

The Wild Ride of Mortgage-Backed Securities

*The roots of the current home
mortgage market crisis.*

IT WASN'T SUPPOSED to happen this way. The market for home mortgage loans was never supposed to shut. No matter the crisis—war, banking failure, or presidential impeachment—the mortgage market was not supposed to deny credit to American homeowners. So how could this happen? How could the mortgage industry, a close to trillion-dollar industry, suddenly collapse? Who is to blame for the ordinary Americans being denied a mortgage to buy into the American dream? How could \$80 billion to \$90 billion be wiped out virtually overnight? Blame it on Lew Ranieri, father of the mortgage market. I know. I was there from the beginning.

STEPHEN A. ROTH

In 1978, I applied to Stanford University's Graduate School of Business. If there was anyone who should not have been allowed to attend an MBA program, it was me. I was a graduate of public schools, son of a car dealer without a college education, and my first career had been as a concert promoter. What a misfit—and I was a misfit—for what *Business Week* had called that year the “Best Business School in the U.S.”

I had somehow managed to graduate Phi Beta Kappa from Berkeley—although I think it was largely a recognition that I was a “most improved” student, since my GPA was mediocre and my test scores were terrible. In today's super-competitive world, I wouldn't have stood a chance in a business school. But I got lucky. Four years earlier, Stanford had admitted Danny Shearer, who had gone on to become Bill Graham's right-hand man. Graham was the most famous concert promoter of that period, manager for the Grateful Dead, Santana, Joan Baez, and briefly The Rolling Stones. So when another rookie concert promoter (me) applied, Stanford let me in.

I showed up a week early, to attend seven days of “math for dummies” classes. I had a gold chain around my neck, long greasy hair, and carried a leather and fabric saddlebag. I had just wrapped up a Saturday night Carlos Santana concert hours before, tallying up thousands of

dollars in concession stand sales and saying good-bye to everyone from security to the back-stage hands. When the teacher's assistant for dummy math went around the room and made everyone give their name and prior occupation, there was dead silence after I spoke. I heard someone from the back, dressed in a polo shirt with kakis and tassel-loafers, say: “You're in the wrong room.”

I managed to make it through two years of preppie-dom because Stanford was on an “Honors,” “Pass,” or “Fail” system. I never failed a course, but the only honors I received were in marketing; the professor thought I was a genius. He didn't know that I had sold cars as a summer job in high school. I thought I was beginning to fit in by my second year. I cut my hair, shed the gold chain, bought a briefcase, and wore penny-loafers (I wasn't quite ready for tassel-loafers). But I had completely misread my acceptance by the mostly Ivy League-educated student body, when I announced that I planned to work as a bond trader, that is, a salesman, at Salomon Brothers upon graduation. My classmates were in shock. I had broken the cardinal rule that all graduates of top MBA schools be either management consultants or investment bankers, never bond traders, and certainly not at Salomon Brothers, a firm with the reputation of being run by scrappy, uneducated New Yorkers.

I will never forget when word had spread among my graduating class that I had taken a job as a Salomon Brothers bond trader. The first classmate to approach me was the son of the chairman of Morgan Stanley. He stopped me in the hallway and said, "Do you know what you're doing? Do you have any idea what kind of people work at Salomon Brothers?" I looked at him with a blank stare, unable to answer. "They are animals," he said. "They have fist-fights on the trading floor." I did have an answer to that. I told him, "That sounds great! Just my kind of place." He walked away in disgust, never to speak to me again. A female classmate came up to me soon after, and snarled, "How can you do this to us? You have an MBA from Stanford Business School, the number-one business school in the country. You're going to drag down all our reputations." I looked at her and said: "I am?" She stomped away muttering something like "fool" or "jerk."

MORTGAGE - BACKED SECURITIES

In 1980, and at least up until Salomon Brothers was merged into Citigroup, incoming bond and stock trader "trainees," as we were called, were required to sit through a three-month training program in a classroom far from the trading

floor. Every day, a salesman or trader would give a one-hour presentation. We were taught concepts such as "relative value," which turned out to be important, since at bonus time if you were told that your relative value was close to zero, even though you had done well, your bonus would be close to zero, too.

