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SECURITIZATION AND DERIVATIVES

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FANNIE MAE AND FREDDIE MAC: “THE WHOLE ARMY OF LOBBYISTS”

The crisis in the thrift industry created an opening for Fannie Mae and Freddie Mac, the two massive government-sponsored enterprises (GSEs) created by Congress to support the mortgage market.

Fannie Mae (officially, the Federal National Mortgage Association) was chartered by the Reconstruction Finance Corporation during the Great Depression in 1938 to buy mortgages insured by the Federal Housing Administration (FHA). The new government agency was authorized to purchase mortgages that adhered to the FHA’s underwriting standards, thereby virtually guaranteeing the supply of mortgage credit that banks and thrifts could extend to homebuyers. Fannie Mae either held the mortgages in its portfolio or, less often, resold them to thrifts, insurance companies, or other investors. After World War II, Fannie Mae got authority to buy home loans guaranteed by the Veterans Administration (VA) as well.

This system worked well, but it had a weakness: Fannie Mae bought mortgages by borrowing. By 1968, Fannie’s mortgage portfolio had grown to \$7.2 billion and its debt weighed on the federal government.¹ To get Fannie’s debt off of the government’s balance sheet, the Johnson administration and Congress reorganized it as a publicly traded corporation and created a new government entity, Ginnie Mae (officially, the Government National Mortgage Association) to take over Fannie’s subsidized mortgage programs and loan portfolio. Ginnie also began guaranteeing pools of FHA and VA mortgages. The new Fannie still purchased federally insured mortgages, but it was now a hybrid, a “government-sponsored enterprise.”

Two years later, in 1970, the thrifts persuaded Congress to charter a second GSE, Freddie Mac (officially, the Federal Home Loan Mortgage Corporation), to help the

thrifts sell their mortgages. The legislation also authorized Fannie and Freddie to buy “conventional” fixed-rate mortgages, which were not backed by the FHA or the VA. Conventional mortgages were stiff competition to FHA mortgages because borrowers could get them more quickly and with lower fees. Still, the conventional mortgages did have to conform to the GSEs’ loan size limits and underwriting guidelines, such as debt-to-income and loan-to-value ratios. The GSEs purchased only these “conforming” mortgages.

Before 1968, Fannie Mae generally held the mortgages it purchased, profiting from the difference—or spread—between its cost of funds and the interest paid on these mortgages. The 1968 and 1970 laws gave Ginnie, Fannie, and Freddie another option: securitization. Ginnie was the first to securitize mortgages, in 1970. A lender would assemble a pool of mortgages and issue securities backed by the mortgage pool. Those securities would be sold to investors, with Ginnie guaranteeing timely payment of principal and interest. Ginnie charged a fee to issuers for this guarantee. In 1971, Freddie got into the business of buying mortgages, pooling them, and then selling mortgage-backed securities. Freddie collected fees from lenders for guaranteeing timely payment of principal and interest. In 1981, after a spike in interest rates caused large losses on Fannie’s portfolio of mortgages, Fannie followed. During the 1980s and 1990s, the conventional mortgage market expanded, the GSEs grew in importance, and the market share of the FHA and VA declined.

Fannie and Freddie had dual missions, both public and private: support the mortgage market and maximize returns for shareholders. They did not originate mortgages; they purchased them—from banks, thrifts, and mortgage companies—and either held them in their portfolios or securitized and guaranteed them. Congress granted both enterprises special privileges, such as exemptions from state and local taxes and a \$2.25 billion line of credit each from the Treasury. The Federal Reserve provided services such as electronically clearing payments for GSE debt and securities as if they were Treasury bonds. So Fannie and Freddie could borrow at rates almost as low as the Treasury paid. Federal laws allowed banks, thrifts, and investment funds to invest in GSE securities with relatively favorable capital requirements and without limits. By contrast, laws and regulations strictly limited the amount of loans banks could make to a single borrower and restricted their investments in the debt obligations of other firms. In addition, unlike banks and thrifts, the GSEs were required to hold very little capital to protect against losses: only 0.45% to back their guarantees of mortgage-backed securities and 2.5% to back the mortgages in their portfolios. This compared to bank and thrift capital requirements of at least 4% of mortgages assets under capital standards. Such privileges led investors and creditors to believe that the government implicitly guaranteed the GSEs’ mortgage-backed securities and debt and that GSE securities were therefore almost as safe as Treasury bills. As a result, investors accepted very low returns on GSE-guaranteed mortgage-backed securities and GSE debt obligations.

