

The Big Short: Inside the Doomsday Machine

Michael Lewis

“Aames Financial, like The Money Store, belonged to a new category of firms extending loans to cash-strapped Americans, known euphemistically as “specialty finance.” [...] Aames was the first subprime mortgage lender to go public.”

“The mortgage bond was different in important ways from old-fashioned corporate and government bonds. A mortgage bond wasn’t a single giant loan for an explicit fixed term. A mortgage bond was a claim on the cash flows from a pool of thousands of individual home mortgages. These cash flows were always problematic, as the borrowers had the right to pay off any time they pleased. This was the single biggest reason that bond investors initially had been reluctant to invest in home mortgage loans: Mortgage borrowers typically repaid their loans only when interest rates fell, and they could refinance more cheaply, leaving the owner of a mortgage bond holding a pile of cash, to invest at lower interest rates. The investor in home loans didn’t know how long his investment would last, only that he would get his money back when he least wanted it. To limit this uncertainty, the people I’d worked with at Salomon Brothers, who created the mortgage bond market, had come up with a clever solution. They took giant pools of home loans and carved up the payments made by homeowners into pieces, called tranches. The buyer of the first tranche was like the owner of the ground floor in a flood: He got hit with the first wave of mortgage prepayments. In exchange, he received a higher interest rate. The buyer of the second tranche—the second story of the skyscraper—took the next wave of prepayments and in exchange received the second highest interest rate, and so on. The investor in the top floor of the building received the lowest rate of interest but had the greatest assurance that his investment wouldn’t end before he wanted it to.”

“The big fear of the 1980s mortgage bond was that he would be repaid too quickly, not that he would fail to be repaid at all. The pool of loans underlying the mortgage bond conformed to the standards, in their size and the credit quality of the borrowers. [...] The loans carried, in effect, government guarantees; if the homeowners defaulted, the government paid off their debts. When Steve Eisman stumbled into this new, rapidly growing industry of specialty finance, the mortgage bond was about to be put to a new use: making loans that did not qualify for government guarantees. The purpose was to extend credit to less and less creditworthy homeowners, not so that they might buy a house but so that they could cash out whatever equity they had in the house they already owned.”

“The mortgage bonds created from subprime home loans extended the logic invented to address the problem of early repayment to cope with the problem of no repayment at all. The investor in the first floor, or tranche, would be exposed not to prepayments but to actual losses. He took the first losses until his investment was entirely wiped out, whereupon the losses hit the guy on the second floor. And so on.”

“Subprime mortgage lending was still a trivial fraction of the U.S. credit markets—a few tens of billions in loans each year—but its existence made sense, even to Steve Eisman. “I thought it was partly a response to growing income inequality,” he said. “The distribution of incoming in this country was skewed and becoming more skewed, and the result was that you have more subprime customers.” Of course, Eisman was paid to see the sense in subprime lending: Oppenheimer quickly became one of the leading bankers to the new industry, in no small part because Eisman was one of its leading proponents. “I took a lot of subprime companies public,” says Eisman. “And the story they liked to tell was that ‘we’re helping the consumer. Because we’re taking him out of his high interest rate credit card debt and putting him into lower interest rate mortgage debt.’ And I believed that story.””

“Oppenheimer was among the leading bankers to the subprime mortgage industry. They never would have been given the banking business if Eisman, their noisiest analyst, had not been willing to say nice things about them. Much as he enjoyed bashing the less viable companies, he accepted that the subprime lending industry was a useful addition to the U.S. economy. His willingness to be rude about a few of these subprime originators was, in a way, useful. It lent credibility to his recommendations of the others.”

“Eisman was now about to become noticeably more negatively disposed, in ways that, from the point of view of his

employer, were financially counterproductive. [...] Eisman wanted to write a report that more or less damned the entire industry, but he needed to be more careful than usual. [...] Ammunition to cause trouble had arrived just a few months earlier from Moody's: The rating agency now possessed, and offered for sale, all sorts of new information about subprime mortgage loans. While the Moody's database did not allow you to examine individual loans, it offered a general picture of the pools of loans underlying individual mortgage bonds: how many were floating-rate, how many of the houses borrowed against were owner-occupied. Most importantly: how many were delinquent."

"These [subprime mortgage originator] companies disclosed their ever-growing earnings, but not much else. One of the many items they failed to disclose was the delinquency rate of the home loans they were making. When Eisman had bugged them for these, they'd pretended that the fact was irrelevant, as they had sold all the loans off to people who packaged them into mortgage bonds: The risk was no longer theirs. This was untrue. All retained some small fraction of the loans they originated, and the companies were allowed to book as profit the expected future value of those loans. The accounting rules allowed them to assume the loans would be repaid, and not prematurely."

"What first caught Vinny's eye were the high prepayments coming in from a sector called "manufactured housing." ("It sounds better than 'mobile homes.'") Mobile homes were different from the wheel-less kind: Their value dropped, like cars', the moment they left the store. The mobile home buyer, unlike the ordinary home buyer, couldn't expect to refinance in two years and take money out. *Why were they prepaying so fast?* Vinny asked himself. "It made no sense to me. Then I saw that the reason the prepayments were so high is that they were involuntary." "Involuntary prepayment" sounds better than "default." Mobile home buyers were defaulting on their loans, their mobile homes were being repossessed, and the people who had lent them money were receiving fractions of the original loans."

"The interest rate on the loans wasn't high enough to justify the risk of lending to this particular slice of the American population. It was as if the ordinary rules of finance had been suspended in response to a social problem. A thought crossed his mind: How do you make poor people feel wealthy when wages are stagnant? You give them cheap loans."

"If the first act of subprime lending had been freaky, this second act was terrifying. Thirty billion dollars was a big year for subprime lending in the mid-1990s. In 2000 there had been \$130 billion in subprime mortgage lending, and 55 billion dollars' worth of those loans had been repackaged as mortgage bonds. In 2005 there would be \$625 billion in subprime mortgage loans, \$507 billion of which found its way into mortgage bonds."

Back in 1996, 65 percent of subprime loans had been fixed-rate, meaning that typical subprime borrowers might be getting screwed, but at least they knew for sure how much they owed each month until they paid off the loan. By 2005, 75 percent of subprime loans were some form of floating-rate, usually fixed for the first two years.

