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LATE 2007 TO EARLY 2008: BILLIONS IN SUBPRIME LOSSES

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While a handful of banks were bailing out their money market funds and commercial paper programs in the fall of 2007, the financial sector faced a larger problem: billions of dollars in mortgage-related losses on loans, securities, and derivatives, with no end in sight. Among U.S. firms, Citigroup and Merrill Lynch reported the most spectacular losses, largely because of their extensive collateralized debt obligation (CDO) businesses, writing down a total of $23.8 billion and $24.7 billion, respectively, by the end of the year. Billions more in losses were reported by large financial institutions such as Bank of America ($9.7 billion), Morgan Stanley ($10.3 billion), JP Morgan ($5.3 billion), and Bear Stearns ($2.6 billion).[1] Insurance companies, hedge funds, and other financial institutions collectively had taken additional mortgage-related losses of about $100 billion.[2]

The large write-downs strained these firms' capital and cash reserves. Further, market participants began discriminating between firms perceived to be relatively healthy and others about which they were not so sure. Bear Stearns and Lehman Brothers were at the top of the "suspect" list; by year-end 2007 the cost of five-year protection against default on their obligations in the credit default swap market stood at, respectively, $176,000 and $119,000 annually for every $10 million, while the cost for the relatively stronger Goldman Sachs stood at $68,000.[3]

Meanwhile, the economy was beginning to show signs of stress. Facing turmoil in financial markets, declining home prices, and oil prices above $75 a barrel, consumer spending was slowing. The Federal Reserve lowered the overnight bank borrowing rate from 5.25% earlier in the year to 4.75% in September, 4.5% in October, and then 4.25% in December.

MERRILL LYNCH: "DAWNING AWARENESS OVER THE COURSE OF THE SUMMER"

On October 24, Merrill Lynch stunned investors when it announced that third-quarter earnings would include a $6.9 billion loss on CDOs and $1 billion on subprime mortgages—$7.9 billion in total, the largest Wall Street write-down to that point, and nearly twice the $4.5 billion loss that the company had warned investors to expect just three weeks earlier. Six days later, the embattled CEO Stanley O'Neal, a 21-year Merrill veteran, resigned.

Much of this write-down came from the firm's holdings of the super-senior tranches of mortgage-related CDOs that Merrill had previously thought to be extremely safe. As late as fall 2006, its management had been "bullish on growth" and "bullish on [the subprime] asset class."[4] But later that year, the signs of trouble were becoming difficult even for Merrill to ignore. Two mortgage originators to which the firm had extended credit lines failed: Ownit, in which Merrill also had a small equity stake, and Mortgage Lenders Network. Merrill seized the collateral backing those loans: $1.5 billion from Mortgage Lenders, $1.2 billion from Ownit.

Merrill, like many of its competitors, started to ramp up its sales efforts, packaging its inventory of mortgage loans and securities into CDOs with new vigor. Its goal was to reduce the firm's risk by getting those loans and securities off its balance sheet. Yet it found that it could not sell the super-senior tranches of those CDOs at acceptable prices; it therefore had to "take down senior tranches into inventory in order to execute deals"[5]—leading to the accumulation of tens of billions of dollars of those tranches on Merrill's books. Dow Kim, then the co-president of Merrill's investment banking segment, told FCIC staff that the buildup of the retained super-senior tranches in the CDO positions was actually part of a strategy begun in late 2006 to reduce the firm's inventory of subprime and Alt-A mortgages. Sell the lower-rated CDO tranches, retain the super-senior tranches: those had been his instructions to his managers at the end of 2006, Kim recalled. He believed that this strategy would reduce overall credit risk. After all, the super-senior tranches were theoretically the safest pieces of those investments.[6] To some degree, however, the strategy was involuntary: his people were having trouble selling these investments, and some were even sold at a loss.[7]

Initially, the strategy seemed to work. By May, the amount of mortgage loans and securities to be packaged into CDOs had declined to $3.5 billion from $12.8 billion in March.[8] According to a September 2007 internal Merrill presentation, the net amount in retained super-senior CDO tranches had increased from $9.3 billion in September 2006 to $25.4 billion by March 2007 and $28.9 billion by May.[9] But as the mortgage market came under increasing pressure and as the market value of even super-senior tranches crumbled, the strategy would come back to haunt the firm.

Merrill's first-quarter earnings for 2007—net revenues of $9.9 billion—were its second-highest quarterly results ever, including a record for the Fixed Income, Currencies and Commodities business, which housed the retained CDO positions. These results were announced during a conference call with analysts—an event that investors and analysts rely on to obtain important information about the company and that, like other public statements, is subject to federal securities laws.

Merrill's then-CFO Jeffrey Edwards indicated that the company's results would not be hurt by the dislocation in the subprime market, because "revenues from subprime mortgage-related activities comprise[d] less than 1% of our net revenues" over the past five quarters, and because Merrill's "risk management capabilities are better than ever, and crucial to our success in navigating turbulent markets." Providing further assurances, he stated, "We believe the issues in this narrow slice of the market remain contained and have not negatively impacted other sectors."[10]

However, Edwards did not disclose the large increase in retained super-senior CDO tranches or the difficulty of selling those tranches, even at a loss—though specific questions on the subject were raised.

In July, Merrill followed its strong first-quarter report with another for the second quarter that "enabled the company to achieve record net revenues, net earnings and net earnings per diluted share for the first half of 2007."[11] During the conference call announcing the results, the analyst Glenn Schorr of UBS, a large Swiss bank, asked the CFO to provide some "color around myth versus reality" on Merrill's exposure to retained CDO positions. As he had three months earlier, Edwards stressed Merrill's risk management and the fact that the CDO business was a small part of Merrill's overall business. He said that there had been significant reductions in Merrill's retained exposures to lower-rated segments of the market, although he did not disclose that the total amount of Merrill's retained CDOs had reached $30.4 billion by June. Edwards declined to provide details about the company's exposure to subprime mortgage CDOs and any inventory of mortgage-backed securities to be packaged into CDOs. "We don't disclose our capital allocations against any specific or even broader group," Edwards said.[12]

On July 22, after the super-senior tranches had been accumulating for many months, Merrill executives first officially informed its board about the buildup. At a presentation to the board's Finance Committee, Dale Lattanzio, co-head of the American branch of the Fixed Income, Currencies and Commodities business, reported a "net" exposure of $32 billion in CDO-related assets, essentially all of them rated triple-A, with exposure to the lower-rated asset class significantly reduced.[13] This net exposure was the amount of CDO positions left after the subtraction of the hedges—guarantees in one form or another—that Merrill had purchased to pass along its ultimate risk to third parties willing to provide that protection and take that risk for a fee. AIG and the small club of monoline insurers were significant suppliers of these guarantees, commonly done as credit default swaps. In July 2007, Merrill had begun to increase the amount of CDS protection to offset the retained CDO positions.

