Margin Call: Hollywood Looks at the Housing Calamity

Margin Call. An odd title for a movie, an expression apparently from the world of markets and finance, perhaps not quite intelligible to many movie goers, so let's start with the name and see what hints it offers. *Margin* is essentially money lent by a brokerage house to investors and traders to buy stocks or bonds, often for speculative purposes. Traders collateralize the loans with assets in their accounts, usually cash or securities, though in futures markets, people have been known to margin a trade with the title to their homes, sometimes losing them. People buying on margin intend, of course, to repay the company from profits that accrue from the trade. If the securities the trader has borrowed against--the collateral--drop significantly in price and can no longer offset the risk, the brokerage usually calls the investor and demands additional margin. This can take the form of cash or more securities. Sometimes, if the trader is inaccessible and the outlook for the trade unexpectedly worsens, the brokerage will simply close out (or liquidate) the position, compelling the trader to bear the loss. The brokerage is naturally loath to carry the trade if losses are building and threaten to exceed the assets in the trader's account. When Tommy Wilhelm's positions in the lard and rye markets deteriorate--in Saul Bellow's novella *Seize the Day*--the company clearing the trades simply closes out the position, leaving Wilhelm with an irrevocable loss that ruins him financially. No margin call in that story.

Let's return to *Margin Call*. The fictitious, unnamed investment house at the center of the story is facing some kind of crisis. But with reflection we know that a brokerage does not face margin calls; it issues them to clients in trouble, so something slightly different is being suggested. Maybe some demand is being made on something larger, society as a whole, perhaps, as though a long-overdue bill were about to be delivered. The trouble the movie identifies--

unstable bonds--is perhaps the end of a long trail of errors large numbers of people have been committing.

The movie condenses into thirty-six hours on a spring or summer night in 2008 events that have been building for years. The range of action is circumscribed, hermetic even, limited to the activities of a small circle of traders and managers confined to the few stories of an office tower in New York. They are nervously laboring to extricate the firm from the terrible risk, we eventually discover, of holding too large a position in notoriously insecure mortgage bonds. Save for a few brief outdoor scenes, the story is told in rooms and corridors and could, in fact, be adapted to the stage. The set is often dark, consisting of grays, dark blues, and black, with the actors setting it all off with white shirts. Like tales of desperation in Shakespeare--*Macbeth* and *Julius Cesar*--almost all of the action takes place at night. Symbolically, the movie begins when Eric Dale (played by Stanley Tucci), an employee involved in risk management, is fired. When he is leaving the firm at a bank of elevators, he hands over to a junior trader a flash drive holding data that indicates the danger the company is facing. Peter Sullivan, the young hire played by Zachary Quinto, studies the numbers late at night on his office computer, and soon discerns the trouble that sets the story in motion. Viewers are given no more than the most general sense of the problem, much less the root cause.

Sullivan studies the computer screen and immediately calls his manager, Sam Rogers, played by Kevin Spacey, who answers while driving home. Summoned to the office by a junior trader, a peeved Rogers returns reluctantly and, on arriving, studies the data that Sullivan has produced. The screen is reading out recondite formulas that Rogers concedes he does not remotely understand (like the technology of the cell phones and computers that surround him, for that matter). Sullivan explains that the Value at Risk, or VaR, formulas are way out of line: they indicate that the firm's position in the mortgage-backed securities market is dangerously askew and threatens to capsize the company.