"The original cast of subprime financiers had been sunk by the small fraction of the loans they made that they had kept on their books. The market might have learned a simple lesson: Don't make loans to people who can't repay them. Instead it learned a complicated one: You can keep on making these loans, just don't keep them on your books. Make the loans, then sell them off to the fixed income departments of big Wall Street investment banks, which will in turn package them into bonds and sell them to investors. Long Beach Savings was the first existing bank to adopt what was called the "originate and sell" model."

"As early as 2004, if you looked at the numbers, you could clearly see the decline in lending standards. In Burry's view, standards had not just fallen but hit bottom. The bottom even had a name: *the interest-only negative-amortizing adjustable-rate subprime mortgage*. You, the home buyer, actually were given the option of paying nothing at all, and rolling whatever interest you owed the bank into a higher principal balance. It wasn't hard to see what sort of person might like to have such a loan: one with no income. What Burry couldn't understand was why a person who lent money would want to extend such a loan. "What you want to watch are the lenders, not the borrowers," he said. "The borrowers will always be willing to take a great deal for themselves. It's up to the lenders to show restraint, and when they lose it, watch out."

"He now had a tactical investment problem. The various floors, or tranches, of subprime mortgage bonds all had one thing in common: The bonds were impossible to sell short. To sell a stock or bond short, you needed to borrow it, and these tranches of mortgage bonds were tiny and impossible to find. You could buy them or not buy them, but you couldn't bet explicitly against them; the market for subprime mortgages simply had no place for people in it who took a dim view of them. You might know with certainty that the entire subprime mortgage bond was doomed, but you could do nothing about it."

"A credit default swap was confusing mainly because it wasn't really a swap at all. It was an insurance policy, typically on a corporate bond, with semiannual premium payments and a fixed term. For instance, you might pay \$200,000 a

year to buy a ten-year credit default swap on \$100 million in General Electric bonds. The most you could lose was \$2 million: \$200,000 a year for ten years. The most you could make was \$100 million, if General Electric defaulted on its debt any time in the next ten years and bondholders recovered nothing. It was a zero-sum bet: If you made \$100 million, the guy who had sold you the credit default swap lost \$100 million. It was also an asymmetric bet, like laying down money on a number in roulette. The most you could lose were the chips you put on the table; but if your number came up you made thirty, forty, even fifty times your money. “Credit default swaps remedied the problem of open-ended risk for me,” said Burry. “If I bought a credit default swap, my downside was defined and certain, and the upside was many multiples of it.”

“In 2004 he began to buy insurance on companies he thought might suffer in a real estate downturn: mortgage lenders, mortgage insurers, and so on. This wasn’t entirely satisfying. A real estate market meltdown might cause these companies to lose money; there was no guarantee that they would actually go bankrupt. He wanted a more direct tool for betting against subprime mortgage lending. On March 19, 2005, alone in his office with the door closed and the shades drawn, reading an abstruse textbook on credit derivatives, Michael Burry got an idea: credit default swaps on subprime mortgage bonds.”

“The idea hit him as he read a book about the evolution of the U.S. bond market and the creation, in the mid-1990s, at J.P. Morgan, of the first corporate credit default swaps. He came to a passage explaining why banks felt they needed credit default swaps at all. It wasn’t immediately obvious—after all, the best way to avoid the risk of General Electric’s defaulting on its debt was not to lend to General Electric in the first place. In the beginning, credit default swaps had been a tool for hedging: Some bank had loaned more than they wanted to General Electric because GE had asked for it, and they feared alienating a long-standing client; another bank changed its mind about the wisdom of lending to GE at all. Very quickly, however, the new derivatives became tools for speculation: A lot of people wanted to make bets on the likelihood of GE’s defaulting.”

“Warren Buffett had an acerbic partner, Charlie Munger, who evidently cared a lot less than Buffett did about whether people liked him. Back in 1995, Munger had given a talk at Harvard Business School called “The Psychology of Human Misjudgment.” If you wanted to predict how people would behave, Munger said, you only had to look at their incentives. FedEx couldn’t get its night shift to finish on time; they tried everything to speed it up but nothing worked—until they stopped paying the night shift workers by the hour and started to pay them by the shift. Xerox created a new, better machine only to have it sell less well than the inferior older ones—until they figured out the salesmen got a bigger commission for selling the older one.”

“Burry has his own angle on this same subject, derived from the time he’d spent in medicine. Even in life or death situations, doctors, nurses, and patients all responded to bad incentives. In hospitals in which the reimbursement rates for appendectomies ran higher, for instance, the surgeons removed more appendixes. The evolution of eye surgery was another great example. In the 1990s, the ophthalmologists were building careers on performing cataract procedures. They’d take half an hour or less, and yet Medicare would reimburse them \$1,700 a pop. In the late 1990s, Medicare slashed reimbursement levels to around \$450 per procedure, and the incomes of the surgically minded ophthalmologists fell. Across America, ophthalmologists rediscovered an obscure and risky procedure called radial keratotomy, and there was a boom in surgery to correct small impairments of vision. The inadequately studied procedure was marketed as a cure for the suffering of contact lens wearers. “In reality,” says Burry, “the incentive was to maintain their high, often one-to two-million-dollar incomes, and the justification followed. The industry rushed to come up with something less dangerous than radial keratotomy, and Lasik was eventually born.”

“Thus when Mike Burry went into business he made sure that he had the proper incentives. He disapproved of the typical hedge fund manager’s deal. Taking 2 percent of assets off the top, as most did, meant the hedge fund manager got paid simply for amassing vast amounts of other people’s money.”

“Often as not, he turned up what he called “ick” investments. In October 2001, he explained the concept in his letter to investors: “Ick investing means taking a special analytical interest in stocks that inspire a first reaction of ‘ick.’”