Lattanzio told the committee, "[Management] decided in the beginning of this year to significantly reduce exposure to lower-rated assets in the sub-prime asset class and instead migrate exposure to senior and super senior tranches."[14] Edwards did not see any problems. As Kim insisted, "Everyone at the firm and most people in the industry felt that super-senior was super safe."[15]

Former CEO O'Neal told FCIC investigators he had not known that the company was retaining the super-senior tranches of the CDOs until Lattanzio's presentation to the Finance Committee. He was startled, if only because he had been under the impression that Merrill's mortgage-backed-assets business had been driven by demand: he had assumed that if there were no new customers, there would be no new offerings. If customers demanded the CDOs, why would Merrill have to retain CDO tranches on the balance sheet? O'Neal said he was surprised about the retained positions but stated that the presentation, analysis, and estimation of potential losses were not sufficient to sound "alarm bells."[16] Lattanzio's report in July indicated that the retained positions had experienced only $73 million in losses.[17] Over the next three months, the market value of the super-senior tranches plummeted and losses ballooned; O'Neal told the FCIC: "It was a dawning awareness over the course of the summer and through September as the size of the losses were being estimated."[18]

On October 21, Merrill executives gave its board a detailed account of how the firm found itself with what was by that time $15.2 billion in net exposure to the super-senior tranches—down from a peak in July of $32.2 billion because the firm had increasingly hedged, written off, and sold its exposure. On October 24, Merrill announced its third-quarter earnings: a stunning $7.9 billion mortgage-related write-down contributing to a net loss of $2.3 billion. Merrill also reported—for the first time—its $15.2 billion net exposure to retained CDO positions. Still, in their conference call with analysts, O'Neal and Edwards refused to disclose the gross exposures, excluding the hedges from the monolines and AIG. "I just don't want to get into the details behind that," Edwards said. "Let me just say that what we have provided again we think is an extraordinarily high level of disclosure and it should be sufficient."[19] According to the Securities and Exchange Commission, by September 2007, Merrill had accumulated $55 billion of "gross" retained CDO positions, almost four times the $15.2 billion of "net" CDO positions reported during the October 24 conference call.[20]

On October 30, when O'Neal resigned, he left with a severance package worth $161.5 million[21]—on top of the $91.4 million in total compensation he earned in 2006, when his company was still expanding its mortgage banking operations. Kim, who oversaw the strategy that left Merrill with billions in losses, had left in May 2007 after being paid $40 million for his work in 2006, which was a profitable year for Merrill as a firm.[22]

By late 2007, the viability of the monoline insurers from which Merrill had purchased almost $100 billion in hedges had come into question, and the rating agencies were downgrading them, as we will see in more detail shortly. The SEC had told Merrill that it would impose a punitive capital charge on the firm if it purchased additional credit default protection from the financially troubled monolines. Recognizing that the monolines might not be good for all the protection purchased, Merrill began to put aside loss allowances, starting with $2.6 billion on January 17, 2008. By the end of 2008, Merrill would put aside a total of $13 billion related to monolines and had recorded total write-downs on nearly $44 billion of other mortgage-related exposures.

CITIGROUP: "THAT WOULD NOT IN ANY WAY HAVE EXCITED MY ATTENTION"

Five days after O'Neal's October 30 departure from Merrill Lynch, Citigroup announced that its total subprime exposure was $55 billion, which was $42 billion more than it had told investors just three weeks earlier. Citigroup also announced it would be taking an $8 to $11 billion loss on its subprime mortgage–related holdings and that Chuck Prince was resigning as its CEO. Like O'Neal, Prince had learned late of his company's subprime-related CDO exposures. Prince and Robert Rubin, chairman of the Executive Committee of the board, told the FCIC that before September 2007, they had not known that Citigroup's investment banking division had sold some CDOs with liquidity puts and retained the super-senior tranches of others.[23]

Prince told the FCIC that even in hindsight it was difficult for him to criticize any of his team's decisions. "If someone had elevated to my level that we were putting on a $2 trillion balance sheet, $40 billion of triple-A-rated, zero-risk paper, that would not in any way have excited my attention," Prince said. "It wouldn't have been useful for someone to come to me and say, 'Now, we have got $2 trillion on the balance sheet of assets. I want to point out to you there is a one in a billion chance that this $40 billion could go south.' That would not have been useful information. There is nothing I can do with that, because there is that level of chance on everything."[24] In fact, the odds were much higher than that. Even before the mass downgrades of CDOs in late 2007, a triple-A tranche of a CDO had a 1 in 10 chance of being downgraded within 5 years of its original rating.[25]

Certainly, Citigroup was a large and complex organization. That $2 trillion balance sheet—and $1.2 trillion off-balance sheet—was spread among more than 2,000 operating subsidiaries in 2007. Prince insisted that Citigroup was not "too big to manage."[26] But it was an organization in which one unit would decide to reduce mortgage risk while another unit increased it. And it was an organization in which senior management would not be notified of $43 billion in concentrated exposure—2% of the company's balance sheet and more than a third of its capital—because it was perceived to be "zero-risk paper."[27]

Significantly, Citigroup's Financial Control Group had argued in 2006 that the liquidity puts that Citigroup had written on its CDOs had been priced for investors too cheaply in light of the risks.[28] Also, in early 2006, Susan Mills, a managing director in the securitization unit—which bought mortgages from other companies and bundled them for sale to investors—took note of rising delinquencies in the subprime market and created a surveillance group to track loans that her unit purchased.[29] By mid-2006, her group saw a deterioration in loan quality and an increase in early payment defaults—that is, more borrowers were defaulting within a few months of getting a loan. From 2005 to 2007, Mills recalled before the FCIC, the early payment default rates nearly tripled from 2% to 5% or 6%.[30] In response, the securitization unit slowed down its purchase of loans, demanded higher-quality mortgages, and conducted more extensive due diligence on what it bought. However, neither Mills nor other members of the unit shared any of this information with other divisions in Citigroup, including the CDO desk.[31] Around March or April 2007, in contrast with the securitization desk, Citigroup's CDO desk increased its purchases of mortgage-backed securities because it saw the distressed market as a buying opportunity.[32]

"Effective communication across businesses was lacking," the company's regulators later observed. "Management acknowledged that, in looking back, it should have made the mortgage deterioration known earlier throughout the firm. The Global Consumer Group saw signs of sub-prime issues and avoided losses, as did mortgage backed securities traders, but CDO structures business did so belatedly—[there was] no dialogue across businesses."[33]

Co-head of the CDO desk Janice Warne told the FCIC that she first saw weaknesses in the underlying market in early 2007. In February, when the ABX.HE.BBB- 06-2 fell to 37% below par, the CDO desk decided to slow down on the financing of mortgage securities for inventory to produce CDOs.[34] Shortly thereafter, however, the same ABX index started to rally, rising to 26% below par in March and holding around that level through May. So, the CDO desk reversed course and accelerated its purchases of inventory in April, according to Nestor Dominguez, Warne's co-head on the CDO desk.[35] Dominguez said he didn't see the market weakening until the summer, when the index fell to less than 60% below par.[36]

Murray Barnes, the Citigroup risk officer assigned to the CDO business, approved the CDO desk's request to temporarily increase its limits on purchasing collateral. Barnes observed, in hindsight, that rather than looking at the widening spreads as an opportunity, Citigroup should have reassessed its assumptions and examined whether the decline in the ABX was a sign of strain in the mortgage market. He admitted "complacency" about the desk's ability to manage its risk.[37]

The risk management division also increased the CDO desk's limits for retaining the most senior tranches from $30 billion to $35 billion in the first half of 2007. As at Merrill, traders and risk managers at Citigroup believed that the super-senior tranches carried little risk.[38] Citigroup's regulators later wrote, "An acknowledgement of the risk in its Super Senior AAA CDO exposure was perhaps Citigroup's 'biggest miss.' . . . As management felt comfortable with the credit risk of these tranches, it began to retain large positions on the balance sheet. . . . As the sub-prime market began to deteriorate, the risk perceived in these tranches increased, causing large write-downs."[39] Ultimately, losses at Citigroup from mortgages, Alt-A mortgage–backed securities, and mortgage-related CDOs would total about $58 billion, nearly half of Citigroup's capital at the end of 2006. About $8 billion of that loss related to protection purchased from the monoline insurers.[40]

