 million.<sup>53</sup>

Using a method similar to Freddie's to test for loan eligibility, Fannie reviewed between 2% and 5% of the mortgages originated since 2005—sampling at the higher rates for delinquent loans. From 2007 through 2010, Fannie put back loans to the following large lenders: Bank of America, \$6.9 billion; Wells Fargo, \$2.3 billion; JP Morgan Chase, \$2.2 billion; Citigroup, \$1.5 billion; SunTrust Bank, \$898 million; and Ally Financial, \$838 million.<sup>54</sup> In early January 2011, Bank of America reached a deal with Fannie and Freddie, settling the GSEs' claims with a payment of more than \$2.5 billion.<sup>55</sup>

Like Fannie and Freddie, private mortgage insurance (PMI) companies have been finding significant deficiencies in mortgages. They are refusing to pay claims on some insured mortgages that have gone into default. This insurance protects the holder of the mortgage if a homeowner defaults on a loan, even though the responsibility for the premiums generally lies with the homeowner. By the end of 2006, PMI companies had insured a total of \$668 billion in potential mortgage losses.<sup>56</sup>

As defaults and losses on the insured mortgages have been increasing, the PMI companies have seen a spike in claims. As of October 2010, the seven largest PMI companies, which share 98% of the market, had rejected about 25% of the claims (or \$6 billion of \$24 billion) brought to them, because of violations of origination guidelines, improper employment and income reporting, and issues with property valuation.<sup>57</sup>

Separate from their purchase and guarantee of mortgages, over the course of the housing boom the GSEs purchased \$690 billion of subprime and Alt-A private-label securities.<sup>58</sup> The GSEs have recorded \$46 billion in charges on securities from January 1, 2008 to September 30, 2010.<sup>59</sup> Frustrated with the lack of information from the securities' servicers and trustees, in many cases large banks, on July 12, 2010, the GSEs through their regulator, the Federal Housing Finance Agency, issued 64 subpoenas to various trustees and servicers in transactions in which the GSEs lost money.<sup>60</sup> Where they find that the nonperforming loans in the pools have violations, the GSEs intend to demand that the trustees recognize their rights (including any rights to put loans back to the originator or wholesaler).<sup>61</sup>

While this strategy being followed by the GSEs is based in contract law, other investors are relying on securities law to file lawsuits, claiming that they were misled by inaccurate or incomplete prospectuses; and, in a number of cases, they are winning.

As of mid-2010, court actions embroiled almost all major loan originators and underwriters—there were more than 400 lawsuits related to breaches of representations and warranties, by one estimate.<sup>62</sup> These lawsuits filed in the wake of the financial crisis include those alleging “untrue statements of material fact” or “material

misrepresentations” in the registration statements and prospectuses provided to investors who purchased securities. They generally allege violations of the Securities Exchange Act of 1934 and the Securities Act of 1933.

Both private and government entities have gone to court. For example, the investment brokerage Charles Schwab has sued units of Bank of America, Wells Fargo, and UBS Securities.<sup>63</sup> The Massachusetts attorney general’s office settled charges against Morgan Stanley and Goldman Sachs, after accusing the firms of inadequate disclosure relating to their sales of mortgage-backed securities. Morgan Stanley agreed to pay \$102 million and Goldman Sachs agreed to pay \$60 million.<sup>64</sup>

To take another example, the Federal Home Loan Bank of Chicago has sued several defendants, including Bank of America, Credit Suisse Securities, Citigroup, and Goldman Sachs, over its \$3.3 billion investment in private mortgage-backed securities, claiming they failed to provide accurate information about the securities. Similarly, Cambridge Place Investment Management has sued units of Morgan Stanley, Citigroup, HSBC, Goldman Sachs, Barclays, and Bank of America, among others, “on the basis of the information contained in the applicable registration statement, prospectus, and prospective supplements.”<sup>65</sup>

#### LOSSES: “WHO OWNS RESIDENTIAL CREDIT RISK?”

Through 2007 and into 2008, as the rating agencies downgraded mortgage-backed securities and CDOs, and investors began to panic, market prices for these securities plunged. Both the direct losses as well as the marketwide contagion and panic that ensued would lead to the failure or near failure of many large financial firms across the system. The drop in market prices for mortgage-related securities reflected the higher probability that the underlying mortgages would actually default (meaning that less cash would flow to the investors) as well as the more generalized fear among investors that this market had become illiquid. Investors valued liquidity because they wanted the assurance that they could sell securities quickly to raise cash if necessary. Potential investors worried they might get stuck holding these securities as market participants looked to limit their exposure to the collapsing mortgage market.