“The alarmingly named Avant! Corporation was a good example. He’d found it searching for the word “accepted” in news stories. He knew that, standing on the edge of the playing field, he needed to find unorthodox ways to tilt it to his advantage, and that usually meant finding unusual situations the world might not be fully aware of. “I wasn’t searching for a news report of a scam or a fraud per se,” he said. “That would have been too backward-looking, and I was looking to get in front of something. I was looking for something happening in the courts that might lead to an investment thesis. An argument being accepted, a plea being accepted, a settlement being accepted by the court.” A court had accepted a plea from a software company called the Avant! Corporation. Avant! had been accused

of stealing from a competitor the software code that was the whole foundation of Avant!’s business. The company had \$100 million in cash in the bank, was still generating \$100 million a year of free cash flow—and had a market value of only \$250 million! Michael Burry started digging; by the time he was done, he knew more about the Avant! Corporation than any man on earth. He was able to see that even if the executives went to jail (as they did) and the fines were paid (as they were), Avant! would be worth a lot more than the market then assumed. Most of its engineers were Chinese nationals on work visas, and thus trapped—there was no risk that anyone would quit before the lights were out. To make money on Avant!’s stock, however, he’d probably have to stomach short-term losses, as investors puked up shares in horrified response to negative publicity.”

“Burry bought his first shares of Avant! in June 2001 at \$12 a share. [...] Mike Burry kept on buying it all [as it dropped]—all the way down to \$2 a share. [...] [Later], Avant! got taken over for \$22 a share.”

“The first thing Mike Burry needed, if he was going to buy insurance on a big pile of subprime mortgage bonds, was to create some kind of standard, widely agreed-upon contract. Whoever sold him a credit default swap on a subprime mortgage bond would one day owe him a great deal of money. He suspected that dealers might try to get out of paying it to him. A contract would make it harder for them to do that, and easier for him to sell to one dealer what he had bought from another—and thus to shop around for prices. An organization called International Swaps and Derivatives Association (ISDA) had the task of formalizing the terms of new securities. ISDA already had a set of rules in place to govern credit default swaps on corporate bonds, but insurance on corporate bonds was a relatively simple matter. There was this event, called a default, that either did or did not happen. The company missed an interest payment, you had to settle. The insurance buyer might not collect the full 100 cents on the dollar—just as the bondholder might not lose 100 cents on the dollar, as the company’s assets were worth something—but an independent judge could decide, in a way that was generally fair and satisfying, what the recovery would be. If the bondholders received 30 cents on the dollar—thus experiencing a loss of 70 cents—the guy who had bought the credit default swap got 70 cents.”

“Buying insurance on a pool of U.S. home mortgages was more complicated, because the pool didn’t default all at once; rather, one homeowner at a time defaulted. The dealers—led by Deutsche Bank and Goldman Sachs—came up with a clever solution: the pay-as-you-go credit default swap. The buyer of the swap—the buyer of insurance—would be paid off not all at once, if and when the entire pool of mortgages went bust, but incrementally, as individual homeowners went into default.”

“The price of insurance was driven not by any independent analysis but by the ratings placed on the bond by the rating agencies, Moody’s and Standard & Poor’s [...] [On the] less safe triple-B-rated tranches, [he might pay] 200 basis points—that is, 2 percent. (A basis point is one-hundredth of one percentage point.) The triple-B-rated tranches—the ones that would be worth zero if the underlying mortgage pool experienced a loss of just 7 percent—were what he was after.”

“He set out to cherry-pick the absolute worst ones, and was a bit worried that the investment banks would catch on to just how much he knew about specific mortgage bonds, and adjust their prices.”

“Once again they shocked and delighted him: Goldman Sachs e-mailed him a great long list of crappy mortgage bonds to choose from. [...] He could pick from the list without alerting them to the depth of his knowledge. It was as if you could buy flood insurance on the house in the valley for the same price as flood insurance on the house on the mountaintop.”

“he couldn’t help but wonder who exactly was on the other side of his trades—what madman would be selling him so much insurance on bonds he had handpicked to explode? The credit default swap was a zero-sum game. If Mike Burry made \$100 million when the subprime mortgage bonds he had handpicked defaulted, someone else must have lost \$100 million. Goldman Sachs made it clear that the ultimate seller wasn’t Goldman Sachs. Goldman Sachs was simply standing between insurance buyer and insurance seller and taking a cut.”

“Inadvertently, he’d opened up a debate with his own investors, which he counted among his least favorite activities. “I hated discussing ideas with investors,” he said, “because I then become a Defender of the Idea, and that influences your thought process.” Once you became an idea’s defender you had a harder time changing your mind about it.”

“The presence of millions of small investors had politicized the stock market. It had been legislated and regulated to at least seem fair.”

“The bond market, because it consisted mainly of big institutional investors, experienced no similarly populist political pressure. Even as it came to dwarf the stock market, the bond market eluded serious regulation. [...] in many cases

the only way to determine if the price some bond trader had given you was even close to fair was to call around and hope to find some other bond trader making a market in that particular obscure security. The opacity and complexity of the bond market was, for big Wall Street firms, a huge advantage. The bond market customer lived in perpetual fear of what he didn't know."

"Senior management's job is to pay people," [Greg Lippmann] would say. "If they fuck a hundred guys out of a hundred grand each, that's ten million more for them. They have four categories: happy, satisfied, dissatisfied, disgusted. If they hit happy, they've screwed up: They never want you happy. On the other hand, they don't want you so disgusted you quit. The sweet spot is somewhere between dissatisfied and disgusted."

"Since 2000, people whose homes had risen between 1 and 5 percent were nearly four times more likely to default on their home loans than people whose homes had risen in value more than 10 percent."

"That was [Greg Lippmann]'s pitch in a nutshell: Home prices didn't even need to fall. They merely needed to stop rising at the unprecedented rates they had the previous few years for vast numbers of Americans to default on their home loans."

"The beauty of the credit default swap, or CDS, was that it solved the timing problem. Eisman no longer needed to guess exactly when the subprime mortgage market would crash. It also allowed him to make the bet without laying down cash up front, and put him in a position to win many times the sums he could possibly lose. Worst case: Insolvent Americans somehow paid off their subprime mortgage loans, and you were stuck paying an insurance premium of roughly 2 percent a year for as long as six years—the longest expected life span of the putatively thirty-year loans."