Barnes's decision to increase the CDO risk limits was approved by his superior, Ellen Duke. Barnes and Duke reported to David Bushnell, the chief risk officer. Bushnell—whom Prince called "the best risk manager on Wall Street"—told the FCIC that he did not remember specifically approving the increase but that, in general, the risk management function did approve higher risk limits when a business line was growing.[41] He described a "firm-wide initiative" to increase Citigroup's structured products business.[42]

Perhaps what is most remarkable about the conflicting strategies employed by the securitization and CDO desks is that their respective risk officers attended the same weekly independent risk meetings. Duke reflected that she was not overly concerned when the issue came up, saying she and her risk team were "seduced by structuring and failed to look at the underlying collateral."[43] According to Barnes, the CDO desk didn't look at the CDOs' underlying collateral because it lacked the "ability" to see loan performance data, such as delinquencies and early payment defaults.[44] Yet the surveillance unit in Citigroup's securitization desk might have been able to provide some insights based on its own data.[45] Barnes told the FCIC that Citigroup's risk management tended to be managed along business lines, noting that he was only two offices away from his colleague who covered the securitization business and yet didn't understand the nuances of what was happening to the underlying loans. He regretted not reaching out to the consumer bank to "get the pulse" of mortgage origination.[46]

"That has never happened since the Depression"

Prince and Rubin appeared to believe up until the fall of 2007 that any downside risk in the CDO business was minuscule. "I don't think anybody focused on the CDOs. This was one business in a vast enterprise, and until the trouble developed, it wasn't one that had any particular profile," Rubin—in Prince's words, a "very important member of [the] board"[47]—told the FCIC. "You know, Tom Maheras was in charge of trading. Tom was an extremely well regarded trading figure on the street. . . . And this is what traders do, they handle these kinds of problems."[48] Maheras, the co-head of Citigroup's investment bank, told the FCIC that he spent "a small fraction of 1%" of his time thinking about or dealing with the CDO business.[49]

Citigroup's risk management function was simply not very concerned about housing market risks. According to Prince, Bushnell and others told him, in effect, "'Gosh, housing prices would have to go down 30% nationwide for us to have, not a problem with [mortgage-backed securities] CDOs, but for us to have problems,' and that has never happened since the Depression."[50] Housing prices would be down much less than 30% when Citigroup began having problems because of write-downs and the liquidity puts it had written.

By June 2007, national house prices had fallen 4.5%, and about 16% of subprime adjustable-rate mortgages were delinquent. Yet Citigroup still did not expect that the liquidity puts could be triggered, and it remained unconcerned about the value of its retained super-senior tranches of CDOs. On June 4, 2007, Citigroup made a presentation to the SEC about subprime exposure in its CDO business. The presentation noted that Citigroup did not factor two positions into this exposure: $14.6 billion in super-senior tranches and $23.2 billion in liquidity puts. The presentation explained that the liquidity puts were not a concern: "The risk of default is extremely unlikely . . . [and] certain market events must also occur for us to be required to fund. Therefore, we view these positions to be even less risky than the Super Senior Book."[51]

Just a few weeks later, the July 2007 failure of the two Bear Stearns hedge funds spelled trouble. Commercial paper written against three Citigroup-underwritten CDOs for which Bear Stearns Asset Management was the asset manager and on which Citigroup had issued liquidity puts began losing value, and their interest rates began rising. The liquidity puts would be triggered if interest rates on the asset-backed commercial paper rose above a certain level.

The Office of the Comptroller of the Currency, the regulator of Citigroup's national bank subsidiary, had expressed no apprehensions about the liquidity puts in 2003. But by the summer of 2007, OCC Examiner-in-Charge John Lyons told the FCIC, the OCC became concerned. Buying the commercial paper would drain $25 billion of the company's cash and expose it to possible balance-sheet losses at a time when markets were increasingly in distress. But given the rising rates, Lyons also said Citigroup did not have the option to wait. Over the next six months, Citigroup purchased all $25 billion of the paper that had been subject to its liquidity puts.[52]

On a July 20 conference call, CFO Gary Crittenden told analysts and investors that the company's subprime exposures had fallen from $24 billion at the end of 2006 to $13 billion on June 30. But he made no mention of the super-senior exposures and liquidity puts. "I think our risk team did a nice job of anticipating that this was going to be a difficult environment, and so set about in a pretty concentrated effort to reduce our exposure over the last six months,"[53] he said. A week later, on a July 27 call, Crittenden reiterated that subprime exposure had been cut: "So I think we've had good risk management that has been anticipating some market dislocation here."[54]

By August, as market conditions worsened, Citigroup's CDO desk was revaluing its super-senior tranches, though it had no effective model for assigning value. However, as the market congealed, then froze, the paucity of actual market prices for these tranches demanded a model. The New York Fed later noted that "the model for Super Senior CDOs, based on fundamental economic factors, could not be fully validated by Citigroup's current validation methodologies yet it was relied upon for reporting exposures."[55]

Barnes, the CDO risk officer, told the FCIC that sometime that summer he met with the co-heads of the CDO desk to express his concerns about possible losses on both the unsold CDO inventory and the retained super-senior tranches. The message got through. Nestor Dominguez told the FCIC, "We began extensive discussions about the implications of the . . . dramatic decline of the underlying subprime markets, and how that would feed into the super-senior positions."[56] Also at this time—for the first time—such concerns reached Maheras. He justified his lack of prior knowledge of the billions of dollars in inventory and super-senior tranches by pointing out "that the business was appropriately supervised by experienced and highly competent managers and by an independent risk group and that I was properly apprised of the general nature of our work in this area and its attendant risks."[57]

The exact dates are not certain, but according to Bushnell, he remembers a discussion at a "Business Heads" meeting about the growing mark-to-market volatility on those super-senior tranches in late August or early September, well after Citigroup started to buy the commercial paper backing the super-senior tranches of the CDOs that BSAM managed.[58] This was also when Chairman and CEO Prince first heard about the possible amount of "open positions" on the super-senior CDO tranches that Citigroup held: "It wasn't presented at the time in a startling fashion . . . [but]

then it got bigger and bigger and bigger, obviously, over the next 30 days."[59] In late August, Citigroup's valuation models suggested that losses on the super-senior tranches might range from $15 million to $2 billion. This number was recalculated as $300 to $500 million in mid-September, as the valuation methodology was refined.[60] In the weeks ahead, those numbers would skyrocket.

"DEFCON calls"

To get a handle on potential losses from the CDOs and liquidity puts, starting on September 9 Prince convened a series of meetings—and later, nightly "DEFCON calls"—with members of his senior management team; they included Rubin, Maheras, Crittenden, and Bushnell, as well as Lou Kaden, the chief administrative officer.[61] Rubin was in Korea during the first meeting but Kaden kept him informed.[62] Rubin later emailed Prince: "According to Lou, Tom [Maheras] never did provide a clear and direct answer on the super seniors. If that is so, and the meeting did not bring that to a head, isn't that deeply troubling not as to what happened—that is a different question that is also troubling—but as to providing full and clear information and analysis now." Prince disagreed, writing, "I thought, for first mtg, it was good. We weren't trying to get to final answers."[63]

A second meeting was held September 12, after Rubin was back in the country. This meeting marked the first time Rubin recalled hearing of the super-senior and liquidity put exposure. He later commented, "As far as I was concerned they were all one thing, because if there was a put back to Citi under any circumstance, however remote that circumstance might be, you hadn't fully disposed of the risk."[64] And, of course, the circumstance was not remote, since billions of dollars in subprime mortgage assets had already come back onto Citigroup's books.