Mortgages are long-term assets often funded by short-term borrowings. For example, thrifts generally used customer deposits to fund their mortgages. Fannie

bought its mortgage portfolio by borrowing short- and medium-term. In 1979, when the Fed increased short-term interest rates to quell inflation, Fannie, like the thrifts, found that its cost of funding rose while income from mortgages did not. By the 1980s, the Department of Housing and Urban Development (HUD) estimated Fannie had a negative net worth of \$10 billion.² Freddie emerged unscathed because unlike Fannie then, its primary business was guaranteeing mortgage-backed securities, not holding mortgages in its portfolio. In guaranteeing mortgage-backed securities, Freddie Mac avoided taking the interest rate risk that hit Fannie's portfolio.

In 1982, Congress provided tax relief and HUD relaxed Fannie's capital requirements to help the company avert failure. These efforts were consistent with lawmakers' repeated proclamations that a vibrant market for home mortgages served the best interests of the country, but the moves also reinforced the impression that the government would never abandon Fannie and Freddie. Fannie and Freddie would soon buy and either hold or securitize mortgages worth hundreds of billions, then trillions, of dollars. Among the investors were U.S. banks, thrifts, investment funds, and pension funds, as well as central banks and investment funds around the world. Fannie and Freddie had become too big to fail.

While the government continued to favor Fannie and Freddie, they toughened regulation of the thrifts following the savings and loan crisis. Thrifts had previously dominated the mortgage business as large holders of mortgages. In the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA), Congress imposed tougher, bank-style capital requirements and regulations on thrifts. By contrast, in the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, Congress created a supervisor for the GSEs, the Office of Federal Housing Enterprise Oversight (OFHEO), without legal powers comparable to those of bank and thrift supervisors in enforcement, capital requirements, funding, and receivership. Cracking down on thrifts while not on the GSEs was no accident. The GSEs had shown their immense political power during the drafting of the 1992 law.³ "OFHEO was structurally weak and almost designed to fail," said Armando Falcon Jr., a former director of the agency, to the FCIC.⁴

All this added up to a generous federal subsidy. One 2005 study put the value of that subsidy at \$122 billion or more and estimated that more than half of these benefits accrued to shareholders, not to homebuyers.⁵

Given these circumstances, regulatory arbitrage worked as it always does: the markets shifted to the lowest-cost, least-regulated havens. After Congress imposed stricter capital requirements on thrifts, it became increasingly profitable for them to securitize with or sell loans to Fannie and Freddie rather than hold on to the loans. The stampede was on. Fannie's and Freddie's debt obligations and outstanding mortgage-backed securities grew from \$759 billion in 1990 to \$1.4 trillion in 1995 and \$2.4 trillion in 2000.⁶

The legislation that transformed Fannie in 1968 also authorized HUD to prescribe affordable housing goals for Fannie: to "require that a reasonable portion of the corporation's mortgage purchases be related to the national goal of providing adequate

housing for low and moderate income families, but with reasonable economic return to the corporation.”⁷ In 1978, HUD tried to implement the law and, after a barrage of criticism from the GSEs and the mortgage and real estate industries, issued a weak regulation encouraging affordable housing.⁸ In the 1992 Federal Housing Enterprises Financial Safety and Soundness Act, Congress extended HUD’s authority to set affordable housing goals for Fannie and Freddie. Congress also changed the language to say that in the pursuit of affordable housing, “a reasonable economic return . . . may be less than the return earned on other activities.” The law required HUD to consider “the need to maintain the sound financial condition of the enterprises.” The act now ordered HUD to set goals for Fannie and Freddie to buy loans for low- and moderate-income housing, special affordable housing, and housing in central cities, rural areas, and other underserved areas. Congress instructed HUD to periodically set a goal for each category as a percentage of the GSEs’ mortgage purchases.