Almost nobody outside a limited circle of traders really understands the details of the matter. As Sam Rogers, Kevin Spacey's character, exclaims near the end, "I just don't know how we fouled this up quite so much." Sullivan was not originally a market or financial analyst at all; he represents the triumph of the "quants," the intellectual technicians who flocked to brokerages and investment banks in the 1990s armed with advanced degrees in physics and math. One of the more sympathetic figures in the story, Sullivan is an MIT-trained engineer who specialized in propulsion, and when Jared Cohen, played by Simon Baker, another principal in the company, inquires how he got into securities analysis, Sullivan replies that trading formulas and "rocket science" are not fundamentally different: they both rely on mathematical equations. The trouble, of course, is that markets are often irrational; if they were not, bubbles would never emerge. Numbers and formulas only work when they correspond to an independent reality, such as the immutable laws of gravity, but often fail when duplicity and crowd psychology enter the picture. Unwarranted confidence in mathematical analysis contributed to the danger the firm is confronting because its technical models failed to account for the rank irresponsibility that stimulated the mortgage mania from the outset. Eric Dale, a quant himself, regretfully notes at the end of the story that before he entered the securities business he had been a civil engineer doing socially useful things, and not, as one of the characters says, simply pushing numbers around on a computer screen.

Consider the historical context of the crash depicted in *Margin Call*. A great bull market in equities began in the 1980s, after the recession of the early Reagan years had abated, and accelerated greatly with the prosperity of the nineties. It had the effect of generating a culture of investing and trading. Peter Lynch and Warren Buffet became household names, and publishers discovered an unexpected market for books by and about both investors. Relishing the attention, Buffett was frequently seen on CNBC, a once-obscure cable channel that covered business news and the newly flourishing stock market; in fact, the channel itself enjoys a brief appearance on a television set placed in the background of an early scene in the movie *Unfaithful*. Buffet was put on the cover of *Fortune* magazine a number of times and was pictured with another famous magnate: "Warren and Bill"--as in Bill Gates--was one such cover story, and described the ties between the two. The super-rich naturally knew each other, entertained warm friendship, and achieved celebrity status. They got photographed holding court with the president while describing philanthropic initiatives. Envious thousands gazed wistfully at the magazine covers. An avid public soon learned that the Buffet investing technique was readily available: read *Security Analysis* by Graham and Dodd. Many did, which led Jason Zweig, a well-known business reporter, to bring out a new edition of the Depression-era classic, complete with a set of interpretive notes that followed each chapter. It was an exegetical text. Peter Lynch, the investing star of Fidelity Investments, wrote his own set of books on picking stocks. Even a topic as apparently remote from public interest as the bond market became news; Bill Gross, that titan of bond trading and founder of PIMCO (Pacific Investment Management Co.), became a public figure, thanks to CNBC and his claque of admirers in the business press, who quoted his remarks on finance.

The arrival of the Internet in the mid-nineties vastly extended the public's access to market data and financial analyses. It also opened the door to electronic trading, which further encouraged demand for buying and selling securities. "Irrational exuberance" is the term Federal Reserve Chair Alan Greenspan, also now established as a household name, used in a televised speech at a black-tie dinner in Washington in December, 1996. The S&P 500 index rose between 22% and 34% in each of the last five years of the nineties, and the run-up appeared to Greenspan as excessive. It did not seem excessive to Professor Jeremy Siegel of the Wharton College of Business at Penn. In multiple printings of his *Stocks for the Long Run*, a book that reflected public demand for investing advice, Siegel offered data going back two centuries to justify a long-term bullish outlook on the market.

"Stocks for the wrong run" is how Zweig re-titled the book after the markets crashed violently in the spring of 2000. The S&P 500 index fell for three consecutive years before bottoming out in March 2003, about 50 percent below its peak, and the erosion was even greater on the screen-based NASDAQ market, inevitably referred to by the press as "tech-heavy." Spectacular bankruptcies, often caused by duplicitous accounting, brought down a number of major firms, some well-known, others big but obscure to the public. They became much less obscure when they got into the headlines and broadcast news. Houston-based Enron, WorldCom, Global Crossing, Tyco, and Adelpha all fell into bankruptcy, with a cumulative loss to investors of a trillion dollars. The swift collapse of its home-town company, a Casey at the Bat facing derivatives instead of a pitcher, obliged the Houston Astros to rename their stadium--down came Enron Field, up went Minute Maid Park.

