1

Subprime Précis

Until recent events, few outside the real estate industry had even heard of a subprime mortgage. But this formerly obscure financial vehicle has grabbed the world's attention because of its ravaging effect on the global economy and financial system.

Simply defined, a subprime mortgage is just a loan made to someone with a weak or troubled credit history. Historically, it has been a peripheral financial phenomenon, a marginal market involving few lenders and few borrowers. However, subprime home buyers unable to make good on their mortgage payments set off a financial avalanche in 2007 that pushed the global economy into its worst downturn since the Great Depression of the 1930s. Financial markets and the economy will ultimately recover, but the subprime financial shock will go down as a major inflection point in economic history.

Genesis

The fuse for the subprime financial shock was set early in this decade, following the tech-stock bust, 9/11, and the invasions of Afghanistan and Iraq. With stock markets plunging and the nation in shock after the attack on the World Trade Center, the Federal Reserve Board (the Fed) slashed interest rates. By summer 2003, the federal funds rate—the one rate the Fed controls directly—was at a record low. Fearing that their own economies would slump under the

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

weight of the faltering U.S. economy, other major central banks around the world soon followed the Fed's lead.

In normal times, central bankers worry that lowering interest rates too much might spark inflation. If they worried less this time, a major factor was China. Joining the World Trade Organization in November 2001 not only ratified China's arrival in the global market, but it lowered trade barriers and accelerated a massive shift of global manufacturing to the formerly closed communist mainland. As low-cost Chinese-made goods flooded markets, prices fell nearly everywhere and inflation seemed a remote concern. Policymakers even worried publicly about deflation, encouraging central banks to push rates to unprecedented lows.

China's explosive growth, driven by manufacturing and exports, boosted global demand for oil and other commodities. Prices surged higher. This pushed up the U.S. trade deficit, as hundreds of billions of dollars flowed overseas to China, the Middle East, Russia, and other commodity-producing nations. Many of these dollars returned to the United States as investments, as Asian and Middle Eastern producers parked their cash in the world's safest, biggest economy. At first they mainly bought U.S. Treasury bonds, which produced a low but safe return. Later, in the quest for higher returns, they expanded to riskier financial instruments, including bonds backed by subprime mortgages.

Frenzied Innovation

The two factors of extraordinarily low interest rates and surging global investor demand combined with the growth of Internet technology to produce a period of intense financial innovation. Designing new ways to invest had long been a Wall Street specialty: Since the 1970s, bankers and traders had regularly unveiled new futures, options, and derivatives on government and corporate debt—even bonds backed by residential mortgage payments. But now the

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

financial innovation machine went into high gear. Wall Street produced a blizzard of increasingly complex new securities.

These included bonds based on pools of mortgages, auto loans, credit card debt, and commercial bank loans, sliced and sorted according to their presumed levels of risk. Sometimes these securities were resliced and rebundled yet again or packaged into risk-swapping agreements whose terms remained arcane to all but their authors.

Yet the underlying structure had a basic theme. Financial engineers start with a simple credit agreement, such as a home mortgage or a credit card. Not so long ago, such arrangements were indeed simple, involving an individual borrower and a single lender. The bank loaned you money to buy a house or a car, and you paid back the bank over time. This changed when Wall Street bankers realized that many individual mortgages or other loans could be tied together and "securitized"—transformed from a simple debt agreement into a security that could be traded, just as with other bonds and stocks, among investors worldwide.

Now a monthly mortgage payment no longer made a simple trip from a homeowner's checking account to the bank. Instead, it was pooled with hundreds of other individual mortgage payments, forming a cash stream that flowed to the investors who owned the new mortgage-backed bonds. The originator of the loan—a bank, a mortgage broker, or whoever—might still collect the cash and handle the paperwork, but it was otherwise out of the picture.

With mortgages or consumer loans now bundled as tradable securities, Wall Street's second idea was to slice them up so they carried different levels of risk. Instead of pooling all the returns from a given bundle of mortgages, for example, securities were tailored so that investors could receive payments based on how much risk they were willing to take. Those seeking a safe investment were paid first, but at a lower rate of return. Those willing to gamble most were paid last but earned a substantially higher return. At least, that was how it worked in theory.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

By mid-decade, such financial innovation was in full frenzy. Any asset with a cash flow seemed to qualify for such slice-and-dice treatment. Residential mortgage loans, merger-and-acquisition financing, and even tolls generated by public bridges and highways were securitized in this way. As designing, packaging, and reselling such newfangled investments became a major source of profit for Wall Street, bankers and salesmen successfully marketed them to investors from Perth to Peoria.