In 1995, President Bill Clinton announced an initiative to boost homeownership from 65.1% to 67.5% of families by 2000, and one component raised the affordable housing goals at the GSEs. Between 1993 and 1995, almost 2.8 million households entered the ranks of homeowners, nearly twice as many as in the previous two years. “But we have to do a lot better,” Clinton said. “This is the new way home for the American middle class. We have got to raise incomes in this country. We have got to increase security for people who are doing the right thing, and we have got to make people believe that they can have some permanence and stability in their lives even as they deal with all the changing forces that are out there in this global economy.”⁹ The push to expand homeownership continued under President George W. Bush, who, for example, introduced a “Zero Down Payment Initiative” that under certain circumstances could remove the 3% down payment rule for first-time home buyers with FHA-insured mortgages.¹⁰

In describing the GSEs’ affordable housing loans, Andrew Cuomo, secretary of Housing and Urban Development from 1997 to 2001 and now governor of New York, told the FCIC, “Affordability means many things. There were moderate income loans. These were teachers, these were firefighters, these were municipal employees, these were people with jobs who paid mortgages. These were not subprime, predatory loans at all.”¹¹

Fannie and Freddie were now crucial to the housing market, but their dual missions—promoting mortgage lending while maximizing returns to shareholders—were problematic. Former Fannie CEO Daniel Mudd told the FCIC that “the GSE structure required the companies to maintain a fine balance between financial goals and what we call the mission goals . . . the root cause of the GSEs’ troubles lies with their business model.”¹² Former Freddie CEO Richard Syron concurred: “I don’t think it’s a good business model.”¹³

Fannie and Freddie accumulated political clout because they depended on federal subsidies and an implicit government guarantee, and because they had to deal with regulators, affordable housing goals, and capital standards imposed by Congress and HUD. From 1999 to 2008, the two reported spending more than \$164 million on lobbying, and their employees and political action committees contributed \$15 million

to federal election campaigns.¹⁴ The “Fannie and Freddie political machine resisted any meaningful regulation using highly improper tactics,” Falcon, who regulated them from 1999 to 2005, testified. “OFHEO was constantly subjected to malicious political attacks and efforts of intimidation.”¹⁵ James Lockhart, the director of OFHEO and its successor, the Federal Housing Finance Agency, from 2006 through 2009, testified that he argued for reform from the moment he became director and that the companies were “allowed to be . . . so politically strong that for many years they resisted the very legislation that might have saved them.”¹⁶ Former HUD secretary Mel Martinez described to the FCIC “the whole army of lobbyists that continually paraded in a bipartisan fashion through my offices. . . . It’s pretty amazing the number of people that were in their employ.”¹⁷

In 1995, that army helped secure new regulations allowing the GSEs to count toward their affordable housing goals not just their whole loans but mortgage-related securities issued by other companies, which the GSEs wanted to purchase as investments. Still, Congressional Budget Office Director June O’Neill declared in 1998 that “the goals are not difficult to achieve, and it is not clear how much they have affected the enterprises’ actions. In fact . . . depository institutions as well as the Federal Housing Administration devote a larger proportion of their mortgage lending to targeted borrowers and areas than do the enterprises.”¹⁸

Something else was clear: Fannie and Freddie, with their low borrowing costs and lax capital requirements, were immensely profitable throughout the 1990s. In 2000, Fannie had a return on equity of 26%; Freddie, 39%. That year, Fannie and Freddie held or guaranteed more than \$2 trillion of mortgages, backed by only \$35.7 billion of shareholder equity.¹⁹

STRUCTURED FINANCE: “IT WASN’T REDUCING THE RISK”

While Fannie and Freddie enjoyed a near-monopoly on securitizing fixed-rate mortgages that were within their permitted loan limits, in the 1980s the markets began to securitize many other types of loans, including adjustable-rate mortgages (ARMs) and other mortgages the GSEs were not eligible or willing to buy. The mechanism worked the same: an investment bank, such as Lehman Brothers or Morgan Stanley (or a securities affiliate of a bank), bundled loans from a bank or other lender into securities and sold them to investors, who received investment returns funded by the principal and interest payments from the loans. Investors held or traded these securities, which were often more complicated than the GSEs’ basic mortgage-backed securities; the assets were not just mortgages but equipment leases, credit card debt, auto loans, and manufactured housing loans. Over time, banks and securities firms used securitization to mimic banking activities outside the regulatory framework for banks. For example, where banks traditionally took money from deposits to make loans and held them until maturity, banks now used money from the capital markets—often from money market mutual funds—to make loans, packaging them into securities to sell to investors.

For commercial banks, the benefits were large. By moving loans off their books, the banks reduced the amount of capital they were required to hold as protection against losses, thereby improving their earnings. Securitization also let banks rely less on deposits for funding, because selling securities generated cash that could be used to make loans. Banks could also keep parts of the securities on their books as collateral for borrowing, and fees from securitization became an important source of revenues.