Margin Call is trading, so to speak, on public interest in all these topics--brokerages, Wall Street, investing, and trading. The director, J.C Chandor, makes few concessions to his audience; the actual source of the trouble facing the firm remains fairly obscure well into the story. Not until Sarah Robertson, the senior figure in risk management played by Demi Moore, offers an indirect remark about mortgages do we get even a hint that these infamous bonds are the root of the trouble. She makes an early, quick reference to checking the content of the bonds in the firm's inventory "block by block" but offers no elaboration.

A critical dimension of the movie is the advent of "securitization" of mortgages, the way it entered the lending market in the 1980s and grew with virulence in the late 1990s. I first learned of the phenomenon around 1986 or 1987, when the business press began describing a new investment vehicle that appealed to pension funds, trusts, and retail investors. Collateralized mortgage obligations--CMOs, for short--bundled mortgages in large numbers and sold them off. A single mortgage bond back then could represent 10,000 individual loans. By 1986, according to Jeff Madrick, author of *The Age of Greed*, a full 25% of home loans in the U.S. had been securitized, i.e., detached from the banks that originated the loans and resold to investment houses and brokerages. These early packages seemed responsibly managed, and I am not aware that they occasioned any scandal. In retrospect, however, it is clear that they initiated that dangerous trend of detaching the risk of lending from the agent that originated the loan. The risk was handed off to the party that acquired it and created the mortgage bond, eventually reselling it. Inevitably, this had the effect of easing the willingness of banks and mortgage servicers to extend loans and ultimately promoted the destruction of lending standards.

The early CMOs generally distinguished the levels of risk in the bundled mortgages, so that people buying into them bought tranches, or pieces of each bond, to which were attached an identified level of creditworthiness. The proponents of this innovation noted that the bonds were diversified not only by numbers but in terms of geography; the same bond could include mortgages from different regions of the country. And these advocates believed, with some justice, that by disseminating risk, they were reducing the risk of lending generally, and thereby making it easier for more people to acquire a mortgage in the first place. Proponents on the buy and sell side did not understand that they might be offering the public too much of a good thing.

A new instrument, the collateralized debt obligation--CDO--was introduced in 2000 and began to overtake the earlier instrument. The new CDOs bundled (bungled?) the bundle--levels of creditworthiness in each tranche were more extensively mixed together, and over time the bonds became much more vulnerable. If a CMO was a collection of mortgages that became an asset-backed bond, pieces of which could be bought, then the CDO was a collection of mortgage bonds consisting of individual tranches--layers--that were sold off to buyers. But these tranches could combine, rather dangerously, mortgages of widely varying quality. Scattered defaults, in other words, could have a disproportionate impact on the value of the security. The instability of the bonds--and of the companies that issued them--was greatly magnified by the introduction of the "synthetic CDO," a peculiar innovation that heaped complexity on complexity beyond the level that even institutional traders could begin to understand. The synthetics included a feature--famously defined by Buffett as "weapons of financial mass destruction"--which enabled traders to buy insurance against a default on the bond, whether they owned the underlying bond or not. And in 2008, those underlying bonds began defaulting on a massive scale. It was the misunderstood risk of insurance that sank AIG, the company that may have been more heavily exposed to synthetic CDOs than any other and which drew the single largest bailout from the Treasury Department--$180 billion--when it seemed as if failure of the company might topple the entire financial system.

As Jeff Madrick writes, "The growth of securitization was a key factor" in turning the collapse of 2008 "into the worse disaster since the Depression." He continues: "Complex computer models were used to create the collateralized debt obligation that was at the center of the rising levels of risk. Adapted from a junk bond innovation of the 1980s, it was a provocative step in the evolution of securitization." The stability of the mortgage securities could only be maintained if the housing boom continued forever. The older CMOs depended on geographic diversification to check risk, but when the lending standards of the originators sank to the bottom in every part of the country, nearly all of the mortgages (and therefore the bonds) were exposed to the same financial pressures, whether in New England or the Southwest. One analyst Madrick interviewed estimated that the default rate on subprime mortgages had only to rise to 7 percent to destroy the value of the bond; in some instances, the default rate eventually rose as high as 30 percent, and the damage was almost literally incalculable.