The benefits of securitization were substantial. In the old days, credit could be limited by local lenders' size or willingness to take risks. A homeowner or business might have trouble getting a loan simply because the local bank's balance sheet was fully subscribed. But with securitization, lenders could originate loans, resell them to investors, and use the proceeds to make more loans. As long as there were willing investors anywhere in the world, the credit tap could never run dry.

On the other side, securitization gave global investors a much broader array of potential assets and let them precisely calibrate the amount of risk in their portfolios. Government regulators and policymakers also liked securitization because it appeared to spread risk broadly, which made a financial crisis less likely. Or so they thought.

Awash in funds from growing world trade, global investors gobbled up the new securities. Reassured by Wall Street, many believed they could successfully manage their risks while collecting healthy returns. Yet as investors flocked to this market, their returns grew smaller relative to the risks they took. Just as at any bazaar or auction, the more buyers that crowd in, the less likely they are to find a bargain. The more investors there were seeking high yields, the more those yields fell. Eventually, a high-risk security—say, a bond issued by the government of Venezuela, or a subprime mortgage loan—brought barely more than a U.S. Treasury bond or a mortgage insured by Fannie Mae.

Starved for greater returns, investors began using an old financial trick for turning small profits into large ones: leverage—that is,

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

investing with borrowed money. With interest rates low all around the world, they could borrow cheaply and thus magnify returns many times over. Investors could also sell insurance to each other, collecting premiums in exchange for a promise to cover the losses on any securities that went bad. Because that seemed a remote possibility, such insurance seemed like an easy way to make extra money.

As time went on, the market for these new securities became increasingly esoteric. Derivatives such as collateralized debt obligations, or CDOs, were particularly attractive. A CDO is a bondlike security whose cash flow is derived from other bonds, which, in turn, might be backed by mortgages or other loans. Evaluating the risk of such instruments was difficult, if not impossible; yet investors took comfort in the high ratings given by analysts at the ratings agencies, who presumably were in the know. To further allay any worries, investors could even buy insurance on the securities.

Housing Boom

Global investors were particularly enamored of securities backed by U.S. residential mortgage loans. American homeowners were historically reliable, paying on their mortgages even in tough economic times. Certainly, some cities or regions had seen falling house prices and rising mortgage defaults, but these were rare. Indeed, since the Great Depression, house prices nationwide had not declined in a single year. And U.S. housing produced trillions of dollars in mortgage loans, a huge source of assets to securitize.

With funds pouring into mortgage-related securities, mortgage lenders avidly courted home buyers. Borrowing costs plunged and mortgage credit was ample. Housing was as affordable as it had been since just after World War II, particularly in areas such as California and the Northeast, where homeownership had long been a stretch for most renters. First-time home buyers also benefited as the Internet transformed the mortgage industry, cutting transaction costs and

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

boosting competition. New loan products were invented for households that had historically had little access to standard forms of credit, such as mortgages. Borrowers with less than perfect credit history—or no credit history—could now get a loan. Of course, a subprime borrower needed a sizable down payment and a sturdy income, but even that changed quickly.

Home buying took on an added sheen after 9/11, as Americans grew wary of travel, with the hassles of air passenger screening and code-orange alerts. Tourist destinations struggled. Americans were staying home more, and they wanted those homes to be bigger and nicer. Many traded up.

As home sales took off, prices began to rise more quickly, particularly in highly regulated areas of the country. Builders couldn't put up houses quickly enough in California, Florida, and other coastal areas, which had tough zoning restrictions, environmental requirements, and a long and costly permitting process.

The house price gains were modest at first, but they appeared very attractive compared with a still-lagging stock market and the rock-bottom interest rates banks were offering on savings accounts. Home buyers saw a chance to make outsized returns on homes by taking on big mortgages. Besides, interest payments on mortgage loans were tax deductible, and since the mid-1990s, even capital gains on most home sales haven't been taxed.

It didn't take long for speculation to infect housing markets. Flippers—housing speculators looking to buy and sell quickly at a large profit—grew active. Churning was especially rampant in condominium, second-home, and vacation-home markets, where a flipper could always rent a unit if it didn't sell quickly. Some of these investors were disingenuous or even fraudulent when applying for loans, telling lenders they planned to live in the units so they could obtain better mortgage terms. Flippers were often facilitated by home builders who turned a blind eye in the rush to meet ever-rising home sales projections.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Speculation extended beyond flippers, however. Nearly all homeowners were caught up in the idea that housing was a great investment, possibly the best they could make. The logic was simple: House prices had risen strongly in the recent past, so they would continue to rise strongly in the future.