Lawrence Lindsey, a former Federal Reserve governor and the director of the National Economic Council under President George W. Bush, told the FCIC that previous housing downturns made regulators worry about banks' holding whole loans on their books. "If you had a regional . . . real estate downturn it took down the banks in that region along with it, which exacerbated the downturn," Lindsey said. "So we said to ourselves, 'How on earth do we get around this problem?' And the answer was, 'Let's have a national securities market so we don't have regional concentration.' . . . It was intentional."²⁰

Private securitizations, or structured finance securities, had two key benefits to investors: *pooling* and *tranching*. If many loans were pooled into one security, a few defaults would have minimal impact. Structured finance securities could also be sliced up and sold in portions—known as tranches—which let buyers customize their payments. Risk-averse investors would buy tranches that paid off first in the event of default, but had lower yields. Return-oriented investors bought riskier tranches with higher yields. Bankers often compared it to a waterfall; the holders of the senior tranches—at the top of the waterfall—were paid before the more junior tranches. And if payments came in below expectations, those at the bottom would be the first to be left high and dry.

Securitization was designed to benefit lenders, investment bankers, and investors. Lenders earned fees for originating and selling loans. Investment banks earned fees for issuing mortgage-backed securities. These securities fetched a higher price than if the underlying loans were sold individually, because the securities were customized to investors' needs, were more diversified, and could be easily traded. Purchasers of the safer tranches got a higher rate of return than ultra-safe Treasury notes without much extra risk—at least in theory. However, the financial engineering behind these investments made them harder to understand and to price than individual loans. To determine likely returns, investors had to calculate the statistical probabilities that certain kinds of mortgages might default, and to estimate the revenues that would be lost because of those defaults. Then investors had to determine the effect of the losses on the payments to different tranches.

This complexity transformed the three leading credit rating agencies—Moody's, Standard & Poor's (S&P), and Fitch—into key players in the process, positioned between the issuers and the investors of securities. Before securitization became common, the credit rating agencies had mainly helped investors evaluate the safety of municipal and corporate bonds and commercial paper. Although evaluating probabilities was their stock-in-trade, they found that rating these securities required a new type of analysis.

Participants in the securitization industry realized that they needed to secure favorable credit ratings in order to sell structured products to investors. Investment banks therefore paid handsome fees to the rating agencies to obtain the desired ratings. “The rating agencies were important tools to do that because you know the people that we were selling these bonds to had never really had any history in the mortgage business. . . . They were looking for an independent party to develop an opinion,” Jim Callahan told the FCIC; Callahan is CEO of PentAlpha, which services the securitization industry, and years ago he worked on some of the earliest securitizations.²¹

With these pieces in place—banks that wanted to shed assets and transfer risk, investors ready to put their money to work, securities firms poised to earn fees, rating agencies ready to expand, and information technology capable of handling the job—the securitization market exploded. By 1999, when the market was 16 years old, about \$900 billion worth of securitizations, beyond those done by Fannie, Freddie, and Ginnie, were outstanding (see figure 3.1). That included \$114 billion of automobile loans and over \$250 billion of credit card debt; nearly \$150 billion worth of securities were mortgages ineligible for securitization by Fannie and Freddie. Many were subprime.²²

Securitization was not just a boon for commercial banks; it was also a lucrative new line of business for the Wall Street investment banks, with which the commercial banks worked to create the new securities. Wall Street firms such as Salomon Brothers and Morgan Stanley became major players in these complex markets and relied increasingly on quantitative analysts, called “quants.” As early as the 1970s, Wall Street executives had hired quants—analysts adept in advanced mathematical theory and computers—to develop models to predict how markets or securities might change. Securitization increased the importance of this expertise. Scott Patterson, author of *The Quants*, told the FCIC that using models dramatically changed finance. “Wall Street is essentially floating on a sea of mathematics and computer power,” Patterson said.²³