"The alacrity with which subprime borrowers paid off their loans was yet another strange aspect of this booming market. It had to do with the structure of the loans, which were fixed for two or three years at an artificially low teaser rate before shooting up to the "go-to" floating rate. "They were making loans to lower-income people at a teaser rate when they knew they couldn't afford to pay the go-to rate," said Eisman. "They were doing it so that when the borrowers get to the end of the teaser rate period, they'd have to refinance, so the lenders can make more money off them."

"When the Goldman Sachs saleswoman called Mike Burry and told him that her firm would be happy to sell him credit default swaps in \$100 million chunks, Burry guessed, rightly, that Goldman wasn't ultimately on the other side of his bets. Goldman would never be so stupid as to make huge naked bets that millions of insolvent Americans would repay their home loans. [...] The party on the other side of his bet against subprime mortgage bonds was the triple-A-rated insurance company AIG [...] Or, rather, a unit of AIG called AIG FP."

"Nineteen eighties financial innovation had all sorts of consequences, but one of them was a boom in the number of deals between big financial firms that required them to take each other's credit risks. Interest rate swaps—in which one party swaps a floating rate of interest for another party's fixed rate of interest—was one such innovation. Once upon a time, Chrysler issued a bond through Morgan Stanley, and the only people who wound up with credit risk were the investors who bought the Chrysler bond. Chrysler might sell its bonds and simultaneously enter into a ten-year interest rate swap transaction with Morgan Stanley—and just like that, Chrysler and Morgan Stanley were exposed to each other. If Chrysler went bankrupt, its bondholders obviously lost; depending on the nature of the swap, and the movement of interest rates, Morgan Stanley might lose, too. If Morgan Stanley went bust, Chrysler, along with anyone else who had done interest rate swaps with Morgan Stanley, stood to suffer. Financial risk had been created out of thin air, and it begged to be either honestly accounted for or disguised."

"All of these places were central to what happened in the last two decades; without them, the new risks being created would have had no place to hid and would have remained in full view of bank regulators. All of these places, when the crisis came, would be washed away by the general nausea felt in the presence of complicated financial risks, but there was a moment when their existence seemed cartographically necessary to the financial world. AIG FP was the model for them all."

"In 1998, AIG FP entered the new market for corporate credit default swaps: It sold insurance to banks against the risk of defaults by huge numbers of investment-grade public corporations."

"But then, in the early 2000s, the financial markets performed this fantastic bait and switch, in two stages. Stage One was to apply a formula that had been dreamed up to cope with corporate credit risk to consumer credit risk. The banks that used AIG FP to insure piles of loans to IBM and GE now came to it to insure much messier piles, which included credit card debt, student loans, auto loans, prime mortgages, aircraft leases, and just about anything else that generated a cash flow. As there were many different sorts of loans, to different sorts of people, the logic that had

applied to corporate loans seemed to apply to them, too: They were sufficiently diverse that they were unlikely all to go bad at once.”

“Stage Two, beginning at the end of 2004, was to replace the student loans and the auto loans and the rest with bigger piles consisting of nothing but U.S. subprime mortgage loans. [...] The “consumer loan” piles that Wall Street firms, led by Goldman Sachs, asked AIG FP to insure went from being 2 percent subprime mortgages to being 95 percent subprime mortgages. In a matter of months, AIG FP, in effect, bought \$50 billion in triple-B-rated subprime mortgage bonds by insuring them against default. [...] Everyone concerned apparently assumed they were being paid insurance premiums to take basically the same sort of risk they had been taking for nearly a decade. They weren’t. They were now, in effect, the world’s biggest owners of subprime mortgage bonds.”

“Goldman Sachs created a security so opaque and complex that it would remain forever misunderstood by investors and rating agencies: the synthetic subprime mortgage bond-backed CDO, or collateralized debt obligation. Like the credit default swap, the CDO had been invented to redistribute the risk of corporate and government bond defaults and was now being rejiggered to disguise the risk of subprime mortgage loans. Its logic was exactly that of the original mortgage bonds. In a mortgage bond, you gathered thousands of loans and, assuming that it was extremely unlikely that they would all go bad together, created a tower of bonds¹, in which both risk and return diminished as you rose. In a CDO you gathered one hundred different *mortgage bonds*—usually, the riskiest, lower floors of the original tower—and used them to erect an entirely new tower of bonds. The innocent observer might reasonably ask, What’s the point of using floors from one tower of debt simply to create another tower of debt? The short answer is, They are too near to the ground. More prone to flooding—the first to take losses—they bear a lower credit rating: triple-B. Triple-B-rated bonds were harder to sell than the triple-A-rated ones, on the safe, upper floors of the building.”

“The long answer was that there were huge sums of money to be made, if you could somehow get them re-rated as triple-A, thereby lowering their perceived risk, however dishonestly and artificially. This is what Goldman Sachs had cleverly done. Their—soon to be everyone’s—nifty solution to the problem of selling the lower floors appears, in retrospect, almost magical. Having gathered 100 ground floors from 100 different subprime mortgage buildings (100 different triple-B-rated bonds), they persuaded the rating agencies that these weren’t, as they might appear, all exactly the same things. They were another diversified portfolio of assets!”

“The CDO was, in effect, a credit laundering service for the residents of Lower Middle Class America. For Wall Street it was a machine that turned lead into gold.”

“With stagnant wages and booming consumption, the cash-strapped American masses had a virtually unlimited demand for loans but an uncertain ability to repay them. All they had going for them, from the point of view of Wall Street financial engineers, was that their financial fates could be misconstrued as uncorrelated. By assuming that one pile of subprime mortgage loans wasn’t exposed to the same forces as another—that a subprime mortgage bond with loans heavily concentrated in Florida wasn’t very much like a subprime mortgage bond more concentrated in California—the engineers created the illusion of security.”

“it didn’t require any sort of genius to see the fortune to be had from the laundering of triple-B-rated bonds into triple-A-rated bonds. What demanded genius was finding \$20 billion in triple-B-rated bonds to launder. In the original tower of loans—the original mortgage bond—only a single, thin floor got rated triple-B. A billion dollars of crappy home loans might yield just \$20 million of the crappiest triple-B tranches. Put another way: To create a billion-dollar CDO composed solely of triple-B-rated subprime mortgage bonds, you needed to lend \$50 billion in cash to actual human beings. That took time and effort. A credit default swap took neither.”