Remodeling and renovations surged. By mid-decade, housing markets across much of the country were in a frenzied boom. House sales, construction, and prices were all shattering records. Prices more than doubled in such far-flung places as Providence, Rhode Island; Naples, Florida; Minneapolis, Minnesota; Tucson, Arizona; Salt Lake City, Utah; and Sacramento, California.

The housing boom did bring an important benefit: It jumpstarted the broader economy out of its early-decade malaise. Not only were millions of jobs created to build, sell, and finance homes, but homeowners were also measurably wealthier. Indeed, the seeming financial windfall for lower- and middle- American homeowners was arguably unprecedented. The home was by far the largest asset on most households' balance sheet.

Moreover, all this newfound wealth could be readily and cheaply converted into cash. Homeowners became adept at borrowing against the increased equity in their homes, refinancing into larger mortgages, and taking on big home equity lines. This gave the housing boom even more economic importance as the extra cash financed a spending splurge.

Extra spending was precisely what the central bankers at the Federal Reserve had in mind when they were slashing interest rates. After all, the point of adjusting monetary policy is to raise or lower the economy's speed by regulating the flow of credit through the financial system and economy. Nevertheless, by mid-2004, the booming housing market and strong economy convinced policymakers it was time to throttle back by raising rates.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Housing Bust

Signs that the boom was ending appeared in spring 2005, in places such as Boston and San Diego. After several years of surging house prices and nearly a year of rising interest rates, many home buyers simply could no longer afford the outsized mortgages needed to buy. Homes that had been so affordable just a few years earlier were again out of reach.

The frenzy began to cool. Not only did bidding wars among home buyers vanish, but many sellers couldn't get their list prices as the number of properties for sale began to mount. Moreover, many sellers found it extraordinarily painful to cut prices. Flippers feared the loss of their capital, and other homeowners with big mortgages couldn't take less than they needed to pay off their existing mortgage loans. Realtors were loath to advise clients to lower prices, lest they destroy belief in the boom that had powered enormous realty fees and bonuses.

Underwriting Collapses

As they anxiously watched loan origination volumes top out, mortgage lenders searched for ways to keep the boom going. Adjustable-rate mortgage loans (ARMs) were a particularly attractive way to expand the number of potential home buyers. ARMs allowed for low monthly payments, at least for awhile.

Although borrowers have had access to such loans since the early 1980s, new versions of the ARM came with extraordinarily low initial rates, known as teasers. In most cases, the teaser rate was fixed for two years, after which it quickly adjusted higher, usually every six months, until it matched higher prevailing interest rates. Many of the homeowners who took on these exploding ARM loans were among the first to lose their homes in foreclosure.

Lenders also began to require smaller down payments. To allow home buyers to avoid paying mortgage insurance (generally required

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

for large loans with low down payments), lenders counseled borrowers to take out second mortgages. For many such borrowers, the amount of the first and second mortgage together equaled the market value of the home, meaning there was no cushion in case that value declined. Moreover, although payments on the second mortgage may have been initially lower than the cost of the insurance, most loans also had adjustable rates, which moved higher as interest rates rose.

Such creative lending worked to support home sales for awhile, but it also further raised house prices. Rising prices together with higher interest rates (thanks to continued Fed tightening) undermined house affordability even more. Growing still more creative—or more desperate—lenders offered loans without requiring borrowers to prove they had sufficient income or savings to meet the payments. Such "stated income" loans had been available in the past, but only to a very few self-employed professionals. Now they went mainstream, picking up a new nickname among mortgage-industry insiders: liars' loans.

By 2006, most subprime borrowers were taking out adjustable-rate loans carrying teaser rates that would reset in two years, potentially setting up the borrowers for a major payment shock. Most of those borrowers had put down little or no money of their own on their homes, meaning they had little to lose. Many had overstated their incomes on the loan documents, often with their lenders' tacit approval. By any traditional standard, such lending would have been viewed as a prescription for financial disaster. But lenders argued that as long as house prices rose, homeowners could build enough home equity to refinance before disaster struck.