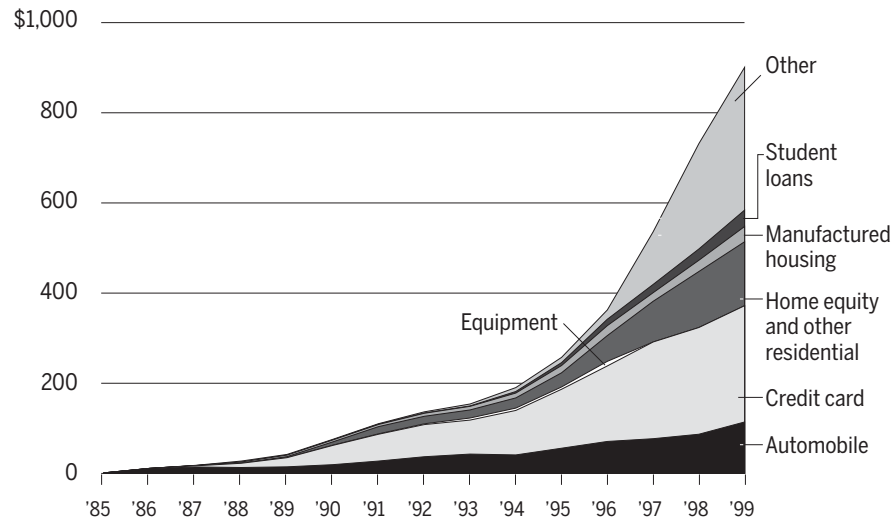
The increasing dependence on mathematics let the quants create more complex products and let their managers say, and maybe even believe, that they could better manage those products’ risk. JP Morgan developed the first “Value at Risk” model (VaR), and the industry soon adopted different versions. These models purported to predict with at least 95% certainty how much a firm could lose if market prices changed.²⁴ But models relied on assumptions based on limited historical data; for mortgage-backed securities, the models would turn out to be woefully inadequate. And modeling human behavior was different from the problems the quants had addressed in graduate school. “It’s not like trying to shoot a rocket to the moon where you know the law of gravity,” Emanuel Derman, a Columbia University finance professor who worked at Goldman Sachs for 17 years, told the Commission. “The way people feel about gravity on a given day isn’t going to affect the way the rocket behaves.”²⁵

Paul Volcker, Fed chairman from 1979 to 1987, told the Commission that regulators were concerned as early as the late 1980s that once banks began selling instead of holding the loans they were making, they would care less about loan quality. Yet as

Asset-Backed Securities Outstanding

In the 1990s, many kinds of loans were packaged into asset-backed securities.

IN BILLIONS OF DOLLARS



NOTE: Residential loans do not include loans securitized by government-sponsored enterprises.

SOURCE: Securities Industry and Financial Markets Association

Figure 3.1

these instruments became increasingly complex, regulators increasingly relied on the banks to police their own risks. “It was all tied up in the hubris of financial engineers, but the greater hubris let markets take care of themselves,” Volcker said.²⁶ Vincent Reinhart, a former director of the Fed’s Division of Monetary Affairs, told the Commission that he and other regulators failed to appreciate the complexity of the new financial instruments and the difficulties that complexity posed in assessing risk.²⁷

Securitization “was diversifying the risk,” said Lindsey, the former Fed governor. “But it wasn’t reducing the risk. . . . You as an individual can diversify your risk. The system as a whole, though, cannot reduce the risk. And that’s where the confusion lies.”²⁸

THE GROWTH OF DERIVATIVES: “BY FAR THE MOST SIGNIFICANT EVENT IN FINANCE DURING THE PAST DECADE”

During the financial crisis, leverage and complexity became closely identified with one element of the story: derivatives. Derivatives are financial contracts whose prices are determined by, or “derived” from, the value of some underlying asset, rate, index,

or event. They are not used for capital formation or investment, as are securities; rather, they are instruments for hedging business risk or for speculating on changes in prices, interest rates, and the like. Derivatives come in many forms; the most common are over-the-counter-swaps and exchange-traded futures and options.²⁹ They may be based on commodities (including agricultural products, metals, and energy products), interest rates, currency rates, stocks and indexes, and credit risk. They can even be tied to events such as hurricanes or announcements of government figures.

Many financial and commercial firms use such derivatives. A firm may hedge its price risk by entering into a derivatives contract that offsets the effect of price movements. Losses suffered because of price movements can be recouped through gains on the derivatives contract. Institutional investors that are risk-averse sometimes use interest rate swaps to reduce the risk to their investment portfolios of inflation and rising interest rates by trading fixed interest payments for floating payments with risk-taking entities, such as hedge funds. Hedge funds may use these swaps for the purpose of speculating, in hopes of profiting on the rise or fall of a price or interest rate.

The derivatives markets are organized as exchanges or as over-the-counter (OTC) markets, although some recent electronic trading facilities blur the distinctions. The oldest U.S. exchange is the Chicago Board of Trade, where futures and options are traded. Such exchanges are regulated by federal law and play a useful role in price discovery—that is, in revealing the market’s view on prices of commodities or rates underlying futures and options. OTC derivatives are traded by large financial institutions—traditionally, bank holding companies and investment banks—which act as derivatives dealers, buying and selling contracts with customers. Unlike the futures and options exchanges, the OTC market is neither centralized nor regulated. Nor is it transparent, and thus price discovery is limited. No matter the measurement—trading volume, dollar volume, risk exposure—derivatives represent a very significant sector of the U.S. financial system.

