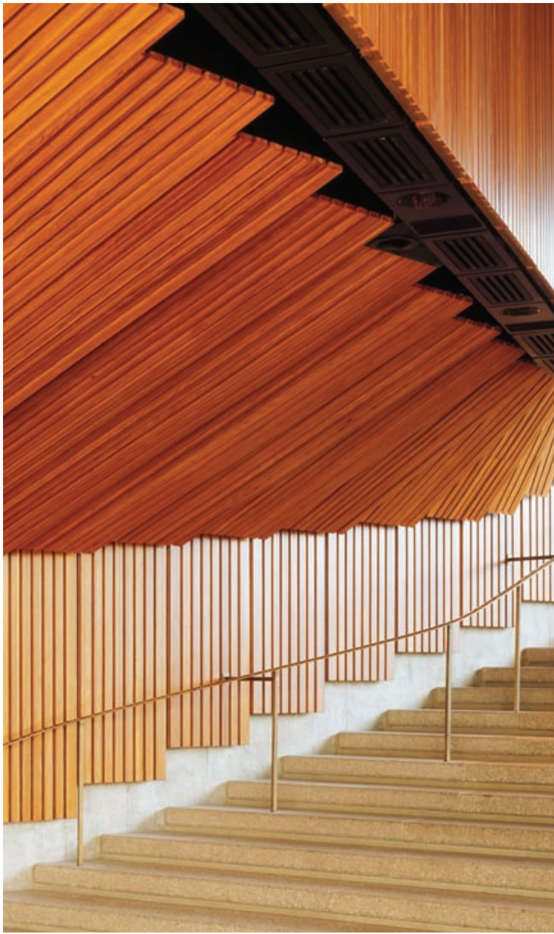

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Anatomy of a Meltdown

By

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Executive Summary

The object of this paper is to identify some of the broad themes driving the current financial meltdown and the housing bubble that preceded it. Section I focuses on leverage, with special attention to three sources of trouble: no-money-down mortgages, over-leveraged investment banks, and the selling of credit default swaps. Section II looks at how flawed regulation and "free market fundamentalism" contributed to the mess. Section III examines the recent environment of self-reinforcing fear, where excessive leverage has created extremely powerful downward momentum. Section IV asks "What do we do now?," emphasizing that, when prices are evaporating, the clash between bullish and bearish arguments is less important than the clash between a momentum mindset and a contrarian mindset.

Introduction

We are now in the fourth stage of a financial crisis that began as a local infection and then gradually invaded the entire global economic system. In Stage I, the problem seemed safely confined to housing and hedge funds as difficulties in the sub-prime sector of the U.S. mortgage market created losses for various highly leveraged hedge funds. In Stage II, it emerged that certain major banks also had excessive exposure to troubled mortgage paper. This created a broader crisis of liquidity and confidence. In Stage III, the anxieties about the financial system shifted from liquidity to solvency. And in Stage IV, the anxieties shifted from the financial system to the underlying "real economy," including the U.S., the other developed markets, and the so-called emerging markets. "Decoupling" is a quaint idea from the past that has quickly become discredited.

I. The Role of Leverage

The housing bubble and related excesses were fed by three main sources of leverage: no-money-down mortgages, the unregulated over-the-counter derivatives market, and badly regulated Wall Street balance sheets.

No-Money-Down Mortgages. In the good old days of mortgage finance, the house buyer made a down payment and the lending bank kept the mortgage on its books. Both the borrower and the lender had money at risk. If the borrower ran into trouble, the two parties could "work something out" as an alternative to foreclosure.

In "Bubble World," people borrowed 100% of the value of the house, or even more. There was no collateral other than the value of the house, which, in theory, could only go up. In fact, the buyer was making a major investment with no margin deposit. The no-money-down mortgage allowed infinite leverage, with predictable results.

What's clear now is that, despite all the fancy modeling on Wall Street and at the bond rating agencies, you can't create AAA bonds from loans anchored by little or no equity.