For their part, home appraisers were working to ensure that this came true. Typically, their appraisals were based on cursory drive-by inspections and comparisons with nearby homes that had recently been sold or refinanced—in some cases, homes they themselves had appraised. Lenders, meanwhile, were happy to see their subprime borrowers refinance; most subprime loans carried hefty penalties for paying off the mortgage early, and that meant more fee income for lenders.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Regulators and Rating Agencies

Federal and state regulators may have been nervous about runaway mortgage lending, but they failed to do much about it. They certainly had reason to worry; their own surveys showed that most mortgage borrowers understood little about the financial obligations they were taking on. Many ARM borrowers did not know their mortgage payments were likely to increase, much less when they would adjust higher or by how much.

Meanwhile, hamstrung government regulators couldn't keep up with lenders who were constantly devising ways to elude oversight. Some of the most egregious lending was done not by traditional mortgage lenders, such as commercial banks and savings and loans, but by real estate investment trusts (REITs). The Securities and Exchange Commission (SEC), the agency that regulates stock and bond sales, also regulates REITs. Yet the SEC was focused on insider trading at the time, not predatory mortgage lending. An even more important factor was a philosophical distaste for regulation that seemed to pervade the Federal Reserve, the nation's most important banking regulator. Without Fed leadership, the agencies that monitor smaller corners of the banking system, such as the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and Office of Thrift Supervision, were deterred from taking action. State regulators also had a say, but they were no match for a globally wired financial industry.

Regulators' reluctance to intervene in the mortgage market may have also been based on their trust in the acumen of the rating agencies. These companies provide opinions about the creditworthiness of securities and are paid by the issuers of these securities. Global banking regulators had only recently given the agencies' opinions a quasi-official status, by making their opinions count toward determining whether banks had an appropriate amount of capital to safeguard depositors. The rating agencies were also the only institutions outside of the mortgage or banking business with enough data and

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

information to make an informed judgment about the securities' safety. If the agencies gave them an A-rating (meaning that they saw very little chance of default), regulators weren't going to argue.

Yet the rating agencies badly misjudged the risks. Poor-quality data and information led to serious miscalculations. The agencies were not required to check what the originators or servicers of the mortgage loans told them, and this information was increasingly misleading. The agencies also had the difficult task of developing models to evaluate the risk of newfangled loan schemes that had never been through a housing slump or economic recession. Without that experience, the models were not up to the task they were asked to perform. The ratings were supposed to account for the range of things that could go wrong, from rising unemployment to falling house prices, but what went wrong was much worse than they had anticipated.

Delusional Home Builders

Despite the developing stress lines, home builders retained their congenital optimism about the housing market. Most could afford it; they still had plenty of cash and bank lines built up during the boom. So they kept on building, putting up a record number of homes through summer 2006. The home-building industry had been transformed during the previous decade, as large, publicly traded firms took market share away from smaller, privately held builders. The big builders now did most of the construction in the largest markets. Observers thought this would mean more disciplined building; the large builders would have better market information, and shareholders would demand that builders pull back at the first sign of weakness. That, too, turned out to be a delusion.

The big publicly held builders and their stockholders showed no such discipline. They ignored the weakening market, putting more shovels into the ground and projecting future sales growth to keep their stock prices up. When challenged by investment analysts or

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

reporters, construction executives proffered theories about why the housing market would remain strong. Some said lots of immigrants were coming to the U.S. and would keep buying no matter what; unfortunately, after 9/11, there were fewer immigrants. There were also variations on the old saw about land—that they're not making more of it. True, in some places developable land was in increasingly short supply; many beachside resorts are short on spare lots. But, of course, developers don't need much vacant land to put up a condo tower, many of which were sprouting skyward along much of the nation's coasts.

Undaunted, some builders even established their own mortgage lending affiliates to ensure that credit kept flowing even if traditional lenders became skittish. These affiliates were particularly aggressive, even offering down payments to buyers as gifts. (They recouped the cost in a higher house price.) And if that still failed to entice purchasers, the builders could offer a marble counter top, a bigger deck, or a built-out basement to close a deal. Yet despite all their efforts, as spring 2006 turned to summer, fewer deals closed and cancellations ballooned.

Lenders Cave

Eventually, the mortgage lenders caved. With housing affordability collapsing, there was no longer a way to squeeze marginal home buyers into mortgages—at least, not without some disingenuous sleight of hand. Not only was it tough to make a new loan, but a growing number of recent borrowers, mostly flippers, weren't even making their first few mortgage payments. Even though the lenders didn't own the loans (they had already been sold for securitization), the terms of those deals left lenders on the hook for any losses that occurred soon after the sale. This was a modest attempt to dissuade fraud. Now these early-payment defaults became a call to arms for nervous regulators, who finally took action and issued new rules to limit some of the more aggressive types of lending.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

As their losses began to mount, some mortgage lenders sold out and found buyers for their businesses in still-confident investment banks. The Wall Street firms calculated that the loan originators' losses would be short term and that they themselves would be well compensated in the long run through the extra securitization business their ownership would bring in. But by the end of 2006, even the investment banks began to lose heart, and loss-plagued loan companies found nobody wanted to buy them. The only recourse for many lenders was bankruptcy and, ultimately, liquidation.