“There was more than one way to think about Mike Burry’s purchase of a billion dollars in credit default swaps. The first was a simple, even innocent, insurance contract. Burry made his semiannual premium payments and, in return, received protection against the default of a billion dollars’ worth of bonds. He’d either be paid zero, if the triple-B-rated bonds he’d insured proved good, or a billion dollars, if those triple-B-rated bonds went bad. But of course Mike Burry didn’t own any triple-B-rated subprime mortgage bonds, or anything like them. He had no property to “insure” [...]. To him, as to Steve Eisman, a credit default swap wasn’t insurance at all but an outright speculative bet against the market—and this was the second way to think about it.”

¹ “In thinking about these towers of debt, it’s handy to simplify them into three floors: a basement, called the “equity,” which takes the very first losses and is not an investment-grade security; the lower floor, called the “mezzanine,” with triple-B rating; and the upper floor, with triple-A rating, and generally referred to as the “senior.” In practice, the towers were far more finely sliced”

“There was also a third, even more mind-bending, way to this new instrument: as a near-perfect replica of a subprime mortgage bond. The cash flows of Mike Burry’s credit default swaps replicated the cash flows of the triple-B-rated subprime mortgage bond that he wagered against. The 2.5 percent a year in premium Mike Burry was paying mimicked the spread over LIBOR that triple-B subprime mortgage bonds paid to an actual investor. The billion dollars whoever had sold Mike Burry his credit default swaps stood too lose, if the bonds went bad, replicated the potential losses of an actual bond owner.”

“And so, to generate \$1 billion in triple-B-rated subprime mortgage bonds, Goldman Sachs did not need to originate \$50 billion in home loans. They needed simply to entice Mike Burry, or some other market pessimist, to pick 100 different triple-B bonds and buy \$10 million in credit default swaps on each of them. Once they had this package (a “synthetic CDO,” it was called, which was the term of art for a CDO composed of nothing but credit default swaps), they’d take it over to Moody’s and Standard & Poor’s. “The ratings agencies didn’t really have their own CDO model,” says one former Goldman CDO trader. “The banks would send over their own model to Moody’s and say, ‘How does this look?’” Somehow, roughly 80 percent of what had been risky triple-B rated bonds now looked like triple-A-rated bonds. The other 20 percent, bearing lower credit ratings, generally were more difficult to sell, but they could, incredibly, simply be piled up in yet another heap and reprocessed yet again, into more triple-A bonds. The machine that turned 100 percent lead into an ore that was no 80 percent gold and 20 percent lead would accept the residual lead and turn 80 percent of that into gold, too.”

“Goldman Sachs stood between Michael Burry and AIG. Michael Burry forked out 250 basis points (2.5 percent) to own credit default swaps on the; very crappiest triple-B bonds, and AIG paid a mere 12 basis points (0.12 percent) to sell credit default swaps on those very same bonds, filtered through a synthetic CDO, and pronounced triple-A-rated. There were a few other messy details—[...]but when the dust settled, Goldman Sachs has taken roughly 2 percent off the top, risk-free, and booked all the profit up front.”

“No wonder Goldman Sachs was suddenly so eager to sell Mike Burry credit default swaps in giant, \$100 million chunks, or that the Goldman Sachs bond trader had been surprisingly indifferent to which subprime bonds Mike Burry bet against. The insurance Mike Burry bought was inserted into a synthetic CDO and passed along to AIG. The roughly \$20 billion in credit default swaps sold by AIG to Goldman Sachs meant roughly \$400 million in riskless profits for Goldman Sachs. *Each year.*”

“with so few investors willing to make an outright bet against the subprime bond market, Greg Lippmann’s bosses asked Lippman to take one for the team: in effect, to serve as a stand-in for Mike Burry, and to make an explicit bet against the market. If Lippmann would buy credit default swaps from Deutsche Bank’s CDO department, they, too, might do these trades with AIG, before AIG woke up and stopped doing them.”

“To sell investors on the idea of betting against subprime bonds—on buying his pile of credit default swaps—Greg Lippmann needed a new and improved argument. [...] Lippmann asked Eugene Xu to study the effect of home price appreciation on subprime mortgage loans. [...] The numbers shocked even him. *They didn’t need to collapse; they merely needed to stop rising so fast.* House prices were still rising, and yet default rates were approaching 4 percent; if they rose to just 7 percent, the lowest investment-grade bonds, rated triple-B-minus, went to zero. If they rose to 8 percent, the next lowest-rated bonds, rated triple-B, went to zero.”

“Lippmann’s short position may have been forced upon him, but by the end of 2005 he’d made it his own, and grown it to a billion dollars. [...] The running cost, in premiums Lippmann paid, was tens of millions of dollars a year, and his losses looked even bigger. The buyer of a credit default swap agreed to pay premiums for the lifespan of the underlying mortgage bond. So long as the underlying bonds remained outstanding, both buyer and seller of credit default swaps were obliged to post collateral, in response to their price movements. Astonishingly, the prices of subprime mortgage bonds were rising. Within a few months, Lippmann’s credit default swap position had to be marked down by \$30 million. His superiors repeatedly asked him to explain why he was doing what he was doing.”

“Rather than cave to the pressure, Lippmann instead had an idea for making it vanish: kill the new market. AIG was very nearly the only buyer of triple-A-rated CDOs (that is, triple-B-rated subprime mortgage bonds repackaged into triple-A-rated CDOs). AIG was, ultimately, the party on the other side of the credit default swaps Mike Burry was buying. If AIG stopped buying bonds (or, more exactly, stopped insuring them against default), the entire subprime mortgage bond market might collapse, and Lippmann’s credit default swaps would be worth a fortune. [He presented his CDS sales pitch to AIG FP’s Joe Cassano and Tom Fewings]. Sure enough, shortly after Lippmann’s visit, AIG FP stopped selling credit default swaps. Even better: AIG FP hinted that they might actually like to *buy* some credit default swaps.”