Prince told the FCIC that Maheras had assured him throughout the meetings and the DEFCON calls that the super seniors posed no risk to Citigroup, even as the market deteriorated; he added that he became increasingly uneasy with Maheras's assessment. "Tom had said and said till his last day at work [October 11]: 'We are never going to lose a penny on these super seniors. We are never going to lose a penny on these super seniors. . . . ' And as we went along and I was more and more uncomfortable with this and more and more uncomfortable with Tom's conclusions on ultimate valuations, that is when I really began to have some very serious concerns about what was going to happen."[65]

Despite Prince's concerns, Citigroup remained publicly silent about the additional subprime exposure from the super-senior positions and liquidity puts, even as it preannounced some details of its third-quarter earnings on October 1, 2007.

On October 11, the rating agencies announced the first in a series of downgrades on thousands of securities. In Prince's view, these downgrades were "the precipitating event in the financial crisis."[66] On the same day, Prince restructured the investment bank, a move that led to the resignation of Maheras.

Four days later, the question of the super-senior CDOs and liquidity puts was specifically raised at the board of directors' Corporate Audit and Risk Management

Committee meeting and brought up to the full board. A presentation concluded that "total sub-prime exposure in [the investment bank] was $13bn with an additional $16bn in Direct Super Senior and $27bn in Liquidity and Par Puts."[67] Citigroup's total subprime exposure was $56 billion, nearly half of its capital. The calculation was straightforward, but during an analysts' conference call that day Crittenden omitted any mention of the super-senior- and liquidity-put-related exposure as he told participants that Citigroup had under $13 billion in subprime exposure.[68]

A week later, on Saturday, October 27, Prince learned from Crittenden that the company would have to report subprime-related losses of $8 to $11 billion; on Monday he tendered his resignation to the board. He later reflected, "When I drove home and Gary called me and told me it wasn't going to be two or 300 million but it was going to be eight billion—I will never forget that call. I continued driving, and I got home, I walked in the door, I told my wife, I said here's what I just heard and if this turns out to be true, I am resigning."[69]

On November 4, Citigroup revealed the accurate subprime exposure—now estimated at $55 billion—and it disclosed the subprime-related losses. Though Prince had resigned, he remained on Citigroup's payroll until the end of the year, and the board of directors gave him a generous parting compensation package: $11.9 million in cash and $24 million in stock, bringing his total compensation to $79 million from 2004 to 2007.[70] The SEC later sued Citigroup for its delayed disclosures. To resolve the charges, the bank paid $75 million. The New York Fed would later conclude, "There was little communications on the extensive level of subprime exposure posed by Super Senior CDO. . . . Senior management, as well as the independent Risk Management function charged with monitoring responsibilities, did not properly identify and analyze these risks in a timely fashion."[71]

Prince's replacements as chairman and CEO—Richard Parsons and Vikram Pandit—were announced in December. Rubin would stay until January 2009, having been paid more than $115 million from 2000 to 2009[72] during his tenure at the company, including his role as chairman of the Executive Committee, a position that carried "no operational responsibilities," Rubin told the FCIC. "My agreement with Citi provided that I'd have no management of personnel or operations."[73]

John Reed, former co-CEO of Citigroup, attributed the firm's failures in part to a culture change that occurred when the bank took on Salomon Brothers as part of the 1998 Travelers merger. He said that Salomon executives "were used to taking big risks" and "had a history . . . [of] making a lot of money . . . but then getting into trouble."[74]

AIG'S DISPUTE WITH GOLDMAN: "THERE COULD NEVER BE LOSSES"

Beginning on July 26, 2007, when Goldman's Davilman sent the email that disrupted the vacation of AIG's Alan Frost, the dispute between Goldman and AIG over the need for collateral to back credit default swaps captured the attention of the senior management of both companies. For 14 months, Goldman pressed its case and sent AIG a formal demand letter every single business day. It would pursue AIG relentlessly with demands for collateral based on marks that were initially well below those of other firms—while AIG and its management struggled to come to grips with the burgeoning crisis.

The initial collateral call was a shock to AIG's senior executives, most of whom had not even known that the credit default swaps with Goldman contained collateral call provisions.

They had known there were enormous exposures—$79 billion, backed in large part by subprime and Alt-A loans, in 2007,[75] compared with the parent company's total reported capital of $95.8 billion—but executives said they had never been concerned. "The mantra at [AIG Financial Products] had always been (in my experience) that there could never be losses," Vice President of Accounting Policy Joseph St. Denis said.[76]

Then came that first collateral call. St. Denis told FCIC staff that he was so "stunned" when he got the news that he "had to sit down."[77] The collateral provisions surprised even Gene Park, the executive who had insisted 18 months earlier that AIG stop writing the swaps. He told the FCIC that "rule Number 1 at AIG FP" was to never post collateral. This was particularly important in the credit default swap business, he said, because it was the only unhedged business that AIG ran.[78]

But Jake Sun, the general counsel of the Financial Products subsidiary, who reviewed the swap contracts before they were executed, told the FCIC that the provisions were standard both at AIG and in the industry.[79] Frost, who was the first to learn of the collateral call, agreed and said that other financial institutions also commonly did deals with collateral posting provisions.[80] Pierre Micottis, the Paris-based head of the AIG Financial Products' Enterprise Risk Management department, told the FCIC that collateral provisions were indeed common in derivatives contracts—but surprising in the super-senior CDS contracts, which were considered safe.[81] Insurance supervisors did not permit regulated insurance companies like MBIA and Ambac to pay out except when the insured entity suffered an actual loss, and therefore those companies were forbidden to post collateral for a decline in market value or unrealized losses. Because AIG Financial Products was not regulated as an insurance company, it was not subject to this prohibition.

As disturbing as the senior AIG executives' surprise at the collateral provisions was their firm's inability to assess the validity of Goldman's numbers. AIG Financial Products did not have its own model or otherwise try to value the CDO portfolio that it guaranteed through credit default swaps, nor did it hedge its exposure. Gene Park explained that hedging was seen as unnecessary in part because of the mistaken belief that AIG would have to pay counterparties only if holders of the super-senior tranches incurred actual losses. He also said that purchasing a hedge from UBS, the Swiss bank, was considered, but that Andrew Forster, the head of credit trading at AIG Financial Products, rejected the idea because it would cost more than the fees that AIG Financial Products was receiving to write the CDS protection. "We're not going to pay a dime for this," Forster told Park.[82]

Therefore, AIG Financial Products relied on an actuarial model that did not provide a tool for monitoring the CDOs' market value. The model was developed by

Gary Gorton, then a finance professor at the University of Pennsylvania's Wharton School, who began working as a consultant to AIG Financial Products in 1996 and was close to its CEO, Joe Cassano. The Gorton model had determined with 99.85% confidence that the owners of the super-senior tranches of the CDOs insured by AIG Financial Products would never suffer real economic losses, even in an economy as troubled as the worst post–World War II recession. The company's auditors, PricewaterhouseCoopers (PwC), who were apparently also not aware of the collateral requirements, concluded that "the risk of default on [AIG's] portfolio has been effectively removed and as a result from a risk management perspective, there are no substantive economic risks in the portfolio and as a result the fair value of the liability stream on these positions from a risk management perspective could reasonably be considered to be zero."[83]

In speaking with the FCIC, Cassano was adamant that the "CDS book" was effectively hedged. He said that AIG could never suffer losses on the swaps, because the CDS contracts were written only on the super-senior tranches of top-rated securities with high "attachment points"—that is, many securities in the CDOs would have to default in order for losses to reach the super-senior tranches—and because the bulk of the exposure came from loans made before 2006, when he thought underwriting standards had begun to deteriorate.[84] Indeed, according to Gene Park, Cassano put a halt to a $150 million hedge, in which AIG had taken a short position in the ABX index. As Park explained, "Joe stopped that because after we put on the first 150 . . . the market moved against us . . . we were losing money on the 150 million. . . . Joe said, 'You know, I don't think the world is going to blow up . . . I don't want to spend that money. Stop it.'"[85]