Subprime Shock

Global investors were very slow to notice the mounting troubles in the U.S. housing and mortgage markets. After some volatility early in 2007, when the Chinese stock market briefly stumbled, global stock and bond prices rocketed to new highs. But fissures were developing in some esoteric corners of the financial markets, such as the credit default swap market (a market for insurance contracts on bonds—mostly corporate bonds, but also mortgage-backed bonds), but this meant little to all but the handful of investors who traded in them.

But by late spring, the cracks could no longer be ignored. A string of venerable investment banks, including the now-defunct Bear Stearns, announced that some of their hedge funds, which had invested aggressively in mortgage-related securities, were hemorrhaging cash and facing failure. Investors weren't prepared for the news. Most global stock, bond, and real estate markets were trading near record highs, reflecting investors' complacent view of the risks involved. As the extent of the financial system's exposure to subprime mortgages came into relief in the following weeks, these same investors began running for the door. By summer 2007, the subprime financial shock was reverberating across the globe.

Some parts of the market for mortgage-backed securities effectively shut down. Bonds backed by the Federal Housing Administration

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

(which is part of the federal government) and Fannie Mae and Freddie Mac (which at the time were publicly traded companies but have since been nationalized and are now owned by taxpayers) continued to be issued. But banks abruptly stopped issuing other mortgage-backed bonds, especially those backed by subprime loans. At the peak of the boom, such bonds accounted for half of all mortgage originations.

Money Stops Flowing

The mortgage securities market wasn't the only casualty of the subprime shock. Very quickly, global money markets began to suffer as well, thanks to a complex chain of financial links that few outside these markets had noticed or understood previously. Over the course of several years, major U.S. and European money center banks had established so-called structured investment vehicles, or SIVs. These are entities set up to invest in a wide range of assets, including subprime mortgage securities, with money they raise by selling short-term commercial paper. Commercial paper (which businesses have historically used to purchase inventory that will soon be sold or for other short-term financing needs) is a mainstay of the money markets because it is regarded as both safe and liquid. Millions of savers who use money markets as an alternative to passbook bank accounts or certificates of deposit are investing in commercial paper, whether they know it or not.

In a time of low interest rates and easy credit, SIVs could easily and cheaply issue short-term commercial paper and use the proceeds to buy longer-term mortgage-backed securities. Now, however, money market funds and other investors began to lose faith in the commercial paper SIVs issued. The SIVs were effectively out of business.

It is a truism to say that financial markets work on trust. Each party to a deal must trust that the other side will honor its commitments.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Lenders must trust that their loans will be paid back; investors must trust that they will see a return on their investment. But no market depends more on trust than a money market, in which the transactions are large and are held for short periods of time. Without trust, money markets quickly break down. By late summer 2007, trust in the SIVs had evaporated. Investors shunned their commercial paper, forcing the SIVs to sell their assets at increasingly distressed prices, thus accelerating the downdraft in financial markets generally.

Short-term lending within the global banking system was also disrupted, as a string of banks began to report losses on their mortgage-related holdings. The distress appeared particularly acute in Europe, as several prominent German and British institutions stumbled. But these high-profile affairs were assumed to be just the tip of the iceberg. With U.S. mortgage security holdings so widely dispersed, and with little information about who was suffering losses and to what extent, banks shrank from doing business with each other. Fewer thought it prudent to borrow or lend, and those that would demanded substantially higher interest rates to compensate for the greater risk they now believed existed.

Banking Buckles

Pressure now mounted on the banks. Not only were they struggling to raise funds in money markets and to straighten out their troubled SIVs, but their mortgage holdings also suddenly turned toxic. They couldn't even count their losses because trading had collapsed in the mortgage securities market; thus, pricing their mortgage assets was all but impossible. Banks began feverishly writing down the value of these assets, although it was unclear how large those write-downs should be.