As for the lenders, Bubble World followed the "originate to distribute" model. Originators created mortgages that were sold into the Wall Street securitization machine, which sliced and diced them to create exotic bonds with different tranches tailored to investors with different risk/ return preferences. The senior tranches were AAA bonds that often carried insurance against default. What's clear now is that, despite all the fancy modeling on Wall Street and at the bond rating agencies, you can't create AAA bonds from loans anchored by little or no equity.

The housing bubble was fundamentally different from the Internet bubble. The Internet bubble was amplified by leverage, but the margin rules for equity that have been in place since the Great Depression prevented it from getting out of hand. When the equity investors were wiped out, the lenders were protected. During the housing bubble there were no margin deposits, so all the losses fell on the lenders and in declining housing markets, the losses are ever growing.

To make matters worse, the lenders were psychologically and financially unprepared for the disaster. When you buy low quality bonds you're aware of the risks and you take credit ratings with a grain of salt. When you buy AAA bonds you think you're playing a low-risk game, but in fact you're making a highly asymmetrical bet: you're balancing the high probability of a small incremental return against the low probability of a negative surprise. The risk is that you miscalculate the "left tail:" the probability turns out to be higher than expected, and the outcome worse than expected. That's why high quality bond investing often degenerates into a game of picking up nickels in front of a bulldozer, or Russian roulette using a revolver with thousands of chambers.

Credit Default Swaps (CDS). Credit default swaps are also highly asymmetrical bets that permit massive leverage. A CDS is essentially a option on a bond, a form of insurance against default. The asymmetry is obvious: the seller collects a small premium in exchange for promising to make a large payment if certain low-probability events occur. The leverage is equally obvious: if the low-probability event occurs, the losses to the CDS seller will greatly exceed the premiums collected.

The CDS market can be used for hedging or for speculation. The hedging uses are straightforward. If you own a risky bond and you buy a CDS, you reduce your risk. If you own a high quality bond and sell a CDS, you create a synthetic risky bond. Eventually, the CDS market came to be dominated by speculators, but that's not what made the market so dangerous. The real problem, once again, was leverage without margin deposits. The CDS market is an over-the-counter (OTC) market, so it lacks the protective mechanisms of a regulated exchange. First, an exchange has a central clearing entity that is counterparty for all trades but does not trade for its own account.

In an OTC market, your counterparty is a financial institution that trades for its own account and may well be sitting on losses that it can't afford. Second, the exchanges have well-enforced minimum margin requirements that provide some assurance to the market that there is some money on the table to cover your obligations. In the OTC market, margin requirements are either non-existent or negotiable.

The failures of regulation rested ultimately on people, not policies or institutions. There were widespread signs of a housing bubble, including an abundance of predatory lenders and fraudulent borrowers. The regulators had the tools to deal with the problems, but they didn't use them.

Central counterparties and well-enforced margin requirements are essential to leveraged markets. There are efforts now underway to introduce exchange-like protections into the OTC markets. Better late than never, but too late to reverse events at AIG. A small trading group inside AIG used AIG's "bulletproof" balance sheet to sell massive amounts of CDS contracts. If AIG had sold those swaps on an exchange, then at some point AIG's losses would have a triggered a margin call that would have forced the positions to be shut down. Thanks to the freedoms of the OTC markets, AIG was able to take on positions that are threatening the entire company.

Wall Street Capital Requirements. Many Wall Street firms that were selling exotic mortgage securities to others wound up keeping an unexpected amount of risk on their own balance sheets. These balance sheets are subject to various capital requirements, but those requirements were eased in recent years, partly to enable U.S. institutions to compete more effectively against non-U.S. institutions. Leverage at Lehman Brothers went from 12 to 1 to 30 to 1. We know how that turned out.

II. Regulation and Free Market Fundamentalism

It's clear that lax regulation aided and abetted the massive growth in leverage. However, the failures of regulation rested ultimately on people, not policies or institutions. There were widespread signs of a housing bubble, including an abundance of predatory lenders and fraudulent borrowers. The regulators had the tools to deal with the problems, but they didn't use them. There were proposals to regulate the over-the-counter derivatives market, but they crumbled in the face of free markets ideology.