The principal legislation governing these markets is the Commodity Exchange Act of 1936, which originally applied only to derivatives on domestic agricultural products. In 1974, Congress amended the act to require that futures and options contracts on virtually all commodities, including financial instruments, be traded on a regulated exchange, and created a new federal independent agency, the Commodity Futures Trading Commission (CFTC), to regulate and supervise the market.³⁰

Outside of this regulated market, an over-the-counter market began to develop and grow rapidly in the 1980s. The large financial institutions acting as OTC derivatives dealers worried that the Commodity Exchange Act’s requirement that trading occur on a regulated exchange might be applied to the products they were buying and selling. In 1993, the CFTC sought to address these concerns by exempting certain nonstandardized OTC derivatives from that requirement and from certain other provisions of the Commodity Exchange Act, except for prohibitions against fraud and manipulation.³¹

As the OTC market grew following the CFTC’s exemption, a wave of significant losses and scandals hit the market. Among many examples, in 1994 Procter & Gamble,

a leading consumer products company, reported a pretax loss of \$157 million, the largest derivatives loss by a nonfinancial firm, stemming from OTC interest and foreign exchange rate derivatives sold to it by Bankers Trust. Procter & Gamble sued Bankers Trust for fraud—a suit settled when Bankers Trust forgave most of the money that Procter & Gamble owed it. That year, the CFTC and the Securities and Exchange Commission (SEC) fined Bankers Trust \$10 million for misleading Gibson Greeting Cards on interest rate swaps resulting in a mark-to-market loss of \$23 million, larger than Gibson's prior-year profits. In late 1994, Orange County, California, announced it had lost \$1.5 billion speculating in OTC derivatives. The county filed for bankruptcy—the largest by a municipality in U.S. history. Its derivatives dealer, Merrill Lynch, paid \$400 million to settle claims.³² In response, the U.S. General Accounting Office issued a report on financial derivatives that found dangers in the concentration of OTC derivatives activity among 15 major dealers, concluding that “the sudden failure or abrupt withdrawal from trading of any one of these large dealers could cause liquidity problems in the markets and could also pose risks to the others, including federally insured banks and the financial system as a whole.”³³ While Congress then held hearings on the OTC derivatives market, the adoption of regulatory legislation failed amid intense lobbying by the OTC derivatives dealers and opposition by Fed Chairman Greenspan.

In 1996, Japan's Sumitomo Corporation lost \$2.6 billion on copper derivatives traded on a London exchange. The CFTC charged the company with using derivatives to manipulate copper prices, including using OTC derivatives contracts to disguise the speculation and to finance the scheme. Sumitomo settled for \$150 million in penalties and restitution. The CFTC also charged Merrill Lynch with knowingly and intentionally aiding, abetting, and assisting the manipulation of copper prices; it settled for a fine of \$15 million.³⁴

Debate intensified in 1998. In May, the CFTC under Chairperson Brooksley Born said the agency would reexamine the way it regulated the OTC derivatives market, given the market's rapid evolution and the string of major losses since 1993. The CFTC requested comments. It got them.

Some came from other regulators, who took the unusual step of publicly criticizing the CFTC. On the day that the CFTC issued a concept release, Treasury Secretary Robert Rubin, Greenspan, and SEC Chairman Arthur Levitt issued a joint statement denouncing the CFTC's move: “We have grave concerns about this action and its possible consequences. . . . We are very concerned about reports that the CFTC's action may increase the legal uncertainty concerning certain types of OTC derivatives.”³⁵ They proposed a moratorium on the CFTC's ability to regulate OTC derivatives.

For months, Rubin, Greenspan, Levitt, and Deputy Treasury Secretary Lawrence Summers opposed the CFTC's efforts in testimony to Congress and in other public pronouncements. As Alan Greenspan said: “Aside from safety and soundness regulation of derivatives dealers under the banking and securities laws, regulation of derivatives transactions that are privately negotiated by professionals is unnecessary.”³⁶

In September, the Federal Reserve Bank of New York orchestrated a \$3.6 billion recapitalization of Long-Term Capital Management (LTCM) by 14 major OTC

derivatives dealers. An enormous hedge fund, LTCM had amassed more than \$1 trillion in notional amount of OTC derivatives and \$125 billion of securities on \$4.8 billion of capital without the knowledge of its major derivatives counterparties or federal regulators.³⁷ Greenspan testified to Congress that in the New York Fed's judgment, LTCM's failure would potentially have had systemic effects: a default by LTCM "would not only have a significant distorting impact on market prices but also in the process could produce large losses, or worse, for a number of creditors and counterparties, and for other market participants who were not directly involved with LTCM."³⁸

Nonetheless, just weeks later, in October 1998, Congress passed the requested moratorium.