The banks were further hurt as investor angst over mortgage credit quality spilled over into corporate credit, particularly for lower-rated loans and bonds. These "junk" loans and bonds had financed a wave of leveraged corporate buyouts and had been lucrative for the

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

banks, but they were supposed to be temporary; banks expected to quickly resell them to investors. Now investors stopped buying, so the loans were stuck on the banks' balance sheets. That put the banks at significant risk if the businesses involved in these leveraged buyouts began to falter, a growing likelihood in a weakening economy. At the very least, these loans tied up scarce capital—the dollars regulators require banks to set aside in case of credit problems. This impairs the bank's capability to extend credit to other borrowers. A bank's capability to lend depends on how much capital it has; less capital means less lending.

Other parts of the credit market were now feeling the stress, as investors grew wary of all risk. Prices for lower-quality bonds backed by auto and credit card loans fell sharply, as did prices for the commercial mortgage securities used to finance the purchase and construction of office towers, shopping malls, and hotels. Bond issuance declined substantially, with junk corporate bond issuance stalling and even well-performing emerging economies pulling back on the debt they were willing and able to sell.

Bond Insurers at the Brink

Financial guarantors faced especially sharp problems. These institutions sell insurance on bonds, guaranteeing to make investors whole if the bonds ever default. Providing insurance on municipal bonds has long been their principal business; because state and local governments almost never default, it has been very profitable, if a bit dull.

The government agencies that issue municipal bonds, from the Port Authority of New York to the state of California, are willing to insure their bonds only if such insurance costs less than the added interest they would pay with no insurance. The formula normally works because the guarantors have their own top-grade seal of approval, which the pension funds and endowments that invest in risk-free assets such as insured municipal bonds demand.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Now, however, it appeared that the guarantors had undermined their own financial viability by expanding beyond their core municipal insurance business. In search of bigger profits, the guarantors wrote hundreds of billions of dollars in insurance contracts in the credit default swap market, a market in which investors buy and sell insurance on a wide array of bonds and CDOs. They promised to compensate buyers if their mortgage-related bonds ever defaulted. As the calamity in the housing and mortgage markets unfolded, these payouts began to look as if they would cut deeply into the insurers' capital base. The most infamous of these insurers is AIG, whose gargantuan miscalculations in the CDS market ultimately cost U.S. taxpayers hundreds of billions of dollars. The retention bonuses it gave to many of the same CDS traders who made the failed bets came to epitomize the worst of the hubris and greed on Wall Street.

The rating agencies that rate the bond insurers' debt warned the guarantors to shore up their capital or see their ratings downgraded. Downgrades would almost certainly put the insurers out of business, rendering their insurance worthless. Investors with a mandate to purchase only risk-free assets would have no choice but to sell their insured municipal holdings, at whatever price they could get.

The formerly staid muni market launched into turmoil as the odds of this scenario rose. Rock-solid municipalities found themselves in the unlikely position of having to pay interest rates reserved for only high-risk borrowers. Waves from the subprime financial shock had reached so far that they had even engulfed state and local governments.

Liquidity-Squeezed Broker-Dealers

The financial shock hit Wall Street's so-called broker-dealers in spring 2008, when rumors swirled over their potential liquidity problems. These are investment firms that buy and sell securities both for customers and for themselves. They often are highly leveraged, borrowing to make big bets on securities ranging from U.S. Treasury

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

bonds to exotic and risky securities backed by mortgages. When they bet right, their profits can be huge—but when they bet wrong, they can end up like Bear Stearns.

Bear Stearns bet big on the residential mortgage market. It not only issued mortgage securities, but it had acquired mortgage-lending firms that originated the loans that went into those securities. Bear "made a market" in mortgage securities, meaning it would either buy or sell, whichever a customer wanted. It prospered during the housing bubble, but as the housing and mortgage markets collapsed, each of Bear's various business segments soured in turn, and confidence in the firm's viability weakened. Unlike commercial banks that collect funds from depositors, a broker-dealer relies on other financial institutions to lend it the money it invests. If those other institutions lose faith and begin withdrawing their money, the broker-dealer's only options are filing bankruptcy or—as in Bear Stearns' case—selling out.

Over a tumultuous weekend in mid-March, the Federal Reserve engineered the sale of Bear Stearns to JPMorgan Chase. The Fed acted out of fear of what a bankruptcy could have meant for the financial system, given Bear's extensive relationships with banks, hedge funds, and other institutions around the world. Policymakers were legitimately worried that the financial system would freeze. To make the deal work, the Fed had agreed to absorb any losses on tens of billions of dollars in risky Bear Stearns securities that JPMorgan Chase had acquired in its takeover of the failed firm. The Fed also established new sources of cash for these hard-pressed institutions to forestall a similar fate befalling another one.