"Free market fundamentalism" has delayed and complicated the political response to the crisis. For example, the September decision to allow Lehman Brothers to fail was driven in part by worries about moral hazard: the government needed a dramatic example of an institution that was *not* too big to fail. Just two weeks later, the U.S. Treasury and Federal Reserve announced the Troubled Assets Repurchase Program (TARP), which was initially designed to address the liquidity crisis by buying "toxic" assets from banks. As the liquidity crisis evolved into a solvency crisis — in no small part because of the Lehman bankruptcy — the Treasury decided to use funds initially designated for TARP to inject capital directly into the equity portion of the banks' balance sheets. Ironically, the decision to let Lehman fail led ultimately to a partial nationalization of the U.S. banking system, which was not exactly a free market outcome.

Now the Treasury and other financial authorities (with intellectual leadership from the Federal Deposit Insurance Corporation) are focused on restructuring the underlying mortgages in order to avoid a massive wave of foreclosures. The mortgage initiative has two key advantages: (1) it addresses the problems in the real economy, and (2) it has the potential to resolve crucial uncertainties that cloud the valuation of mortgage-related assets.

A key lesson from the crisis is that what we need is not "more regulation" but more intelligent regulation, which must be sensitive to the various momentum feedback loops that accentuate bubbles and panics. Even Alan Greenspan has admitted that he overestimated the degree to which free markets would regulate themselves. The Fed needs to be an even-handed contrarian, taking away the punchbowl when the party gets too loud and bringing it back when the party gets too quiet. Unfortunately, the Greenspan Fed was more eager to supply the punchbowl than to remove it. Indeed, Greenspan argued that it's impossible to tell when the party is getting too loud. The Fed's asymmetrical behavior helped to create the Internet and housing bubbles.

In the future the Fed will need to act more symmetrically, aiming to prevent bubbles and not merely to cure the post-bubble damage. Since leverage amplifies the bubble–making momentum, we need counter-cyclical capital requirements, dynamic provisioning, and other policies that will force leverage ratios down as asset prices go up.

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Moreover, we need global coordination. The U.S. regulatory disaster was aggravated by the often-repeated argument that proposed regulations would drive business to London or other financial centers. The regulators need a unified front.

III. Fear and Momentum

Fear is not always a mark of irrationality. Indeed, sometimes it is irrational *not* to be afraid in the face of bleak news and deep uncertainty. The challenge is to remain in control of the fear, which is difficult when we are surrounded by positive feedback loops that enable the fear to feed upon itself. These feedback loops create vicious spirals that are utterly different from the random walks found in finance texts.

Some of these feedback loops reflect the madness of crowds. During a bubble, people buy because they see others buying and they don't want to be the last to buy. During a panic, nobody wants to be the last to sell. It's the classic "run on the bank" syndrome.

The madness of crowds becomes more lethal when amplified by leverage. If you buy stock on margin, then falling prices eventually trigger a margin call: you have to sell some stock or deposit additional equity into the account. The margin call forces you to sell into a falling market, hence the vicious spiral. Rising prices present the opposite problem: as the stock appreciates your net capital increases, and thus you gain additional borrowing power.

This means that you have to buy additional assets in order to preserve a constant leverage ratio. As you buy into a rising market you are following the advice of the former CEO of Citigroup: "As long as the music is playing, you've got to get up and dance."

Even unleveraged investors can become forced sellers of equities. Many large institutions have built up heavy allocations to real estate, private equity, hedge funds, and other illiquid investments. The combination of spending requirements and capital calls from illiquid partnerships has forced a good deal of equity selling, just because equities were the only remaining source of liquid funds.

The momentum mechanisms operating now are the same as those that operated during the 1987 crash. Portfolio insurance didn't cause the 1987 crash, but it amplified the price declines once they got started. Similarly, the positive feedback loops that operate today didn't start the fire, but they are throwing gasoline onto the flames.