Despite the limited market transparency in the summer of 2007, Goldman used what information there was, including information from ABX and other indices, to estimate what it considered to be realistic prices. Goldman also spoke with other companies to see what values they assigned to the securities. Finally, Goldman looked to its own experience: in most cases, when the bank bought credit protection on an investment, it turned around and sold credit protection on the same investment to other counterparties. These deals yielded more price information.[86]

Until the dispute with Goldman, AIG relied on the Gorton model, which did not estimate the market value of underlying securities. So Goldman's marks caught AIG by surprise. When AIG pushed back, Goldman almost immediately reduced its July 27 collateral demand from $1.8 billion to $1.2 billion, a move that underscored the difficulty of finding reliable market prices. The new demand was still too high, in AIG's view, which was corroborated by third-party marks. Goldman valued the CDOs between 80 and 97 cents on the dollar, while Merrill Lynch, for example, valued the same securities between 95 and 100 cents.[87]

On August 7, Cassano told PwC that there was "little or no price transparency" and that it was "difficult to determine whether [collateral calls] were indicative of true market levels moving."[88] AIG managers did call other dealers holding similar bonds to check their marks in order to help its case with Goldman, but those marks were not "actionable"—that is, the dealers would not actually execute transactions at the quoted prices. "The above estimated values . . . do not represent actual bids or offers by Merrill Lynch" was the disclaimer in a listing of estimated market values provided by Merrill to AIG.[89] Goldman Sachs disputed the reliability of such estimates.

"Without being flippant"

On August 9, for the first time, AIG executives publicly disclosed the $79 billion in credit default swaps on the super-senior tranches of CDOs during the company's second-quarter earnings call. They acknowledged that the great majority of the underlying bonds thus insured—$64 billion—were backed by subprime mortgages. Of this amount, $19 billion was written on CDOs predominantly backed by risky BBB-rated collateral. On the call, Cassano maintained that the exposures were no problem: "It is hard for us, without being flippant, to even see a scenario within any kind of realm or reason that would see us losing $1 in any of those transactions." He concluded: "We see no issues at all emerging. We see no dollar of loss associated with any of [the CDO] business. Any reasonable scenario that anyone can draw, and when I say reasonable, I mean a severe recession scenario that you can draw out for the life of the securities." Senior Vice President and Chief Risk Officer Robert Lewis seconded that reassurance: "We believe that it would take declines in housing values to reach depression proportions, along with default frequencies never experienced, before our AAA and AA investments would be impaired."[90]

These assurances focused on the risk that actual mortgage defaults would create real economic losses on the company's credit default swap positions.[91] But more important at the time were the other tremendous risks that AIG executives had already discussed internally. No one on the conference call mentioned Goldman's demand for $1.2 billion in collateral; the clear possibility that future, much-larger collateral calls could jeopardize AIG's liquidity; or the risk that AIG would be forced to take an "enormous mark" on its existing book, the concern Forster had noted.

The day after the conference call, AIG posted $450 million in cash to Goldman, its first collateral posting since Goldman had requested the $1.2 billion. As Frost wrote to Forster in an August 16, 2007, email, the idea was "to get everyone to chill out."[92] For one thing, some AIG executives, including Cassano, had late-summer vacations planned. Cassano signed off on the $450 million "good faith deposit" before leaving for a cycling trip through Germany and Austria.[93] The parties executed a side letter making clear that both disputed the amount. For the time being, two companies that had been doing business together for decades agreed to disagree.

On August 14, Frost went to Goldman's offices to "start the dialog," which had stalled while Cassano and other key executives were on vacation. Two days later, Frost wrote to Forster: "Trust me. This is not the last margin call we are going to debate."[94] He was right. By September 11, Société Générale—known more commonly as SocGen—had demanded $40 million in collateral on CDS it had purchased from AIG Financial Products, UBS had demanded $67 million, and Goldman had upped its demand by $300 million. The SocGen demand was based on an 82.5 bid price provided by Goldman, which AIG disputed. Tom Athan, managing director at AIG Financial Products, told Forster that SocGen "received marks from GS on positions that would result in big collateral calls but SG disputed them with GS."[95] Several weeks later, Cassano told AIG Financial Services CFO Elias Habayeb that he believed the SocGen margin call had been "spurred by Goldman," and that AIG "disputed the call and [had] not heard from SocGen again on that specific call."[96] In the second week of October, the rating agencies announced hundreds of additional downgrades affecting tens of billions of dollars of subprime mortgage–backed securities and CDOs. By November 2, Goldman's demand had almost doubled, to $2.8 billion. On November 6, Bensinger, the CFO, informed AIG's Audit Committee that Financial Products had received margin calls from five counterparties and was disputing every single one.[97]

This stance was rooted in the company's continuing belief that Goldman had set values too low. AIG's position was corroborated, at least in part, by the wide disparity in marks from other counterparties. At one point, Merrill Lynch and Goldman made collateral demands on the very same CDS positions, but Goldman's marks were almost 35% lower than Merrill's.[98] Goldman insisted that its marks represented the "constantly evolving additional information from our market making activities, including trades that we had executed, market activity we observed, price changes in comparable securities and derivatives and the current prices of relevant liquid . . . indices."[99] Trading in the ABX would fall from over 400 trades per week through the end of September 2007 to less than 250 per week in the fourth quarter of 2007; trading in the TABX, which focuses on lower-rated tranches, dropped from roughly 50 trades per week through mid-July to almost zero by mid-August.[100]

But Cassano believed that the quick reduction in Goldman's first collateral demand (from $1.8 billion on July 27 to $1.2 billion on August 2) and the interim agreement on the $450 million deposit confirmed that Goldman was not as certain of its marks as it later insisted. According to Cassano, Michael Sherwood, co-CEO of Goldman Sachs International, told him that Goldman "didn't cover ourselves in glory during this period" but that "the market's starting to come our [Goldman's] way"; Cassano took those comments as an implicit admission that Goldman's initial marks had been aggressive.[101]

"More love notes"

In mid-August, Forster told Frost in an email that Goldman was pursuing a strategy of aggressively marking down assets to "cause maximum pain to their competitors."[102] PricewaterhouseCoopers, which served as auditor for both AIG and Goldman during this period, knew full well that AIG had never before marked these positions to market. In the third quarter of 2007, with the collateral demands piling up, PwC prompted AIG to begin developing a model of its own. Prior to the Goldman margin call, PwC had concluded that "compensating controls" made up for AIG's not having a model. Among those was notice from counterparties that collateral was due.[103] In other words, one of AIG's risk management tools was to learn of its own problems from counterparties who did have the ability to mark their own positions to market prices and then demand collateral from AIG.

The decision to develop a valuation model was not unanimous. In mid-September, Cassano and Forster met with Habayeb and others to discuss marking the positions down and actually recording valuation losses in AIG's financial statements. Cassano still thought the valuation process unnecessary because the possibility of defaults was "remote."[104] He sent Forster and others emails describing requests from Habayeb as "more love notes . . . [asking us to go through] the same drill of drafting answers."[105] Nevertheless, by October, and in consultation with PwC, AIG started to evaluate the pricing model for subprime instruments developed and used by Moody's. Cassano considered the Moody's model only a "gut check" until it was fully validated internally.[106] AIG coupled this model with generic CDO tranche data sold by JP Morgan that were considered to be relatively representative of the market. Of course, by this time—and for several preceding months—there was no active market for many of these tranches. Everyone understood that this was not a perfect solution, but AIG and its auditors thought it could serve as an interim step. The makeshift model was up and running in the third quarter.