The agencies rating the bonds, including Standard & Poor's and Moody's, were supposed to have served as an independent check offering buyers and sellers an informed appraisal of the quality of the securities. Their methods of rating the bonds depended on formulas that became irrelevant by 2002-03, when mortgage-servicing standards dropped to new lows. Far more seriously, both services were paid by the bond issuers--the investment banks--to rank the bonds they were repackaging for the public. Having to choose between two masters--the public that assumed it was receiving an honest assessment and the companies paying for the work--they chose to issue favorable reports on the product, which is what they assumed their clients wanted. Michael Lewis, who endlessly ridicules the credit analysts and their intellectual standards, describes in detail the corrupt techniques that investment houses used to manipulate the agencies' ratings methods in order to obtain a favorable judgment on vulnerable bonds, bonds that were known to be worthless. "To judge from their behavior," says Lewis, "all the ratings agencies worried about was maximizing the number of deals they rated for Wall Street investment banks, and the fees they collected from them."

The instability of the bonds, of course, stemmed from the erosion of lending standards, which Edmund Andrews describes in some detail in *Busted*. A reporter for the *New York Times*, covering the housing market no less, Andrews is stunned in 2002 by the ease with which he himself acquires a sizeable mortgage, even though fully half his salary is committed to child support and maintenance payments to a former wife. This is his description of obtaining a mortgage in Washington, D.C., two years before the market peaked in 2006.

> People like me could mix and match the [loan] offerings almost any way we wanted. What began as specialized programs--no-doc loans for self-employed people; sub-prime loans for people with poor credit; "pay-option" loans for people who wanted low initial payments; or no-money-down loans for people who didn't have any up-front cash--were increasingly being combined into Frankenstein loans that combined all of the nightmarish features at once.

Especially damning for analysts and reporters following the market was the expansion of sub-prime lending. In the 1990s, according to Lewis, $30 billion was an impressive annual number for subprime loans. In 2000, he writes, the figure climbed to $130 billion. "In 2005," he adds, "there would be $625 billion in subprime mortgage loans, $507 billion of which found its way into mortgage bonds." Growing in size too were the synthetic CDOs, which compounded the instability of the system by requiring banks, brokerages and insurance companies to pay out enormous sums against failed mortgage bond issues.

"Just speak to me in plain English," exhorts Jeremy Irons, who plays John Tuld in *Margin Call*, the chief executive of the firm, when asking Sullivan to explain the trouble. I assume the character's name was chosen because it rhymes with the name of Richard Fuld, the chief executive of Lehman Brothers who led the company into ruin. "It wasn't brains that got me into this position." The line has a double purpose--it indicates the confusion at the top over the operations of the trading floors, as well as a lofty indifference to them. The scene echoes a passage near the end of *The Big Short*, when Lewis, then employed by Salomon Brothers, recalls being asked to explain certain derivatives trades to John Gutfreund, chief executive of the now-defunct firm. "He claimed not to be smart enough to understand them," comments Lewis, "and I assumed that this was how a Wall Street CEO showed he was the boss, by rising above the details."

There is another echo of that book in the movie, when the two younger traders seem to be driving over the Brooklyn Bridge by themselves, returning to Manhattan after having failed to persuade Eric Dale to go back to the office for a few hours. One character wonders out loud what the drivers in the trucks and cars around them would think if they understood the scale of the calamity that was about to upend their lives for years to come. The alert traders profiting from the disaster that Lewis depicts in *The Big Short* have the same experience when their forecasts begin to materialize, and they pass an idle moment on the stone steps of St. Patrick's Cathedral, observing the passersby. "We just sat and watched the people pass and talked about what might happen next," comments one of the traders. "How many of these people were going to lose their jobs? Who was going to rent these buildings, after all the Wall Street firms had collapsed?" This is what, for the public, so much of modern life amounts to--enslavement to currents of financial activity that lead to convulsions that are seldom understood but which are profoundly felt.