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IV. What Should We Do Now?

The polite word for the October/November plunge in global markets is "de-leveraging" — a global margin call that compounded the fear and momentum already driving the markets. We all hope that the November lows hold, but we must be very humble about our predictive powers. Current prices reflect extremely pessimistic expectations. But the news could get worse, and, in the crunch, it's impossible to know with any precision how much bad news is built into today's prices. I know what I expect, and you know what you expect, but it's hard to know what the collective "we" — aka "the market" — expects.

What do we do now: buy, hold, or sell? The points of view in this debate are based partly on fact and partly on ideology, or investment DNA. Some investors have momentum DNA, others have contrarian DNA. Momentum investors like to buy when prices are rising and sell when prices are falling; contrarian investors do the opposite. During a market panic, the contrarian investor is inclined to buy: he hears the bearish arguments, but he regards them as additional contrary indicators. During a panic the momentum investor is inclined to sell: he hears the bullish arguments, but he's more focused on reducing risk than on enhancing return.

Momentum investors and contrarian investors take very different risks, but they are comfortable with their respective risks. When prices are rising, contrarians will miss the last leg of the rally while the momentum investors will be fully invested as prices start to fall. When prices are falling, contrarians are catching falling knives while the momentum investors run the risk of being uninvested at the market bottom.

The contrarian forces are less powerful than the momentum forces, which is one reason why markets are not self-correcting. That's why the Fed needs to be a "symmetrical contrarian" and why capital requirements need to have a contrarian bias.

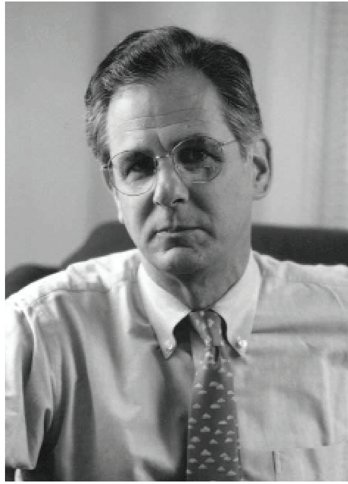
As we saw on the previous page, leverage and other forces create powerful amounts of momentum in the market. Fortunately, there are also some large contrarians in the market. Many asset managers pursue a value approach that makes them buy on weakness, and many large institutions have asset allocation policies that require "rebalancing to target weights." But the contrarian forces are less powerful than the momentum forces, which is one reason why markets are not self-correcting. That's why the Fed needs to be a "symmetrical contrarian" and why capital requirements need to have a contrarian bias.

When momentum investors reduce their risk in a falling market they are often accused of market timing. After all, if you reduce your exposure now, then you have to figure out when to get back in, so you run the risk of missing a good part of the recovery. However, this problem is muted by the fact that a V-shaped recovery seems very unlikely. Given the severity of what we've been through, the more likely scenario is a volatile recovery punctuated by numerous stomach-churning sell-offs. Even if the initial move is a dramatic "melt-up," afterwards there will still be a wall of worry to climb.

Panic creates major buying opportunities, but they are not risk-free: there are no $100 bills lying around on the sidewalks. Nobody rings a bell at the bottom. Major bottoms are supposedly marked by "investor capitulation," but capitulation is easier to spot in hindsight than in real time. And if everybody waits for capitulation, then it's very likely not to arrive.

Keynes observed many years ago that markets can remain irrational longer than you can remain solvent. Some investors are looking for exotic opportunities hidden under the financial rocks. Others are looking for "plain vanilla" opportunities among the household names that have been beaten down to depressed levels. The plain vanilla approach exploits two important facts: (1) sometimes valuables are best hidden in plain sight, and (2) during a crisis people sell what they can sell, not what they want to sell, so the large liquid names can become disproportionately oversold.

At the height of the Internet bubble we were told that high prices would last forever. Now we hear stories about the end of civilization. This too shall pass, but it won't be easy.



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