"Confident in our marks"

On November 7, when AIG reported its third-quarter earnings, it disclosed that it was taking a $352 million charge "related to its super senior credit default swap portfolio" and "a further unrealized market valuation loss through October 2007 of approximately $550 million before tax [on that] portfolio." On a conference call, CEO Sullivan assured investors that the insurance company had "active and strong risk management." He said, "AIG continues to believe that it is highly unlikely that AIGFP will be required to make payments with respect to these derivatives." Cassano added that AIG had "more than enough resources to meet any of the collateral calls that might come in."[107] While the company remained adamant that there would be no realized economic losses from the credit default swaps, it used the newly adopted—and adapted—Moody's model to estimate the $352 million charge. In fact, PwC had questioned the relevance of the model: it hadn't been validated in advance of the earnings release, it didn't take into account important structural information about the swap contracts, and there were questions about the quality of the data.[108] AIG didn't mention those caveats on the call.

Two weeks later, on November 23, Goldman demanded an additional $3 billion in cash. AIG protested, but paid $1.55 billion, bringing the total posted to $2 billion.[109] Four days later, Cassano circulated a memo from Forster listing the pertinent marks for the securities from Goldman Sachs, Merrill Lynch, Calyon, Bank of Montreal, and SocGen.[110] The marks varied widely, from as little as 55% of the bonds' original value to virtually full value. Goldman's estimated values were much lower than those of other dealers. For example, Goldman valued one CDO, the Dunhill CDO, at 75% of par, whereas Merrill valued it at 95% of par; the Orient Point CDO was valued at 60% of par by Goldman but at 95% of par by Merrill. Forster suggested that the marks validated AIG's long-standing contention that "there is no one dealer with more knowledge than the others or with a better deal flow of trades and all admit to 'guesstimating' pricing."[111] Cassano agreed. "No one seems to know how to discern a market valuation price from the current opaque market environment," Cassano wrote to a colleague. "This information is limited due to the lack of participants [willing] to even give indications on these obligations."[112]

One week later, Cassano called Sherwood in Goldman's London office and demanded reimbursement of $1.4 billion. He told both AIG and Goldman executives that independent third-party pricing for 70% of the 3,500 securities underlying the CDOs on which AIG FP had written CDS and AIG's own valuation for the other 30% indicated that Goldman's demand was unsupported—therefore Goldman should return the money.[113] Goldman refused, and instead demanded more.[114]

By late November, there was relative agreement within AIG and with its auditor that the Moody's model incorporated into AIG's valuation system was inadequate for valuing the super-senior book.[115] But there was no consensus on how that book should be valued. Inputting generic CDO collateral data into the Moody's model would result in a $1.5 billion valuation loss; using Goldman's marks would result in a $5 billion valuation loss, which would wipe out the quarter's profits.[116] On November 29, PwC auditors met with senior executives from AIG and the Financial Products subsidiary to discuss the whole situation. According to PwC meeting notes, AIG reported that disagreements with Goldman continued, and AIG did not have data to dispute Goldman's marks. Forster recalled that Sullivan said that he was going to have a heart attack when he learned that using Goldman's marks would eliminate the quarter's profits.[117] Sullivan told FCIC staff that he did not remember this part of the meeting.[118]

AIG adjusted the number, and in doing so it chose not to rely on dealer quotes. James Bridgewater, the Financial Products executive vice president in charge of models, came up with a solution. Convinced that there was a calculable difference between the value of the underlying bonds and the value of the swap protection AIG had written on those bonds, Bridgewater suggested using a "negative basis adjustment," which would reduce the unrealized loss estimate from $5.1 billion (Goldman's figure) to about $1.5 billion. With their auditor's knowledge, Cassano and others agreed that the negative basis adjustment was the way to go.

Several documents given to the FCIC by PwC, AIG, and Cassano reflect discussions during and after the November 29 meeting. During a second meeting at which only the auditor and parent company executives were present (Financial Products executives, including Cassano and Forster, did not attend), PwC expressed significant concerns about risk management, specifically related to the valuation of the credit default swap portfolio, as well as to the company's procedures in posting collateral. AIG Financial Products had paid out $2 billion without active involvement from the parent company's Enterprise Risk Management group. Another issue was "the way in which AIGFP [had] been 'managing' the SS [super senior] valuation process—saying PwC will not get any more information until after the investor day presentation."[119]

The auditors laid out their concerns about conflicting strategies pursued by AIG subsidiaries. Notably, the securities-lending subsidiary had been purchasing mortgage-backed securities, using cash raised by lending securities that AIG held on behalf of its insurance subsidiaries. From the end of 2006 through September 2007, its holdings rose from $69 billion to $88 billion. Meanwhile, Financial Products, acting on its own analysis, had decided in 2006 to begin pulling back on writing credit default swaps on CDOs. In PwC's view, in allowing one subsidiary to increase exposure to subprime while another subsidiary worked to exit the market entirely, the parent company's risk management failed. PwC also said that the company's second quarter of 2007 financial disclosures would have been changed if the exposure of the securities-lending business had been known. The auditors concluded that "these items together raised control concerns around risk management which could be a material weakness."[120] Kevin McGinn, AIG's chief credit officer, shared these concerns about the conflicting strategies. In a November 20, 2007, email, McGinn wrote: "All units were apprised regularly of our concerns about the housing market. Some listened and responded; others simply chose not to listen and then, to add insult to injury, not to spot the manifest signs." He concluded that this was akin to "Nero playing the fiddle while Rome burns."[121] On the opposite side, Sullivan insisted to the FCIC that the conflicting strategies in the securities-lending business and at AIG Financial Products simply revealed that the two subsidiaries adopted different business models, and did not constitute a risk management failure.[122]

On December 5, six days after receiving PwC's warnings, Sullivan boasted on another conference call about AIG's risk management systems and the company's oversight of the subprime exposure: "The risk we have taken in the U.S. residential housing sector is supported by sound analysis and a risk management structure. . . . we believe the probability that it will sustain an economic loss is close to zero. . . . We are confident in our marks and the reasonableness of our valuation methods." Charlie Gates, an analyst at Credit Suisse, a Swiss bank, asked directly about valuation and collateral disputes with counterparties to which AIG had alluded in its third-quarter financial results. Cassano replied, "We have from time to time gotten collateral calls from people and then we say to them, well we don't agree with your numbers. And they go, oh, and they go away. And you say well what was that? It's like a drive-by in a way. And the other times they sat down with us, and none of this is hostile or anything, it's all very cordial, and we sit down and we try and find the middle ground and compare where we are."[123]

Cassano did not reveal the $2 billion collateral posted to Goldman, the several hundred million dollars posted to other counterparties, and the daily demands from Goldman and the others for additional cash. The analysts and investors on the call were not informed about the "negative basis adjustment" used to derive the announced $1.5 billion maximum potential exposure. Investors therefore did not know that AIG's earnings were overstated by $3.6 billion—and they would not learn that information until February 11, 2008.

"Material weakness"

By January 2008, AIG still did not have a reliable way to determine the market price of the securities on which it had written credit protection. Nevertheless, on January

16, Cassano sent an email to Michael Sherwood and CFO David Viniar at Goldman demanding that they return $1.1 billion of the $2 billion posted.[124] He attached a spreadsheet showing that AIG valued many securities at par, as if there had been no decline in their value. That was simply not credible, Goldman executives told the FCIC.[125] Meanwhile, Goldman had by then built up $1.45 billion in protection by purchasing credit default swaps on AIG to cover the difference between the amount of collateral they had demanded and the amount that AIG had paid.[126]

On February 6, 2008, PwC auditors met with Robert Willumstad, the chairman of AIG's board of directors. They informed him that the "negative basis adjustment" used to reach the $1.5 billion estimate disclosed on the December 5 investor call had been improper and unsupported, and was a sign that "controls over the AIG Financial Products super senior credit default swap portfolio valuation process and oversight thereof were not effective." PwC concluded that "this deficiency was a material weakness as of December 31, 2007."[127] In other words, PwC would have to announce that the numbers AIG had already publicly reported were wrong. Why the auditors waited so long to make this pronouncement is unclear, particularly given that PwC had known about the adjustment in November.