At the end of the night in *Margin Call*, despite intense resistance from Sam Rogers, the firm decides simply to liquidate all of its mortgage-back securities when trading resumes later that morning. One of the limitations of the movie is that for dramatic purposes the writer/director, J. C. Chandor, feels obliged to condense the action into approximately thirty-six hours, but the actual crisis had peaks and receding spells of anxiety that lasted several months to a year. Sam argues sharply with Tuld that "we're selling stuff of no value," but by the summer of 2008 the abundance of what soon became labeled toxic assets was no secret. In an early-morning pep talk Rogers instructs his crew of traders to sell the mortgage bonds as quickly as possible, and offers them jointly and individually financial rewards for their skill and speed in doing so. He warns them that they may never find work in the industry again, because supposedly people on the other side of the trades will not discover until later how poor the assets are that they have acquired. In fact, of course, by the summer of 2008, anyone reading the business press knew how degraded and desperate matters had become. Everyone on the inside "knew the housing bubble was a mirage," asserts Edmund Andrews, and yet they continued to try and profit from it, seemingly indifferent to the inevitable consequences.

Near the end of the movie, during the late-night conference in the office tower, John Tuld stands up and declares to his assembled staff that "My business is to know when the music stops"--when, in other words, the press, the public, and the regulators will wake up to the reckless danger of building and reselling homes that few can afford while passing worthless debt to finance the initiative. The remark is a grotesque and indirect confession of irresponsibility that could have been made by scores of senior figures in investment banking. Selling the debt, in other words, only stops when a corporate chieftain decides that the collective trance has been broken and that everyone has finally understood how perilous the situation is, after the damage has become incalculable and irreversible. At that point when it becomes too late to do almost anything except appeal to the government for help. The calculation amounts to moral depravity.

Tuld decides the music has stopped, and that the time has come to sell the securities at any price. "My loss is your gain," goes the unctuous, deceitful refrain of the English actor Paul Bettany who, playing the coarse Will Emerson, telephones contacts at other companies when trading begin as he tries to unwind his firm's position. Bids for the securities drop call by call when word spreads of the firm's peril.

Ultimately, whatever their misgivings, everyone at the company can be bought off, paid to participate. Eric Dale, who had refused to return with the young traders, reappears at the firm in a late scene with Sarah Robertson. He had been enraged with the firm--he was fired at the opening of the movie--but he agrees to return to keep his severance package intact, to stay silent while the firm liquidates the assets. Sarah Robertson, played by Demi Moore, the chief of risk management and Dale's superior at the firm, agrees to leave--"go quietly," as they say--because John Tuld says the traders "need a head," i.e., someone to blame and identify as the responsible party who is obliged to pay the price. She insists to Tuld that he had been warned of the dangers of the firm's positions for a year, but her protests do little good. Finally, she gives way, as does Sam Rogers, who assures his staff that liquidating the position as quickly as possible "is for the greater good"--a platitude that everyone in the room knows is vacant and meaningless. Ultimately, he wants, or imagines, that he needs the money as well.   Nearly everyone is attached to opulence, security, comfort, and status, and fail to resist the appeal of money. Cash crushes everything. That's the message of the story.

Addendum: February 2014

"Accountability" for the financial debacle that *Margin Call* depicts proceeds at a slow pace but on a staggering scale. Last November, the U.S. Department of Justice (DOJ) levied a $13 billion fine on JPMorgan Chase & Co. The penalty, the largest ever imposed on an American company, was exacted because of the worthless mortgage-backed securities the bank sold into the market during the housing bubble. Two of its subsidiaries, Washington Mutual and Bear Stearns, were included in the allegations of dishonest business dealings. In a separate agreement, JPMorgan agreed to pay $4.5 billion to investment companies that bought similar securities from the bank that its principals knew to have little or no value.