When the newly created Mortgage Trading Desk, founded by Lewis S. Ranieri only the year before, made its presentation, I got really excited. Non-government-insured mortgage-backed securities were brand new, less than a year old. They were called "mortgage pass-throughs" because the cash flow generated from a pool of home mortgage loans, placed in a "trust," was "passed-through" to investors in the form of the newly created bonds. The cash flow could vary because if a homeowner whose mortgage was placed into the trust decided to sell their home or refinance their mortgage, the mortgage loan would be paid off and the proceeds from the payoff were distributed to the investor. The exact time when a mortgage was paid off was basically unpredictable. So unlike a typical bond that paid regularly scheduled interest payments (coupons) twice a year, and then the full amount of the principal of the bond at its scheduled maturity date, mortgage pass-throughs paid only whatever the cash flow the underlying pool of mortgages generated, on a monthly basis.

Of course all sorts of models were developed to predict when and how a pool of mortgages might pay off. Mortgages could pay off before their scheduled maturity date for many reasons. Homeowners might die, or get a divorce, or simply sell their houses. They might refinance their mortgages if interest rates dropped and they could get a lower interest rate on new mortgages. The mortgages themselves were designed to “amortize” or gradually pay off a portion of their principal each year. Thus, a thirty-year mortgage would be completely paid off by the thirtieth year, even if the homeowner never refinanced.

The head of mortgage research at Solomon Brothers was a numbers geek named Michael Waldman; his associate was Michael Bloomberg (the future mayor of New York), who helped Waldman to design tools that would allow mortgage traders to figure out how a mortgage pass-through might behave. There were numerous models developed to try to mimic human behavior, based on the history of mortgage payoffs. One model assumed that a fixed percentage of mortgages each year would pay off. (Why not? It was as good a guess as any.) Another model assumed that all thirty-year mortgages would pay monthly until the twelfth year, and then all of a sudden, all of the mortgages would pay off at once. Farfetched as it now sounds, the twelve-year life model

was the predominant tool that investors and mortgage salesmen and traders used for years. Although some of this work was done on computers, in 1980, most people in the investment world of mortgages consulted tables to calculate the yield of a mortgage pool. A portion of Bloomberg’s vast wealth came from designing (for Merrill Lynch, and later for his own company) computer models that made it easier and faster to price and value securities backed by home mortgage pass-throughs.

In 1980, at the birth of the mortgage securities industry (an industry that eventually grew to close to a trillion dollars in mortgage securities issued), those of us on Salomon’s Mortgage Trading Desk thought we were revolutionizing the world for the better. Previously, banks, S&Ls and insurance companies were the sole source of funding for mortgage loans. With every business cycle came an eventual credit crunch, and the banks, the S&Ls and the insurance companies would stop making mortgage loans. And, at least for a time, the American dream of home ownership would be stopped dead in its tracks. The Salomon Brothers Mortgage Trading Desk, led by Lew Ranieri, was the leader in creating a public capital market where a whole new class of investors could provide needed capital, even when the usual providers shut down. We believed that by creating a public capital market for mortgage loans, credit would never again be

shut off to the American homeowner, or to the family who desired to own a home.

The vast majority of the investors who were buying these brand new securities were institutional money managers who managed money for pension funds. The corporate pension funds of the big steel and chemical companies, and the major car and truck manufacturers, were generally “defined benefit” plans; that is, the retired worker at U.S. Steel or Chrysler received a predetermined, or “defined,” monthly pension check. When the major corporations discovered that they owed more money to their pensioners than they had set aside, they hired private-sector advisors to ensure that their pension funds would grow sufficiently to cover the ever-rising cost of future payouts. Thus, throughout the 1970s and 1980s, an industry of pension fund advisors was born.