In the meeting with Willumstad, the auditors were broadly critical of Sullivan; Bensinger, whom they deemed unable to compensate for Sullivan's weaknesses; and Lewis, who might not have "the skill sets" to run an enterprise-wide risk management department. The auditors concluded that "a lack of leadership, unwillingness to make difficult decisions regarding [Financial Products] in the past and inexperience in dealing with these complex matters" had contributed to the problems.[128] Despite PwC's findings, Sullivan received $107 million over four years in compensation from AIG, including a severance package of $18 million. When asked about these figures at a FCIC hearing, he said, "I have no knowledge or recollection of those numbers whatsoever, sir. . . . I certainly don't recall earning that amount of money, sir."[129]

The following day, PwC met with the entire AIG Audit Committee and repeated the analysis presented to Willumstad. The auditors said they could complete AIG's audit, but only if Cassano "did not interfere in the process." Retaining Cassano was a "management judgment, but the culture needed to change at FP."[130] On February 11, AIG disclosed in an SEC filing that its auditor had identified the material weakness, acknowledging that it had reduced its December valuation loss estimates by $3.6 billion—that is, the difference between the estimates of $5.1 billion and $1.5 billion—because of the unsupportable negative basis adjustment.

The rating agencies responded immediately. Moody's and S&P announced downgrades, and Fitch placed AIG on "Ratings Watch Negative," suggesting that a future downgrade was possible. AIG's stock declined 12% for the day, closing at $44.74.

At the end of February, Goldman held $2 billion in cash collateral, was demanding an additional $2.5 billion, and had upped to $2.15 billion its CDS protection against an AIG failure. On February 28, AIG disappointed Wall Street again—this time with dismal fourth-quarter and fiscal year 2007 earnings. The company reported a net loss of $5.29 billion, largely due to $11.12 billion in valuation losses related to the super-senior CDO credit default swap exposure and more than $2.6

billion in losses relating to the securities-lending business's mortgage-backed purchases. Along with the losses, Sullivan announced Cassano's retirement, but the news wasn't all bad for the former Financial Products chief: He made more than $300 million from the time he joined AIG Financial Products in January of 1987 until his retirement in 2008, including a $1 million-a-month consulting agreement after his retirement.[131]

In March, the Office of Thrift Supervision, the federal regulator in charge of regulating AIG and its subsidiaries, downgraded the company's composite rating from a 2, signifying that AIG was "fundamentally sound," to a 3, indicating moderate to severe supervisory concern. The OTS still judged the threat to overall viability as remote.[132] It did not schedule a follow-up review of the company's financial condition for another six months.

By then, it would be too late.

FEDERAL RESERVE: "THE DISCOUNT WINDOW WASN'T WORKING"

Over the course of the fall, the announcements by Citigroup, Merrill, and others made it clear that financial institutions were going to take serious losses from their exposures to the mortgage market. Stocks of financial firms fell sharply; by the end of November, the S&P Financials Index had lost more than 16% for the year. Between July and November, asset-backed commercial paper declined about 30%, which meant that those assets had to be sold or funded by other means. Investment banks and other financial institutions faced tighter funding markets and increasing cash pressures. As a result, the Federal Reserve decided that its interest rate cuts and other measures since August had not been sufficient to provide liquidity and stability to financial markets. The Fed's discount window hadn't attracted much bank borrowing because of the stigma attached to it. "The problem with the discount window is that people don't like to use it because they view it as a risk that they will be viewed as weak," William Dudley, then head of the capital markets group at the New York Fed and currently its president, told the FCIC.[133]

Banks and thrifts preferred to draw on other sources of liquidity; in particular, during the second half of 2007, the Federal Home Loan Banks—which are government-sponsored entities that lend to banks and thrifts, accepting mortgages as collateral—boosted their lending by $235 billion to $875 billion (a 37% increase) when the securitization market froze. Between the end of March and the end of December 2007, Washington Mutual, the largest thrift, increased its borrowing from the Federal Home Loan Banks from $28 billion to $73 billion; Countrywide increased its borrowing from $27 billion to $48 billion; Bank of America increased its borrowing from $38 billion to $56 billion. The Federal Home Loan Banks could thus be seen as the lender of next to last resort for commercial banks and thrifts—the Fed being the last resort.[134]

In addition, the loss of liquidity in the financial sector was making it more difficult for businesses and consumers to get credit, raising the Fed's concerns. From July to October, the percentage of loan officers reporting tightening standards on prime mortgages increased from 15% to about 40%. Over that time, the percentage of loan officers reporting tightening standards on loans to large and midsize companies increased from 8% to 19%, its highest level since 2003.[135] "The Federal Reserve pursued a whole slew of nonconventional policies . . . very creative measures when the discount window wasn't working as hoped," Frederic Mishkin, a Fed governor from 2006 to 2008, told the FCIC. "These actions were very aggressive, [and] they were extremely controversial."[136] The first of these measures, announced on December 12, was the creation of the Term Auction Facility (TAF). The idea was to reduce the discount window stigma by making the money available to all banks at once through a regular auction. The program had some success, with banks borrowing $40 billion by the end of the year. Over time, the Fed would continue to tweak the TAF auctions, offering more credit and longer maturities.

Another Fed concern was that banks and others who did have cash would hoard it. Hoarding meant foreign banks had difficulty borrowing in dollars and were therefore under pressure to sell dollar-denominated assets such as mortgage-backed securities. Those sales and fears of more sales to come weighed on the market prices of U.S. securities. In response, the Fed and other central banks around the world announced (also on December 12) new "currency swap lines" to help foreign banks borrow dollars. Under this mechanism, foreign central banks swapped currencies with the Federal Reserve—local currency for U.S. dollars—and lent these dollars to foreign banks. "During the crisis, the U.S. banks were very reluctant to extend liquidity to European banks," Dudley said.[137] Central banks had used similar arrangements in the aftermath of the 9/11 attacks to bolster the global financial markets. In late 2001, the swap lines totaled $88 billion. During the financial crisis seven years later, they would reach $580 billion.

The Fed hoped the TAF and the swap lines would reduce strains in short-term money markets, easing some of the funding pressure on other struggling participants such as investment banks. Importantly, it wasn't just the commercial banks and thrifts but the "broader financial system" that concerned the Fed, Dudley said. "Historically, the Federal Reserve has always tended to supply liquidity to the banks with the idea that liquidity provided to the banking system can be [lent on] to solvent institutions in the nonbank sector. What we saw in this crisis was that didn't always take place to the extent that it had in the past. . . . I don't think people going in really had a full understanding of the complexity of the shadow banking system, the role of [structured investment vehicles] and conduits, the backstops that banks were providing SIV conduits either explicitly or implicitly."[138]

Burdened with capital losses and desperate to cover their own funding commitments, the banks were not stable enough to fill the void, even after the Fed lowered interest rates and began the TAF auctions. In January 2008, the Fed cut rates again—and then again, twice within two weeks, a highly unusual move that brought the federal funds rate from 4.25% to 3.0%.