On December 2, two weeks after DOJ announced the penalty, Bank of America conceded culpability by paying the Federal Home Loan Mortgage Corporation--Freddie Mac--$404 million to settle charges that it sold valueless mortgage-backed securities to the agency from 2000 to 2009. The agreement is unrelated to other damages the Federal Housing Finance Authority is claiming regarding bonds Bank of American sold to the government in the years preceding the housing crisis. According to Reuters, the FHFA is seeking indemnity of losses totaling $57 billion. The bonds in question, of course, are the sub-prime securities and the "Alt-A" mortgages that Edmund Andrews describes in *Busted* and which are at the center of *Margin Call*.

Are the fines against JPMorgan too small? Many observers argue that the sums are not commensurate with the damage the corruption produced. Peter Eavis of the *New York Times* noted that between 2004 and 2007, JPMorgan, Washington Mutual and Bear Stearns sold $1 trillion worth of bundled mortgages to other institutions; the fines paid out are but a tiny fraction of that. The FHFA asserts that in one set of bundled securities, 15 percent of the loans extended were for a second home, five times the level the bank indicated in its prospectus. Gretchen Morgenson, a *Times* columnist, complained that the DOJ "statement of facts" outlining JPMorgan's infractions was "the same-old-same-old" fault-finding. The document offers nothing new about the activity of the bank, and merely rehashes information that has been circulating for years. (JPMorgan told investors that it "did not admit to any wrongdoing" and simply "acknowledged" the "statement of facts.") As long ago as 2010, an official for Clayton Holdings, a company that analyzed mortgage data for banks and credit ratings agencies, presented evidence before the Financial Crisis Inquiry

Commission. The official told the panel that almost half of the mortgages Clayton studied between January 2006 and June 2007 "failed to meet crucial quality benchmarks that banks had promised to investors."

In the first week of January 2014, JPMorgan was obliged to pay yet another $2 billion in fines levied by DOJ and the Comptroller of the Currency. That enforcement action stemmed from the bank's dealings with the disgraced investment manager Bernard Madoff. Essentially, JPMorgan served as Madoff's primary bank for more than twenty years. With a reasonably clear view of Madoff's trading practices, the bank had grounds for doubting the profits he claimed to be making. Under the terms of the Bank Secrecy Act of 1970, JPMorgan had a duty to report to the government any suspicious money transfers or trading activities--and the warning signals regarding Madoff's account were ample and longstanding. The same legislation was grounds for fining the British bank HSBC $1.9 billion in July 2013 for helping Mexican drug lords launder cash through its branches in Mexico.

On February 9, the *Times* reported that the DOJ was investigating JPMorgan on yet another charge, this one involving the bank's decision to hire the children of high-level Chinese officials in order to obtain banking deals with Chinese companies. Many of these firms are managed by the parents of children American firms are courting for positions. The *Times* reported that "at least six other big banks" were under investigation for the same reason. The hires, in effect, would represent an attempted bribe of a foreign government, an illegal action under the the *Foreign Corrupt Practices Act* of 1977.

WaMu, Bear and JPMorgan are not the only institutions with balance sheets likely to be damaged by government fines. Countrywide Financial and Merrill Lynch, both of which were acquired by Bank of America, helped to wreck the economy by selling bad debt. Foreign companies, including Deutsche Bank and the Royal Bank of Scotland, are under investigation as well. Referring to the Financial Crisis Inquiry Commission's findings, Morgenson of the *Times* wrote that "over a dozen institutions disregarded the problems" that have been identified. "The institutions accepted thousands of loans that should been rejected for use in the securities sold to investors," she notes.

As my review of *Margin Call* indicates, not only lending institutions but also credit rating agencies have been found culpable. In February 2013, the DOJ filed a civil suit against Standard & Poor's Rating Services. The government argued that S&P "engaged in a scheme to defraud investors" by granting unjustifiably high investment-grade ratings to the securities. Standard & Poor's claimed independence in assessing the mortgages. The government claims that the company "was so concerned about losing market share and profits that it limited, adjusted and delayed updates to the ratings criteria and analytical models it used to assess the credit risks" the securities carried.

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