Greenspan continued to champion derivatives and advocate deregulation of the OTC market and the exchange-traded market. "By far the most significant event in finance during the past decade has been the extraordinary development and expansion of financial derivatives," Greenspan said at a Futures Industry Association conference in March 1999. "The fact that the OTC markets function quite effectively without the benefits of [CFTC regulation] provides a strong argument for development of a less burdensome regime for exchange-traded financial derivatives."³⁹

The following year—after Born's resignation—the President's Working Group on Financial Markets, a committee of the heads of the Treasury, Federal Reserve, SEC, and Commodity Futures Trading Commission charged with tracking the financial system and chaired by then Treasury Secretary Larry Summers, essentially adopted Greenspan's view. The group issued a report urging Congress to deregulate OTC derivatives broadly and to reduce CFTC regulation of exchange-traded derivatives as well.⁴⁰

In December 2000, in response, Congress passed and President Clinton signed the Commodity Futures Modernization Act of 2000 (CFMA), which in essence deregulated the OTC derivatives market and eliminated oversight by both the CFTC and the SEC. The law also preempted application of state laws on gaming and on bucket shops (illegal brokerage operations) that otherwise could have made OTC derivatives transactions illegal. The SEC did retain antifraud authority over securities-based OTC derivatives such as stock options. In addition, the regulatory powers of the CFTC relating to exchange-traded derivatives were weakened but not eliminated.

The CFMA effectively shielded OTC derivatives from virtually all regulation or oversight. Subsequently, other laws enabled the expansion of the market. For example, under a 2005 amendment to the bankruptcy laws, derivatives counterparties were given the advantage over other creditors of being able to immediately terminate their contracts and seize collateral at the time of bankruptcy.

The OTC derivatives market boomed. At year-end 2000, when the CFMA was passed, the notional amount of OTC derivatives outstanding globally was \$95.2 trillion, and the gross market value was \$3.2 trillion.⁴¹ In the seven and a half years from then until June 2008, when the market peaked, outstanding OTC derivatives increased more than sevenfold to a notional amount of \$672.6 trillion; their gross market value was \$20.3 trillion.⁴²

Greenspan testified to the FCIC that credit default swaps—a small part of the

market when Congress discussed regulating derivatives in the 1990s—“did create problems” during the financial crisis.⁴³ Rubin testified that when the CFMA passed he was “not opposed to the regulation of derivatives” and had personally agreed with Born’s views, but that “very strongly held views in the financial services industry in opposition to regulation” were insurmountable.⁴⁴ Summers told the FCIC that while risks could not necessarily have been foreseen years ago, “by 2008 our regulatory framework with respect to derivatives was manifestly inadequate,” and that “the derivatives that proved to be by far the most serious, those associated with credit default swaps, increased 100 fold between 2000 and 2008.”⁴⁵

One reason for the rapid growth of the derivatives market was the capital requirements advantage that many financial institutions could obtain through hedging with derivatives. As discussed above, financial firms may use derivatives to hedge their risks. Such use of derivatives can lower a firm’s Value at Risk as determined by computer models. In addition to gaining this advantage in risk management, such hedges can lower the amount of capital that banks are required to hold, thanks to a 1996 amendment to the regulatory regime known as the Basel International Capital Accord, or “Basel I.”

Meeting in Basel, Switzerland, in 1988, the world’s central banks and bank supervisors adopted principles for banks’ capital standards, and U.S. banking regulators made adjustments to implement them. Among the most important was the requirement that banks hold more capital against riskier assets. Fatefully, the Basel rules made capital requirements for mortgages and mortgage-backed securities looser than for all other assets related to corporate and consumer loans.⁴⁶ Indeed, capital requirements for banks’ holdings of Fannie’s and Freddie’s securities were less than for all other assets except those explicitly backed by the U.S. government.⁴⁷