As market prices dropped, “mark-to-market” accounting rules required firms to write down their holdings to reflect the lower market prices. In the first quarter of 2007, the largest banks and investment banks began complying with a new accounting rule and for the first time reported their assets in one of three valuation categories: “Level 1 assets,” which had observable market prices, like stocks on the stock exchange; “Level 2 assets,” which were not as easily priced because they were not actively traded; and “Level 3 assets,” which were illiquid and had no discernible market prices or other inputs. To determine the value of Level 3 and in some cases Level 2 assets where market prices were unavailable, firms used models that relied on assumptions. Many financial institutions reported Level 3 assets that substantially exceeded their capital. For example, for the first quarter of 2007, Bear Stearns reported about \$19 billion in Level 3 assets, compared to \$13 billion in capital; Morgan Stanley re-

ported about \$60 billion in Level 3 assets, against capital of \$38 billion; and Goldman reported about \$48 billion, and capital of \$37 billion.

Mark-to-market write-downs were required on many securities even if there were no actual realized losses and in some cases even if the firms did not intend to sell the securities. The charges reflecting unrealized losses were based, in part, on credit rating agencies' and investors' expectations that the mortgages would default. But only when those defaults came to pass would holders of the securities actually have realized losses. Determining the market value of securities that did not trade was difficult, was subjective, and became a contentious issue during the crisis. Why? Because the write-downs reduced earnings and capital, and triggered collateral calls.

These mark-to-market accounting rules received a good deal of criticism in recent years, as firms argued that the lower market prices did not reflect market values but rather fire-sale prices driven by forced sales. Joseph Grundfest, when he was a member of the SEC's Committee on Improvements to Financial Reporting, noted that at times, marking securities at market prices "creates situations where you have to go out and raise physical capital in order to cover losses that as a practical matter were never really there."<sup>66</sup> But not valuing assets based on market prices could mean that firms were not recording losses required by the accounting rules and therefore were overstating earnings and capital.

As the mortgage market was crashing, some economists and analysts estimated that actual losses, also known as realized losses, on subprime and Alt-A mortgages would total \$200 to \$300 billion;<sup>67</sup> so far, by 2010, the figure has turned out not to be much more than that. As of year-end 2009, the dollar value of all impaired Alt-A and subprime mortgage-backed securities total about \$300 billion.<sup>68</sup> Securities are impaired when they have suffered realized losses or are expected to suffer realized losses imminently. While those numbers are small in relation to the \$14 trillion U.S. economy, the losses had a disproportionate impact. "Subprime mortgages themselves are a pretty small asset class," Fed Chairman Ben Bernanke told the FCIC, explaining how in 2007 he and Treasury Secretary Henry Paulson had underestimated the repercussions of the emerging housing crisis. "You know, the stock market goes up and down every day more than the entire value of the subprime mortgages in the country. But what created the contagion, or one of the things that created the contagion, was that the subprime mortgages were entangled in these huge securitized pools."<sup>69</sup>

The large drop in market prices of the mortgage securities had large spillover effects to the financial sector, for a number of reasons. For example, as just discussed, when the prices of mortgage-backed securities and CDOs fell, many of the holders of those securities marked down the value of their holdings—before they had experienced any actual losses.

In addition, rather than spreading the risks of losses among many investors, the securitization market had concentrated them. "Who owns residential credit risk?" two Lehman analysts asked in a September 2007 report. The answer: three-quarters of subprime and Alt-A mortgages had been securitized—and "much of the risk in

these securitizations is in the investment-grade securities and has been almost entirely transferred to AAA collateralized debt obligation (CDO) holders.<sup>70</sup> A set of large, systemically important firms with significant holdings or exposure to these securities would be found to be holding very little capital to protect against potential losses. And most of those companies would turn out to be considered by the authorities too big to fail in the midst of a financial crisis.

The International Monetary Fund's Global Financial Stability Report published in October 2008 examined where the declining assets were held and estimated how severe the write-downs would be. All told, the IMF calculated that roughly \$10 trillion in mortgage assets were held throughout the financial system. Of these, \$3.8 trillion were GSE mortgage-backed securities; the IMF expected losses of \$80 billion, but investors holding these securities would lose no money, because of the GSEs' guarantee. Another \$4.7 trillion in mortgage assets were estimated to be prime and nonprime mortgages held largely by the banks and the GSEs. These were expected to suffer as much as \$170 billion in write-downs due to declines in market value. The remaining \$1.5 trillion in assets were estimated to be mortgage-backed securities and CDOs. Write-downs on those assets were expected to be \$500 billion. And, even more troubling, more than one-half of these losses were expected to be borne by the investment banks, commercial banks, and thrifts. The rest of the write-downs from non-agency mortgage-backed securities were shared among institutions such as insurance companies, pension funds, the GSEs, and hedge funds. The October report also expected another \$655 billion in write-downs on commercial mortgage-backed securities, CLOs, leveraged loans, and other loans and securities—with more than half coming from commercial mortgage-backed securities. Again, the commercial banks and thrifts and investment banks were expected to bear much of the brunt.<sup>71</sup>

Furthermore, when the crisis began, uncertainty (suggested by the sizable revisions in the IMF estimates) and leverage would promote contagion. Investors would realize they did not know as much as they wanted to know about the mortgage assets that banks, investment banks, and other firms held or to which they were exposed. To an extent not understood by many before the crisis, financial institutions had leveraged themselves with commercial paper, with derivatives, and in the short-term repo markets, in part by using mortgage-backed securities and CDOs as collateral. Lenders would question the value of the assets that those companies had posted as collateral at the same time that they were questioning the value of those companies' balance sheets.