“Joe Cassano [eventually] agreed to meet with all the big Wall Street firms and discuss the logic of their deals—to investigate how a bunch of shaky loans could be transformed into triple-A-rated bonds. Together with Gene Park and a few others, he set out on a series of meetings with traders at Deutsche Bank, Goldman Sachs, and the rest, all of whom argued how unlikely it was for the housing prices to fall all at once. “They all said the same thing,” said one of the traders present. “They’d go back to historical real estate prices over sixty years and say they had never fallen nationally, all at once.” [...] The AIG FP traders present were shocked by how little thought or analysis seemed to underpin the subprime mortgage machine: It was simply a bet that home prices would never fall. Once he understood this, and once he could construe it as his own idea, Joe Cassano changed his mind. By early 2006 he agreed with Gene Park: AIG FP shouldn’t insure any more of these deals—though they would continue to insure the ones they had already insured.”

“By April 2006 Lippmann’s superiors at Deutsche Bank were asking him to defend his quixotic gamble. They wanted him to make money just by sitting in the middle of this new market, the way Goldman Sachs did, crossing buyers and sellers. They reached an agreement: Lippmann could keep his expensive short position as long as he could prove that, if he had to sell it, there’d be some other investor willing to take it off his hands on short notice. That is, he needed to foster a more active market in credit default swaps; if we wanted to keep his bet he had to find others to join him in it.”

“[When FrontPoint was deciding whether to trade with Lippmann or not] they were interrupted by two pieces of urgent news. The first came in May 2006: Standard & Poor’s announced its plan to change the model used to rate subprime mortgage bonds. [...] Instantly, the creation of subprime bonds shot up dramatically. “They were stuffing the channel,” said Vinny. “Getting as much shit out so that it could be rated by the old model” The fear of new and better ratings suggested that even the big Wall Street firms knew that the bonds they’d been creating had been overrated.”

“The other piece of news concerned home prices. Eisman spoke to a housing market analyst at Credit Suisse named Ivy Zelman. The simple measure of sanity in housing prices, Zelman argued, was the ratio of median home price to income. Historically, in the United States, it ran around 3:1; by late 2004, it had risen nationally, to 4:1. “All these people were saying it was nearly as high in some other countries,” says Zelman. “But the problem wasn’t just that it was four to one. In Los Angeles it was *ten to one* and in Miami, eight-point-five to one. And then you coupled that with the buyers. They weren’t real buyers. They were speculators.” The number of For Sale signs began rising in mid-2005 and never stopped. In the summer of 2006, the Case-Shiller index of house prices peaked, and house prices across the began to fall. For the entire year they would fall, nationally, by 2 percent.”

“[Eisman and his partners] went hunting for crooks and fools. “The first time I realized how bad it was,” said Eisman, “was when I said to Lippmann, ‘Send me a list of the 2006 deals with high no-doc loans.’ Eisman, predisposed to suspect fraud in the market, wanted to bet against Americans who had lent money without having been required to show evidence of income or employment. “I figured Lippmann was going to send me deals that had twenty percent no docs. He sent us a list and none of them had less than fifty percent.””

“They called Wall Street trading desks and asked for menus of subprime mortgage bonds, so they might find the most rotten ones and buy the smartest insurance. The juiciest shorts—the bonds ultimately backed by the mortgages most likely to default—had several characteristics. First, the underlying loans were heavily concentrated in what Wall Street people were now calling the sand states: California, Florida, Nevada, and Arizona. House prices in the sand states had risen fastest during the boom and so would likely crash fastest in a bust—and when they did, those low California default rates would soar. Second, the loans would have been made by the more dubious mortgage lenders. Long Beach Savings, wholly owned by Washington Mutual, was a prime example of financial incontinence. Long Beach Savings had been the first to embrace the originate and sell model and now was moving money out the door to new home buyers as fast as it could, few questions asked. Third, the pools would have a higher than average number of low-doc or no-doc loans—that is, loans more likely to be fraudulent. Long Beach Savings, it appeared to Eisman and his partners, specialized in asking homeowners with bad credit and no proof of income to accept floating-rate mortgages. No money down, interest payments deferred upon request. The housing blogs of southern California teemed with stories of financial abuses made possible by these so-called thirty-year payment option ARMs, or adjustable-rate mortgages. In Bakersfield, California, a Mexican strawberry picker with an income of \$14,000 and no English was lent every penny he needed to buy a house for \$724,000.”

“The big Wall Street firms—Bear Stearns, Lehman Brothers, Goldman Sachs, Citigroup, and others—had the same goal as any manufacturing business: to pay as little as possible for raw material (home loans) and charge as much as possible for their end product (mortgage bonds). The price of the end product was driven by the ratings assigned to it by the models used by Moody’s and S&P. The inner workings of these models were, officially, a secret: Moody’s and

S&P claimed they were impossible to game. But everyone on Wall Street knew that the people who ran the models were ripe for exploitation. “Guys who can’t get a job on Wall Street get a job at Moody’s,” as one Goldman Sachs trader-turned-hedge fund manager put it.”

“Wall Street bond trading desks, staffed by people making seven figures a year, set out to coax from the brain-dead guys making high five figures the highest possible ratings for the worst possible loans. They performed the task with Ivy League thoroughness and efficiency. They quickly figured out, for instance, that the people at Moody’s and S&P didn’t actually evaluate the individual home loans, or so much as look at them. All they and their models saw, and evaluated, were the general characteristics of loan pools.”

“Their handling of FICO scores was one example. [...] The highest possible FICO score was 850; the lowest was 300; the U.S. median was 723. FICO scores were simplistic. They didn’t account for a borrower’s income, for instance. They could also be rigged. A would-be borrower could raise his FICO score by taking out a credit card loan and immediately paying it back. [...] Moody’s and S&P asked the loan packagers not for a list of the FICO scores of all the borrowers but for the *average* FICO score of the pool. To meet the rating agencies’ standards—to maximize the percentage of triple-A-rated bonds created from any given pool of loans—the average FICO score of the borrowers in the pool needed to be around 615. [...] A pool of loans composed of borrowers all of whom had a FICO score of 615 was far less likely to suffer huge losses than a pool of loans composed of borrowers half of whom had FICO scores of 550 and half of whom had FICO scores of 680.”