Financial Panic

The financial turmoil experienced a brief respite in summer 2008. The weak economy got a lift from the rebate checks taxpayers received as part of the first economic stimulus package quickly cobbled together by the Bush Administration and the Democratic

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Congress. A few large financial institutions reported decent earnings, suggesting perhaps that with the resolution of Bear Stearns, the coast was clearing. Unfortunately, it was the proverbial calm before the storm.

Things took a dramatic turn for the worse when in early September, policymakers stumbled badly, beginning with the government takeover of Fannie Mae and Freddie Mac. Fannie and Freddie were publicly traded companies with a federal government charter to promote homeownership by providing ample and cheap credit to minorities and other disadvantaged groups. This became difficult to do during the height of the housing boom because subprime lenders were willing to provide even more—and cheaper—credit. Fannie and Freddie's share of mortgage lending fell sharply. The companies fought back; they had to, given the requirements of their charters and the demands of their profit-hungry shareholders. They didn't push all the way into the subprime market, but by the peak of the housing bubble, they had become sizable players in risky parts of the mortgage market. And although the dollar amount of this lending was small compared to the rest of their operations, it was large compared to their capital base. The companies' regulator had historically not required them to hold a lot of capital because they had made only safe mortgage loans; they didn't increase their capital commensurately when they moved into riskier lending.

As losses at Fannie and Freddie began to mount, their stock- and bondholders—including some of the largest and bluest of blue-chip institutional investors in the world—grew increasingly nervous. Fannie's and Freddie's stock prices fell, and their borrowing costs began to rise, increasing mortgage rates for home buyers. By the first week of September 2008, the Bush Administration felt it had no choice but to take over Fannie Mae and Freddie Mac. The Treasury Department put them into conservatorship. Shareholders were wiped out, and although bondholders were protected, the action crystallized in the minds of global investors that all financial institutions, no matter how large, were at significant threat of failure. Fannie and Freddie

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

probably would have been considered insolvent if their assets and liabilities were valued at market prices, but they still had sufficient regulatory capital, the amount of capital necessary to satisfy regulatory requirements. In past financial crisis, policymakers had showed forbearance to large institutions in similar situations—Citigroup was likely insolvent during the early 1990s Savings & Loan crisis but was not taken over by regulators—so as not to unnerve investors. Treasury Secretary Paulson didn't show the same forbearance with Fannie and Freddie, and this spooked investors.

Investors' fears boiled over when policymakers allowed broker-dealer Lehman Brothers to fail one week later. Lehman's problem wasn't a lack of cash—it could use the credit facility the Fed had established after the Bear Stearns collapse for just such a purpose. But no other financial institution wanted to do business with a firm that could soon be out of business. Hedge funds that had used Lehman to execute their trades no longer did so, and other, bigger financial institutions forced Lehman to put up more funds as collateral just in case something went wrong. A year earlier, Lehman Brothers had been at the center for the financial system, but in what seemed like just a few days, the system had shut Lehman out. The company was careening toward bankruptcy.

The Treasury and the Federal Reserve worked feverishly to find a buyer for Lehman, as they had done for Bear Stearns, but no one stepped forward. Lehman's fate was in the hands of the Treasury and the Fed. The Fed argued that it couldn't help because Lehman didn't have enough assets to provide the collateral necessary to get a Fed loan; by its charter, the Fed could provide only a fully collateralized loan. The Treasury also said no, arguing that it couldn't bail out everyone, and the financial system had plenty of time, given the Bear collapse, to prepare for a Lehman failure.

Not forestalling a Lehman bankruptcy was a mistake; not everyone was prepared. The Reserve Primary Fund, one of the nation's oldest and largest money market funds, had invested heavily in

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Lehman debt. Lehman's bankruptcy forced them to write off that investment. The resulting losses caused them to break the buck: The value of the fund's assets fell below what it owed its investors. This was too much to bear for many mom-and-pop investors, who thought a money fund was as safe as putting their money in the mattress; they began withdrawing their funds. Money funds that are large investors in commercial paper—the short-term IOUs of major businesses—had no choice but to stop buying CP. What's more, they were forced to sell CP to meet the redemptions. Large businesses were immediately scrambling for ways to finance their basic operations. Equity investors realized that no business was immune from the fallout of the mounting credit crunch, and stock prices plunged.