Pension fund advisors competed to win pension fund business by showing pension funds that they could offer a slightly higher return than their rivals. This is where the term “relative value” or “relative performance” came into play. The pension fund advisors convinced pension funds and pension fund consultants that it wasn’t the actual performance of a particular manager that mattered; it was their relative performance as compared to their competitors, and their performance relative to the overall market. A pension fund advisor

who lost 10 percent in one year might still be picked to manage hundreds of millions of dollars of a pension fund’s money, if his competitors had lost 11 percent, or if the overall market had declined 12 percent. Although the phrase “You don’t eat relative value” started being used at this time, it did little to deter the pension fund consultants from using relative performance as the measure to pick pension fund advisors.

By comparison, the hedge-fund industry, which began in the early to mid-1990s, promised “absolute” returns. The hedge fund would take only a 1 percent fee for managing the money, and only if the investment made money, they would take an additional 20 percent to 30 percent of the profits. The irony is that the old-school pension fund advisors were getting only 1 percent or less as well, though of course they never received the additional 20 percent to 30 percent. Soon, hedge funds began attracting hundreds of billions of dollars of pension fund assets on the basis that they always made money. This tremendous growth of the hedge fund industry is one of the keys to understanding the collapse of the mortgage securities markets.

So what did this have to do with the new mortgage loan securities and mortgage loan pass-throughs? To gain a performance advantage over their competitors, pension fund advisors were always looking for a way to earn extra yield.

Mortgage pass-throughs provided this yield, since they were a brand new instrument, understood by few, and thus were priced at a higher yield. Even though the first mortgage pass-throughs carried a Standard & Poors or Moody's AA rating (a highly desirable rating available to only the top 100 Fortune Companies), it took an additional .5 percent or even 1 percent in yield to make these securities attractive to pension fund investors.

WHAT WENT WRONG?

In August 2007, almost thirty years after the first non-government-insured mortgage pass-through was created, a vast capital market with hundreds of billions of dollars in mortgage-backed securities suddenly shut down. It is now almost impossible to get a mortgage loan for all but individuals or families with the best credit rating who want to borrow only 75 percent to 80 percent of today's value of their home, and who don't need more than \$417,000, the maximum loan amount that Fannie Mae or Freddie Mac will purchase. The U.S. economy has survived the stock market crash of 1987 that took stocks down 20 percent in one day, the Mexican peso collapse and the default of dozens of Latin American countries in 1994, the Southeast Asia currency crisis, the Russian ruble collapse and the default

of Russia in 1998, the dot-com collapse of 2000, and the week when Wall Street itself was shut down after the terrorist attacks on the World Trade Centers on September 11, 2001. Why now, when the American economy is running near full employment, inflation is low, and the entire world (except Africa) is experiencing unprecedented growth and prosperity, would the mortgage-backed securities industry collapse? Is it really all Lew Ranieri's fault?

In fact, the roots of the collapse didn't start to take hold until Ranieri had long left Wall Street. In the early days of the mortgage securities business, mortgage securities salesmen were stuck selling a one-trick pony. They were taking thirty-year mortgages, pooling them, and then selling them to investors and helping them try to guess when those mortgages might pay off, the crude assumption being that they would pay off in the twelfth year, all at once. It was a hard sell. Most pension funds wanted some degree of certainty that the yield they were buying would last for a certain number of years, in order to match this asset off against their known pension liabilities. Insurance companies, too, needed more definitive maturity dates than could be provided by the standard thirty-year mortgage pass-through security. But thirty-year (or even fifteen-year) fixed-rate mortgages are highly unpredictable. If interest rates are falling, which they did between 1983 and 2006, mortgage rates

also fall. It didn't take long before American homeowners became adept at refinancing their 9 percent fixed-rate mortgages with 8 percent fixed-rate mortgage, then 6 percent, then (in 2006) 5 percent. When homeowners refinance, the cash flow from their original 8 percent fixed-rate mortgages disappears, and the proceeds from the mortgage payoff pass through one last time to the holders of that particular mortgage-backed security; the 8 percent interest payment is gone for good. When interest rates fall, homeowners refinance, but if interest rates rise, they stay put. Thus the assumption that a thirty-year mortgage will inevitably pay off in twelve years is not always correct. In some situations, a thirty-year mortgage might stay outstanding for a lot longer than twelve years. But no one wants a thirty-year mortgage pass-through security that was purchased assuming a twelve-year life, extending to eighteen or twenty years when interest rates are rising. Conversely, no one wants a thirty-year security with an attractive yield, paying off early as interest rates fall. It's a "heads I win, tails you lose" situation.