“the Wall Street bond trading desks exploited another blind spot in the rating agencies’ models. Apparently the agencies didn’t grasp the difference between a “thin-file” FICO score and a “thick-file” FICO score. A thin-file FICO score implied, as it sounds, a short credit history. The file was thin because the borrower hadn’t done much borrowing. Immigrants who had never failed to repay a debt, because they had never been given a loan, often had surprisingly high thin-file FICO scores. Thus a Jamaican baby nurse or Mexican strawberry picker with an income of \$14,000 looking to borrow three-quarters of a million dollars, when filtered through the models at Moody’s and S&P, became suddenly more useful, from a credit-rigging point of view.”

“The models used by the rating agencies were riddled with these sorts of opportunities. The trick was finding them before others did—finding, for example, that both Moody’s and S&P favored floating-rate mortgages with low teaser rates over fixed-rate ones. Or that they didn’t care if a loan had been made in a booming real estate market or a quiet one. Or that they were blind to the presence of “silent seconds”²—second mortgages that left the homeowner with no equity in his home and thus no financial incentive not to hand the keys to the bank and walk away from it. Every time some smart Wall Street mortgage bond packager discovered another example of the rating agencies’ idiocy or neglect, he had himself an edge in the marketplace: Crappier pools of loans were cheaper to buy than less crappy pools. Barbell-shaped loan pools, with lots of very low and very high FICO scores in them, were a bargain compared to pools clustered around the 615 average—at least until the rest of Wall Street caught on to the hole in the brains of the rating agencies and bid up their prices. Before that happened, the Wall Street firm enjoyed a perverse monopoly. They’d phone up an originator and say, “Don’t tell anybody, but if you bring me a pool of loans teeming with high thin-file FICO scores I’ll pay you more for it than anyone else.” The more egregious the rating agencies’ mistakes, the bigger the opportunity for the Wall Street trading desks.”

“Even as late as the summer of 2006, as home prices began to fall, it took a certain kind of person to see the ugly facts and react to them [...] But they were not all odd in the same way. John Paulson was oddly interested in betting against dodgy loans, and oddly persuasive in talking others into doing it with him. Mike Burry was odd in his desire to remain insulated from public opinion, and even direct human contact, and to focus instead on hard data and the incentives that guide future human financial behavior. Steve Eisman was odd in his conviction that the leveraging of middle-class America was a corrupt and corrupting event, and that the subprime mortgage market in particular was an engine of exploitation and, ultimately, destruction. Each filled a hole; each supplied a missing insight, an attitude to risk which, if more prevalent, might have prevented the catastrophe. But there was at least one gaping hole no big-time professional investor filled. It was filled, instead, by Charlie Ledley.”

Charlie Ledley and Jamie Mai got their start investing \$110,000 of personal cash in Capital One during a regulatory investigation.

“Capital One’s stock traded in a narrow band around \$30 a share. That stability obviously masked a deep uncertainty.

²“A silent second is a second mortgage used, in the purchase of a house, to supplement a first mortgage. It is silent only to the guy who made the first loan, and who is less likely to be repaid, as the borrower is less likely to have any financial stake at all in his own home.”

Thirty dollars a share was clearly not the “right” price for Capital One. The company was either a fraud, in which case the stock was probably worth zero, or [...] around \$60 a share.”

“Jamie Mai had just read *You Can Be A Stock Market Genius*, the book by Joel Greenblatt [...] Greenblatt described how he’d made a lot of money using a derivative security, called a LEAP (for Long-term Equity Anticipation security), which conveyed to its buyer the right to buy a stock at a fixed price for a certain amount of time. There were times, Greenblatt explained, when it made more sense to buy options on a stock than the stock itself. [...] Old-fashioned value investors shunned options because options presumed an ability to time price movements in undervalued stocks. Greenblatt’s simple point: When the value of a stock so obviously turned on some upcoming event whose date was known (a merger date, for instance, or a court date), the value investor could in good conscience employ options to express his views.”

“The right to buy Capital One’s shares for \$40 at any time in the next two and a half years cost a bit more than \$3. That made no sense. Capital One’s problems with regulators would be resolved, or not, in the next few months. When they were, the stock would either collapse to zero or jump to \$60. Looking into it a bit, Jamie found that the model used by Wall Street to price LEAPs, the Black-Scholes option pricing model, made some strange assumptions. For instance, it assumed a normal, bell-shaped distribution for future stock prices. [...] This assumption made sense only to those who knew nothing about the company. In this case the model was totally missing the point: When Capital One stock moved, as it surely would, it was more likely to move by a lot than by a little.”

“Financial options were systematically mispriced. The market often underestimated the likelihood of extreme moves in prices. The options market also tended to presuppose that the distant future would look more like the present than it usually did. Finally, the price of an option was a function of the volatility of the underlying stock or currency or commodity, and the options market tended to rely on the recent past to determine how volatile a stock or currency or commodity might be. [...] The longer-term the option, the sillier the results generated by the Black-Scholes option pricing model, and the greater the opportunity for people who didn’t use it.”

“A CDO, in their view, was essentially just a pile of triple-B-rated mortgage bonds. Wall Street firms had conspired with the rating agencies to represent the pile as a diversified collection of assets, but anyone with eyes could see that if one triple-B subprime mortgage went bad, most would go bad, as they were all vulnerable to the same economic forces. Subprime mortgage loans in Florida would default for the same reasons, at the same time, as subprime mortgage loans in California. And yet fully 80 percent of the CDO composed of nothing but triple-B bonds was rated higher than triple-B: triple-A, double-A, or A. To wipe out any triple-B bond—the ground floor of the building—all that was needed was a 7 percent loss in the underlying pool of home loans. That same 7 percent loss would thus wipe out, entirely, any CDO made up of triple-B bonds, no matter what rating was assigned it.”

“The market appeared to believe its own lie. It charged a lot less for insurance on a putatively safe double-A-rated slice of a CDO than it did for insurance on the openly risky triple-B-rated bonds. Why pay 2 percent a year to bet directly against triple-B-rated bonds when they could pay 0.5 percent a year to make effectively the same bet against the double-A-rated slice of the CDO? If they paid four times less to make what was effectively the same bet against triple-B-rated subprime mortgage bonds, they could afford to make four times more of it.”

“Each CDO contained pieces of a hundred different mortgage bonds—which in turn held thousands of different loans.”