The entire financial system was on the precipice of collapse. A rattled Treasury Secretary Paulson and Fed Chairman Bernanke came before Congress with a plan to save the system. The idea was for taxpayers to put up $700 billion in a Troubled Asset Relief Fund to buy the banking system's toxic assets. Neither the need for the $700 billion TARP nor how the money was to be used and overseen was well explained. Confusion circulated over just how purchasing distressed mortgage loans and securities would be conducted and why this would quell the financial panic. With taxpayers incensed that they were being asked to bail out bankers who had made terrible mistakes, in late September, Congress failed to muster enough votes to pass the TARP legislation. Financial markets were roiled. Congress passed TARP a few days later because they couldn't ignore the market turmoil, but the collective psyche had been badly damaged. There was no longer time to begin asset purchases, and the TARP monies were used instead to make direct capital infusions into the teetering financial institutions. Taxpayers now owned big stakes in the nation's biggest financial institutions.

Although TARP funds weren't being used for asset purchases, it was widely expected that they eventually would be. Investors were thus shocked when Secretary Paulson announced in November 2008 that the TARP fund would not be used for this purpose after all.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

Depressed asset prices fell even more. If the government wasn't going to buy these assets, no one would. The collateral damage from this decision was the near-collapse of Citigroup, which held hundreds of billions in these bad loans and securities. Ironically, the only way to avert this calamity was for the Federal Reserve to guarantee Citi's troubled assets, the same assets the Treasury had decided not to buy.

A string of policy errors had turned a severe yet manageable financial crisis into an inherently unpredictable and even uncontrollable financial panic. The longer the panic continued, the darker the economic outlook became.

The Great Recession

With the entire financial system hemorrhaging losses, and with every corner of the credit markets in disarray, loans to consumers, businesses, and even state and local governments became scarcer and more costly. Banks aggressively ratcheted up their lending standards; borrowers who normally were considered good credits and could readily get a loan, now could not. Not only was a subprime loan out of the question, but even prime borrowers were struggling to get credit.

Without credit, home sales buckled, and subprime borrowers who had hoped to refinance before their mortgage payments exploded higher could not do so. Foreclosure seemed the only option. Inventories of unsold homes surged and house prices collapsed.

Commercial property markets froze as tighter bank underwriting and problems in the commercial mortgage securities market undermined deals. Just a year earlier, transaction volumes and real estate prices had been at record highs. Now property deals could not be consummated, weighing on commercial real estate prices and impairing developers' ability to finance new projects.

Even small and midsize companies in far-flung businesses completely unrelated to housing or mortgage finance found themselves in tough negotiations, with lenders demanding more stringent and

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)

costly terms. Financing investment and hiring was suddenly more difficult. Credit is the mother's milk of a well-functioning economy, and with credit no longer flowing, the economy crumbled.

Previously stalwart stock investors, who had held on admirably through much of the turmoil in the credit markets, capitulated. Financial shares of commercial and investment banks, mortgage insurers, and financial guarantors collapsed. The financial system's problems were daunting when the economy was still growing; with the economy in a full-blown downturn, they were overwhelming. The massive losses financial institutions had already recognized on their mortgage holdings were now wholly inadequate. Shares in nonfinancial companies were crushed as investors factored in the implications of a worldwide downturn on corporate earnings. Stock prices that were at all-time highs in late 2007 had been halved by early 2009.

The carnage in the financial system convinced businesses that they needed to batten down the hatches. It was quickly becoming a matter of survival, as sales and prices fell, cash got tight, and getting a loan became all but impossible. Unemployment, which had started 2007 at just over 4%, had nearly doubled to more than 8% by the start of 2009. It seemed headed to double digits. To preserve cash, many businesses also required employees who still had jobs to cut their hours and even their pay. Travel budgets were slashed and investment plans shelved. Despite businesses' best efforts, corporate bankruptcies rose rapidly.

The massive job losses, cracked nest eggs, and financial turmoil were too much for households to bear; consumer confidence plunged to record lows. Christmas 2008 was about the worst Christmas for retailers in a quarter-century, and the automakers were suffering with sales they hadn't seen since World War II. All this made businesses even more nervous, prompting more cutting. A self-reinforcing vicious cycle had set it. This was the worst economic downturn since the Great Depression. There wouldn't be endless breadlines and the mass exodus of homeless families as in the 1930s, but the downturn was resulting in tremendous financial suffering. It was the Great Recession.

Financial Shock: Global Panic and Government Bailouts--How We Got Here and What Must Be Done to Fix It
(FT Press; $19.99; ISBN: 0137016638; May 2009)