This uncertainty was a genuine impediment in the early days of the mortgage-backed securities business. Investors wanted more certainty as to the cash flow of the security they were buying. At first, Wall Street's attempt to carve up the cash flows from pools of mortgage

loans into separate, individual securities, each with their own somewhat more predictable maturity date, succeeded. The first bonds were called "Collateralized Mortgage Obligations" or CMOs. A \$100 million pool of thirty-year mortgages that previously would have been sold as one security now was carved up into as many as twenty to thirty individual classes, or tranches, varying in credit ratings depending on which tranche got paid off first.

To further limit the potential range of possible maturity dates, the interest coupon of the mortgages was stripped away and sold at a very high yield as an "interest-only" or I/O. The buyer of an I/O was making a bet on interest rate movements, since if rates went down, and the pool of mortgagees refinanced, the interest coupon would of course disappear. But I/Os traded at extremely high potential yields, since there were plenty of speculators who wanted to make a bet on interest rates.

In 1990, I left Wall Street and started my own firm, which became the largest contractor for the sale of nonperforming mortgage loans for the Resolution Trust Corporation, set up to liquidate the seized assets of bankrupt S&Ls. By then the analysts had pretty much hijacked the mortgage securities industry. Wall Street was selling thousands of very small, carved-up mortgage securities in an attempt to meet the needs of the pension funds and insur-

ance companies (and sometimes banks) that wanted a security with a specific—or at least more predictable—maturity date and yield. This strategy broadened the base of potential investors. The hedge funds became increasingly interested in the lower rated, higher-yielding tranches of these mortgage securities. This produced a situation in which single-rated original mortgage pass-through securities (usually AA-rated) were now made up of securities rated anywhere from AAA to B, or even non-rated in the case of I/Os. The other new device was the idea that mortgages could have all sorts of credit ratings: all mortgage securities didn't have to be AA-rated or government-insured, but could actually be rated "junk" or below-investment grade.

The next seemingly logical step that would lead to the August 2007 collapse was a change in the qualifications of borrowers themselves, who no longer were required to have stellar credit ratings. As hedge funds demanded more and higher-yielding securities, Wall Street encouraged mortgage companies (with whom they were sometimes allied) to make loans to riskier borrowers, charging them a higher interest rate. "Subprime" mortgages began to show up in mortgage securities. There had always been a private market for borrowers whose credit rating was poor, or who needed to borrow more than the customary 75 percent to 80 percent loan-to-

value of their property, but it was usually wealthy individuals who provided mortgages to these people, and enjoyed yields as high as 15 percent to 20 percent for their troubles; now, the public capital markets embraced subprime borrowing. The analysts developed models to show that the default rates on subprime borrowers were only marginally higher than those of other borrowers, and thus the extra yield charged on these subprime loans easily made up for their slightly higher default rates.

It is often said that financial markets, including the market for mortgage securities, are always battling between "greed" and "fear." It was greed that caused the explosion in subprime lending over the past five years. Borrowers could refinance their homes, pull out all of their equity, and still get relatively attractive interest rates—and they could do so often with dubious credit histories. The reason they were allowed to do this was that there was now a secondary market for subprime mortgages and securities backed by subprime mortgage loans, driven by hedge funds that needed the extra yield, so that there were enough profits to justify their 20 percent to 30 percent cut of their investor's return.