“Here was another bizarre fact about CDOs: Often they simply repackaged tranches of other CDOs, presumably those tranches that their Wall Street creators had found difficult to sell. Even more amazing was their circularity: CDO “A” would contain a piece of CDO “B”, CDO “B” would contain a piece of CDO “C”, and CDO “C” would contain a piece of CDO “A”!”

“The CDO manager’s job was to select the Wall Street firm to supply him with subprime bonds that served as the collateral for CDO investors, and then to vet the bonds themselves. The CDO manager was further charged with monitoring the hundred or so individual subprime bonds inside each CDO, and replacing the bad ones, before they went bad, with better ones. That, however, was mere theory; in practice, the sorts of investors who handed their money to Wing Chau, and thus bought the triple-A-rated tranche of CDOs [...] did so precisely because they were meant to be foolproof, impervious to losses, and unnecessary to monitor or even think about very much. [...] “Two guys and a Bloomberg terminal in New Jersey” was Wall Street shorthand for the typical CDO manager. The less mentally alert the two guys, and the fewer the questions they asked about the triple-B-rated subprime bonds they were absorbing into their CDOs, the more likely they were to be patronized by the big Wall Street firms. The whole point of the CDO was to

launder a lot of subprime mortgage market risk that the firms had been able to place straightforwardly. The last thing you wanted was a CDO manager who asked lots of tough questions.”

“The bond market had created what amounted to a double agent—a character who seemed to represent the interests of investors when he better represented the interests of Wall Street bond trading desks. To assure the big investors who had handed their billions to him that he had their deep interests at heart, the CDO manager kept ownership of what was called the “equity,” or the “first loss” piece, of the CDO—the piece that vanished first when the subprime loans that ultimately supplied the CDO with cash defaulted. But the CDO manager was also paid a fee of 0.01 percent off the top, before any of his investors saw a dime, and another, similar fee, off the bottom, as his investor received their money back. That doesn’t sound like much, but, when you’re running tens of billions of dollars with little effort and no overhead, it adds up. [...] In one year as a CDO manager, [Wing Chau had] taken home \$26 million”

“Chau explained to Eisman that he simply passed all the risk that the underlying home loans would default on to the big investors who had hired him to vet the bonds. His job was to be the CDO “expert,” but he actually didn’t spend a lot of time worrying about what was in CDOs. His goal, he explained, was to maximize the dollars in his care.”

“[The guys at FrontPoint had] often wondered, for instance, why the rating agencies weren’t more critical of bonds underpinned by floating-rate subprime mortgages. Subprime borrowers tended to be one broken refrigerator away from default. [...] It was easy to understand why originators like Option One and New Century preferred to make these sorts of loans: After two years the borrowers either defaulted or, if their home price had risen, refinanced. To them the default was a matter of indifference, as they kept none of the risk of the loan; the refinance was merely a chance to charge the borrower new fees. [...] [T]he rating agencies simply assumed that the borrower would be just as likely to make his payments when the interest rate on the loan was 12 percent as when it was 8 percent—which meant more cash flow for the bondholders. Bonds backed by floating-rate mortgages received *higher* ratings than bonds backed by fixed-rate ones—which was why the percentage of subprime mortgages with floating rates had risen, [from 2002 to 2007], from 40 to 80.”

““When we shorted the bonds, all we had was the pool-level data,” [Eisman] said. The pool-level data gave you the general characteristics—the average FICO scores, the average loan-to-value ratios, the average number of no-doc loans, and so forth—but no view of the individual loans. [...] “We of course thought that the ratings agencies had more data than we had,” said Eisman. “They didn’t.””

“Eisman concluded that “S&P was worried that if they demanded the data from Wall Street, Wall Street would just go to Moody’s for their ratings.””

“The subprime mortgage market had experienced at least two distinct phases. The first, in which AIG had taken most of the risk of a market collapse, lasted until the end of 2005. When AIG abruptly changed its mind, traders inside AIG FP assumed their decision might completely shut down the subprime mortgage market. That’s not what happened, of course. Wall Street was already making too much money using CDOs to turn crappy triple-B-rated subprime bonds into putatively riskless triple-A ones to simply stop doing it. The people who ran the CDO machine at the various firms had acquired too much authority. From the end of 2005 until the middle of 2007, Wall Street firms created somewhere between \$200 and \$400 billion in subprime-backed CDOs: No one was exactly sure how many there were. Call it \$300 billion, of which roughly \$240 billion would have been triple-A-rated and thus treated, for accounting purposes, as riskless, and therefore unnecessary to disclose. Much, if not all, of it was held off balance sheets.”

“By March 2008 the stock market had finally grasped what every mortgage bond salesman had long known: Someone had lost at least \$240 billion. But who? [...] The truth is it was impossible to know how big the losses were, or who had them. All that anyone knew was that any Wall Street firm deep in the subprime market was probably on the hook for a lot more than they had confessed. Bear Stearns was deep in the subprime market. It had \$40 in bets on its subprime mortgage bonds for every dollar of capital it held against those bets. The question wasn’t how Bear Stearns could possibly fail but how it could possibly survive.”

“That was the problem with money: What people did with it had consequences, but they were so remote from the original action that the mind never connected the one with the other. The teaser-rate loans you make to people who will never be able to repay them will go bad not immediately but in two years, when their interest rates rise. The various bonds you make from those loans will go bad not as the loans go bad but months later, after a lot of tedious foreclosures and bankruptcies and forced sales. The various CDOs you make from the bonds will go bad not right then but after some trustee sorts out whether there will ever be enough cash to pay them off. Whereupon the end owner of the CDO receives a little note, *Dear Sir, we regret to inform you that your bond no longer exists....*”

“The reason that American financial culture was so difficult to change—the reason the political process would prove so slow to force change upon it, even after the subprime mortgage catastrophe—was that it had taken so long to create, and its assumptions had become so deeply embedded.”

“Maybe the best definition of “investing” is “gambling with the odds in your favor.” The people on the short side of the subprime mortgage market had gambled with the odds in their favor. The people on the other side—the entire financial system, essentially—had gambled with the odds against them. Up to this point, the story of the big short could not be simpler. What’s strange and complicated about it, however, is that pretty much all the important people on both sides of the gamble left the table rich.”