These international capital standards accommodated the shift to increased leverage. In 1996, large banks sought more favorable capital treatment for their trading, and the Basel Committee on Banking Supervision adopted the Market Risk Amendment to Basel I. This provided that if banks hedged their credit or market risks using derivatives, they could hold less capital against their exposures from trading and other activities.⁴⁸

OTC derivatives let derivatives traders—including the large banks and investment banks—increase their leverage. For example, entering into an equity swap that mimicked the returns of someone who owned the actual stock may have had some upfront costs, but the amount of collateral posted was much smaller than the upfront cost of purchasing the stock directly. Often no collateral was required at all. Traders could use derivatives to receive the same gains—or losses—as if they had bought the actual security, and with only a fraction of a buyer’s initial financial outlay.⁴⁹ Warren Buffett, the chairman and chief executive officer of Berkshire Hathaway Inc., testified to the FCIC about the unique characteristics of the derivatives market, saying, “they accentuated enormously, in my view, the leverage in the system.” He went on to call derivatives “very dangerous stuff,” difficult for market participants, regulators, auditors, and investors to understand—indeed, he concluded, “I don’t think I could manage” a complex derivatives book.⁵⁰

A key OTC derivative in the financial crisis was the credit default swap (CDS), which offered the seller a little potential upside at the relatively small risk of a potentially large downside. The purchaser of a CDS transferred to the seller the default risk of an underlying debt. The debt security could be any bond or loan obligation. The CDS buyer made periodic payments to the seller during the life of the swap. In return, the seller offered protection against default or specified “credit events” such as a partial default. If a credit event such as a default occurred, the CDS seller would typically pay the buyer the face value of the debt.

Credit default swaps were often compared to insurance: the seller was described as insuring against a default in the underlying asset. However, while similar to insurance, CDS escaped regulation by state insurance supervisors because they were treated as deregulated OTC derivatives. This made CDS very different from insurance in at least two important respects. First, only a person with an insurable interest can obtain an insurance policy. A car owner can insure only the car she owns—not her neighbor’s. But a CDS purchaser can use it to speculate on the default of a loan the purchaser does not own. These are often called “naked credit default swaps” and can inflate potential losses and corresponding gains on the default of a loan or institution.

Before the CFMA was passed, there was uncertainty about whether or not state insurance regulators had authority over credit default swaps. In June 2000, in response to a letter from the law firm of Skadden, Arps, Slate, Meagher & Flom, LLP, the New York State Insurance Department determined that “naked” credit default swaps did not count as insurance and were therefore not subject to regulation.⁵¹

In addition, when an insurance company sells a policy, insurance regulators require that it put aside reserves in case of a loss. In the housing boom, CDS were sold by firms that failed to put up any reserves or initial collateral or to hedge their exposure. In the run-up to the crisis, AIG, the largest U.S. insurance company, would accumulate a one-half trillion dollar position in credit risk through the OTC market without being required to post one dollar’s worth of initial collateral or making any other provision for loss.⁵² AIG was not alone. The value of the underlying assets for CDS outstanding worldwide grew from \$6.4 trillion at the end of 2004 to a peak of \$58.2 trillion at the end of 2007.⁵³ A significant portion was apparently speculative or naked credit default swaps.⁵⁴

Much of the risk of CDS and other derivatives was concentrated in a few of the very largest banks, investment banks, and others—such as AIG Financial Products, a unit of AIG⁵⁵—that dominated dealing in OTC derivatives. Among U.S. bank holding companies, 97% of the notional amount of OTC derivatives, millions of contracts, were traded by just five large institutions (in 2008, JPMorgan Chase, Citigroup, Bank of America, Wachovia, and HSBC)—many of the same firms that would find themselves in trouble during the financial crisis.⁵⁶ The country’s five largest investment banks were also among the world’s largest OTC derivatives dealers.

While financial institutions surveyed by the FCIC said they do not track revenues and profits generated by their derivatives operations, some firms did provide estimates. For example, Goldman Sachs estimated that between 25% and 35% of its revenues from 2006 through 2009 were generated by derivatives, including 70% to

75% of the firm's commodities business, and half or more of its interest rate and currencies business. From May 2007 through November 2008, \$133 billion, or 86%, of the \$155 billion of trades made by Goldman's mortgage department were derivative transactions.³⁷

When the nation's biggest financial institutions were teetering on the edge of failure in 2008, everyone watched the derivatives markets. What were the institutions' holdings? Who were the counterparties? How would they fare? Market participants and regulators would find themselves straining to understand an unknown battlefield shaped by unseen exposures and interconnections as they fought to keep the financial system from collapsing.