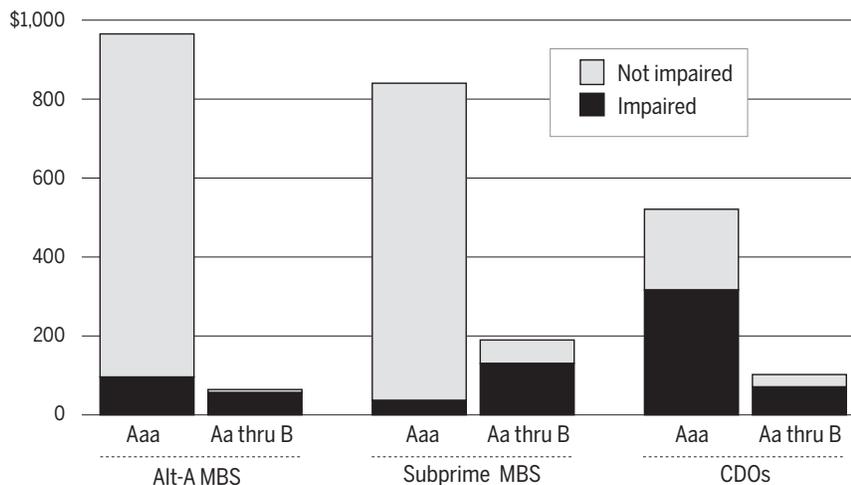
Even the highest-rated tranches of mortgage-backed securities were downgraded, and large write-downs were recorded on financial institutions' balance sheets based on declines in market value. However, although this could not be known in 2007, at the end of 2010 most of the triple-A tranches of mortgage-backed securities have avoided actual losses in cash flow through 2010 and may avoid significant realized losses going forward.

Overall, for 2005 to 2007 vintage tranches of mortgage-backed securities originally rated triple-A, despite the mass downgrades, only about 10% of Alt-A and 4% of subprime securities had been "materially impaired"—meaning that losses were im-

## Impaired Securities

*Impairment of 2005-2007 vintage mortgage-backed securities (MBS) and CDOs as of year-end 2009, by initial rating. A security is impaired when it is downgraded to C or Ca, or when it suffers a principal loss.*

IN BILLIONS OF DOLLARS



SOURCE: Moody's Investors Service, "Special Comment: Default & Loss Rates of Structured Finance Securities: 1993-2009"; Moody's SFDRS.

*Figure 11.4*

minent or had already been suffered—by the end of 2009 (see figure 11.4). For the lower-rated Baa tranches, 96.5% of Alt-A and 95.5% of subprime securities were impaired. In all, by the end of 2009, \$320 billion worth of subprime and Alt-A tranches had been materially impaired—including \$132.6 billion originally rated triple-A. The outcome would be far worse for CDO investors, whose fate largely depended on the performance of lower-rated mortgage-backed securities. More than 90% of Baa CDO bonds and 71.3% of Aaa CDO bonds were ultimately impaired.<sup>73</sup>

The housing bust would not be the end of the story. As Chairman Bernanke testified to the FCIC: "What I did not recognize was the extent to which the system had flaws and weaknesses in it that were going to amplify the initial shock from subprime and make it into a much bigger crisis."<sup>73</sup>

**COMMISSION CONCLUSIONS ON CHAPTER 11**

The Commission concludes that the collapse of the housing bubble began the chain of events that led to the financial crisis.

High leverage, inadequate capital, and short-term funding made many financial institutions extraordinarily vulnerable to the downturn in the market in 2007. The investment banks had leverage ratios, by one measure, of up to 40 to 1. This means that for every \$40 of assets, they held only \$1 of capital. Fannie Mae and Freddie Mac (the GSEs) had even greater leverage—with a combined 75 to 1 ratio. Leverage or capital inadequacy at many institutions was even greater than reported when one takes into account “window dressing,” off-balance-sheet exposures such as those of Citigroup, and derivatives positions such as those of AIG.

The GSEs contributed to, but were not a primary cause of, the financial crisis. Their \$5 trillion mortgage exposure and market position were significant, and they were without question dramatic failures. They participated in the expansion of risky mortgage lending and declining mortgage standards, adding significant demand for less-than-prime loans. However, they followed, rather than led, the Wall Street firms. The delinquency rates on the loans that they purchased or guaranteed were significantly lower than those purchased and securitized by other financial institutions.

The Community Reinvestment Act (CRA)—which requires regulated banks and thrifts to lend, invest, and provide services consistent with safety and soundness to the areas where they take deposits—was not a significant factor in sub-prime lending. However, community lending commitments not required by the CRA were clearly used by lending institutions for public relations purposes.