The Fed also started plans for a new program that would use its emergency authority, the Term Securities Lending Facility, though it wasn't launched until March. "The TLSF was more a view that the liquidity that we were providing to the banks through the TAF was not leading to a significant diminishment of financing pressures elsewhere," Dudley told the FCIC. "So maybe we should think about bypassing the banking system and [try] to come up with a vehicle to provide liquidity support to the primary dealer community more directly."[139]

On March 7, the Fed increased the total available in each of the biweekly TAF auctions from $30 billion to $50 billion, and guaranteed at least that amount for six months. The Fed also liberalized its standard for collateral. Primary dealers—mainly the investment banks and the broker-dealer affiliates of large commercial banks—could post debt of government-sponsored enterprises, including GSE mortgage–backed securities, as collateral. The Fed expected to have $100 billion in such loans outstanding at any given time.

Also at this time, the U.S. central bank began contemplating a step that was revolutionary: a program that would allow investment banks—institutions over which the Fed had no supervisory or regulatory responsibility—to borrow from the discount window on terms similar to those available to commercial banks.

MONOLINE INSURERS: "WE NEVER EXPECTED LOSSES"

Meanwhile, the rating agencies continued to downgrade mortgage-backed securities and CDOs through 2007. By January 2008, as a result of the stress in the mortgage market, S&P had downgraded 3,389 tranches of residential mortgage–backed securities and 1,383 tranches from 420 CDOs. MBIA and Ambac, the two largest monoline insurers, had taken on a combined $265 billion of guarantees on mortgage securities and other structured products. Downgrades on the products that they insured brought the financial strength of these companies into question. After conducting stress analysis, S&P estimated in February 2008 that Ambac would need up to $400 million in capital to cover potential losses on structured products.[140] Such charges would affect the monolines' own credit ratings, which in turn could lead to more downgrades of the products they had guaranteed.

Like many of the monolines, ACA, the smallest of them, kept razor-thin capital—less than $700 million—against its obligations that included $69 billion in credit default swaps on CDOs. In late 2007, ACA reported a net loss of $1.7 billion, almost entirely due to credit default swaps.

This was news. The notion of "zero-loss tolerance" was central to the viability of the monoline business model, and they and various stakeholders—the rating agencies, investors, and monoline creditors—had traditionally assumed that the monolines never would have to take a loss. As Alan Roseman, CEO of ACA, told FCIC staff: "We never expected losses. . . . We were providing hedges on market volatility to institutional counterparties. . . . We were positioned, we believed, to take the volatility because we didn't have to post collateral against the changes in market value to our counterparty, number one. Number two, we were told by the rating agencies that rated us that that mark-to-market variation was not important to our rating, from a financial strength point of view at the insurance company."[141]

In early November, the SEC called the growing concern about Merrill's use of the monolines for hedging "a concern that we also share."[142] The large Wall Street firms attempted to minimize their exposure to the monolines, particularly ACA. On December 19, S&P downgraded ACA to junk status, rating the company CCC, which was fatal for a company whose CEO said that its "rating is the franchise."[143] Firms like Merrill Lynch would get virtually nothing for the guarantees they had purchased from ACA.

Despite the stresses in the market, the SEC saw the monoline problems as largely confined to ACA. A January 2008 internal SEC document said, "While there is a clear sentiment that capital raising will need to continue, the fact that the guarantors (with the exception of ACA) are relatively insulated from liquidity driven failures provides hope that event[s] in this sector will unfold in a manageable manner."[144]

Still, the rating agencies told the monolines that if they wanted to retain their stellar ratings, they would have to raise capital. MBIA and Ambac ultimately did raise $1.65 billion and $1.5 billion, respectively. Nonetheless, S&P downgraded both to AA in June 2008. As the crisis unfolded, most of the monolines stopped writing new coverage.

The subprime contagion spread through the monolines and into a previously unimpaired market: municipal bonds. The path of these falling dominoes is easy to follow: in anticipation of the monoline downgrades, investors devalued the protection the monolines provided for other securities—even those that had nothing to do with the mortgage-backed markets, including a set of investments known as auction rate securities, or ARS. An ARS is a long-term bond whose interest rate is reset at regularly scheduled auctions held every one to seven weeks.[145] Existing investors can choose to rebid for the bonds and new investors can come in. The debt is frequently municipal bonds. As of December 13, 2007, state and local governments had issued $165 billion in ARS, accounting for half of the $330 billion market. The other half were primarily bundles of student loans and debt of nonprofits such as museums and hospitals.

The key point: these entities wanted to borrow long-term but get the benefit of lower short-term rates, and investors wanted to get the safety of investing in these securities without tying up their money for a long time. Unlike commercial paper, this market had no explicit liquidity backstop from a bank, but there was an implicit backstop: often, if there were not enough new buyers to replace the previous investors, the dealers running these auctions, including firms like UBS, Citigroup, and Merrill Lynch, would step in and pick up the shortfall. Because of these interventions, there were only 13 failures between 1984 and early 2007 in more than 100,000 auctions. Dealers highlighted those minuscule failure rates to convince clients that ARS were very liquid, short-term instruments, even in times of stress.[146]

However, if an auction did fail, the previous ARS investors would be obligated to retain their investments. In compensation, the interest rates on the debt would reset, often much higher, but investors' funds would be trapped until new investors or the dealer stepped up or the borrower paid off the loan. ARS investors were typically very risk averse and valued liquidity, and so they were willing to pay a premium for guarantees on the ARS investments from monolines. It necessarily followed that the monolines' growing problems in the latter half of 2007 affected the ARS market. Fearing that the monolines would not be able to perform on their guarantees, investors fled. The dealers' interventions were all that kept the market going, but the stress became too great. With their own problems to contend with, the dealers were unable to step in and ensure successful auctions. In February, en masse, they pulled up stakes. The market collapsed almost instantaneously. On February 14, in one of the starkest market dislocations of the financial crisis, 80% of the ARS auctions failed; the following week, 67% failed.

Hundreds of billions of dollars were trapped by ARS instruments as investors were obligated to retain their investments. And retail investors—individuals investing less than $1 million, small businesses, and charities—constituted more than $110 billion of this $330 billion market.[147] Moreover, investors who chose to remain in the market demanded a premium to take on the risk. Between investor demands and interest rate resets, countless governments, infrastructure projects, and nonprofits on tight budgets were slammed with interest rates of 10% or higher. Problems in the ARS market cost Georgetown University, a borrower, $6 million.[148] New York State was stuck with interest rates that soared from about 3.5% to more than 14% on $4 billion of its debt. The Port Authority of New York and New Jersey saw the interest rate on its debt jump from 4.3% to 20% in a single week in February.[149]

In 2008 alone, the SEC received more than 1,000 investor complaints regarding the failed ARS auctions. Investors argued that brokers had led them to believe that ARS were safe and liquid, essentially the equivalent of money market accounts but with the potential for a slightly higher interest rate. Investors also reported that the frozen market blocked their access to money for short-term needs such as medical expenses, college tuition, and, for some small businesses and charities, payroll. By 2009, the SEC had settled with financial institutions including Bank of America, RBC Capital Markets, and Deutsche Bank to resolve charges that the firms misled investors. As a result, these and other banks made more than $50 billion available to pay off tens of thousands of ARS investors.[150]

COMMISSION CONCLUSIONS ON CHAPTER 14

The Commission concludes that some large investment banks, bank holding companies, and insurance companies, including Merrill Lynch, Citigroup, and AIG, experienced massive losses related to the subprime mortgage market because of significant failures of corporate governance, including risk management. Executive and employee compensation systems at these institutions disproportionally rewarded short-term risk taking.

The regulators—the Securities and Exchange Commission for the large investment banks and the banking supervisors for the bank holding companies and AIG—failed to adequately supervise their safety and soundness, allowing them to take inordinate risk in activities such as nonprime mortgage securitization and over-the-counter (OTC) derivatives dealing and to hold inadequate capital and liquidity.