Between 1980, when I began my career on Wall Street, and 1990, the original providers of mortgage capital, the commercial banks, the S&Ls and the insurance companies, stopped keeping these mort-

gage loans on their books and sold them into the secondary market to be packaged as mortgage securities. Why did they do this? Because thirty-year or even fifteen-year mortgages, with a widely unpredictable maturity date, did not match the short-term nature of bank deposits and CDs. The banks and the S&Ls predominately funded themselves with short-term deposits. Mortgages, on the other hand, were predominately long-term in nature. This mismatch of assets and liabilities helped lead to the fall of the S&L industry and brought hundreds of commercial banks to their knees.

August 2007 saw a similar mismatch. Hedge funds and mutual funds specializing in bonds can be considered to have short-term liabilities—that is, their investors. As every Fidelity or Vanguard mutual fund investor knows, you are just a phone call away from asking for your money back. Most hedge funds have provisions that do not allow immediate redemptions; instead, they “leverage” invested capital by borrowing short-term from a Wall Street firm that was ready to lend them short-term funds, provided the fund bought the latest junk-rated mortgage or subprime mortgage security.

So, even though hedge funds could stop a “run on the bank” by committing their customers to five to seven-year investments, they usually leveraged invested capital with short-term loans.

But when fear began to win out over greed, Wall Street and the commercial banks stopped renewing these loans. This was similar to the Asian and Russian crises of 1998, when the Wall Street firms and commercial banks yanked their lines of credit to hedge funds or other financial or mortgage companies. Today, dozens of mortgage companies have had their credit lines yanked and are being forced into bankruptcy, like American Home Mortgage; controlled by the giant hedge fund Cerberus; or teetering on the edge of bankruptcy, like the biggest mortgage company in the world, Countrywide Financial Corporation (at least at the time this article was written. On August 21, Bank America purchased \$2 billion of Countrywide convertible preferred stock to help shore-up the company). Before the forty commercial banks that had provided Countrywide Financial with an \$11.5 billion credit line could yank it, Countrywide on August 16, 2007 drew down its entire \$11.5 billion credit line at once. It is better to have the money in your treasury and argue about whether you may technically be in default than have to go begging to the banks for the money when you are in trouble. No doubt, the forty banks are screaming to high heaven, but Countrywide now has their money.

The final chapters of the August 2007 collapse of the mortgage industry have yet

to be played out. It will take at least until early 2008, and maybe mid-2008, before we really know the butcher's bill. It is likely that the cost will be \$80 billion to \$90 billion in losses. And thousands of individuals and families will lose their homes due to foreclosures caused by the credit crunch that the United States is now experiencing—real people, real families, with the rug of the American dream of home ownership pulled out from underneath them.

So, you can't blame this one on Lew Ranieri. It was five long years of greed ruling over fear (and now there will probably be at least six months of fear ruling over greed). Many people have a share of the blame. Borrowers who borrowed the full value of their home with little likelihood of making the interest payments can be blamed. Mortgage companies with a desire to originate and sell off subprime mortgages to Wall Street can be blamed. Wall Street firms, of course, are also to blame. They are in the middle—as they always are—caught between the mortgage firms and the investors who were willing to snap up poor-quality, subprime mortgage loan securities. And the investors also share in the blame, those who ignored prudent credit standards and bought these securities at yields that were nowhere close to compensating them for the risk.

There is more blame to go around. The rating agencies, Standard & Poor's and Moody's, are to blame for rating junk secu-

rities as investment-grade. And we cannot forget the regulators, including the state regulators who oversee mortgage firms, as well as the federal regulators, including the FDIC, the Office of the Comptroller of the Currency, and the Federal Reserve Board, which continued to feed this feeding frenzy with easy money and only in spring 2007 began to warn of lax lending by the banks. We have been here before. Congress will hold hearings. A few unfortunate mortgage firms will be hauled up before committees and found to have committed some paperwork errors and will be prosecuted. New regulations will be passed preventing borrowers from borrowing 100 percent of the value of their home. And then one day, the fear will fade and the greed will return. It will be back to business as usual.